United States Department of the Interior
Bureau of Land Management

TUSCARORA FIELD OFFICE

Owyhee, Rock Creek, and Little Humboldt Herd Management Areas Gather Plan and Environmental Assessment

Bachelor wild horse band – Owyhee HMA

BLM

Elko District Office, Nevada

NATIONAL SYSTEM OF PUBLIC LANDS

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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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Table of Contents

MAPS

APPENDICES

ATTACHMENTS

1 INTRODUCTION

The Bureau of Land Management (BLM) is proposing to gather wild horses in the Owyhee, Rock Creek and Little Humboldt herd management areas (HMAs) during the summer of 2010 based on its determination that wild horses are present in excess of the levels at which a thriving natural ecological balance can be maintained. By law, BLM is required to immediately remove excess animals once a determination has been made that excess animals are present.

This Environmental Assessment (EA) contains the site-specific analysis of potential impacts that could result with the implementation of the Proposed Action or other alternatives. The EA ensures compliance with the National Environmental Policy Act (NEPA). Based on the following analysis of potential environmental consequences, a determination can be made whether to prepare an Environmental Impact Statement (EIS) or issue a "Finding of No Significant Impact" (FONSI). A FONSI documents why implementation of the selected alternative will not result in environmental impacts that significantly affect the quality of the human environment.

Background Information

The Owyhee, Rock Creek, and Little Humboldt HMAs are managed by the Tuscarora Field Office (TFO) of the BLM. Table 1 depicts the approximate acreage within the HMAs and the breakdown of public versus private lands. The Owyhee HMA is located within the Owyhee Allotment (see Map 2), the Rock Creek HMA (see Map 3) is located within the Spanish Ranch and Squaw Valley Allotments, and the Little Humboldt HMA is located in the Little Humboldt Allotment (see Map 3). The average annual wild horse population growth rate for these HMAs is approximately 18-20%.

Table 1 Approximate Acres

HMA	Acres Public Land	Acres Private Land	Total Acres
Owyhee	336,262	2,025	338,287
Rock Creek	102,638	24,115	126,753
Little Humboldt	15,734	1,417	17,151
Total	454,634	27,557	482,191

1.1 Purpose and Need

The purpose of the Proposed Action is to remove excess wild horses from the Owyhee, Rock Creek and Little Humboldt HMAs to maintain the AML ranges for the HMAs and restore a thriving natural ecological balance and multiple use relationship on the public lands consistent with the provisions of Section 3(b) (2) of the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA).

The need for the proposed action is to prevent undue or unnecessary degradation of the public lands and to protect rangeland resources from deterioration associated with excess populations of wild horses within the HMAs and use of rangeland resources by wild horses outside of the HMA boundaries.

1.2 Relationship to Laws, Policies and Land Use Plans

The Federal Land Policy and Management Act of 1976 (FLPMA) requires that an action under consideration be in conformance with the applicable BLM land use plan, and be consistent with other federal, state, local and tribal policies to the maximum extent possible. The Proposed Action and Alternative B are in conformance with the *Wild Free-Roaming Horses and Burros Act of 1971* (as amended), applicable regulations at 43 CFR § 4700 and BLM policies, including:

- **43 CFR § 4710.4 Constraints on Management**
  Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas. Management shall be at the minimum level necessary to attain the objectives identified in approved land use plans and herd management area plans.
- **43 CFR § 4720.1 Removal of excess animals from public lands**
  Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.
- **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.

The Elko RMP Record of Decision (ROD) dated March 11, 1987 (page 3) provided for four wild horse herd areas and "gatherings as needed to maintain numbers." In 2003, the Elko RMP was amended for wild horse management to establish the four current HMAs and their boundaries, to identify the Appropriate Management Levels ("AMLs") for the four HMAs within the Elko Resouce Area (Tuscarora Field Office), and to establish a process for modifying AMLs for wild horses through monitoring, evaluation, and Herd Management Area Plans. The Proposed Action and Alternatives B and C are in conformance with this Plan, as amended, and is consistent with federal, state, and local laws, and regulations.

The No Action Alternative would not comply with the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA) or with applicable regulations and Bureau policy, nor would it comply with the Northeastern Great Basin RAC Standards and Guidelines for Rangeland Health and Healthy Wild Horse and Burro Populations. However, it is included as a baseline for comparison with the Proposed Action Alternative, as provided for in the 1969 National Environmental Policy Act (NEPA).

1.3 Conformance with Rangeland Health Standards

The Northeastern Great Basin Resource Advisory Council (NGBRAC) Standards and Guidelines for Rangeland Health were approved by the Secretary of the Interior in 1997. The Standards and Guidelines for Wild Horse & Burros were approved in 2000. The NGBRAC Standards and Guidelines can be accessed at http://www.blm.gov/nv/st/en/res/resource_advisory/northeastern_great/s_gs/wild_horses.html.

The Owyhee HMA was assessed for conformance with Rangeland Health Standards and Guidelines in 2002. The Rock Creek HMA was assessed for conformance with the Rangeland Health Standards and Guidelines in 1997 and is currently being re-assessed with the Spanish Ranch and Squaw Valley Allotments in 2010. The 2002 Owyhee HMA and the 1997 Rock Creek HMA assessments state that wild horses are contributing to the non-attainment of the Standards and Guidelines. The Little Humboldt HMA was assessed for conformance with the Rangeland Health Standards and Guidelines in 2002. These assessments recommended that wild horse populations be maintained at AML for the Owyhee, Rock Creek and Little Humboldt HMAs to help achieve rangeland health standards. The assessments also concluded that historical levels of grazing use by wild horses are factors that have contributed to not meeting the standards for rangeland health. The Cultural Standard was met for all HMAs. Health assessments are available for public review at the Elko District Office.

1.4 Other NEPA Analyses

Environmental analyses (EA) for wild horse management in the Owyhee, Rock Creek and Little Humboldt HMAs have been conducted in past years. These analyses were prepared for the establishment of AML for the HMAs, and to analyze the impacts of various removal methods on wild horses and other critical elements of the human environment, and for gather and removal of wild horses in previous years consistent with the management of wild horse populations within the established AMLs for the Owyhee, Rock Creek and Little Humboldt HMAs and in response to emergency conditions. These documents include:

1. Elko District Office Wild Horse Management Removal Plan and Environmental Assessment EA# NV-010-0-19, 1981
2. Owyhee Herd Management Area Wild Horse Removal Plan and Environmental Assessment Drought Emergency BLM/EK/PL-2000-026, June 7, 2000.
3. Owyhee Allotment Evaluation Environmental Assessment BLM/EK/PL-2002-01, April 19, 2002.
4. Owyhee Herd Management Area Wild Horse Removal Plan and Environmental Assessment BLM/EK/PL -2002038, 2002.
5. Rock Creek Herd Area Wild Horse Environmental Assessment BLM/EK/PL/1994-038, 1994
6. Rock Creek Herd Management Area Emergency Capture Plan and Environmental Assessment BLM/EK/PL2002/032

7. Little Humboldt Herd Management Area Emergency Capture Plan Environmental Assessment BLM/EK/PL2002/036
8. Proposed Elko Resource Management Plan Wild Horse Amendment BLM/EK/PL-2003/024
9. Rock Humboldt Complex Wild Horse Removal Plan and Environmental Assessment BLM/EK/PL/2004/24
10. Owyhee Desert-Snowstorm Mountains Wild Horse Management Capture Plan NV 010-0-19 1980
11. Little Humboldt, Rock Creek, and Spruce/Pequop Wild Horse Removal Plan and Environmental Assessment EA# NV-010-7-036 1987
12. Buffalo and Ranch Wildland Fire Emergency Wild Horse Gather and Removal EA# BLM/EK/PL-2002-002
13. Winters Emergency Stabilization and Rehabilitation Plan Environmental Assessment BLM/EK/PL/2006/026
14. Amazon Emergency Stabilization and Rehabilitation Plan Environmental Assessment BLM/EK/PL/2007/002
15. Final Grazing Management Decision for the Sensitive Bird Species Environmental Impact Statement INT-FES-06, 2006

To promote the conservation of the greater sage grouse and its habitat which may occur on public lands in all of the wild horse HMAs, BLM follows the October 2000 "*Management Guidelines for Sage Grouse and Sagebrush Ecosystems in Nevada*" (Nevada Guidelines) and the Western Association of Fish and Wildlife Agencies (WAFWA) Page 8 of the Nevada Guidelines recognizes grazing has altered sage grouse habitat over the last century, and that the management goal for wild horses is to manage them as components of the public land and to manage them in a manner that preserves and maintains a thriving natural ecological balance in a multiple-use relationship.

All the documents listed above are available in the EDO for public review.

The following table identifies elements of the human environment that are regulated by a statutory or regulatory authority, including those that the BLM determined would not be affected. Those that would potentially be affected are analyzed in Chapter 3 of this EA.

Table 2 Review of Statutory Authorities

ELEMENT/RESOURCE	Present?	Affected?	Comment
Air Quality	Yes	No	Any effects would be short term (temporary) and minimal.
Area of Critical Environmental Concern	No	No	No areas of critical environmental concern are within or affected by the proposed gather area.
Cultural Resources	Yes	No	A number of known cultural resources exist within the proposed gather area that would be avoided during capture operations. Trap sites and holding facilities located in areas that have not been previously surveyed would be surveyed before the gather begins to

			prevent any effects to cultural resources. If cultural resources are located at a proposed gatherer site, the site will be moved to avoid the cultural resources. All surveys/inventories will be completed by currently certified District Archaeological Technician (DAT). The DAT will prepare a written report that includes the locations of all gathering sites and archaeological sites or cultural resources (including UTM coordinates determined with GPS readings), digital photographs of gather sites, archaeological sites and any artifacts observed. The report will be reviewed and approved by the BLM archaeologist before it is forwarded to the Nevada SHPO, as stipulated under the current Protocol.
Environmental Justice	No	No	The Proposed Action would have no effect.
Farm Land -Prime/Unique	No	No	The Proposed Action would have no effect.
Floodplains	Yes	No	Resource is present; however, there will be no impacts to this resource from the proposed action.
Migratory Birds	Yes	Yes	Discussed below under Wildlife
Native American Religious Concerns	Yes	No	Various tribes and bands of the Western Shoshone have stated that federal projects and land actions could have widespread effects to their culture and religion because they consider the landscape as sacred and as a provider. However, the proposed action has a low potential to impact any specific Native American religious aspect or Traditional Cultural Property.
Non-Native Invasive and Noxious Species	Yes	No	Any noxious weeds or non-native invasive weeds would be avoided when establishing trap and/or holding facilities, and would not be driven through. Noxious weed monitoring at trap/holding sites would be conducted and applicable treatment of weeds would occur as needed. Any disturbed areas from gathering operations would be reclaimed using a certified weed free native seed mixture to minimize any opportunity for invasive or noxious weeds to establish.
Threatened/Endangered Species[1]	Yes (LCT only)	Yes	LCT BLM has determined that effects from gather activities to LCT will be insignificant or discountable. BLM has also determined that indirect effects from reduced numbers of horses will be beneficial to LCT.

		No	California condor Although identified as potentially present, by Nevada Department of Wildlife (NDOW) there have been no reported sightings or presence of the California condor within the BLM Elko District. There is also no critical habitat for the California condor designated within the Elko District by the U.S. Fish and Wildlife Service.
Water Quality (Surface/Ground)	Yes	Yes	Discussed below
Wastes, Hazardous/Solid	No	No	Not Present
Fisheries and Riparian Zones	Yes	Yes	Discussed below
Wild & Scenic Rivers	Yes	No	South Fork Owyhee River is within the area, but will have no or minimal impacts.
Wilderness	Yes	No	South Fork Owyhee River, Little Owyhee, and Little Humboldt River Wilderness Study Areas are within the area, but will not be affected. No wild horses will be gathered from within the WSAs.
Wildlife	Yes	Yes	Discussed below

[1]Lahontan cutthroat trout (LCT), a federally listed threatened species, occurs in streams adjacent to the Rock Creek and Little Humboldt HMA's.

2 ALTERNATIVES

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

- Alternative A – Proposed Action: Remove excess wild horses to the lower limit of AML, apply fertility control to released mares and/or adjust the sex ratio to 60% males and 40% females within the Owyhee HMA. Gather wild horses within the Rock Creek and Little Humboldt HMAs to apply fertility control to released mares, and to remove weanlings to four year old mares, and remove any wild horses residing outside the HMAs boundaries.
- Alternative B - Remove to AML lower limit, adjust the sex ratio to 60% males and 40% females in the Owyhee, Rock Creek and Little Humboldt HMAs and remove any wild horses residing outside the HMAs boundaries.
- Alternative C – Removal Only to AML lower limit and remove any wild horses residing outside the HMAs boundaries
- Alternative D – No Action Alternative (Defer gather and removal)

The Proposed Action and Alternatives B and C were developed to meet the purpose and need (i.e. to remove excess wild horses and reduce herd growth rates, maintain AML, and ensure a thriving natural ecological balance). The Proposed Action and Alternatives B and C were developed in consideration of the issues identified during internal scoping and agency consultation. Although the No Action alternative does not comply with the

1971 WFRHBA (as amended)and does not meet the purpose and need for action, it is included as a basis for comparison with the Proposed Action.

2.1 Management actions specific to Alternative A (Proposed Action)

The Proposed Action for the Owyhee, Rock Creek and Little Humboldt HMAs is to gather up to 1,548 wild horses (which includes the 2010 foal crop), remove approximately 1,137-1,197 excess wild horses (approximately 686 in the Owyhee HMA and approximately 425 from outside the Rock Creek HMA and approximately 26-86 weanling to 4 years old mares from the Rock Creek and Little Humboldt HMAs), and to apply fertility control and/or manage sex ratios of up to 399 gathered wild horses that would be released back into the HMAs. The gather would occur in the summer of 2010.

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

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

Year 1	**Year 2**	**Year 3**
92%	84%	92% (Gather and Retreat)

One-time application at the capture site would not affect normal development of the fetus, hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick, 1995). The vaccine has also proven to have no apparent effect on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Mares would foal normally in (Year 1).

The injection 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.

Of the animals released post-gather, fertility control would be applied and/or sex ratios would be adjusted to favor males. In order to effectively apply fertility control to mares and/or adjust sex ratios, the gather operation would need to capture at least 81-90% of the entire wild horse population within the Owyhee, Rock Creek and Little Humboldt HMAs. Fertility control treatment would be conducted in accordance with the Standard Operating Procedures (SOPs) and post-treatment monitoring requirements in Appendix B. Mares would be selected to maintain a diverse age structure, herd characteristics and conformation (body type).

Studs selected for release would be released to increase the post-gather sex ratio to approximately 60% studs in the remaining herds. Studs would be selected to maintain a diverse age structure, herd characteristics and body type (conformation).

Animals would be removed using a selective removal strategy: 1st priority – age 5 years and younger; 2nd priority – age 6-15; 3rd priority – age 16 and older.

Approximately 139 wild horses in the Owyhee HMA, 200 in the Rock Creek HMA, and 60 in the Little Humboldt HMA would be released back to the range following the gather. Post-gather, every effort would be made to return released animals to the same general area from which they were gathered. The sex of animals released back to the range would be 50-60% males and 40-50% females.

The following table shows the estimated number of wild horses to be removed and to be treated and released back into the HMAs.

Table 3 Estimated Numbers

HMA	Estimated Population at gather time (includes 2010 foal crop)	AML Range	Estimated maximum number to remove	Estimated maximum number to be treated and released
Owyhee	825	139-231	686	139
Rock Creek	225	150-250	60 (weanling to 4 years old mares)	200
Outside Rock Creek HMA	425	N/A	425	
Little Humboldt	73	48-80	26 (weanling to 4 years old mares)	60
Total	1,548	337-561	1,197	399

Under the Proposed Action alternative, of the maximum 399 wild horses released following the gather, approximately 195 would be breeding age mares treated with PZP prior to their release. Because it is unlikely that BLM will be able to gather 100% of the wild horses within the HMAs, this number would almost certainly be less than 195. The exact number will depend on the number of wild horses gathered. Fertility control will be conducted in accordance with the Standard Operating Procedures (Appendix A).

2.2 Alternative B – Gather and Adjust Sex Ratio

Under this alternative, the same numbers of wild horses would be gathered, removed, and released. However, there would not be any fertility control treatments and only sex ratio adjustments to reduce herd growth rates would be implemented with a 60% male to 40% female ratio. The standard SOPs for selecting wild horses for release would be used to determine those wild horses returned to the range.

2.3 Alternative C – Removal Only - to AML lower limit

Under this alternative, the same numbers of wild horses would be gathered, removed, and released. However, there would not be any fertility control treatments or sex ratio adjustments to reduce herd growth rates. The standard SOPs for selecting wild horses for release would be used to determine those wild horses returned to the range.

2.4 Management Actions Common to Alternatives A, B and C

- Both the Proposed Action and Alternative B and C would manage wild horses within their established AML ranges for the Owyhee, Rock Creek and Little Humboldt HMAs.
- The gather operation on the Owyhee HMA would be completed in about ten to eighteen days. The gather operation on the Rock Creek HMA would be completed in about ten days. The gather operation on the Little Humboldt HMA would be completed in less than three days. Total operational time (continuous) will be 20 – 31 days.
- All wild horses outside the HMA boundaries will be permanently removed.
- All gathering and handling activities would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix A. Several factors such as animal condition, herd health, weather conditions, or other considerations may result in adjustments to the gather schedule.
- The helicopter drive-trapping method would be used and would include multiple trap sites. BLM would be responsible for contractor compliance to national contract specifications, including SOPs.
- Trap sites and holding facilities would be located in previously disturbed areas. Undisturbed areas would be inventoried for cultural resources. If cultural resources are encountered, these locations would not be used unless modifications to avoid impacts to cultural resources are feasible. Trap sites and holding facilities would not be placed in known areas of Native American concern.
- Trap sites and holding facilities would not be located in riparian area including streams, meadows and/or seeps and springs.
- A veterinarian from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) or licensed contract veterinarian may be consulted, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses. Decisions to humanely euthanize animals in field situations will be made in conformance with BLM policy. (Washington Office Instruction Memorandum 2009-041). Conditions requiring humane euthanasia occur infrequently and are described in more detail in Section 4.13 Current policy reference:

http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-041.html

- Information such as: age, sex, color, body condition, or other characteristics would be recorded for captured animals.
- Excess animals would be sent to Bureau facilities for adoption, sale, or long-term holding.
- Noxious weed monitoring at trap sites and temporary holding facilities would be conducted in the spring and summer of 2010 by BLM.
- Vehicles would be limited to existing roads except where traps are established. However, traps will be established in previously disturbed areas where possible. If it is not possible to select a disturbed area for a trap site, the area would be seeded with a certified weed free mix. This mix would consist of site adaptable species that would be broadcasted and dragged prior to November 30, 2010 by the Elko District Office. Weed treatments and inventories would continue in this area as part of regular duties of the Weeds Program.
- Monitoring of forage condition and utilization, water availability, aerial population surveys and animal health would continue.

2.5 Alternatives Considered But Eliminated from Detailed Analysis

Water/Bait Trapping Alternative

An alternative which was eliminated from detailed consideration was to water/bait trap wild horses within the HMAs. Though water/bait trapping is an effective tool for specific management purposes, this alternative was dismissed from detailed study for the following reasons: (1) the size of the gather area is too large to make this a feasible method; (2) the presence of water sources on both private and public lands inside and outside the HMAs boundaries would make it almost impossible to restrict wild horse access to only selected water trap sites, which would extend the time required to remove the excess horses or make it impossible to capture all of the excess horses; and (3) access for vehicles necessary to safely transport gathered wild horses is limited-- especially in the Rock Creek and Little Humboldt HMAs. The large geographic area involved, the significant amount of time necessary for implementing this alternative, and the difficulty of ensuring horse use of only water trap areas would make it difficult (if not impossible) to gather excess horses within a manageable gather time frame or without a significant increase in gather costs. In summary, bait/water trapping would not be effective and would be much more costly and time-consuming. Though there are limited perennial water sources in the Owyhee HMA, there are numerous seasonal stock tanks and seasonal lakes (vegetated playas) that collect seasonal water in the Owyhee HMA. Important cultural resources are known to be concentrated along the South Fork Owyhee River and other perennial water sources. Trapping wild horses next the riparian areas would have adverse effects to cultural and riparian resources as well as potential negative impacts to Lahontan cutthroat trout (LCT). Given the impracticalities of implementing this alternative for such a large geographic area, this alternative was eliminated from detailed study.

Remove or Reduce Livestock within the HMAs
This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the HMAs. This alternative was not brought forward for analysis because it is inconsistent with the 1987 Elko RMP ROD, the 2003 Elko RMP Wild Horse Amendment and the WFRHBA which directs the Secretary to immediately remove excess wild horses. This alternative is also inconsistent with the BLM's multiple use management mission under FLPMA. Additionally, livestock grazing can only be reduced or eliminated following the process outlined in the regulations found at 43 CFR Parts 4100 and 4700. Such changes to livestock grazing cannot be made through a wild horse gather decision. Furthermore, even with the current situation of significantly reduced levels of livestock grazing within the Owyhee, Rock Creek and Little Humboldt HMAs, there is insufficient habitat for the current population of wild horses. As a result, this alternative was not analyzed in detail.

Wild Horse Numbers Controlled by Natural Means
This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to prevent the range from deterioration associated with an overpopulation of wild horses. It is also inconsistent with the 1987 Elko RMP and 2003 Wild Horse Amendment which directs that Elko District BLM conduct gathers as necessary to achieve and maintain AML. The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Since the last gather in 2006, wild horses within the Owyhee, Rock Creek and Little Humboldt HMAs have increased to over 1,548 (which includes 2010 foals) or more than double the high end of the AML range. Wild horses in the Owyhee, Rock Creek and Little Humboldt HMAs are not substantially regulated by predators. In addition, wild horses are a long-lived species with documented foal survival rates exceeding 95% and they are not a self-regulating species. This alternative would result in a steady increase in numbers which would continually exceed the carrying capacity of the range until severe and unusual conditions that occur periodically-- such as blizzards or extreme drought-- cause catastrophic mortality of wild horses.

Gathering the Owyhee, Rock Creek and Little Humboldt HMAs to upper range of AML
Under this Alternative, a gather would be conducted to gather and remove enough wild horses to achieve the upper level of the AML (561 wild horses). A post-gather population size at the upper level of the AML would result in AML being exceeded following the next foaling season (spring 2011). This would be unacceptable for several reasons.

The AML represents "that 'optimum number' of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range." Animal Protection Institute, 109 IBLA 119 (1989). The Interior Board of Land Appeals has also held that "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" Animal Protection Institute, 118 IBLA 63, 75 (1991).

The upper level of the AMLs established for the HMAs represent the maximum population for which thriving natural ecological balance would be maintained. The lower level represents the number of animals to remain in the HMAs following a wild horse gather in order to allow for a periodic gather cycle, and prevent the population from exceeding the established AML between gathers.

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 continued overutilization of vegetation resources and damage to important habitats. Frequent gathers would increase the stress to wild horses, as individuals and as entire herds. For these reasons, this alternative was eliminated from further consideration.

2.6 No Action

Under the No Action Alternative, a gather to remove excess wild horses would not take place beginning about July 2010. There would be no active management to control the size of the wild horse population at this time. The current population of wild horses in the Owyhee, Rock Creek and Little Humboldt HMAs would continue to increase at a rate of 18-20% annually. A gather would have to occur at a later date to comply with WFRHBA and the land use policies of the Elko District, BLM.

3 AFFECTED ENVIRONMENT/EFFECTS OF ALTERNATIVES

This chapter characterizes the resources that may be affected by the Proposed Action and the alternatives including No Action alternative, followed by a comparative analysis of the direct, indirect and cumulative impacts of the alternatives. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

3.1 Scope of Analysis

General Description of the Affected Environment

Owyhee Herd Management Area (NV-101)

The Owyhee HMA is located in northwestern Elko County, approximately 90 air miles northwest of Elko, Nevada. The HMA is located in the Owyhee Desert area within the Columbia Plateau and Great Basin physiographic regions. These regions are located in the Great Basin which is one of the largest deserts in the world. It is characterized by a high rolling plateau underlain by basal flows covered with thin loess and alluvial mantel (see picture below). On many of the low hills and ridges that are scattered throughout the area, the soils are underlain by bedrock. The HMA is occasionally cut by deep, vertically walled canyons. Elevations range from about 5,100 feet to 5,600 feet. Precipitation ranges from 6 to 14 inches; averaging 6-9 inches annually, occurring primarily in the winter and spring with the summers being quite dry. Data from the Western Regional Climate Center shows that the average annual (Jan-Dec) precipitation on the Owyhee

HMA is 6-7 inches (1991-2009). Information can be found at the following links: http://www.wrcc.dri.edu/index.html and http://www.raws.dri.edu/index.html

Generally evaporation potential exceeds precipitation throughout the year. The average annual temperature is 43 to 47 degrees Fahrenheit (F.).

Owyhee HMA looking west (mountains in the distance are 50+ miles away)

The Owyhee HMA is very dry with very few perennial waters (see attached map 5). In the Dry Creek Pasture of the HMA the only perennial water can be found at Bookkeeper Spring. In the Chimney Creek Pasture of the HMA the only perennial water can be found at Desert Range Reservoir. In the northern portion of the HMA (Star Ridge) the only perennial water is the Owyhee River in the extreme northeastern portion of the HMA. While there are few perennial waters, there are numerous stock tanks and seasonal lakes (vegetated playas) that collect seasonal water in the Owyhee HMA. These stock tanks and seasonal lakes are dependent on winter precipitation where there may be no water or little water available by the spring to summer period during some years (Gray, Ken 1992).

In general the vegetation consists of Wyoming big sagebrush (*Artemisia tridentata var. wyomingensis*), Sandberg bluegrass (*Poa secunda*), squirretail (*Sitanion hystrix*) with scattered bluebunch wheatgrass (*Pseudorogneria spicatum*) and Indian ricegrass (*Oryzopsis hymenoides*).

The area is also utilized by domestic livestock and numerous wildlife species. The Owyhee HMA is bordered on the west by the Little Owyhee HMA and the Snowstorm Mountains to the southwest (both managed by the Winnemucca District) and Rock Creek HMAs to the south.

Rock Creek Herd Management Area (NV-0103)

The Rock Creek HMA is located in northwestern Elko County, approximately 80 air miles northwest of Elko, Nevada. The area is within the Columbia Plateau and Great Basin physiographic regions. The HMA is located just south of the Owyhee Desert area within the Columbia Plateau and Great Basin physiographic regions. These regions are located in the Great Basin which is one of the largest deserts in the world. It is characterized by a high rolling plateau underlain by basal flows covered with thin loess and alluvial mantel (see picture below). Elevations range from about 5,100 feet to 7,750 feet in the Tuscarora Mountains. Precipitation ranges from 7 inches in the valley bottoms to 16 to 18 inches in the mountains. Most of the precipitation comes during the winter months in the form of snow with the summer months being quite dry. Generally evaporation potential exceeds precipitation throughout the year. Temperatures range from 90+ degrees F. in the summer to -15 F. in the winter.

The Rock Creek HMA is bisected by several water sources. The water sources range from springs, seeps to perennial streams. However in dry years several of these water sources have been determined to be unreliable.

In general the vegetation consists of Wyoming big sagebrush, Sandberg bluegrass, squirretail with scattered bluebunch wheatgrass and Indian ricegrass.

Rock Creek HMA looking east.

The area is also utilized by domestic livestock and numerous wildlife species. The Rock Creek HMA is bordered on the north by the Owyhee HMA, on the west by Little Humboldt and Snowstorm Mountains HMAs (managed by the Winnemucca District Office) to the west.

The Rock Creek HMA also shares its western boundary with the Little Humboldt HMA. There is limited interaction of wild horses within the Rock Creek and Little Humboldt HMAs and there is also limited interaction with wild horses in adjoining HMAs. For the most part, few fences exist within the HMAs and consist mainly of allotment boundary fencing.

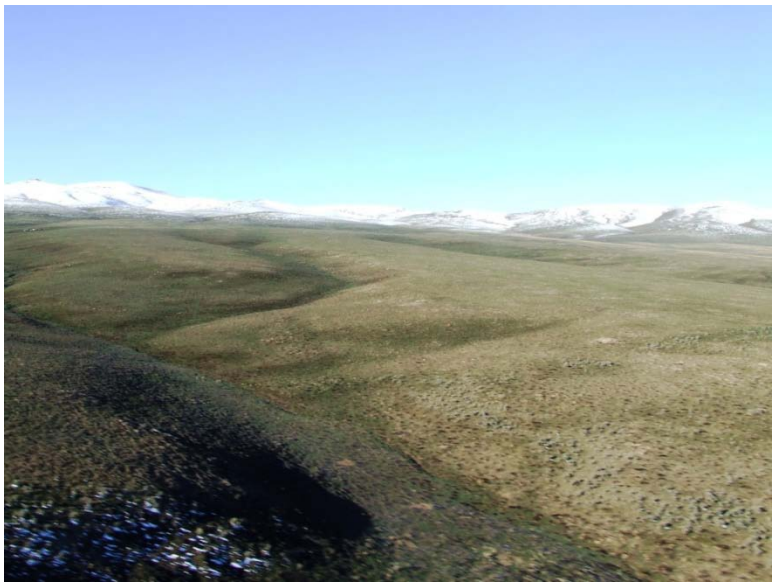
Wild horses in the Rock Creek HMA generally winter and move from the lower elevations in the Burner Hills to summer in the higher elevations in portions of the Tuscarora Mountains (Soldier and Red Cow Fields).

Little Humboldt Herd Management Area (NV-0102)

The Little Humboldt HMA is located in northwestern Elko County, approximately 90 air miles northwest of Elko, Nevada. The area is within the Columbia Plateau and Great Basin physiographic regions. The HMA is located just south of the Owyhee Desert area within the Columbia Plateau and Great Basin physiographic regions. These regions are located in the Great Basin which is one of the largest deserts in the world. It is characterized by a high rolling plateau underlain by basal flows covered with thin loess and alluvial mantel (see picture below). Elevations range from about 5,700 feet to 7,400 feet. Precipitation ranges from 7 inches in the valley bottoms to 16 to 18 inches in the mountains. Most of the precipitation comes during the winter months in the form of snow with the summer months being quite dry. Generally evaporation potential exceeds precipitation throughout the year. Temperatures range from 90+ degrees F. in the summer to -15 F. in the winter.

Water sources within the Little Humboldt HMA range from springs and seeps to perennial streams and the Castle Springs Pipeline. However in dry years, several of these water sources have been determined to be unreliable. For this reason, the Castle Springs Pipeline was installed in 1982 to improve livestock and wild horse distribution and to reduce livestock and wild horse use on (and impacts to) seeps and springs in the Castle Ridge Pasture.

In general the vegetation consists of Wyoming big sagebrush, Sandberg bluegrass, squirretail with scattered bluebunch wheatgrass and Indian ricegrass.



Little Humboldt HMA (looking west)

The area is also utilized by domestic livestock and numerous wildlife species. The Little Humboldt HMA is bordered on the north by the Snowstorm Mountains HMA (managed by the Winnemucca District Office), on the west by the South Fork of the Little Humboldt River and Little Humboldt Wilderness Study Area (WSA), and on the east by the Rock Creek HMA.

3.2.1 Wild Horses

Affected Environment

Owyhee HMA

The appropriate management level (AML) for the Owyhee HMA was established as a population range of 139-231 wild horses through the Owyhee Allotment Evaluation/Multiple Use Decision process in 2002 following an in-depth analysis of monitoring data collected over several years.

The existing HMA boundary and the herd area (HA) have matching boundaries as established by the Elko Resource Management Plan (RMP) Wild Horse Amendment in 2003. Establishing the AML as a population range allows for the periodic removal of excess animals (to the low range) and subsequent growth (to the high range) between removals (gathers). The AML was based on considerations of forage availability and water availability. The AMLs represent the wild horse population range at which a thriving natural ecological balance can be maintained, and reflect the balance between wild horse and other multiple uses of the public rangelands established through prior planning decisions. The AML for the Owyhee HMA was established at a level BLM determined would ensure a thriving natural ecological balance and multiple-use relationship within the Owyhee HMA. The Final Multiple Use Decision establishing the AML and supporting documentation are available for public review at the Elko District Office (EDO). The decision was rearfirmed in the October 30, 2006, EIS and "Final

Grazing Management Decision and Record of Decision for the Sheep Complex, Big Springs and Owyhee Grazing Allotments".

Wild horse population growth rates average 15-25% in the Owyhee HMA. An aerial population inventory flight conducted in March 2009 in the Owyhee HMA observed 510 wild horses within the HMA. An aerial population inventory flight conducted in May 2010 in the Owyhee HMA observed 813 wild horses of all age classes within the HMA of which 116 where suspected to have come from the Little Owyhee HMA (based on color). The Little Owyhee HMA is known for having "overo paint" patterns. Wild horses with these color patterns were found on the Owyhee HMA. The Owyhee HMA is primarily known for its roans, duns (Star Ridge is dominated by greys). The population inventory flights have also provided information pertaining to: population numbers, distribution, and herd health. The estimated July population is 825 wild horses, which includes the estimated 2010 year's foal crop.

Hundreds of wild horses have grazed the Owyhee HMA over the past two decades and throughout this period the lack of water has been the limiting factor for wild horse herd management. To achieve and maintain AML, BLM has conducted three (two emergency gathers and one AML gather) removals in the Owyhee HMA in the last 20 years and approximately 1,425 wild horses have been removed during these management operations. Emergency gathers as a result of drought or fire were also conducted in 2000 and 2006 to prevent the death of individual animals from thirst or starvation. In the 2000 emergency gather, the waters in the Dry Creek Pasture became unreliable and over six hundred wild horses were using Bookkeeper Spring which was rapidly drying up. The 2006 Winters Fire – which burned approximately 238,462 acres -- also prompted the need for another emergency gather with 136 wild horses gathered and 126 horses removed due to the loss of forage from the fire. No fertility control was applied during the 2006 gather, the 10 wild horses that were not removed from the HMA were released back into the Owyhee HMA.

The last non-emergency gather of the Owyhee HMA was completed in December 2002, when 791 wild horses were gathered, 687 were removed, and 104 were released back to the range. Of the released horses, 32 mares were treated with an immunocontraceptive fertility control two year vaccine. The Dry Creek Pasture portion of the Owyhee HMA was not gathered as it was estimated to be at AML prior to the 2002 gather. Following the 2002 gather, a total of 206 wild horses were estimated to remain in the Owyhee HMA.

In the Star Ridge portion of the Owyhee HMA, wild horses can be found in large concentrations on Star Valley ridge. The ridge is close to a series of stock tanks. When water is not available in the stock tanks, all of the wild horses must obtain water at the "pipeline" crossing in the South Fork Owyhee River, which is at a distance of 9-10 miles from the stock tanks. In the Star Ridge Pasture, supplemental water for wild horses provided by the permittee has also been common in the past in order to meet the watering needs for the numbers of wild horses in excess of the current established AML. In the Chimney Creek Pasture, wild horses obtain water at the Desert Ranch Reservoir.

Wild horse use patterns within the Owyhee HMA are dependent on the available waters. Wild horses in the Dry Creek Pasture can normally be found in the vicinity of the seasonal lakes. When water is not available, the bands of wild horses move south to man-made stock tanks and Bookkeeper Spring. When normal waters dry up, they must travel the longest distances to alternate water sources and may not know where to find water when their traditional water sources dry up.

Climate data from the National Weather Service shows that precipitation for the current water year (beginning October 1, 2009) is approximately 6 percent below the thirty-year average (1971-2000). Information can be found at the following link: http://newweb.wrh.noaa.gov/lkn/.

The U.S. Drought Monitor continues to show abnormally dry conditions on portions of the HMAs in late May 2010. Information can be found at the following link: http://drought.unl.edu/dm/monitor.html

Given the dry conditions and the expanding wild horse numbers, along with the limited perennial water sources in the Owyhee HMA, the BLM has a very strong concern that wild horses could suffer from dehydration and possible death in the Owyhee HMA this summer (2010) if excess wild horses are not gathered.

Rock Creek HMA

The AML for the Rock Creek HMA was established as a population range of 150-250 wild horses by the Elko Resource Management Plan (RMP) Wild Horse Amendment in 2003. The AML for the Rock Creek HMA was established at a level that would ensure a thriving natural ecological balance and multiple-use relationship within the Rock Creek HMA. The Rock Creek HMA and HA boundaries are different and portions of the HA were not designated as the HMA due the presence and potential for continued degradation of habitat for the Lahontan cutthroat trout (LCT) a federally listed threatened species. The RMP establishing the AML is available for public review at the EDO.

Wild horse population growth rates average 20% in the Rock Creek HMA. An aerial population inventory flight conducted in March 2009 in the Rock Creek HMA observed 439 wild horses within and outside of the HMA. An aerial population inventory flight conducted in May 2010 observed 642 wild horses of all age classes of which over 60% were outside of the Rock Creek HMA. The estimated July population of wild horses in and outside the Rock Creek HMA is estimated to be 650 wild horses, which includes the estimated 2010 year's foal crop.

Over time, the Rock Creek HMA has been documented with more than a thousand wild horses several times. During these times, excess numbers of wild horses within the HMA have caused wild horses to move outside of the HMA in search of forage and to avoid competition from other wild horse bands. To achieve and maintain AML, the Rock Creek HMA has undergone six removals equaling approximately 3,100 wild horses. This

includes emergency gathers as a result of drought or fire which were conducted in 1996, 2000, 2002 and 2006 to prevent the death of individual wild horses from thirst or starvation due to excess horse numbers, drought conditions and lack of forage due to wildfires.

The 2001 Buffalo fire burned 21,186 acres, which was approximately 20% of the Rock Creek HMA. As a result of the fire, and on going drought conditions an emergency gather was completed in July/August 2002 with 1,338 wild horses gathered and 1,223 removed due to the lack of forage. As most of the Rock Creek HMA was not burned in the Buffalo fire, non-excess wild horses were released back into the HMA after the gather.

In 2006, the Winters and Amazon fires burned a total of 238,462 and 108,563 acres respectively. Both of these fires were on public and private lands. An emergency gather was conducted in the fall of 2006 with 284 wild horses gathered and 252 wild horses removed due to the loss of forage. The 32 wild horses that were released after the gather were released into the Owyhee HMA outside the burn area. Approximately 95% of the Rock Creek HMA burned between these two wildfires.

The last non-emergency gather of the Rock Creek HMA was completed in 2004, when 1,340 wild horses were gathered, and 106 were released back to the range. Of these, 82 were mares treated with a fertility control two-year vaccine. An estimated 53 wild horses were not gathered in the 2004 gather. An estimated 159 wild horses were left in the Rock Creek HMA following the 2004 gather.

Based on current population inventory data from May 2010 it is estimated that the July population within the Rock Creek HMA will be around 225 wild horses, which includes the 2010 foal crop. Additionally, field observations and the 2010 population inventory documents that over 60 percent or 425 wild horses of the Rock Creek herd are permanently residing outside the Rock Creek HMA in non-HMA areas that are not designated for wild horse management. These non-HMA areas currently occupied by wild horses were not identified for long-term use by wild horses because they include streams that have Lahontan cutthroat trout (LCT), a federally listed threatened species, or have been identified for the possible re-introduction of LCT.

Little Humboldt HMA

The AML for the Little Humboldt HMA was established as a population range of 48-80 through the Little Humboldt Allotment Evaluation and Stipulation to Modify Decision and Dismiss Appeals dated 6/24/2002. The Little Humboldt HMA is located within the Castle Ridge Pasture of the Little Humboldt Allotment.

An aerial population inventory flight conducted in March 2009 in the Little Humboldt HMA observed 60 wild horses within and outside of the HMA. Of these 88 percent were located in the Castle Ridge Pasture of the Little Humboldt Allotment and 12 percent were found outside of the HMA. An aerial population inventory flight conducted in May 2010 in the Little Humboldt HMA observed 69 wild horses of all age classes within the HMA.

Based on current population inventory data from May 2010 it is estimated that the July population within the Little Humboldt HMA will be around 73 wild horses, which includes the estimated 2010 year's foal crop. These population inventory flights have also provided information pertaining to: population numbers, distribution, and herd health. The increase in wild horses into the Little Humboldt HMA can be attributed to ingress and egress of wild horses between the adjacent HMAs.

To achieve and maintain AML, BLM has removed excess wild horses from the Little Humboldt HMA in four removals in the last 20 years with approximately 605 wild horses removed. This includes emergency gathers as a result of drought or fire which were conducted in 2002, 2004, and 2006. In July 2002, the Little Humboldt HMA was gathered to remove excess wild horses due to severe drought conditions and fire. The severe drought conditions prevented the production of forage and water to sustain the large number of wild horses through the summer and especially the upcoming winter. In August 2001 the Ranch fire burned 19,966 acres; with only a small portion of the HMA being affected it was determined that wild horses from outside the HMA, but within the fire perimeter, needed to be gathered as the fire reduced available habitat for wild horses. As a result, 41 wild horses were removed in February 2002.

In July/August 2002 an emergency gather due to drought was conducted on the Little Humboldt HMA with a total of 294 wild horses gathered. Of those 294 wild horses gathered, the excess wild horses were removed and 37 wild horses were returned to the HMA. The population after the gather was estimated to be approximately 37 wild horses, as the horses observed during the population flight had moved into the Rock Creek HMA during gather operations.

In 2006, the Winters Fire burned a total of 238,462 acres. This fire burned over 90% of the Little Humboldt HMA. An emergency gather of the HMA was conducted in the fall of 2006 when 112 wild horses were gathered and 87 wild horses were removed due to the loss of forage. Tweny-five wild horses were released back into the HMA.

The last non-emergency gather of the Little Humboldt HMA was completed in 2004, when 312 wild horses were gathered, excess wild horses were removed and 48 were released back into the HMA. Of these, 30 were mares treated with a fertility control two-year vaccine. An estimated 50 wild horses remained in the Little Humboldt HMA following the 2004 gather.

Genetic Diversity

In the northern portion of the Owyhee HMA, the wild horses are descendants of horses that were released by the Desert Ranch in the 1930's. In the southern portion of the Owyhee HMA, the wild horses are descendants of Cavalry re-mounts from the early 1900's or of horses that escaped from the nearby ranches. The dominant colors in the Owyhee HMA are gray, bay, black, brown, and roan.

The wild horses within the Rock Creek and Little Humboldt HMAs are descendants of ranch horses from the Spanish Ranch and specifically a late 19th century ranch which

produced cavalry re-mounts. The dominant colors are bay, sorrel, brown, black, and roan.

Blood samples were collected from 77 wild horses during the 2002 gathers to develop genetic baseline data (e.g. genetic diversity, historical origins of the herd, unique markers). The samples were analyzed by a geneticist (E. Gus Cothran) at the Department of Veterinary Science University of Kentucky to determine the degree of heterozygosity for the herd. Results showed good genetic diversity and are available at the Elko District Office. Past gathers in the Owyhee, Rock Creek, and Little Humboldt HMAs have not resulted in genetic diversity problems. This data will be incorporated into a Herd Management Area Plan(s) in the future. At this time, there is no evidence to indicate that the Owyhee, Rock Creek, and Little Humboldt HMAs wild horses suffer from reduced genetic fitness at the established AMLs.

The Owyhee, Rock Creek, and Little Humboldt HMAs in the Elko District as well as the Little Owyhee, and Snowstorm Mountains HMAs within the Winnemucca District are all connected and separated by fencing. Movement does occur between these HMAs through open gates and crossings, but no formal research has been completed to determine the extent of this movement. Management of the wild horses in these HMAs at the established AML ranges and as an interacting population regardless of boundaries (i.e., as an HMA Complex) will ensure continued genetic diversity and health. Even slight movement helps to diversify and contribute to heterozygosity of the herds. Samples would again be collected during the proposed gather for genetics analysis.

Summary
Based upon the inventory information available at this time, the BLM has determined that an estimated 1,137-1,197 excess wild horses are present both within and outside the Owyhee and Rock Creek HMAs that need to be removed, and that approximately 26-86 weanling to 4 year old mares from the Rock Creek and Little Humboldt HMAs need to be removed so as to bring the wild horses populations to the low-range of AML for the three HMAs.

BLM's excess determination is based on a number of factors including, but not limited to:

- The current wild horse population is significantly over AML, at five times the lower range of AML in the Owyhee HMA and one and a half times the lower range of AML in the Rock Creek HMA.
- The current wild horse population in the Little Humboldt HMA is almost two times over the lower end of AML, which will put the population in excess of AML with the next foaling season.
- There are limited water sources available for use by the current wild horse population within the Owyhee HMA, resulting in damage to water resources and increasing the potential for an emergency situation.
- An estimated 60 percent of the wild horses associated with the Rock Creek HMA are in areas that are not designated or suitable for wild horse management.

- In contrast to excess wild horse numbers, livestock use has averaged only 26% of the active permitted use on the Owyhee Allotment, 43% on the Spanish Ranch Allotment and 0.4% on the Squaw Valley Allotment and 6% for the Castle Ridge Pasture of the Little Humboldt Allotment over the past seven years.

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B and C

The WinEquus program, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist Wild Horse and Burro Specialists model various management options and project possible outcomes for management of wild horses. Population modeling was completed to analyze possible differences that could occur to the wild horse populations between alternatives. Included for this analysis was an assessment of the Proposed Action and removal of excess wild horses without fertility control. The No Action Alternative (no removal) alternative was also modeled. One objective of the modeling was to project if the Proposed Action would "crash" the population or cause extremely low population numbers or growth rates. Minimum population levels and growth rates were found to be within reasonable levels and adverse impacts to the population are not likely.

Table 4. WinEquus Population Model Results for the Owyhee HMA

This table compares the projected population growth for the proposed action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial. **Modeling Statistic Owyhee HMAs**	**Alternative A Gather and Apply Fertility Control and ajust sex ratios on Owyhee**	**Alternative B – Gather and adjust sex ratios 60% Studs and 40% Mares.**	**Alernative C Removal Only**	**No Action**
Population in Year One	139	139	139	694
Median Growth Rate	10.4%	14.6%	17.2%	19.4%
Average Population	241	237	242	2,235
Lowest Average Population	210	210	221	1,691
Highest Average Population	287	257	261	3,186
Average # Animals removed	623	692	612	n/a
Average # Mares Treated	111	n/a	n/a	n/a

Table 5. WinEquus Population Model Results for Rock Creek and Little Humboldt HMAs

This table compares the projected population growth for the proposed action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial. **Modeling Statistic Rock Creek and Little Humboldt HMAs**	**Alternative A Gather and Apply Fertility Control**	**Alternative B – Gather and adjust sex ratios 60% Studs and 40% Mares**	**Alternative C Removal Only**	**No Action**
Population in Year One	298	298	298	298
Median Growth Rate	14.4%	12.1%	17.0%	19.6%
Average Population	285	280	287	892
Lowest Average Population	254	255	254	598
Highest Average Population	304	307	306	1,293
Average # Animals removed	380	344	431	n/a
Average # Mares Treated	84	n/a	n/a	n/a

The BLM has been actively conducting wild horse gathers since the mid 1970's within the Elko District. During this time, methods and procedures have been identified and refined throughout the western states to minimize stress and impacts to wild horses during implementation of wild horse gathers. The SOPs outlined in Appendix A would be implemented to ensure a safe and humane gather and to minimize potential stress and injury to wild horses.

Since 2004, BLM Nevada has gathered just over 26,000 excess animals. Of these, mortality has averaged only 0.5%, which is very low when handling wild animals. Another 0.6% of the animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. This data affirms that the use of helicopters and motorized vehicles has proven to be a safe, humane, effective and practical means for the gather and removal of excess wild horses and burros from the public lands. BLM also avoids gathering wild horses by helicopter during the peak foaling season of March 1 through June 30.

Over the past 35 years, various impacts to wild horses from wild horse gathers have been observed. Individual, direct impacts to wild horses include handling stress associated with the roundup, capture, sorting, animal handling, and transportation of the animals. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. The wild horse is a very adaptable animal and assimilates into the environment with new members quite easily. Observations made following the completion of gathers shows that captured wild horses acclimate quickly to the holding corrals, and become accustomed to water tanks and hay, as well as human presence.

Direct impacts include injuries sustained by wild horses during gathers, such as nicks and scrapes to legs, face, or body from brush or tree limbs while being herded to the trap corrals by the helicopter. Rarely, wild horses will encounter barbed wire fences and will receive wire cuts. These injuries are not fatal and are treated with medical spray at the

holding corrals until a veterinarian can examine the animal. During the actual herding of wild horses with a helicopter, injuries are rare, and consist of scrapes and scratches from brush, or on rare occasions broken legs from wild horses stepping into a rodent hole.

Most injuries are sustained once the wild horse has been captured and is either within the trap corrals or holding corrals, or during transport between the facilities and during sorting. These injuries result from kicks and bites, and from animals making contact with corral panels or gates. Transport and sorting is completed as quickly and safely as possible to reduce the occurrence of fighting and so as to move the wild horses into the large holding pens where they can settle in with hay and water. Injuries received during transport and sorting consist of superficial wounds of the rump, face, or legs. Despite precautions, occasionally a wild horse will rear up or make contact with panels hard enough to sustain a fatal neck break, though such incidents are rare. There is no way to reasonably predict any of these types of injuries. On many gathers, no wild horses are injured or die. On some gathers, due to the genetic background of the wild horses, they are not as calm and injuries are more frequent. Overall, however, injuries and death are not frequent and usually average less than 0.5% of gathered horses.

Though some members of the public have expressed the view that helicopter gathers are not humane, most injuries occur once the wild horses are captured, and similar injuries would also be sustained if horses were captured through bait trapping, as the animals would still need to be sorted, aged, transported and otherwise handled. Serious injuries requiring euthanasia could occur in 1-2 wild horses per every 1000 captured based on prior gather statistics.

Temporary Holding Facilities During Gathers

Wild horses gathered would be transported from the trap sites to a temporary holding corral within the HMAs in goose-neck trailers. Holding facilities and trap sites have historically been located on private lands and may be located on privates lands during the gather. At the temporary holding corral wild horses will be sorted into different pens based on sex. The horses will be aged and fed good quality hay and water. Wild horses selected for return to the HMAs after the application of fertility control and/or near the end of the gather operation will be kept in pens separate from horses that will be removed. Mares and their un-weaned foals will be kept in pens together.

Transport, Short Term Holding, and Adoption Preparation

About 1,137 to 1,197 excess horses would be removed. Wild horses removed from the range would be transported to the receiving short-term holding facility in a goose-neck stock trailer or straight-deck semi-tractor trailers. 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 to long-term pastures (LTPs).

Wild horses selected for removal from the range are transported to the receiving short-term holding facility in a straight deck semi-trailers or goose-neck stock trailers. Vehicles are inspected by the BLM COR or 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 a maximum of 8 hours. During transport, potential impacts to individual horses 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 wild horses are off-loaded by compartment and placed in holding pens where they are fed good quality hay and water. Most wild horses begin to eat and drink immediately and adjust rapidly to their new situation. At the short-term holding facility, a veterinarian examines each load of horses and provides recommendations to the BLM regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club feet, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA). Wild horses in very thin condition or animals with injuries are sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses, 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 lose their pregnancies. Every effort is taken to help the mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

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

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

Adoption or Sale with Limitations, and Long Term Pastures

Adoption applicants are required to have at least a 400 square foot corral with panels that are at least six feet tall for horses over 18 months of age. Applicants are required to provide adequate shelter, feed, and water. The BLM retains title to the horse for one year and the horse 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 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 5750.

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

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

Potential impacts to wild horses from transport to adoption, sale or LTP are similar to those previously described. One difference is that when shipping wild horses for adoption, sale or LTP, 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 horse with adequate bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater than the stress involved in the additional period of uninterrupted travel.

LTPs are designed to provide excess wild horses with humane, life-long care in a natural setting off the public rangelands. There wild horses are maintained in grassland pastures large enough to allow free-roaming behavior and with the forage, water, and shelter necessary to sustain them in good condition. About 22,700 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private land pastures in Iowa, Kansas, Oklahoma, and South Dakota. Located in mid or tall grass prairie regions of the United States, these LTP are highly productive grasslands as compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 8-10 acres per animal). The majority of these animals are older in age.

Mares and castrated stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. No reproduction occurs in the long-term grassland pastures, but foals are born to mares that were pregnant when they were

removed from the range and placed onto the LTP. These foals are gathered and weaned when they reach about 8-10 months of age and are then shipped to short-term facilities where they are made available for adoption. Handling of wild horses in LTP 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 LTP 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 LTP 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 will be placed on the use of FY2011 appropriated funds

Wild Horses Remaining or Released into the HMA following Gather

Under the Proposed Action, the post-gather population of wild horses would be about 399 wild horses, which is the low range of the AML for the Owyhee HMA and the mid-range AMLs for the Rock Creek and Little Humboldt HMAs. Reducing population size would also ensure that the remaining wild horses are healthy and vigorous, and not at risk of death or suffering from starvation due to insufficient habitat coupled with the effects of frequent drought (lack of forage and water).

The wild horses that are not captured may be temporarily disturbed and move into another area during the gather operations. With the exception of changes to herd demographics, direct population wide impacts have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of when wild horses are released back into the HMA. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

As a result of lower density of wild horses across the HMAs following the removal of excess horses, competition for resources would be reduced, allowing wild horses to utilize preferred, quality habitat. Confrontations between stallions would also become less frequent, as would fighting among wild horse bands at water sources. Achieving the AMLs and improving the overall health and fitness of wild horses could also increase foaling rates and foaling survival rates over the current conditions.

The primary effects to the wild horse population that would be directly related to this proposed gather would be to herd population dynamics, age structure or sex ratio, and subsequently to the growth rates and population size over time.

The remaining wild horses not captured would maintain their social structure and herd demographics (age and sex ratios). No observable effects to the remaining population associated with the gather impacts would be expected except a heightened shyness toward human contact.

Impacts to the rangeland as a result of the current overpopulation of wild horses would be reduced under the three gather and removal alternatives. Fighting among stud horses would decrease since they would protect their position at water sources less frequently; injuries and death to all age classes of animals would also be expected to be reduced as competition for limited forage and water resources is decreased.

Indirect individual impacts are those impacts which occur to individual wild horses after the initial stress event, and may include spontaneous abortions in mares, and increased social displacement and conflict in studs. 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 skirmish which occurs among older studs following sorting and release into the stud pen, which lasts less than two minutes and ends when one stud retreats. Traumatic injuries usually do not result from these conflicts. These injuries typically involve a bite and/or kicking with bruises which don't break the skin. Like direct individual impacts, the frequency of occurrence of these impacts among a population varies with the individual.

With the gathers in July the probability of gathering pregnant mares is very low. Spontaneous abortion events among pregnant mares following capture is also rare, though poor body condition can increase the incidence of such spontaneous abortions. Given the timing of this gather and the current condition of the wild horses, spontaneous abortion is not considered to be an issue for the proposed gather.

A few foals may be orphaned during gathers. This may occur due to:

- The mare rejects the foal. This occurs most often with young mothers or very young foals,
- The foal and mother become separated during sorting, and cannot be matched,
- The mare dies or must be humanely euthanized during the gather,
- The foal is ill, weak, or needs immediate special care that requires removal from the mother,
- The mother does not produce enough milk to support the foal.

Oftentimes, foals are gathered that were already orphans on the range (prior to the gather) because the mother rejected it or died. These foals are usually in poor, unthrifty condition. Orphans encountered during gathers are cared for promptly and rarely die or have to be euthanized.

Nearly all foals that would be gathered during the summer season would be about two to four months of age and some would be ready for weaning from their mothers. In private industry, domestic horses are normally weaned between four and six months of age.

Summer gathers pose increased risk of heat stress; however, this can occur during any gather, especially in older or weaker animals. Adherence to the SOPs as well as the techniques utilized by the gather contractor minimizes heat stress if summer gathers are necessary. In some cases, electrolytes can be administered to the drinking water during gathers that involve animals in weakened conditions or during summer gathers based on the recommendations of a veterinarian. Heat stress does not occur often, but if it does, death can result.

Through the capture and sorting process, wild horses are examined for health, injury and other 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 SOPs Appendix A). Animals that are euthanized for non-gather related reasons include those with old injuries (broken hip, leg) that have caused the animal to suffer from pain or which prevent them from being able to travel or maintain body condition; old animals that have lived a successful life on the range, but now have few teeth remaining, are in poor body condition, or are weak from old age; and wild horses that have congenital (genetic) or serious physical defects such as club foot, or sway back and should not be returned to the range.

No Action (Alternative D)

All impacts from this alternative would be indirect. The current population of wild horses on the Owyhee, Rock Creek, and Little Humboldt HMAs equates to over to 18,576 AUMs, which exceeds the identified carrying capacity of 6,729 AUMs (high end of AMLs) for wild horses established through prior decisions and land-use planning. Wild horses require more forage supply as they use the forage less efficiently then cattle (An Approach for Setting the Stocking Rate, Rangelands 10(1), February 1988 Holechek). Without a gather to control the population, these figures could increase to nearly 26,748 AUMs within two years, which would be 4 times the carrying capacity established for wild horses.

Based on current studies, a horse requires 12 to 15 gallons of water per horse per day (Stoddart, Laurence A., et. Al, and USDA Forest Service Technology Development Center, John F. Valentine). This equates to 18,576 to 23,220 gallons of water per day required by the current population of wild horses within the HMAs. The limited water resources in the Owyhee HMA and the water sources in the Rock Creek and Little Humboldt HMAs do not have the capacity to provide adequate dependable water for the current population.

Under the No Action Alternative, wild horses would not be removed and the AMLs would not be achieved on the Owyhee, Rock Creek, and Little Humboldt HMAs. Individual horses as well as the herd would not be subject to any direct or indirect impacts which may result during a gather operation as described for the Proposed Action. However, the estimated July 2010 population (which includes the 2010 foal crop) of 825 wild horses (Owyhee HMA), 225 wild horses (Rock Creek HMA, 425 wild horses outside of the Rock Creek HMA, and 73 wild horses (Little Humboldt HMA) would

continue to increase at rates of 18 to 20 percent per year. Without a gather and removal now, the wild horse population in the Owyhee HMA would continue to remain in excess of AML and would exceed 1,000 head within 4 years based on the annual population growth rate. According to the population modeling results, the average population within the Owyhee HMA over 10 years would approximate 2,235 wild horses, with a highest average population reflecting up to 3,186 wild horses at one time.

Without a gather, the Rock Creek and Little Humboldt HMAs and areas outside the HMAs would continue to remain in excess of the AML (for the Rock Creek HMA) and would exceed 1,069 head within four years based on the annual population growth rate. According to the population modeling results, the average population within the Rock Creek and Little Humboldt HMAs over 10 years would be approximately 1,417 wild horses, with a highest average population reflecting up to 2,984 wild horses at one time.

As previously discussed in other sections, the current wild horse population of 1,548 wild horses in the gather area equates to over 18,576 AUMs, which exceeds the carrying capacity established for wild horses.

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes; predation and disease do not substantially regulate wild horse population levels. As a result, wild horse numbers would be expected to continue to increase, which in turn would continue to exceed the carrying capacity of the range.

Individual horses would be at risk of death by starvation and lack of water. Competition among wild horses for the available forage and water would increase, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources. As populations continue to increase beyond the capacity of the habitat, more bands of wild horses would be expected to leave the boundaries of the HMAs seeking forage and water. This would in turn impact range conditions and other range users (i.e. native wildlife) outside the HMAs boundaries.

While some members of the public have advocated "letting nature take its course", 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"*.

Promulgated Federal Regulations at Title 43 CFR § 4700.0-6 (a) state "*Wild horses shall be managed as self- sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat"* (emphasis added). Allowing excess wild horses to remain ungathered would be inconsistent with the mandates of the WFRHBA and implementing regulations.

It is anticipated that emergency removals would be necessary in the future to prevent individual animals from suffering or death as a result of insufficient water if excess horses are not removed. These emergency removals could occur as early as this winter season if the area experiences normal or above-normal snow depths. There is also a high likelihood that emergency actions would be needed beyond the winter season if the current drought conditions persist through the upcoming summer. During emergency conditions, competition for available forage and water resources is heightened and generally impact the older and youngest horses as well as lactating mares first. These groups would experience significant weight loss and diminished health, which could result in prolonged suffering and their eventual death. If emergency actions are not taken (prior to or in response to these events), the overall population could be affected by severely skewed sex ratios towards stallions (generally the strongest and healthiest portion of the population) and a significantly altered age structure. In addition, habitat resources would be over-utilized and progress toward achieving rangeland health standards would not be possible.

3.2.2 Soils and Water Resources

Soils

Affected Environment

Soils in the project area are Aridisols that vary in depth, texture, erosion potential, erosion factor T, and other characteristics based upon several soil forming factors. These soils typically have a mesic or frigid temperature regime and aridic soil moisture regime. Isolated patches of hydric soils may be present near water resources. Detailed information for these soils can be found in applicable USDA soil survey publications.

Detailed explanations about each soil type are available at http://websoilsurvey.nrcs.usda.gov/app/homepage/htm

A specific analysis of soil quality for this project has not been completed, but due to the large geographic area encompassed, it can be assumed that a wide variety of soil quality conditions exist. These soils are impacted by a variety of natural and anthropogenic influences.

Effects of Alternatives for the Proposed Action and Alternatives B and C

Proposed Action

Short term impacts to soils would occur as a result of mechanical and animal disturbance of the soil surface. Helicopters flights, vehicles used in the gather and animal movement would disturb the soil surface and could have direct impacts to soil quality. These activities would only disturb soils at the ground surface and their impact is localized and for the most part, temporary.

Impacts to soils would occur as a result of compression caused by vehicles driving over un-disturbed soils. Soil compaction can result in decreased porosity and conductivity of water affecting soil productivity and soil quality characteristics.

The proposed action could negatively impact soil quality by the presence of hoof action, which could impair physical crusts and vegetative cover. This could impair soil water infiltration, and soil stability. Negative impacts could be minimized by the utilization of previously disturbed sites.

The Proposed Action and Alternatives B and C would likely take place on soils within the project area that have already been heavily impacted by fire and weed infestation. Erosion by wind and water has likely occurred at these sites and may have exceeded the erosion factor T which is an estimate of the maximum annual rate of soil erosion which can occur without affecting crop productivity. This is manifested in part by the observed increase in invasive plants and lack of native vegetative cover due to fire. Anecdotal data indicate that these conditions occur in many locations throughout the project area.

The reduced number of wild horses following the removal of excess horses would indirectly improve overall soil quality in the long term by reducing grazing pressure and promote more extensive vegetative cover. Vegetative canopies and root systems would provide numerous benefits for soil quality by improving aggregate stability, compaction, infiltration, organic matter, soil biota and reducing erosion by wind and water.

No Action (Alternative D)

Under the no action alternative, direct disturbance to soil as a result of the Proposed Action and Alternatives B and C would not occur. Vegetation cover would be removed at a higher rate, however, with the higher population of wild horses because of the greater grazing pressure resulting in continued impacts to affected areas. This higher rate of removal of vegetative cover would have negative impacts to soil quality by reducing overall protection from rainfall impact and decrease soil stability if vegetation does not successfully re-establish.

Under the no action alternative soil conditions may degrade if vegetation does not re-establish or climatic factors inhibit recovery. Soils would likely not improve and may degrade further. Higher wild horse numbers would inhibit recovery of soils and could accelerate soil degradation and/or reduce chances of soils improving.

Water Resources

Affected Environment

The Owyhee HMA has very few water sources, whereas the Rock Creek and the Little Humboldt HMAs contains numerous springs ranging in size from a few feet to large enough to form small drainages.

The Owyhee HMA lies primarily within the East Little Owyhee hydrologic basin (17050106) which drains north to the Snake River Plain. However, there are only two available water sources on public lands in the Owyhee HMA, the South Fork of the Owyhee River in the northeastern portion, and the Desert Ranch Reservoir in the eastern portion. Bookkeeper Spring located on private land in the southern portion of the

Owyhee is used by numerous wild horses since the spring is not fenced. In extremely dry years, Bookkeeper Spring and the Desert Ranch Reservoir have dried up and are therefore not considered reliable water sources. A site visit to Desert Ranch reservoir in June 2010 showed the reservoir at less than half capacity.

Desert Ranch reservoir May 2010

Water quality standards for the South Fork Owyhee River are designated in Nevada Administrative Code Chapter 445A and the stream was included in the State's 2006 303(d) list for exceedence of temperature.

Overall, the Rock Creek HMA is well-watered compared to the Owyhee HMA, however, the amount of water for the number of horses is limited to mainly small springs and seep.restricted. The far-western portion has seven identified springs, and the north-flowing intermittent Milligan Creek. The far-eastern portion of the HMA has no identified springs, and what little available water is found at the north-flowing, intermittent Four-Mile Creek. The central part of Rock Creek has the most available water. Over 100 identified springs are found in the central region of the HMA, along with the north-flowing intermittent Chimney Creek, Red Cow Creek, Winters Creek, and Chino (Fourmile) Creeks and three perennial south-flowing streams: Little Rock Creek, Coyote Creek and Soldier Creek, a tributary of Coyote Creek. All three south-flowing streams drain into Rock Creek. Water sources outside the Rock Creek HMA that are impacted by horses leaving the HMA are Willow Creek (from its origin to Willow Creek Reservoir) and Nelson Creek (from its origin to its confluence with Willow Creek) are on the Nevada's 2006 303(d) impaired water list as a result of temperature levels greater than the standard (20°).

The Little Humboldt HMA has seven springs identified. Four springs are located in the central portion of the HMA and three more are found in the southern portion. Two perennial streams are present: the west-flowing Rush Creek and west-flowing Oregon Canyon Creek, both located in the southern portion of HMA. Both streams flow into the south fork of the Little Humboldt River, which forms the western boundary of the HMA.

In all three HMAs, spring sources and associated spring drainages historically displayed poor riparian habitat conditions as a result of grazing activities of large ungulates (cattle and wild horses) (refer to discussion under Fisheries and Riparian Zones, Section 3.2.3). These activities include trampling, compaction, defecation and urination, which can lead to an increased nutrient and bacterial loading, decreased water infiltration, higher water temperatures, and increased surface runoff and sediment movement. In periods of limited water availability and flow, wild horses, in an effort to increase water flow at springs, will paw at drainage bottoms and sides, which can damage springs and surrounding vegetation. Native wildlife species also contribute to nutrient and bacterial loading, thus impairing water quality.

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B & C

Direct effects to water quality would occur if wild horses cross streams or springs as they are herded to temporary gather sites. This impact would be short- term and transitory in nature.

Indirect impacts would be related to wild horse population size. Reduction of wild horse populations from the currents levels through removal of excess horses would decrease competition for available water, which would lead to decreased water impairment by hoof action (sediment mobilization), nutrient loading and bacterial loading in surface waters. Achievement of the AML would also result in increased residual vegetation (increased cover) that would decrease surface disturbance and increase vegetation cover, thereby leading to improved water temperatures and greater water availability.

No Action (Alternative D)
Leaving excess wild horses in and adjacent to the HMAs would increase degradation to water quality as wild horse populations continue to increase each year that a gather is postponed. Water quality would remain in a degraded state on heavily grazed spring sources and as a result of the continued removal of standing vegetation, compaction, and deposition of animal wastes from wild horses. The increasing population of wild horses would exacerbate use on existing limited waters and compound impacts described here.

3.2.3 Fisheries (Including Threatened and Endangered Species) and Riparian Zones

Affected Environment
Owyhee HMA

Within the Owyhee HMA, fisheries habitat is limited to a portion of the South Fork Owyhee River. However, redband trout are only very rarely documented in the River (Johnson 2010).

Riparian areas within the Owyhee HMA are limited to the South Fork Owyhee River and a few upland springs. Typical riparian plants include willows (*Salix* species), sedges (*Carex* species), rushes (*Juncus* species), and a variety of grasses and forbs. Wild horses access the South Fork Owyhee River at the pipeline crossing, which is located on the northern end of the HMA. The rest of the river is believed to be inaccessible to wild horses due to topography. The only documented perennial spring located on BLM managed land is Devil's Corral; this spring is not used by wild horses and livestock due to the surrounding topography. Bookkeeper spring is a perennial spring located on private land on the south end of the Owyhee HMA. Currently Bookkeeper is accessible to wild horses. Photos of the area by BLM in 2000 show degraded riparian habitat conditions. Although Bookkeeper Spring was rested from livestock grazing between 2007 and 2009 as a result of the Winter's Fire Closure, photos taken by BLM in 2010 indicate riparian vegetation remains sparse to absent-- presumably as a result of the continued use of this area by wild horses. A site visit in May 2010 indicates very little available water at Bookkeeper Spring.

Bookkeeper Spring, Summer 2000 - 100 horses at spring

Bookkeeper Spring, March 2009

Bookkeeper Spring, May 2010

Devils Corral Spring, 2008

The Owyhee HMA also has intermittent streams, stock ponds and playa lakes. These intermittent water sources support little to no riparian vegetation. Desert Ranch Reservoir also occurs within this HMA but does not support a notable level of riparian vegetation due to seasonal fluctuations in water levels. Proper functioning condition (PFC) surveys conducted by BLM in 2009 show the majority of the South Fork of the Owyhee River within the Owyhee HMA is in PFC.[1] Access by wild horses to most of the canyon is limited by steep, rocky terrain.

Rock Creek HMA

The Rock Creek HMA and adjacent area supports fisheries habitat for native interior redband trout in streams associated with the Snake/Columbia River Basin watershed including Red Cow, Chino (Fourmile) and Big Cottonwood Canyon creeks (Map 8). LCT occurs in streams adjacent to or in the vicinity of the Rock Creek HMA including Toe Jam, Rock, Frazer, Willow, Lewis and Nelson creeks (refer to Map 8). Intermittent and perennial drainages as well as channels associated with springs within the Rock Creek HMA also drain into waters supporting LCT or redband trout.

Although current data are lacking, population surveys conducted by the Nevada Department of Wildlife (NDOW) in 1996 show very low numbers of redband trout in

[1] Riparian areas in proper functioning condition (PFC) dissipate stream energy, filter sediment, capture and store water and provide diverse habitat for wildlife (Prichard et al. 1998 and 1999, Revised 2003). Riparian areas which are functioning-at-risk have one or more attributes or process making them susceptible to degradation.

Red Cow and Big Cottonwood Canyon creeks (Johnson 2010, BLM file data). Surveys conducted by NDOW in 2001 on Toe Jam, Rock, Willow and Lewis creeks showed LCT populations in these streams were static to downward (BLM 2003). Only on Nelson Creek did the population appear to be upward. Although data have not yet been analyzed, more comprehensive LCT surveys are currently being conducted by Trout Unlimited in cooperation with BLM and NDOW in the Willow and Rock creek drainages in the Squaw Valley Allotment.

Rock Creek HMA riparian areas consist of springs and streams within the South Fork Owyhee River and Rock Creek subbasins supporting mixtures of sedges, rushes, grasses, willows and forbs. Quaking aspen (*Populus tremuloides*) and occasionally narrowleaf cottonwood (*Populus angustifolia)* occur in scattered pockets at the higher elevations or along stream corridors. Unlike the Owyhee HMA, the Rock Creek HMA has multiple water sources with the majority of lentic (standing water) water sources accessible by wild horses. Field observations indicate wild horses tend to impact lentic riparian areas more than lotic (flowing water) riparian areas. In general, horses avoid areas of confinement and poor visibility such as canyons and draws where the streams typically occur.

Lentic (flowing water) PFC assessments conducted by BLM in the Spanish Ranch and Squaw Valley Allotments in 2004 documented impacts to seeps and springs in the form of trampling and grazing of riparian vegetations by both wild horses and livestock both within and outside the Rock Creek HMA (BLM file data). On the Squaw Valley Allotment, only 11 of 43 springs (excluding ponds) assessed were rated as being in PFC or were functioning-at-risk with an upward trend. The remaining 32 sites were either nonfunctional or functioning at risk with a downward or not-apparent trend. Wild horses (in combination with livestock) were documented to be causal factors for poor ratings at 11 of these sites. On the Spanish Ranch Allotment, only 4 of 57 lentic sites assessed (excluding ponds) were rated as being in PFC or functioning-at-risk, with an upward trend. The remaining 53 sites were either nonfunctional or functioning at risk with a downward or not-apparent trend, with wild horses (in combination with livestock) being identified as causal factors at 19 of these sites.

Heavy grazing of streamside vegetation by wild horses was documented for Nelson Creek located within the Upper Willow Creek Habitat Enhancement Area (UWCHEA) in 2006 and 2009 (Cedar Creek Associates, Inc. 2006, Viert 2010). The UWCHEA is a 20,000 acre pasture located outside the Rock Creek HMA being managed by BLM in cooperation with Barrick Goldstrike Mines and the Squaw Valley Ranch for the conservation and enhancement of LCT. Other than very limited incidental use, 2010 is the first time since 2003 livestock grazing has occurred in the pasture. Within the last five years wild horses gained access to the pasture by breaking or damaging perimeter fences (Simonds 2010). Wild horses have gained access to the UWCHEA by breaking or damaging permiteter fences almost every year since the pasture was constructed.

Although most impacts to riparian areas from wild horses in the Squaw Valley and Spanish Ranch allotments were documented for lentic rather than lotic (flowing water)

areas, some of the impacted springs have channels which drain directly into streams supporing LCT or redband trout. On the Squaw Valley Allotment, two springs showing excessive trampling and compaction by wild horses drain directly into Trout Creek, a potential LCT reintroduction stream and important tributary to Rock Creek, an occupied LCT stream. Trampling by wild horses was also documented for an additional seven seeps and springs which drain directly into Soldier and Little Rock creeks, tributaries to a downstream reach of Rock Creek. On the Spanish Ranch, at least three springs impacted by horses drain directly into Chino (Fourmile) Creek which supports redband trout.

A combination of rest from livestock grazing between 2005 and 2008 as a result of fire closures and large scale changes in ranching operations, along with reduced numbers of wild horses from prior gathers has resulted in improved riparian habitat conditions in recent years. Data collected by BLM and by contractors working in cooperation with BLM between 2006 and 2009 shows substantial improvement in condition of lentic and lotic areas on both the Squaw Valley and Spanish Ranch allotments (BLM file data, Cirrus Ecological Solutions, LC 2008, Cedar Creek Associates Inc. 2006, Simonds et al. 2009).

Little Humboldt HMA

LCT occur in streams adjacent to the Little Humboldt HMA, while certain springs and stream channels inside the HMA drain into waters occupied by LCT. LCT streams in or near the Little Humboldt HMA include Oregon Canyon Creek and the upper reaches of the South Fork of the Little Humboldt River (Map 8). Drainages inside the HMA which enter LCT streams include the upper reaches of Oregon Canyon Creek and several intermittent drainages including Brush Creek on the eastern side of the South Fork of the Little Humboldt River. Although data are somewhat inconclusive, LCT populations in the South Fork Little Humboldt River appear to be increasing with improving habitat conditions (Jenne 2010).

Little Humboldt HMA riparian areas consist of scattered seeps and springs. Pockets of aspen occur at the higher elevations. Perennial streams are limited to the upper reaches of Oregon Canyon; other drainages are intermittent. This HMA encompasses portions of the South Fork Little Humboldt River and South Fork Owyhee River subbasins.

Until recently, riparian habitat conditions in the Little Humboldt Allotment (including the Little Humboldt HMA) were highly degraded (BLM file data). Functioning condition assessments conducted by BLM in 2003 showed that fully 19 of 21 assessed lentic sites were either non-functional or functioning-at-risk with a downward trend. Although livestock were determined to be the causal factor for poor conditions at most sites outside the HMA, wild horse impacts to springs in vicinity of Castle Ridge have been documented as severe over multiple years (BLM file data, Kay 2002). In 1999, wild horses were also documented to be adversely impacting Brush Creek and adjacent intermittent drainages which are tributary to LCT habitat in the upper reaches of the SFLHR. At that time, these areas were rated as being nonfunctional with both wild horses and livestock being identified as causal factors (BLM file data).

As with the Rock Creek HMA, reduced grazing in recent years by both livestock and wild horses (from fire closure, prescriptive livestock grazing and wild horse gathers) has resulted in improvement in riparian habitat conditions in some locations in or adjacent to the HMA (BLM file data). Fire closure monitoring conducted by BLM in 2008 showed that portions of Oregon Canyon Creek and Brush Creek were functioning-at-risk with an upward trend. Although outside the HMA, stream and riparian habitat conditions in the SFLHR have improved in response to changes in livestock grazing practices (BLM file data).

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B & C

Under the proposed action, direct impacts would include trampling of riparian areas if horses cross streams or springs during gather operations, causing short-term loss of riparian plant species and possible increases in sedimentation to stream channels. However, these impacts would be short-term in nature and minor. No direct impacts to riparian areas are expected to occur as a result of temporary holding facilities since construction of these areas on or near springs, meadows or streams is prohibited (See Section 2.4, Management Actions Common to Alternatives A, B and C).

Indirect effects of the proposed action would benefit fisheries and riparian resources as a result of the reduced use of riparian areas by horses as well as improved opportunities for control and management of livestock. Fewer numbers of wild horses following removal of excess wild horses would allow for continued growth and establishment of riparian vegetation at seeps and springs as well as on perennial and intermittent drainages. Increases in vegetative cover would reduce erosion rates and improve water quality, resulting in better habitat conditions for redband trout and LCT. Impacts from wild horses to springs on Castle Ridge would be expected to decrease if wild horse population is within the AML range, allowing for recovery of this area.

High numbers of wild horses cause damage to livestock management fences in areas outside, but near HMA's, making control and management of livestock more difficult. Fewer numbers of wild horses following removal of excess wild horses would result in less damage to fences and a greater likelihood that existing or proposed riparian-friendly livestock grazing management practices would be successful.

Under Alternative C, direct and indirect effects would be similar to Alternatives A and B, but the timeframe for observing positive impacts would be shorter than for the proposed action. Riparian areas previously impacted by wild horses would continue to improve (or begin to improve in the case of Castle Ridge) over the short-term, but would decline over the long-term as horse numbers grow at a faster rate (relative to Alternative A). Potential for damage to livestock management fences could also increase over the long-term as wild horse numbers increase.

No Action (Alternative D)

Wild horse numbers would remain above AML. Wild horses would continue to negatively impact riparian areas both within and outside HMAs through trampling, bank shearing and over use of riparian vegetation. Lentic areas especially would be impacted; however, any loss of vegetative cover on drainages feeding perennial streams would also be expected to negatively impact fish, including redband trout and LCT, through increases in sediment delivery to receiving streams. Excess sediment can increase stream temperatures, cause channel downcutting, clog fish gills and degrade spawning habitats. Other water quality parameters would also be adversely affected, causing further degradation to fisheries habitats. Growing wild horse populations would cause increased damage to fences making it more difficult for BLM to implement prescriptive livestock grazing systems for the benefit of fisheries and riparian resources.

3.2.4 Vegetation

Affected Environment

Owyhee HMA Historic Vegetation

The primary vegetation in the Owyhee HMA is sagebrush communities with perennial grasses. Vegetation communities include mature stands of Wyoming and basin big sagebrush with bluebunch wheatgrass, Nevada bluegrass and Sandbergs bluegrass. Also occurring within the HMA are scattered patches of cheatgrass, an annual non-native species.

Rock Creek and Little Humboldt HMAs Historic Vegetation

Historically, vegetation within the Rock Creek and Little Humboldt HMAs was diverse, ranging from perennial grass seedings to sagebrush communities. The major plant associations were characterized as big sagebrush/bunchgrass and low sagebrush/bunchgrass communities. The big sagebrush/bunchgrass and low sagebrush/bunchgrass types were dominated by big sagebrush, low sagebrush, shadscale and rabbit brush. Major grass species included bluebunch wheatgrass, Idaho fescue, Sandbergs bluegrass, needlegrass and bottlebrush squirreltail. Key forb components included arrowleaf balsamroot, lupine, phlox, and aster. The higher elevations found in the Tuscarora Mountains also included mountain browse types interspersed with the low sagebrush, mountain big sagebrush/mountain shrub, and quaking aspen vegetation types.

Owyhee, Rock Creek and Little Humboldt HMAs Current Vegetation

In 2006, 17% of the Owyhee HMA burned in the Winters fires, 95% of the Rock Creek HMA burned in the Winters and Amazon fires, and over 90% of the Little Humboldt HMA burned in the Winters Fire. The current vegetation communities have therefore been altered from the historic communities due to these large wildfires and subsequent native vegetation release and fire rehabilitation efforts. The Amazon and Winters fires burned a total of 108,563 and 238,462 acres respectively. Currently the burned portions of the HMAs are dominated by perennial grasses with isolated intact islands of Wyoming and mountain sagebrush communities. Perennial grasses include: bluebunch wheatgrass, Idaho fescue, Sandbergs bluegrass, needle-and-thread grass, Thurber's needlegrass, bottlebrush squirreltail, Indian ricegrass, and basin wildrye, and some seeded species that include streambank wheatgrass, big bluegrass, and snake river wheatgrass. The forb

community includes arrowleaf balsamroot, lupine, phlox spp., aster spp., hawksbeard, prickly lettuce, wild onion and death camas. In order to re-establish sagebrush within the burned areas in the Owyhee, Rock Creek and Little Humboldt HMAs, the burn areas have been seeded with basin big sagebrush and Wyoming big sagebrush. The higher elevations have intact mountain browse communities and quaking aspen present.

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B & C

Direct impacts associated with Alternatives A, B and C would consist of disturbance to vegetation immediately in and around the temporary gather site(s) and holding facilities. Impacts would be created by vehicle traffic and hoof action as a result of temporary concentrating of wild horses during the gather activities, and would be greatest in the immediate vicinity of the gather site(s) and holding facilities. Generally, these sites would be small (less than one half acre) in size. Any impacts would remain site-specific and isolated in nature. These impacts would include trampling of vegetation. Impacts would be minimal in scope and would have a short-term duration.

In addition, most gather sites and holding facilities would be selected to enable easy access by transportation vehicles and logistical support equipment. Normally, gather sites are located near or on roads, pullouts, water hauling sites or other flat areas, which have been previously disturbed. These common practices would minimize the potential for impacts to vegetation from the gather.

Implementation of the proposed action or Alternatives B or C would reduce the current wild horse population to the established AML and provide the opportunity for the vegetative communities to progress toward achieving a thriving natural ecological balance. By achieving AMLs, vegetative utilization by wild horses would be reduced, which would result in improved forage availability, improved vegetation density, increased vegetation cover, increased plant vigor, and improved seed production, seedling establishment, and forage production over current conditions. Higher quality forage species (grasses) would be available. Competition for forage among wild horses, wildlife, and livestock would be reduced as utilization levels decrease and rangeland health improves; thereby promoting healthier habitat and healthier animals. Allotment specific utilization objectives would not be exceeded due to wild horse numbers. Reduced concentrations of wild horses following removal of excess horses would contribute to the recovery of the vegetative resource. Physical damage to shrubs and herbaceous vegetation associated with the physical passage of wild horses (as wild horse bands move within the HMAs) would be decreased.

No Action

There would be no direct impacts expected under this alternative. As a result of the excessive wild horse population numbers within the Owyhee HMA, wild horses would continue to trail farther out from limited waters to foraging areas. Wild horses outside the Rock Creek HMA boundary would continue to expand on their utilization of forage

outside the HMA boundary. Indirect impacts include increased competition for forage between wild horses, livestock and wildlife, as wild horse populations continue to increase. Forage utilization would likely exceed the capacity of the range, resulting in a loss of desired forage species from plant communities as plant health and watershed conditions deteriorate. Abundance and long-term production potential of desired plant communities may be compromised, potentially precluding the return of these vegetation communities to their full potential, particularly following the major wildfires experienced in 2006.

3.2.5 Wildlife, Special Status Species, and Migratory Birds and their Habitat

Affected Environment

Owyhee HMA Big Game Wildlife/Habitat

Big Game Species: The area provides habitat for mule deer, elk and pronghorn on a seasonal or yearlong basis. Mule deer intermediate (spring and fall) and crucial winter range habitat primarily occurs within two miles of the South Fork Owyhee River. A small number of elk (estimated at less than 100 in total) inhabit the area primarily during the winter period near Desert Ranch Reservoir. The entire area provides pronghorn summer and crucial yearlong habitat. Crucial deer winter habitat occurs on the Star Ridge Pasture within approximately two miles of the South Fork Owyhee River.

Rock Creek HMA Big Game Wildlife/Habitat

Big Game Species: The Rock Creek HMA provides habitat for mule deer, elk and pronghorn on a seasonal or yearlong basis. Upper elevation areas primarily provide mule deer summer habitat while lower to mid elevation areas generally provide intermediate (spring and fall) habitat. Elk numbers have increased over the past several years with observations on the Tuscarora Range observed by Nevada Department of Wildlife (NDOW) and BLM personnel, and the public on or near the east side of the HMA. The HMA provides pronghorn summer range.

Little Humboldt HMA Big Game Wildlife/Habitat

The Little Humboldt HMA provides crucial habitat for mule deer in the winter and summer, crucial habitat for California bighorn sheep year-round, and summer range for pronghorn.

Owyhee, Rock Creek and Little Humboldt HMAs - Other Game and Nongame Wildlife/Habitat

There are approximately 350 species of vertebrate wildlife which occur in northeastern Nevada. The HMAs provide habitat for many of these species on a seasonal or yearlong basis in association with sagebrush steppe habitat, and seasonally-flooded vegetated playa and riparian habitat types. In addition, the Rock Creek and Little Humboldt HMAs provide montane brush and aspen habitat. The table shown in Attachment #1 includes a list of main wildlife species that have the potential to occur within the project area on upland habitat areas.

Migratory Birds

Migratory Birds -- On January 11, 2001, President Clinton signed the Migratory Bird Executive Order 13186. It directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act and to conserve migratory birds. Migratory bird species that may occur in the habitat types of the HMAs are listed at Attachment #2. This listing is from the 1999 Nevada Partners in Flight Bird Conservation Plan. The Nevada Partners in Flight Bird Conservation Plan identifies bird species associated with each of these ecotypes (Attachment #2).

Special Status Species

Actions that may affect species that are Federally-listed, or are proposed for listing as threatened or endangered, are subject to consultation or conference under Section 7 of the Endangered Species Act. Nevada BLM policy is to provide State of Nevada Listed Species and Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species as shown in BLM Manual 6840.06C. Nevada protected animals that meet BLM's 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: (1) 'protected" under authority of Nevada Administrative Codes 501.100 – 503.104; (2) have been determined to meet BLM's policy definition of "listing by a State in a category implying potential endangerment or extinction," and (3) are not already included as a federally listed, proposed, or candidate species (Attachment #3). See Attachment #3 for BLM policy (516 DM 6840) definitions for special status species.

Federally Listed, Proposed and Candidate Species (Terrestrial Species)

There are no known terrestrial wildlife species that are listed as threatened or endangered under the Endangered Species Act (Attachment #3).

Greater Sage Grouse

The greater sage grouse is a candidate species as of March 5, 2010 (see paragraph and footnote below and Attachment 3). This species could be considered an "umbrella species" where positive or negative impacts to their habitat generally affect the habitat for other sagebrush-obligate species or other species that utilize similar upland and riparian/meadow habitat.

On March 5, 2010, the U.S. Fish and Wildlife Service announced Proposed Rules* in the Federal Register for the notice of 12-month findings for petitions to list the greater sage grouse as a threatened or endangered species. The Fact Sheet for this finding iterated the following, *"After thoroughly analyzing the best scientific and commercial information available, the Fish and Wildlife Service has concluded that the greater sage-grouse warrants protection under the Endangered Species Act. However, the Service has determined that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. As a result, the sage-grouse will be added to the list of species that are candidates for Endangered Species Act protection. The Service will review the status of the sage-grouse annually, as we do all candidate species, to determine whether it warrants more immediate attention."* The Proposed Rules were formally announced in the Federal Register on March 23, 2010

under the following reference: **13910 Federal Register** / Vol. 75, No. 55 / Tuesday, March 23, 2010 / Proposed Rules.

[* The following is stated for this finding in the Federal Register, "*This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.*"]

The three HMAs are within the Desert and Tuscarora Sage Grouse Population Management units (PMUs) in Nevada. These PMUs are being considered under the Governor's Nevada Sage Grouse Conservation Strategy by the Northeastern Nevada Stewardship Group as part of sage grouse conservation planning efforts underway for the Elko District. Shrub cover and associated herbaceous plants in the understory is vital as a forage and cover component for sage grouse. Evaluation of habitat values and the possibilities to improve them are considered through this conservation effort.

As of May 2007, a total of 13 sage grouse leks (breeding display sites) are known to occur on the Owyhee HMA and approximately 12 additional leks, including those within the Owyhee Allotment and on adjoining allotments in Idaho and Nevada, are within approximately seven miles or less from the Owyhee HMA boundary. There are 16 leks known to occur on the Rock Creek HMA and approximately two dozen leks known to occur within four miles of the Rock Creek HMA boundary including those on the Little Humboldt HMA; this does not include what has been mentioned above for the Owyhee HMA. The Bullhead Allotment (Snowstorm HMA) adjoins the Little Humboldt HMA and provides documented habitat for several more leks. A high percentage of the leks on the Rock Creek and Little Humboldt HMAs have been affected by wildfires, and intensive rehabilitation efforts have also been completed on thousands of acres. Collectively, these lek areas provide core breeding habitat for some of the highest historic sage grouse population densities in Nevada.

The lek areas form core areas for associated nesting, brood-rearing and fall-winter habitat areas. In addition, there could be sage grouse movements into the area from outside the project area as individual or groups of grouse seek seasonal use areas. See Attachment #3 for lek definitions.

The HMAs provide other sage grouse habitat including fall-winter, nesting, early (upland) and late (meadow-riparian) brood habitat. Recent wildfires from 2000 to 2006 have negatively impacted tens of thousands of acres of sage grouse habitat on the grazing allotments/associated HMAs and adjoining allotments; however, a high percentage of these same burn areas have been artificially-seeded with native shrub, grass and forb species as part of wildlife habitat rehabilitation efforts.

Breeding and nesting primarily occurs at lower (Owyhee HMA) to mid (Rock Creek and Little Humboldt HMAs) elevations over large areas. Areas of riparian habitat, described in section 3.2.3, are important for brood-rearing especially at upper elevations during the summer and early fall. Forbs are an essential part of the diet of young sage grouse. Hen sage grouse move their broods considerable distances seeking riparian areas that provide

succulent forbs. It is highly likely that brood movements occur from the Owyhee HMA to the Rock Creek and Little Humboldt HMAs. These latter HMAs are the closest areas that provide a relative abundance of late brood-rearing habitat. Sage grouse use of some riparian habitat has been affected by the poor condition of some areas in the HMAs, as discussed in section 3.2.3.

BLM Sensitive Species (Terrestrial Species)

Attachment #4 lists and includes narratives for the BLM and State of Nevada wildlife species of concern that might occur in the vicinity of the proposed action. The exception for narratives are for pygmy rabbits and golden eagles shown below as "focus species." The lists are based on the Nevada BLM-Information Bulletin No. NV-2003-097 (July 29, 2003) and additional input from NDOW.

Sensitive Mammals

Pygmy Rabbits

Pygmy rabbits are a BLM Sensitive Species that were petitioned for listing as threatened or endangered under the Endangered Species Act. As of the January 8, 2008 Federal Register announcement, the pygmy rabbit is a BLM-listed sensitive species whose status for Federal listing is under review by the USFWS. Collective land management actions during the review period would include ongoing actions to conserve, enhance or protect pygmy rabbit habitat; this includes the actions to complete wild horse gathers on the three HMAs and surrounding non-HMA areas.

Pygmy rabbits are found in a variety of vegetation types that include big sagebrush that are suitable for creating their burrow system. Although no formal surveys have been completed on the HMAs, they have either been observed, or their active burrows have been observed in recent years by BLM personnel on the Star Ridge and Dry Creek pastures on the Owyhee HMA within habitat characterized by the Wyoming big sagebrush vegetation type.

Pygmy rabbits have been documented by NDOW personnel immediately south of the Rock Creek HMA on the Trout Creek drainage area within the Tuscarora Range. They have also been documented in close proximity to the Willow Creek drainage approximately six miles south of the Rock Creek HMA boundary.

Nevada BLM Sensitive Birds

Golden Eagle –This species is protected under the Bald and Golden Eagle Protection Act. In February 2010, the following protocol was written by the U.S. Fish and Wildlife Service: *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance*. The area provides nesting and foraging habitat where prey species are primarily small mammals.

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B & C

Implementation of the Proposed Action, Alternatives B or C is expected to improve riparian and upland habitat conditions thereby improving habitat for wildlife, including those designated as BLM Special Status Species and migratory birds.

The direct impacts to wildlife populations from the Proposed Action and Alternatives B and C would be potential disturbance and displacement associated with the helicopter and increased traffic at the trap sites and holding facilities. These disturbances would be during the capture period only. However, trap sites and holding facilities would be located in previously disturbed areas to minimize potential impacts. There would be no direct impacts to sage grouse lek sites as these areas would be avoided when locating trap sites and holding facilities. In addition, no lek activities occur beyond late June and broods are capable of flight by July so sage grouse would avoid areas where gather operations are occurring.

With the gather operations proposed to being after July 1st, there is the potential for impacts to active bird nests and animal burrows at ground level. As wild horses are driven by helicopters, they could run directly on and over shrubs and affect active bird nests and/or burrows within the shrub canopy. However, overall, the direct impacts of the capture operations would be minor. These impacts would not be different than potential day-to-day impacts that might occur as wild horses and bands travel within the HMAs and the potential for such on-going impacts would be dramatically reduced after wild horse numbers are reduced to AML.

Implementation of the Proposed Action would result in reduced competition with wildlife species, which would increase the quantity and quality of available forage, water and cover on sagebrush steppe, vegetated playa, and riparian habitat types. Implementation of the Proposed Action would help to provide improved habitat conditions for BLM Special Status Species and migratory birds. In the case of raptors that are BLM Special Status Species, the Proposed Action would help to provide improved habitat for prey species. There would be fewer disturbances associated with wild horses along stream bank riparian habitat and adjacent upland habitat.

No Action (Alternative D)

Wildlife would not be temporarily displaced or disturbed under the no action alternative from gather activities. However, there would be continued competition with wild horses for water and forage resources. This competition would increase as wild horse numbers increase annually. Wild horses are aggressive around water sources, and some wildlife species may not be able to compete. The competition for resources may lead to increased stress or dislocation of native wildlife species, or possible death of individual animals.

Excess wild horse numbers and resultant negative impacts to upland and riparian/meadow areas within the HMAs negatively impact the availability of forage and

cover for wildlife such as sage grouse that reside within the HMAs or that otherwise utilize habitat outside the HMAs on a seasonal basis. For example, some sage grouse that inhabit the Willow Creek Ridge area (outside the HMAs) during the winter and spring likely utilize the mid to upper elevations of the Rock Creek and Little Humboldt HMAs as summer/late (riparian/meadow) brood-rearing and fall habitat. The relative high abundance and interspersions of riparian/meadow areas within uplands on the Tuscarora and Snowstorm ranges on the Rock Creek and Little Humboldt HMAs are attractive to many wildlife species that seek succulent vegetation or otherwise inhabit these areas on a seasonal basis due to cover and forage diversity and the availability of water. Continued presence of excess wild horses would negatively impact sage grouse use of these meadow areas.

The no action alternative would result in greater degradation of habitat conditions for wildlife, BLM Special Status Species and migratory birds as a result of excess numbers of wild horses impacting vegetation and riparian resources.

3.2.6 Livestock Grazing

Affected Environment

The Owyhee, Spanish Ranch, Squaw Valley and Little Humboldt allotments were affected by the 2006 Winters Fire. The Winters Fire burned approximately 17% of the Owyhee Allotment, resulting in the closure of all or portions of the Chimney Creek and Dry Creek Pastures to livestock grazing. More than 90% of the Castle Ridge Pasture of the Little Humboldt Allotment burned as a result of the Winters Fire and was also closed to livestock grazing. Due to the 2006 Amazon and Winters fires, 73% of the Spanish Ranch Allotment burned, and 100% of the Soldier Field Pasture burned in the Squaw Valley Allotment. As a result the burned portions of the Spanish Ranch Allotment were closed to authorized livestock grazing. The entire Soldier Field Pasture in the Squaw Valley Allotment was also closed to authorized livestock grazing.

The Burner Hills and Winters Creek Pastures of the Spanish Ranch Allotment and the Castle Ridge Pasture of the Little Humboldt Allotment were re-opened to limited livestock grazing in 2009. Current monitoring data for all the allotments show that the fire rehabilitation objectives have been met and the allotments may be fully re-opened for livestock grazing during the 2010 grazing year.

<u>Owyhee Allotment</u>

The Owyhee HMA includes portions of the Owyhee Allotment (Map 2). The entire Owyhee HMA is within the Owyhee Allotment. The Chimney Creek, Dry Creek and Star Ridge Pastures make up the Owyhee HMA. One permittee is authorized to graze cattle in the allotment. The permitted season of use for the Owyhee Allotment is 3/15 to 12/15. Livestock grazing also occurs in areas immediately adjacent to the Owyhee HMA. Due to the limited number of natural water sources throughout the Owyhee Allotment, the livestock permittee hauls water to existing watering locations and pumps existing wells to distribute livestock use. The Dry Creek and Star Ridge Pastures are

grazed under an every other year rest rotational grazing system. The Chimney Creek Pasture is used early in year one and again in late fall of the same year and then used during the hot season in year two of the grazing rotation. This grazing system was adopted in 2006 under a Final Grazing Management Decision issued following the completion of the Sensitive Bird Species Environmental Impact Statement for the Owyhee Allotment.

Spanish Ranch and Squaw Valley Allotments

The Rock Creek HMA includes portions of the Spanish Ranch and Squaw Valley Allotments. Ninety percent of the Rock Creek HMA is within the Spanish Ranch Allotment and ten percent of the Rock Creek HMA is within the Squaw Valley Allotment. The Burner Hills Pasture, Winters Pasture, Red Cow Creek use areas within the Spanish Ranch Allotment and the Soldier Field Pasture within Squaw Valley Allotment make up the Rock Creek HMA (Map 3). Permitted livestock grazing includes both sheep and cattle use within the Rock Creek HMA, and the season of use for the Spanish Ranch Allotment is 3/25 to 10/31, and for the Squaw Valley Allotment is 3/1 to 2/28. However, it should be noted that both the Squaw Valley and Spanish Ranches have made large scale changes in livestock management operations in recent years for the purpose of improving upland and riparian habitats. The Squaw Valley Ranch has rested significant portions of their allotment while intensifying management and improvement of their private lands for the purpose of reducing use on public lands and particularly in areas supporting LCT. During the 2010 grazing season they plan to actively employ riders to move cattle away from streams and riparian areas and to reduce the amount of time cattle remain in any one area. Where domestic sheep have been trailed through the Squaw Valley Allotment, herding practices to prevent overuse of riparian areas have been employed. Similarly, the Spanish Ranch is using riders and recently constructed water developments on private lands to reduce livestock use of streams and springs. The BLM is currently in the process of completing standards and guidelines assessments and developing allotment management plans for the Spanish Ranch and Squaw Valley allotments. This process will include looking at carrying capacities for both livestock and wild horses as well as implementing livestock grazing management practices which are consistent with good upland and riparian habitat conditions.

Little Humboldt Allotment

The Little Humboldt HMA coincides with the Castle Ridge Pasture of the Little Humboldt Allotment (Map 3). All of the Little Humboldt HMA is within the Little Humboldt Allotment. Permitted livestock grazing includes cattle use within the Little Humboldt HMA, and the season of use for the Little Humboldt Allotment is 4/16 to 11/30. The portion of the Little Humboldt Allotment which supports LCT (the South Fork Litle Humboldt River Basin) is outside the HMA and is fenced separately. This area is currently managed under an intensive rotational grazing system in cooperation with NDOW and the permittee**.** The grazing system, which was implemented in 2002, provides for periods of rest and limits hot season grazing by cattle.

Table 6. Allotment Summaries

HMA	Allotment	Season of Use	Total Allotment Acres	% of Allotment in HMA	Total Active Preference	Average AUM Use for 2003-2009	Average Percent of Permitted Use
Owyhee	Owyhee	3/15-12/15	374,543	91%	29,903	7,770	26%
Rock Creek	Spanish Ranch	3/25-10/31	189,181	40%	22,201	9,485 (03-06) 1,743 (07-09)	43% 8%
Rock Creek	Squaw Valley	3/1/-2/28	273,747	7%	26,796	131	0.4%
Little Humboldt	Little Humboldt	4/16-11/30	97,903	18%	8,279	515	6%

Table 7. Owyhee Allotment Actual Use AUMs

Pasture	Year	Actual Use	% of total AUMs
Chimney Creek	2003	4,452	15%
	2004	2,595	9%
	2005	3,867	13%
	2006	1,925	6%
	2007	Closed	0%
	2008	769 (trailing)	3%
	2009	Non-use	0%
Dry Creek	2003	Rest	0%
	2004	9,672	32%
	2005	Rest	0%
	2006	8,370	28%
	2007	Closed	0%
	2008	1,729	6%
	2009	Non-use	0%
Star Ridge	2003	8,225	28%
	2004	Rest	0%
	2005	7,202	24%
	2006	Rest	0%
	2007	5,583	19%
	2008	Rest	0%
	2009	Non-use	0%

Table 8. Spanish Ranch Allotment Actual Use AUMs

Allotment/Pasture/Use Area	Year	Actual Use	% of total AUMs
Spanish Ranch	2003	8,729	39%
	2004	15,751	71%
	2005	7,323	33%
	2006	6,135	28%
Burner Hills Pasture	2007	Closed	0%
	2008	Closed	0%
	2009	1,835	8%
Red Cow Creek /Use Area	2007	Closed	0%
	2008	Closed	0%
	2009	Closed	0%
Winters Creek Pasture	2007	Closed	0%
	2008	Closed	0%
	2009	1,651	7%

Actual Use for 2003-2006 was reported by the allotment not by pasture. Therefore, the actual use for 2003-2006 includes pastures not located within the Rock Creek HMA.

Table 9. Squaw Valley Allotment Soldier Field Actual Use AUMs

Pasture	Year	Actual Use	% of total AUMs
Soldier Field	2003	Non-use	0%
	2004	795	2%
	2005	30	0.1%
	2006	93	0.3%
	2007	Closed	0%
	2008	Closed	0%
	2009	Closed	0%

Table 10. Little Humboldt Allotment Castle Ridge Pasture Actual Use AUMs

Pasture	Year	Actual Use	% of total AUMs
Castle Ridge	2003	518	6%
	2004	202	2%
	2005	1,116	13%
	2006	346	4%
	2007	Closed	0%
	2008	Closed	0%
	2009	1,421	17%

Direct and Indirect Effects of Alternatives

Effects of Alternatives for the Proposed Action and Alternatives B & C

Experience has shown that wild horse gather operations have few direct impacts to cattle and sheep grazing. Livestock located near gather activities could be temporarily disturbed or displaced by the helicopter and the increased vehicle traffic during the gather operation. Typically livestock move back into the area once gather operations cease. Removal of excess wild horses would result in an increase in forage availability and quality, reducing competition between livestock and wild horses for available forage and water resources. Direct impacts of the gather activities itself would be minor and short-term.

Indirect impacts to livestock grazing would be an increase in forage availability and quality, reduced competition for water and forage, and improved vegetative resources that would lead to a thriving ecological condition. Damage to livestock management fences as a result of high wild horse numbers would also decrease, making it easier for BLM to implement prescriptive grazing practices for improvement of upland and riparian resources.

Under Alternative C, positive indirect effects would be have a shorter-term duration than for the proposed action.

No Action (Alternative D)
Livestock would not be displaced or disturbed due to gather operations under the No Action Alternative. However, there would be increased competition with wild horses for limited water and forage resources throughout the Owyhee, Spanish Ranch, Squaw Valley and Little Humboldt Allotments. Damage to fences from wild horses would also increase, making it more difficult for control and management of livestock.

3.3 Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations define cumulative impacts as: "[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or Non-Federal) or person undertakes such actions." Past present and reasonably foreseeable future actions related to the analysis of cumulative impacts on resources or uses affected by the proposed action primarily include livestock grazing, agriculture/hay farming, oil and gas exploration and dispersed recreation.

3.3.1 Related Past, Present and Reasonably Foreseeable Future Actions (PPRFFAs)

Table 11. The Past, Present, and Reasonably Foreseeable Future Actions applicable to the assessment area are identified as the following:

Issue-Project-Name or Description	Status		
	Past	Present	Future
Issuance of decisions and grazing permits for ranching operations through the allotment evaluation process/standards and guidelines assessment and the reassessment of the associated allotments	X		X
Livestock grazing	X	X	X
Wild Horse and Burro Gathers	X	X	X
Mineral Exploration / Geothermal Exploration/Abandoned mine land reclamation	X	X	X
Ruby Pipeline[1](Outside of Rock Creek HMA)			X
Recreation	X	X	X
Spring development (fencing water sources)	X	X	X
Wildlife guzzler construction	X	X	X
Invasive weed inventory/treatments	X	X	X
Wild Horse and Burro issues, issuance of Multiple use decisions AML adjustments and planning	X		X
Wildfire and Emergency stabilization and rehabilitation	X	X	X
Wildlife Issues: Expanding elk population		X	X

[1] The amount of vegetation production that would be lost (approximately 618 acres) should the natural gas pipeline be implemented within the CESA, is anticipated to be negligible in relation to total vegetative production in the Squaw Valley Allotment (outside of the Rock Creek HMA).

Dispersed recreation; drought, wildfire, wildfire suppression, fuel break and wildlife/range rehabilitation efforts; wildlife habitat improvement projects; expanding elk population, minerals exploration; invasive and non-native weed species, livestock grazing, and wild horse gathers are considered the primary past and present and reasonably foreseeable actions within the CESA. The American Recovery and Reinvestment Act (ARRA) Project (which includes rehabilitation and restoration work in

areas dominated by cheatgrass) is being implemented in the Squaw Valley Allotment outside the Rock Creek HMA boundary. In addition the Ruby Pipeline Project is expected to impact 618 acres within the Squaw Valley Allotment (outside of the Rock Creek HMA) during the construction of the pipeline with minimal impact on any resource after construction and rehabilitation of the disturbed area is completed.

3.3.2 Cumulative Impacts to Resources

Table 12. Resources and Cumulative Effects Study Areas

Resource	Cumulative Effects Study Area (CESA)
Wild Horses	The CESA for wild horses include the Owyhee, Rock Creek, and Little Humboldt HMAs and immediately surrounding areas.
Soils	The CESA for soils is the Owyhee, Rock Creek, and Little Humboldt HMAs and immediately adjacent areas affected by wild horses.
Water	The CESA for water is the Owyhee, Rock Creek, and Little Humboldt HMAs and immediately adjacent areas affected by wild horses.
Fisheries and Riparian Zones	The CESA for fisheries and riparian zones is the Owyhee, Rock Creek, and Little Humboldt HMAs and immediately adjacent areas affected by wild horses.
Vegetation	The CESA for vegetation includes the Owyhee, Spanish Ranch, Squaw Valley, and Little Humboldt allotments which contain the Owyhee, Rock Creek, and Little Humboldt HMAs.
Wildlife Species, Special Status Species and Migratory Birds and their Habitat	The CESA for wildlife includes the Owyhee, Spanish Ranch, Squaw Valley, and Little Humboldt allotments which contain the Owyhee, Rock Creek, and Little Humboldt HMAs.
Livestock Grazing	The CESA for livestock grazing includes the Owyhee, Spanish Ranch, Squaw Valley, and Little Humboldt allotments.

Impacts Common to Action Alternatives (A, B, and C)

Cumulative effects expected when incrementally adding either of the action alternatives to the CESA would include continued improvement of upland and riparian vegetation conditions, which would in turn benefit current livestock management, native wildlife including sensitive and listed fish species, water resources and wild horses populations as forage (habitat) quantity and quality is improved over the current level. Benefits from reduced wild horse populations would include fewer animals competing for limited water quantity and at limited sites. Cumulatively there should be more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts within the cumulative area over the short and long-term. Gathering and removing excess wild horses from the Owyhee, HMA as wellas treating gathered wild horses that are released back to the Rock Creek and Little Humboldt HMAs, and removal of wild horses

outside of the Rock Creek and Little Humboldt HMAs would also likely benefit resources in the adjoining areas, as horses in the Owyhee, Rock Creek, and Little Humboldt HMAs would not need to travel outside of the HMAs in search of additional forage, water and space due to overpopulation.

Cumulatively over the next 10-15 year period, continuing to manage wild horses within the established AML ranges would result in improved vegetation condition (i.e. forage availability and quantity), which in turn would result in improved vegetation density, cover, vigor, seed production, seedling establishment and forage production over current conditions. Increased coordinated management of wild horses over the entire CESA would allow a free roaming behavior amongst existing herds and therefore lead to a thriving natural ecological balance. Managing wild horse populations within the established AMLs would allow the primary forage plant species to return more rapidly and allow for improvements to riparian habitat, even though some vegetation conditions may never be able to return to their potential. Maintaining AMLs over a sustained period of time throughout the CESA would allow for the collection of scientific data to evaluate AML levels.

Cumulatively over the next 10-15 years, fewer gathers should result and less frequent disturbance to individual wild horses and the herd's social structure would occur. Individual and herd health would be maintained. Some movement of wild horses across HMA boundaries within the CESA would be expected but should not result in non-attainment of identified AML ranges and other management objectives if excess horses are removed from the Owyhee, Rock Creek, and Little Humboldt HMAs and adjoining HMAs.

The ability to gather a higher percentage of the total population in future gathers would allow the increased use of fertility control and sex ratio adjustments in an effort to slow population growth. However, return of wild horses back into the HMAs may lead to the decreased ability to gather horses in the future as released horses learn to evade the helicopter.

Alternative D- No Action: Defer Gather & Removal

Under the No Action alternative, the wild horse population in the Owyhee, Rock Creek, and Little Humboldt HMAs could exceed 1,890 head in about four years. Increased movement of horses outside the boundaries of the Rock Creek and Little Humboldt HMAs can be expected as the ever greater numbers of horses search for sufficient resources and habitat for survival, thus impacting larger areas of public lands within the CESA. Heavy utilization of available forage and insufficient water would be expected. Allowing the wild horse population to continue to grow beyond the current population numbers would be likely to result in a population crash during the next decade. Wild horses, wildlife and livestock would not have sufficient forage or water. All animals would experience suffering and possible death. Ecological communities and habitat resources would not be sustainable. Rangeland health would degrade, possibly below biological thresholds, making recovery unlikely if not impossible as cheatgrass, and other

invasive non-native species could dominate the understory degrading ecological conditions.

Emergency removals could be expected in order to prevent individual animals from suffering or death as a result of insufficient forage and water. These emergency removals could occur as early as this summer season if the area experiences normal or below normal precipitation. There is also a high likelihood that emergency actions would be needed beyond the summer season if the current dry conditions persist through the upcoming summer. During emergency conditions, competition for available forage and water resources is heightened and generally impacts the older and youngest horses as well as lactating mares first. These groups would experience significant weight loss and diminished health, which could result in prolonged suffering and their eventual death. If emergency actions are not taken (prior to or in response to these events), the overall population could be affected by severely skewed sex ratios towards stallions (generally the strongest and healthiest portion of the population) and a significantly altered age structure. In addition, habitat resources would be over-utilized and progress toward rangeland health standards would not be met.

Cumulative impacts would result in foregoing an opportunity to improve rangeland health and to properly manage wild horses in balance with the available water and forage. Over-utilization of vegetation and other habitat resources would occur as wild horse populations continued to increase. Wild horse populations would be expected to eventually crash at some ecological threshold; however wild horse, livestock, and wildlife would all experience suffering and possible death as rangeland resources continued to degrade. Attainment of RMP/FMUD objectives and Standards for Rangeland Health and Wild Horse and Burro Populations would not be achieved.

AML would not be achieved or sustained throughout the CESA and therefore the collection of scientific data necessary to evaluate AML levels, in relationship to rangeland health standards and thriving natural ecological balance being met or achieved, would not be attainable.

Impacts to the human environment across the CESA would be compounded should the current population of horses be allowed to remain and expand.

3.4 Mitigation and Monitoring

In addition to the SOPs that would be implemented for this Proposed Action and Alternatives B and C,the following measures recommended by the U.S. Fish and Wildlife Service (Letter of Concurrence by U.S. Fish and Wildlife Service to BLM, dated June 4, 2010) to reduce potential impacts to LCT have been added:

1. Avoid or limit the number of times horses are herded across streams.

2. Limit the number of times horses cross streams in any one location. Herd horses across streams in multiple locations rather than in one concentrated area to minimize stream bank disturbance.

3. Utilize existing stream fish survey data to identify areas where LCT do not occur for use as crossing sites.

4. If stream banks are trampled during the gather, restore disturbed stream bank areas to natural ground contours and replant with native vegetation as soon as possible after the gather.

The BLM Contracting Officer Representative (COR) and Project Inspectors (PIs) assigned to the gather would be responsible for insuring contract personnel abide by contract specifications and SOPs. Ongoing rangeland, riparian, and wild horse monitoring would continue, including periodic aerial population inventory counts.

Should the Proposed Action gather efficiency allow for treatment and release of some of the gathered horses, fertility control monitoring would be conducted in accordance with the SOP's outlined in Appendix A and, monitoring of the herd's social behavior would be incorporated into routine monitoring.

4 CONSULTATION AND COORDINATION

4.1.1 General Information

and motorized vehicles to gather and transport wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns or opinions regarding the use of these methods to gather and transport wild horses (or burros). Nevada BLM will hold the 2010 meeting in mid to late June 2010. The location and time of this meeting will be determined at a later date.

In the May 2009 hearing the comments, specific opinions expressed or issues identified included the following: (1) the use of helicopters and motorized vehicles is inhumane and results in injury or death to significant numbers of wild horses and burros; (2) inventory methods using helicopters and fixed wing aircraft; (3) reported reproduction and mortality rates; (4) providing the public with pertinent information regarding gather plans at site-specific locations; (5) statistics or statements relating to impacts of helicopter driving, distances, terrain, etc. on wild horse and burro herds; (6) studies on impacts to wild horses and burros on the use of helicopters and helicopter driving during gathers. BLM reviewed its Standard Operating Procedures (SOPs) in response to the views and issues raised at the May 2009 public meeting and determined that no changes to the SOPs were warranted.

4.1.2 Scoping and Issue Identification

A scoping letter for the Owyhee HMA was sent to 78 interested individuals, groups, and agencies on May 1, 2008, regarding the proposed removal of excess horses from the Owyhee HMA. Letters or e-mails were received from 11 individuals during the 30 day comment period.

A scoping letter for the Rock Creek HMA was sent to 87 interested individuals, groups, and agencies on April 23, 2009, regarding the proposed removal of excess horses from the Rock Creek HMA. Letters or emails were received from 15 individuals during the 30 day comment period.

The following issues were identified:

1. Impacts to individual wild horses and the herd from proposed capture, removal and handling procedures. Measurement indicators for this issue include:

    - Projected population size and annual growth rate (WinEquus 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

4.1.3 Issues Not Addressed in this EA

The scope of this EA is limited to analyzing the environmental impacts of the proposed action and alternatives. Some comments received from the public in response to public scoping are outside the scope of this EA and were not considered by the BLM in preparing this EA.

4.1.4 Coordination with Other Agencies

A letter was received from the Nevada State Historic Preservation Officer concurring with the proposed gather. The BLM consulted with the U.S. Fish and Wildlife Service on impacts of the proposed action to listed species in a letter dated April 28th, 2010.

4.1.5 Native American Consultation

A Native American scoping letter for the Owyhee and Rock Creek HMAs was mailed on January 12, 2010 to the Te-Moak, Shoshone, and Shoshone Paiute tribes. One comment was received and is addressed in this EA.

4.2 Preparers

Bruce Thompson	Wild Horses, Elko District Office
Susie Stokke	Wild Horses, National Program Office
Alan Shepherd	Wild Horses, Nevada State Office
Bea Wade	Wild Horses, National Program Office
Matt Murphy	Rangeland Management
Jerrie Bertola	Rangeland Management
Kathryn Fuell	Supervisory Natural Resource Specialist
Kirk Laird	Environmental Coordinator

Ken Wilkinson	Wildlife, Migratory Birds, BLM Special Status Species and their Habitat
Russ Miller	Fisheries and Riparian Zones
Carol Evans	Fisheries and Riparian Zones
John Daniel	Soils and Water Quality
Zach Pratt	Visual Resource Management and Wilderness
Bill Fawcett	Cultural Resources
Tyson Gripp	Noxious Weeds

4.3 Distribution

A Preliminary EA was sent to the public on April 20, 2010 for a 30 day review and comment period. The Final EA will be available on the BLM public web site at:

http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa.html

A letter was sent to the following groups or individuals containing the FONSI and Decision Record. This letter also notified them that the Final EA is available.

Adrea Lococo
American Wild Horse Preservation Campaign
Animal Welfare Institute
Barbara Warner
Barrick Goldstrick Mines Inc, Gary Sundseth
Cal Worthington Trust
Carol Clinton
Craig C Downer
Darynne Jessler
Dean Rhoads
Doby George LLC
Dolores Wilson
Eileen Hennessy
Elko County
Ellison Ranching Company
Friends of Nevada Wilderness
In Defense of Animals
Irene Lopez
John Carpenter
Lorraine Schanzebach
Mori Ranches LLC
Nelo Mori
Nevada Cattlemen's Association
Nevada Department of Wildlife
NFC Land and Cattle LLC
Patsy Stombaugh
Petan Company of Nevada
Richard Carter

Roxanna Lund
Sherry Oster
Squaw Valley Ranch LLC
Sustainable Grazing Coalition
The Cloud Foundation
Thomas Cristy
Trout Unlimited
US Fish and Wildlife Service
Western Watersheds Project
Wild Horse Commission

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6. MAPS APPENDICES AND ATTACHMENTS

MAPS

Map 1 Owyhee, Rock Creek & Little Humboldt HMAs
Map 2 Owyhee Allotment & Pastures
Map 3 Rock Creek & Little Humboldt HMAs Spanish Ranch, Squaw Valley & Little Humboldt Allotments & Pastures
Map 4 Owyhee, Rock Creek & Little Humboldt HMAs Fire History
Map 5 Owyhee HMA Water Locations
Map 6 Rock Creek & Little Humboldt HMAs Perennial Water Locations
Map 7 Owyhee HMA Focus Species Habitat Areas
Map 8 Rock Creek & Little Humboldt HMAs Focus Species Habitat Areas
Map 9 Owyhee HMA 2010 Inventory
Map 10 Rock Creek HMA 2010 Inventory
Map 11 Little Humboldt HMA 2010 Inventory

APPENDICES

Appendix A Standard Operating Procedures
Appendix B Win Equus Modeling
Appendix C BLM Responses to Comments

ATTACHMENTS

Attachment #1 Wildlife Species List Lower Sagebrush/Grassland Steppe, Northeastern Nevada (Main List)
Attachment #2 Migratory Birds by Habitat Type
Attachment #3 Federally Listed and Candidate Species
Attachment #4 Nevada BLM Sensitive and State of Nevada-Listed Birds
Attachment #5 Owyhee HMA Stock Ponds Monitoring June 2010

Appendix A

Appendix A. Standard Gather Operation Operating Procedures (SOPs)
Gathers would be conducted by utilizing contractors from the Wild Horse and Burro Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses and burros would apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations will be conducted in conformance with the *Wild Horse and Burro Aviation Management Handbook* (March 2009).

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

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

The primary 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 and burros 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 (water or feed) to lure wild horses and burros into a temporary trap.

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

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

1. The primary concern of the contractor is the safe and humane handling of all animals captured. All capture attempts shall incorporate the following: All trap and holding facilities locations must be approved by the Contracting Officer's Representative (COR) and/or the Project Inspector (PI) prior to construction. The Contractor may also be required to change or move trap locations as determined by the COR/PI. All

traps and holding facilities not located on public land must have prior written approval of the landowner.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.
3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

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

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

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

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

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

4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.

5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.

6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be

necessary and will be provided by the government. Alternate pens shall be furnished by the

Contractor to hold animals if the specific gathering requires that animals be released back into the 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 will be at the discretion of the COR.

7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.

8. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of captured animals until delivery to final destination.

9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if injured animals must be destroyed and provide for destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.

10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

B. Capture Methods that may be used in the Performance of a Gather

1. Capture attempts may be accomplished by utilizing bait (feed or water) to lure animals into a temporary trap. If the contractor selects this method the following applies:

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

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

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

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

a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one hour.

b. The contractor shall assure that foals shall not be left behind, and orphaned.

3. Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor with the approval of the COR/PI selects this method the following applies:

a. Under no circumstances shall animals be tied down for more than one hour.

b. The contractor shall assure that foals shall not be left behind, or orphaned.

c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. Use of Motorized Equipment

1. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The Contractor shall provide the COR/PI with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.

2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches

from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.

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

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

6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers: 11 square feet per adult horse (1.4 linear foot in an 8 foot wide trailer); 8 square feet per adult burro (1.0 linear foot in an 8 foot wide trailer); 6 square feet per horse foal (.75 linear foot in an 8 foot wide trailer); 4 square feet per burro foal (.50 linear feet in an 8 foot wide trailer).

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

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

D. Safety and Communications

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

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

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

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

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

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

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

E. Public Participation

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

F. Responsibility and Lines of Communication

The Contracting Officer's Representatives (CORs) and the project inspectors (PIs) have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

The appropriate Tuscarora Field Manager and the Elko District Manager will take an active role to ensure the appropriate lines of communication are established between the gather staff, Field Office, District Office, State Office, National Program Office,

and Palomino Valley Corral. All publicity, formal public contact and inquiries will be handled through the appropriate Tuscarora Field Manager.

G. Site Clearances

Personnel working at gather sites will be advised of the illegality of collecting artifacts.

Prior to implementation of gather operations, trap sites and temporary holding facilities would be evaluated for cultural resources. Gather sites and temporary holding facilities would not be constructed on wetlands or riparian zones.

Appendix B.

Standard Operating Procedures for Population-level Fertility Control Treatments

22-month time-release pelleted vaccine:

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

1. PZP vaccine would be administered only by trained BLM personnel or collaborating research partners.
2. The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP is administered using an 18-gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14-gauge needle. These are delivered using a modified syringe and jabstick to inject the pellets into the gluteal muscles of the mares being returned to the range. The pellets are designed to release PZP over time similar to a time-release cold capsule.
3. 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 Freunds Modified Adjuvant (FMA). The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
4. 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.
5. All treated mares will be freeze-marked on the hip or neck HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

Monitoring and Tracking of Treatments:

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

mares are not freeze-marked) and date of treatment. Each applicator will submit a PZP Application Report and accompanying narrative and data sheets will be forwarded to the NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.

4. A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and State along with the freeze-mark(s) applied by HMA and date.

Appendix C

Population Modeling

To complete the population modeling for the Owyhee, Rock Creek, and Little Humboldt HMAs version 1.40 of the WinEquus program, created April 2, 2002, was utilized.

Objectives of Population Modeling

Review of the data output for each of the simulations provided many useful comparisons of the possible outcomes for each alternative. Some of the questions that need to be answered through the modeling include:

- Do any of the Alternatives "crash" the population?
- Different growth rates and numbers removed.
- What effect does fertility control have on population growth rate?
- What effects do the different alternatives have on the average population size?

Population Data, Criteria, and Parameters utilized for Population Modeling All simulations used the survival probabilities, foaling rates, and sex ratio at birth that was supplied with the WinEquus population model for the Garfield HMA 1997.

Sex ratio at Birth:
47% Females
53% Males

The following percent effectiveness of fertility control was utilized in the population modeling for Alternative I:

Yr 1 - 92; Yr 2 – 84; Yr 3 – Gather and retreat

The following table displays the contraception parameters utilized in the population model for Alternative I:

Contraception Criteria (Alternative I)

Age	Fertility Treatment
Foal	0%
1	0%
2	100%
3	100%
4	100%
5	100%
6	100%
7	100%
8	100%
9	100%
10-14	100%

15-19	100%
20+	100%

Population Modeling Criteria

The following summarizes the population modeling criteria that are common to the Proposed Action, and all alternatives:

- Starting Year: 2010
- Initial gather year: 2010
- Gather interval: minimum interval of three years.
- Gather for fertility treatment regardless of population size: No
- Continue to gather after reduction to treat females: Yes
- Sex ratio at birth: 53% males
- Percent of the population that can be gathered: 85%
- Minimum age for long term holding facility horses: Not Applicable
- Foals are not included in the AML
- Simulations were run for 10 years with 100 trials each

The following table displays the population modeling parameters utilized in the model:

Population Modeling Parameters **Modeling Parameter**	**Alternative A Gather and Apply Fertility Control & Fertility Control and Adjust sex ratio**	**Alternative B Adjust sex ratio**	**Alternative C Removal Only**	**Alternative D No Action (No Removal & No Fertility Control)**
Management by removal, and fertility control	Yes	No	No	N/A
Management by removal, 60:40 adjustment in sex ratio, and fertility control	No	Yes	NO	N/A
Management by removal only	No	No	Yes	N/A
Threshold Population Size for Gathers (High end AML)	561	561	561	N/A
Target Population Size Following	561	561	561	N/A

Population Modeling Parameters **Modeling Parameter**	**Alternative A Gather and Apply Fertility Control & Fertility Control and Adjust sex ratio**	**Alternative B Adjust sex ratio**	**Alternative C Removal Only**	**Alternative D No Action (No Removal & No Fertility Control)**
Gathers (Mid Point)				
Gather for fertility control regardless of population size	No	No	No	N/A
Gathers continue after removals to treat additional females	Yes	Yes	No	N/A
Effectiveness of Fertility Control: year 1	92%	N/A	N/A	N/A
Effectiveness of Fertility Control: year 2	84%	N/A	N/A	N/A
Effectiveness of Fertility Control: year 3 (gather and retreat)	Repeat	N/A	N/A	N/A

Results of WinEquus Population Modeling

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

To date, one herd has been studied using the 2-year PZP vaccine. The Clan Alpine study, in Nevada, was started in January 2000 with the treatment of 96 mares. The test resulted in fertility rates in treated mares of 6% year one and 18% year two.

Interpretation of the Model

The estimated population of 1,548 wild horses in the Owyhee, Rock Creek, and Little Humboldt HMAs was based on a May 2010 direct count population inventory and was used in the population modeling. Year one is the baseline starting point for the model, and reflects wild horse numbers immediately prior to the gather action and also reflects a slightly size skewed sex towards females. A sex ratio of 53:47 was entered into the model for the post gather action population. In this population modeling, year one would be 2010. Year two would be exactly one year in time from the original action, and so forth for years three, four, and five, etc. Consequently, at year eleven in the model, exactly ten years in time would have passed. In this model, year eleven is 2021. This is reflected in the Population Size Modeling Table by "Population sizes in ten years" and in

the Growth Rate Modeling Table by "Average growth rate in 10 years". Growth rate is averaged over ten years in time, while the population is predicted out the same ten years to the end point of year eleven. The Full Modeling Summaries contain tables and graphs directly from the modeling program.

The parameters for the population modeling were:

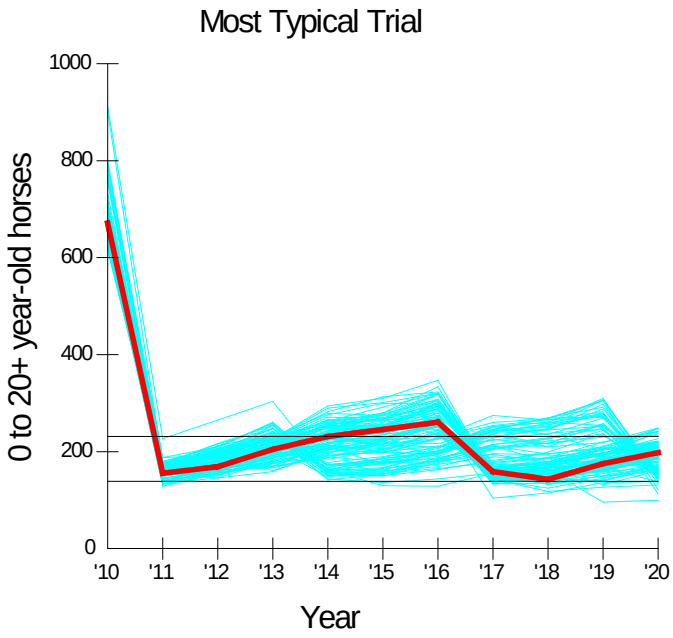
1. gather when population exceeds 561 in the Owyhee, Rock Creek, and Little Humboldt HMAs
2. foals are not included in AML
3. percent to gather 85
4. three years between gathers
5. number of trials 100
6. number of years 10
7. initial calendar year 2010
8. initial population size for all HMAs 1,548
9. population size for all HMAs after gather 399
10. implement selective removal criteria
11. fertility control Yes for Proposed Action (Alternative A) and No for Alternative B through D

This table compares the projected population growth for the proposed action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial. **Modeling Statistic Owyhee HMAs**	**Alternative A Gather and Apply Fertility Control and ajust sex ratios on Owyhee**	**Alternative B – Gather and adjust sex ratios 60% Studs and 40% Mares.**	**Alernative C Removal Only**	**No Action**
Population in Year One	139	139	139	694
Median Growth Rate	10.4%	14.6%	17.2%	19.4%
Average Population	241	237	242	2,235
Lowest Average Population	210	210	221	1,691
Highest Average Population	287	257	261	3,186
Average # Animals removed	623	692	612	n/a
Average # Mares Treated	111	n/a	n/a	n/a

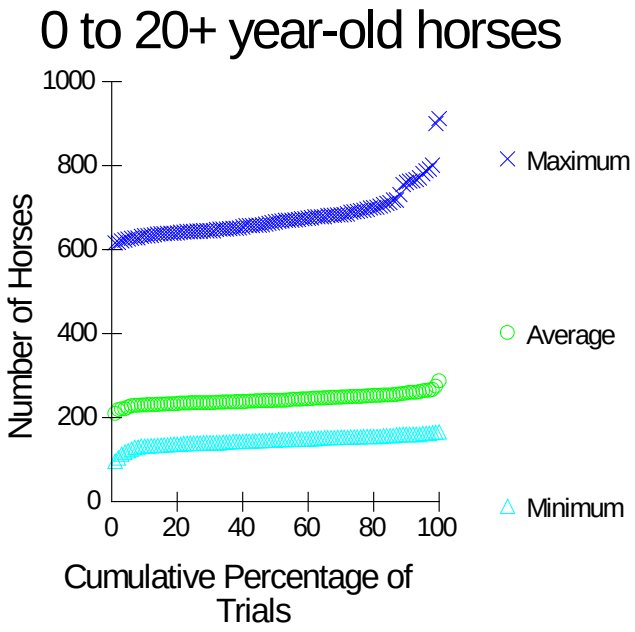
This table compares the projected population growth for the proposed action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial. **Modeling Statistic Rock Creek and Little Humboldt HMAs**	**Alternative A Gather and Apply Fertility Control**	**Alternative B – Gather and adjust sex ratios 60% Studs and 40% Mares.**	**Alternative C Removal Only**	**No Action**

This table compares the projected population growth for the proposed action and the alternatives at the end of the ten-year simulation. The population averages are from the median trial. **Modeling Statistic Rock Creek and Little Humboldt HMAs**	**Alternative A Gather and Apply Fertility Control**	**Alternative B – Gather and adjust sex ratios 60% Studs and 40% Mares.**	**Alternative C Removal Only**	**No Action**
Population in Year One	298	298	298	298
Median Growth Rate	14.4%	12.1%	17.0%	19.6%
Average Population	285	280	287	892
Lowest Average Population	254	255	254	598
Highest Average Population	304	307	306	1,293
Average # Animals removed	380	344	431	n/a
Average # Mares Treated	84	n/a	n/a	n/a

Owyhee NV HMA
Removal and apply fertility control and adjust sex ratios
60% Studs and 40% Mares
Proposed Action



Population Size

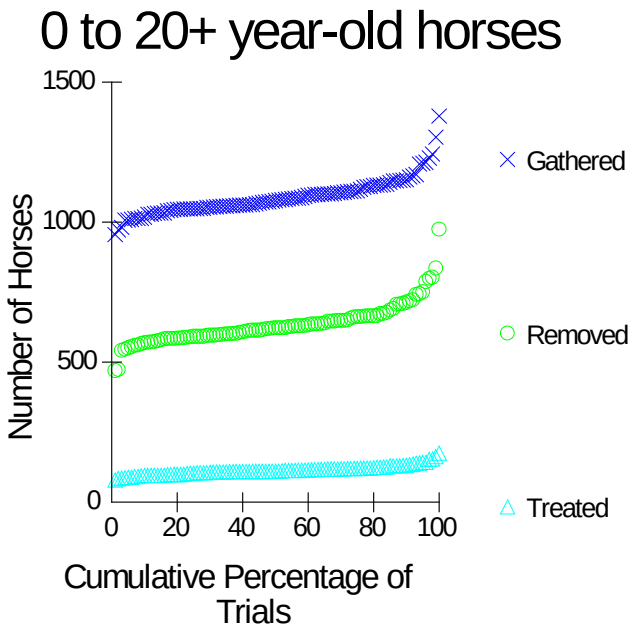


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	96	210	616
10th Percentile	132	230	633
25th Percentile	139	235	644
Median Trial	147	241	666
75th Percentile	154	250	692
90th Percentile	160	259	762
Highest Trial	166	287	912

* 0 to 20+ year-old horses

In 11 years and 100 trials, the lowest number of 0 to 20+ year old horses ever obtained was 96 and the highest was 912. In half of the trials, half the trials, the minimum population size in 11 years was less than 147 and the maximum was less than 666. The average population size across 11 years ranged from 210 to 287.

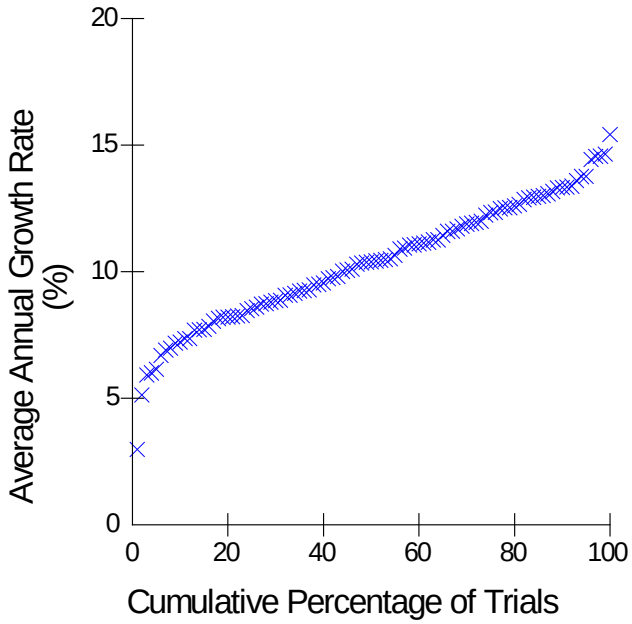
Gathered



	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	956	470	79
10th Percentile	1023	570	95
25th Percentile	1048	592	104
Median Trial	1078	623	111
75th Percentile	1114	663	120
90th Percentile	1156	716	132
Highest Trial	1379	975	175

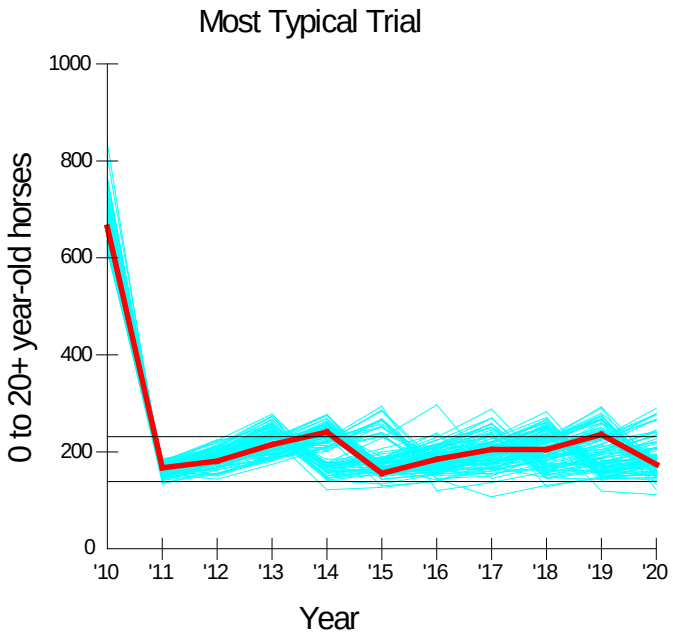
* 0 to 20+ year-old horses

Growth Rate

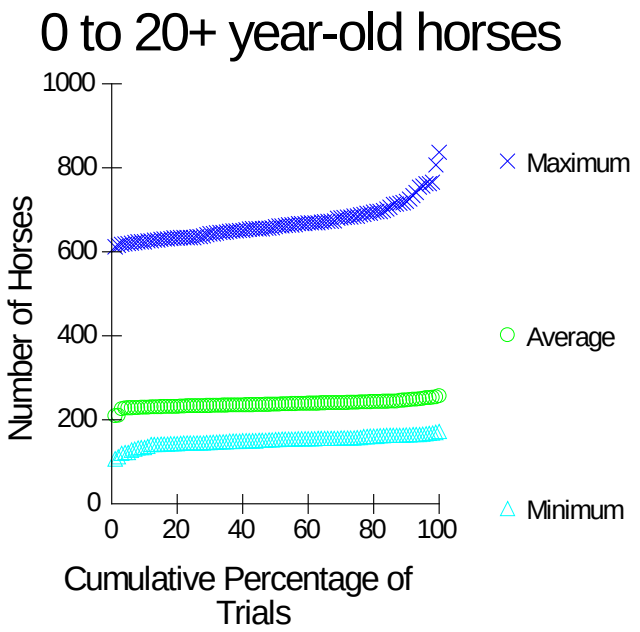


Average Growth Rate in 10 Years	
Lowest Trial	3.0
10th Percentile	7.3
25th Percentile	8.6
Median Trial	10.4
75th Percentile	12.3
90th Percentile	13.3
Highest Trial	15.4

Owyhee NV HMA
Removal and adjust sex ratios 60% Studs and 40% Mares
Alternative B



Population Size



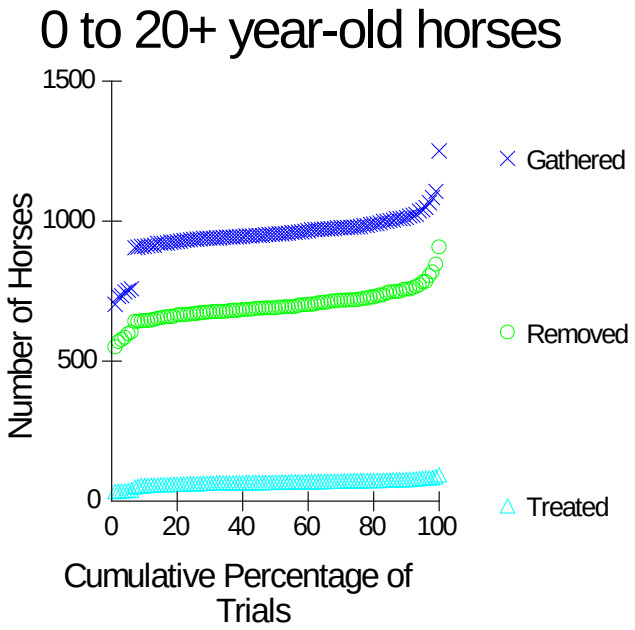
Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	107	210	612
10th Percentile	136	230	625
25th Percentile	145	233	635
Median Trial	153	237	661
75th Percentile	158	242	686
90th Percentile	164	248	723
Highest Trial	172	257	837

* 0 to 20+ year-old horses

In 11 years and 100 trials, the lowest number of 0 to 20+ year old horses ever obtained was 107 and the highest was 837. In half of the trials, half the trials, the minimum population size in 11 years was less than 153 and the maximum was less than 661. The average population size across 11 years ranged from 210 to 257.

Gathers

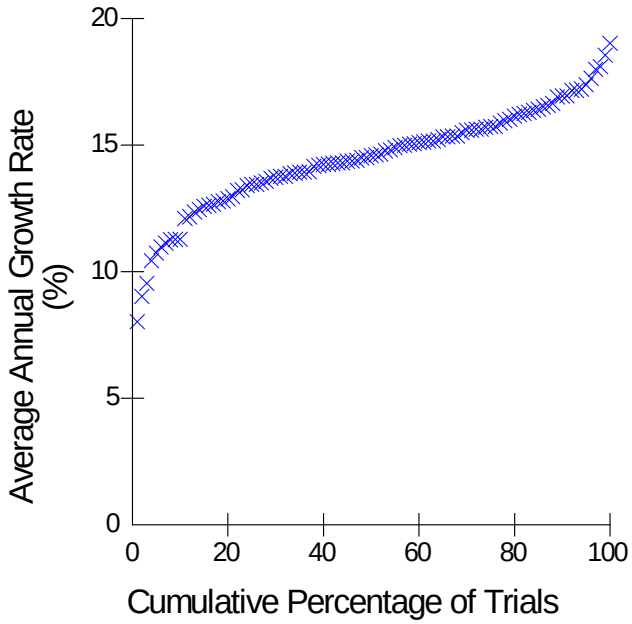


Totals in 11 Years*

	Gathered	Removed	Treated
Lowest Trial	703	551	34
10th Percentile	911	645	56
25th Percentile	936	670	62
Median Trial	954	692	68
75th Percentile	980	720	73
90th Percentile	1016	757	78
Highest Trial	1251	908	94

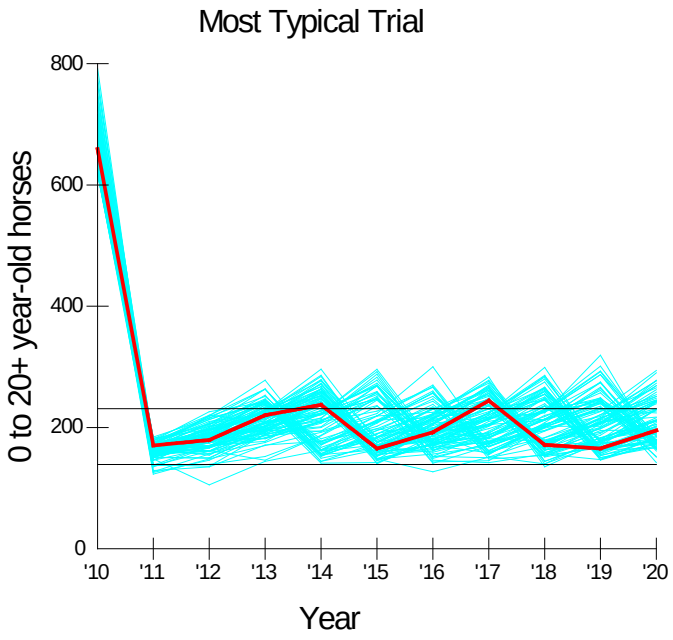
* 0 to 20+ year-old horses

Growth Rate

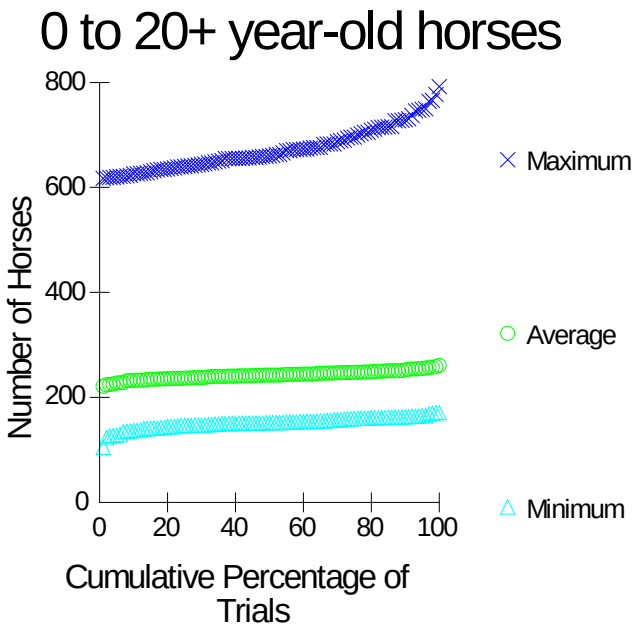


Average Growth Rate in 10 Years	
Lowest Trial	8.0
10th Percentile	11.7
25th Percentile	13.4
Median Trial	14.6
75th Percentile	15.7
90th Percentile	16.9
Highest Trial	19.0

Owyhee HMA NV
Gather and Removal Only
Alternative C



Population Size

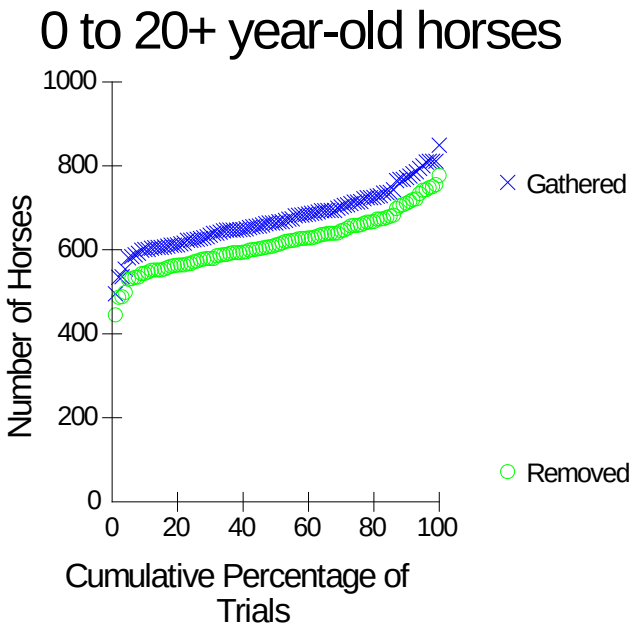


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	105	221	617
10th Percentile	137	232	626
25th Percentile	146	236	640
Median Trial	152	242	660
75th Percentile	160	247	698
90th Percentile	163	253	730
Highest Trial	171	261	792

* 0 to 20+ year-old horses

In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 105 and the highest was 792. In half the trials the minimum population size in 11 yrs was less than 152 and the maximum was less than 660. The average population size in 11 yrs ranged from 221 to 261.

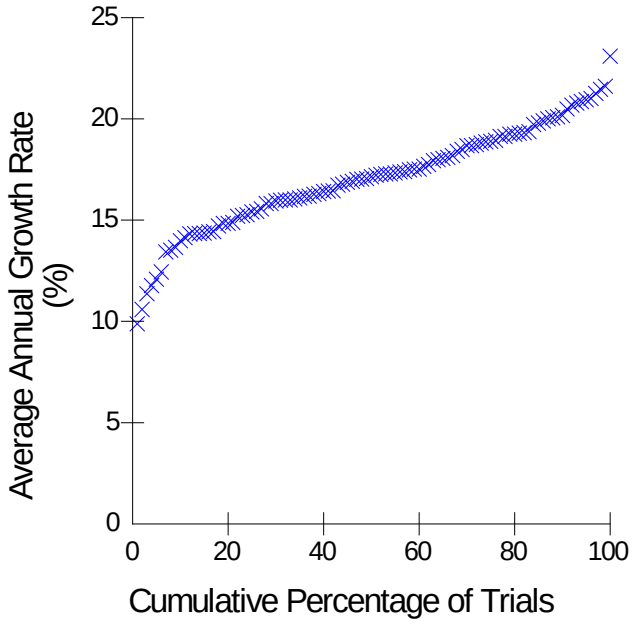
Gathers



	Totals in 11 Years*	
	Gathered	Removed
Lowest Trial	495	445
10th Percentile	601	546
25th Percentile	624	572
Median Trial	666	612
75th Percentile	714	658
90th Percentile	774	713
Highest Trial	849	777

* 0 to 20+ year-old horses

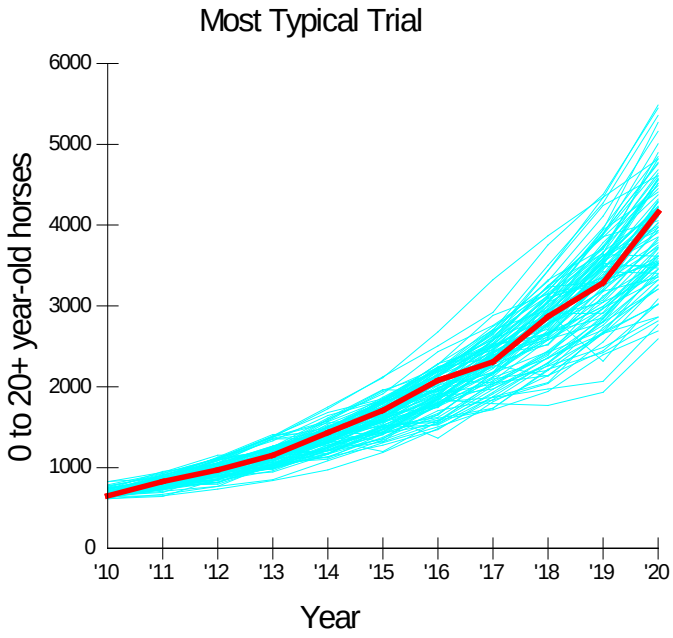
Growth Rate



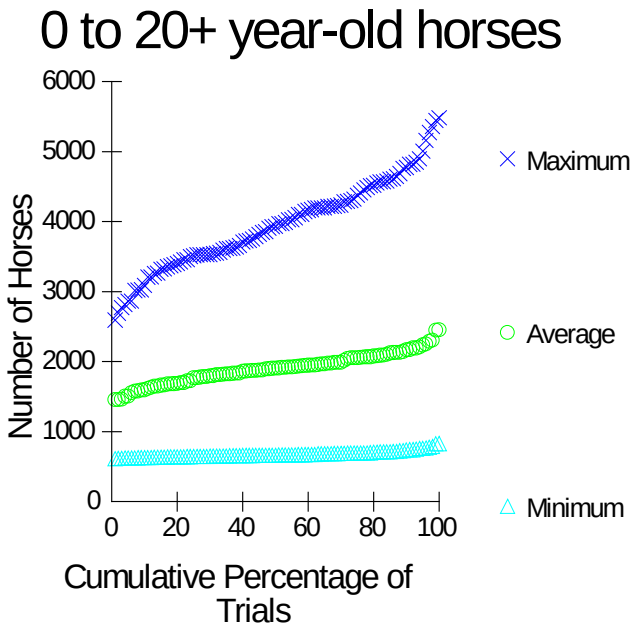

```
Average Growth Rate in 10 Years

Lowest Trial          9.9
10th Percentile      14.1
25th Percentile      15.4
Median Trial         17.2
75th Percentile      18.9
90th Percentile      20.3
Highest Trial        23.1
```

Owyhee NV HMA
No Action



Population Size



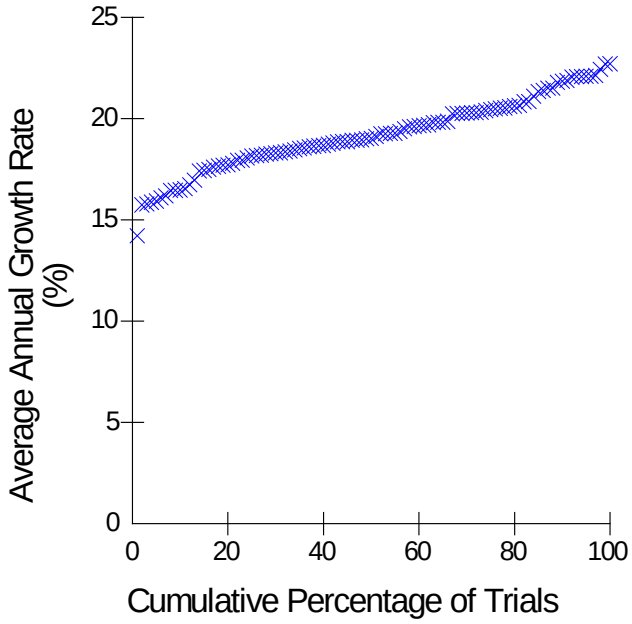
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	734	1691	2790
10th Percentile	750	1993	3847
25th Percentile	764	2126	4280
Median Trial	790	2235	4718
75th Percentile	828	2445	5270
90th Percentile	886	2588	5864
Highest Trial	1052	3186	6673

* 0 to 20+ year-old horses

Explanation
In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 734 and the highest was 6,673. In half the trials the minimum population size in 11 yrs was less than 790 and the maximum was less than 4,718. The average population size in 11 yrs ranged from 1,691 to 3,186.

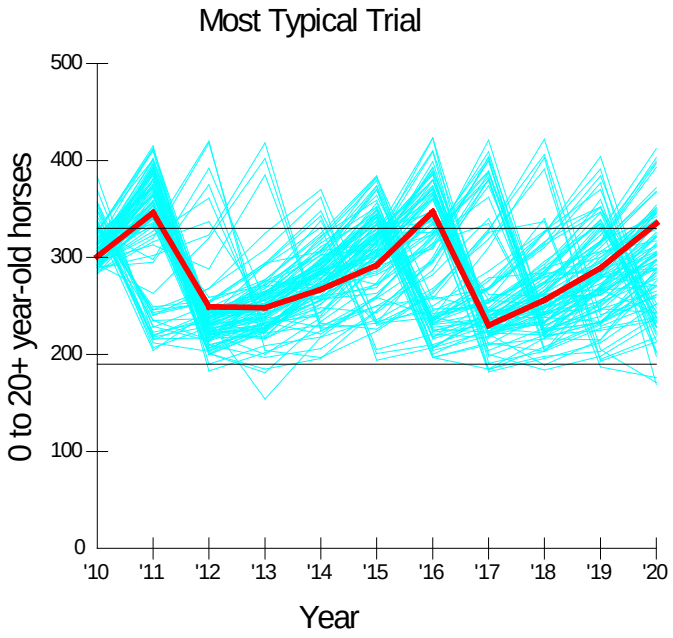
Gathers – N/A

Growth Rate

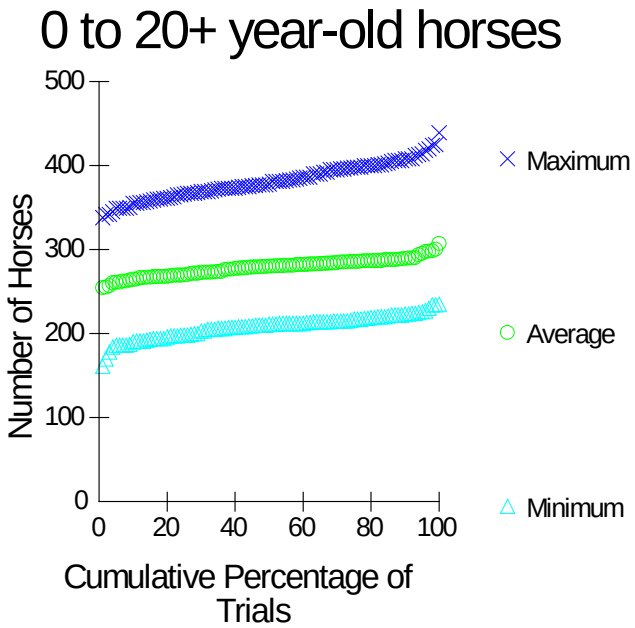


Average Growth Rate in 10 Years	
Lowest Trial	13.9
10th Percentile	17.5
25th Percentile	18.2
Median Trial	19.4
75th Percentile	20.7
90th Percentile	21.4
Highest Trial	22.8

Rock Creek and Little Humboldt HMA NV
Fertility Control and Removal
Alternative A



Population Size

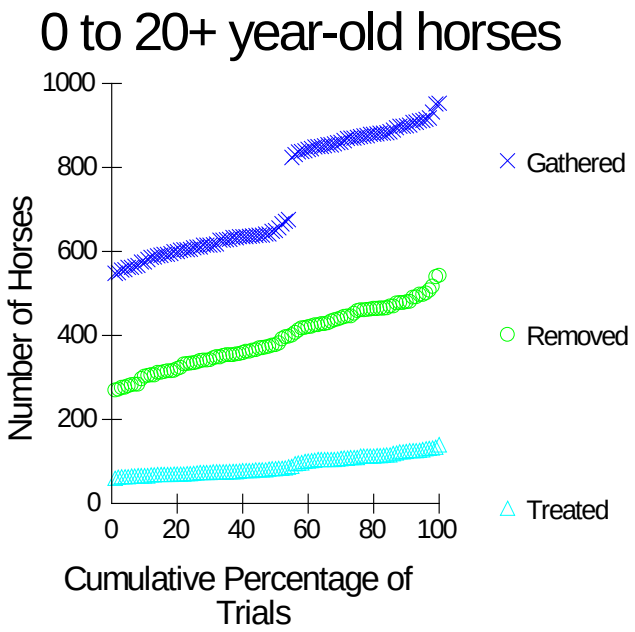


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	154	254	338
10th Percentile	185	268	348
25th Percentile	200	278	370
Median Trial	217	285	383
75th Percentile	224	289	399
90th Percentile	230	294	412
Highest Trial	237	304	423

* 0 to 20+ year-old horses

In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 154 and the highest was 423. In half the trials the minimum population size in 11 yrs was less than 217 and the maximum was less than 383. The average population size in 11 yrs ranged from 254 to 304.

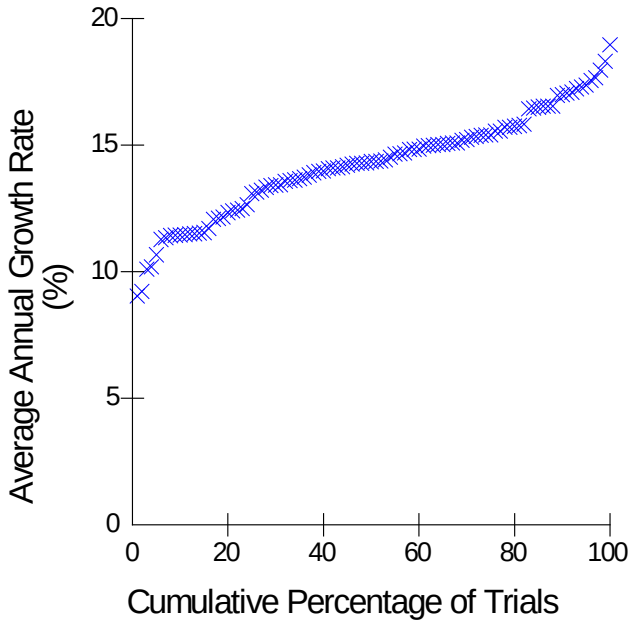
Gathers



	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	548	270	60
10th Percentile	578	304	66
25th Percentile	610	336	72
Median Trial	653	380	84
75th Percentile	873	460	111
90th Percentile	900	480	125
Highest Trial	953	543	140

* 0 to 20+ year-old horses

Growth Rate

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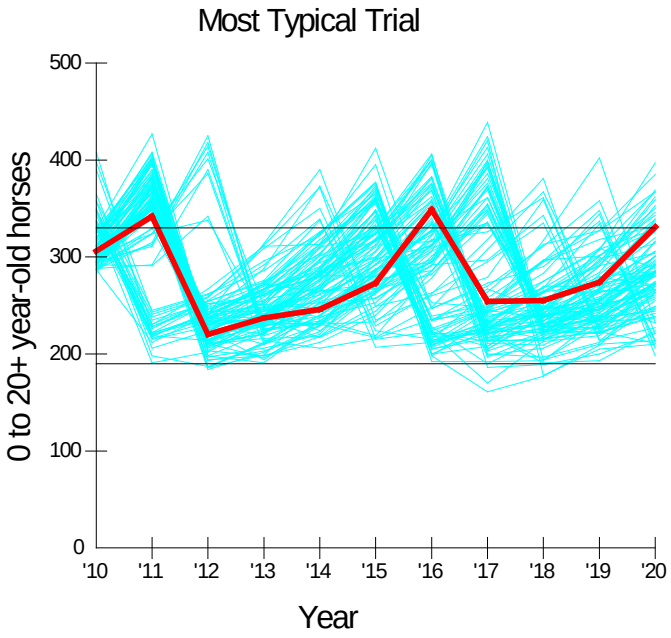
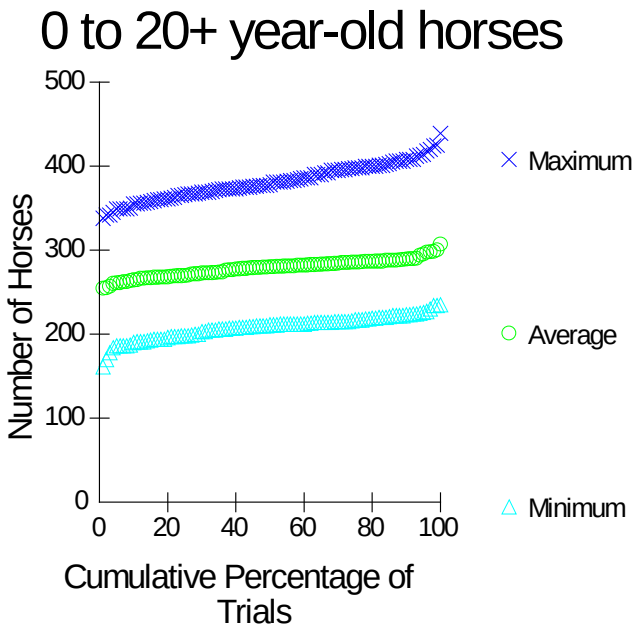
Average Growth Rate in 10 Years
Lowest Trial          9.0
10th Percentile      11.5
25th Percentile      13.1
Median Trial         14.4
75th Percentile      15.5
90th Percentile      17.0
Highest Trial        19.0
```

Rock Creek and Little Humboldt HMAs NV
Removal and adjust sex ratios 60% Studs and 40% Mares
Alternative B



Population Size

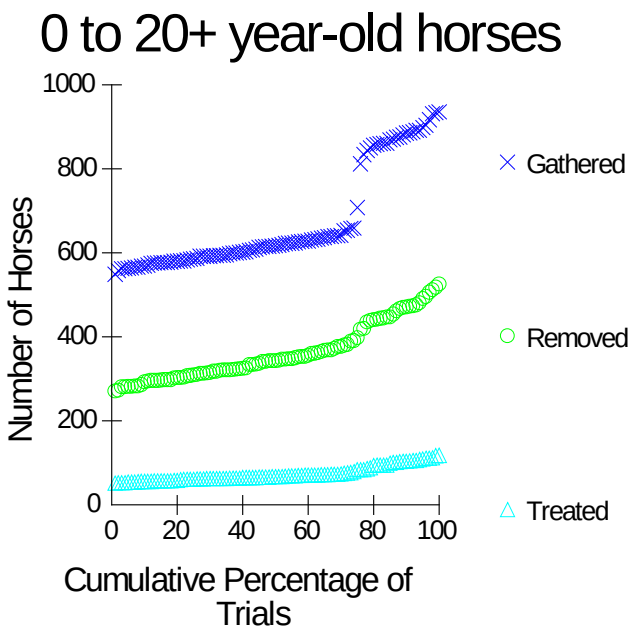


* 0 to 20+ year-old horses			
	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	161	255	338
10th Percentile	190	264	355
25th Percentile	198	270	366
Median Trial	211	280	380
75th Percentile	217	286	398
90th Percentile	223	290	408
Highest Trial	235	307	439

* 0 to 20+ year-old horses

In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 161 and the highest was 439. In half the trials the minimum population size in 11 yrs was less than 211 and the maximum was less than 380. The average population size in 11 yrs ranged from 255 to 307.

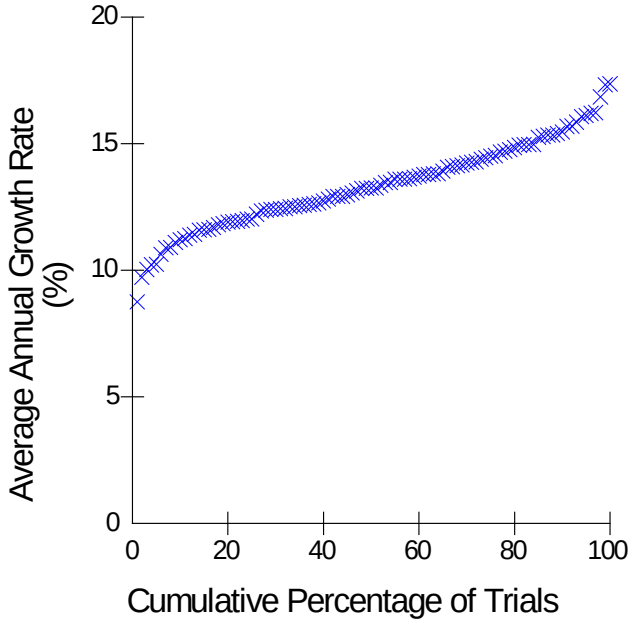
Gathers



	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	549	271	52
10th Percentile	570	294	56
25th Percentile	586	310	62
Median Trial	618	344	67
75th Percentile	760	408	84
90th Percentile	886	472	104
Highest Trial	936	526	118

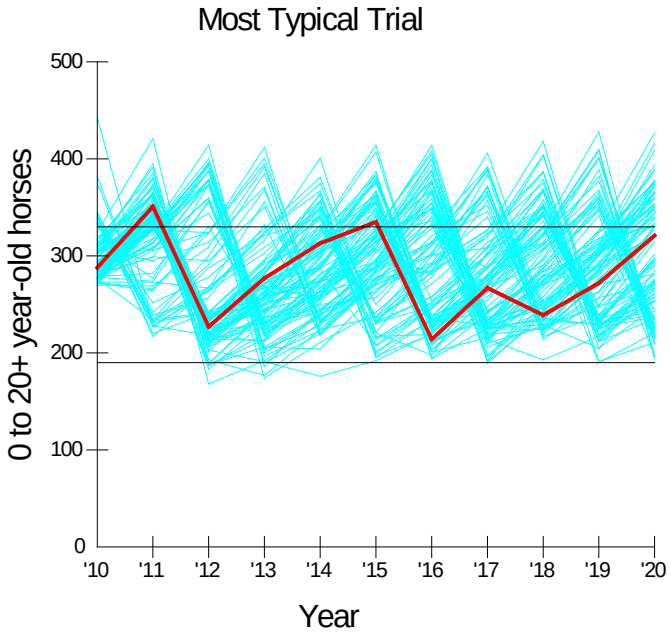
* 0 to 20+ year-old horses

Growth Rate

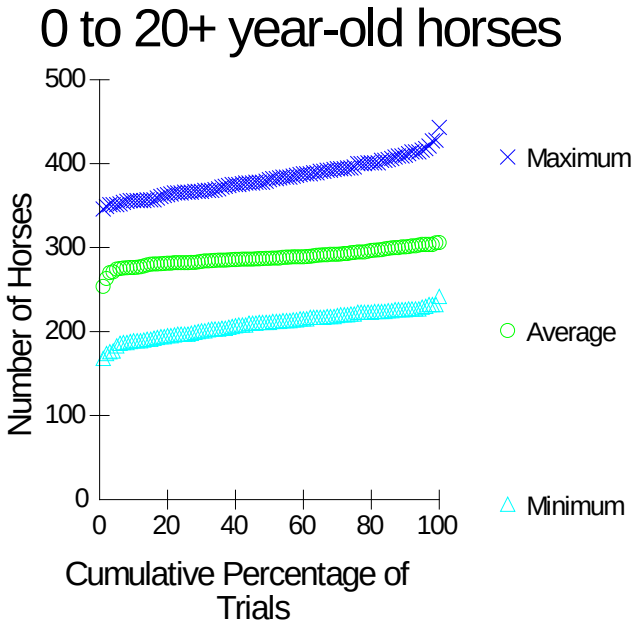



```
Average Growth Rate in 10 Years
Lowest Trial          8.8
10th Percentile      11.2
25th Percentile      12.1
Median Trial         13.3
75th Percentile      14.5
90th Percentile      15.6
Highest Trial        17.4
```

Rock Creek and Little Humboldt HMAs NV
Gather and Removal Only
Alternative C



Population Size



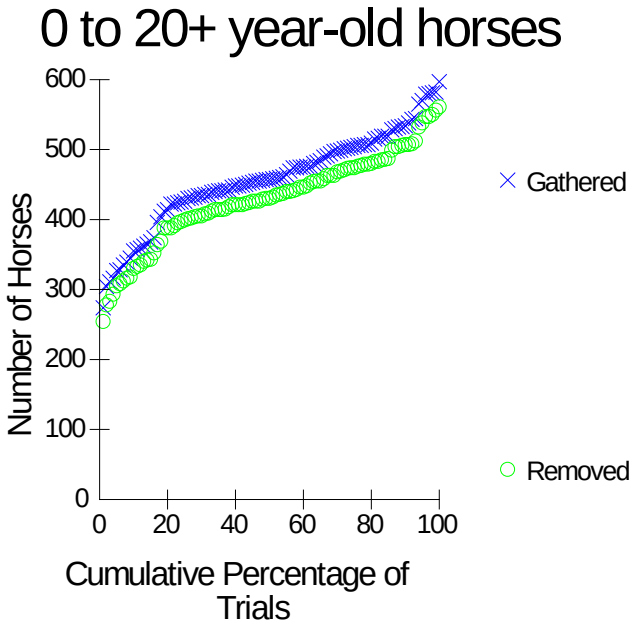
Population Sizes in 11 Years*

	Minimum	Average	Maximum
Lowest Trial	168	254	346
10th Percentile	189	276	356
25th Percentile	197	282	366
Median Trial	212	287	382
75th Percentile	222	294	398
90th Percentile	226	301	411
Highest Trial	242	306	443

* 0 to 20+ year-old horses

In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 168 and the highest was 443. In half the trials the minimum population size in 11 yrs was less than 212 and the maximum was less than 382. The average population size in 11 yrs ranged from 254 to 306.

Gathered

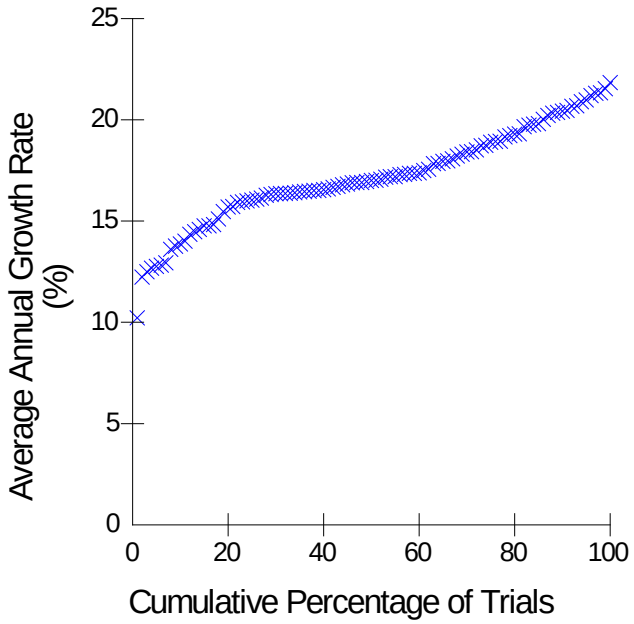


Totals in 11 Years*

	Gathered	Removed
Lowest Trial	274	254
10th Percentile	356	332
25th Percentile	428	400
Median Trial	458	431
75th Percentile	505	475
90th Percentile	536	507
Highest Trial	597	561

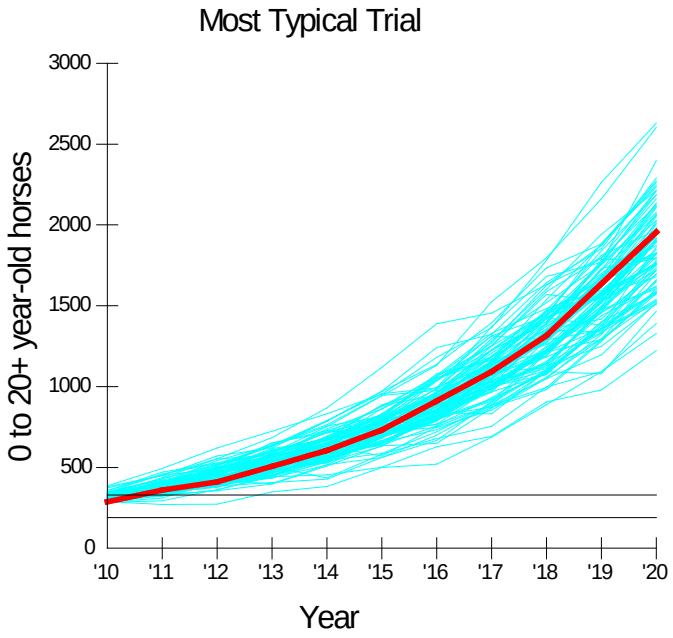
* 0 to 20+ year-old horses

GROWTH RATE

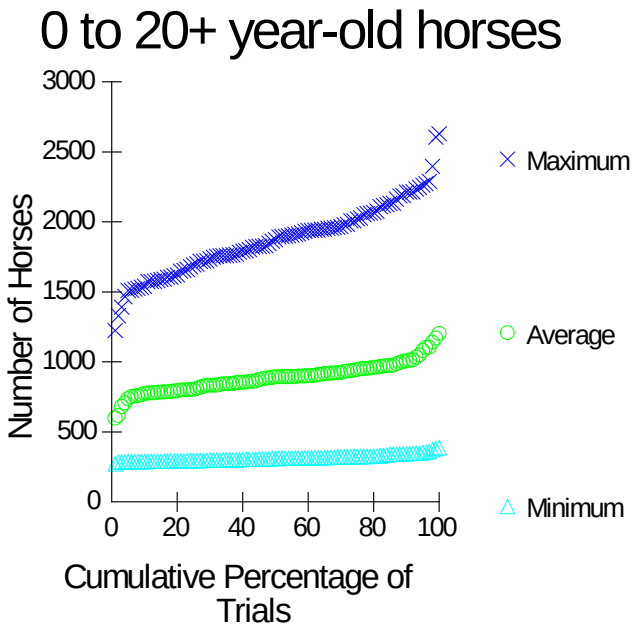


Average Growth Rate in 10 Years	
Lowest Trial	10.2
10th Percentile	13.9
25th Percentile	16.1
Median Trial	17.0
75th Percentile	18.9
90th Percentile	20.4
Highest Trial	21.8

Rock Creek and Little Humboldt HMAs NV
No Action



Population Size



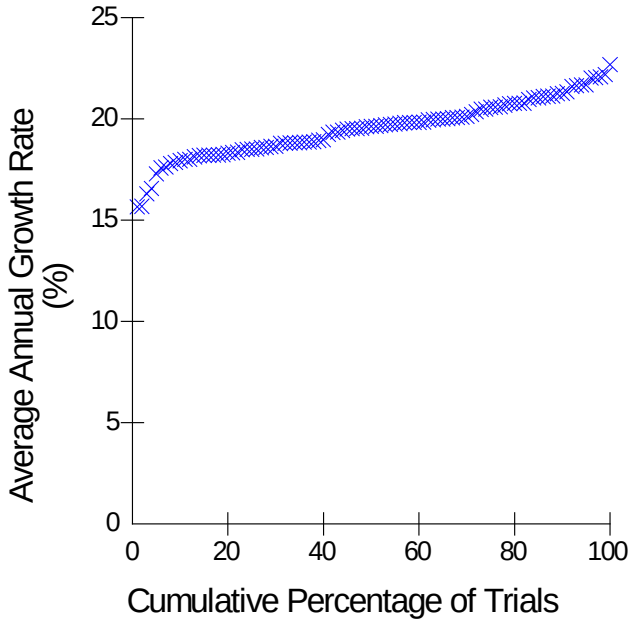
Population Sizes in 11 Years*			
	Minimum	Average	Maximum
Lowest Trial	270	598	1223
10th Percentile	288	775	1556
25th Percentile	294	806	1696
Median Trial	310	892	1883
75th Percentile	324	947	2024
90th Percentile	343	1008	2212
Highest Trial	387	1203	2630

* 0 to 20+ year-old horses

In 11 yrs and 100 trials, the lowest number of 0 to 20+ yr old horses ever obtained was 270 and the highest was 2630. In half the trials the minimum population size in 11 yrs was less than 310 and the maximum was less than 1883. The average population size in 11 yrs ranged from 598 to 1283.

Gathers N/A

Population Size



Average Growth Rate in 10 Years	
Lowest Trial	15.6
10th Percentile	18.0
25th Percentile	18.5
Median Trial	19.6
75th Percentile	20.6
90th Percentile	21.3
Highest Trial	22.7

Appendix C
RESPONSE TO COMMENTS
Owyhee, Rock Creek, and Little Humboldt Herd Management Areas (HMAs)-Wild Horse Gather Plan
Environmental Assessment, DOI-BLM-NV--EA

In excess of 2,500 comment letters/emails were received from individuals, organizations and agencies following the issuance of the Owyhee, Rock Creek, and Little Humboldt HMAs-Wild Horse Gather Plan Preliminary Environmental Assessment, DOI-BLM-NV-NO20-2010-0014. In excess of 2,500 comment letters/emails were received from individuals, organizations and agencies. The majority of these approximately 2,500 comment letters/emails received were one of two form letters. All comment letters were reviewed and considered and resulted in approximately 141 unique substantive comments. Substantive comments were utilized to finalize the EA as appropriate. BLMs responses to the comments received are identified in the table below. Comments received were organized into the following general categories:

Herd growth/animal numbers incorrect
Appropriate management levels are too low
Affected environment/monitoring data
Concerns/effects/results of fertility control
Outside of scope of analysis
Viewpoint/matter of opinion
Concerns/effects of use of helicopters
Concerns/effects of Long Term Pastures
Concern on modeling program
Public perception regarding other uses in the Owyhee, Rock Creek and Little Humboldt HMAs

No.	Commenter	Comment	BLM Response
1	Individuals	I support your efforts at managing the population level of feral horses on our public lands. Thank you.	Comment noted. The BLM is required to manage for the maximum amount of wild horses that won't lead to range deterioration
2	Roberta Lauk	You seriously need to stop this rounding up of Nevada's wildlife. It is horrific. You are killing these beautiful wild animals that hurt no one and only serve to beautify the landscape. My children and I marvel at the site of these wild horses every time we are lucky enough to see them. This is so sadistic. You really, really, really need to stop it now!	Comment noted.
3	Individuals	Remove as many as possible please. The horses got there because of humans, so the	Comment noted.

		humans should be removing them so other native species can thrive in their natural habitat……..	
4	Individuals	I would like to go on record as being in favor of the horse gather planned for the Owyhee, Rock Creek and Little Humboldt herd. Thank you.	Comment noted.
5	Michael Le Pore	As a resident of Nevada for almost 50 years, and one who loves to hunt & fish in our state, I do believe that you should remove all of the wild horses from the range as they are not native, and do alot of damage to the area's that they inhabit.	Comment noted.
6	State of Nevada, Commission for the preservation of Wild Horses	Supports the Proposed Action.	Comment noted.
7	Nevada Cattlemen's Association	Endorses the removal of wild horses to the minimum appropriate management level.	Comment noted.
8	Nevada Cattlemen's Association	The Nevada Cattlemen's Association continues to be in support of sustainable, healthy, well managed herds of Wild Horses and Burros on healthy Nevada rangelands.	See response to comment 1 above.
9	Nevada Cattlemen's Association	The association does not stand for one use over another on public lands. We believe in the multiple use concept of management.	See response to comment 1 above.
10	Nevada Cattlemen's Association	There are standards and guidelines that we work under so that utilization on the range is at an acceptable level where wildlife and other users have forage and esthetic value on the public lands. If over use by livestock occurs on public lands there are consequences to the permittee. this may include a temporary reduction in Animal Unit Months, lines, or permanent loss of the permit.	See response to comment 1 above.
11	Nevada Cattlemen's	Degradation to our public lands is not acceptable by any user	See response to comment 1 above. The BLM is required to manage

	Association	group. Management of wildlife and domestic animals is crucial to the health of the resource. If wild horses are kept unchecked their population can grow to unhealthy levels; causing not only resource damage but damage to the health of the herd. We feel that it is unacceptable for horse numbers to exceed AML.	for the maximum amount of wild horses that won't lead to range deterioration
12	Nevada Cattlemen's Association	We support BLM's plans to gather excess horses and manage numbers of those remaining with stacked sex ratios and non-breeding herds. We encourage you to keep the Owyhee, Rock Creek, and Little Humboldt Herd Management Areas within appropriate management levels (AML).	See response to comment 11 above.
13	Nevada Cattlemen's Association	Gathering 1,438 excess number of horses from the Owyhee, Rock Creek, and Little Humboldt Herd Management Areas will bring horse numbers back to a level where both the resource and the animal can continue to be healthy. With concerns such as the potential impacts to Lahontan cutthroat trout habitat within the Heard Management Areas, give the BLM cause to gather some horses.	See responses to comments 1 and 11 above.
14	Nevada Cattlemen's Association	Wild Horses are on the range 12 months a year and their health can be correlated to the health of the land. To ensure a healthy herd of Wild Horses the land and water resources must be healthy too. The Nevada Cattlemen's Association encourages the Bureau of Land Management to manage the Wild horse herds of Nevada at AML. This is important not only for the resource but for	See responses to comments 7 and 11 above.

		overall herd health.	
15	Nevada Department of Wildlife	The area continues to recovery from significant fires of the recent past. NDOW manages significant wildlife resources on public and private lands in the area. NDOW has spent hundreds of thousands of dollars on fire rehabilitation efforts on private lands which are unfenced from public lands. BLM has worked to restrict livestock re-entry on burned areas until habitats can support such activity.	See response to comment 1 above.
16	Nevada Department of Wildlife	It is paramount that BLM manage wild horse numbers within the boundaries of existing HMAsFIMAs at or below established AMLs.	Comment noted. The BLM is mandated to manage for a thriving natural ecological balance and protect the range from deterioration while preserving multiple use relationships. See response to comment 1 above.
17	Nevada Department of Wildlife	We are in support of the Tuscarora Wild Horse Gather.	Thank you for your support Comment noted.
18	Rick Furman	I am in favor of gathers of wild/feral horses to achieve appropriate management levels. The current overpopulation is detrimental to native wildlife and habitat, and federal law mandates removal of horses in excess of appropriate management levels.	Thank you for your support Comment noted.
19	Individuals	Please round them up because they are feral animals	Comment noted.
20	Individuals	I would like an accurate count of the horses that are in this HMA, as you are stating you will be removing 1000 excess animals & leaving approximately 440.	Current wild horse numbers are based on direct counts (aerial inventory) completed in March 2007, March 2009 and May 2010. Refer to EA (Section 3.2.1).
21	Individuals.	Please do not do anymore roundups, as they are not needed. Please reduce your subsidized grazing leases	Comment noted. Outside the scope of this analysis.
22	Individuals	Aren't the wild horses native wildlife? What wildlife could they be threatening?	The Congress declared horses as wild and free-roaming under the 1971 WFRHBA. Under the law, BLM is required to manage wild

			horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess immediately upon a determination that excess wild horses exist. Refer to the EA (Section 1.1 – Purpose and Need).
23	Individuals	The AMLs (337-561 wild horses) set for the three HMAs, which comprise more than 480,000 acres (more than 750-square miles), appear to be artificially and arbitrarily low.	AMLs were established through prior separate decision-making processes. See EA, Section 3.2.1
24	Individuals	The massive removal of wild horses from the Owyhee, Rock Creek, and Little Humboldt HMAs and the warehousing of these horses in government holding facilities violates the intent of Congress and the will of the American people that our wild horses be managed on the range in a humane and minimally intrusive manner that preserves their wild and free-roaming behavior.	The BLM has examined current information and on the basis of that information determined that excess wild horses exist and need immediate removal consistent with the WFRHBA. Refer to EA (Section 1.1). The BLM has also analyzed the potential impacts associated with No Action (Delay Gather/Removal). See EA, page 12.
25	Individuals	Utilize BLM's discretion under 43 CFR 4710.5(a) to close or limit livestock grazing in the HMAs, or designate these areas to be managed principally for wild horses.	The issue of authorized livestock grazing use was previously decided. See EA, page 10.
26	Individuals	Designate such areas to be managed principally for wild horse herds under 43 C.F.R. 4710.3-2.	HMAs are areas designated in the Land Use Planning process for the long term management of wild horses. The Elko District administers 8 HMAs but does not administer any Congressionally designated Wild Horse or Burro Ranges, which are by definition in the Act "devoted principally but not necessarily exclusively to their welfare in keeping with the multiple-use management concept for the public land".
27	Individuals	Offer ranches in the affected HMAs the option to retire livestock grazing allotments or convert livestock grazing allotments to wild horse	Achieving and maintaining our wild horse populations within our established AMLs and controlling their population growth rates will enhance the public lands for the

		allotments to promote ecotourism opportunities.	benefit of all users and resources. This in turn will increase the recreational experience in the area.
28	Individuals	Implement and expand the current proposed fertility control treatments to allow more horses to remain on the range.	See response to comment 11 above. Refer to EA (Section 2).
29	Individuals	The EA states that wild horse AMLs and livestock grazing levels are set by existing land use plans, but fails to consider the fact that these plans are not set in stone and the agency, through its adaptive management policy, has the discretion to re-assess and amend them to address these matters.	See response to comment 28 above.
30	Individuals	Violates the 1971 Act, HMA's were to be managed for the primary benefit of wild horses, not private livestock operators.	This issue is outside the scope of this analysis. Information about the Congress' intent is found in the Senate Conference Report (92-242) which accompanies the 1971 WFRHBA (Senate Bill 1116): **"The principal goal of this legislation is to provide for the protection of the animals from man and not the single use management of areas for the benefit of wild free-roaming horses and burros**. It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands." (Senate Report No. 92-242). Under the 1976 Federal Land Policy and Management Act (FLPMA), BLM is required to manage public lands under the principles of multiple use and sustained yield. Managing use by cattle and sheep, together with wildlife andwild horses and burros, and a host of other uses is a key part of BLM's multiple-use

			management mission under FLPMA. The Elko District does not administer any Congressionally designated Wild Horse or Burro Ranges, which are "devoted principally but not necessarily exclusively to their welfare in keeping with the multiple-use management concept for the public land".
31	Individuals	Range improvements and water enhancements that will benefit all animals, including wildlife and horses, living in the HMAs	This comment is outside the scope of this analysis.
32	Monika Courtney	Surely, other alternatives such as **true protection in their preserved habitat** (1971 WFRHB Act), safe from the invasion of drilling, mining and an ever increased cattle population **are not only of compelling importance** - but the only solution and answer after the irreparable havoc that BLM has caused for the American wild mustangs and burros. End the round ups and do your job, which your agency was assigned to do: Protect our wild horses and burros in their designated protected lands and stop the propaganda - before it's too late !!!	See response to comment 30 above.
33	Lauren Elizabeth Coe	When trying to round up these "problem" horses, you cause them to DIE!!!! These horses have to run many, perhaps a hundred, miles over rocky and broken terrain that causes serious injuries to them.	The gather will be administered under the National Gather Contract and associated SOPs that prevent this from occurring.
34	Animal Welfare Institute	EA at P. 16 states AML was set in 2002 following in-depth analysis of resource monitoring data collected over several years, but fails to disclose any of this data or where the data can be obtained.	The Final Multiple Use Decision establishing the EA and the supporting documentation are available for public review at the Elko District Office as stated in the EA (P.16).
35	Animal Welfare Institute	EA at P. 17 documents the current water year at 30% below the thirty average, but	A URL for the National Weather Service data has been included in the final EA (see EA, P. 17).

		fails to disclose the actual data or provide a URL. EA at P.13-14 notes the area as very dry but also includes no climate data.	
36	Individuals	EA at P.18-19 (also P. 13-15 and 37-38) provides no information about any past or present forage/vegetation monitoring studies for the HMAs. EA at P.25 suggests that failing to address the wild horse overpopulation would allow impacts to the range continue, but provides no data documenting said impacts.	Additional monitoring information as it pertains to wild horse impacts has been added to the EA (Refer to section 3.2.3).
37	Animal Welfare Institute	Gather and release numbers reported for the HMAs following the last gather (EA at P.18) can't be accurate based on BLM's current estimated population numbers.	Gather and release numbers are accurate, however, the movement between the HMAs and the post gather populations have been greater than what BLM initially anticipated.
38	Individuals	The BLM's reference to past rangeland health assessments (EA P.3) is not adequate. Some data should have been incorporated into the EA from these assessments.	The EA has been modified to note that the referenced rangeland health assessments are available for public review at the Elko District Office.
39	Animal Welfare Institute	The BLM has not considered a reasonable range of alternatives. Other alternatives could and should have been considered: 1. Remove wild horses proportionate to assessment of range conditions; 2. Recalculate and reset AML at a higher number; 3. Temporarily or permanently suspend livestock grazing (this alternative was inappropriately dismissed in the EA). 4. Maximize gather and release of all mares following fertility control treatment.	1. See response to comments 1 and 11 above. 2. The AMLs were established through prior decision-making processes that are still applicable. 3. See response to comment 25 above. 4. Please refer to Section 2 of the EA.
40	Animal Welfare Institute	Removal of mares older than four from Rock Creek and	This comment is noted.

		Little Humboldt cannot be undertaken if Alternative A is selected because it is not included as part of Alternative A.	
41	Animal Welfare Institute	The EA does not include a discussion of habitat utilization data or habitat use patterns.	See response to comment 36 above.
42	Animal Welfare Institute	EA at P.20 discloses genetic monitoring indicates good genetic diversity but does not cite the analysis or data and fails to define what is meant by good genetic diversity.	The EA has been modified to include observed heterozygosity (Ho) based on the genetics analysis and cites the report prepared by Dr. Gus Cothran (2003-2004).
43	Animal Welfare Institute	EA (Appendix B) does not cite a publication verifying the accuracy of the Win Equus model nor does it indicate the model has been subject to peer review. It fails to provide a URL for the model to allow the public to access the model and assess its accuracy for themselves. As an initial matter, the estimated number of wild horses reported in the EA at P. 27 does not correspond to the numbers reported elsewhere in the EA (example: the Rock Creek population was reported as both 618 and 632). It also appears the BLM erroneously reported the same projected 10 year population and highest average population in Table 1 (EA at P.17-18). Survival probabilities are based on the Garfield HMA; the BLM has not demonstrated how this HMA has applicability to the Owyhee complex HMAs for the purpose of population modeling. Additionally, the modeling does not correspond to the four alternatives analyzed in the EA.	Win Equus was subject to peer review. Additionally the program is available on the UNR website at: http://wolfweb.unr.edu/homepage/jenkins The EA has been modified to assure the population for the Rock Creek HMA is reported consistently throughout the document. The population modeling was reviewed and has been corrected to accurately correspond to the four alternatives analyzed in the EA. This is the best data that BLM has. This data was collected over a period of time under acceptable research protocol. The alternatives do correspond to the modeling.

44	Animal Welfare Institute	The BLM should examine the mortality associated with the Calico gather rather than rely on the average since 2004. Nor has the BLM disclosed mortality associated with previous gathers for the affected HMAs.	There were 9 animals euthanized on the Calico gather out of 1,900 at the gather outside the facility. Two animals were euthanized as a direct result of gather activities and 7 were euthanized due to poor body condition or preexisting conditions. The total gather mortality was 0.0036%. Mortality from gathers for the three HMAs from 1994 to 2006 is 0.008%.
45	Animal Welfare Institute	The BLM has provided no substantive evidence that wild horses acclimate quickly to the holding corrals.	Short-term holding mortality rate is about 5%. Refer to the GAO-09-77 Report page 51. http://www.gao.gov/new.items/d0977.pdf
46	Animal Welfare Institute	EA at P.22 – why is the segregation of wild horses by age and sex not mandatory when they are being transported from the capture facility? Also why would BLM transport animals in extremely poor condition rather than humanely euthanizing them at the capture site?	BLM follows SOPs and it is rare that wild horses are mixed while being transported. The exception is with weanlings and mares and foals. BLM follows the euthanasia policy, this includes giving the benefit of the doubt to wild horses.
47	Animal Welfare Institute	EA at P.22 and 24 – why is there a difference in the maximum transport time from gathers (8 hours) to adoptions or long term holding (24 hours)? Why isn't a maximum of 8 hours required for both?	The wild horses that are first transported to holding facilities are not used to being confined, whereas after a period of time when they are transported to long-term holding or adoptions they are used to being in confinement, humans, and the stress of off loading the horses would be more stressful than to leave the horses on the truck.
48	Animal Welfare Institute	EA at P. 24 – the BLM claims the establishment of long term holding pastures is subject to a separate NEPA and decision making process. If that is true, why hasn't AWI seen a BLM notice soliciting public comments on a NEPA document analyzing the impact of creating such facilities.	The authorized officer conducts scoping in accordance with the NEPA Handbook (H-1790-1). EAs are made available for public review and comment on the Filed Office's web site.

49	Animal Welfare Institute	EA at P. 24 – what is the reason for separating mares from geldings at long term holding facilities if geldings can't breed the mares? EA at P.24 and 28 – why does BLM claim a 92% survival probability for horses on native range, but claim an 8% mortality rate for wild horses in long-term pastures where the forage is supposedly much better?	For the ease of management and the best interest of the animals. The mortality rate in long-term holding and on the range is similar; the exception is that horses in long-term holding are middle aged to older aged horses.
50	Animal Welfare Institute	EA at P.26 – the proposed removal of a number of weanlings from the Little Humboldt and Rock Creek HMAs raises concerns about the survival of these foals that clearly are still dependent on their mothers.	Foals not old enough to be weaned from their mothers would not be separated; they would either be shipped or returned to the range with their mothers.
51	Individuals	EA at P.27 – the BLM cites not study or other document to substantiate the claim that wild horses use the forage supply less efficiently than cattle.	Citation has been added.
52	Animal Welfare Institute	EA at P.27 – the BLM fails to disclose any estimates of the amount of water that is available for wild horse use, how long that amount is expected to last, or provide any data to show that the existing amount of water is insufficient to maintain the current population of wild horses in the HMAs.	The Owyhee HMA has 2 perennial (in which one is accessible) water sources on public lands and numerous stock tanks (that collect rainfall/snow melt). Refer to EA (Section 3.1, 3.2.1, and 3.2.2.).
53	Individuals	EA at P.30 – the BLM fails to disclose any information about the types of soils within the HMAs, the current condition of said soils, and has not adequately described or provided any data about how wild horses are impacting these soils. The BLM should also have disclosed quantifiable data on the invasive weedy plants and how their presence has	There are hundreds of individual soil types found in the HMA. Detailed explanations about each soil type are available at http://websoilsurvey.nrcs.usda.gov/app/homepage/htm. However, the critical physical impacts that occur on soils from grazing animals, happens when the soil is wet. Dry soils are the least susceptible to compaction.

		altered animal use of the range. Also in the EA at P.5, the BLM claims it will avoid weeds when establishing trap or holding facilities but does not say how it will do so – for example, will BLM limit driving to established roads and trails?	Refer to EA (Section 2.4) for additional information on weeds.
54	Animal Welfare Institute	The analysis of water quality included in the EA at P.32 is flawed in many respects. No monitoring data is provided nor has BLM demonstrated how removal of wild horses will result in a net beneficial effect.	Additional information on impacts of wild horses to seeps and springs has been added to the EA (see response to comment 36 above). Data show improvement in riparian habitat conditions in response to reduced numbers of wild horses and changes in livestock management practices. Improved riparian habitat conditions are assumed to lead to improved water quality.
55	Individuals	The analysis of riparian impacts included in the EA at P.37 is flawed in many respects. No monitoring data is provided nor has BLM demonstrated how removal of wild horses will result in a net beneficial effect to fish. For example, in the Owyhee HMA the majority of the riparian areas are reported in proper functioning condition which suggests conditions are improving not declining due to wild horse overpopulation.	See response to comment 54 above. The Owyhee HMA has only one accessible perennial water source on public lands. Additional monitoring data on impacts of wild horses to fisheries habitats has been added to the EA (see response to comment 36 above). Impacts from wild horses to important fisheries streams occur primarily in the Rock Creek and Little Humboldt HMA's (refer to discussions for these HMA's in the Fisheries and Riparian Section (3.2.3).
56	Animal Welfare Institute	The EA fails to disclose sufficient evidence to determine if wild horses are causing any adverse impacts to wildlife species or their habitat. EA at P. 43-44. Nor is any specific information about wildlife species provided except a mention of the number of sage grouse leks and that elk populations are increasing. Also, the EA at P. 37-38	See Section 3.2.5 of the EA. Additional information on impacts of wild horses to riparian habitats including summaries of monitoring data has been added to the EA (see response to comment 36 above). Riparian areas provide high priority habitat for many species of wildlife.

		provides no information about which vegetation species are preferred by wild horses, wildlife and domestic livestock and fails to provide any forage utilization/vegetation monitoring data for these HMAs.	
57	Animal Welfare Institute	The EA does not provide evidence (fish population size and trend data) to prove wild horses are adversely affecting LCT and other fish.	Fish populations studies for all three HMA's have been conducted by the Nevada Department of Wildlife and the Trout Unlimited. Although population trend data are currently inconclusive, it can be assumed documented improvements in stream and riparian habitat conditions in response to reduced use by wild horses and livestock are beneficial to trout. Additional information has been added to the EA (refer to the Fisheries and Riparian Section 3.23 and to Map 8 for distribution of LCT and redband trout in or near HMA's.
58	Animal Welfare Institute	The EA does not provide evidence of riparian area degradation to substantiate claims of adverse impacts to fish.	Additional information on wild horse impacts to riparian areas and on causes for recent improvement in riparian habitat conditions has been added to the EA (refer to Fisheries and Riparian Section 3.2.3 and to Livestock Grazing 3.2.6).
59	Animal Welfare Institute	The BLM needs to assess impacts of future livestock management action on riparian habitats.	Additional information on current and proposed changes to livestock management practices in HMA's for the benefit or riparian and fisheries habitats has been added to the EA (refer to Livestock Grazing 3.2.6).
60	Animal Welfare Institute	The BLM has failed to accurately assess the cumulative impacts of the proposed action. It provides a table of those past, present and reasonably forseeable future actions (EA – P.48) but fails to assess the impact of these actions on the proposed action.	Refer to the EA pages 48-51.
61	Animal Welfare	EA at P. 18 – BLM states it will	Gathered wild horses will be

	Institute	make every effort to return any released horses back to the area where they were gathered from. How will this be done?	marked with temporary livestock friendly paint and every effort will be made to return the release wild horses to the same general area.
62	Animal Welfare Institute	The BLM must issue its final decision at least 45 days prior to starting the gather – not days before the gather begins.	Under authority provided in 43 CFR 4770.3(c), the authorized officer may make decisions to remove wild horses and burros effective upon issuance or on a date specified in the decision when removal is required by applicable law, or is necessary to preserve or maintain a thriving natural ecological balance and multiple use relationship.
63	Animal Welfare Institute	Re: SOPs (EA – Appendix A) – it is not known when these were developed or if they have ever been subject to public review. The SOPs must be amended to require that a veterinarian is always present during all capture operations. The SOP does not specify who can be a COR or what the qualifications of the COR or PI's are. The SOPs allow discretion which could result in moving wild horses at a rate or distance that is inappropriate. The SOPs must be amended to require monitoring to observe horses to ensure they do not develop colic or become ill when fed hay. The BLM should also investigate the potential use of different food stuffs to minimize potential problems with colic, etc. There is no justifiable reason why animals should be allowed to stand up to 3 hours on a truck that is not moving. The current SOP allowing 11 square feet per horse on a truck seems unnecessarily low. Allowing any wild horse to tied down at all is a hideously cruel practice and should not be allowed.	Please refer to page 21 of the EA.
64	Western	Why is there no full and	The analysis of the conditions of

	Watersheds Project	detailed cumulative effects analysis of the conditions of the private lands, and conflicts with wild horses?	the private lands is outside the scope of this analysis. BLM is required to remove wild horses from private land by law.
65	Western Watersheds Project	Why is the adjacent Little Owyhee HMA not examined, as well?	In the future every effort would be made to gather all five HMAs together. Due to time constraints, budget, and district priorities the Little Owyhee HMA was not analyzed at this time.
66	Western Watersheds Project	Can't horses move back and forth between that HMA, as well?	Yes they can move back and forth between the HMAs.
67	Western Watersheds Project	How many horses are there now?	See section 3.2.1 of the EA for updated numbers.
68	Western Watersheds Project	Aren't there actually FIVE HMAs that form one big Complex?	Five HMAs are located in the same general area, and it is anticipated that future management of theses HMA would be coordinated between the two districts.
69	Western Watersheds Project	Alternatives that examine removal of fencing so that horses can move between seasonal ranges without restriction must be considered as an alternative.	Outside the scope of this analysis.
70	Western Watersheds Project	BLM must provide full and complete copies of annual Grazing authorizations for all allotments grazed by these permittees, pasture-by-pasture actual use, use levels monitored, etc. for the past decade.	Actual use is outlined in section 3.2.6 of the EA.
71	Western Watersheds Project	BLM must consider a full range of alternatives, including keeping cattle grazing at the average actual use; grazing only in non-HMA areas of these allotments, and other actions that better balance uses.	Outside the scope of this analysis.
72	Western Watersheds Project	BLM must fully identify and map each and every water source to be used by horses vs. cows and sheep, and/or both classes of animals. How much water at each source is used by horses? By livestock? When? Where are fall-winter-spring	Outside the scope of this analysis.

		rainstorm puddles used extensively by livestock? By horses? How much more water would there be for horses and wildlife if domestic grazing was eliminated or significantly reduced? How much water do cattle drink – vs. horses?	
73	Western Watersheds Project	This has been a very wet and cool spring – for what time period is this information on precip. compiled?	See response to comment 35 above.
74	Western Watersheds Project	How has this recent moist and cool weather altered waters in stock ponds – of which there are dozens if not hundreds across this landscape? (Note: These artificial impoundments for livestock and spring projects have significantly altered and reduced drainage network processes).	A map showing the stock ponds on the Owyhee HMA has been added. BLM has been checking the stock ponds since early May. As of the most recent visit to the stock ponds (23) on June 2, 2010, 7 were dry, 13 had minimal water, 1 had an estimated 30+ day supply of water and 2 were not located. Refer to attachment 5 of the EA.
75	Western Watersheds Project	Where is necessary detailed mapping and analysis that shows where each and every water source is located, where each and every fence is located?	Outside the scope of this analysis.
76	Western Watersheds Project	When (what year) was each fence built in or between all allotments used by these horses, as well as the Little Owyhee?	Outside the scope of this analysis.
77	Western Watersheds Project	How many miles of fencing have been built since the passage of the Wild Horse and Burro Act? On BLM lands? On private lands?	Outside the scope of this analysis.
78	Western Watersheds Project	How many fences were built following each fire? Where? How many fire fences were supposed to be taken down, but remain? Where?	Outside the scope of this analysis.
79	Western Watersheds Project	How was post-fire and fencing used to shrink the size of the Rock Creek HMA in the Barrick Goldstrike allotment – where it had been much larger?	Outside the scope of this analysis. Information on the establishment of the Rock Creek HA as an HMA can be found in the 2003 Elko Wild Horse Amendment.
80	Western Watersheds Project	BLM has provided no evidence that it has cut a single livestock AUM off large gold mine and	Outside the scope of this analysis.

		other large rancher permits here to protect wildlife or LCT. Why not?	
81	Western Watersheds Project	What numbers of livestock are allowed to graze in each of the incrementally imposed barbed wire fence maze pastures here?	Outside the scope of this analysis.
82	Western Watersheds Project	Please provide detailed information of how many livestock AUMs have been grazed (actual use) in all allotments grazed by these entities.	Refer to Section 3.2.6 of the EA.
83	Western Watersheds Project	An EIS is essential to understand the carrying capacity for livestock, the adverse effects of the boatload of livestock facilities, and to balance livestock and horse use.	Outside the scope of this analysis.
84	Western Watersheds Project	Please provide population numbers, along with the annual tallies BLM has come up with over all years for all allotments and the Little Owyhee area as well.	See section 3.2.1 of the EA. The Little Owyhee HMA is outside the scope of this analysis.
85	Western Watersheds Project	Why aren't cattle and sheep eliminated from these LCT watersheds, as well?	Outside the scope of this analysis. Additional information has been added to the EA addressing recent and proposed changes in livestock management for the benefit of LCT and other resources. (refer to Section 3.2.6).
86	Western Watersheds Project	Please provide a detailed accounting of numbers of horses – up to the present – in those HMAs as well. How do they mesh with those to be rounded up? Do horses move back and forth over the course of the year?	See response to comment 84 above.
87	Western Watersheds Project	*Although Bookkeeper Spring was rested from livestock grazing between 2007 and 2009 as a result of the Winter?s Fire Closure, photos taken in 2009 indicate riparian vegetation remains sparse to absent--presumably as a result of the continued use of this area by wild horses.*	See page 35 of the EA for information on May 2010 site visit.

		Was there any livestock use? How often did BLM check? We see horses blamed all the time for cattle grazing areas not scheduled to be grazed.	
88	Western Watersheds Project	How much water is available at Desert Ranch for horses vs cows? At ALL water sources?	All available water is available to all users.
89	Western Watersheds Project	How man cows and sheep were grazed in the areas of these springs and streams over the past two decades? What level of stubble height removal, trampling damage, etc. were caused by cows/sheep vs. horses?	Additional monitoring information for riparian areas has been added to the EA (see response to comment 41 above).
90	Western Watersheds Project	Were these 2008 figures done by Barrick-hired consultants? How many fences have been built to restrict use? Were any of these measurements taken inside fenced/exclosure – areas?	Outside the scope of this analysis. Monitoring data have been collected by both BLM and by contractors working in cooperation with BLM and Barrick Goldstrike Mines, Inc.. Some of the data were collected inside areas excluded from livestock. See information added to EA (Section 3.2.3).
91	Western Watersheds Project	BLM Must fully and honestly provide detailed site-specific mapping of all the extensive livestock (and horse) exclosure fencing it has built. This has resulted in intensified livestock and horse use on any remaining unfenced areas. There has not been sufficient de-stocking of cattle, just a proliferation of fencing. What is the condition of all areas outside any fencing?	Outside the scope of this analysis.
92	Western Watersheds Project	Many of these fences were built WITHIN the HMAs – or to CHOP the HMAS into smaller size areas or hamper movement over landscapes. They have adversely affected sage-grouse, antelope and other wildlife as well. There is NOTHING in this EA being done to bring about changes in the harmful	Outside the scope of this analysis.

		livestock grazing. The EA's only focus is on removing horses as if they were weeds.	
93	Western Watersheds Project	Do indirect effects of the proposed action mean it is easier for gates in the maze of fences to be kept closed?	Wild horses tend to gain access to fenced areas outside the HMAs being managed for improved riparian habitat conditions by breaking or damaging fences.
94	Western Watersheds Project	Recovery of riparian areas as a result of the proposed action is not supported unless full and detailed analysis of the adverse effects of livestock grazing, including during drought, are examined in an EIS here or unless BLM is planning on permanently closing the area to livestock. BLM vegetation "treatments" are promoting weeds and degreaded condition here and in other areas of the allotment.	Additional information about existing and proposed changes to livestock grazing in the Squaw Valley and Spanish Ranch allotments has been added to the EA (See Section 3.2.6).
95	Western Watersheds Project	*achieving AMLs, vegetative utilization by wild horses would be reduced, which would result in improved forage availability, improved vegetation density, increased vegetation cover, increased plant vigor, and improved seed production, seedling establishment, and forage production over current conditions. Higher quality forage species (grasses) would be available. Competition for forage among wild horses, wildlife, and livestock would be reduced as utilization levels decrease and rangeland health improves; thereby promoting healthier habitat and healthier animals. Allotment specific utilization objectives would not be exceeded due to wild horse numbers. Reduced concentrations of wild horses following removal of excess horses would contribute to the recovery of the vegetative resource. Physical damage to*	Additional information has been added to the EA addressing recent and proposed changes in livestock management for the benefit of upland and riparian resources (See Section 3.2.6).

		shrubs and herbaceous vegetation associated with the physical passage of wild horses (as wild horse bands move within the HMAs) would be decreased. Unless livestock grazing is greatly reduced or removed, these claims will not hold in fact, large portions of the allotments WITHOUT horses have shown highly degraded conditions over all the years, as well. This shows livestock are a very significant adverse effect.	
95	Western Watersheds Project	*Pygmy rabbits are a BLM Sensitive Species that were petitioned for listing as threatened or endangered under the Endangered Species Act. On May 20, 2005, the U.S. Fish and Wildlife Service announced a 90-Day Finding in the Federal Register indicating that, "[T]he petition does not provide substantial information indicating that listing the pygmy rabbit may be warranted." However, the Finding does not downplay the need to conserve, enhance or protect pygmy rabbit habitat.* That aberrant FWS filing has been found invalid by a Federal Court.	The EA has been modified See Section 3.2.5.
96	Western Watersheds Project	Pygmy rabbits are found in a variety of vegetation types that include big sagebrush that are suitable for creating their burrow system. Although no formal surveys have been completed on the HMAs, they have either been observed, or their active burrows have been observed in recent years by BLM personnel …	Analysis of impacts of livestock grazing on pygmy rabbits and other sensitive species falls outside the scope of this analysis.

		BUT where is the analysis of the adverse effects of livestock grazing on all these rare and imperiled species –sage-grouse, pygmy rabbits, raptor prey, etc.?	
97	Western Watersheds Project	The EA's cumulative effects analysis, as well as presentation of information on the environmental Baseline is woefully deficient. It is clear that am EIS must be prepared to fully examine the severe conflicts with overstocking of domestic livestock on the allotments, watersheds and within the HMAs	See Section 3.3.2.
98	Western Watersheds Project	The EA Cumulative effects area is much too small. For example, huge cyanide gold mines are causing aquifer drawdown across the region. How are these mines affecting watersheds, water availability, etc.? What is the current condition and trend of the aquifers? Is this affecting spring flows and perennial water availability in these allotments, or for species of concern here?	Impacts to water sources from mine dewatering have not been documented for any of the HMA's.
99	Western Watersheds Project	And of course, the Little Owyhee and Snowstorm areas are ALL part of this Complex and condtions and effects must be fully examined.	Outside the scope of this analysis.
100	Western Watersheds Project	Where is the analysis of all the adverse effects of the ruby Pipeline just to the south of the HMAS, and that runs through the Squaw Valley allotment, and large portions of the Tuscarora sage-grouse PMU?	Ruby Pipeline is **not** located within any of the HMAs boundaries.
101	Western Watersheds Project	What are all the adverse effects of veg treatments, herbicide use where veg treatments have degraded public lands, etc.?	Outside the scope of this analysis.
102	Western Watersheds Project	Please incorporate all of WWP's comments and Appeals of Grazing Decision processes in the Squaw Valley, Spanish	Outside the scope of this analysis.

		Ranch, and Owyhee allotments. Please also include all Transcripts from the OHA Hearing on Squaw Valley/Spanish Ranch.	
103	In Defense for Animals	Wild Horse Numbers Controlled by Natural Means While hunting is regulated by the state of Nevada, the EA should outline the BLM's (as the manager of the public lands in the HMAs) authority and discretion to reduce or eliminate hunting in the BLM-managed HMAs.	Natural predation is not an effective method for controlling the wild horse population in the HMAs. See Section 3 of the EA and response to comment 105 below.
104	Individuals	The EA should provide an alternative to postpone the roundup, reduce livestock grazing, amend the RMP and increase AML and implement a reduction or ban on predator hunting or "management" on BLM-managed lands in and around the affected HMAs to explore the impact on horse population reduction.	See Section 2 of the EA for Alternatives. Predators are managed by the State of Nevada.
105	In Defense of Animals	The EA must document claims and provide copies of cited studies in the appendix. Specifically, below are a few claims included in the EA without any documentation: "The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past." "Wild horses are long-lived species with documented foal survival rates exceeding 95% and they are not a self-regulating species." "Wild horse numbers in excess of AML are already showing impact to range condition to the extent that individual horses and herd health is placed at	Wild horses on public lands have an average growth rate of 18-25% with a national average of 20% which shows that natural controls and self regulation do not have a major impact on this growth rate.

		risk."	
106	Individuals	EA at P. 16 states AML was set in 2002 following in-depth analysis of resource monitoring data collected over several years, but fails to disclose any of this data or where the data can be obtained.	The Final Multiple Use Decision establishing the EA and the supporting documentation are available for public review at the Elko District Office as stated in the EA (P.16).
107	In Defense of Animals	Provide documentation of wild horse damage to streams.	Information on wild horse impacts to streams have been added to the EA (refer to (see Fisheries and Riparian Zones Section 3.2.3).
108	In Defense of Animals	BLM does not have the authority to move unadopted horses to long-term holding.	IDA's lawsuit (In Defense of Animals v. Salazar, Case No. 1:09-cv-02222-PLF) challenging the legality of long-term holding was dismissed by the U.S. District Court for the District of Columbia in a Decision dated May 24, 2010.
109	In Defense of Animals	Rounding up and removing horses does not fulfill the requirement of minimal feasible management.	See 43 CFR 4710.4. (page 2 of the EA)
110	Individuals	The EA is incorrect in claiming the WFRHBA requires the immediate removal of horses. It first requires the BLM to determine there are excess horses and then whether action should be taken to remove the horses. This determination must be based on current information.	See BLM's response to comment 1 above.
111	In Defense of Animals	The EA must include the pertinent data for the past 5 years: wild horse monitoring data, range improvements, description and census of predators; cost to taxpayers.	See BLM's response to comment 1 above. Outside the scope of this analysis.
112		**EA Must include Pertinent Data** o A listing and description of all horses (and bands) living within the HMAs o Demographic data on those horses/bands - **Comparative resource allocations** (and capacity) for the HMAs - **Estimated financial cost to**	Outside the scope of this analysis. Outside the scope of this analysis as these resource allocations have been determined through prior

		taxpayers for the proposed roundup, removal and short-/long-term holding of wild horses (breakdown of costs should be provided for various components including internal staff costs, contractors, etc) **Owyhee HMA – provide the number and locations of water sources** (man-made and naturally-occurring) - identify the location of the wells, livestock watering, indicate proximity to naturally-occurring water sources, etc. **Owyhee HMA – identify water improvements made** (provide dates and description of each improvement) - **Rock Creek herd – identify specific location of the "255 wild horses" outside of HMA** (confirm whether horses are on Herd Area (HA) territories, if so identify HA); provide all history/documentation relating to this territory - **Rock Creek wild horses – identify water improvements** or protections made to streams in the "non-HMA areas" where horses currently reside - **Rock Creek wild horses – provide documentation of damage to streams** - **Rock Creek wild horses – identify livestock grazing in the "non-HMA areas"** where Rock Creek wild horses reside – specifically provide allocated and utilized AUMs, permitted usage dates for this specific area, any conditional usage, etc. - **Little Humboldt wild horses – identify/describe non-HMA areas** where horses reside (indicate whether locations are HA territories, BLM owned, privately owned, etc)	decision-making processes that are still in effect. Outside the scope of this analysis. See Map 5 of the EA. Additional information can be found in the Owyhee FMUD and the Final Grazing Management Decision and Record of Decision for the Sheep Complex, Big Springs and Owyhee Grazing Allotments, which is available for review at the Elko District Office. Outside the scope of this analysis. Refer to Maps 9-11 in the EA of the 2010 Invertory. Also see response to comment 79. Outside the scope of this analysis. See response comment 36. Outside the scope of this analysis.

			Refer to Section 3 of the EA.
113	Carol Able	Removing horses from herd areas is not in conformance with the law.	See BLM's response to comment 1 above.
114	Carol Able	The following are outdated and as such, their use in the document is not in conformance with the law: tiering to the 1987 Elko RMP, land health standards, land health assessments or decisions that are 6-29 years old, sage grouse guidelines that are 10 years old.	The documents listed are still the guiding documents for the district.
115	Individuals	Why isn't there an agreement with the private landowner to allow wild horse use at Bookkeeper Spring?	The law provides the landowner with the right to decide whether to make their privately owned water available for other uses and the landowner has elected not to do so. Agreements for use of private lands are outside the scope of the EA. Statement has been removed from the EA.
116	The Cloud Foundation	When the AML is set for a HMA it is not to include foals. We ask that you remove foals and young horses from the official population count or adjust AMLs upward accordingly.	The EA was modified see section 3. of the EA.
117	The Cloud Foundation	This EA and Gather Plan fails to adequately consider realistic alternatives to the permanent removal of 1,000 horses from the range. These include options for range improvements such as reseeding, water source enhancement and repair as well as fence removal.	Alternatives are addressed in Section 2 of the EA. Range improvements are outside the scope of this analysis.
118	The Cloud Foundation	Further, the 1990 the Government Accountability Office Report underscored that wild horse removals did not significantly improve range conditions. The report pointed to cattle as the culprit as they vastly outnumber horses on BLM-managed public lands. They reported that wild horse removals are not linked to range	Monitoring data specific to these HMAs indicates that the excess number of wild horses is a causal factor in not meeting rangeland health standards. See Section 3 of the EA.

		conditions and mentioned the lack of data provided by BLM.	
119	The Cloud Foundation	Fences should be removed from the HMA and livestock grazing reduced or eliminated. The horses are to be managed as *free-roaming wild horses* on their legal range. Wild horses will rotate and manage their grazing if allowed the mobility.	Outside the scope of this analysis.
120	The Cloud Foundation	It would make more sense to pay the permittees utilizing allotments within the HMA not to graze on the public lands and leave wild horses in greater numbers.	Outside the scope of this analysis and BLM lacks the legal authority to pay permittees not to graze.
121	The Cloud Foundation	Removal of older wild horses should not be allowed given the future they face and the expenditure of taxpayer dollars to remove a horse that may live only a few more years.	BLM follows the selective removal policy.
122	The Cloud Foundation	Although discounted in this EA as inadequate, "natural management" should always be the ultimate goal of your office and any BLM field office. I encourage you to work in coordination with Wyoming Game and Fish to stop issuing hunting permits for mountain lions in the area in order to allow for natural predation on the horse herds. In keeping with the protection of public lands and ecosystems, non-invasive management should be the ultimate goal.	Outside the scope of this analysis, additionally the Nevada Department of Wildlife manages hunting permits in Nevada.
123	The Cloud Foundation	Alternatives A and B include creation of an artificial 60-40 sex ration. We do not support this as skewing the sex ratio to control the population comes with significant social disruption to the herd and would likely result in compensatory reproduction as the herd works to re-establish a socially functional balance of	Comment noted.

		males and females.	
124	The Cloud Foundation	By increasing the number of males and decreasing the females, the fabric of wild horses society will be torn apart. There will be increased competition among the stallions to win and keep a mare; the health of the stallions and mares can decline due to all the excessive fighting and running; more injuries will occur, not only to stallions but to the mares and particularly to foals caught up in the melee. Mares could be raped and passed from stallion to stallion. If the relatively few number of females are also on infertility drugs, they will be coming into heat monthly during the spring, summer, and fall, They will be bred but will not settle and will come back into heat monthly. They will be eagerly and perhaps brutally fought over and pursued by the over population of males. It is easy to envision an unnaturally violent scenario replacing the relative calm and stability of wild horse society.	Based on available data there is no evidence of these impacts. Available data is inconclusive.
125	The Cloud Foundation	We appreciate the accounting of wild fires in this EA and Gather plan, but have the horses' role as valuable fire suppressors not been considered?	Outside the scope of this analysis. BLM would be interested in any data that you have on this topic.
126	American Wild Horse Preservation Campaign	it fails to consider the economic impacts of this management by roundup every two-four years policy. A cost benefit analysis, comparing the proposed management strategy to on-the-range management approaches must be included. · The EA should detail the costs for the gather, processing of horses, transport of horses to short-term holding, adoption procedures,	Outside the scope of this analysis.

		transport of horses to long-term holding and maintenance of unadopted horses in long-term holding facilities.	
127	American Wild Horse Preservation Campaign	It fails to note policy changes (vis a vis Secretary Salazar's plan for BLM reform), which includes balancing removals with adoption demand through aggressive use of fertility control, among other measures.	BLM is currently looking at aggressive fertility control within the Rock Creek and Little Humboldt HMAs. Additionally, every effort will be made to apply fertility control to the mares within the Owyhee HMA based on gather efficiency. Please refer to Section 2 of the EA.
128	American Wild Horse Preservation Campaign	It fails to note legal developments that have called into question the legality of BLM's off-the-range stockpiling of wild horses.	See response to comment 108 above.
129	American Wild Horse Preservation Campaign	What, if any, predator control programs other than hunting exist in the HMAs and what role BLM has in authorizing such programs to be conducted within designated HMAs.	Relative to the three HMAs and "predator hunting programs", the following excerpts are from the Nevada Department of Wildlife website as of May 27, 2010: *Mountain lion tags are available for residents and nonresidents to purchase over the counter (two per year) at NDOW offices. Mountain lion quotas are established for each of Nevada's three regions. When the harvest objective has been met for a given region, the lion season is closed in that region.* Please see NDOW website for more information.
130	American Wild Horse Preservation Campaign	Litigation pending in the U.S. District Court District of Columbia that has called into question the legality of the BLM's long term holding facilities.	See response to comment 108 above.
131	American Wild Horse Preservation Campaign	Wild horse populations could be *maintained* at current levels while the land use planning process to revise AML upward was undertaken. '	Data currently available to BLM shows that excess numbers of wild horses are present in the HMAs.
132	American Wild Horse Preservation Campaign	The EA fails to adequately assess the impacts of short- and long-term holding on any horses removed from this EA, including:	Refer to Section 3 of the EA.

		The physiological affects the physical and psychological health of the horses. (See AWHPC report on this topic, including Appendix 2, report by Dr. Bruce Nock, expert in the physiological effects of stress on animals.) The effects of permanent removal from the range, transportation and maintenance in short- and long-term holding facilities on individual horses are not adequately analyzed. The EA did not adequately evaluate the impacts of short- and long-term holding on individual horses. According to BLM's own documentation (Strategic Research Plan, Wild Horse and Burro Management, Oct. 2003/Revised March 2005) The omission of evaluation of the post-capture impacts on individual horses, which are noted in other BLM resource documents, renders this EA non-compliant with NEPA.	
133	Individuals	AWHPC asks that the roundup of horses from the Owyhee, Rock Creek and Little Humboldt HMAs be canceled.	Comment noted.
134	Individuals	The EA fails to adequately evaluate the impacts to the horses of helicopter stampede and permanent warehousing in BLM holding pens and pastures. A recent report by the American Wild Horse Preservation Campaign on the deaths of wild horses as a result of the roundup in the Calico Mountains Complex, found a vast majority of those fatalities were related to the stress and trauma from capture, loss of freedom and the destruction of	The EA adequately addresses the potentials impacts related to the gather operations as well as the maintenance and care of any excess animals. Gather operations adhere to Gather SOPs which further assures the animals welfare. BLM has not reviewed the identified report and therefore cannot comment on those alleged findings.

		wild horse family bands. The report included the opinion of Dr. Bruce Nock, Associate Professor at the Washington University School of Medicine and expert on the physiological effects of stress on animals that the capture and removal of wild horses "is extremely detrimental to their long-term health and soundness."	
135	In Defense of Animals	The Proposed Action will have significant and negative impacts on the affected region, the Owyhee, Rock Creek, and Little Humboldt Herd Management Areas (HMAs) and those individuals with interests in the region and in the management of wild horses. As you know, wild horses are subjects of significant public interest throughout the country.	The EA adequately addresses the potentials impacts related to the gather operations as well as the maintenance and care of any excess animals.
136		The need, as outlined in the EA, to "prevent undue or unnecessary degradation of the public lands and protect rangeland resources" can be accomplished through appropriate and adequate on-the-range management of wild horses – measures which the TFO has not implemented, continues to not implement and does not project to adequately implement in any documents provided to date.	The BLM is required to manage for the maximum amount of wild horses that won't lead to range deterioration
137		The Proposed Action and alternatives provided in the EA are insufficient and TFO is negligent in fulfilling its mandate to manage wild horses at "minimal feasible level" and therefore the Proposed Action should be postponed until the inadequacies outlined herein are addressed.	Under the law, BLM is required to manage wild horses in a thriving natural ecological balance and multiple use relationship on the public lands and to remove excess immediately upon a determination that excess wild horses exist. Refer to the EA (Section 1.1 – Purpose and Need).
138		The EA and Proposed Action are not in compliance with NEPA which requires the	See responses to comment 39. Refer to the NEPA Handbook 1790-1.

		assessment of reasonable alternatives that would avoid or minimize adverse effects of the Proposed Action (i.e. roundup and short-/long-term holding of wild horses).	
139		The TFO did not sufficiently provide reasonable alternatives to the Proposed Action. Instead TFO provided three meaningless variations (A, B, C) of the same proposal of rounding up wild horses from the three HMAs. The EA acknowledges the similarity of three of the four alternatives stating, "The proposed action and Alternatives B and C, primarily involve removal of excess wild horses." Alternative D is provided as a token alternative in an effort to seemingly fulfill NEPA requirements. However, this last alternative does not offer a meaningful alternative.	See response to comment 137
140		Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA). The EA is incorrect in claiming that the WFRHBA merely "directs the Secretary to immediately remove excess wild horses." In fact, the WFRHBA specifically instructs the Secretary to first "make determinations as to whether and where an overpopulation exists" and then to determine "whether action should be taken to remove excess animals." This provides the Secretary the discretion "whether action should be taken to remove excess animals." In fact the WFRHBA emphasizes the separation of the decision to deem horses "excess" from the action to	See response to comment 24.

		remove the excess horses by stating where the Secretary determines, "that an overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals" the horses shall be immediately removed. Therefore, given that the Secretary must make two determinations and has the discretion to consider actions outside of roundup and removal, the EA must analyze reasonable alternatives such as postponement of the roundup in order to revise RMP, reassess and increase AML, conduct range improvements to increase AML, etc.	
141		The EA claims that decreasing or eliminating livestock grazing in the HMAs is "inconsistent with the BLM's multiple use management mission." This claim suggests the TFO staff believes that merely reducing livestock grazing no longer fulfills FLPMA requirements. Livestock grazing is not required to fulfill FLPMA or BLM's multiple use management mission. BLM manages 253 million acres of public lands and allows livestock grazing on 160 million acres – does that mean that the 93 million acres not open to livestock grazing is not managed for multiple use? It is ridiculous for the EA to suggest that recreation opportunities available in the HMAs including exploration, horseback riding, day hiking, backpacking, natural history activities such as bird watching,	See responses to 1, 11 and 16. Under the 1976 Federal Land Policy and Management Act (FLPMA), BLM is required to manage public lands under the principles of multiple use and sustained yield. Managing use by cattle and sheep, together with wildlife and wild horses and burros, and a host of other uses is a key part of BLM's multiple-use management mission under FLPMA.

		rock hunting, landscape-nature photography, hunting, camping and other uses do not fulfill the BLM's multiple use mandate – and that only livestock grazing can fulfill that mandate.	

Attachment #1

Wildlife Species List Lower Sagebrush/Grassland Steppe, Northeastern Nevada (Main List)

Common Name	Scientific Name	Common Name	Scientific Name
Birds			
Turkey vulture	*Cathartes aura*	Horned bark	*Eremophila alpestris*
Bald eagle	*Haliaetus leucocephalus*	Barn swallow	*Hirundo rustica*
Northern harrier	*Circus cyaneus*	Black-billed magpie	*Pica pica*
Swainson's hawk	*Buteo swainsoni*	American crow	*Corvus brachyrhynchos*
Red-tailed hawk	*Buteo jamaicensis*	Common raven	*Corvus corax*
Ferruginous hawk	*Buteo regalis*	Rock wren	*Salpinctes obsoletus*
Rough-legged hawk	*Buteo lagopus*	Mountain bluebird	*Sialia currucoides*
Golden eagle	*Aquila chrysaetos*	American robin	*Turdus migratorius*
American kestrel	*Falco sparverius*	Sage thrasher	*Oreoscoptes montanus*
Merlin	*Falco columbarius*	Loggerhead shrike	*Lanius ludovicianus*
Prairie falcon	*Falco mexicanus*	Northern shrike	*Lanius excubitor*
Cray partridge	*Perdix perdix*	European starling	*Sturnus vulgaris*
Chukar	*Alectoris chukar*	Brewer's sparrow	*Pooecetes gramineus*
Sage grouse	*Centrocercus urophasianus*	Vesper sparrow	*Chondestes grammacus*
Mourning dove	*Zenaida macroura*	Lark sparrow	*Amphispiza belli*
Great Horned owl	*Bubo virginianus*	White-crowned sparrow	*Zonotrichia leucophrys*
Burrowing owl	*Athene cunicularia*	Lapland longspur	*Calcarius lapponicus*
Short-eared owl	*Asio flammeus*	Red-winged blackbird	*Agelaius phoeniceus*
Common nighthawk	*Chordeiles minor*	Western meadowlark	*Sturnella neglecta*
Broad-tailed hummingbird	*Selasphorus platycercus*	Brewer's blackbird	*Euphagus cyanocephalus*
Northern flicker	*Colaptes auratus*	Brown-headed cowbird	*Molothrus ater*
Gray flycatcher	*Epidonax wrightii*	Black rosy finch	*Leucosticte atrata*
Ash-throated flycatcher	*Myiarchus cinerascens*	Gray-crowned rosy finch	*Leucosticte tephrocotis*
Say's phoebe	*Sayornis saya*	House sparrow	*Passer domesticus*
Western kingbird	*Tyrannus verticalis*		
Mammals			
Little brown bat	*Myotis lucifugus*	Great Basin pocket mouse	*Perognathus parvus*
Long-eared myotis	*Myotis evotis*	Dark kangaroo mouse	*Microdipodops megacephalus*
Long-legged myotis	*Myotis volans*	Ord kangaroo rat	*Dipodomys ordii*
Small-footed myotis	*Myotis ciliolabrum*	Chisel-toothed kangaroo rat	*Dipodomys microps*
Silver-haired bat	*Lasionycteris noctivagan*	Deer mouse	*Peromyscus maniculatus*
Western pipistrelle	*Pipistrellus hesperus*	Northern grasshopper mouse	*Onychomys leucogaster*
Big brown bat	*Eptesicus fuscus*	Desert woodrat	*Neotoma lepida*
Townsend's big-eared bat	*Plecotus townsendii*	Sagebrush vole	*Lemmiscus curtatus*
Brazilian free-tailed bat	*Tadarida brasiliensis*	House mouse	*Mus musculus*
Black-tailed jackrabbit	*Lepus californicus*	Kit fox	*Vulpes macrotis*
Mountain cottontail	*Sylvilagus nuttal1ii*	Coyote	*Canis latrans*
Pygmy rabbit	*Sylvilagus idahoensis*	Long-tailed weasel	*Mustela frenata*
Townsend's ground squirrel	*Spermophilus townsendii*	Badger	*Taxidea taxus*

Common Name	Scientific Name	Common Name	Scientific Name
Belding ground squirrel	*Spermophilus be1dingi*	Striped skunk	*Mephitis mephitis*
Least chipmunk	*Tamias minimus*	Mountain lion	*Felix concolor*
Botta's pocket gopher	*Thomomys bottae*	Bobcat	*Lynx rufus*
Northern pocket gopher	*Thomomys talpoides*	Mule deer	*Odocoileus hemionus*
Little pocket mouse	*Perognathus longimembris*	Pronghorn	*Antilocapra americana*
Reptiles			
Western skink	*Eumeces skiltonianus*	Short-horned lizard	*Phrynosorna douglassii*
Western whiptail	*Cnemidophorus tigrus*	Long-nosed snake	*Rhinocheilus lecontei*
Desert collared lizard	*Crotaphytus insularis*	Ground snake	*Sonora semiannulata*
Long-nosed leopard lizard	*Gambelia wislizenii*	Night snake	*Hypsiglena torquata*
Desert spiny lizard	*Sceloporus magister*	Gopher snake	*Pituophis melanoleucus*
Sagebrush lizard	*Sceloporus graciosus*	Racer	*Coluber constrictor*
Western fence lizard	*Sceloporus cccidentalis*	Striped whipsnake	*Masticophis taeniatus*
Side-blotched lizard	*Uta stansburiana*	Western rattlesnake	*Crotalus viridis*
Desert horned lizard	*Phrynosorna platyrhinos*		

Attachment #2
Migratory Birds by Habitat Type

Aspen*	Montane Shrub*	Montane Riparian
Obligates**: None Other**: Northern Goshawk Calliope Hummingbird Flammulated Owl Lewis's Woodpecker Red-naped Sapsucker Mountain Bluebird Orange-crowned Warbler MacGillivray's Warbler Wilson's Warbler Other Associated Species*** Cooper's Hawk Northern Flicker Hermit Thrush Yellow-rumped Warbler Long-eared Owl	Obligates: None Other: Black Rosy Finch Black-throated Gray Warbler Calliope Hummingbird Cooper's Hawk Loggerhead Shrike Blue Grosbeak Vesper Sparrow MacGillivray's Warbler Orange-crowned Warbler Swainson's Hawk Western Bluebird	Obligates: Wilson's Warbler MacGillivray's Warbler Other: Cooper's Hawk Northern Goshawk Calliope Hummingbird Lewis's Woodpecker Red-Naped Sapsucker Orange-crowned Warbler Virginia's Warbler Yellow-breasted Chat Other Associated Species Warbling Vireo Broad-tailed Hummingbird Fox Sparrow Blue Grouse
Cliffs and Talus	Sagebrush	Lakes (Playas)****
Obligates: Prairie Falcon Black Rosy Finch Other: Ferruginous Hawk Other Associated Species Golden Eagle White-throated Swift Say's Phoebe Common Raven Cliff Swallow Violet-green Swallow Canyon Wren Rock Wren	Obligates: Sage Grouse Other: Black Rosy Finch Ferruginous Hawk Gray Flycatcher Loggerhead Shrike Vesper Sparrow Prairie Falcon Sage Sparrow Sage Thrasher Swainson's Hawk Burrowing Owl Calliope Hummingbird Other associated	Obligates (PIF-listed as Wetlands/Lakes): White-faced Ibis Snowy Plover American Avocet Black Tern Other (PIF-listed as Wetlands/Lakes): Sandhill Crane Long-billed Curlew Short-eared Owl Other Associated Species (Wetlands/Lakes) American bittern Great Egret

	species: Brewer's Sparrow Western Meadowlark Black-throated Sparrow Lark Sparrow Green-tailed Towhee Brewer's Blackbird Horned Lark Lark Sparrow	Snowy Egret Cattle Egret Black-crowned Night Heron Marsh Wren Common Yellowthroat Yellow-headed Blackbird

* Rock Creek and Little Humboldt HMAs

** "Obligates" are species that are found only in the habitat type described in the section. [Habitat needed during life cycle even though a significant portion of their life cycle is supported by other habitat types]

** "Other" are species that can be found in the habitat type described the Nevada Partners in Flight Bird Conservation Plan.

**** Other Associated (Wetlands/Lakes) Species are predominately associated with wetlands where emergent aquatic vegetation provides cover and foraging areas. Otherwise, snow pond/playas/manmade reservoirs could provide some seasonal habitat for some of the species shown.

Some of these migratory bird species are also designated as BLM Sensitive Species.

Attachment #3
Federally Listed & Candidate Species

BLM policy (516 DM 6840) defines special status species to include:

- Federally Threatened or Endangered Species: Any species that the U.S. Fish and Wildlife Service has listed as an endangered or threatened species under the Endangered Species Act throughout all or a significant portion of its range.
- Proposed Threatened or Endangered Species: Any species that the Fish and Wildlife Service has proposed for listing as a federally endangered or threatened species under the Endangered Species Act.
- Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.
- BLM Sensitive Species: Species 1) that are currently under status review by the U.S. Fish and Wildlife Service, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.
- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

FEDERALLY-LISTED THREATENED and ENDANGERED SPECIES and CANDIDATE SPECIES
Owyhee, Rock Creek and Little Humboldt HMAs Gather Plan

COMMON NAME	SCIENTIFIC NAME
Federally-Listed Endangered Species	
(California Condor)*	Gymnogyps californianus
Federally-Listed Threatened Species	
Lahontan Cutthroat Trout (LCT)	Oncorhynchus clarki henshawi
Federally-Proposed Threatened or Endangered Species	
(None)	(None)
Federally-Listed Candidate Species	
Greater Sage Grouse	Centrocercus urophasianus
(Yellow-billed Cuckoo)*	Coccyzus ameriacanus occidentalis

* These species are not known to occur on the HMAs. Neither BLM, NDOW nor other agency personnel, nor has academia personnel or the public documented and reported this species on the BLM Elko District including the Owyhee, Squaw Valley, Spanish Ranch or Little Humboldt allotments within the HMAs. Nor has there been any critical condor habitat designated on the Elko District by the U.S. Fish and Wildlife Service.

*Yellow-Billed Cuckoo – This candidate is a riparian obligate species and willow cover is an important habitat component. Willow cover is present in "scattered" stands with low foliar cover within the South Fork Owyhee River riparian corridor within the Owyhee HMA to more uniform stands on the Rock Creek and Little Humboldt HMAs. The presence of willow cover has increased in recent years as a result of livestock grazing actions including rest and deferment on the HMAs. However, neither BLM, NDOW nor other agency personnel, nor has academia personnel or the public documented and reported this species on the Owyhee, Squaw Valley, Spanish Ranch or Little Humboldt allotments.

Greater Sage Grouse Lek Definitions[1]:

Active - a lek that had two or more birds present during at least one of three or more visitations in a given breeding season. For a strutting ground to attain this status it must also have had two or more birds present during at least two years in a five-year period (Connelly et al. 2003).

Inactive - a lek that has been surveyed three or more times during one breeding season with no birds detected during the visitations and no sign observed on the lek. If a lek is only visited once during a breeding season and was surveyed under adequate conditions and no birds were observed at the location during the current and the previous year and no sign was observed at the lek, then an inactive status can be applied to the lek.

Unknown - a lek that may not have had birds present during the last visitation, but could be considered viable due to the presence of sign at the lek. This designation could be especially useful when weather conditions or observer arrival at a lek could be considered unsuitable to observe strutting behavior. The presence of a single strutting male would invoke the classification of the lek as unknown. A lek that was active in the previous year, but was inadequately sampled (as stated above) in the current year with no birds observed could also
be classified as unknown.

[1][As defined in *Greater Sage-Grouse Conservation Plan for Nevada and Eastern California First Edition . June 30, 2004* for Maps 7 and 8]

Attachment #4

Nevada BLM Sensitive Mammals

Owyhee, Rock Creek and Little Humboldt HMAs Gather Plan

COMMON NAME	SCIENTIFIC NAME
	Nevada BLM Sensitive Mammal Species
Pygmy rabbit	*Brachylagus idahoensis*
Preble's shrew	*Sorex pleblei*
Small-footed myotis	*Myotis ciliolabrum*
Long-eared myotis	*Myotis evotis*
Long-legged myotis	*Myotis volans*
Spotted bat	*Euderma maculatum*
Fringed myotis	*Myotis thysanodes*
Yuma myotis	*Myotis yumanensis*
Townsend's big-eared bat	*Plecotus townsendiii*

Preble's shrew - Preble's shrews are found in Nevada primarily in riparian habitat. Riparian areas on the HMAs provide potential habitat.

Bats

The cliffs, talus, shallow caves; rock crevices (including those surrounding some of the vegetated playas); trees; ephemeral, intermittent and perennial drainages, and mine shafts and adits provide potential bat roost sites on the HMAs. Foraging areas are provided on the uplands in the area where use could occur in concert with use on natural or artificially impounded water, drainage areas and riparian areas.

Small-footed myotis -- This bat species could occur in the HMAs. Roosting occurs primarily in caves or mine shafts or adits which potentially occur in or near the area.

Long-eared myotis. -- This bat species is relatively common throughout northeastern Nevada and could occur in the area. This bat has also been reported to be found within a variety of habitats.

Long-legged myotis -- This bat species uses a variety of sites for roosting and could potentially inhabit the area.

Spotted bat. Suitable habitat could occur in the area. Roosting sites include rock crevices on steep cliff faces which exist in the area.

Fringed myotis – This bat species is uncommon in the Great Basin. Shallow caves along the South Fork Owyhee River and on the Tuscarora and Snowstorm ranges could provide roosting habitat.

Yuma myotis - A record of this bat species occurring in northeast Nevada was noted as of the 2002 Nevada Bat Conservation Plan. Therefore, there is potential for this species to exist on the area. This species utilizes caves and rock crevices for roosting. These features exist in the area; however, the availability and suitability of caves is not known.

Townsend's big-eared bat – This species generally requires caves for roosting. The availability and suitability of caves on the HMAs is not known. This species has been documented near the

town of Midas about three miles south of the Little Humboldt HMA; therefore there is potential for it to exist on areas within the HMAs.

Nevada BLM Sensitive and State of Nevada-Listed Birds
OWYHEE, ROCK CREEK and LITTLE HUMBOLDT HMAs Gather PLAN

COMMON NAME	SCIENTIFIC NAME
Bald Eagle	*Haliaetus leucocephalus*
Golden Eagle	*Aquila chrysaetos*
Northern goshawk	*Accipiter gentalis*
Prairie Falcon	*Falco mexicanus*
American peregrine falcon	*Falco peregrinus*
Swainson's Hawk	*Buteo swainsoni*
Ferruginous Hawk	*Buteo regalis*
Burrowing Owl	*Athene cunicularia*
Long-eared owl	*Asio otus*
Short-eared Owl	*Asio flammeus*
Loggerhead Shrike	*Lanius ludovicianus*
Black-rosy Finch	*Leucosticte atrata*
Vesper Sparrow	*Poocetes gramineus*
Yellow-breasted chat	*Icteria virens*
Lewis' woodpecker	*Melanerpes lewis*
State of Nevada-Listed Species	
osprey	*Pandion haliatus*
white pelican	*Pelecanus erythrorhynchos*
white-faced ibis	*Plegadis chihi*

Raptors

Bald Eagle – On July 9, 2007, it was announced that the bald eagle has been removed (de-listed) from the list of threatened and endangered species. BLM is coordinating with the NDOW to ensure compliance with state regulations regarding the bald eagle. As of August 30, 2007, BLM policy is to consider the bald eagle as a BLM Sensitive Species.

After de-listing, bald eagles would continue to be protected under the Bald and Golden Eagle Protection Act (BGEPA), as amended, and the Migratory Bird Treaty Act. Both of these laws prohibit killing, selling or otherwise harming eagles, their nests, or their eggs. In June 2007, the Service clarified its regulations implementing the BGEPA and published the National Bald Eagle Management Guidelines. The Service is in the process of establishing a permit program under the BGEPA that would authorize limited take of bald and golden eagles consistent with the purpose and goal of the BGEPA. The Service has also prepared a post-delisting bald eagle monitoring plan.

Bald eagles may use the area due to suitable habitat for foraging primarily during the winter period or during migration. Observations have been documented to the east of the South Fork Owyhee River on the Petan Ranch within several miles of the Owyhee Allotment boundary. Bald eagles have also been observed to the south near Squaw Valley and Willow Creek Reservoir. Suitable habitat on uplands, irrigated lands and riparian areas is widely dispersed over tens of

thousands of acres with primary use occurring during the winter period or as a migrant throughout the Elko District.

Northern goshawk -- Suitable nesting (primarily aspen forest types) and foraging habitat occurs on the Rock Creek and Little Humboldy HMAs. This species would be considered as an occasional winter visitor on the Owyhee HMA.

Prairie Falcon -- The HMAs provide nesting (primarily cliff areas) and foraging habitat for this species where prey species are primarily small mammals. Black-tailed jackrabbits provide a primary forage base.

American peregrine falcon – This species is considered to be a potential migrant on the area with use of suitable habitat for foraging. There are no known nest sites on the HMAs.

Swainson's Hawk – Rock ledges or deciduous trees such as species of willows along the South Fork Owyhee River or quaking aspen stands on the Tuscarora and Snowstorm ranges provide primary potential nesting habitat. It is unknown if any nesting use occurs on any stands of deciduous trees on the HMAs. However, Swainson'd hawks have been documented on Pole Creek on the Little Humboldt Allotment ouside of the HMA. The variety of habitat on the area, as shown for migratory birds, provide foraging habitat during the summer period and during migration or seasonal movement events.

Ferruginous Hawk – In Nevada, this species prefers to nest in scattered juniper woodlands that are found on the edge of salt desert shrub or sagebrush vegetation types overlooking broad valleys. Juniper woodlands do not exist on the area. They could also nest on the top of tall sagebrush/other shrubs, rock outcrops, manmade structures or on deciduous trees such cottonwoods. Tall sagebrush/other shrubs could be defined as shrubs existing at about six feet in height or higher, out of the reach of potential ground-dwelling predators such as coyotes. Shrubs at this height could occur on some loamy bottom areas on the HMAs. Otherwise, the area provides foraging habitat during migration or seasonal movement events. Black-tailed jackrabbits and ground squirrels provide a forage base.

Burrowing Owl - This species has been documented on the area. Abandoned mammal burrows, such as those created by badgers, help to provide nesting habitat. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing, such as recent burned areas or areas near troughs, corrals, or livestock mineral licks where open terrain exists. This may be due to the lack of vegetation at these sites that allows increased visibility from the burrow entrance.

Long-Eared Owl – This species could potentially utilize older age class willows in riparian areas as nesting habitat. Foraging areas are provided in these same riparian areas as well as surrounding uplands.

Short-Eared Owl - The area provides nesting and documented foraging habitat for this ground-nesting species.

Other Sensitive Avian Species

Loggerhead Shrike – Potential nesting habitat is provided in the area primarily by basin and Wyoming big sagebrush. Foraging habitat is provided on sagebrush-grass areas with variable canopy cover of brush species. Loggerhead shrikes have been observed with an active nest with nestlings in the crown of a Wyoming big sagebrush plant on the area.

Vesper Sparrow – This species is a ground-nester. It is associated with sagebrush grasslands on the area. The area provides potential nesting and foraging habitat.

Black-rosy Finch – The area provides suitable winter habitat on sagebrush grasslands.

Yellow-breasted chat – Riparian areas with tree cover provide foraging and nesting habitat for this species.

Lewis' woodpecker - Riparian areas with tree cover provide foraging and nesting habitat for this species. Quaking aspen stands and adjoining uplands and riparian habitat would provide the primary habitat for this species on the Rock Creek and Little Humboldt HMAs.

Other BLM Sensitive Species (Fish)

Interior Redband Trout – This species occurs in Chino (Fourmile), Red Cow and Big Cottonwood Canyon creeks in the Rock Creek HMA.

State of Nevada-Listed Species

Osprey – There are no known nest sites in the area. The diet of this species is comprised almost exclusively of fish. Suitable foraging habitat exists on the South Fork Owyhee River and Desert Ranch Reservoir.

White Pelican – This species has been observed on Desert Ranch Reservoir and Willow Creek Reservoir which provides resting and potential foraging habitat.

White-faced ibis – The white-face ibis is a wetland-dependent species relative to formation of nest colonies in dense and tall emergent marsh vegetation. There is no known nesting habitation in the area. Foraging habitat is available but limited to riparian habitat associated with Fourmile Creek and the South Fork Owyhee River. Desert Ranch Reservoir provides resting habitat and limited foraging habitat. BLM personnel have observed this species foraging on flooded agricultural lands on the South Fork Owyhee River drainage including private lands on the IL and Desert ranches. During the late spring and summer, white-faced ibis have been observed in Northeastern Nevada flying relatively fast and direct in tight flocks within flooded areas including riparian corridors. It is unknown if these flocks are comprised of non-breeding birds. Individual white-faced ibis have been observed on occasion in Northern Nevada. They feed on aquatic insects, crustaceans, snails, and worms and nests in bulrushes or reeds.

Attachment #5

UNITED STATES GOVERNMENT
memorandum

DATE: June 3, 2010

REPLY TO ATTN OF: Kristine Dedolph
Range Technician, Wells Field Office, Elko BLM District

SUBJECT: Current Water Availability on Owyhee Allotment
TO: Owyhee HMA Monitoring File

On June 2, 2010, I conducted an assessment of remaining available water on the north part of the Owyhee Allotment, particularly, the Star Ridge area.

The previous week had seen measurable rainfall for the area, and water level in the reservoirs was higher than might be seen normally. I saw approximately 350 horses in the area of assessment.

SITE #	LOCATION UTMS (ZONE 11, NAD 83)	NOTES
1	11534356 X 4620002	Reservoir, at 50%, approx 3 weeks of water
2	Holding Field	Reservoir, trough at holding field, dry
3	11525317 X 46330159	Dry in 4-5 days
4	Line camp	Dry
5	11518486 X 4641248	Dry in 30 days
6	11518059 X 4641773	Muddy, dry in 4-5 days
7	11517831 X 4642164	Muddy, dry in 4-5 days
8	11517562 X 4642494	Dry in 30 days
9	11517557 X 4642930	Approx. 30 days of water left
10	11517239 X 4643477	Muddy, approx 10 days of water left
11	11516947 X 4643377	Good water, 60-90 days of water left.
12	11516187 X 4644635	Approx. 3 weeks water left
13	11514076 X 4646036	Approx. 3 weeks water left
14	11513047 X 4647734	Dry/muddy with lots of horse use, 300 head in sight of reservoir
15	11528813 X 463554	Reservoir on Devils Corral/WSA road, primarily used by cattle, but some horse use. 30 days till dry.

UNITED STATES GOVERNMENT
memorandum

DATE: 6-02-2010

REPLY TO ATTN OF: Jason Dobis, Range Technician, Tuscarora Field Office, Elko District Office

SUBJECT: Current Water Availability on Owyhee Allotment

TO: Owyhee HMA Monitoring File

On June 2, 2010, I looked at and conducted a visual assessment of available water on the south half of the Owyhee Allotment.

Site #	UTM Location	Note's
2 Middle Draw Res.	E534531 - N4597178	Dry, no water

Site #	UTM Location	Note's
3	E530656 – N4599215	Low, 1 to 2 weeks of water left

Site #	UTM Location	Note's
5	E526874 – N4602663	Low, 1 to 2 weeks of water left

Site #	UTM Location	Note's
6	E527597 – N4604777	Low, 4 to 5 days of water left

Site #	UTM Location	Note's
7	E530600 - N4612396	Low, 1 weeks or less of water left

Site #	UTM Location	Note's
8	E527542 – N4613564	Low, 1 weeks or less of water left

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