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Environmental Assessment
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FINAL

Fish Creek Herd Management Area Wild Horse Gather Plan



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U.S. Department of the Interior
Bureau of Land Management
Battle Mountain District
Mount Lewis Field Office
50 Bastian Road, Battle Mountain NV 89820



TABLE OF CONTENTS

1. Introduction	3
1.1. Background	3
1.2. Estimated Wild Horse Population	6
1.3. Purpose of and Need for the Proposed Action	8
1.4. Conformance with Existing Land Use Plans	10
1.5. Relationship to Statutes, Regulations, Policy, Plans or Other Environmental Analysis	11
1.6. Conformance with Rangeland Health Standards and Guidelines	12
1.7. Decision to be Made	13
1.8. Scoping and Identification of Issues	13
2. Proposed Action and Alternatives	15
2.1. Introduction	15
2.2. Proposed Action and Alternatives in Detail	16
2.3. Management Actions Common to Multiple Alternatives	21
2.4. Alternatives Comparison	27
2.5. Alternatives Considered but Eliminated from Detailed Analysis	28
3. Affected Environment and Environmental Consequences	32
3.1. General Description of the Affected Environment	34
3.2. Wild Horses	34
3.3. Livestock Management	66
3.4. Noxious Weeds, Invasive and Non-native Species	71
3.5. Rangeland Vegetation, Soils, Climate and Drought	74
3.6. Riparian-Wetland Resources and Water Quality	82
3.7. Threatened & Endangered Species, Special Status Species, Migratory Birds and Wildlife	92
3.8. Health and Safety	96
3.9. Wild Horse Gather Mitigation Measures	97
4. Cumulative Effects Analysis	99
4.1. Past, Present, and Reasonably Foreseeable Actions	99
4.2. Cumulative Impacts Summary	103
5. Monitoring and Mitigation Measures	106
6. List of Preparers	107
7. Consultation and Coordination	107
8. Public Involvement	107
9. List of References	108
Appendix A: Wild Horse and Burro Gather Plan and Standard Operating Procedures (SOPs)	110
Henneke Equine Body Condition Scoring System	122
Appendix B: Herd Management Area Background Information	126
Appendix C: Standard Operating Procedures for Population-level Fertility Control Treatments	139
Appendix D: Precipitation, Drought and Monitoring	141
Appendix E: Summary of Population Modeling	149
Appendix F: Daily Visitation Protocol and Ground Rules	160
Appendix G: Comprehensive Animal Welfare Policy	170
Appendix H: BLM Special Status Species	175
Appendix I: Genetic Analysis Report	177
Appendix F: Response to Comments	186
Map 1: Fish Creek HMA Gather Project Boundary	Section 1.1, page 4
Map 2: 2014 Population Inventory	Section 1.2, page 7
Map 3: Springs and Streams within the Fish Creek HMA	Section 3.6, page 86

Photos on cover clockwise from upper left: Wild horses in Antelope Valley, December 2014; Antelope Valley drought monitoring June 2014; the Slough, July 2014, wild horses in the Fish Creek HMA, June 2014; wild horses running in Antelope Valley, September, 2014 resource flight.

1. Introduction

The Bureau of Land Management (BLM) Mount Lewis Field Office (MLFO) is proposing to conduct a gather within the Fish Creek Herd Management Area (HMA). The gather would involve implementation of a long term management plan with the objective of slowing population growth and achieving the established Appropriate Management Level (AML) over the next ten years. The plan includes the use of multiple methods to initially and subsequently capture and treat mares with Population Growth Suppression (PGS) within the Fish Creek HMA. The Proposed Action includes an initial gather to be completed in 2015 which would include the capture of 500-549 wild horses and removal of 200 excess wild horses from the Fish Creek HMA. Approximately 300-349 wild horses would be released back to the range following the gather. The fertility control vaccine PZP (Porcine Zona Pellucida) or other current formulation would be applied to mares released back to the range (estimated 150-175 mares) to slow population growth. The Proposed Action and Alternatives are discussed in more detail in Section 2.0.

Due to National wild horse and burro program gather priorities and holding facility limitations, the BLM would not achieve the AML during this initial phase, but would continue to treat mares on an ongoing basis to continue to suppress reproduction, reduce population growth rates, and achieve the AML at some point in the future dependent upon the effectiveness and frequency of treatment methods and the ability to remove excess wild horses through future gathers. Although only mares would be administered the fertility control vaccine, the goal is to capture as much of the existing population as possible to maximize the number of mares treated. The gather and treatment activities would involve wild horses both inside and outside of the HMA boundaries within the areas noted on Map 1.

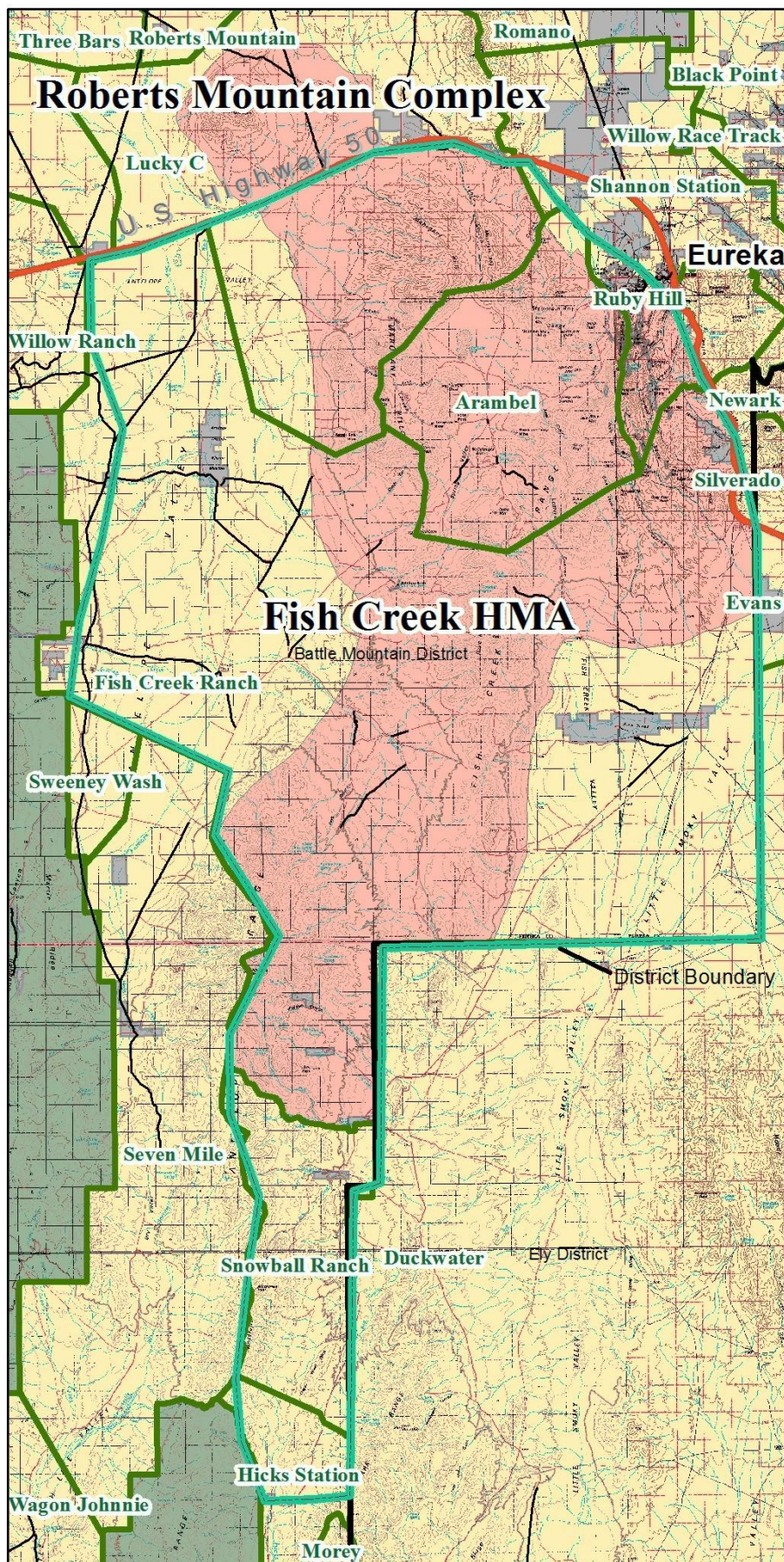
The MLFO may also hold on-site wild horse adoption events during or following the gathers to offer wild horses recently gathered from the Fish Creek HMA to qualified applicants for adoption. During the initial gather proposed for 2015, an estimated 15-20 wild horses would be offered at an on-site event.

This Environmental Assessment (EA) is a site-specific analysis of the potential impacts that could result from implementation of any one of the Action Alternatives. An EA provides sufficient information and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).¹ This EA ensures compliance with the National Environmental Policy Act (NEPA) by providing site-specific analysis of potential direct, indirect, and cumulative effects to the human environment associated with gathering and removing excess wild horses and implementing a PGS program within the Fish Creek HMA. Should a determination be made that implementation of the Proposed Action or Alternative actions would not result in “significant environmental impacts” a FONSI would be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

1.1. Background

Since the passage of the Wild Free-Roaming Horses and Burros Act (WFRHBA) of 1971, knowledge regarding management of wild horse population levels has increased. By law, BLM is required to remove excess animals once a determination has been made that excess animals are present and removal is necessary to address the current overpopulation. In the past two decades, program goals have shifted beyond establishing a “*thriving natural ecological balance*” (i.e. establishing AML for individual herds) and conducting gathers to achieving and maintaining wild horse populations within the established AML

1. 40 CFR § Sec. 1508.9.



Fish Creek HMA Wild Horse Gather EA Project Boundary

Mount Lewis Field Office

December 2014

Map 1

Legend

Area

Fish Creek HMA Gather Boundary

Major Roads

Interstate

US Highway

State Highway

BLM

County

District Office Boundary

Grazing Allotment Boundaries

Fish Creek Herd Management Area

Land Owner

Agency

BLM

Forest Service

Private



0 2.5 5 10 Miles

to manage for healthy wild horse populations and healthy rangelands. Management actions resulting from shifting the program emphasis include increasing fertility control and adjusting sex ratios to reduce population growth rates and increase gather intervals, improving the accuracy of population inventories and collecting genetic baseline data to support genetic health assessments. Decreasing numbers of excess wild horses removed while reducing population growth rates and ensuring the welfare of wild horses on the range is pertinent to these program goals and consistent with findings and recommendations from the National Academy of Sciences (NAS), American Horse Protection Association (AHPA), the American Association of Equine Practitioners (AAEP), Humane Society of the United States (HSUS), Government Accountability Office (GAO), Office of Inspector General (OIG) and current BLM policy. BLM's management of wild horses must also be consistent with Standards and Guidelines for Rangeland Health and for Healthy Wild Horse Populations developed by the Northeastern Great Basin Resource Advisory Council (RAC).

To further implement this strategy of increasing population growth controls as a management tool, the current gather schedules emphasize increased application of existing fertility control vaccines. This strategy's long term goal is to reduce population growth rates so the number of excess wild horses removed from the range are lower and at levels for which adoption demand exists. This EA will include analysis for gathers and population growth suppression that could be implemented within the Fish Creek HMA and areas outside of the HMA over the next ten years.

The Fish Creek HMA is located west of Eureka, Nevada, in Eureka County and shown on Map 1. The area covered by this EA falls within the jurisdictional boundary of the MLFO. The portion of the Fish Creek HMA located south of U.S. Highway 50 is the focus of the analysis within this EA. The portion north of U.S. Highway 50 is to be managed with the Roberts Mountain Complex. Throughout this document, any reference to the Fish Creek HMA is specific only to the portion of the HMA south of U.S. 50. The AML for wild horses within the Fish Creek HMA is displayed in the following table.

Table 1: Fish Creek HMA Appropriate Management Level

HMA/WHT	Allotment	Decision	AML (wild horses)
Fish Creek HMA	Arambel	FMUD ² 2004	32-54
	Fish Creek Ranch	FMUD 2004	45-75
	Lucky C	FMUD 2004	19-32 ³
	Ruby Hill	FMUD 2004	5-9
	Total AML		101-170³

In addition to these areas, future gathers could also include gathers of wild horses or burros outside of HMA and Herd Area boundaries in the Hicks Station, Snowball Ranch, or Morey Allotments (Refer to Map 1). These areas are not designated for management of wild horses, do not have an associated AML and wild horses present in these areas are considered excess and need to be removed.

The AML is defined as the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance⁴ in keeping with the multiple-use management concept for the area.

² Final Multiple Use Decision (FMUD).

³ This does not include the portion of the Fish Creek Allotment north of U.S. Highway 50 administered with the Roberts Mountain Complex (AML 6-10).

The AML for the allotments within the Fish Creek HMA was established through the FMUD issued by the MLFO September 27, 2004, following the analysis of monitoring data and completion of the Fish Creek Complex Evaluation and Rangeland Health Assessment and EA #NV062-EA04-69. The AML was determined to be the level of use by wild horses, which would provide for a thriving natural ecological balance and prevent deterioration of the range. The AML was also determined to be the level which would provide for healthy wild horse populations within the capacity of the habitat to provide forage and water. The AML was established following the collection, analysis, and interpretation of many years of monitoring data, which included precipitation, use pattern mapping, trend, production, census/inventory, and carrying capacity analysis, and through coordination with the interested public. Monitoring data including vegetation trend, utilization, water availability, wild horse inventory and distribution, actual use and climate data has been collected through an ongoing monitoring program since the AML was established. Refer to Appendix B for more detailed information about the HMA and to the documents identified in Section 1.5 for more detail about the AMLs for the Fish Creek HMA.

1.2. Estimated Wild Horse Population

The current population of the Fish Creek HMA is based on a helicopter inventory completed in March 2014, and adjusted for estimated foals born during the spring 2014. This inventory included only the portion of the HMA south of U.S. Highway 50, as the portion north will be managed in the future with the Roberts Mountain Complex.

The helicopter inventory resulted in a “direct count” made by three experienced BLM observers and the pilot. The Double Simultaneous Count (DSC) method was also applied. The DSC data has not been processed and the estimated population is based on the direct count. Refer to Map 2 which displays the distribution of wild horses observed during the March 2014 inventory.

The following table shows the estimated population, acres and AML for the Fish Creek HMA. The portion of the HMA north of U.S. Highway 50 is not included in these figures⁵.

Table 2: Fish Creek HMA Population and AML

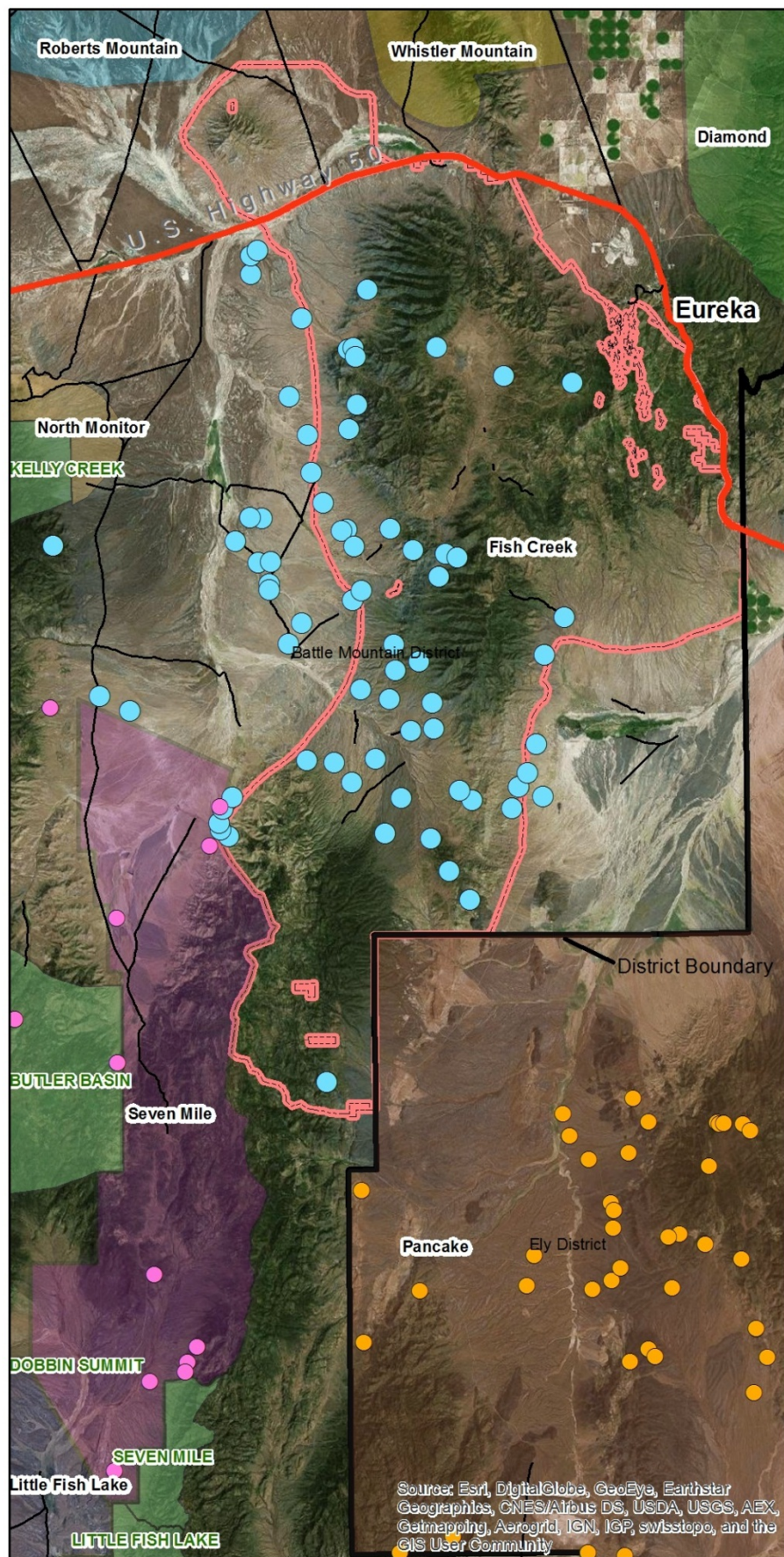
HMA	Acres	AML	2014 Inventory Direct Count	Estimated 2014 Population	% of AML
Fish Creek	230,675	101-170	478	549 ⁶	323 ⁷ %

4. The Interior Board of Land Appeals (IBLA) defined the goal for managing wild horse (or burro) populations in a thriving natural ecological balance as follows: “As the court stated in Dahl v. Clark, *supra* at 594, the ‘benchmark test’ for determining the suitable number of wild horses on the public range is ‘thriving ecological balance.’ In the words of the conference committee which adopted this standard: ‘The goal of WH&B management ***should be to maintain a thriving ecological balance between WH&B populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.’ ” (Animal Protection Institute of America v. Nevada BLM, 109 IBLA 115, 1989).

5 The portion of the Fish Creek HMA north of U.S. Highway 50 is 19,394 acres in size with an AML of 6-10 wild horses. This area is managed with the Roberts Mountain Complex.

6 The estimated post foaling population in 2014 was based on the number of adults counted during the March 2014 inventory plus an estimated annual rate of increase of 19%.

7 The % of AML does include estimated foals that would have been born during the spring 2014 beyond the 15 observed during the inventory in March. The % of AML of only the adults is estimated to be 272%.



Fish Creek HMA Wild Horse Gather EA 2014 Inventory

Mount Lewis Field Office

December 2014

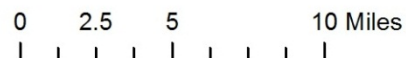
Map 2

Legend

- 2014 Fish Creek Inventory Points
- 2014 Sevenmile Inventory Points
- 2014 Pancake Inventory Points

Major Roads

- Interstate
- US Highway
- State Highway
- BLM
- County
- District Office Boundary
- Fish Creek Herd Management Area
- Nevada USFS Territories
- Other Herd Management Areas



The upper level of AML represents the maximum population for which a Thriving Natural Ecological Balance (TNEB) and multiple use relationship on the public lands can be maintained. The lower level represents the number of animals that should remain in the HMAs following a wild horse gather in order to allow for a periodic gather cycle. With implementation of PGS, such as fertility control with PZP, management goals include the achievement of a population within the AML range. *“Proper range management dictates removal of horses before the herd size causes damage to the range land. Thus, the optimum number of horses is somewhere below the number that would cause resource damage”* (118 IBLA 75). *We interpret the term AML...to mean that “optimum number” of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range* (109 IBLA 119 API 1989).

The Wild Horses and Burros Management Handbook also provides this definition of TNEB: Wild horses and burros are managed in a manner that assures significant progress is made toward achieving the Land Health Standards for upland vegetation and riparian plant communities, watershed function, and habitat quality for animal populations, as well as other site-specific or landscape-level objectives, including those necessary to protect and manage Threatened, Endangered, and Sensitive Species.

The most recent removal operations within the Fish Creek HMA were completed in summer 2005 and winter 2006. Those activities were analyzed within the *Fish Creek Complex Wild Horse Gather EA NV062-EA05-04, January 2005* that included the Fish Creek and several other HMAs and US Forest Service (USFS) Wild Horse Territories (WHTs) in the area, which are not included in the current gather proposals. No PGS has been implemented within the Fish Creek HMA since January 1998; at which time a one-year formulation of PZP was given to mares released following a gather. This EA tiers to the prior gather EA and the analysis contained therein is incorporated by reference.



McCullough Springs water haul, July 2014. A 3000 gallon storage tank keeps the trough full with use of a float.

1.3. Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to achieve and maintain the established AML through implementation of a population growth suppression program to reduce population growth rates and removal of excess wild horses from within and outside of the HMA boundaries. The proposed action would help prevent undue or unnecessary degradation of the public lands, and protect rangeland resources from deterioration associated with excess wild horses within the HMA, and to restore a thriving natural ecological balance and multiple use relationship on the public lands consistent with the provisions of Section 1333 (a) of the 1971 WFRHBA.

This action is needed to achieve a population size consistent with the established AML, remove wild horses from areas not designated for wild horse use, slow population growth rates, remove excess wild horses from within the HMA, protect rangeland resources from deterioration associated with an overpopulation of wild horses, and restore and maintain a thriving natural ecological balance and

multiple use relationship on the public lands consistent with the provisions of Section 3(b) (2) of the WFRHBA. Further, the action is needed to ensure current and future populations of healthy wild horses.

Based on a review of monitoring, inventory, and all other information available at this time, the MLFO has determined that 409 excess wild horses are currently present within the Fish Creek HMA. Excess wild horses need to be removed in order to comply with the WFRHBA, to achieve a population consistent with the established AML, meet Land Use Planning (LUP) objectives, and to restore a thriving natural ecological balance by preventing degradation of rangeland resources resulting from an overpopulation of wild horses. This assessment is based on factors including, but not limited to the following rationale:

- Severe and Extreme drought conditions experienced in the Fish Creek HMA since 2012 as documented by the U.S. Drought Monitor <http://droughtmonitor.unl.edu/>
- Field monitoring since 2012 has documented drought conditions and the effects to the health of water sources and upland vegetation, and availability of forage and water to wild horses.
- Due to drought conditions which have reduced water availability, coupled with the overpopulation of wild horses exceeding AML, water hauling has been necessary since 2012 to ensure adequate water for wild horses, to ward off emergency conditions and maintain wild horse health.
- The Fish Creek HMA has a history of emergency wild horse gathers primarily due to lack of water resources. As a result, the AML was established conservatively to take that into account.
- The current population of wild horses in the Fish Creek HMA is contributing to impacts to rangeland health including heavy utilization of key perennial forage species, trailing and erosion.
- The 2004 Rangeland Health Assessment involved a comprehensive evaluation of all of the grazing allotments within the HMA, use by wild horses, vegetation conditions and RAC Standards and Guidelines for Rangeland Health. Through this evaluation and subsequent FMUD, the AML was established for the wild horses in the Fish Creek HMA. The AML would be assessed through future Rangeland Health Assessments and the evaluation of monitoring data to determine if adjustments are needed.
- The current estimated wild horse population within the Fish Creek HMA exceeds the AML (101-170 wild horses) as established through the 2004 FMUD and wild horse use is exceeding the allocation for their use.
- Monitoring completed throughout the Fish Creek HMA since the AML was established, and since the most recent gather in 2006 does not indicate that AML should be adjusted. In fact, monitoring indicates that the established AML should be achieved in order to promote rangeland recovery, to make progress towards attainment of the RAC Standards and Guidelines for Rangeland Health, and to maintain a healthy wild horse population.

The AML for the Fish Creek HMA needs to be achieved and maintained to make progress towards improved rangeland health and prevent further decline of important wild horse habitat, and to ensure the long-term health and well-being of the wild horses. Maintaining wild horse populations consistent with the established AML would also promote progress towards attainment of RAC Standards and for Rangeland Health, Resource Management Plan and Allotment Specific Objectives. More detail about monitoring in the Fish Creek HMA is presented in Appendix D.

Comments received from the public for BLM gathers over the past few years have emphasized the desire for BLM to increase the use of fertility control in order to reduce the number of wild horses that have to be removed from the range or maintained in Long Term Pastures (LTPs). Since the mid-2000s,

support for fertility control programs has increased as a strategy to balance wild horse and burro population growth rates with the public adoption demand to control holding costs. This proposed gather is the result of National BLM direction to increase the use of fertility control to maintain wild horses within AML with fewer necessary removals.

In 2013, the National Academy of Sciences (NAS) issued a report summarizing their findings on various aspects of the wild horse and burro program. The report, *Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward* (NAS, 2013) concluded that PZP-22 was one of the most promising methods for fertility control, and that delivery of the one-year liquid formulations via darting could prove useful, though not likely practical in all areas.

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

And, in response to Environmental Protection Agency (EPA) official registration of the contraceptive vaccine: *“This is a win-win-win – good for horses, good for wildlands management, and good for taxpayers. Expanding the use of this proven contraceptive should lead to a significant reduction in wild horse gathering, relocation and costly pasturing in long term holding facilities”*(HSUS, 2012). http://www.humanesociety.org/news/press_releases/2012/02/EPA_Announces_First_Fertility_Control_Vaccine_for_Wild_Horses.html

The American Association of Equine Practitioners (AAEP) issued a BLM Task Force Report in August 2011 following their evaluation of handling procedures and animal welfare at wild horse gathers, and short and long term holding facilities. In the Executive Summary of this report is stated: *“Clearly the mission of the BLM Program – Healthy Ranges, Healthy Horses – is not a simple one. A central issue for all discussions involving the care and management of the wild horse population is controlling the reproductive rate of the wild horses on the range. The AAEP encourages the BLM to prioritize research and application of effective fertility control methods in order to reduce the foaling rate in wild herds”*.

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

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

Wild Horse & Burro Management Objectives:

- 1) To manage viable herds of sound, healthy wild horses in a wild and free-roaming state.
- 2) To initially manage wild horse populations at existing numbers based on the 1982 aerial counts and determine if this level of use can be maintained.

- 3) To manage wild horses within the areas which constituted their habitat at the time of the Wild and Free-Roaming Horse and Burro Act became law in 1971.

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

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

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

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

The 1978 amendments to the WFRHBA directs the continued “*policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values*”.

BLM policy Instruction Memorandum 2010-135, states at Section E: “*During gather or herd management area planning, the authorized officer will consider a range of alternatives to reduce (slow) population growth rates and extend gather cycles for all wild horse herds with annual growth rates greater than or equal to 5%. These alternatives may include (but are not limited to): fertility control, adjustments in the sex ratio in favor of males, a combination of fertility control and sex ratio adjustment, and management of selected HMAs for non-reproducing wild horses*”. Similar direction is also located at Section 4.5.3 of the Wild Horses and Burros Management Handbook H 4700-1.

The Fish Creek HMA discussed in this EA have not been designated as a “range” under 43 CFR § 4710.3-2.⁸

A comprehensive Rangeland Health Assessment and EA were completed in the process of establishing AML for wild horses in the Fish Creek HMA. This EA tiers to these existing documents and will

⁸There are currently four designated Wild Horse and Burro Ranges in the Western United States that are managed principally for wild horses and burros consistent with 43 CFR 4170.3-2. These are the Pryor Mountain Wild Horse Range in Montana; the Little Book Cliffs Wild Horse Range in Colorado; the Nevada Wild Horse Range and the Marietta Wild Burro Range in Nevada. Only the BLM Director or Assistant Director (as per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse and Burro Range after a full assessment of the impact on other resources through the land-use planning process.

incorporate relevant portions by reference, where applicable. These documents include the following:

- ◆ *Fish Creek Complex FMUD, September, 2004,*
- ◆ *Fish Creek Complex Evaluation and Rangeland Health Assessment, EA #NV062-EA04-69, August, 2004,*
- ◆ *Fish Creek Complex Evaluation and Rangeland Health Assessment, June, 2004,*

1.6. Conformance with Rangeland Health Standards and Guidelines

The Proposed Action is consistent with the Standards and Guidelines for Rangeland Health as developed by the Northeastern Great Basin RAC, specifically Standard 5: Healthy Wild Horse and Burro Populations.

STANDARD 5. HEALTHY WILD HORSE AND BURRO POPULATIONS:

Wild horses and burros exhibit characteristics of a healthy, productive, and diverse population. Age structure and sex ratios are appropriate to maintain the long term viability of the population as a distinct group. Herd management areas are able to provide suitable feed, water, cover and living space for wild horses and burros and maintain historic patterns of habitat use.

As indicated by:

Healthy rangelands that provide sufficient quantities and quality of forage and water to sustain the appropriate management level on a yearlong basis within a herd management area.

Wild horses and/or burros managed on a year-long basis for a condition class greater than or equal to five to allow them normal chances for survival in the winter (See glossary for equine body conditioning definitions).

Highly adoptable wild horses and burros that are readily available from herd management areas.

Wild horse and burro herds that exhibit appropriate age structure and sex ratio for short and long term genetic and reproductive health.

GUIDELINES:

- 5.1 Implement the objectives outlined in the Wild Free-Roaming Horses and Burros Tactical Plan for Nevada (May 1999).*
- 5.2 Manage for wild horses and/or burros in herd management areas based on the capability of the HMA to provide suitable feed, water, cover and living space for all multiple uses.*
- 5.3 Set appropriate Management Levels based on the most limiting habitat factor (eg. available water, suitable forage, living space and cover) in the context of multiple use.*
- 5.4 Manage herd management area populations to preserve and enhance physical and biological characteristics that are of historical significance to the herd.*
- 5.5 Manage wild horse and burro herds for short and long term increases and to enhance adoptability by ensuring that wild horses and burros displaying desirable traits are preserved in the herd thus providing a reproductive base to increase highly adoptable horses and burros for future demands.*
- 5.6 Identify and preserve historic traits and characteristics within the herd which have proven to be highly desirable by the adoption public to increase the long term availability of animals bearing these features.*

5.7 Wild horse and burro selective removal criteria are modified on a per herd basis to correct deficiencies in population age and sex ratios which threaten short and long term genetic diversity and reproductive health.

The complete NE Nevada RAC Standards and Guidelines are available here:

http://www.blm.gov/nv/st/en/res/resource_advisory/northeastern_great/s_gs/wild_horses.html

1.7. Decision to be Made

The authorized officer shall determine whether or not to implement wild horse gathers to implement population growth suppression, achieve and maintain the established AML and to remove excess wild horses from the range. The authorized officer may utilize portion(s) of any alternative to make their decision that they feel will fulfill the purpose and need for the action at hand.

The decision would not establish or adjust the AML, which was established through previous planning-level decisions. Monitoring and other available information confirms that an excess population of wild horses exists within the Fish Creek HMA and need to be removed in order to preserve a thriving natural ecological balance. Based on the available monitoring information that shows the excess wild horses are impacting rangeland resources, and the fact that the area has sustained three years of severe drought, it is not appropriate at this time to make adjustments to AML. Future decisions regarding long-term management within the HMA would continue to be accomplished with public involvement through a Herd Management Area Plan (HMAP) or other activity level management plans specific to the HMA based on available monitoring data. Additionally, the decision would not adjust livestock use, which also has been allocated through prior planning-level processes and decisions, and for which any adjustments must be made through the applicable regulatory procedures set forth at 43 CFR § 4100.

Questions arose during the public comment period about the objectives in this plan to achieve the established AML should adjustments be made to AML in future Rangeland Health Assessments, and how the Proposed Action would be affected by a revised RMP that may be issued in the coming years for the Battle Mountain District. Should the AML for the Fish Creek HMA be adjusted following future analysis and decision, the AML targets for this 10 year plan would also change. Prior to future management action, a review would be completed to determine if management direction has changed, which may require a new NEPA document.

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

1.8. Scoping and Identification of Issues

Comments by the interested public were received following issuance of the Preliminary Fish Creek EA between December 22 and January 23, 2015. The comments were reviewed and incorporated, as appropriate, into this Final EA. The following issues were identified as a result of internal scoping relative to the BLM's proposals for gathers and fertility control treatment of wild horses (mares) in the planning area, issues brought up by members of the public through other management activities within

the District, comments received on Wild Horse and Burro Gather EAs within Nevada, and comments received during the public comment period for the Fish Creek EA.

1. Potential impacts to individual wild horses and the herd.
 - Projected population size and annual growth rate
 - Expected effects to individual wild horses from handling stress
 - Expected effects to herd social structure
 - Expected effects of proposed fertility control application
 - Potential effects to genetic diversity
 - Potential effects to animal health and body condition
2. Potential impacts to vegetation/soils, and riparian/wetland.
 - Expected forage utilization, and changes in vegetation trend
 - Potential effects to vegetation/soils and riparian/wetland resources – indirect and direct
3. Potential impacts to wildlife, migratory birds, and special status species and their habitat.
 - Potential for temporary displacement, trampling or disturbance
 - Potential competition for forage and water over time

Other issues of concern include the following:

- Drought impacts to forage and water sources
- Animal health due to drought and limited water sources



Wild horses and cattle spread out across Antelope Valley, December 2014.

2. Proposed Action and Alternatives

2.1. Introduction

The following Section details the Proposed Action and Alternatives that will be analyzed in this EA, as well as alternatives considered, but not carried forward for analysis.

The Proposed Action and sequential Alternatives were developed to meet the Purpose and Need (i.e. to achieve and maintain AML, manage wild horses within identified HMA boundaries, remove excess wild horses from within and outside of HMA boundaries, reduce population growth rates, and ensure a thriving natural ecological balance). Additionally, these alternatives considered current National Wild Horse and Burro Program policy that directs the BLM to implement population growth suppression (PGS) measures during gathers in an effort to reduce population growth rates so as to reduce gather frequency and the number of excess wild horses that ultimately must be removed from the range in future gathers in order to maintain populations at AML. The Proposed Action and Alternatives were developed in consideration of the issues presently and previously identified during internal and external scoping and agency consultation. The following table provides a brief overview of the Alternatives which are further described in detail in Section 2.2.

Table 3: Overview of Proposed Action and Alternatives

Alternative	Description
Proposed Action: Multiple Gather Methods with Fertility Control	Over a ten year period, achieve and maintain a population within the AML range ⁹ (101-170 wild horses) through the implementation of the following: <ul style="list-style-type: none"> various gather methods (helicopter, bait/water trap), selective removal of excess wild horses, population growth suppression (PGS) using fertility control treatments (ZonaStat-H, PZP-22 or most current formulations)
Alternative 1: No Fertility Control	Over a ten year period, achieve and maintain a population within the AML range (101-170 wild horses) through the implementation of the following: <ul style="list-style-type: none"> various gather methods (helicopter, bait/water trap), selective or non-selective removal of excess wild horses <u>no</u> implementation of fertility control.
Alternative 2: Fertility Control with No Removals or Use of Helicopter	Over a ten year period implement the following: <ul style="list-style-type: none"> PGS using fertility control treatments (ZonaStat-H, PZP-22 or most current formulations) <u>no</u> use of helicopter drive trapping and no removal of wild horses bait and water trapping, darting
Alternative 3 Helicopter Gather with Limited Removals and Sex Ratio Adjustment	Over a ten year period, achieve and maintain a population within the AML range (101-170 wild horses) through the implementation of the following: <ul style="list-style-type: none"> helicopter drive trapping selective removal of excess wild horses PGS using fertility control treatments (PZP-22 or most current formulations) Sex ratio adjustment to favor studs.
Alternative 4: No Action	No gather or treatment for fertility control would occur.

⁹ Should the AML for the Fish Creek HMA be adjusted following future analysis and decision, the AML targets would be adjusted accordingly. Similarly, changes to management identified in a future RMP revision would be incorporated into this EA. Prior to future management actions, a review would be completed to determine if the management direction has changed which may require a new NEPA document.

2.2. Proposed Action and Alternatives in Detail

2.2.1. Proposed Action: Multiple Gather Methods with Fertility Control

The objective of the Proposed Action is to achieve the Purpose and Need through implementation of a ten year plan which includes the implementation of several gather methods, application of population growth suppression (PGS), and removal of excess wild horses.

The BLM would utilize helicopter drive trapping, and bait and water trapping to implement a PGS program and achieve and maintain the AML range (101-170 wild horses) through selective removal.

Due to National funding and holding space limitations, and anticipated gather efficiencies, the BLM cannot achieve the goals of the Proposed Action and attain the established AML through a single gather in 2015. The 2015 gather would therefore become the first phase in a long term population management strategy designed to address large scale wild horse gathers while still achieving BLM's management goals of attaining AML, reducing population growth rates, and obtaining a thriving natural ecological balance on the range as identified within the WFRHBA.

Under the Proposed Action, the BLM would gather approximately 500-549 wild horses in the initial 2015 gather event in order to treat mares with the 22-month time release pelleted PZP (PZP-22) or current formulation. This gather estimate is based on the ability to gather 90-100% of the horses, which will vary depending on many factors, and may be much less (75-85% efficiency). The higher number is used here to show the potential maximum that could be gathered with the highest efficiency. The initial 2015 gather would be conducted via helicopter drive trapping. Younger, adoptable wild horses including weanlings, yearlings, and two and three year old horses would be the primary target for removal, although older aged horses could be removed if needed to achieve the removal objectives. The goal for removal would be limited to 200 horses, based on National holding space availability and National gather priorities. The remaining 300-349 wild horses would be released to the range. Of those released, it is estimated that 150-175 would be mares treated with fertility control PZP-22 or current formulation. The sex ratio objective under the Proposed Action is for a 50:50 mare to stud ratio, without any adjustment in the ratio to favor studs.

Long term management goals for the Fish Creek HMA includes achievement and maintenance of the established AML (101-170 wild horses) and continued implementation of PGS. Under the Proposed Action, the BLM would continue to implement fertility control through bait and water trapping, darting and helicopter drive trapping. Darting could be utilized to booster treat mares initially treated with PZP-22. Bait and water trapping could be used to booster mares and retreat or initially treat mares with PZP-22, and provide for limited removals. Helicopter gathers would occur as needed to continue the population growth control protocols, remove excess wild horses and to achieve or maintain the established AML. Removals of wild horses could be implemented through the life of the plan to achieve the management targets, to relieve resource concerns and/or remove concentrated groups of excess wild horses both inside and outside the boundaries of the Fish Creek HMA.

Fertility control would be applied to all the released mares to decrease the future annual population growth and reduce the number of excess wild horses that would have to be removed during future gathers. The procedures to be followed for implementation of fertility control are detailed in Appendix C. Refer to Section 2.3.1 for more information about the application of fertility control.

A method to apply fertility control booster treatments through darting is included under the Proposed Action. BLM staff and approved volunteers would be certified to administer PZP via darting by an approved instructor in order to continue treatment of mares and maintain reduced population growth rates without the need for physically gathering wild horses. Darting would be completed from the ground (as compared to aurally). Booster treatments could occur year round and would be timed to occur prior to the existing PZP treatment is no longer effective.

Data collection and identification of animals for future documentation and PGS treatments would be as described below in Section 2.3.5.

Subsequent helicopter gather activities could be conducted during the period of July through February and in a manner consistent with those described in Section 2.3.

By implementing of a phased approach utilizing multiple gathering methods, the BLM would be able to reduce the population growth rate over time, and continue to treat an increasing number of mares with fertility control. The Proposed Action is consistent with current BLM policy and direction to reduce gather frequencies and the number of animals that need to be removed from the range over time through application of population growth suppression.

Table 4 displays the anticipated gather and removal figures. Because the Proposed Action involves a phased approach, Table 4 displays the estimated initial gather and removal numbers given current funding and holding space limitations.

Table 4: Estimated Populations and Proposed removals under Proposed Action (Phase I)

HMA	AML	Est. Population	Est. Gather Number ¹⁰	Est. Un-gathered	Est. treated mares	Est. to Remove	Est. Release	Est. Post-gather
Fish Creek	101-170	549	500-549	0-49	150-175	200	300-349	300-349

2.2.2. Alternative 1: Helicopter Gathers without Fertility Control

Alternative 1 is similar to the Proposed Action in that it includes the use of multiple gather methods over the next 10 years to capture wild horses, including helicopter drive trapping and water or bait trapping. This alternative includes both selective and non-selective removal options, however does not include the application of PGS such as PZP-22 or ZonaStat-H. Achievement of the population objectives would be through removals only. The removal goals would include achieving and maintaining AML.

As with the Proposed Action, National funding and holding space limitations, precludes the ability to remove adequate number of excess wild horses to achieve the established AML in a single gather in 2015. The 2015 gather would become the first phase to remove excess wild horses towards the AML goal. Gather and removal frequency would depend on National funding and holding availability, but could occur every 3-5 years. The number of excess wild horses to be removed in future gathers would be based on actual population increase, wild horse inventory flights and other relevant monitoring data.

10. Estimated gather numbers based on ability to capture in excess of 90-100% of the population, which could vary depending on terrain, animal location, weather conditions, and animal movement experienced before and during the gather, and may be much less.

Periodic gathers would be completed throughout the life of the document to implement selective removal of excess wild horses to achieve and maintain AML. Selective removal goals would be similar to those identified under the Proposed Action, and an emphasis would be placed on only removing more adoptable, younger wild horses. However, the removal numbers needed to achieve AML in future gather events may result in the need to remove wild horses in excess of 5 years of age or older. During the initial gather in 2015, selective removal would target horses 3 years of age or younger. In order to achieve these goals, as much of the entire population as possible would be gathered to allow the selection of only this age group for removal, and to allow for mostly adoptable horses to be transported to BLM preparation facilities for adoption.

If necessary to reach population goals, non-selective, or gate cut gathers could be implemented in the future whereas only a sufficient number of horses to achieve the removal target are actually captured, and no selective removal occurs. For example, if a gather was planned to remove 200 horses, the gather activities (helicopter or bait/water trap) would only be conducted until 200 horses were captured and removed. This would include the removal of all horses regardless of age, leaving the remaining population undisturbed.

If gather efficiencies utilizing a helicopter do not achieve the desired goals of Alternative 1, water/bait trapping may be utilized throughout the year during the life of the plan to remove sufficient numbers of wild horses to achieve the management targets, to relieve resource concerns and/or remove concentrated groups of excess wild horses both inside and outside the boundaries within the Fish Creek HMA.

Since PGS would not be implemented at this time, standard monitoring and inventory would occur, without additional monitoring to document animal movement or use patterns within the HMA. No horses would be freezemarked for future monitoring, and darting for fertility control would not occur.

Alternative 1 is not consistent with BLM policy or National direction for management of wild horses and burros, nor is consistent with current NAS recommendations. The following table displays the anticipated gather and removal numbers for Phase I.

Table 5: Estimated Populations and Proposed removals under Alternative 1 (Phase I)

HMA	AML	Est. Population	Est. Gather Number ¹¹	Est. Un-gathered	Est. treated mares	Est. to Remove	Est. Release	Est. Post-gather
Fish Creek	101-170	549	500-549	0-49	0	200	300-349	300-349

2.2.3. Alternative 2: Fertility Control with No Removals or Use of Helicopter

Though components of Alternative 2 resemble those in other Alternatives, it is quite different in that it does not include the use of helicopter drive trapping or the removal of any wild horses from the range. The BLM rarely considers bait and water trapping as the sole gather methods due to the fact that bait and water trapping are inefficient and unrealistically time consuming in large, remote wild horse populations. It is provided for analysis as “Fertility Control Only” Alternative.

11. Estimated gather numbers based on ability to capture in excess of 90-100% of the population, which could vary depending on terrain, animal location, weather conditions, and animal movement experienced before and during the gather, and may be much less.

No initial helicopter gather would be implemented within the Fish Creek HMA. Bait and water trapping could occur year round and would be implemented as described under the Section 2.3. Initial fertility control treatment and freezemarking of horses would be accomplished as the horses are initially bait and water trapped. Documentation and recordkeeping would require that the mares are easily identifiable. With an existing population estimate of 549 wild horses, it is unrealistic to believe that all mares could be effectively documented and tracked via photo documentation alone. In order to facilitate the freezemarking, aging, genetics sampling and fertility control application, the groups of horses gathered in the bait or water traps would be transported to a central holding corral where a working chute would be used to restrain the horses for the needed work to be accomplished before they were released back to the range.

Booster treatments could be applied through darting by certified applicators. Bait and water trapping would continue to be accomplished to implement booster treatment, initial treatment, re-treatment and identification of horses as necessary. Monitoring and tracking would be as described under the other fertility control alternatives, and trail camera photo analysis would be valuable in assessing usage patterns at waters and bait stations to improve treatment strategy and implementation.

Table 6: Estimated Populations and treatment under Alternative 2 (Phase I)

HMA	AML	Est. Population	Est. Gather Number ¹²	Est. Un-gathered	Est. treated mares	Est. to Remove	Est. Release	Est. Post-gather
Fish Creek	101-170	549	500-549	0-49	251-275	0	500-549	500-549

Though it is highly unlikely that all 500-549 of the wild horses could be effectively captured by bait and water trapping within the first year, for the purposes of the population modelling and this analysis, the assumption was made that a high percentage of the horses would be captured and treated the first year, with a high percentage of mares being treated/boostered annually via darting and bait and water trapping thereafter in order to show the highest possible effectiveness of this Alternative at controlling population growth, albeit unrealistic at this time within this HMA.

2.2.4. Alternative 3: Helicopter Gather with Limited Removals and Sex Ratio Adjustment

Alternative 3 would implement a ten year plan consisting of helicopter drive trapping and the implementation of population growth suppression (fertility control) to achieve the AML (101-170 wild horses) over the next 10 years. This Alternative also includes sex ratio adjustment to favor studs at a 60:40 ratio over mares. This alternative is similar to other ongoing fertility control/gather programs implemented within other Nevada HMAs; with the primary capture method identified as helicopter drive trapping.

Helicopter would be used as the sole gather method. Removals of wild horses could be implemented through the life of the plan to achieve the management targets, to relieve resource concerns and/or remove concentrated groups of excess wild horses both inside and outside the boundaries of the Fish Creek HMA. Small scale bait and water trapping throughout the year could be utilized but would not be the primary tool used to capture wild horses during future gather operations, and darting would not be used as a tool to continue implementation of fertility control.

12. Estimated gather numbers based on ability to capture in excess of 90-100% of the population, which could vary depending on terrain, animal location, weather conditions, and animal movement experienced before and during the gather, and may be much less.

The gather and removal numbers for the first phase implemented in 2015 would be identical to those described for the Proposed Action, with a target removal of 200 wild horses and a goal to capture as much of the population as possible to implement fertility control (PZP-22 or current formulation). Selective removal would be used to target horses aged at 3 years old and younger for removal in the initial phase. Gather activities for helicopter drive trapping would be as described elsewhere in this section.

Future gathers would implement selective removal to the extent possible to target only younger age groups (≤ 4 years of age) for removal in order to ensure that highly adoptable wild horses are transported to BLM preparation facilities and that less adoptable horses are not.

Gather frequency would depend on National funding and holding availability, but could occur every 2-3 years (starting in 2017 or 2018) for a period of ten years to continue the population growth control protocols of treating and/or re-treating mares with fertility control and to achieve and maintain low range AML by using limited removals of excess wild horses. The number of excess wild horses to be removed in future gathers would be based on actual population increase, wild horse inventory flights and other relevant monitoring data.

Because the 2015 gather would not allow for low AML to be achieved initially, in order to reduce resource impacts and promote recovery and improvement of rangeland health, the sex ratio of the 2015 post gather population would be adjusted to 60% studs to further slow population growth until another gather could occur to achieve the low AML. If future budget and holding space limitations continue to preclude achievement of low AML, sex ratio adjustment and fertility control measures would continue to be implemented. If follow-up gathers are able to achieve low AML, only fertility control would be implemented as a population control, with sex ratio adjustment reserved for those follow-up gathers that do not allow for achievement of the low AML.



A group of roan horses in the Fish Creek HMA, 2005.

Table 7 below identifies the anticipated gather and removal numbers under the first phase of this Alternative.

Table 7: Estimated Populations and treatment under Alternative 3 (Phase I)

HMA	AML	Est. Population	Est. Gather Number ¹³	Est. Un-gathered	Est. treated mares	Est. to Remove	Est. Release	Est. Post-gather
Fish Creek	101-170	549	500-549	0-49	150-175	200	300-349	300-349

13. Estimated gather numbers based on ability to capture in excess of 90-100% of the population, which could vary depending on terrain, animal location, weather conditions, and animal movement experienced before and during the gather, and may be much less.

2.2.5. Alternative 4: No Action Alternative (No Wild Horse Gather)

Under the No Action Alternative, a wild horse gather would not be conducted within the Fish Creek HMA. Wild horse populations would not be actively managed at this time and excess wild horses would not be removed from areas outside of HMA boundaries that are not designated for use by wild horses. No population growth suppression program would be implemented within this HMA.

The current estimated population of 549 wild horses would continue to increase at an estimated rate of 18-20% annually. The established AML range of 101-170 within the Fish Creek HMA would continue to be exceeded. Additionally, implementation of the No Action Alternative would not result in progress towards attainment of the RAC Standards for Rangeland Health, or LUP Objectives for the Fish Creek HMA and associated allotments or progress towards the improvement of rangeland conditions.

The No Action Alternative would not achieve the Purpose and Need identified in Section 1.3. However, it is analyzed in this EA to provide a basis for comparison with the action alternatives, and to assess the effects of not conducting a gather at this time. The No Action Alternative would not be consistent with the requirement under the WFRHBA to remove excess wild horses and burros from public lands and is also not in conformance with regulatory provisions for management of wild horses and burros as set forth at 43 CFR § 4700.

2.3. Management Actions Common to Multiple Alternatives

2.3.1 Population Growth Suppression (Proposed Action, Alternative 2 and 3)

The BLM currently uses two PZP formulations for fertility control of mares. The most effective is a one-year liquid vaccine that must be re-administered annually. This vaccine, known as ZonaStat-H, was registered in February 2012 with the EPA for preventing pregnancy in wild horse mares.

http://www.humanesociety.org/news/press_releases/2012/02/EPA_Announces_First_Fertility_Control_Vaccine_for_Wild_Horses.html

Developed in collaboration with Dr. Jay F. Kirkpatrick, Director of the Science and Conservation Center in Billings, MT, ZonaStat-H is based on PZP, a protein which when injected, produces antigens that bind the sperm receptor sites and render the animal infertile. <http://www.pzpinfo.org/pzp.html>

It is not feasible to gather wild horse herds every year to administer the ZonaStat-H form of the vaccine. In a few herds, horses can be treated by darting each year, but darting is generally not practical for BLM because it is difficult to approach most wild horses close enough on Western rangelands. For this reason, the BLM mostly uses a longer-lasting, 22-month, pelleted PZP agent (PZP-22). The pelleted vaccine has been successfully administered by darting into a few mares, but typically it is hand-injected after the mares have been captured. This method of treatment means that during gathers, more mares need to be captured (for treatment and release) than would actually be removed from the range if removal was the only goal. While this is usually possible, it can be difficult to capture a large enough fraction of the population so that significant numbers can be treated and released. Maximum effectiveness of PZP-22 is achieved when the mares are treated during a three- to four-month window prior to foaling.

http://www.blm.gov/wo/st/en/prog/whbprogram/science_and_research/fertility_control.html

The procedures to be followed for the implementation of fertility control are detailed in Appendix C. For the PZP-22 formulation administered during gathers, each released mare would receive a single dose

of the two-year PZP contraceptive vaccine. The PZP-22 components include a liquid dose of the ZonaStat-H and a vaccination of time release pellets that dissolve at 1, 3 and 12 months after application, with a potential effectiveness of 22 months. The pellets are applied to the mare with a large gauge needle and jab-stick into the hip. At this time, a proven method is not available to apply the pellets via darting, though trials are underway to explore appropriate mechanisms for the delivery of the pellets by darting.

Booster treatment with ZonaStat-H (or other current formulation) may be necessary on an annual basis to maintain effective treatment success. Trained applicators would dart mares through multiple methods on the range. Blinds made of camouflaged material would be used at water sources to obscure applicators and allow efficient treatment of as many mares as possible. This PGS plan does not include aerial application of a fertility control vaccine.

It is anticipated that bait and water trapping and periodic helicopter removals would be necessary to continue to apply identifying freezemarks to mares born on the range, collect samples for fertility control and remove excess wild horses to achieve and maintain the established AML.

References in this document to PZP include the PZP-22 and ZonaStat-H formulations discussed above. Other formulations approved for use by BLM may be applied through future gathers or darting activities.

2.3.2. Helicopter Drive Trapping (Proposed Action, Alternative 1 and 3)

The Proposed Action, and Alternatives 1 and 3 include the use of helicopter drive trapping to gather wild horses. In addition to helicopter, roping from horseback could also be used when necessary.

The initial proposed gather is scheduled to take place in February 2015 and would be completed in accordance with this EA, Wild Horse and Burro Gather Plan and Standard Operating Procedures (SOPs; Appendix A) and BLM's Comprehensive Animal Welfare Policy (CAWP) IM WO 2013-059, (Appendix G) in addition to any additional BLM State or National policy and guidance in place at that time.



Deer and wild horses at McCullough Spring prior to water hauling in 2012, taken with trail camera.

The BLM would be responsible for contractor compliance to National contract specifications including SOPs. The BLM is committed to the well-being and responsible care of wild horses and burros we manage. At all times, the care and treatment provided by the BLM and the gather contractors will be characterized by *compassion and concern* for the animal's well-being and welfare needs. BLM Wild Horse and Burro Specialists would be on site at all times during gather operations to ensure wild horse safety and humane

treatment. Measures to reduce stress and injury and ensure the highest levels of safety are described throughout Section 2.3, 3.2, 3.9 and Appendix A.

Capture success may vary depending on topography, weather, and location of the wild horses, and their level of awareness of humans. Under the Proposed Action and Alternative 3, the BLM would attempt to gather a sufficient number of wild horses beyond the excess wild horses to be removed, so as to allow for the application of fertility control to all breeding age mares that are released.

A USDA Animal and Plant Inspection Service (APHIS) or other veterinarian would be on-site during helicopter gathers, as needed, to examine animals and make recommendations to the BLM for care and treatment of wild horses.

2.3.3. Bait and Water Trapping (All Action Alternatives)

Future gather activities could be achieved through bait or water trapping if determined to meet the removal and fertility control treatment objectives. Bait/water trapping would be completed by using a qualified bait/water trapping contractor, or would be completed “in-house” by BLM staff.

Bait or water trapping would involve placement of capture corrals at water locations or strategically located “bait stations”. Multiple gather sites (trap corrals) would be used. Trap corrals may be left in place for several months to allow wild horses to become acclimated to the structures. Bait and water trap corrals would either be manually operated by humans or affixed with triggers to automatically close the gates as wild horses enter the corrals. During active bait and water trapping operations, corrals would be checked daily. Real-time remote cameras could also assist with monitoring capture success.

Once captured, BLM could apply booster treatments (Under the Proposed Action and Alternative 2) to mares within the corral through darting. Alternately, groups of horses could be transported to central holding corrals where horses could be examined for age and health, and previously untreated and unidentified mares receive freezemarks, fertility control treatment and sampled for genetics. Once treated, the group of horses would be released back to the range together. If wild horses are identified for removal at this time, they would be sorted off into separate pens and cared for as described for helicopter gathers (refer to Appendix A).

2.3.4. Fertility Control Booster Treatment (Proposed Action, Alternative 2)

Booster treatment with ZonaStat-H (or other current formulation) may be necessary on an annual basis to maintain effective treatment success. It is anticipated that annual darting of 100% of all identified mares would not be feasible. Implementation of a solid darting strategy could result in treatment of an estimated 85-90% of the identified mares annually.

Applicators would dart mares through multiple methods on the range. Blinds made of camouflaged material would be used at water sources to obscure applicators and allow efficient treatment of as many mares as possible.

2.3.5. Animal Identification and Monitoring

Standard herd health and characteristics data would be collected as part of continued monitoring of the wild horse herds. Other data, including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may also be recorded for all gathered wild horses.

Hair samples would be collected from an adequate sample size of released wild horses during the initial gather project in order to monitor the genetic health of the wild horses. The initial sampling would be no less than 25% of the horses released; however all wild horses released to the range during the initial

gather could be sampled. Future bait/water or helicopter gathers could involve sampling a portion or all of the horses released to the range to continue monitoring of the genetic variability of the HMA. There is an interest to be able to increase the monitoring and tracking of the genetics within this HMA, possibly by individual animal verses the population based genetic variability. The MLFO would work with the contract geneticist to develop a genetic monitoring plan for this HMA to complement the additional data that could be collected through the PGS program.

Population inventories and routine resource/habitat monitoring would be completed between gather cycles to document current population levels, growth rates, and areas of continued resource concern (wild horse concentrations, riparian impacts, over-utilization, etc.) on an ongoing basis. Helicopter inventory flight may be conducted prior to or following the gather or trapping activities to collect information about wild horse numbers and distribution within the HMA.

Standard procedure for fertility control application is to apply a two letter freezemark to the left hip of each mare receiving treatment with additional identifying freezemarks to the neck to indicate repeated treatments.

In addition to standard information, additional data could be collected for released wild horses in order to facilitate the future management of the Fish Creek HMA and the fertility control program. This information could include additional data about the treated and released mares, and photo documentation of released mares and studs.

In addition to standard fertility control freezemarks, wild mares treated with fertility control could receive an additional freezemark for future identification. This would be through a 1-3 number freezemark on the hip or other appropriate location.

The identifying freezemark would be vital to tracking mare health, treatment effectiveness and allowing for documentation of future booster treatments of PZP. Freezemarks applied on the mares would enable staff to track the treatment status of each mare, as well as record other pertinent data such as body condition, pregnancy or lactation status, and other data. It is possible that studs released to the range may also be given an identifying freezemark, which could be a 1-3 letter or number to allow improved data collection about movement and behavior patterns in the future.

The use of trail cameras at springs and other key locations would provide ongoing data about wild horse use patterns, body condition and health, and presence or absence of foals. Unique freezemarks on treated mares would facilitate tracking and documentation of movement and behavior patterns through analysis of trail camera photos. The data compilation and analysis would be used to assess the effectiveness of treatment modes and make adjustments to the PGS program. Data would also be assessed to monitor and track herd and rangeland health.

Should tracking collars or other approved tracking mechanism such as GPS microchip, become available that are shown to be safe for use in wild horse herds, select number of released horses could be fitted with collars or chips to further facilitate data collection related to movement patterns.

It is anticipated that bait and water trapping and periodic helicopter removals would be necessary to continue to apply identifying freezemarks to mares born on the range, and collect samples for genetics analysis.

Since all mares treated with fertility control would be individually identified, and studs released to the range may receive an HMA brand, there may exist opportunities to collect and assess data that previously has not been available. Increased monitoring in the field and via trail cameras, as well as that data collected during treatment activities would be valuable for inclusion into an HMAP and for use to make determinations about future management activities.

2.3.6. Activities Common to Bait/Water Trapping and Helicopter Gathers (As Applicable to the Alternatives)

All gather activities would be conducted in a manner consistent with those described in this document and in conformance with the SOPs in Appendix A, BLM's CAWP IM WO 2013-059, and any additional BLM State or National policy and guidance in place at that time. If a contractor is used, the BLM would be responsible for contractor compliance to national contract specifications including SOPs. Funding limitations and competing priorities may require delaying the future follow-up gathers and population control activities (as identified). Future gathers could be conducted in either summer or winter months.

During gather activities, horses would be sorted by age and sex, and selected either for release back to their respective HMA, or transported to BLM wild horse adoption, preparation or holding facilities, where they would be prepared for adoption and/or sale to qualified individuals who can provide them with a good home or for transfer to long-term grassland pastures (LTPs).

Objectives for the Fish Creek HMA regardless of gather method include ensuring that the population consist of diverse age groups and reflect the historic range of characteristics for this HMA. Wild horses would also be selected for release back to the Fish Creek HMA, based on age, health, demeanor, and other desirable historic characteristics.

Through gathers and population growth suppression (Proposed Action, Alternative 2 and 3), the goal is to reduce population growth, and reduce the number of excess wild horses that need to be removed through future gathers in order to achieve and maintain the established AML. To that end, priority for removal of wild horses gathered from within the Fish Creek HMA would be given to animals that were three years of age or younger, and more desirable for adoptable. It is anticipated that most animals released would be 5-20 years of age, and that less adoptable horses, due to age, would not be transported to BLM holding facilities. An emphasis would be placed on releasing older mares and stallions (15+ years of age) back into the HMA to avoid the stress of transportation and handling on older wild horses. However, if necessary to achieve the post-gather population objective, animals within the older age class could be selected for removal, particularly if wild horses are gathered from areas outside of the HMA boundaries (such as Hicks Station and Snowball Allotments).

Most foals would be 6-9 months of age or older and of weaning age. In order to transport only the most highly adoptable wild horses to BLM adoption preparation or holding facilities, weanable foals and yearlings may be the focus for removal during future gathers, particularly if small removal targets exist. If foals too young to wean are encountered, they would either be transported to the BLM holding facilities with their mothers, or released with their dam if it the safety of the foal could be ensured.

The number of excess wild horses to be removed in future gathers would be based on estimated population increase, wild horse inventory flights and other relevant monitoring data. Future gathers would involve notification to the interested public. A review would be completed to determine if the management direction has changed which may require a new NEPA document.

Wild horses captured from outside of the HMA boundaries or from private lands could be removed regardless of characteristics or age and may not be released back into the HMA, contingent upon removal targets approved, known wild horse movement patterns in the area, and other factors.

Since gather efficiency, even with helicopter gathers rarely exceeds 85-90%, at least 10-15% of wild horses would be left uncaptured and consist of normal age structures and sex ratios. Additionally, these uncaptured mares would not be treated with population growth suppression (under the Fertility Control Alternatives). Future gather efficiency could be much lower, resulting in a larger percentage of the population evading capture. Bait and water trapping would likely not be on the scale to gather every single horse, or even a majority of the population and in most cases would be used to supplement removals and population growth suppression treatments in addition to darting activities and periodic helicopter gathers if they become necessary to meet population objectives (as identified for specific Alternatives).

On-site adoption events could be planned to occur in conjunction with the gather activities in which selected wild horses would be adopted to qualified applicants at an event held near the gather location following standard screening and approval procedures.

Should the AML be adjusted through future Rangeland Health Assessments, or other similar analysis, the future removal numbers would be adjusted accordingly. Similarly, management changes identified in a future RMP revision would be implemented as appropriate during future treatment and gather activities. Herd health, rangeland monitoring, and other data would be assessed to determine the number of horses that need to be removed in subsequent gathers. Growth rates, genetics data and other herd characteristics would be examined to determine if all, or which mares should be treated.

All gather sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System (GPS) equipment and provided to the BMD Noxious Weed Specialist for monitoring following the gather.

Multiple gather sites (traps) would be used to gather wild horses both from within and outside the HMA boundaries within the Fish Creek HMA (both helicopter and bait/water gathers). The BLM would make every effort to place gather sites in previously disturbed areas, but if new sites need to be used, a cultural resource survey would be completed prior to using the new gather site. All cultural materials located would be treated as unevaluated sites and avoided by project re-design. No gather sites would be set up near greater sage-grouse leks, known populations of Sensitive Species; or in riparian areas, cultural resource sites, Wilderness Study Areas (WSAs), or Wilderness.

Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy (Washington Office Instruction Memorandum 2009-041). Refer to: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-041.html. Old, sick or lame horses unable to maintain an acceptable body condition (greater than or equal to a Henneke body condition score (BCS) of 3 or with serious physical defects such as club feet, severe limb deformities, severe loss or wear of teeth or sway back would be humanely euthanized as an act of mercy.

2.3.7. Public Observation

Public observation of the helicopter gather activities on public lands would be allowed in accordance with observation protocols intended to minimize potential for harm to members of the public, to

government and contractor staff, and to the wild horses being gathered, and would be consistent with BLM IM No. 2010-164 and in compliance with the Wild Horse Observation Protocol found in Appendix F. Public observation sites would be established in locations that reduce safety risks to the public (e.g., from helicopter-related debris or from the rare helicopter crash landing, or from the potential path of gathered wild horses), to the wild horses (e.g., by ensuring observers would not be in the line of vision of wild horses being moved to the gather site), and to contractors and BLM employees who must remain focused on the gather operations and the health and well-being of the wild horses.

The Wild Horse Observation Protocol (Appendix F) provides the public with the opportunity to safely observe the gather operations. Every attempt would be made to identify one or more observation sites at the gather location that offer meaningful viewing opportunities and reasonable access with the objective of observing individual animals captured, although there may be circumstances (flat terrain, limited vegetative cover, private lands, etc.) that require viewing locations to be at greater distances from the gather site due to public visitor access limitations or to ensure safe gather operations.

The public has expressed interest in being involved with bait/water trap gathers with the understanding that humans cannot be present during trapping operations due to the nature of this type of a gather (if people are near, the horses would not enter the trap corrals). In order to keep the public informed and allow reasonable access to the gather operations, the MLFO would schedule site visits by appointment to view the bait/water trap corrals, and ask questions. Throughout the trapping activities, the BLM would attempt to provide opportunities for the public to be present when horses have been captured and view them in the trap and/or holding corrals.

The MLFO would make reasonable efforts to allow for public viewing of the captured horses within the limitations and fluid nature of bait/water trapping. Additionally, the BLM Project Inspector (PI) and/or Contracting Officer's Representative (COR) would take digital photographs of the horses in the pens each day a capture occurs as well as when they are in the holding corrals and during loading to facilities and post them on Flickr® or other platform on a daily basis (within staff availability), and report the daily capture numbers, update on animal health or other notable information on a designated Fish Creek HMA Gather website.

2.4. Alternatives Comparison

The following tables provide a comparative overview of the Alternatives described above. Table 9 displays the proposed gather figures under Phase 1 of each of the Action Alternatives.

Table 8: Comparison of Alternatives Components

Alternative	Helicopter Drive Trapping	Bait and Water Trapping	Population Growth Suppression (Fertility Control)	Booster/ Darting	Sex Ratio Adjustment	Selective Removal	Non-Selective Removal (Gate Cut)
Proposed Action	√	√	√	√	No	√	No
Alternative 1	√	√	No	No	No	√	√
Alternative 2	No	√	√	√	No	No	No
Alternative 3	√	No	√	No	√	√	No
Alternative 4 -- No Action	No	No	No	No	No	No	No

Table 9: Comparison of Alternatives (Phase 1)

Alternative	Est. Gather Number	Est. Un-gathered	Est. treated mares	Est. to Remove	Est. Release	Est. Post-gather	Sex Ratio (studs:mares)
Proposed Action	500-549	0-49	150-175	200	300-349	300-349	50:50
Alternative 1	500-549	0-49	0	200	300-349	300-349	50:50
Alternative 2	500-549 ¹⁴	0-49	251-275	0	500-549	500-549	50:50
Alternative 3	500-549	0-49	150-175	200	300-349	300-349	60:40
Alternative 4 -- No Action	0	0	0	0	0	0	unaffected

2.5. Alternatives Considered but Eliminated from Detailed Analysis

Through completion of EAs for proposed wild horse gathers in Nevada, several alternatives have been proposed for consideration and are discussed below.

2.5.1. Remove or Reduce Livestock within the HMA

This alternative would involve no removal of wild horses and instead address the excess wild horse numbers through the removal or reduction of livestock grazing within the Fish Creek HMA. This alternative was not brought forward for analysis because it would be inconsistent with the current LUP/RMPs and/or FMUDs for the grazing allotments within the Fish Creek HMA or with multiple use management. This gather document and subsequent Decision Record is not the appropriate mechanism for adjusting the authorized livestock use within the allotments associated with the Fish Creek HMA.

The proposal to reduce livestock would not meet the purpose and need for action identified in Section 1.2: *“to achieve and maintain the AML through removal of excess wild horses from within and outside of the HMA boundaries, and to reduce the population growth rate . . . prevent undue or unnecessary degradation of the public lands, and protect rangeland resources from deterioration associated with excess wild horses within the HMAs, and to restore a thriving natural ecological balance and multiple use relationship on the public lands consistent with the provisions of Section 1333 (a) of the 1971 WFRHBA.”*

Neglecting to manage HMAs as multiple use area would not be in conformance with the existing Land Use Plan and is contrary to the BLM’s multiple-use mission as outlined in FLPMA and also would be inconsistent with the WFRHBA and PRIA. It was Congress’ intent to manage wild horses and burros as one of the many uses of the public lands, not a single use. Therefore, the BLM is required to manage wild horses and burros in a manner designed to achieve a thriving natural ecological balance between wild horse and burro populations, wildlife, domestic livestock, vegetation and other uses.

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 (emphasis added). It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands.”*

¹⁴ Though it is not reasonable that 500-549 wild horses would be successfully captured and treated via bait and water trapping under Alternative 2, it has been included as such for analysis as the success rate for bait and water trapping in this area is unknown.

Furthermore, simply re-allocating livestock AUMs to increase the wild horse AMLs would not achieve a thriving natural ecological balance. Unlike livestock which can be confined to specific pastures, limited periods of use, and specific seasons-of-use so as to minimize impacts to vegetation during the critical growing season or to riparian zones during the summer months, wild horses are present year-round and their impacts to rangeland resources cannot be controlled through establishment of a grazing system, such as for livestock. Thus, impacts from wild horses can only be addressed by limiting their numbers to a level that does not adversely impact rangeland resources and other multiple uses.

Livestock grazing can only be reduced or eliminated through provisions identified within regulations at 43 CFR § 4100 and must be consistent with multiple use allocations set forth in LUP/RMPs. Such changes to livestock grazing cannot be made through a wild horse gather decision, and are only possible if BLM first revises the LUPs to allocate livestock forage to wild horses and to eliminate or reduce livestock grazing.

The BLM is authorized to remove livestock from HMAs “*if necessary to provide habitat for wild horses or burros, to implement herd management actions, or to protect wild horses or burros from disease, harassment or injury*” (43 CFR § 4710.5), however, this authority is usually applied in cases of emergency and not for general management of wild horses or burros. As shown in Section 3.3, the actual use by livestock in the allotments affiliated with the Fish Creek HMA has been far below the permitted levels and averaged 62% of the permitted levels since 2009. In 2014, the actual use was 49% of the permitted levels in these allotments. Since 2012, voluntary non-use due to drought has been requested of livestock operators across the BMD due to reduced forage and vigor of rangeland forage species.

For the reasons stated above, this alternative was dropped from detailed analysis. For long-term management, changes in forage allocations between livestock and wild horses would have to be re-evaluated and implemented through the appropriate public decision-making processes to determine whether a thriving natural ecological balance can be achieved at a higher AML and in order to modify the current multiple use relationship established in the LUPs.

2.5.2. Alternative gather techniques instead of helicopter capture of excess wild horses

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

- Net gunning techniques normally used to capture big game animals also rely on helicopters. These methods can be safe and effective on a small scale with optimum ground conditions and access. The use of this method is not practical on a large scale and could result in additional injury to animals, humans and impacts due to the need for cross country off-road travel to access netted animals.
- Chemical immobilization is a very specialized technique and strictly regulated. Currently the BLM does not have sufficient expertise to implement this method and it would be impractical to use given the size of the Fish Creek HMA, access limitations and approachability of the wild horses.
- Use of wranglers on horseback drive-trapping to remove excess wild horses can be fairly effective on a small scale but due to the number of excess horses to be removed, the large geographic size of the Fish Creek HMA, and approachability of the wild horses this technique

would be ineffective and impractical. Horseback drive-trapping is also very labor intensive and can be very harmful to the domestic horses used to herd the wild horses and dangerous to humans. For these reasons, this method was eliminated from further consideration.

2.5.3. Letting Nature Take its Course/Control of Wild Horse Numbers by Natural Means

This alternative would use natural means, such as natural predation or extreme weather to control the wild horse population. This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to protect the range from deterioration associated with an overpopulation of wild horses. This Alternative is also inconsistent with the RMP and ROD. The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Wild horse populations in the Fish Creek HMA are not substantially regulated by predators, as evidenced by the 18-20% average annual increase in the wild horse populations within the HMA.

Survival rates for wild horses on western public lands are high. None of the significant natural predators from native ranges of the wild horses in Europe and Asia — wolves, brown bears, and possibly one or more of the larger cat species — exist on the wild horse ranges in the western United States (mountain lions and black bears take foals in a few herds, but predation contributes to population limitation in only a handful of herds). In some cases, adult annual survival rates exceed 95%. Many horse herds grow at sustained high rates of 15-22% per year and are not a self-regulating species. The NAS report concluded that the primary way that equid populations self-limit is through increased competition for forage at higher densities, which results in smaller quantities of forage available per animal, poorer body condition and decreased natality and survival. It also concluded that the effect of this would be impacts to resource and herd health in contradiction to BLM management objectives. This alternative would result in a steady increase in the wild horse populations which would continue to exceed the carrying capacity of the range resulting in a catastrophic mortality of wild horses in the Fish Creek HMA, and irreparable damage to rangeland resources.

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*”.

Title 43 CFR § 4700.0-6 (a) states “*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).

As the vegetative and water resources are over utilized and degraded to the point of no recovery with wild horse overpopulation a contributing factor, wild horses would start showing signs of malnutrition and starvation. The weaker animals, generally the older animals, and the mares and foals, would be the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration which could lead to a catastrophic die off. The resultant population could be heavily skewed towards the stronger stallions which could contribute to social disruption in the Fish Creek HMA. Competition between wildlife and wild horses for forage and water resources would be severe. Wild horses can be aggressive around water sources, and some wildlife may not be able to compete, which could lead to the death of individual animals. Wildlife habitat conditions would deteriorate as

wild horse numbers above AML reduce herbaceous vegetative cover, damage springs and increase erosion. This degree of resource impact would likely lead to management of wild horses at a greatly reduced level if BLM is able to manage for wild horses at all on the Fish Creek HMA in the future. For these reasons, this alternative was eliminated from further consideration.

2.5.4. Make on-the-ground and individualized excess wild horse determination prior to removal

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

This proposed alternative would only be viable in situations where the project area is contained within barriers (natural and/or manmade) which prohibits the animals movements outside the project area, the area is readily accessible and wild horses are clearly visible, and where the number of horses to be removed is so small that a targeted approach to removal could be implemented. Under the conditions present within the project area, however, this proposed alternative is impractical, if not impossible, as well as more disruptive to and less humane for a variety of reasons.

First, BLM does euthanize old, sick or lame animals on the range when such animals have been identified. This occurs on an on-going basis and is not limited to wild horse gathers. During a gather, if old, sick or lame animals are found and it is clear that an animal's condition requires the animal to be put down, that animal is separated from the rest of the group that is being herded so that it can be euthanized on the range. However, horses that meet the criteria for humane destruction because they are old, sick or lame usually, in most cases, cannot be identified as such until they have been gathered and examined up close, so as to determine whether the horses have dental regression or damage, genetic defects (i.e. club foot), injuries (old/new), and overall wild horse body condition. Old, sick and lame horses meeting the criteria for humane euthanasia are also only a very small percentage of the total number of horses to be gathered, comprising on average about 0.5% of gathered horses. Thus, in a gather of over 1,000 horses, potentially about five of the gathered horses might meet the criteria for humane destruction. Due to the size of the Fish Creek HMA, access limitations associated with topographic and terrain features and the challenges of approaching horses close enough to make an individualized determination of whether a horse is old, sick or lame, it would be virtually impossible to conduct a phased culling of such horses on the range without actually gathering and examining the horses.

Similarly, rounding up and removing wild horses for which an adoption demand exists, before gathering any other excess wild horses would be both impractical and much more disruptive and traumatic for the animals. Making a determination of excess as to a specific horse under this alternative, and then successfully gathering that horse would be impractical to implement (if not impossible) due to the size of the Fish Creek HMA, terrain challenges and difficulties approaching the wild horses close enough to make an individualized determination.

The impracticalities inherent in attempting to separate the small number of adoptable horses from the rest of the herd, and the impacts to the horses from the closer contact necessary, makes such phased removal a much less desirable method for gathering excess wild horses. This approach would create a significantly higher level of disruption for the horses on the range and would also make it much more difficult to gather the remaining excess wild horses. A phased strategy such as described would be cost-prohibitive, and would be unlikely to result in the successful removal of excess horses. Furthermore, if BLM plans to apply any population controls to gathered horses prior to release, it would be necessary to gather more than just the excess horses to be removed. This alternative was therefore eliminated from any further consideration.

2.5.5. Raising the Appropriate Management Levels for Wild Horses

This alternative was not brought forward for detailed analysis because it would be outside of the scope of the analysis, and would be inconsistent with the WFRHBA which directs the Secretary to immediately remove excess wild horses and to manage wild horse populations within multiple use management. This gather document and subsequent Decision Record is not the appropriate mechanism for adjusting the AML for wild horses.

This alternative is inconsistent with the BMD RMP and multiple use management. Adjusting AML must be based on the analysis of monitoring data. Monitoring data collected within the Fish Creek HMA does not indicate that an increase in AML is warranted at this time. On the contrary, such monitoring data confirms the need to remove excess wild horses above AML to reverse downward trends and promote improvement of rangeland health and recovery from severe/extreme drought experienced in 2012-2014 and potentially beyond these years. Refer to Section 1.3 of the EA and Appendix D. Wild horse AML would be analyzed in future Rangeland Health Assessments which would include involvement with the interested public.

2.5.6. Designation of the HMAs to be Managed Principally for Wild Horses

This action to designate the Fish Creek HMA as a “Wild Horse and Burro Range” under 43 CFR § 4710.3-2 would require an amendment of the approved RMP which is outside the scope of this EA. Only the BLM Director or Assistant Director (as per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse and Burro Range after a full assessment of the impact on other resources through the land-use planning process. As this is not an “exclusive” designation, it potentially would not change the level of livestock grazing permitted to occur in the area. Refer to footnote 8, page 11 for a list of currently managed Wild Horse or Burro Ranges.

3. Affected Environment and Environmental Consequences

To comply with NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, BLM 1997, BLM 2008). The following table outlines the elements that must be addressed in all environmental analyses, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action, sequential alternatives, or the No Action Alternative affects those elements.

Potential or expected impacts to the affected resources are discussed following the tables. Direct impacts are those that result from the actual gather, removal and treatment of wild horses from the Fish Creek HMA. Indirect impacts are those impacts that occur once the gather, removal and treatment of wild horses is complete.

Table 10a: Elements Checklist

ELEMENT	PRESENT YES/NO	AFFECTED YES/NO	RATIONALE
Air Quality	Yes	No	The proposed gather area is not within an area of non-attainment or areas where total suspended particulate matter exceeds Nevada air quality standards. Areas of disturbance would be small and any effects on air quality would be temporary and fleeting in nature, and would take the form of fugitive dust.
ACECs	No	No	Resource is not present.
Cultural Resources	Yes	No	Through adherence of the SOPs (Appendix A), potential impacts to cultural sites would be eliminated. Archeological inventory of gather corrals, holding corrals and others areas of potential effects would occur prior to construction. If cultural resources were encountered, those locations would not be utilized.
Environmental Justice	No	No	The Proposed Action or alternatives would have no effect on minority or low-income populations.
Fish Habitat	No	No	Resource is not present.
Flood Plains	No	No	Resource is not present.
Forests and Rangelands (HFRA only)	Yes	No	This project does not meet the criteria to qualify as an HFRA project.
Noxious Weeds and Invasive, Nonnative Species	Yes	Yes	Discussed below in Section 3.4.
Migratory Birds	Yes	Yes	Discussed below in Section 3.7 under Wildlife.
Native American Religious Concerns	No	No	There are no known Native American concerns.
Prime or Unique Farmlands	No	No	Resource is not present.
Threatened or Endangered Species (plants and animals)	No	No	No Threatened or Endangered Species are known to exist within the project area.
Wastes, Hazardous or Solids	No	No	Resource is not present.
Water Quality	Yes	No	Resource would not be affected.
Wetlands and Riparian Zones	Yes	Yes	Discussed in detail below in Section 3.6.
Wild and Scenic Rivers	No	No	Resource is not present.
Wilderness	Yes	No	Wilderness Study Areas (WSAs) are not present within the HMA. But are present outside the HMA. No trapping will occur within them. Refer to the WSA discussion in Appendix A.
Lands with Wilderness Characteristics**	No	No	** Based on available inventories

Other resources of the human environment that have been considered for this EA are listed in the table below.

Table 10b Checklist of other Resources

OTHER RESOURCES	PRESENT YES/NO	AFFECTED YES/NO	RATIONALE
Grazing/Livestock Management	Yes	Yes	Discussed below in Section 3.3.
Land Use Authorization	Yes	No	Resource is not affected by the proposed action or alternatives
Minerals	Yes	No	Resource is not affected by the proposed action or alternatives.
Paleontological Resources	Yes	No	Resource is not affected by the proposed action or alternatives. There is a minimal likelihood that resources would be present. Known resources are present at Alhambra Hills but will not be affected. Any surface disturbance resulting from the proposed gather would not be sufficient to cause impacts.
Recreation	Yes	No	Resource is not affected by the proposed action or alternatives.

OTHER RESOURCES	PRESENT YES/NO	AFFECTED YES/NO	RATIONALE
Socio-Economic Values	Yes	No	Resource is not affected by the proposed action or alternatives.
Soils	Yes	Yes	Discussed below in Section 3.5.
Special Status Species (plants and animals)	Yes	Yes	Discussed below in Section 3.7 under Wildlife.
Vegetation	Yes	Yes	Discussed below in Section 3.5.
Visual Resources	Yes	No	Resource is not affected by the proposed action or alternatives. Gather operations would be temporary and isolated in nature. There would be no permanent changes to the landscape.
Wild horses	Yes	Yes	Discussed below in Section 3.2.
Wildlife	Yes	Yes	Discussed below in Section 3.7.

3.1. General Description of the Affected Environment

The proposed gather area is located within Central Nevada within the Great Basin. Elevations range between 6,300 feet in the Valleys to over 10,000 at the top of Ninemile Peak. Much of the rangeland at lower elevations consists of salt desert shrub and either Wyoming big sagebrush or black sagebrush plant communities. Pinyon and Juniper are prevalent in the mid and upper elevations. Precipitation averages 5-8 inches per year in the valleys and 16+ inches in the highest elevations. Drought conditions may occur 1 out of every 3-4 years, and the majority of the area has been within Severe and Extreme Drought since 2012¹⁵. Refer to the documents referenced in Section 1.5 for more information about the Fish Creek HMA and Map 1-3 which displays various aspects of the HMA. Appendix D provides additional detail about the climate and drought conditions in the HMA.

3.2. Wild Horses

Affected Environment

Additional detailed information about the history and the wild horses within the Fish Creek HMA is provided in the EA completed for the most recent gather in 2005/2006, identified in Section 1.1. Refer also to expanded detail in Appendix B.

This HMA is located south and west of Eureka, Nevada, encompassing the east side of Antelope Valley, the Mahogany Hills, Fish Creek Range and a portion of the Antelope Range. As stated in Section 1.1, this EA is specific to activities that would be implemented within the portion of the Fish Creek HMA south of U.S. Highway 50. This portion of the HMA is 230,675 acres with an established AML range of 101-170 wild horses.

During the most recent helicopter inventory conducted in March 2014, a direct count of 463 adults and 15 newly born foals were observed for 478 total. Of the adults observed, it was estimated that 55 or 11.5% were yearlings born in 2013. This was only an estimate, as it is difficult to discern larger yearlings from smaller adults or two year olds with heavy winter coats from a helicopter.



Antelope Valley, March 2014.

¹⁵ Droughtmonitor.unl.edu/

The estimate was made to collect additional information beyond adults and young foals, and to be able to assess the number of foals born in 2013 that survived through the past year of drought. The 15 new foals observed represents 3.1% of the total horses observed. However, since the inventory was completed in March, this represents only a portion of the foals that would have been expected to be born during the spring of 2014.

For the process of estimating the population growth from the total number of foals born in 2014, a figure of 19% population increase was utilized, resulting in an estimated population of 549¹⁶. During the 2014 inventory, the double simultaneous count method was utilized, but has yet to be analyzed and the population estimate is based on a direct count, without adjustments applied from the analysis (which would likely increase the estimate by at least 5-10%). An estimated 20-100 wild horses are located outside of the Fish Creek HMA boundaries in Antelope Valley at any given time. During the March 2014 inventory, 154 wild horses or 32% of the total observed were located outside of HMA boundaries. Refer to Map 2 which shows the distribution of wild horses observed during the March 2014 inventory.

As stated in the 2013 NAS report *Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward*, it was the committee's judgment that the reported annual population statistics are probably substantial underestimates of the actual number of horses occupying public lands inasmuch as most of the individual HMA population estimates are based on the assumption that all animals are detected and counted in population surveys—that is, perfect detection. A large body of scientific literature focused on inventory techniques for horses and many other large mammals clearly refutes that assumption and shows estimates of the proportion of animals missed on surveys ranging from 10 to 50 percent depending on terrain ruggedness and tree cover (Caughley, 1974a; Siniff et al., 1982; Pollock and Kendall, 1987; Garrott et al. 1991a; Walter and Hone, 2003; Lubow and Ransom, 2009). The committee went on to state that a reasonable approximation of the average proportion of horses undetected in surveys throughout western rangelands may be 20% to 30%. An earlier National Research Council committee and the GAO also concluded that reported statistics were underestimates.

As a result of comments received on the Preliminary Fish Creek EA, additional detail has been added to Appendix B regarding past inventory and resource flights completed in the Fish Creek area.

Severe and extreme drought conditions since 2012 have resulted in lack of water and drought affected vegetation within the HMA. Water sources are inherently limited, consisting mostly of ephemeral and perennial springs and some developed water sources. Severe and Extreme drought conditions endured since 2012 have caused water sources to dry up or dry up earlier in the year. This has resulted in reduced water availability for the increasing population of wild horses. Due to the inadequacy of water, population of wild horses above the established AML, and concerns of emergency conditions, additional measures have been implemented by the MLFO since 2012. Water has been hauled to two locations in the northern portion of the HMA, and the Davis Pipeline maintained and operated in order to provide adequate water and prevent emergency conditions. A well in the northern portion of the HMA has also been pumped to provide water through the summer months. The BLM holds Nevada State water rights for horses on the well and the pipeline. Remote trail cameras have been used to document wild horse body condition and use of the waters at the well and the two water haul locations.

16 Direct count 463 adults x 1.19 = 549 estimated 2014 population following foaling.



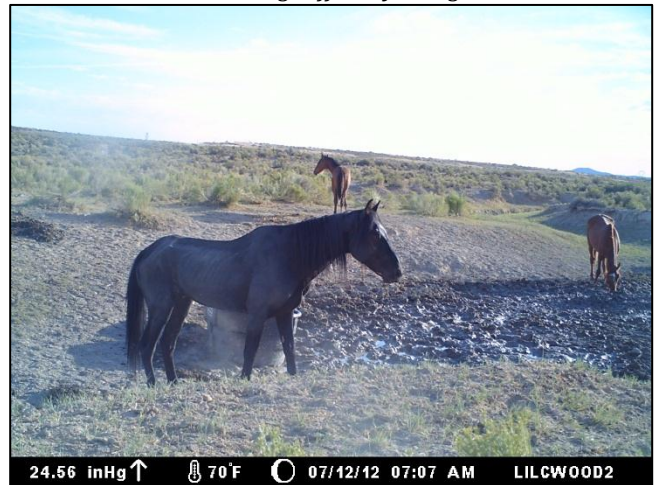
The Slough June 15, 2012. The trail camera was used to assess the water quantity and the use by wild horses.



By the end of June 2012, the Slough was almost dry, and horses were having difficulty using the water.



Water hauling was initiated at the Slough and at McCullough Spring in early July 2012.



The trail cameras were used to assess wild horse body condition. This black horse was underweight in 2012.



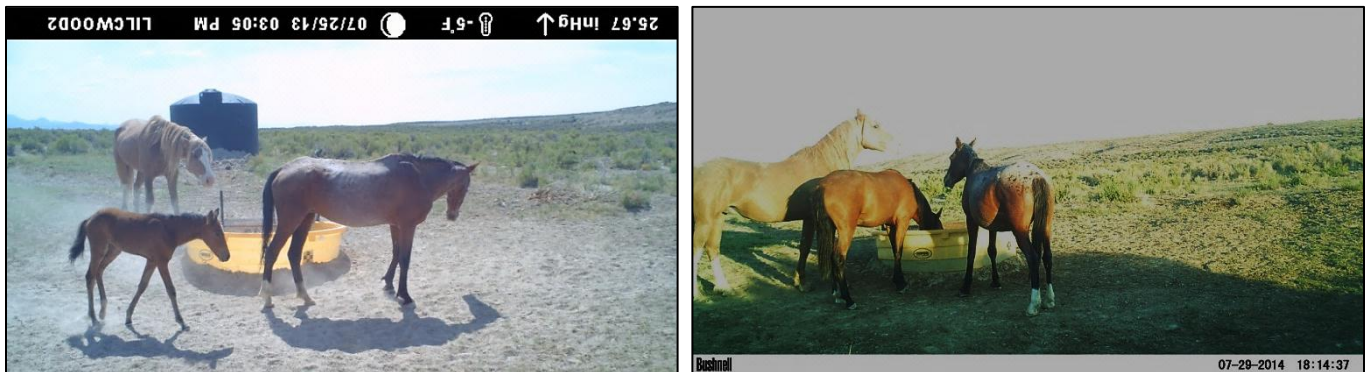
The Davis Pipeline has been maintained and operated since 2012 to improve water availability. Five troughs are on this pipeline that originates at Davis Spring. Photo taken June 29, 2014.



In early 2013, a large 3000 gallon storage tank was installed at the Slough and McCullough Springs to improve efficiency of hauling water and ensure better qualities for wild horses in order to avoid emergency situations. This one is at the Slough, July 2013.

Health

On average, the body condition of the Fish Creek HMA wild horses has been Moderately Thin to Moderate, Henneke BCS 4.0-5.0 during the summer months and Thin to Moderately Thin during winter months (BCS 3.0-4.0). The BCS of some horses have dropped below that, particularly in aged mares and young foals, especially in 2012 and 2013 which appeared to receive the worst of the drought impacts. Refer to Appendix A for an explanation of the Henneke BCS. The HMA has been closely monitored for escalating conditions due to drought since 2012. This HMA has a history of drought issues and emergency gathers due to lack of forage and water when the population was in excess of the AML. In addition to field monitoring of forage, water and wild horse body condition, resource monitoring flights were conducted in August 2012, March, 2013 and January, 2014 to assess water,



The trail cameras were useful to monitor body condition of the horses. On the left, a group of three horses observed in 2013 with a thin mare and small foal. On the right the same group of horses observed in 2014. Recent photos of the roan mare via trail camera fall 2014 show that she has deteriorated to a body condition score of very thin. All photos taken at the Slough.

forage and wild horse body conditions.

Widespread debilitation or death has not been documented throughout the HMA; however drought conditions and limited resources coupled with overpopulation have likely contributed to increased death rates within the population particularly older horses or young foals. It is expected that due to the extra efforts taken to increase water availability that distribution of the horses within the HMA has allowed better use of the limited forage, including higher elevations not covered with snow.

Population Growth Rates

Comments were received on the Preliminary Fish Creek EA regarding population growth rates. Throughout the history of the Wild Horse and Burro Program in the Battle Mountain District, population growth rates have been estimated in years between inventory flights so as to document and track population size among the HMAs and across the District. Population growth rates vary by year due to many factors. An average annual rate of increase is used, and may vary between HMAs as determined by review of inventory, gather and field data. A current annual rate of increase of 19% was used to determine the 2014 post gather population. This rate of increase accounts for foals born and mortality across all age groups. Refer to Appendix D for additional information about the inventory and resource monitoring flights conducted in the HMA since 2007, and the percentage of foals observed in the population.

Wild horses are a long-lived species with documented survival rates exceeding 95% for most age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse population levels within the proposed gather area. Throughout the

HMA's administered by the BMD, there are few predators that exist to control wild horse or burro populations. Some mountain lion predation occurs, but it is not believed to be substantial. Coyote are not prone to prey on wild horses unless young, or extremely weak. Other predators such as wolf or bear do not exist. Wildlife of Nevada is managed by the Nevada Department of Wildlife (NDOW). Wild horses in general are very resilient and adaptable animals with a metabolism that has evolved to allow them to survive and thrive in poor quality habitat (compared to their domestic counterparts). These wild animals are typically in top fitness, have strong bones and hooves and rarely succumb to ailments that plague domestic horses. Wild horses typically do not begin to show signs of body condition decline until the habitat components are severely deficient. Once the decline begins, their health can deteriorate rapidly.

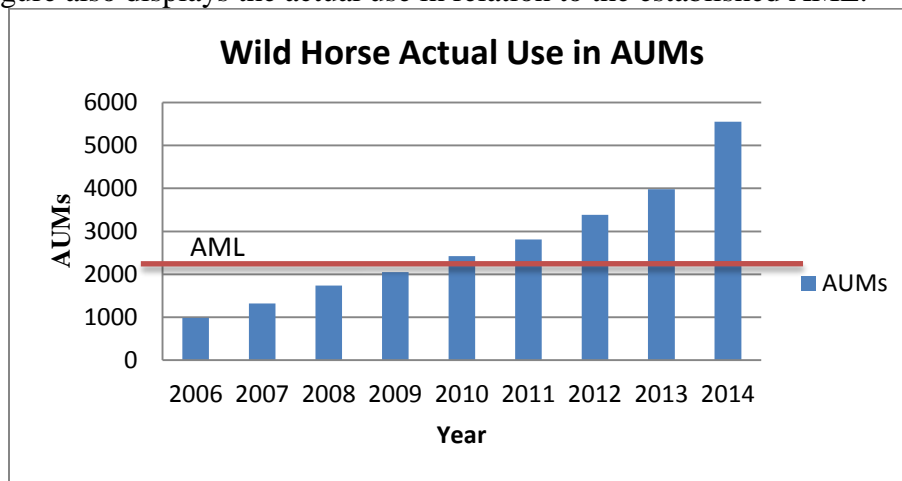
Actual Use

Wild horse actual use was compiled based on the three helicopter inventory flights completed since the 2006 gather (September 2007, August 2011 and March 2014), and estimated populations between inventory years. The actual use only includes estimated adult wild horses and does not include foals. An annual rate of increase of 18-20% was utilized to estimate the population figures. The actual use for wild horses in the Fish Creek HMA since the last gather operation is displayed in the table below.

Table 11: Actual Use (AUMs) Fish Creek HMA

Year		
2006	984	2040
2007	1320	2040
2008	1740	2040
2009	2052	2040
2010	2424	2040
2011	2808	2040
2012	3384	2040
2013	3984	2040
2014	5556	2040
Total	23,916	--
Average	2657	2040

The following figure also displays the actual use in relation to the established AML.



Wild Horse Actual Use

The actual use table shows that the AML was exceeded in 2009 and has been exceeded in the years since. This means that wild horses have been using AUMs not allocated to their use through the 2004 Fish Creek Complex FMUD. The 2014 actual use represents 273% of the AUMs identified for the established AML, and use of 3,516 AUMs above what is allocated.

Characteristics

Typically, the wild horses found in the Fish Creek HMA are medium in size, reaching approximately 14-14.2 hands (56-58 inches at the withers) and weigh an average of 800-1000 pounds. The dominant color within the HMA is roan (blue, red, strawberry), with other colors present including palomino, buckskin, grulla, sorrel, gray, brown and bay. The origin of wild horses in the Fish Creek HMA most likely descended from stock used by ranchers in the area, and are speculated to have originated from Quarter Horse stock. Curly horses can be found in the HMA and it is thought that these horses may be descendants of curly horses brought into the United States to Eureka, Nevada in the late 1800's by Tom Dixon. The suspected origin of the Curly Horse in the Eureka area is documented in the book, *The Dames and the American Curly Horse* by Dale E. Woolley. Though limited in number, there are still curly horses present in the HMA today, and it is the goal of the MLFO to preserve the curly traits in this HMA. The following photos of the Fish Creek HMA wild horses were taken in 2014. From top to bottom: Antelope Valley December 2014, Davis Pipeline June 2014, Fenstermaker Spray June 2014.





Estimated Age Structure

The age structure for the Fish Creek HMA is estimated to reflect a normal population, with all age groups represented. The last gather completed in the Fish Creek HMA was in July 2005 and February 2006. Because wild horses released in 2005 and 2006 represent most age groups, and due to the long period of time since the last gather, it is anticipated that a normal age structure would be present for this HMA. Due to the past 3 years of Severe to Extreme drought conditions in the HMA, it is possible that higher than average death rates could have impacted the proportion of very young or very old horses in the population. The estimated age structure was compiled based on analysis gather data from seven different years (1997-2009), involving 5 different HMAs administered by the BMD, including the Fish Creek HMA. All total, data for over 5,200 wild horses was compiled in order to determine an average age structure. This was then adjusted for the estimated population in the Fish Creek HMA. The following table displays the estimated age structure for the Fish Creek HMA (which was also utilized in the Population Modeling).

Table 12: Estimated Age Structure – Fish Creek HMA

Age	Number		Percent	
	Female	Male	Female	Male
0	45	40	15.5%	15.4%
1	25	22	8.6%	8.5%
2	36	32	12.4%	12.4%
3	39	34	13.4%	13.1%
4	27	24	9.3%	9.3%
5	19	17	6.6%	6.6%
6	12	11	4.1%	4.2%
7	12	11	4.1%	4.2%
8	10	9	3.4%	3.5%
9	10	9	3.4%	3.5%
10-14	29	26	10.0%	10.0%
15-20	15	14	5.2%	5.4%
20+	11	10	3.8%	3.9%
Total	290	259	100.0%	100.0%

Movement Patterns

Wild horse distribution within the Fish Creek HMA varies through the year as animals move through the allotments associated with the HMA in response to snow cover and water availability. Many of the wild horses move into the higher elevations of the Dry Lake Area of the Arambel Allotment, or Ninemile Peak area of the Fish Creek HMA in the summer months, and move into the lower elevation winter fat communities in Antelope Valley in the winter. The March 2014 helicopter inventory map shows the distribution of the wild horses in the HMA. Distribution in summer would have reflected more horses in the higher elevations. It is likely that a certain portion of the wild horses within the Fish Creek HMA may move south into the Sevenmile HMA and east into Pancake Complex, though no definitive or re-occurring movement patterns have been documented. In general, additional water hauling and operation of wells and pipelines has helped to improve the distribution of wild horses in recent years. Wild horses are concentrating in portions of the HMA, especially near waters and in the winter range areas of Antelope Valley, but not to the degree they would have been if the additional waters would not have been available. Additional information regarding movement patterns of the Fish Creek HMA wild horses is available in Appendix B.



McCullough Springs water haul location (storage tank out of view). The date function on the camera was not working properly. The photo was taken during summer 2013.



Brown Canyon Well troughs. This well has been pumped throughout the summer months since 2012 with a gas powered generator, and use of a large storage tank.

Wild Horse Gatherers

The most recent gather of this area was the Fish Creek Complex gather completed in July 2005 and February 2006. The Fish Creek Complex gather included not only the Fish Creek HMA, but also the Sevenmile, Little Fish Lake and North Monitor HMAs, and their associated USFS WHTs. A one-year fertility control vaccine was administered to released mares during a gather in 1998; however population growth suppression treatments have not been administered since that time. Emergency removals occurred in 2000 and 2004 due to drought conditions and overpopulations of wild horses. Due to the recurring issues with lack of water and drought, no horses were returned to the northern portions of the HMA during the 2005/2006 gathers and only released to the Fish Creek Ranch Allotment at a level below the AML in order to alleviate pressure on the waters, and allow for recovery of the uplands and the water sources. Refer to additional detail about past gathers in Appendix B and the 2004 Fish Creek Complex Gather EA.

These HMAs were last gathered in July 2005 with a follow up gather in February 2006. Fertility control was not administered during this gather. The details of both gathers are shown below.

Table 13: Fish Creek 2005/2006 Gather Results

HMA					
Fish Creek	July 16-20, 2005	200	161	34	195
Fish Creek	January 31- February 5, 2006	131	65	17	82 (due to the clearing of Lucky C)

The Fish Creek HMA gather was completed in two portions in summer 2005 and February 2006 because of conflicts in the National gather schedule that would have allowed for a winter gather to take place in late 2004. As a result, the gather was started during the summer of 2005 and finished the following winter. High elevations and thick tree cover in much of the gather area for the Fish Creek Complex precluded gather efficiencies above 60% in much of the Complex during the summer gather. During the Fish Creek Complex gather (which included several other HMAs and USFS Wild Horse Territories), a total of 331 wild horses were gathered from the Fish Creek HMA. During the gather of this HMA, only one horse was euthanized for a broken leg.

Genetics Analysis

During the 2005 gather, blood samples were collected for genetic analysis. Only 23 samples were submitted for analysis. The genetic analysis report concluded that the genetic variation was high with indications of mixed ancestry. The highest similarity of the Fish Creek HMA was to Old World Spanish breeds, but no strong allelic indication of Spanish ancestry, with similar values to all cold blood horse groups. Due to the small sample size taken at the time, and the fact that hair samples are the standard method for analysis, a large sample size will be collected on the next gather for additional genetics analysis. The Fish Creek Genetic Analysis Report has been added to this Final EA in Appendix I.



A gather crew member collects a hair sample for genetics analysis from a horse to be released back to the Diamond Complex Gather, February 2013.

Current Issues

Severe and Extreme drought conditions have been experienced in the Fish Creek HMA since 2012. As of 2012, the population within the HMA was estimated to be in excess of 160% of AML. The history of the Fish Creek HMA includes multiple emergency gathers of various scales due to lack of water, drought, and subsequent depletion of forage near available water sources due to an overpopulation of wild horses. With drought conditions developing in 2012, MLFO staff intensified monitoring to document available water sources, animal health and forage availability in the Fish Creek HMA. Water hauling at two locations (the Slough and McCullough Spring) was initiated in July 2012 due to decline of wild horse body condition following depletion of two water sources. The Brown Canyon Well was pumped, and Davis Pipeline in the southern portion of the HMA repaired to provide water in the area.

Motion activated trail cameras were installed to monitor usage patterns and wild horse body condition through the summer. With the water provided, body conditions improved and stabilized. Monitoring of the forage and water continued through the summer months. A resource flight was conducted in August

2012 of the Fish Creek and other HMAs in order to assess body condition, water resources and wild horse distribution.

In April 2013, a monitoring flight was conducted to document distribution and animal health in the HMA. Two-3000 gallon storage tanks with troughs and floats were installed at the two water haul locations identified above in order to improve water availability and decrease costs. The Brown Well was pumped, and the Davis Pipeline operated. Trail cameras were again installed and monitoring of the water and forage continued. Body condition was noted to decline in the northern portion of the HMA despite the availability of the water storage unit and the well. Numerous mares dropped below a BCS of 3.0, and foals were small, and unthrifty. A local rancher voluntarily pumped additional wells in the southern portion of the HMA outside of the HMA to provide water to the horses. Late summer rains provided some recharge to water sources and regrowth of vegetation further helping to avoid emergency conditions in this HMA.

Another resource flight was conducted in January 2014 to assess wild horse health and distribution within the HMA. Most wild horses were noted to be in a body condition class of 4.0 (moderately thin) or below, and considered “lean”. With little to no snow on the ground, horses were able to access forage that would have otherwise been unavailable to them. An inventory flight was conducted in March 2014 to obtain a current population estimate and assess conditions of the horses and the range. The average BCS was 4.0 (moderately thin). Large concentrations of horses were observed throughout portions of the HMA, and wild horses were observed to have moved outside of the HMA boundaries (refer to Map 2). Sources known to be limiting, had adequate water.

The MLFO continued to monitor wild horse distribution and body condition throughout 2014, and conduct drought monitoring to document vegetation conditions. Water hauling continued at two locations (Slough and McCullough) and the Brown Well was again pumped in 2014 to provide water to wild horses. The Davis Pipeline was maintained and operated to provide water to five troughs in the southern portion of the HMA.

Since 2012, the BLM has worked with the permittees in the Fish Creek HMA to obtain voluntary non-use by livestock in portions of the HMA, reduce hot season use and to permit use in the dormant season to protect habitat from overuse, and to protect forage and water resources for wild horses. Refer to Section 3.3 for more information.

Currently, wild horse body condition is holding at and above 4.0 for most horses. Winter conditions through January 2015 have been very mild with little snow and moderate temperatures for this time of the year. As a result, wild horse distribution has been above what it might be if snow covered much of the HMA, and forage that might otherwise be covered by snow is available. Heavy trailing exists in portions of the HMA and many horses are residing outside of the HMA boundaries on the winterfat communities in Antelope Valley. Heavy use of winterfat and greenup of perennial grasses is occurring.

Environmental Consequences

Under the Proposed Action and Action Alternatives, impacts to wild horses would be both direct and indirect, occurring to both individual horses and the population as a whole. The purpose of this section is to provide relevant information to the proposed gather and summarize the potential direct and indirect effects to wild horses that could occur with implementation of the Proposed Action, Alternatives or the No Action Alternative.

Impacts Common to the Proposed Action, Alternative 1 and 3 (Use of Helicopter, with Removals)

The BLM has been gathering excess wild horses from public lands since 1975, and has been using helicopter for such gathers since the late 1970's. Refer to Appendix A and Section 3.9 for information about methods that are utilized to reduce injury or stress to wild horses and burros during gathers.

BLM policy prohibits the gathering of wild horses with a helicopter, (unless under emergency conditions), during the period of March 1 to June 30 which includes and covers the six weeks that precede and follow the peak foaling period (mid-April to mid-May). BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. The SOPs outlined in Appendix A, and the BLMs CAWP IM 2013-059 would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts to or injury of the wild horses.

Since gathers began in the 1970's, methods and procedures have been developed and refined so as to minimize stress and impacts to wild horses during implementation of gathers. Injury and death as a direct result of the helicopter herding is minimal. In fact, most injuries or death occur *after* the animal is gathered, e.g., when the animals are sorted or loaded for transport, or while in the holding corrals.

Over the past 40 years, various impacts to wild horses during gathers have been observed. Individual, direct impacts to these animals include handling stress associated with the capture, sorting, animal handling, and transportation. The intensity of these impacts varies by individual animal, and is indicated by behaviors ranging from nervous agitation to physical distress. Wild horses are very adaptable animals and assimilate into the environment with new members quite easily. Observations made through completion of gathers indicate that many of the wild horses captured acclimate quickly to the holding corral situation, becoming accustomed to water tanks and hay, as well as human presence. Both the BLM Wild Horse and Burro Specialists and the Gather Contractor and crew are very attentive and sensitive to the needs of foals as well as all wild horses captured during gathers, and ensuring their health, safety and wellbeing during and after the gather is a focus and priority.

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



Since 2004, BLM Nevada has gathered over 42,000 wild horses and burros. Of these, gather related mortality has averaged only 0.5% which is very low when handling wild animals. Another 0.6% of the animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. On many gathers, no wild horses are injured or die. On some gathers, due to the temperament of the horses, they are not as calm and injuries are more frequent.

The Diamond Complex was gathered by the Battle Mountain, Ely and Elko Districts in January and February 2013. During the gather of 792 wild horses, only two horses were euthanized for pre-existing conditions, and no horses killed or euthanized due to the gather activities. This equates to 0.2% total for that gather. A previous gather completed of the Stone Cabin Complex in 2012 included the gather of 725 wild horses. A total of 5 gather reported death/euthanasia occurred, and 9 non-gather related/pre-existing cases for a total of 1.9% of the total gathered. The most recent gather completed by the BMD in

the Reveille HMA in November 2014 saw no euthanasia or deaths of the 120 gathered. This data supports that the use of helicopters and motorized vehicles is a safe, humane, effective and practical means for gathering and removing excess wild horses and burros from the range.

Injuries sustained during gathers include nicks and scrapes to legs, face, or body from brush or tree limbs while being herded to the gather corrals by the helicopter. Rarely, wild horses will encounter barbed wire fences and will receive wire cuts. These injuries are not fatal and are treated with medical spray at the holding corrals until a veterinarian can examine the horse.

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

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

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

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

During summer gathers, roads and corrals may become dusty, depending upon the soils and specific conditions at the gather area. The BLM ensures that contractors mitigate any potential impacts from dust by slowing speeds on dusty roads and watering down corrals and alleyways. Despite precautions, it

is possible for some animals to develop complications from dust inhalation and contract dust pneumonia. This is rare, and usually affects animals that are already weak or otherwise debilitated due to old age or poor body condition.

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

In some areas, gathering wild horses during the winter may avoid certain stresses that could be associated with a summer gather. By fall and winter, most foals are of good body size and sufficient age (6 months or older) to be easily weaned. Winter gathers are often preferred when terrain and higher elevations make it difficult to gather wild horses during the summer months. Under winter conditions, horses are often located in lower elevations due to snow cover at higher elevations. This typically means the horses are closer to the potential trap sites and potentially herded shorter distances, thereby reducing the potential for fatigue and stress. While deep snow can tire horses as they are moved to the trap, the helicopter pilots allow the horses to travel slowly at their own pace. Trails in the snow are often followed to make it easier for horses to travel to the trap site. On occasion, trails can be plowed in the snow to facilitate the safe and humane movement of horses to a gather site. During the 2008 emergency gather of the Roberts Mountain Complex, deep snow and weak horses resulted in the need to plow some paths for the horses to allow for easier travel. When weak or debilitated horses are encountered, the pilot can bring horses to the gather corrals slowly and carefully, being mindful of their strength and body condition. It is anticipated that late winter gathers (January/February) would involve the capture of mares in late gestation and heavy with foal. Additionally, a small number of newborn foals could be present in the population. Extra precautions in the way of speed and distance would be ensured to provide additional safety for these horses as necessary.

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

The environmental conditions and the overall health and wellbeing of the horses is continually monitored through both summer and winter gathers to adjust gather operations as necessary to protect the horses from gather related health issues. For example, experience during some past gathers has shown that gathers of HMAs with wild horses that are in very good body condition (moderate, Henneke

BCS 5 or higher), sometimes have more heat or gather related issues than horses that do not have as high of a body condition score. The reasons for this are unknown, but do show that body condition is not always an indication of the animal's ability to easily handle the stresses of a wild horse gather. Due to genetics or other unknown factors, two similar HMAs could be gathered under exactly the same circumstances, with wild horses from one HMA showing more signs of heat or other gather related stresses than the other herd. For these reasons, constant monitoring and adjustment of gather operations on a daily or hourly basis is an inherent part of the gathers.

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

Wild Horses Remaining or Released into the HMAs following Gathers

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

It is not expected that genetic health would be impacted by the Proposed Action, or Action Alternatives. Smaller, *isolated* populations (< 200 total population size) are particularly vulnerable when the number of animals participating in breeding drops below a minimum needed level (Coates-Markle, 2000). The wild horses in the Fish Creek HMA do not fall into this category because of the known and suspected intermixing between the nearby and adjacent Sevenmile HMA/Butler Basin WHT and Pancake HMA. Most wild horse herds sampled have high genetic heterozygosity, genetic resources are lost slowly over periods of many generations, and wild horses are long-lived with long generation intervals (Singer, 2000). Genetic analysis completed following the most recent gather of the Fish Creek HMA in 2005/2006 reveals that the genetic variation and allelic diversity of the HMA is above average for wild horses sampled at that time. Refer to additional information about the genetic analysis in Appendix B, and the Fish Creek HMA Genetic Analysis Report in Appendix I.

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

Deterioration of the range associated with wild horse overpopulation would be avoided and rangelands would have the opportunity to recover from prior overpopulation impacts and drought. Managing wild horse populations in balance with the available habitat and other multiple uses would lessen the potential for individual animals or the herd to be affected by drought, and would avoid or minimize the need for emergency gathers, which would reduce stress to the animals and increase the success of these herds over the long-term. Individuals would be able to maintain optimum body weight and overall health even in ‘bad’ years marked by poor precipitation (drought) or harsh winters. Through maintenance of AML, progress would be made towards the Standards for Rangeland Health, Allotment Specific and RMP Objectives.



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

Temporary Holding Facilities During Gathers

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

At the temporary holding facility, recommendations regarding care, treatment, and if necessary, euthanasia of the recently captured wild horses is provided by a veterinarian, BLM staff or contractor. Any animals affected by a chronic or incurable disease, injury, lameness or serious physical defect (such as severe tooth loss or wear, club foot, and other severe congenital abnormalities) would be humanely euthanized using methods acceptable to the American Veterinary Medical Association (AVMA).

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

Excess wild horses removed from the range would be transported from the capture/temporary holding corrals to the designated BLM short-term holding corral facility(s). From there, they would be made available for adoption or sale to qualified individuals or sent to long-term holding pastures.

Wild horses selected for removal from the range are transported to the receiving short-term holding facility in straight deck semi-trailers or goose-neck stock trailers. Vehicles are inspected by the BLM COR or PI prior to use to ensure wild horses can be safely transported and that the interior of the vehicle is in a sanitary condition. Wild horses are segregated by age and sex and loaded into separate

compartments. Weanlings and yearlings may be shipped in mixed compartments of both colts and fillies. Transportation of recently captured wild horses is limited to approximately 8 hours. During transport, potential impacts to individual animals can include stress, as well as slipping, falling, kicking, biting, or being stepped on by another animal. Unless wild horses are in extremely poor condition, it is rare for an animal to be seriously injured or to die during transport.

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

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

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

On Site Adoption Event

If public interest exists the MLFO may hold an on-site adoption event in conjunction with the initial and future gathers of the Fish Creek HMA. A small number of wild horses (est. 15-20) would be selected during helicopter or bait/water gather activities. BLM staff would freeze-mark, vaccinate, and deworm the horses, and a veterinarian would draw blood to enable Coggins testing for Equine Infectious Anemia (EIA). All standard adoption requirements would apply.

Some additional handling to prepare the animals for the on-site event could result in injury, most commonly lacerations or bruising from contact with panels or fighting with pen mates. Experience conducting on-site adoptions in the BMD since 1995 indicates that wild horses removed from the range and soon adopted do not exhibit signs of additional stress as a result of not having additional time to “settle”. The adopted animals are able to move directly into a supportive, caring home environment and begin the gentling process and additional transportation to BLM short term facilities and handling and sorting is avoided.

Adoption or Sale with Limitations, and Long Term Pastures (LTPs)

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

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

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



Wild horses generally 5 years of age and older (those for which there is less adoption or sale demand) are transported to LTPs. Each LTP is subject to a separate environmental analysis and decision making process. Wild horses 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 and 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 15-25 pounds of good quality hay per horse/burro with adequate bunk space to allow all animals to eat at one time. Most animals are not shipped more than 18 hours before they are rested. The rest period may be waived in situations where the travel time exceeds the 24-hour limit by just a few hours and the stress of offloading and reloading is likely to be greater to the animals than the stress involved in the additional period of uninterrupted travel.

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 (i.e., the horses are not kept in corrals) and with the forage, water, and shelter necessary to sustain them in good condition. About 31,600 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private land pastures

in Iowa, Kansas, Oklahoma, Nebraska 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. No reproduction occurs in the long-term grassland pastures, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the 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 at LTPs by humans is minimized to the extent possible although regular on-the-ground observation and weekly counts of the wild horses to ascertain their numbers, well-being, and safety are conducted. A very small percentage of the animals may be humanely euthanized if they are in very thin condition and are not expected to improve to a Henneke 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 to maintaining the excess animals in short-term holding facilities.

Euthanasia and Sale without Limitation

While humane euthanasia and sale without limitation of healthy horses for which there is no adoption demand is required under the WFRHBA, Congress prohibited the use of appropriated funds between 1987 and 2004 and again in 2010 for this purpose. It is unknown if a similar limitation will be placed on the use of Fiscal Year 2015 appropriated funds or those in future years.

Impacts Common to the Proposed Action, and Alternative 2 (Bait/Water Trap, Booster Via Darting)

Water/Bait Trapping

Gathering wild horses through bait and water trapping involves setting up portable panels around an existing water source, in an active wild horse area, or around an artificial water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it is fitted with a gate system that will either close automatically or manually once wild horses are inside the corrals. The acclimatization of the horses creates a low stress trap. During this acclimation period the horses would experience some stress due to the panels being setup and perceived access restriction to the water/bait source.

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

Bait and/or water trapping generally require a long window of time for success. Although the trap corrals would be set in a high probability area for capturing wild horses residing within the area and at the most effective time periods, time is required for the horses to acclimate to the trap and/or decide to access the water/bait. Some of the main reasons that the potential for bait and water trapping was identified for the Fish Creek HMA is that there is good access to several water sources and that water sources are somewhat limited throughout the HMA, wild horse use patterns are strongly tied to those waters, and that the general area has good access and options for constructing bait or water trap corrals.

Gathering of the excess horses utilizing bait/water trapping could occur at any time of the year. Generally, bait/water trapping is most effective when a specific resource is limited, such as water during the summer months. For example, in some areas, a group of wild horses may congregate at a given watering site during the summer because few perennial water resources are available nearby. Under those circumstances, water trapping could be a useful means of capturing wild horses at a given location. As the proposed bait and/or water trapping in this area is a lower stress approach to gathering of wild horses, such trapping can continue into the foaling season without harming the mares or foals. Conversely, it has been documented that at times water trapping could be stressful to wild horses due to their reluctance related to approaching new, human structures or intrusions. In these situations, wild horses may avoid watering or may travel greater distances in search of other watering sources.

Impacts that could occur through a bait or water trapping process would be similar to those experienced during helicopter gathers as most injuries occur once the animals are actually captured and in the trap corrals or holding corrals or during transport. Similar injury and death rates would be expected. Once horses are captured in the trap corrals, and during handling, the horses would become stressed and agitated similar to that experienced during helicopter gathers. Because of the nature of bait/water trapping corral design and the difficulty of sorting animals in bait/water traps, foals transported to short term facilities with adult wild horses of mixed gender may be more prone to injury. If mares and studs are not sorted before transport to short term facilities, increased fighting and injury could be expected.

The application of the fertility control booster or treatment with PZP-22 may be done with the use of the working chute and alleyways made out of panels. As a result, sorting and handling of horses would still be necessary, which can result in injury and rarely death, and would cause temporary stress to the horses during that time.

Since the goal would be to treat and release the individual groups that were captured together, few (Proposed Action) or no (Alternative 2) horses could be selected for removal. During the release event, depending upon foal age and mare experience, foals could be left behind or abandoned in the excitement of the release. Every precaution would be taken to keep activities calm and quiet to allow for a smooth transition from capture, treatment and then release during bait and water trapping.

PZP Booster Treatment via Darting

Booster treatments via darting would be administered by certified BLM staff, volunteers or other qualified organizations strictly following the developed darting and documentation protocol. Boostering would be implemented prior to the 22-month effective period is reached for PZP-22. Darting itself would be accomplished by targeting mares that are approachable on the range (rare), and by using camouflaged blinds at water locations and heavily travelled trails. Darting would not be completed aurally.

Booster treatment through darting would be with the one-year PZP formulation ZonaStat-H or current formulation. Should a multi-year formulation become available for use with darting, it may be implemented during future treatments. The effects of booster treatment with PZP via darting should have minor and temporary effects to treated wild horses and would consist of the discomfort to the injection site, and a raised awareness of humans.

Bait and water trapping could be used to capture horses at water sources or bait stations and either dart the mares in the capture corral prior to release, or the horses could be transported to a central holding corral where the PZP (ZonaStat-H or PZP-22) could be hand applied. This would also be the case for

mares born on the range, or previously uncaptured that do not yet have the unique identifier or fertility control freezemark. These mares would also be sampled for genetic analysis and other data collected such as the mare's age, body condition, lactation status and photographs.

Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)

Three of the five Alternatives propose treating mares with PZP fertility control. The goal of fertility control is to break the cycle of gathers, removals and wild horses in holding facilities by reducing the number of horses that must inherently be removed from the range through the use of population controls at effective frequencies.

Fertility control would be applied to all the released mares to decrease the future annual population growth. The procedures to be followed for the implementation of fertility control are detailed in Appendix C. Each released mare would receive a single dose of the two-year PZP contraceptive vaccine (or current formulation). Refer also to Section 2.3.1. When injected, PZP (antigen) causes the mare's immune system to produce antibodies and these antibodies bind to the mare's eggs, and effectively block sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible.

The highest success for fertility control has been obtained when applied during the timeframe of November through February. The efficacy for the application of the two-year PZP vaccine (PZP-22) based on winter applications follows:

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

Rates for summer application for an August to October treatment window are:

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Normal	80%	65%	50%

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

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

As the sole approach, contraception would not allow the BLM to achieve the population objectives;

however, in conjunction with other techniques (e.g., removals of excess animals and adoption) and through incorporation of other population control techniques, it now provides a valuable tool in a larger, adaptive management approach to wild horse and burro management.

Contraception may be a cost effective and humane treatment to employ in horses to prevent increases in populations, or with other techniques, to reduce horse populations (Bartholow 2004). In general, contraception would not remove horses from an HMA's population which would result in some continuing environmental effects by those individuals. Horses are long-lived reaching 20 years of age in the wild and those horses returned to the range may continue exerting throughout their life span negative effects on the

environment as described above, as opposed to the removal of a horse. Contraception, if effective, reduces future reproduction. Limiting future population increases of horses would limit increases in environmental damage from higher densities of horses. It may also reduce the effect of wild horse gather activities on the environment (if it limits the numbers of wild horse gathers required). If application of contraception to horses requires capturing and handling horses, the risks and costs associated with capture and handling of horses may be roughly equivalent (not counting the cost of adoption). Application of contraception to older animals and returning them to the range may reduce risks associated with wild horses that are difficult to adopt or handle in captivity.

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

Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in three populations of wild horses, which is consistent with Powell's (1999) findings in another population. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population, presumably because energy expenditure was reduced by the absence of pregnancy and lactation.

In two studies involving a total of four wild horse populations, both Nunez et al. (2009) and Ransom et al. (2010) found that PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other mammal species can regularly demonstrate estrus behavior while contracepted (Shumake and Wilhelm



Diamond HMA helicopter overflight, August 2012. Mares treated with fertility control in 2004, with the identifying freeze-mark on the left hip.

1995, Heilmann et al. 1998, Curtis et al. 2002).

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

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

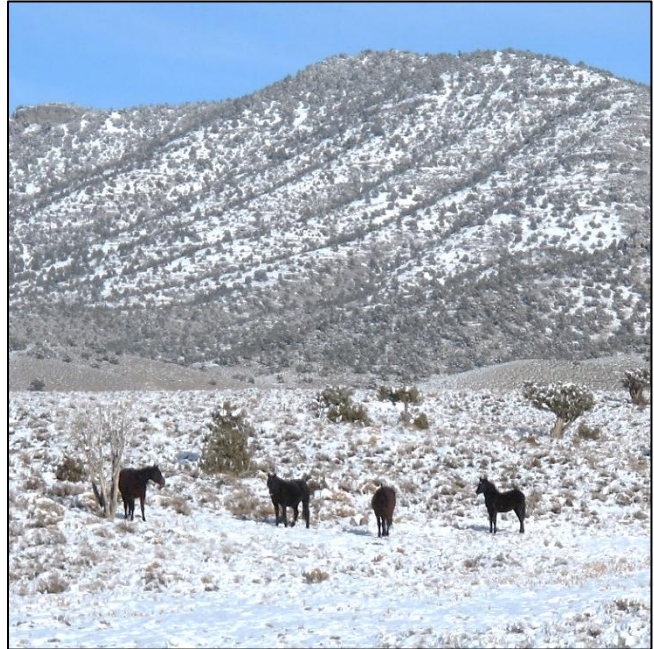
Furthermore, the HSUS (HSUS, 2010) has also completed analysis of the potential of population control with the modeling work showing that *“more aggressive changes in earlier years will yield more dramatic decreases in later years, obviating the need for removing any horses from the range in the future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

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

Following the gather, a large percentage of mares inoculated with PZP-22 would experience reductions in fertility. Recruitment of foals into the population would be reduced over a three-year period. Up to 94% of the mares treated would not foal the second year following implementation of fertility control, and 82% and 68% of mares in the following two years. Since gather efficiency would likely not exceed 85-90% via helicopter and less via bait and water trapping, there would be a portion of the population

uncaptured, and an estimated 50% of these would be mares. Additionally, not all mares respond to the fertility control vaccine and would continue to foal normally.

Under the Proposed Action, Alternative 2 and 3, the BLM could continue to either booster and initiate new treatments with PZP on an annual basis, or return to the HMA every 2-3 years to re-apply PZP-22 in order to maintain its effectiveness in controlling population growth rates. PZP-22 can safely be repeated in 2 years or as necessary to control the population growth rate. The probability of long-term infertility using PZP-22 is very low, and many mares retreated even after 3 years will return to normal fertility after the second treatment wears off (Turner, pers. comm.). Even through repeated booster treatments of PZP, most if not all mares would return to fertility. Observations at Assateague Island National Seashore indicate that the more times a mare is consecutively treated, that there is an increased time before fertility returns, but that even mares treated 7 consecutive years have started ovulating again (Kirkpatrick, 2002). Since the PZP formulations do not act permanently, determinations would be made as to how long to consecutively treat mares once the population growth is controlled.



Fish Creek HMA wild horse herd, December 2013.

One of the primary long-term and indirect effects to the wild horses through the continued treatment with fertility control would be to the overall health and wellbeing of the animals and the range. Many mares would not experience the biological stress of reproduction, foaling and lactation and would reflect better health as noted by higher body condition scores. Future foals born to these mares would be healthier overall, and would benefit from optimum nutrition from mares' milk and rangeland forage. Past application of fertility control has shown that mares reflect improvements to overall health and body condition even after fertility resumes. Subsequent observations of mares treated in past gathers showed that many of the mares were larger than the others were, maintained higher body condition than untreated mares, and had large healthy foals. Following resumption of fertility, the proportion of mares that conceive and foal could be increased (rebound effect) due to the increased fitness. Research is continuing to document and quantify these effects.

The indirect effect of fertility control would be to reduce foaling rates and population growth, reduce the number of wild horses that would have to be removed in the future to achieve and maintain the established AML. Long term genetic and physical health and future reproductive success of mares within the herd would be sustained. Expanding the use of PGS to slow growth rates and reduce the number of animals removed from the range (especially to LTPs) is a BLM priority. Additionally, reducing the numbers of wild horses that would have to be removed in future gathers would also allow for only younger, adoptable wild horses to be removed, and thereby eliminate the possibility of additional horses going to LTPs.

Reduced population growth rates and smaller population sizes would also allow for continued and

increased improvements to range condition, which would have long-term benefits to wild horse habitat quality. As the population nears or is maintained at the level necessary to achieve a thriving natural ecological balance, vegetation resources would continue to improve, thereby improving the forage available to wild horses throughout the Fish Creek HMA. With balance and optimum distribution across the Fish Creek HMA there would also be less trailing and concentrated use of waters which would have many benefits to the wild horses. There would be reduced competition among wild horses using the waters, and less fighting would occur among studs and individual animals accessing these waters. Water quality and quantity would continue to improve to the benefit of all rangeland users including wild horses. Wild horses would also have to trail less distance back and forth to water and desirable foraging areas.

Should the booster treatment and repeated fertility control treatment with PZP-22 or other formulation be continued into the future, the chronic cycle of over population and large gathers and removals would no longer occur, but instead a consistent cycle of balance and stability would ensue, resulting in continued improvement of overall habitat conditions and animal health.

The Callaghan Complex administered by the MLFO has been treated with PZP-22 during two gather operations between 2007 and 2011. The Callaghan Complex includes four HMAs exceeding 800,000 acres. Inventory flights conducted before the PZP-22 became effective and then throughout the years since first treatment show notable decreases in the number of foals observed in the population. Though results varied by HMA, the most notable inventory results showed a pre-effectiveness foal percentage of 20% in 2008, which had dropped to 7.5% by August 2012 after the second treatment was delivered in January 2011. Additionally, fewer horses needed to be removed during the second round of gathers, allowing for limited removals of younger, adoptable horses to be removed. During the first round of gathers, approximately 80% of the population was removed in order to achieve the AMLs in these areas. During the second round of gathers and retreatment of mares, primarily younger horses 4 years of age or younger were removed and approximately 80% of the population remained on the range following the gather.

Differences within Alternatives 1 and 3

Gate Cut Gather

A non-selective, or Gate Cut Gather method could be implemented through any or all of the future gathers that would occur under Alternative 1, as no PGS would be planned, and therefore, the entire population would not need to be gathered unless specific ages of horses were targeted for removal. Wild horses would be gathered and removed as encountered until removal and post-gather population objectives were achieved. No wild horses would be released so that the number removed would equal the number gathered. Impacts from this alternative to the animals gathered and removed would be similar as the Proposed Action.

Un-gathered horses could experience minor disturbance due to the activity of the helicopter but would otherwise be unaffected, and would resume normal activity once removal operations were complete. Sex ratios and age distributions of the un-gathered population would be unknown but should be comparable to the ratios observed in the gathered animals and the impacts to the residual herd's health and distribution is difficult to assume.

A primary effect of Gate Cut gathers would be the inability to select younger, more adoptable wild horses for removal would likely result in substantially more wild horses placed into LTPs at very high

costs when compared to opportunities available under the other Action Alternatives.

Another effect of the Gate Cut Alternative is that it eliminates the ability to select for animal health or desirable or historical characteristics in animals released back to the range. Experience over the past 37 years has shown that oftentimes gate cut gathers result in unintended impacts to the remaining herds. For example, typically horses of larger size (draft), gentle disposition, or bright/light coloring are the easiest to locate and capture, and thus the first to be removed under a gate cut scenario. In effect, the gate cut gather removes these genetic traits from the herds, and oftentimes these traits are gone from the population forever. Additionally, removal through gate cut gathers may distort the distribution within the HMA by removing all animals concentrated in certain areas (where capture is easiest), while leaving animals in the outlying areas that are more difficult to gather (trees, terrain, distance), and which may be characterized by lesser quality habitat.

The inability to select for desirable or historic traits equates to a missed opportunity to maintain or improve the health, conformation, color patterns or demeanor of the wild horses within a population, and potential permanent loss of these genetic traits from the population.

Sex Ratio Adjustment

Population control methods including the adjustment of sex ratios to favor stallions would be expected to have relatively minor impacts to overall population dynamics. Under Alternative 3, impacts of additional stallions in the population could include decreased band size, increased competition for mares, and increased size and number of bachelor bands. These effects would be slight, as the proposed sex ratio is not an extreme departure from normal sex ratio ranges. Refer to Appendix B for information about the estimated sex ratio. Conversely, a selection criterion, which leaves more mares than stallions, would be expected to result in fewer and smaller bachelor bands, increased reproduction on a proportional basis with the herd, and larger band sizes. With more stallions involved in breeding it should result in increased genetic exchange and improvement of genetic health within the herd. After future gathers are conducted to achieve the low AML, sex ratio adjustment would no longer be implemented, and fertility control would be implemented to slow population growth rates.

Modification of sex ratios for a post-gather population favoring stallions could also reduce growth rates and subsequent population size, as a smaller proportion of the population would consist of mares that are capable of giving birth to foals.

Differences Between Fertility Control Alternatives (Proposed Action, Alternative 2 and 3)

Under the Proposed Action, the initial phase of the management would involve the capture of about 500-549 wild horses, removal of 200 excess wild horses, and release of 300-349 back to the range. Approximately 150-175 mares released to the range would be treated with PZP-22 or other approved formulation. Future treatments could involve boosting with ZonaStat-H or other formulations approved for use by BLM on wild horses.

The removal goal for the initial phase of the operation is for wild horses three years of age or younger, though select two or three year olds exhibiting desirable and historic traits could be released back to the range as well (such as those exhibiting curly characteristics). These horses would be transported to a BLM short-term corral facility where they would receive appropriate care, and be prepared for adoption, sale (with limitations) or sent to LTPs. Only older animals would be offered for sale or transported to LTPs and it is estimated that this number would be very minimal due to the target of removing only younger, and highly adoptable wild horses.

The Proposed Action utilizes a combination of tools to implement a long-term population management plan designed to reduce population growth. BLM would booster treat with the ZonaStat-H formulation of PZP, implemented through darting and/or bait and water trapping, and helicopter drive trapping utilized at appropriate points in the future to either booster, re-treat with PZP-22 and treat previously untreated mares. Bait and water trapping could also be used to re-treat with the PZP-22 formulation. Following the initial gather, the goal would be to implement a PZP booster program of at least 90% of the mares per year. It is possible that wild mares in the Fish Creek HMA could be treated, boosted and re-treated through darting and bait and water trapping alone. It is possible that periodic helicopter gathers would be necessary to capture and treat mares, or that portions of the HMA would need to be gathered by helicopter to continue the treatment protocols.



Laura Leigh of Wild Horse Education in Antelope Valley inspecting conditions of wild horses and the range during a field tour with BLM. December 2014.

Alternative 2 does not include the use of helicopter or removals of wild horses and would involve initial treatment (or re-treatment) with PZP-22 and booster treatment with ZonaStat-H and re-treatment with PZP-22 or other current formulations through darting and bait and water trapping. The same data collection and implementation strategy would be used as described for the Proposed Action.

For the Alternatives that include a program to booster with ZonaStat-H (Proposed Action and Alternative 2), the following efficacy could be achieved if all treated mares can be boosted annually and any untreated mares from previous attempts can be treated.

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

Alternative 3 is similar to what has been referred to as Capture, Treat and Release (CTR) protocol, where the BLM return to this area re-apply fertility control (PZP-22). No boosting via darting or bait and water trapping would be done, and standard, periodic helicopter gathers would be completed to capture wild horses. Standard monitoring and inventory would be completed to monitor population size and growth rates. Under this alternative, these mares could be treated again in 2-3 years and thereafter every 2-3 years which could have the following efficacy for a two year protocol (which was used for the population modeling):

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

Refer to the WinEquus Population Modelling Section below for more information about the expected effects to population size, removals and growth rates under the Alternatives.

The following table provides an overview of the proposed activities under each of the Alternatives in which PGS is planned.

Table 14: Comparison of Fertility Control Alternatives

Alternative	Description	Darting	Bait/Water Trap	Continued Treatment
Proposed Action	Helicopter gather 2015, Initial treatment with PZP-22.	Booster with ZonaStat-H.	Booster with ZonaStat-H, retreat and initially treat with PZP-22, sample genetics, freezemark mares.	Future helicopter gather TBD to retreat and initially treat with PZP-22, sample genetics, freezemark mares, limited removal of younger animals.
Alternative 2	Bait and water trapping to treat initially with PZP-22 or ZonaStat-H.	Booster with ZonaStat-H.	Same as the Proposed Action.	Dart and Bait/Water Trap.
Alternative 3	Same as the Proposed Action.	No Booster Treatment	Small scale trapping if needed for wild horse concentration or health issues.	Helicopter gather in 2-3 years to treat and retreat mares with PZP-22.

Monitoring and Animal Identification

Mares treated with fertility control and released during the gathers would be freeze-marked on the left hip with two 4 inch letters for future identification. These identifiers would be recorded along with age and health of the mare for future analysis.

For the Alternatives that would involve booster treatment, a unique 1-3 number identifier would also be freezemarked on the left hip to allow for future documentation, tracking and follow up booster treatment. To facilitate an effective and efficient booster treatment program, monitoring of the released wild horses would occur though on the ground field monitoring and trail cameras to track movement and behavior patterns, collect data on animal health and foaling, and improve the future booster strategies.

Genetics samples would continue to be collected during bait/water and helicopter trapping. There is an interest to be able to increase the monitoring and tracking of the genetics within this HMA, possibly by individual animal verses the population based genetic variability. The MLFO would work with the contract geneticist to develop a genetic monitoring plan for this HMA to complement the additional data that could be collected through the PGS program.

Inventory flights would also be conducted to monitor population size and the effectiveness of the fertility control program. Future analysis of population growth or decline, genetics and other factors would be completed to assess the future number of mares to be targeted for initial treatment with PZP-22, booster treatment or no treatment at all.

Unique freezemarks on treated mares would facilitate tracking and documentation of movement and behavior patterns through analysis of trail camera photos. The data compilation and analysis would be used to assess the effectiveness of treatment modes and make adjustments to the PGS program. Data would also be assessed to monitor and track herd and rangeland health.

Since all mares treated with fertility control would be individually identified, and studs released to the range may receive an HMA brand, there may exist opportunities to collect and assess data that

previously has not been available. Increased monitoring in the field and via trail cameras, as well as that data collected during treatment activities would be valuable for inclusion into an HMAP and for use to made determinations about future management activities.

Results of WinEquus Population Modeling

The purpose of the modeling is to display a **potential range of outcomes for various management activities** including removals, fertility control or no removals. A standard set of outputs in the form of tables and graphs are obtained for population size, growth rates, and gathers/removals. The results can also be analyzed through Pivot tables in Excel to display other results of interest.

Modeling for the Fish Creek HMA was completed for all four Action Alternatives and the No Action Alternative using Version 3.2 of the WinEquus population model (Jenkins, 2000) for a total of 10 years, which provided 11 years of data. The following section provides an overview of the results of the modeling and provides comparative tables. More detailed results are located in Appendix E.

The model was used to simulate the possible outcomes of PZP treatment, booster treatment or re-treatment to display the potential growth rates, population sizes and gather and removal numbers. It should be noted that the WinEquus population model is a management tool to project possible outcomes based on various management scenarios. The actual results of management activities may be similar or quite different than the output provided by the model due to individual herd genetics, foaling rates, age structure, health, survivability rates, environmental conditions and a host of other factors. Routine monitoring of the range and the herd would continue and will be used to evaluate population growth rates, animal health and other population and habitat parameters for use in future planning documents such as HMAPs and wild horse gather EAs.

The current WinEquus Population Model includes options for management by Fertility Control Only, Removals Only or Removals and Fertility Control. Currently, there are no options to simulate fertility control booster treatment through darting for or initial treatment or boosting via bait and water trapping. The program is also limited in that a specific number of horses cannot be identified for removal under various gather scenarios. For example, the program will not allow the user to show an initial gather event and removal of 200 horses with initial treatment of PZP-22, then a follow up booster treatment of ZonaStat-H via darting, or capture by bait and water trapping with no future removals.

In order to overcome this obstacle for modelling of the Proposed Action, the estimated “post-gather” population after the initial phase of the gather in 2015 was modelled out through the 10 years simulating annual gathering of 90% of the mares through a Fertility Control Only scenario. Therefore, the results for “gathered” wild horses under the Proposed Action reflect a gather of 90% of the population annually rather than booster treatment of just mares or horses captured through bait and water trapping.

Additionally, under the Proposed Action, the objective is to follow up with booster treatment of mares to the extent possible using bait and water trapping and darting, with the understanding that periodic helicopter gathers could be necessary to effectively identify mares born on the range following the initial gather, collect genetics samples, apply freemarks and implement limited removals of young animals to make progress towards achieving or maintaining the established AML. It is possible that these activities could be achieved through bait and water trapping. However it is also realistic that bait and water trapping may not be effective enough to meet the needs for the long term management plan. For the purposes of this analysis, it was assumed that under the Proposed Action, that a second helicopter gather may be necessary at approximately 5 years or 2020, at which time any mares born since 2015 would be

vaccinated with PZP-22 or other current formulation and properly identified for future booster treatment and monitoring. At that time as well, the assumption was made that at least weanlings and yearlings would be removed, if not additional horses in order to achieve the established AML.

Alternative 1 was modelled for Removal Only, at a 3-year interval, and only younger horses ≤ 4 removed during the gathers. The starting population of 549 was utilized, with a gather efficiency of 90%.

Alternative 2 was modelled for Fertility Control Only. Since this Alternative does not include helicopter gathers or removals, the model was set to show “gathers” annually to implement fertility control as was done for the Proposed Action. Since the goal under Alternative 2 would be to use a combination of bait and water trapping and darting to initially treat and then booster the mares, the “gather” number shown in the tables below is not representative, but actually reflects 90% of the population gathered each year. The starting population of 549 was utilized, also with an annual “gather” efficiency of 90% which is highly ambitious for a program not using helicopter. 90% was chosen to show the maximum number of horses that could be captured and the potential population level effects.

Alternative 3 was modelled for both Removal and Fertility Control with a gather occurring in 2015, then every three years to implement PZP-22 or other current formulation. Younger age groups (≤ 4) were selected for removal, with adjustment of the removal targets to allow for additional males to be released to the population. Slight adjustment was made to the removal proportions to favor a higher ratio of studs remaining on the range. Again, the beginning population of 549 was utilized with a gather efficiency of 90%.

The results of the population modeling clearly show that the application of fertility control would reduce growth rates and result in potential reductions in the number of excess wild horses that would need to be removed from the range over the next 10 years to move towards achievement of the established AML range. The Fertility Control Alternatives (Proposed Action, Alternative 2 and 3) show a population that decreases over the modeling period once the fertility control became effective. The following questions were addressed through the modeling:

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

Results of the modeling do not indicate that implementing the Proposed Action or any of the Action Alternatives would result in a crash of the population. Results obtained for 11 years and 100 trials reveal minimum population levels and growth rates within reasonable levels, indicating that adverse impacts to the population are not likely.

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

The results of the model indicate that the most effective and efficient method to achieve the established AML would be through a combination of removals with an intensive fertility control program. Average population sizes produced from the modeling are in the following order from low to high by Alternative: Alternative 3 < Alternative 1 < Proposed Action < Alternative 2 < No Action.

The Proposed Action includes an initial removal of 200 horses in 2015, with annual booster treatments of PZP. Though the population modeling shows a decline in population size, the reduction is slow, and does not indicate that AML could be achieved by PZP treatment and booster treatment alone. Removals through bait and water trapping or helicopter gathers could be implemented throughout the next 10 years to achieve the objective of achieving AML more quickly

than with no removals at all. It was not possible to model this scenario to show a gather and removal of a certain number of horses in a certain year, so the modelling for the Proposed Action does not show any future gathers or removals occurring (see tables below for more information).

Alternative 1 does not include the use of fertility control to limit population growth, and the population size would be regulated through gathers and removals. The model was set to show only removal of horses 4 years of age or younger in order to transport only the most adoptable horses to BLM facilities for adoption. Through the modelling, the population size does approach the high level of AML by 2025, but requires the removal of over 900 horses through four gather events to achieve this.

With no removals of excess wild horses or use of helicopter to gather wild horses, the Alternative 2 shows the highest overall population size of all of the Action Alternatives. The initial treatment in 2015 for fertility control involves no removal of wild horses, so the starting population is 200 horses higher than the other Action Alternatives. The application of fertility control alone does cause a decline in the population, but not enough to achieve the AML within 10 years. The ending population in 2025 according to the model would be 100 wild horses higher than the Proposed Action.

The modelling for Alternative 3 shows the potential effects of a fertility control program which includes regularly scheduled gathers every 3 years to re-treat mares with fertility control and implement limited removals. Over the 10 year modeling period, the population approaches the high AML, and the results show that it is very possible that this Alternative could be successful in achieving AML by 2025. Through this scenario, the most typical trial shows 542 horses (≤ 4 years of age) removed from the range through 2025, including 279 within the initial gather event. It is not possible to set the model to remove a certain number of horses per gather, and the model generated the removal number for the most typical trial rather than the 200 identified as the current 2015 proposal. Future gathers in 2018, 2021 and 2024 reflected by the most typical trial showed the removal of 50-148 horses per gather event. This Alternative reflects the lowest average population size of all Alternatives.

The No Action Alternative obviously shows the highest overall population sizes with no management at this time to control growth rates or remove excess wild horses. The average population size exceeds 900 wild horses, with population increase into the thousands possible through the 10 year modelling period.

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

The results of the population modelling show that the Alternatives that implement an intensive fertility control program involving annual booster treatments would produce the lowest growth rates. The median trial reflects -2.1% for the Proposed Action and -1.7% for Alternative 2. The less intensive fertility control program modelled for Alternative 3 indicates a growth rate of 6.4%, resulting from gathers (and removals) every 3 years with the application of PZP-22 and no booster program. The non-fertility control Alternatives (Alternative 1 and the No Action), both reflect median trial growth rates above 20%.

The modelling shows that the low and potentially negative growth rates of the Proposed Action and Alternative 2 would result in population decline. However, neither Alternative showed the ability to reach the established AML ranges over the course of 10 years. It is realistic that periodic removals

through helicopter and bait and water trapping under the Proposed Action would enable the AML range to be realized. The following table shows the average growth rates produced for each Alternative through the modelling.

Table 15: Median Trial for Average Growth Rates in 11 years

Trial	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	-10.8	9.9	-11.6	-1.5	15.6
Median Trial	-2.1	20.7	-1.7	6.4	20.5
Highest Trial	2.0	26.8	2.0	11.9	25.9

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

Neither the No Action nor Alternative 2 include any gathers to remove wild horses. Both Alternative 1 and 3 were modelled to show gathers occurring every 3 years with removals of only horses 4 years of age or younger. No fertility control would be implemented under Alternative 1, whereas PZP-22 would be implemented for Alternative 3. The differences between the Alternatives include nearly double the number of wild horses removed over the next 10 years under Alternative 1 without the use of fertility control. Additionally, the numbers gathered are higher under Alternative 1, assumedly due to the larger population size. Between these two alternatives, the fertility control Alternative 3 shows the lowest average population size, lowest growth rates, and lower numbers of wild horses gathered and removed over the next 10 years.

The Proposed Action was modelled to show the annual booster treatment of mares having been treated with PZP rather than regularly scheduled gathers to re-treat and remove wild horses (as for Alternative 3). Under this scenario, the “Removal Only” setting was used to show the population level effects of retreatment without removals in order to model potential effects of booster treatment, knowing that within this Alternative, there could be future removals as needed to meet population targets as allowed through the National gather schedule. In order to model this, the initial gather in 2015 was not included. The estimated post gather population was used as a starting point for the model with an initial population of 300-349 wild horses. An estimated 500-549 wild horses would be gathered in 2015 with 200 removed at that time.

The Proposed Action assumes another gather event near the year 2020 to capture, re-treat mares with PZP-22 or current formulation, apply identification marks to mares, and implement limited removals of an estimated 200 wild horses. Approximately 400 wild horses would be gathered to accomplish this in 2020. Bait and water trapping could be used to booster mares with ZonaStat-H and re-treat or initially treat mares with PZP-22 throughout the 10 years. For the purposes of this analysis, it was estimated that 50 horses would be captured through bait and water trapping in each of 2017-2019 and 2012-2023 for a total of 600 trapped. Should additional wild horses be removed during bait and water trapping or through one or more helicopter gathers, it is estimated that the established AML could be achieved by year 2022.

The following table reflects the results of the modeling. The Action Alternatives reflecting the lowest results are shaded in gray. Those with the highest figures are identified in red font. The initial gather, removal and treatment figures for the Proposed Action Alternative are not reflected since the modelling was set to begin with the estimated post gather population. Since numbers gathered are not representative for the Proposed Action or Alternative 2, they were not identified for

highs and lows. The “gathered” numbers do reflect the degree of intensity required for the management program under each Alternative.

Table 16: Modeling Summary Table – Median Trial

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Proposed Action FC/Darting	314	408	506	-2.1	3633	400*	1486
Alternative 1 No FC	168	366	597	20.7	1546	1000	0
Alternative 2 FC No Removals	494	627	752	-1.7	5664	0	2602
Alternative 3 HGLR/SRA	178	342	598	6.4	1320	634	244
No Action	592	1829	3910	20.5	0	0	0

FC: Fertility Control

SRA: Sex Ratio Adjustment

HGLR: Helicopter Gather/Limited Removal

Since the Proposed Action components are not reflective of the current population model, the following table is included to display potential and estimated gather and removal numbers.

Table 17: Gather and Removal Estimates – Proposed Action

Capture Method		
Helicopter 2015	500-549	200
Helicopter est. 2020	400	200
Bait and Water Capture	600	TBD (est. 60)
Total	1500-1549	400-460

Summary

The WinEquus Population Model was utilized to display potential outcomes for the various management activities under the Proposed Action and Alternatives, including a No Action Alternative. The model shows that the use of a fertility control vaccine to reduce growth rates would reduce population size over time. The model also shows that the use of fertility control in combination with removals could reduce the population to within the established AML range of 101-170 wild horses, and could reduce or eliminate the need to remove wild horses from the range. Without removals, an intensive fertility control program of initial treatment and boosting would be necessary to effect reductions in population growth rates and population size, but would not bring the population to within the AML range.

A scenario without using fertility control would require the removal of nearly double the number of wild horses, to approach the AML range over the next 10 years, with high gather numbers to conduct selective removal to only remove younger adoptable wild horses. A less intense program of periodic gathers to continue the PZP-22 program would also reduce the population to near or within the AML range. Without the annual boosting program, however, gather and removal numbers would be higher than that reflected for the Proposed Action.

Finally, the No Action Alternative would allow population growth to continue, with population size eventually exceeding the ability of the range to support wild horses.

Refer to Appendix E for more information about the Population Modeling and more detailed tables and graphs.

No Action Alternative

As described above in the discussion about the population modeling, under the No Action Alternative, no gather would take place in 2015, and no PGS implemented to reduce population growth rates. The Fish Creek HMA population would continue to grow uncontrolled. The Typical Trial populations displayed in Table 8 of Appendix E reflect a population in excess of 800 by the year 2019 and 1400 by year 2025. The Median Average population size of all trials reflects a population in excess of 1800 wild horses. The AML for the Fish Creek HMA was established to achieve a thriving natural ecological balance and avoid deterioration of the range caused by an overpopulation of wild horses.

Populations at the levels that could occur under the No Action Alternative would have disastrous consequences to the health of the range and to the wild horses. Due to drought and overpopulation, the MLFO has been hauling water to supplement existing sources in the HMA since 2012. This practice would have to increase over time to keep up with the growing population. Existing natural sources would continue to be degraded by concentrated use of wild horses. Utilization of key forage species would increase to the detriment of rangeland health as invasive species such as halogeton and Russian thistle invade the native plant communities. At some point in the future, widespread decline of wild horse body condition would result. Wild horse health would decline affecting survival rates of foals, and the very young and old horses initially and eventually all age groups as forage and water become inadequate to provide the needs of the growing population.

This scenario would include suffering by starvation and dehydration, inconsistent with a thriving natural ecological balance, and would constitute inhumane treatment. Even with intervention through emergency gathers, the damage to the range and long term health of the HMA would be impacted to degrees congruent with the level of overpopulation and the decline of animal health. This Alternative would not be in conformance with the WFRHBA, existing LUP, FLPMA, PRIA, the NEGB RAC or other existing BLM policies regarding proper management of wild horses.

3.3. Livestock Management

Affected Environment

Detailed information about the authorized livestock use within these HMAs is provided in the documents identified in Section 1.5. Refer to Map 1 which displays the Allotment boundaries in addition to the HMA boundaries within the proposed gather area. Substantial changes to the livestock management systems have not taken place since issuance of the most recent gather EA in 2005.

In 2004, a comprehensive Rangeland Health Assessment was completed for the Fish Creek Complex, which included the Fish Creek Ranch, Lucky C, Romano, Ruby Hill and Arambel Allotments. The analysis of the data resulted in the conclusion that several RAC Standards for Rangeland Health and allotment specific objectives were not being met throughout the Complex, and that changes in livestock management were needed in addition to establishing and achieving AML for wild horses within the Fish Creek and Whistler Mountain HMAs. With the exception of the Fish Creek Ranch Allotment, carrying capacity analyses were completed for all the allotments within the Fish Creek Complex using utilization, monitoring and actual use data for wild horses and livestock. As a result, livestock management systems were implemented for each allotment, which included changes in season of use and changes to permitted

use. A carrying capacity was not completed for the Fish Creek Ranch Allotment in 2004 due to insufficient data, lack of livestock use and the wild horse population being over the AML during the evaluation period. However, a grazing management system was developed that retained the permitted use and AML established in 1994 (following a carrying capacity analysis and issuance of an FMUD) and modified the season of use. These changes to livestock management were implemented through the FMUD issued in September 2004.

This EA does not propose changes to livestock management. When changes to livestock management are proposed, they would be analyzed through a site-specific environmental assessment. Future completion of Rangeland Health Assessments would involve the analysis of monitoring data, potential carrying capacity calculations and adjustments to livestock grazing, and would include participation from the interested public.

Allotments within Fish Creek HMA

Refer to the 2004 Fish Creek Complex Rangeland Health Evaluation and FMUD for more detailed information about the livestock grazing permitted within the proposed gather area.

The grazing allotments included within the proposed gather areas are displayed in the table below. The Lucky C Allotment reflects only the portion south of U.S. Highway 50.

Table 18: Allotment Overview – Fish Creek HMA

Allotment		
Arambel	97%	3%
Fish Creek Ranch	48%	51%
Lucky C	76%	24%
Ruby Hill	46%	54%

The four grazing allotments (including only the portion of Lucky C south of U.S. Highway 50) total approximately 417,000 acres in size. The Fish Creek HMA overlaps 230,675 acres or approximately 55% of the grazing allotment acreage. The HMA boundary does not match the allotment boundaries or use boundaries of any of the grazing allotments that it overlaps. Therefore, there is not a parallel relationship between the acres, actual use or permitted use within these allotments and the acres or actual use of wild horses within the HMA. Map 1 displays the Fish Creek HMA and the various grazing allotments that overlap the HMA.

The permitted use for all of these allotments totals 8,855 AUMs annually. Since 2009 (the past six years), the average actual use within these allotments has been 5,530 AUMs or 62% of the permitted use. In 2014, the actual use was 4,353 AUMs or 49% of the permitted use. As noted in the tables below, some years reflect the amount of use that was billed and may not reflect the actual AUMs used by livestock.

The tables below display the actual use¹⁷ that has occurred within these areas within the past five years. The grazing allotment and use area boundaries within the allotments do not correspond to the HMA boundaries, and therefore, permitted use and actual use within these allotments does not perfectly correspond to (and may overstate) use by livestock within the HMA boundaries.

17. If actual use was not submitted by the permittee then billed use was used instead.

Table 19: Arambel Allotment Actual Use (AUMs)

Year	
2009	254
2010	474
2011	646
2012	383
2013	324
2014 (billed)	761
Average	474
Permitted Use	1349

There is a total of 1,349 AUMs allocated to sheep use in the Arambel Allotment. The season of use ranges from 4/15 to 10/31, annually. From 2009 to 2014 the actual use within the Arambel Allotment ranged from 19% to 56% of permitted sheep AUMs.

Table 20: Fish Creek Ranch Allotment Actual Use (AUMs)

Year			
2009	1369***	1,932*	431*
2010	1174**	2091***	543***
2011	1054**	1,994*	802***
2012	1390**	1414***	102***
2013	1386**	2402**	0**
2014 (billed)	961**	887**	602**
Average	1222	1787	413
Permitted Use	1,500 AUMs	2513 AUMs	802 AUMs

*Operator different than Current Operator

**Reflects billed AUMs

***Both: operator different than current operator and reflecting billed AUMs

There is a total of 4,815 AUMs allocated to livestock use in the Fish Creek Ranch Allotment. Of the 4,815 AUMs allocated to livestock, 4,013 AUMs are allocated for cattle use and are split between two separate permits (Antelope Valley and Little Smoky Valley). The remaining 802 AUMs are allocated for sheep use (Ninemile Peak Use Area). Very little of the Little Smoky Valley use areas are within the Fish Creek HMA. From 2009 to 2014 the actual use within Fish Creek Ranch Allotment ranged from 46% to 94% of permitted cattle AUMs and 0% to 100% of sheep AUMs.

In 2014, unauthorized livestock were documented grazing consistently for six months outside the permitted use within the Antelope Valley Use Area of the Fish Creek Ranch Allotment. Additionally, in 2012 unauthorized sheep were documented in the Ninemile use area that grazed consistently for through the winter and outside permitted use. The unauthorized use, especially in Antelope Valley, and Fenstermaker Wash has exacerbated the current vegetative conditions in light of Severe and Extreme drought and overpopulation of wild horses. The BLM has and will continue to pursue corrective action regarding unauthorized livestock use on public lands.

Table 21: Ruby Hill Allotment Actual Use (AUMs)

Year		
2009	700	0***
2010	213	0***
2011	486	171
2012	341	197
2013	144	258
2014 (billed)	278**	248**
Average	360	146
Permitted Use	1011 AUMs	275 AUMs

*Operator different than Current Operator

**Reflects billed AUMs

***Both: operator different than current operator, and reflecting billed AUMs

There is a total of 1,286 AUMs allocated to livestock use in the Ruby Hill Allotment. Of the 1,286 AUMs, 1,011 AUMs are allocated to sheep use and 275 AUMs are allocated to cattle use. From 2009 to 2014 the actual use within the Ruby Hill Allotment ranged from 14% to 69% of permitted sheep AUMs and 0% to 94% of cattle permitted AUMs.

Table 22: Lucky C Allotment Actual Use (AUMs)

Year	
2009	1400**
2010	749**
2011	1400**
2012	1400**
2013	454**
2014 (billed)	616**
Average	1128
Permitted Use	1405 AUMs

**Reflects the billed AUMs

The Lucky C Allotment exists both north and south of U.S. Highway 50. The Fish Creek HMA is located on both sides of the highway; however, this EA only covers the portion of the HMA south of the highway. Of the portion located south of U.S. Highway 50 there are 1,405 AUMs allocated to cattle use. The permitted season of use is from 4/15 to 2/28, annually. From 2009 to 2014 the actual use south of Highway 50 within the Lucky C Allotment ranged from 32% to 100% of permitted cattle AUMs.

Drought Actions

On February 5, 2008, the MLFO issued a decision closing the winterfat plant communities within the Fish Creek Ranch and Seven Mile Allotments stating poor vegetative conditions and reduced production due to drought. The closure was in effect through the 2008 and 2009 grazing season and was lifted on January 19, 2010.

In 2012 the BMD issued the Battle Mountain District Drought Management Environmental Assessment (DOI-BLM-NV-B000-2012-0005-EA) in order to address drought related impacts across the BMD. Starting in 2012 to present (2014), livestock numbers have been reduced across the District through voluntary agreements by permittees and through Decisions issued by the BMD in light of reduced forage and water and to protect resources from overuse. Drought utilization and stubble height triggers were

implemented to facilitate monitoring and subsequent management actions. Within the Allotments in the Fish Creek HMA, voluntary reductions were also made in livestock AUM¹⁸s. For the 2014 grazing year the following reductions in AUMs occurred: Arambel Allotment 44%, Fish Creek Ranch Allotment 49%, Ruby Hill Allotment 59% and in Lucky C Allotment 56%.

Environmental Consequences

Proposed Action

The Proposed Action would not directly affect livestock operations within the grazing allotments. If livestock are present during gathers, livestock may be temporarily disturbed. Any bait or water trapping or darting of wild horses has the potential to disturb livestock. The BLM would work closely with affected livestock permittees to prevent conflicts.

The effects of wild horse populations on livestock, wildlife, and vegetation resources are largely functions of dietary and spatial overlap between species. In some cases wild horses utilize rangeland that livestock do not; in other cases, a 1:1 relationship exists. Additionally, most livestock permits do not allow for year-round use of the allotments, whereas wild horses inhabit these areas on a continual year-round basis.

The most notable effects of achieving the established wild horse AML would be indirect and beneficial through reducing impacts caused by an overpopulation of wild horses, particularly throughout low elevation winter range, heavily utilized riparian areas and around water developments. Removal of wild horses from outside the HMA boundaries where they are not allocated for use would eliminate the competition between wild horses and livestock in those areas, and reduce use levels on the vegetation. Managing wild horses within the established AML ranges, would promote a thriving natural ecological balance between wild horses and other resource values, improve the quality and quantity of forage available throughout these areas, and contribute to improved rangeland health.

Impacts that differ by Action Alternative

The effects of the action alternatives to livestock would be from the growth rates and population size of wild horses. The Proposed Action has the potential to provide the greatest opportunity for range resources to improve, if successful fertility control is implemented and if sufficient removals of excess wild horses occur in future gathers to achieve the established AML. These indirect impacts decline as average population size increases between the Alternatives. The lowest average population size could be accomplished through Alternative 1 or 3 which both involve the periodic removal of wild horses through helicopter gathers.

Alternative 2 would not slow population growth enough to achieve the established AML within 10 years and excess wild horses would continue to utilize forage not allocated to them and compete with livestock and wildlife for that forage. This Alternative would result in the greatest impacts to riparian and upland resources and would promote the least recovery or improvement of rangeland health. Achieving and maintaining AML over the next decade would allow for the most benefits to livestock in terms of reduced competition, and utilization levels consistent with the carrying capacity analyses and grazing management plans.

¹⁸ 43 CFR 4100.0-5 defines Animal Unit Month (AUM) as the amount of forage necessary for the sustenance of one cow or its equivalent for 1 month (which equates to 5 sheep).

No Action Alternative

There would be no direct impacts to livestock from gather operations under the No Action Alternative. Authorized livestock operations and range resources would continue to be impacted by the overpopulation of wild horses, inside and outside of HMA boundaries. Impacts of the No Action Alternative could include continued resource deterioration resulting from competition between wild horses and livestock for water and forage, reduced quantity and quality of forage, and the inability to graze livestock on public lands due to insufficient forage quantity and quality.

3.4. Noxious Weeds, Invasive and Non-native Species

Healthy rangeland supports native shrubs, understory grasses and forbs that remain intact and compete with noxious weeds, invasive and non-native species. Changes in plant community composition from invasion of non-native plants into areas of native plant communities can negatively affect wildlife, livestock and wild horses by changing fire regimes, habitat structure, and available forage.

Noxious weeds, invasive and non-native species are highly competitive, aggressive and easily spread by people, equipment, animals and by natural processes, such as wind and water. Any surface disturbance activity can create a potential environment for noxious weeds, invasive and non-native species. The potential for increased weed infestations rises proportionally with increased



Winterfat community (light gray) invaded with halogeton, Russian thistle and annual mustard (foreground). Antelope Valley June 2014.

cultural activities such as road maintenance, grazing and recreational use, primarily off-highway vehicle (OHV) use. In addition, contaminated equipment or vehicles provide an environment for seed dispersal and establishment into new areas. Heavy use of the range by an overpopulation of wild horses and concentrated use of springs can promote the spread of weeds through reducing competition by perennial native species and increasing ground disturbance through trampling and trailing.

Noxious weeds and invasive plant species have been defined as pests by law or regulation. The BLM defines a noxious weed as, “a plant that interferes with management objectives for a given area of land at a given point in time.” An invasive species is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (EO 13112, signed February 3, 1999).

Several laws authorize control of noxious weeds, invasive and non-native species on public land under the BLM’s administrative jurisdiction (e.g., The Federal Insecticide, Fungicide and Rodenticide Act [1972], Federal Noxious Weed Act [1974], FLPMA [1976], and the Public Rangelands Improvement Act [1978]). Additionally, Executive Order 13112 outlines the federal responsibility to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.”

The Nevada Revised Statutes, Chapter 555 - Control of Insects, Pests and Noxious Weeds, mandates the extent that land owners and land management agencies must control specific noxious weed species on lands under their jurisdiction. BLM Nevada recognizes the current noxious weed list designated by the Nevada Department of Agriculture, found in the Nevada Administrative Code, Chapter 555, Section 010 (NAC 555.010).

Noxious weeds, invasive and non-native species are known to exist on public lands within the administrative boundaries of the Fish Creek HMA and are a concern for site function and productivity, threatening biodiversity, habitat quality and ecosystems stability. Guidelines for managing noxious weeds, invasive and non-native species in the Fish Creek HMA have been followed in accordance with the BMD Integrated Weed Management (IWM) Plan.

The entire Fish Creek HMA has not been inventoried for the presence of noxious weeds, invasive and non-native species. However, of the 47 species designated as noxious by the State of Nevada, several species have been documented within the area. The most prevalent invasive, non-native species within the Fish Creek HMA include the threat to winterfat communities by halogeton, Russian thistle and annual mustard. The following table identifies known noxious weeds as and other invasive, non-native plant species.

Table 23. Known noxious weeds, invasive and non-native species

Scientific Name		
<i>Lepidium draba draba</i>	Hoary cress	√
<i>Carduus nutans</i>	Musk thistle	√
<i>Acroptilon repens</i>	Russian knapweed	√
<i>Lepidium latifolium</i>	Perennial pepperweed	√
<i>Hyoscyamus niger</i>	Black henbane	√
<i>Cirsium vulgare</i>	Bull thistle	√
<i>Salsola iberica</i>	Russian thistle	√
<i>Bromus tectorum</i>	Cheatgrass	√
<i>Halogeton glomeratus</i>	Halogeton	√

Environmental Consequences

Proposed Action

There is low to moderate potential for noxious weeds, invasive and non-native species to establish and spread following the gather, depending upon site specific conditions. This could occur if vehicles drive through infestations and spread seed into previously weed-free areas transport seeds on contaminated equipment. This is of particular concern if a gather crew moves from valley to valley.

Areas most vulnerable to establishment of noxious weeds, invasive and non-native species are heavily disturbed areas such as trap sites and temporary holding facilities and denuded and degraded areas subject to heavy or severe utilization or to trampling damage. The COR/PI would examine proposed gather sites and holding corrals for weed infestations prior to set-up to reduce the potential for weeds to invade other sites. If weed infestations are found, a different location would be selected. Any equipment or vehicles exposed to weed infestations or arriving on site carrying dirt, mud, or plant debris would be cleaned before moving into or within the project area. Following BLM policy, IWM practices including

continued treatments throughout the area would help control the spread of weeds on roadways and other areas used during gather operations.

The Proposed Action and Action Alternatives would promote improved condition of plant communities and reduce the vulnerability of the project area to weed infestations. Managing wild horse populations within the established AML would reduce the potential or occurrence of over utilization of vegetation or severe trampling and trailing. When the recovery of drought stressed vegetation begins to improve and become more resilient, native vegetation will better compete and help protect against invasive and non-native species such as halogeton, Russian thistle and cheatgrass. Despite short-term risks of the introduction and spread of weeds, over the long term, achieving and maintaining AML and the subsequent recovery of the native vegetation the susceptibility of these areas to invasive plant species would be reduced.

Impacts that differ among Action Alternatives

The indirect impacts would be in relation to the size of the population on the range relative to the established AML, and wild horse gather operations that could be implemented. Maintaining the population of wild horses at AML would offer the best opportunity to promote healthy rangelands and reduce the establishment and spread of noxious weeds, invasive and non-native species. The Proposed Action, Alternatives 1 and 3 have the potential achieve the AML for wild horses within 10 years, should adequate removals of excess wild horses occur in combination with PGS (Proposed Action and Alternative 3). Alternative 2 would likely not see the achievement of the AML within 10 years, and excess wild horses would continue to affect rangeland health, increasing the potential for continued spread of noxious weeds, invasive and non-native species. Alternative 3, with repeated removals of excess wild horses and the implementation of fertility control could see the AML achieved the soonest, and maintained thereafter. Refer to the Population Modeling discussion in Section 3.2 for more information about the potential population size, growth rates, and gather and removal numbers for each Alternative.

Gather operations, whether by helicopter drive trapping or bait and water trapping would cause soil disturbance and could lead to increased presence of noxious weeds, invasive and non-native species in the areas surrounding the trap or holding corrals. Most trap and corral locations would be placed in previously disturbed areas so not to disturb native, intact rangeland vegetation. It is not possible to discern which Alternative would have the greatest impact at trap or holding corrals, as the number of corrals needed under each Alternative is not known and would depend on site specific circumstances.

No Action Alternative

Under the No Action Alternative, no wild horse gathers would occur and there would be no direct impacts expected. Currently, the population of wild horses in the Fish Creek HMA is over 300% of the established AML resulting in heavy use of rangeland vegetation, widespread trailing and disturbance to riparian areas. These impacts have been further compounded by the effects of severe drought on forage and water availability, causing concentrated use by wild horses on remaining resources. Under the No Action Alternative, these impacts would continue and would increase as the wild horse population continues to grow and resources are consumed.

Wild horses would continue to trail farther out from limited water sources to foraging areas, subsequently broadening the areas receiving heavy grazing or trailing use. Indirect impacts include increased competition for forage among multiple-users of the range. Forage utilization would 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 would be further compromised. Winterfat communities throughout the lower elevations within and outside of the HMA have been suffering from drought since 2012. Continued heavy use will contribute to the conversion of native plant communities into low diversity non-native communities such as halogeton, Russian thistle and cheatgrass.

Under The No Action alternative, increased wild horse numbers and continued overgrazing would increase the risk of the establishment and spread of noxious weeds, invasive and non-native species in disturbed and degraded areas, resulting in a reduction of native perennial species and degradation of habitat quality.

3.5. Rangeland Vegetation, Soils, Climate and Drought

The terrain varies from low valleys (6,300 feet) to high mountains over 10,000 feet at Ninemile Peak. Vegetation types are distributed according to topography, elevation, and precipitation.

Climate and Drought

The climate of the area is characteristic of the Great Basin with relatively low precipitation in valleys and lower elevations (6-8" per year), and higher precipitation in the higher elevations (12-14" per year). Summers are hot and dry, with daytime temperatures ranging from 70-100+ degrees. Winters are generally cold with snowfall highly variable from year to year. During mild winters, little snow accumulates and is restricted to higher elevations and northern slopes. Heavier winters are marked by widespread snow into the valleys and deep snow in the mountainous areas that precludes use by animals. Temperatures may fall below zero, with daytime temperatures ranging from 0-50 degrees.

The precipitation patterns for central Nevada meet the definition for drought 3-4 years out of every 10. Since the last gather completed in 2006, the 3 weather stations assessed for this EA reflected below normal precipitation or drought conditions 67-78% of the years. Precipitation tables, summary of monitoring data collected and other pertinent information is available in Appendix D.

Inherently low annual precipitation levels and drought are issues throughout central Nevada affecting current health of vegetation communities and the ability for recovery of the rangeland vegetation from past over use by wild horses and livestock. Potential vegetation production is low, especially in lower elevations and can be markedly reduced or non-existent during periods of drought. During periods of drought, forage availability for livestock, wildlife, and wild horses is further reduced and it becomes more important to prevent overgrazing of perennial plants. Improper grazing during drought can harm or kill the perennial plants that grazing animals rely on.

On February 5, 2008, the MLFO issued a decision closing the winterfat plant communities within the Fish Creek Ranch and Seven Mile Allotments stating poor vegetative conditions and reduced production due to drought. The closure was in effect through the 2008 and 2009 grazing season and was lifted on January 19, 2010.

In 2012, 2013 and 2014 precipitation was far below normal levels resulting in Severe and Extreme drought conditions across much of Nevada. The Fish Creek HMA was severely affected as evidenced by reduced growth of grasses and winterfat, poor vigor and early senescence (dormancy) of plants (including deep rooted shrubs), plant death and lack of reproduction.

Weather stations do not exist within or in close proximity of the Fish Creek HMA. The nearest and most dependable weather stations are located in Eureka and at the University of Nevada, Reno Gund Ranch in Grass Valley, Nevada.

The following tables provide an overview of 2012-2014 precipitation data from these stations for the year and the growing season. The numbers in parentheses represent the percent of precipitation received compared to the period of record average for the same time period. This data was obtained from the Western Regional Climate Center website: <http://www.wrcc.dri.edu/summary/Climsmnv.html>.

Table 24: Growing Season and Year to Date Precipitation, 2012

2012 Growing Season and Year to Date Precipitation		
March – June 2012 (growing season)	3.11" (63%)	2.38" (56%)
Year (January through December)	11.27" (95%)	5.27" (52%)

Table 25: Growing Season and Year to Date Precipitation, 2013

2013 Growing Season and Year to Date Precipitation		
March – June 2013 (growing season)	1.57" (32%)	1.89" (44%)
Year to date (January through December)	9.81" (83%)	9.71" (95%)

Table 26: Growing Season and Year to Date Precipitation, 2014

2014 Growing Season and Year to Date Precipitation		
March – June 2014 (growing season)	3.32" (67%)	3.06" (72%)
Year to date (January through October)	8.73" (74%)	7.95" (78%)

The average precipitation identified in the above tables represents the Period of Record Average provided on the website. For more information about drought in the western United States, please refer to the websites identified in Appendix D. As the above tables show, precipitation received during 2012, 2013 and 2014 is below the Period of Record Average, as was the precipitation received during the growing season. Uncharacteristically high precipitation levels in the form of late summer showers occurred July-October and is reflected by both weather stations. Though data differed by year and station, precipitation levels were as high as 200-300% of the average during this time frame. These late summer showers provided much needed moisture to enable fall re-growth of plants. In some cases, fall growth of grasses and shrubs exceeded what occurred during spring months. Some recharge of water sources also occurred, though not enough to reflect full recovery. Refer to the precipitation tables and other data included within Appendix D for more information.



Antelope Valley drought affected and degraded winterfat communities June 29, 2014.



Fenstermaker Wash area dead sagebrush communities and large expanses of bare ground. June 29, 2014.



Shrub stems chewed to the ground level in front of the clipboard. June 29, 2014.



Drought affected Indian ricegrass plant. June 29, 2014

Rangeland Vegetation Communities

Many valley bottoms within the Fish Creek HMA support salt desert shrub plant communities such as winterfat (*Krascheninnikovia lanata*) and shadscale (*Atriplex confertifolia*). Lower elevations also support black sagebrush (*Artemisia nova*), Wyoming big sagebrush (*Artemisia tridentata ssp wyomingensis*) and various understories comprised of forbs and perennial grasses. Pinyon pine (*Pinus monophylla*) and Utah Juniper (*Juniperus osteosperma*) communities (pinyon/juniper) are prevalent throughout mid and high elevations within the Project Area. Cottonwood (*Populus spp.*) and aspen (*Populus tremuloides*) stands are present in high elevations. Mountain big sagebrush (*Artemisia tridentata ssp vaseyana*), antelope bitterbrush (*Purshia tridentate*), snowberry (*Symphoricarpos spp.*), serviceberry (*Amelanchier spp*) and curleaf mountain mahogany (*Cercocarpus ledifolius*) with an understory of perennial bunchgrasses are common throughout the higher elevations. Refer to the 28B MLRA Natural Resource Conservation Service (NRCS) for more information. Table 27 summarizes the major range types listed and characteristics pertinent to each.

Table 27: Soil Types and Ecological Sites of the Fish Creek HMA

Site Number	Site Name	Precipitation Zone	Major Vegetative Species		Soil Factors
			Grass	Shrubs/Trees	
028BY003	Loamy Bottom	10-14"	Basin wildrye (LECI4), Nevada bluegrass (POSE)	Basin big sagebrush (ARTRT), rubber rabbitbrush (ERNA10)	Deep, well drained, susceptible to gullyng

Site Number	Site Name	Precipitation Zone	Major Vegetative Species		Soil Factors
			Grass	Shrubs/Trees	
028BY004	Saline Bottom	6-10"	Basin wildrye (LECI4), alkali sacaton (SPAI)	Black greasewood (SAVE4), rubber rabbitbrush (ERNA10)	Deep to very deep, calcerous, somewhat poorly to poorly drained
028BY007	Loamy	10-12"	Thurber needlegrass (ACTH7), bluebunch wheatgrass (PSSP6)	Big sagebrush (ARTR2), antelope bitterbrush (PUTR2)	Moderately deep to deep and well drained
028BY010	Loamy	8-10"	Indian ricegrass (ACHY), needleandthread (HECO26)	Wyoming big sagebrush (ARTRW8), rabbitbrush (CHRY9)	Moderately deep to deep and well drained
28BY011	Shallow Calcareous Loam	8-10"	Indian ricegrass (ACHY), needleandthread (HECO26)	Black sagebrush (ARNO4), downy rabbitbrush (CHVIP4)	Shallow and well drained
28 BY013	Silty	8-10"	Indian ricegrass (ACHY), bottlebrush squirreltail (ELEL5)	Winterfat (KRLA2), bud sagebrush(PIDE4)	Deep to very deep and well drained
28 BY016	Shallow Calcareous Slope	8-10"	Indian ricegrass (ACHY), needleandthread (HECO26)	Black sagebrush (ARNO4), shadscale (ATCO)	Very shallow to a duripan, indurated hardpan or bedrock
28BY017	Loamy	5-8"	Indian ricegrass (ACHY), bottlebrush squirreltail (ELEL5)	Shadscale (ATCO), bud sagebrush (PIDE4)	Mixed alluvium and well drained
28BY020	Sodic Flat	5-8"	Alkali sacaton (SPAI), inland saltgrass (DISP)	Black greasewood (SAVE4), shadscale (ATCO)	Deep and somewhat poorly to well drained
28BY024	Loamy Bottom	14+"	Basin wildrye (LECI4), Nevada bluegrass (PONE3)	Mountain big sagebrush (ARTRV), willow (salix)	Deep to very deep and well to moderately-well drained
28BY027	Shallow Calcareous Slope	14+	Bluebunch wheatgrass (PSSPS), muttongrass (POFE)	Black sagebrush (ARNO 4)	Generally shallow to very shallow and well drained
28BY029	Loamy	16+	Mountain brome (BRMA4), Letterman's needlegrass (ACLE9)	Mountain big sagebrush (ARTRV), snowberry (SYMPH)	Moderately deep to deep and well drained
028BY030	Loamy	12-16"	Bluebunch wheatgrass (PSSP6), Thurber needlegrass (ACTH7)	Mountain big sagebrush (ARTRV), antelope bitterbrush (PUTR2)	Deep to very deep and well drained
28BY037	Claypan	12-14"	Bluebunch wheatgrass (PSSP6), needlegrass (ACHNA)	Low sagebrush (ARAR8), antelope bitterbrush (PUTR2)	Shallow to moderately deep and well drained
28BY038	Mountain Ridge	14+	Bluebunch wheatgrass (PSSPS), muttongrass (POFE)	Sagebrush (ARTEM)	Mostly shallow to very shallow

Site Number	Site Name	Precipitation Zone	Major Vegetative Species		Soil Factors
			Grass	Shrubs/Trees	
28BY042	Mahogany Thicket	14+	Bluebunch wheatgrass (PSSP6), Thurber needlegrass (ACTH7)	Mountain big sagebrush (ARTRV), snowberry (SYMPH)	Moderately deep to deep to bedrock and well drained
28BY043	Calcareous Mahogany Savanna	14+	Bluebunch wheatgrass (PSSP6), needlegrass (ACHNA)	Mountain big sagebrush (ARTRV), snowberry (SYMPH)	Deep to bedrock and well drained
29XY052	Claypan	16+	Letterman's needlegrass (ACLE9), muttongrass (POFE)	Low sagebrush (ARAR8)	Shallow to moderately deep

Vegetation communities are highly variable throughout the HMA as the above table indicates. Similarly, vegetation condition and health varies considerably across the HMA due to historic use levels by wild horses and livestock, inherent precipitation levels and natural soil capability. Extensive monitoring was completed for analysis within the Fish Creek Complex Rangeland Health Assessment completed in 2004. Refer to this document (and the others) identified in Section 1.4 for additional detail about the vegetation communities in this area.

Across the HMA, most vegetation communities can be characterized as supporting a lower amount of perennial key species than should be present. Historic use or over use by grazing animals has contributed to the vegetation conditions in the HMA. Since the 2004 Rangeland Health Assessment, minor improvement has been noted within the Lucky C Allotment through increased abundance and vigor of Sandberg's bluegrass in the lower elevations and increased Indian ricegrass and other perennial bunchgrasses in the mid elevations. The understory grasses have also improved slightly in the Arambel Allotment. Throughout the Fish Creek Allotment most mid and high elevation sites in the central portion of the allotment do not support productive stands of grasses in the understory due to historic use and inherent productivity of the soils. The southern portion of the HMA supports increased productivity of grasses throughout the higher elevations where pinyon and juniper stands do not exist in thick stands that preclude healthy and diverse understories. Winterfat communities of the Fish Creek HMA have fluctuated in condition due to use levels by wild horses and livestock and precipitation levels and timing. Since 2012, winterfat growth has been severely stunted due to lack of precipitation. Late summer rain storms have provided for some regrowth and even flowering and seed production. Halogeton, Russian thistle and annual mustard are undesirable and invasive species that are prevalent in the low elevation winterfat communities throughout Antelope Valley. Refer to Appendix D for more information about the vegetation monitoring within the Fish Creek HMA.

Soils

The soils throughout the Project Area are highly variable and include soils comprised of clay, silt, sand, gravel, quaternary alluvial deposits and limestone derived from lake and wind deposits. The mountains, slopes and foothills of the entire area include soils derived from dolomite, limestone and various amounts of shale, sandstone (or quartzite), and silt. Biological crusts (cryptogamic or cryptobiotic) are present and consist of algae, lichen, fungi, moss, cyanobacteria and bacteria growing on or just below the soil surface. Biological crusts are known to aid in soil stabilization, soil fertility, water infiltration, and nutrient cycling. No surveys or inventories have been completed for biological crusts.

For more detailed information, please refer to the Soil Survey of Eureka County, Nevada (1989) available through the NRCS.

Soils in the lower elevations are silty and prone to erosion. Throughout Antelope Valley, increased occurrence of overland flow, gullies and washouts has occurred since 2012. Plant growth and abundance, and presence of deep rooted perennial species has decreased during the Severe and Extreme drought conditions experienced in the Fish Creek HMA, resulting in reduced soil stability. Bare ground is extensive and litter is limited. Mid and higher elevations typically maintain enough gravel, or small rocks to maintain soils; however, pedestalling of plants and erosion pavement are common indicating continued soil loss in these areas. Refer to the documents identified in Section 1.5 for more information.

Areas occupied by wild horses [and other grazing animals]¹⁹ have a significantly higher soil penetration resistance than areas without wild horses (Beever and Herrick 2006). This can affect a variety of other ecosystem processes, such as decreasing water infiltration rates, inhibiting digging by burrowing mammals, limiting plant establishment, and restricting root growth (E. Beever, R. Tausch, and P. Brussard 2003).

The relative quantity of vegetative cover removed by grazing also affects soil properties. In general, vegetative cover provides shading for soils, which increases their ability to retain moisture, reduces soil erosion by intercepting precipitation and reducing surface wind velocities, and provides organic input into the soil (Beever and Herrick 2006).

Trailing and hoof action by wild horses has the potential of accelerating erosion following intense storms or snow melt. Aerial and on the ground monitoring indicates heavy and increasing trailing by wild horses between limited water sources and foraging areas. Heavy wild horse utilization and trailing are decreasing vegetative cover, particularly in areas of water sources, resulting in increased soil compaction and bare ground which increases run off and soil erosion and decreased soil productivity.



*Fish Creek HMA, Wild Horses in mixed sagebrush, pinion-juniper community during January 2014
Resource Flight.*

As the wild horse population increases, there are comparable increases in trailing, and hoof action on uplands and riparian areas. This has been substantially compounded by reduced vegetation cover and drought conditions since 2012. Trailing has increased substantially as waters have become limited in the HMA, particularly in light of the continuing increase in the wild horse population.

Environmental Consequences

Impacts common to the Action Alternatives

Direct impacts associated with the action alternatives would consist of disturbance to vegetation and soils immediately in and around the temporary gather site(s) and holding facilities. Impacts would be created by vehicle traffic and hoof action as a result of concentrating horses at the gather site, and could

19. Though the report is specific to wild horses, it is assumed that similar impacts would occur from other hooved animals such as livestock, elk, etc.

be locally high 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 and soils. Impacts would be minimal as gather operations would have a short-term duration.

Ideally, gather corrals and holding facilities would be selected to enable easy access by transportation vehicles and logistical support equipment, and would be established near or on roads, pullouts, gravel pits, water haul sites or other flat areas, which have previously been disturbed to avoid impacts to unaltered vegetation and soils. These common practices would minimize the long-term effects of these impacts. Disturbance of soils and vegetation would be similar whether gather activities occurred through helicopter drive trapping or bait and water trapping.

Impacts from herding wild horses to the trap corrals would be minimal. Wild horses are typically herded distances averaging 4-7 miles over mixed terrain which may vary from rolling foothills to steeper terrain, drainages, ridges and valley bottoms. The horses often follow their own trails, which allow the horses to travel easier by choosing their own path. Coincidentally, this allows the horses to travel over previously disturbed areas, which limits the amount of herding over undisturbed areas.

As the AML is achieved and maintained through periodic gathers and continued fertility control treatment, year-round utilization by wild horses would be reduced and heavy and severe utilization



Fenstermaker Wash December 2014, trailing through winterfat communities.



June 2012, in the northern portion of Antelope Valley. Wild horse trailing to the Slough.

levels attributed to excess wild horses would cease, improving forage availability, vegetation density, cover, plant vigor, 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 the density of wild horses is reduced across the landscape, particularly in low elevation winter range. Utilization levels would decrease and allotment specific utilization objectives would not be exceeded. Physical damage to shrubs and herbaceous vegetation, and soil disturbance associated with the physical passage of horses would be decreased, as would heavy use and hedging of shrubs including shadscale and winterfat.

Similar to other resources within the proposed gather area, soils would benefit both directly and indirectly if the wild horse populations are maintained within the established AMLs. In the Fish Creek HMA, the increase in population has concentrated wild horses on the limited water sources. As the wild horses exceed AML, the available forage closest to water becomes over utilized and the horses have to travel farther from water to find forage. Trails are formed due to constant perturbation and soil compaction. Monitoring in the Fish Creek HMA has shown extensive trailing within and outside of the

HMA boundaries. Plants that are grazed repeatedly may have little or no opportunity to regrow between successive defoliations and may become stressed, and die, especially under drought conditions.

A healthy, productive, and diverse plant community plays an important role in the improvement and/or maintenance of soil processes such as permeability, infiltration rates and soil stability. Inadequate plant cover can lead to substantial wind or water erosion of valuable top soil (Reece et al. 1991). Crusting of surface soils is another problem associated with low vegetation cover. When rain strikes exposed soil the particles are detached by the raindrop energy (raindrop splash) and clog the remaining soil pores, making them smaller or sealing them completely resulting in a crust (Thurrow and Taylor 1999). This reduces water infiltration and increases erosion potential. Vegetation, including standing dead and litter reduces the impact of raindrop splash and promotes water infiltration, which in turn reduces water erosion. It is expected by removing excess wild horses the vegetation would be allowed to recover within the Fish Creek HMA, which would reduce the potential for accelerated wind and water erosion.

Reducing population growth rates and removing excess wild horses would promote improvements in riparian and upland vegetation condition and prevent further degradation from an over population of wild horses. Given the current condition of the vegetative resources, improvement would be slow and would occur most often during years of average or above average precipitation levels. During years of drought or low precipitation, improvement would be stalled or could be reversed. Healthy plants that are able to finish their life cycle, set seed and store carbohydrates before the end of the growing season are more capable of withstanding drought and maintaining their presence in the plant community.

Maintaining AML would support continued upward trend and promote progress towards attainment of Rangeland Health Standards. Upward trends and healthier rangeland would equate to healthier habitat and healthier animals. These trends would also benefit wildlife and would promote improvement of degraded habitat, consistent with IM 2012-043, *Greater Sage-Grouse Interim Management Policies and Procedures*.

Impacts that differ among Action Alternatives

The direct and indirect impacts to the vegetation resource would differ by Alternative as they relate to the average population size and the number of gathers that could occur over the next 10 years. Maintaining the population of wild horses at AML would offer the best opportunity to promote healthy rangeland plant communities and stabilize soils. The Proposed Action and Alternatives 1 and 3 have the potential to achieve the AML within 10 years, should adequate removals of excess wild horses occur in combination with PGS (Proposed Action and Alternative 3). Alternative 2 is not likely to achievement the AML within 10 years and excess wild horses would continue to negatively affect rangeland health. Alternative 3 with repeated removals of excess wild horses and the implementation of fertility control could achieve the AML quickest and maintain AML in the long-term. Refer to the Population Modeling discussion in Section 3.2 for more information about the potential population size, growth rates, and gather and removal numbers for each Alternative.

Gather operations, whether helicopter drive trapping or bait and water trapping, would cause soil and vegetation disturbance. Most trap and corral locations would be placed in previously disturbed areas so not to disturb native, intact rangeland vegetation. It is not possible to discern which Alternative would have the greatest impact at trap or holding corrals, as the number of corrals needed under each Alternative is not known and would depend on site specific circumstances.

No Action

There would be no direct impacts as a wild horse gather would not occur under this alternative. Impacts to rangeland health in the form of trailing, heavy and severe utilization and heavy use of springs would continue as a result of the current overpopulation of wild horses. These impacts are further compounded by severe drought which has limited plant production and vigor, increased stress to rangeland plants and resulted in concentrated use of springs and foraging areas. Heavy utilization of forage by an overpopulation of wild horses would continue particularly in the lower elevations during winter months especially if snow precludes use of the mid and higher elevations. Wild horses would continue to trail farther out from limited waters to foraging areas, subsequently broadening the areas receiving heavy grazing or trailing use.

Heavy use of forage during the critical growth period would continue and if drought conditions persist or worsen, rangeland plants would be further stressed and degraded. The most heavily and repeatedly used areas would experience loss of perennial forage species. Lower and mid elevations would become further dominated by annual invasive species such as halogeton, Russian thistle and other invasive annuals as perennial bunchgrasses die off. The loss of perennial native grass, increased soil perturbation, and soil compaction, would increase soil loss from wind and water erosion and invasion of undesired plant species. Abundance and long-term production potential of desired plant communities would be further compromised potentially precluding the return of these vegetation communities to their potential as identified in ecological site descriptions published by the NRCS. Reduced ecological status would be indicated by lowered production and frequency of deep rooted perennial vegetation, reduced production of litter, reduced soil stability and reduced riparian functionality. Progress would not be made towards attaining Rangeland Health Standards.

3.6. Riparian-Wetland Resources and Water Quality

BLM Manual 1737, *Riparian-Wetland Area Management*, defines riparian zones as a form of wetland transition between permanently saturated wetlands and upland areas (USDI BLM 1992). These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian zones. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

Riparian-wetland areas are important to water quality, water quantity, and are critical for up to 80% of terrestrial vertebrate species (National Research Council, 2003). . They comprise only a small portion of the landscape, but are among the most productive and diverse of all terrestrial habitats, and the influence of moving water within stream riparian zones often results in rapid and dynamic habitat changes (Naiman et al. 1993). Unfortunately, the disturbance and successional patterns of riparian areas are highly vulnerable (Groeneveld and Or 1994, Busch and Scott 1995).

In addition to riparian, wetland and water quality objectives identified in respective RMPs, the Northeastern Great Basin RAC addresses riparian health in Standard 2: Riparian and Wetland Sites, and indirectly in Standard 3: Habitat. Standard 2 requires that riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria. BLM Technical References 1737-9, 11, 15 and 16 provide guidance and methodology for assessing riparian areas for properly functioning condition.

Riparian-wetland areas are classified as Lentic (i.e. springs, ponds, wet meadows) and Lotic (i.e. streams). To account for the different physical characteristics and functions, separate definitions for Proper Functioning Condition have been developed.

Lotic riparian-wetland areas are considered to be in Proper Functioning Condition when adequate vegetation, landform, or large woody debris is present to:

- dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality;
- filter sediment, capture bedload, and aid floodplain development;
- improve floodwater retention and groundwater recharge;
- develop root masses that help to stabilize streambanks against cutting action;
- develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and
- support greater biodiversity.

Lentic riparian-wetland areas are considered to be in Proper Functioning Condition when adequate vegetation, landform, or large debris is present to:

- dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality.
- filter sediment and aid floodplain development;
- improve floodwater retention and groundwater recharge;
- develop root masses that stabilize islands and shoreline features against cutting action;
- restrict water percolation;
- develop diverse ponding characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterbird breeding, and other uses;
- and support greater biodiversity.

In grazed areas, vegetation is often reduced or absent and the soil compacted, encouraging water to flow more quickly without allowing it to infiltrate the soil, resulting in higher peak flows and lower base flows in streams. Higher peak flows are more likely to reshape channels and to erode banks than lower flows. Additionally, with a reduced amount of water infiltrating the ground, less water will be available for plants and for perennial flow sources during the summer and fall.

Where the riparian area is grazed and vegetative cover is greatly reduced, stream bank stability is weakened from loss of vegetation and damaged from livestock or wild horses repeatedly and continuously entering and exiting the water source. Throughout the west, many riparian systems have been adversely impacted by domestic livestock grazing, particularly in summer months or when grazing is year round and proper management is lacking. Uncontrolled trampling of banks, utilization of vegetation and reduction of deep rooted hydrophytes (willow and sedge species) have impaired the stability of these systems, increasing erosion, channel incision, and reducing riparian function. Throughout the Fish Creek HMA, riparian condition and water quality vary depending on the local

hydrology, type of surface water feature, elevation and historical use by livestock, wild horses or both. Generally, field observations indicated that wildlife had little impact on the Fish Creek HMA riparian systems, though these areas provide vital habitat to many species.

For wildlife and domestic species living in arid environments, the availability and location of water is critical, not only for drinking and cover, but also for high quality forage that maintains its palatability long after upland vegetation has desiccated in the hot season. Wild horses have been observed to travel great distances to and from water daily. During dry summer months, when less water is available from seasonal sources, horses remain slightly closer to perennial water sources than in the winter and spring (Ganskopp and Vavra 1986, R. Hansen, R. Clark, and W. Lawhorn 1977).

Horses have been found to have some effect on the frequency of use of a water source by other wildlife in arid environments. One study found that in areas where bighorn sheep and horse water sources overlapped, a higher frequency of horse use led to a lower frequency of bighorn sheep use, and vice versa (Ostermann-Kelm et al. 2008). The presence of wild horses at water sources is believed to deter the use of that water by pronghorn antelope until the horses leave the area.

Wild horses prefer to drink during the first part and last parts of daylight and tend not to linger at the water source (Ganskopp and Vavra 1986). In most cases, wild horses visit water sources briefly. The exception may include large open springs or meadow complexes, or when water is so limiting that the wild horses must remain at the site for hours in order to allow for enough recharge for them to drink. High wild horse population and density of animals in relation to limited water sources results in degradation of riparian and wetland habitat. Wild horses utilize lotic (streams) and lentic sites (springs) differently because of inherent social behaviors. Wild horses tend to move quickly away from lotic sites to avoid dangerous encounters with other wild horses or predators. Relative to lotic sites, lentic riparian areas tend to exist on topography with larger viewsheds (on hillsides and broader valleys) that allow animals to view further distances. Consequently, these sites tend to receive long duration and high frequency use that predisposes them to rapid degradation.



2012: Dry Lake. Top photo May 11. Bottom photo June 8.

Wild horses impact riparian and wetland sites through hoof action, which causes compaction, bank shear, erosion, and hummocking. Wild horses also dig or paw sources with their hooves, especially

when spring discharge is low, in an attempt to access the deeper groundwater. These actions result in drainage of subsurface water, channelization and shrinkage (and loss) of the riparian zone. Through concentrated and year-round utilization of riparian vegetation, wild horses decrease the plants' ability to photosynthesize and regrow, often leading to downward trends in riparian health. In addition to potential physical impacts to riparian areas, dominant studs can physically exclude other wildlife and livestock species.

The Fish Creek HMA supports relatively limited water sources for wild horses and has been closely monitored since 2012 to ensure adequate water availability for wild horses. Although recent comprehensive surface water surveys have not been completed for the Fish Creek HMA, the US Geological Survey's National Hydrography Dataset (NHD), Version 210 (released 5/7/2014) indicates that there are 100 springs and 10.2 miles of perennial streams, which are concentrated in the mountainous portion of the HMA (see Map 3). However, it should be noted that stream and spring flow may have changed since the initial surveys that were used to develop the NHD and that the number of surface water systems and corresponding discharge varies greatly with annual precipitation, as well as climatic variability.

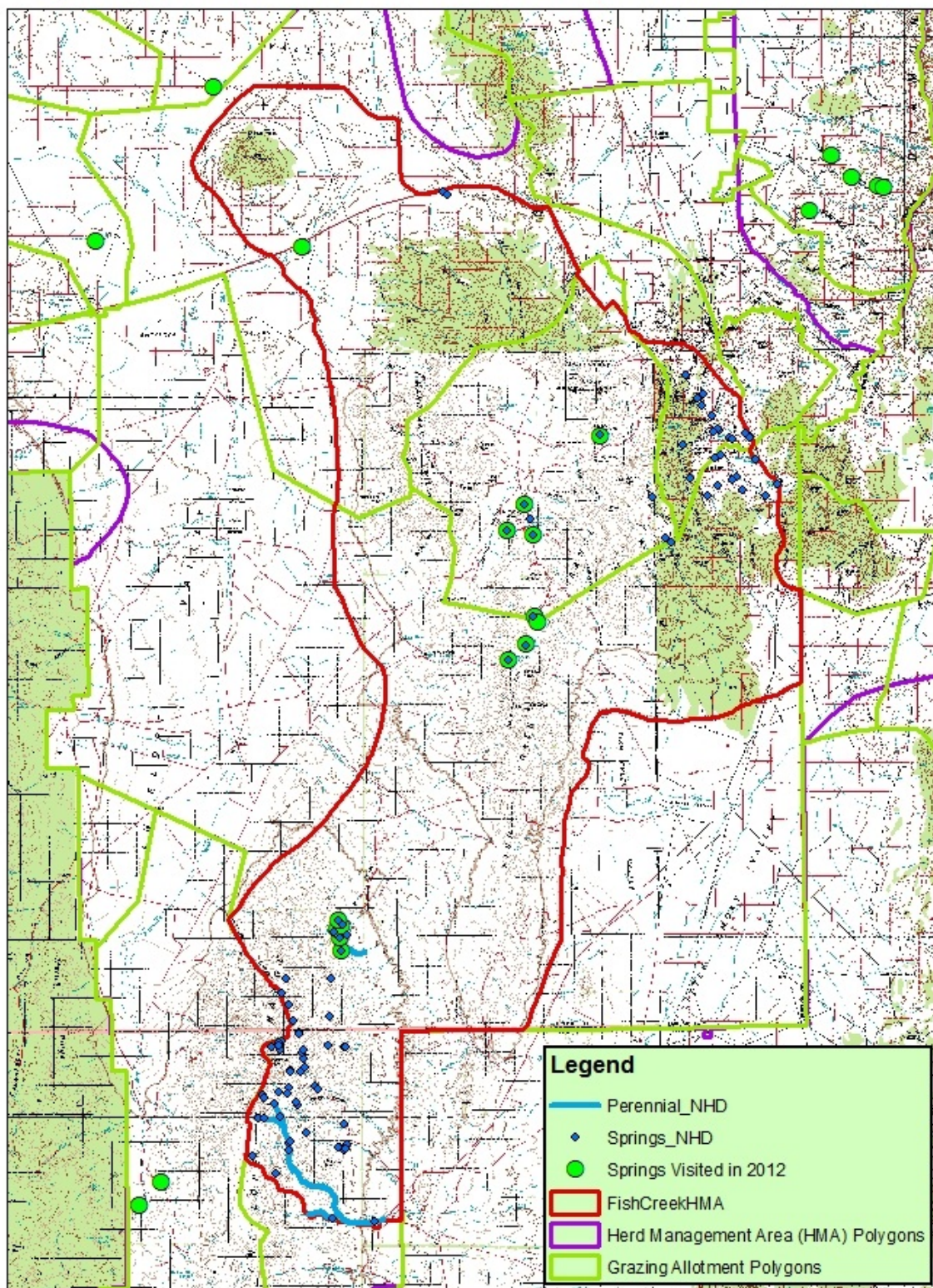
Past drought has resulted in the need to conduct emergency gathers in 2000 and 2004, due to lack of water and deteriorating body condition of wild horses. In 2012, the BLM initiated water hauling at McCullough Spring, and the Slough, in response to severe drought conditions. Additionally, a gas powered generator is used to fill a storage tank and troughs at the Brown Well.

The Davis Pipeline was inspected and maintained to ensure it was fully functioning and delivering water to all of the five troughs on the system. Water inventory and inspection occurred at all known waters within the Fish Creek HMA, with the exception of Ninemile Peak. These waters are shown on Map 3.

Drought monitoring has continued throughout the HMA since 2012. To further facilitate monitoring of wild horse use and body condition, trail cameras have been used at several of the water sources within the HMA, including the Slough, Brown Well and McCullough Spring. In 2013, 3,000 gallon storage tanks were set at the Slough and McCullough Spring to provide water to troughs at those locations. Water hauling continued through 2014. The following photos display some of the water sources within the Fish Creek HMA 2010 through 2014.

Riparian Proper Functioning Condition (PFC) Assessments have not been conducted on the riparian areas within the Fish Creek HMA since completion of the Fish Creek Complex Rangeland Health Evaluation in 2004. Refer to the documents in Section 1.4 for more information about the condition of riparian areas in this area. The following map and photos provide further information about the water availability and representative conditions in the HMA since 2012.

Springs and Perennial Streams, Fish Creek HMA



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

0 2.75 5.5 11 Miles





2012: The Slough. Top photo June 18. Bottom photo August 10. Troughs were placed and water hauling initiated in early July. BLM Nevada Wild Horse and Burro Specialist Alan Shepherd and Mount Lewis Field Office Assistant Field Manager, Renewable Resources Mike Vermeys discuss options for hauling water to wild horses.



2012: Dave Keene Spring. Top photo May 17. Bottom photo July 19.



2012 McCullough Spring. Top photos May 8. Bottom photos June 8.



2013 McCullough Spring. Left July 22, right August 22.



The Slough, July 22, 2013.



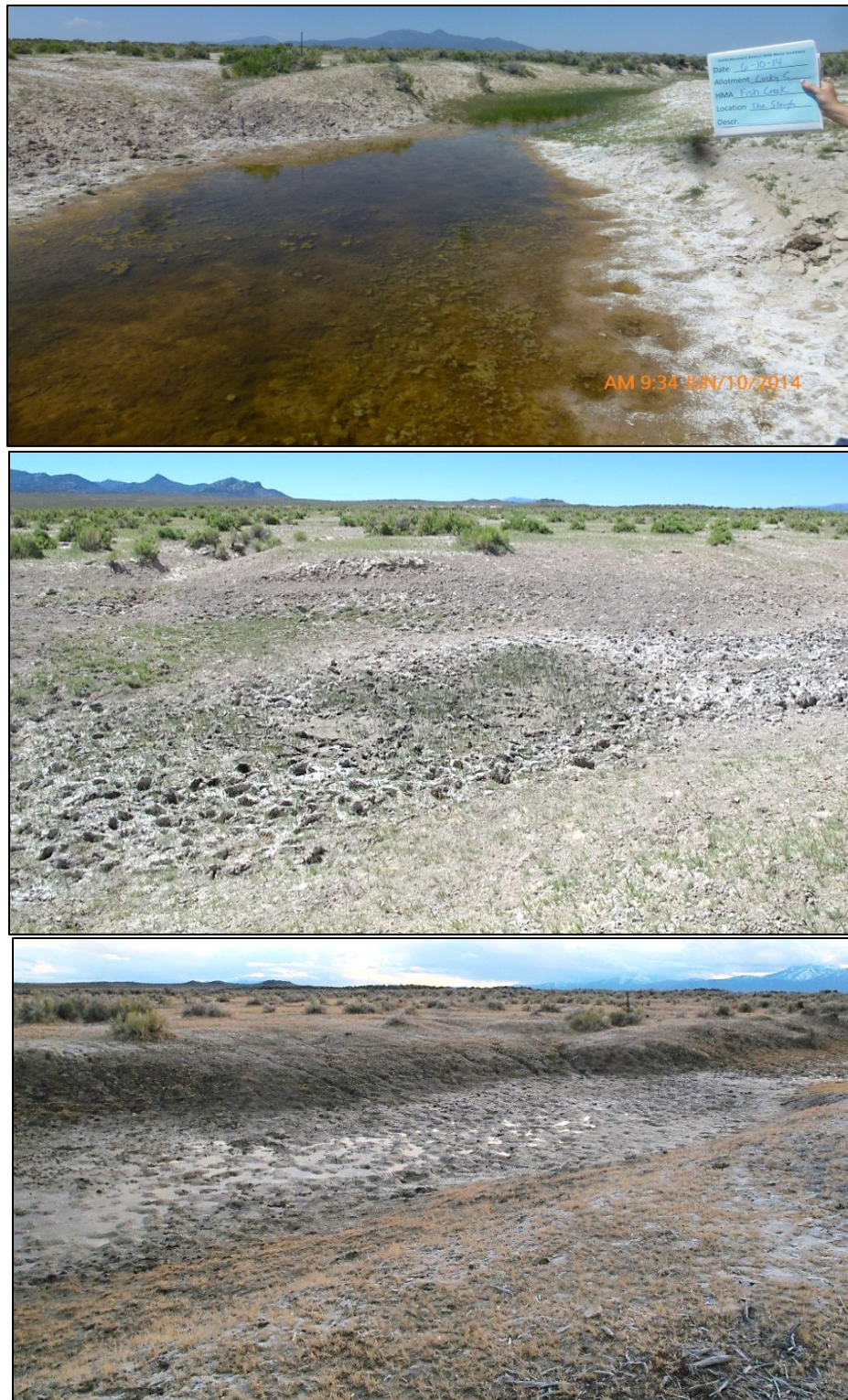
Dry Lake Pond June 10, 2014. The pond was still full as of July 3.



Dave Keene Spring June 10, 2014



McCullough Spring June 10, 2014



The Slough, 2014: Top June 10, middle June 29, bottom December 4.

Environmental Consequences

Proposed Action

The proposed wild horse gather would not have any direct impacts to riparian-wetland zones or water quality within the Fish Creek HMA.

In most cases, wild horses visit water sources briefly. The exception may include large open springs or meadow complexes. High wild horse population and density of animals in relation to limited water sources may result in degradation of water sources. Maintaining the wild horse populations within the established AML range and promoting a thriving natural ecological balance within the HMA would offer the best opportunity to improve riparian resources that have historically been heavily used by wild horses, and which have suffered the impacts of severe drought.

Achievement of AML would ensure that wild horse populations are in balance with the forage and water availability, providing for optimal dispersion of wild horses. As the population growth rates are reduced, and the population declines, indirect impacts would include less concentrated use in the regions near critical water sources. Over time there would be improvement of these areas through stabilization of banks and soils in the area, increased production of key riparian vegetation such as sedges, rushes and willow, and overall improvement in the quantity and quality of these areas for use by wildlife, wild horses and livestock. Through continued improvement, riparian systems would increase trends in functioning condition and make significant progress towards meeting the Standards for Rangeland Health.

Impacts that differ among Action Alternatives

Differences in the indirect impacts to riparian wetland zones and water quality would be related to wild horse population size. The Proposed Action, Alternatives 1 and 3 have the potential to see the population achieve the AML within 10 years should adequate removals of excess wild horses occur in combination with PGS (Proposed Action and Alternative 3). Alternative 2 would likely not see the achievement of the AML within 10 years, and excess wild horses would continue to negatively affect rangeland health. Alternative 3, with repeated removals of excess wild horses and the implementation of fertility control could see the AML achieved the soonest, and maintained thereafter. Implementing the Proposed Action, Alternative 1 or 3 would decrease competition for water sources and alleviate pressures exerted on riparian habitat due to wild horses congregating around these sensitive areas. Refer to the Population Modeling discussion in Section 3.2 and Appendix E for more information about the potential population size, growth rates, and gather and removal numbers for each Alternative.

No Action Alternative (No Wild Horse Gather)

Wild horse population size would continue to increase in excess of the established AML. According to population modeling analysis, the average population over 10 years could exceed 1,800 wild horses. Emergency removals would be required as the population exceeds the ability to be supported by the available waters. Use of riparian areas by this level of wild horses would have obvious consequences to the condition of riparian resources within the HMA, and resulting quality of riparian habitat for wildlife. Downward trends would result from heavy utilization of riparian vegetation and browse, and trampling by wild horses. Riparian areas rated below PFC (Functional at Risk and Non-Functional) would not improve, and downward trends could continue.

Water quality throughout the HMA would continue to be affected by high populations of wild horses using the limited water sources throughout the area.

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

Affected Environment

The BLM manages the habitat for which wildlife species depend on public lands. The NDOW manages the wildlife throughout the state. BLM and NDOW work together to monitor wildlife, wildlife habitat, plan restoration or enhancement activities and coordinate on management activities. The BLM does not manage the wildlife of Nevada, nor does the BLM manage any predator control programs.

The Endangered Species Act (ESA) of 1973 requires BLM to analyze the impacts of all proposed activities on Proposed, Threatened, or Endangered species. Currently, the Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is the only known federally listed species that may occur in the Fish Creek HMA. Populations of some species throughout Fish Creek HMA are declining and warrant special management actions to insure population viability. One species that occurs within the range, the greater sage-grouse (*Centrocercus urophasianus*), is listed as a candidate for federal listing as a threatened or endangered species by the United States Fish and Wildlife Service (USFWS). In addition to greater sage-grouse, the Nevada BLM has listed several other species (see IM-NV-2011-059-1) whose populations are considered to be at risk and warrant attention. BLM special status species that occur or may occur in the Fish Creek HMA are listed in Appendix H.

The Fish Creek HMA, which includes the Fish Creek Mountain Range, Antelope Valley and Little Smoky Valley, supports fauna characteristic of the northern Great Basin within sagebrush steppe, pinyon-juniper woodlands, cottonwood and aspen groves, and mountain shrub habitat types. Large mammals in the Fish Creek HMA include mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), elk (*Cervus canadensis*) and mountain lion (*Felis concolor*). For mule deer, pockets of bitterbrush (*Purshia tridentata*) and other shrubs are particularly important for overwinter survival. Elk have been observed throughout the Fish Creek Mountain Range. Other wide-ranging mammals include coyote (*Canis latrans*), bobcat (*Lynx rufus*), badger (*Taxidea taxus*), pygmy rabbit (*Brachylagus idahoensis*), black-tailed jackrabbit (*Lepus californicus*), long-tailed weasel (*Mustela fretala*) and a variety of rodent species. Several bat species listed as BLM special status species (see Appendix H) are also likely to occur in the mountains. Other animal species within the Fish Creek HMA include lizards, snakes, a few amphibians, and a diversity of insects.



2007 Monitoring, Sage-grouse, June 11, 200, located south of the Fish Creek HMA on private land.

Birds in the Fish Creek HMA include raptors, upland gamebirds, woodpeckers, hummingbirds, and several species of passerines. The most ubiquitous nesting raptors in the range are golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), and American kestrels (*Falco sparverius*). Ferruginous hawks (*Buteo regalis*) and prairie falcons (*Falco mexicanus*) also nest throughout the range, and aspen stands support nesting cooper's hawks (*Accipiter cooperii*), sharp-shinned hawks (*Accipiter striatus*) and potentially northern goshawks (*Accipiter gentilis*).

Chukar (*Alectoris chukar*), gray partridge (*Perdix*

perdix), dusky grouse (*Dendragopus obscurus*) and greater sage-grouse are the primary upland game-birds in the range. Greater sage-grouse use large portions of the Fish Creeks throughout the year. Habitat requirements for greater sage-grouse typically include low and high-elevation sites that are dominated by sagebrush. Oftentimes, greater sage-grouse use low- to mid-elevation sagebrush for breeding (i.e., strutting grounds or leks), nesting and early brood-rearing, but move to higher elevations and riparian areas for late brood-rearing. Greater sage-grouse use sagebrush for cover and food throughout the year, but also require an herbaceous understory to provide nest concealment, as well as provide a diet of forbs and insects for adults and their chicks.

Portions of the Fish Creek Mountains and surrounding valleys are considered to be critical habitat for greater sage-grouse with several known leks in the area. Population declines are likely principally related to reductions in the availability and degraded condition of lowland breeding habitat. However, changes in the condition of valuable brood-rearing habitat on meadows, springs and other riparian habitat that occur on the range may also be a factor in the declining populations here.

Generally, risks to greater sage-grouse throughout their range include:

- the loss of sagebrush habitat due to wildfire
- reduction in brood-rearing habitat due to channelization of stream channels
- down-cutting and drying of meadows
- reduction in size of spring and seep sites due to the removal of vegetative cover by ungulates
- reduction of native perennial grasses and forbs necessary for nesting cover
- reduction of native forbs which provide insects and other sources of protein for pre-egg laying and chick development
- pinyon-juniper encroachment into sagebrush habitat
- human disturbance

Greater Sage-Grouse Interim Management Policies and Procedures, (BLM IM 2012-043) directs the BLM to implement conservation strategies for the protection of greater sage-grouse including minimizing habitat loss, maintaining and restoring habitat, and implementation of management actions to improve degraded habitat. The policy also directs the BLM to prioritize removal of excess wild horses from HMA's and to manage wild horse HMA's within the established AML's.

Wild horses can compete with wildlife species for forage as dietary overlap occurs to varying degrees depending upon species and their preferred forage (grasses, forbs or shrubs), time of year and the nutritional needs of the animal. As a result, overpopulation of wild horses, heavy utilization levels or degradation of rangeland can cause important forage components for wildlife species to become limiting. Degraded rangelands typically produce substantially reduced levels of grasses and forbs important to many wildlife species.

According to the United States Drought Monitor, the state of Nevada is entering the fourth consecutive year of severe drought. Drought is a significant factor for reduced plant growth and rangeland degradation. In 2014, drought monitoring was conducted and found that primary forage species exhibited reduced production in many locations throughout the Fish Creek HMA.

Competition for water sources also exists, particularly where waters are limited or during drought years when existing sources do not produce normally or go dry. Horses have been found to have some effect on the frequency of use of a water source by other wildlife in arid environments. One study found that in areas where bighorn sheep and horse water sources overlapped, higher the frequency of horse use led to lower frequency of bighorn sheep use, and vice versa (Ostermann-Kelm et al. 2008). The presence of wild horses at water sources is believed to deter the use of that water by pronghorn antelope until the horses leave the area. However, two water haul locations in addition to a pumped well and a five-trough pipeline has been operated within the Fish Creek HMA since 2012 to provide water to wild horses during drought. BLM holds water rights for horses on both the well and the pipeline. Game cameras utilized at the water haul locations show frequent use by pronghorn with documented elk and mule deer at the McCullough Springs location. These additional water sources have benefited both horses and wildlife within this HMA.



Trail camera photo of young elk taken at a water hauling location in the Fish Creek HMA, August 2012.

Environmental Consequences

Impacts Common to Helicopter Gather Alternatives

The gathering of wild horses using helicopter is included within the Proposed Action, Alternative 1 and Alternative 3. Direct impacts to wildlife are expected to be minimal and short term in nature. Most notably, wildlife present in or near trap sites or holding facilities would be temporarily displaced. However, when possible, gather sites would be located in areas that have previously been disturbed (i.e. gravel pits) and would likely contain very little vegetation. If necessary, potential gather sites would also be inventoried to determine the presence of sensitive species and they would be avoided if observations indicate use.

If wild horse gathers occur during fall or winter (i.e., prior to March 1), negative impacts to birds, reptiles and amphibians would be minimal because birds typically do not begin nesting during this time and reptiles and amphibians are inactive. If the action occurs during the avian nesting season (March 1 through July 31), a qualified biologist would conduct a survey to determine the presence of nesting birds near the gather site, and a protective buffer zone surrounding each nest would be established until the young birds are fledged. This approach would be used because any ground clearing for traps and holding facilities, or other vegetation-disturbing action during the migratory bird nesting season risks a violation of the Migratory Bird Treaty Act by destroying bird eggs or young. Gather sites would also be located > 2 miles from any known active lek sites if greater sage-grouse could be present. Direct impacts to greater sage-grouse are not anticipated because helicopter operations would normally be completed during winter months and would not interfere with greater sage-grouse strutting/lekking, nesting or brood rearing activities. Refer to the SOPs in Appendix A for additional measures that would be implemented to reduce impacts to wildlife species.

Impacts Common to Bait and Water Trapping Alternatives

For the use of water trapping, portable corrals are placed around water sources for eventual capture of

wild horses when they come to the water to drink. Water or bait trapping could occur year round. Through the use of water trapping, it is possible that non-target species such as deer, pronghorn or elk could be captured. Non-target animals would be released immediately. However, these animals would be stressed by the experience and could be injured or killed.

In order to facilitate water trapping, existing water sources besides the target water may be excluded for use by constructing panels around the source, thereby forcing wild horses to utilize the target source. This would also affect pronghorn, mule deer and elk, forcing them to utilize water sources which they may not normally have used. These disturbances would exist through the duration of water trapping activities. The BLM would coordinate with NDOW when planning for water or bait trapping activities in order to minimize impacts to wildlife and increase success of the wild horse capture.

Indirect Impacts Common to Action Alternatives

Reducing wild horse population size achieving the established AML would have long-term indirect benefits to several wildlife species via 1) reduced competition for important forage species, 2) reduced competition for water, and 3) increased understory vegetation cover. Since 2012, forage has become substantially limited due to drought and heavy use by wild horses and livestock throughout the Fish Creek HMA. Removing 200 excess wild horses in 2015 under the Proposed Action, Alternative 1 or 3 would preserve some of the remaining forage for wildlife use during the 2015 winter and spring.

Managing wild horse populations within the established AML would ensure that unacceptable levels of competition with wildlife species do not occur since a thriving natural ecological balance would be maintained. Improved trends in rangeland health equate to increased quality and quantity of habitat available for both wild horses and wildlife and allow for healthier animals, especially in times of drought or harsh winters when resources are most limited. Management of the populations within the established AML would also be consistent with BLM IM 2012-043 and promote improvement of degraded habitat important for greater sage-grouse, as well as reducing risk factors.

Impacts that differ among Alternatives

Indirect impacts to wildlife are inversely proportionate to the size of the wild horse population. According to the population modeling, the Alternative 3 would result in the lowest overall average population size which would provide the most increase in forage and water resources available to wildlife in comparison with the other alternatives. However the Proposed Action and Alternative 1 have the potential to achieve the AML if sufficient excess wild horses are removed in future gathers and if the fertility control program is successful under the Proposed Action. The sooner that AML could be achieved the sooner other benefits would be received by wildlife (including greater sage-grouse) and would include increased grass and shrub cover which provides more nesting and foraging habitat. Reductions in wild horse populations via removal and fertility treatments are thought to be an important mechanism to prevent excessive degradation of greater sage-grouse habitat (Beever and Aldridge 2011).

Reducing population growth rates and achieving and maintaining the AML through multiple gather methods and the implementation of fertility control under the Proposed Action provides the best opportunity for conservation, protection, and preservation of identified species and their habitats. Alternative 2 would not likely achieve the AML over the course of the next 10 years, and though no helicopter gathers would occur (that might disturb wildlife), wild horses in excess of the established AML would continue to compete with wildlife for forage and water, and impact upland and riparian resources. According to the population modelling, Alternative 1 and 3 could achieve AML more quickly when compared to the Proposed Action, through increased gather operations and removals.

Refer to the Population Modeling discussion in Section 3.2 and additional detail in Appendix E.

No Action Alternative

The existing population of wild horses is currently estimated to be 323% of the AML established for the HMA, and wild horses are utilizing forage and resources beyond what they have been allocated through LUP/RMP and FMUDs. As a result, competition with wildlife species has increased substantially and habitat health, forage and water availability is being impacted, particularly during 2014, which have endured severe and extreme drought conditions. Through the projection of potential population increases through the WinEquus population model, it was determined that average population size could exceed 1,800 wild horses over the next 10 years if no gather occurs. Excessive populations of this magnitude would have extreme negative impacts to wildlife and wildlife habitat through severe degradation of habitat, loss of perennial key forage species, loss of riparian systems and destruction of cover and nesting habitat. Given current monitoring data, degradation could be irreversible in some areas if the population isn't reduced to levels consistent with the AML which would restore a thriving natural ecological balance. Decline of wildlife species would be congruent upon the decline of habitat.

Wild horses are already impacting important habitat utilized by greater sage-grouse, in addition to riparian areas, aspen communities, and meadow complexes valuable to many species of wildlife. If the No Action alternative was selected, increasing wild horse populations could severely increase greater sage-grouse vulnerability to predation, disease and elevated stress levels, ultimately affecting aspects of fitness and survival (Beever and Aldridge 2011). In the Fish Creek HMA, implications of further reductions in the integrity of sagebrush communities are potentially severe, and would likely contribute to continued declines in greater sage-grouse populations here. The No Action Alternative would not afford protection of important greater sage-grouse habitat and would allow for further degradation of uplands and riparian areas by an overpopulation of wild horses. The habitat degradation would continue to deteriorate the longer the period is to a gather and removal of excess wild horses. The No Action Alternative would not adhere to IM 2012-043.

3.8 Health and Safety

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

The helicopter work is done at various heights above the ground, from as little as 10-15 feet (when herding the animals the last short distance to the gather corral) to several hundred feet (when doing a recon of the area). While helicopters are highly maneuverable and the pilots are very skilled in their operation, unknown and unexpected obstacles in their path can impact their ability to react in time to avoid members of the public in their path. These same unknown and unexpected obstacles can impact the wild horses or burros being herded by the helicopter in that they may not be able to react and can be potentially harmed or caused to flee which can lead to injury and additional stress. When the helicopter is working close to the ground, the rotor wash of the helicopter is a safety concern by potentially causing loose vegetation, dirt, and other objects to fly through the air which can strike or land on anyone in close proximity as well as cause decreased vision.

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

The public would not be allowed to view the actual trapping activities during bait or water trapping, as described in Section 2.3. Safe viewing areas would be identified for the public to view loading, sorting and fertility control treatment.

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

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

Environmental Consequences

Proposed Action

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

No Action Alternative

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

3.9. Wild Horse Gather Mitigation Measures

This EA has analyzed the potential impacts that could occur with completion of gathers using helicopter and bait or water trapping to remove excess wild horses and apply fertility treatment to released mares. The following section applies primarily to helicopter gathers and summarizes the measures developed to ensure that potential impacts are minimized or avoided entirely.

BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. The SOPs outlined in Appendix A, and the BLMs CAWP IM 2013-059 would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts or injury to the wild horses. Both the BLM Wild Horse and Burro Specialists and the Gather Contractor and crew are very attentive and sensitive to the needs of all wild horses captured during gathers, and ensuring their health, safety and wellbeing during and after the gather is a focus and priority.

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

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

Fertility control treatment would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures (SOPs, Appendix C). The treatment would be controlled, handled, and administered by a trained BLM employee, or other qualified volunteer or organization in the case of on-the-range darting.

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

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

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

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

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

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

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

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

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

4. Cumulative Effects Analysis

The NEPA regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The cumulative effects study area (CESA) for the purposes of evaluating cumulative impacts is the Fish Creek HMA.

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

Resources that could be impacted cumulatively by the Proposed Action, Alternatives (including the No Action Alternative), and future actions include the following:

Livestock Management
Vegetation and Soils
Wild Horse Populations
Wildlife, and Sensitive Species
Water and Riparian Resources

For purposes of this analysis, potentially affected resources are discussed below in terms of past, present and reasonably foreseeable future actions which have or would have an effect in conjunction with the Proposed Action, Alternatives and No Action Alternative. These effects may be beneficial or negative, and differ among the Alternatives including the No Action Alternative.

4.1. Past, Present, and Reasonably Foreseeable Actions

Past Actions

Past actions, which have affected these resources within the CESA, primarily include livestock grazing and wild horse use. Other actions have included mining, mining exploration, and woodcutting. These actions are currently ongoing.

Management of the public lands and authorized uses were determined within the RMPs and amendments completed by each District in conjunction with input from the interested public. The Northeastern Great Basin RAC developed standards and guidelines for rangeland health that have been the basis for assessing rangeland health in relation to management of wild horse and livestock grazing within the BLM Districts. Adjustments in numbers, season of use, grazing season, and allowable use have been based on the evaluation of progress made toward reaching the standards and RMP objectives.

Historical mining activities have occurred throughout the CESA, and have primarily been small in scale. Substantial historic and current mining activity exists on the northern boundary of the HMA around the town of Eureka. These areas are seldom used by wild horses.

Domestic livestock have been present in the Fish Creek HMA, regulation of which resulted from the Taylor Grazing Act (TGA) of 1934, Federal Land Policy and Management Act (FLPMA) of 1976 and Public Range Improvement Act (PRIA) of 1978 as well as other laws, regulations and policies. Livestock grazing is also authorized in RMPs.

A series of livestock grazing decisions since the TGA have resulted in reductions in livestock numbers and changes in seasons of use and in grazing management practices to promote rangeland health within grazing allotments. The most current livestock management changes were implemented through the FMUDs issued in 2004 following completion of the Fish Creek Complex Rangeland Health Evaluation.

In 1971 Congress passed the WFRHBA which placed wild and free-roaming horses and burros, that were not claimed for individual ownership, under the protection of the Secretaries of Interior and Agriculture. In 1976 FLPMA gave the Secretary the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to inventory the public lands. PRIA amended the WFRHBA to provide additional directives for BLM's management of wild free-roaming horses on public lands.

Past actions also include establishment of wild horse HMAs, establishment of AML for wild horses, and wild horse gathers. Some activities have increased infestations of invasive plants, noxious weeds, and pests and their associated treatments. Activities have also increased human disturbance of wild horses, contributed to habitat fragmentation and changes to plant communities as a result of disturbance or utilization of key forage species.

Wild horses have existed within the Fish Creek HMA since prior to the passage of the 1971 WFRHBA. The Herd Area was established based on the presence of wild horses within this area in 1971, and later designated as an HMA in the 1986 SERA RMP ROD. The Fish Creek HMA boundary is nearly



Fish Creek HMA September 17, 2014. This area is a winterfat site. In the top left corner a winter fat enclosure is depicting potential of ungrazed winterfat. This area is heavily used by wild horses as it is near the end trough of Davis Pipeline. This area also reflects impacts from Severe and Extreme drought experienced since 2012.

identical to the Fish Creek Herd Area boundary with the exception of the portion of the HMA north of U.S. Highway 50.

Wild horse management has occurred in the Fish Creek HMA since 1980. Eight gathers have been completed in the past on part or all of the HMA, with the last two larger gathers in 1994 and 2000. In 2000 and 2004, 600 and 55 wild horses respectively were removed from the Fish Creek HMA due to lack of resources due to drought. The following table displays the gathers that have occurred and the removal of wild horses through the years. The figures do not reflect wild horses uncaptured, or post gather population estimates.

Table 28: Fish Creek Complex Gather History

HMA				
Fish Creek	1980	413	0	413
	1986	99	0	99
	1987	303	0	303
	1994	889	246	643
	1998	622	144	478
	2000	600	0	600
	2004	55	0	55
	2005	200	34	165
	2006	131	17	114

The actions which have influenced today's wild horse populations are primarily wild horse gathers, which have resulted in the capture and removal of excess horses, and release of horses back into the HMAs. During the January 1998 gather of the Fish Creek HMA, fertility control vaccine (PZP) was administered to all (52) mares 10 years and older released back onto the HMA. The vaccine was a 1-year formulation, and would have prevented pregnancy of these mares in 1999. 13 mares under 10 years of age were also given the drug and released, for a total of 65 mares treated. A follow up flight indicated that the drug was 90% effective. The drug was only effective for one year.

Present and Future Actions

Current actions, which have affected the resources within the CESA, primarily include mining exploration, livestock grazing and wild horse use.

Future activities which could be expected to contribute to the cumulative impacts of implementing the Proposed Action or Alternatives within the next 10 years include continued mining exploration and development, oil and gas leasing, power line construction, solar, wind or other "green" energy production, livestock adjustments, treatment of invasive plants, noxious weeds, and pests, wild horse AML adjustments, wild horse population growth suppression, modification of wild horse sex ratios, herd augmentation, and wild horse removals.

Livestock grazing is expected to continue at similar stocking rates and utilization of the available vegetation (forage) would also be expected to continue at similar levels. Rangeland Health Assessments would be planned to be completed in future years which could result in changes to livestock grazing systems such as changes to season of use, reduced or increased permitted use levels, or implementation of rotational grazing systems.

Any future actions that take place within the Fish Creek HMA would be assessed through appropriate

environmental documents in conformance with NEPA. For example, future mining plans of operation might require an EA or and EIS. Rangeland Health Assessments that adjust wild horse or livestock use might be accompanied by an EA, and future wild horse fertility treatment or gathers would be in conformance with this EA or new or amended EAs.

Though authorized by the WFRHBA, current appropriations and policy prohibit the destruction of healthy animals that are removed or deemed to be excess. Only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method. A recent amendment to the WFRHBA allows the sale of excess wild horses that are over 10 years in age or have been offered unsuccessfully for adoption three times. BLM is adding additional long-term grassland pastures in the Midwest and West to care for excess wild horses for which there is no adoption or sale demand.

The focus of wild horse management has also expanded to place more emphasis on achieving rangeland health as measured against the RAC Standards. The Northeastern Great Basin RAC standards and guidelines for rangeland health are the current basis for assessing rangeland health in relation to management of wild horse and livestock grazing. Program emphasis has also shifted to controlling population growth rates using fertility control in order to reduce the need for removal and holding of wild horses off the range for which an adoption demand doesn't exist.



Antelope Valley in the Fish Creek HMA, view from helicopter taken during flight of Fish Creek HMA on September 17, 2014.

The current Fish Creek HMA population is estimated to be 549 wild horses. Resource damage is occurring in portions of the Fish Creek HMA due to excess animals. The present condition of the vegetation resources is characterized by a lack or absence of many of the key perennial species that are part of the Potential Natural Community for these areas, especially in the lower elevations that receive lower precipitation levels. The current overpopulation of wild horses is contributing to heavy use of vegetation communities, and trailing, especially in light of Severe and Extreme drought conditions experienced since 2012.

Over the next 10-20 year period, reasonably foreseeable future actions that could cumulatively affect wild horses include treatment with PGS (fertility control) formulations that would reduce population growth and allow AML to be maintained with reduced necessity for gathers. Through successful PGS, the number of excess wild horses that need to be removed from the range to maintain a Thriving Natural Ecological Balance could be reduced. It is possible that forms of sterilization of mares or studs could be implemented to keep a portion of the population from reproducing without needing annual or periodic treatment with a fertility control drug.

Future gathers could be conducted by helicopter or through bait or water trapping. These gathers could continue as needed to continue to implement PGS (if indicated) and/or remove excess horses from the range. A Herd Management Area Plan (HMAP) could also be completed which would establish additional short and long-term management and monitoring objectives for the HMAs and their habitat. Future improvements in habitat could result in increases to AMLs in any or all of these HMAs. The Fish Creek HMA wild horses could also be involved in future Research projects for fertility control,

animal tracking, and vegetation studies.

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

In the future, the BLM would manage wild horses within HMAs that have suitable habitat for an AML range that maintains genetic diversity, age structure, and targeted sex ratios. Current policy is to express all future wild horse AMLs as a range, to allow for regular population growth, as well as better management of populations rather than individual HMAs. The BMD is in the process of revising the Tonopah and SERA LUPs. The revised Plan could influence the management of wild horses within the District in the future pertaining to HMAPs, gathers, population control, allocation of use to wild horses, burros, livestock and wildlife, monitoring and setting and adjusting AMLs.



Fish Creek HMA horses May, 2012.

The BLM would continue to conduct monitoring to assess progress toward meeting rangeland health standards and RMP objectives. Wild horses would continue to be a component of the public lands in the Fish Creek HMA, managed within a multiple use concept.

While there is no anticipation for amendments to the WFRHBA, any amendments may change the management of wild horses on the public lands. The Act has been amended three times since 1971; therefore there is potential for amendment as a reasonably foreseeable future action.

4.2. Cumulative Impacts Summary

Impacts Common to the Proposed Action Alternative

As the BLM achieves AML on a national basis, gathers should become more predictable due to facility space. PGS should also become more readily available as a management tool, with treatments that last between gather cycles reducing the need to remove as many wild horses and possibly extending the time between gathers (or reduce the need for gathers all together). The combination of these factors should result in an increase in stability in management of wild horses on the range.

A program to implement population growth suppression with periodic gathers would result in the population growth balancing with the minimal removals of young horses and natural mortality levels. Eventually, few or no horses would need to be removed from the range in future gathers. Negligible numbers of animals would have to be put in long term pastures or through the sale program, and all young horses removed from the range would be healthy and highly adoptable.

A cycle of AML maintenance, improved rangeland and improvements to animal health could result. In past years, the gather frequency in the BMD has averaged 7-8 years with populations increasing to many times the AML, followed by gathers that required the removal of a large portion of the population to reach AML given the high population growth rate and length of time between gathers. A program to implement population growth suppression would result in the *release* of most of the animals gathered (after application of fertility treatment to mares), removal of primarily young animals, and would maintain stable populations within the established AML range, avoiding the cycle of over populated ranges, necessitating the gather and removal of large numbers of excess animals in order to achieve the lower limit of AML.

Cumulatively, there should be more stable wild horse populations, less competition for limited forage and water resources, healthier rangelands and wild horses, and fewer multiple-use conflicts in the area over the short and long-term. Over the next 10-20 years, continuing to manage wild horses within the



Fish Creek HMA, September 17, 2014 helicopter resource flight view of high mountain use areas by wild horses.

established AML range would ensure a thriving natural ecological balance and multiple use relationship on public lands in the area.

By bringing the wild horse populations to AML, it would be possible to gather a higher percentage of the total population in future gathers, which would allow the increased use of fertility control and sex ratio adjustments as methods to slow population growth.

The cumulative effects associated with the capture and removal of excess wild horses or the application of fertility control vaccine to release mares includes gather-related mortality of less than 1% of the captured animals, about

5% per year associated with transportation, short term holding, adoption or sale with limitations and about 8% per year associated with long-term holding. This compares with natural mortality on the range ranging from about 5-8% per year for foals (animals under age 1), about 5% per year for horses ages 1-15, and 5-100% for animals age 16 and older (Stephen Jenkins, 1996, Garrott and Taylor, 1990).

In situations where forage and/or water are limited, mortality rates increase, with the greatest impact to young foals, nursing mares and older horses. Animals can experience lameness associated with trailing to/from water and forage, foals may be orphaned (left behind) if they cannot keep up with their mare, or animals may become too weak to travel. After suffering, often for an extended period, the animals may die. Before these conditions arise, the BLM generally removes the excess animals to prevent their suffering from dehydration or starvation.

Cumulative effects which would be expected when incrementally adding the Proposed Action Alternative to the CESA would include continued improvement of 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. Managing wild horse populations within the established AML 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. Upward trends would benefit permitted livestock, native wildlife, and wild horse population as forage (habitat) quality and quantity is improved over the current level. Maintaining AML over a sustained period of time throughout the CESA would allow for the collection of scientific data to evaluate whether changes to AML levels are warranted or necessary.

Impacts of that differ among Action Alternatives

Cumulative impacts that differ among the Action Alternatives concern vegetation and soil disturbance from gathers, long term impacts to rangeland health and wild horse health and numbers treated and removed from the range.

The Proposed Action, Alternative 1 and 3 include the use of helicopter to gather wild horses initially in 2015. Regular helicopter gathers would occur under Alternative 1 and 3, and periodically as needed under the Proposed Action. No helicopter gather would be included under the Alternative 2. The magnitude and frequency of helicopter gathers would vary and be the greatest under Alternative 1 and 3, moderate under the Proposed Action and the smallest under Alternative 2. This would have proportional effects to the population's social structure.

No removals would be planned under Alternative 2, with the fewest removals expected under the Proposed Action. This could benefit the genetic health of the population over time, and prevent any bottleneck effect. None of the Action Alternatives would be expected to have long term or cumulative impacts to wild horses.

Through all Alternatives, wild horses would be gathered. Bait and water trapping would be less intrusive and would be implemented under the Proposed Action, Alternative 2 and to a much lesser degree under Alternative 1 or 3.

Under Alternative 3, gathers to implement fertility control every 3 years, would have the effect of reducing the gather efficiency as wild horses learn to avoid the helicopter. Though horses would be disturbed every 2-3 years, most horses would be re-released back to the range resulting in fewer disturbances to existing social structures.

The Proposed Action, Alternative 1 and 3 all have the potential to achieve the AML within the next 10 years, depending on the removal of excess wild horses in future gather activities. Consequently, cumulative negative impacts to wildlife, soils, and vegetation from gathers would be minimized, whereas long term cumulative benefits in the way of improved habitat quality and quantity would be enjoyed by all rangeland users.

Impacts from No Gather Alternative

Increased movement of horses outside the boundaries of the HMA could be expected as the ever greater numbers of wild 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 to meet the needs of the over-population of wild horses 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 in less than 1-3 years. Wild horses, wildlife and livestock would not have sufficient forage or water. Ecological communities and habitat resources would be over-extended. Rangeland health would further degrade, possibly below biological thresholds, making recovery unlikely if not impossible as cheatgrass, medusa head, and other invasive non-native species dominate the understory, degrading ecological conditions.

Cumulative impacts under the No Action Alternative include the foregone 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. Improvements that have resulted from or could continue to be generated from reductions in livestock use, changes in season of use, and other management changes would be negated by the damaging effects of a significant overpopulation of wild horses.

Cumulative and chronic loss of habitat quality would impair the wild horse populations' ability to remain healthy and viable in the long-term. Although wild horse populations would be expected to eventually crash at some ecological threshold; wildlife would also experience suffering and possible death as rangeland resources are consumed and severely degraded. The RMP/FMUD objectives and Standards for Rangeland Health and Wild Horse and Burro Populations would not be achieved.

Because AML would continue to be exceeded throughout the CESA, monitoring data would reflect impacts from an over-population of wild horses and would not allow BLM to evaluate whether AML levels can (or should be) further modified.

Current impacts to the human environment across the CESA would be compounded should the current population of wild horses be allowed to remain and expand since rangeland resources would continue to be over-used and would not have the opportunity to recover from the impacts of excess numbers of wild horses. Irreparable damage to the arid habitat could preclude the ranges ability to support a viable wild horse population. Future actions could involve permanent remove of all wild horses from the Fish Creek HMA, or to reduce AMLs in future decisions due to lack of suitable habitat features. Similarly, permitted livestock would be reduced or possibly eliminated in certain areas due to lack of forage. Wildlife numbers would also fall, as habitat quality drops below levels needed to support them.

Impacts Conclusion

Past actions regarding the management of wild horses have resulted in the current wild horse population within the Fish Creek HMA. Wild horse management has contributed to the present resource condition and wild horse herd structure within the gather area.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Action or Action Alternatives, should result in more stable and healthier wild horse populations, healthier rangelands (vegetation, riparian areas and wildlife habitat), and fewer multiple-use conflicts within the Fish Creek HMA.

The proposed gather area contains a variety of resources and supports a variety of uses. Any alternative course of wild horse management has the opportunity to affect and be affected by other authorized activities ongoing in and adjacent to the area. The significance of cumulative effects based on past, present, proposed, and reasonably foreseeable future actions are determined based on context and intensity.

5. Monitoring and Mitigation Measures

The BLM COR and PIs assigned to the gather would be responsible for ensuring contract personnel abide by the contract specifications and the SOPs (Appendix A).

Ongoing monitoring of range vegetation, riparian areas, aerial population surveys, and animal health would continue.

Fertility control monitoring would be conducted in accordance with the SOPs (Appendix C). Under the Proposed Action or Alternative 2, additional freezemarking of released wild horses, particularly mares would be implemented to facilitate documentation of movement and behavior patterns. Trail cameras would supplement field monitoring data and be analyzed to enable an efficient and effective booster treatment strategy. Treatment records would be maintained for all treated mares as well as other information as it becomes available through the continued monitoring efforts.

The initial gather in 2015 would involve the collection of samples for genetic analysis of the population and potentially facilitate tracking and monitoring by animal. In future gathers, biological samples would be collected to analyze genetic diversity of the wild horses within these HMAs and compare to the baseline samples already analyzed.

Through the expanded efforts that could be implemented to collect data in this HMA as part of the PGS program, opportunities to collect information on animal behavior and movement patterns, effectiveness of fertility control, animal health, and other data could be possible that would be of value in completion of a HMAP for this area, as well as being useful to develop fertility control programs in other areas.

6. List of Preparers

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

Shawna Richardson	Project Lead/Wild Horse and Burro Specialist
Shiva Achet	Planning and Environmental Coordinator
Dustin Fowler	Rangeland Management Specialist
Juan Martinez	Native American Coordinator
Alden Shallcross	Hydrologist
Michelle Fast	Great Basin Institute Riparian Monitoring
Kent Bloomer	Noxious and Invasive Species Specialist
Jason Spence	Rangeland Management Specialist
Victoria Sanderson	Great Basin Institute Rangeland Monitoring
William O'Neill	Wildlife Biologist

7. Consultation and Coordination

Public hearings are held annually on a state-wide basis regarding the use of motorized vehicles, including helicopters and fixed-wing aircraft, in the management of wild horses and burros.

During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of the motorized vehicles. The Winnemucca District Office hosted the Nevada state-wide meeting on June 18, 2014; no changes to the current gather operation SOPs were identified based on the concerns expressed.

8. Public Involvement

This Preliminary EA was posted on the Fish Creek HMA gather website and the National NEPA Register. Notification of its availability was sent to the Interested Public mailing list (50+ individuals and organizations), and the Native American Consultation mailing list. The Preliminary EA was

available for 30 day comment period. Comments received were reviewed and edits made to the Final EA. As discussed in Section 2.3.6 and 3.8 and Appendix F, viewing opportunities would be made available to the public, and information posted on the Fish Creek HMA gather website throughout the gather activities.

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Trail camera photos of one group of horses 2012-2014, clockwise from top left.

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

I. Gather Plan

The purpose of the gather plan is to outline the methods and procedures for conducting wild horse gather activities on public lands in the Fish Creek Complex.

A. Gather Area

The Proposed Gather Area includes the Fish Creek HMA and areas outside of HMA boundaries where wild horses reside. Refer to Map 1 and 2, which display the HMA, grazing allotments and the gather area.

B. Administration of the Contract /Gather Operations

The National Wild Horse and Burro Gather Contract would be used to conduct wild horse helicopter gathers. The existing Bait and Water trapping contract could be used for those activities, or they may be conducted by BLM staff. BLM personnel would be responsible for overseeing the contract for the capture, care, aging, and temporary holding of wild horses and burros from the capture area. The BLM is committed to the well-being and responsible care of wild horses and burros we manage. At all times, the care and treatment provided by the BLM and our contractors will be characterized by *compassion and concern* for the animal's well-being and welfare needs. BLM Wild Horse and Burro Specialists would be on site at all times during gather operations to ensure wild horse safety and humane treatment. Measures to reduce stress and injury and ensure the highest levels of safety are described throughout Section 2, 3.2, 3.9 and Appendix A.III and Appendix G.

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

It is estimated that 4-6 gather corrals and one set of central holding corrals would be necessary to complete the gather. Ideally, gather corrals would be established in areas of previous disturbance (such as gravel pits, roads etc.), to avoid impacts to unaltered vegetation and soils. A cultural resources survey would be conducted prior to the construction of gather corrals and temporary holding facilities. Refer to the SOPs, Section E for more detailed information.

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

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

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

C. General Overview of Wild Horse Gather Methods

Helicopter Drive Trapping

The gather contractor supplies and transports all equipment needed to conduct a gather to a central location where Holding Corrals are constructed. These corrals consist of six or more pens constructed of sturdy panels, with a central alleyway and working/squeeze chute in the center. Corral panels are covered with snow fencing to keep animals calm, and water tanks are located within the pens. The central alley and pen arrangement allows the BLM staff and the contractor to sort recently captured animals, separating animals to ship to the adoption facilities, and mares and foals from studs to prevent fighting and injury. The pen arrangement allows the contractor to off-load wild horses from stock trailers into the pens, and facilitates the loading of the horses to be transported to facilities onto large straight deck trucks. Refer to photos 5, 8, and 13 at the end of this Appendix.

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

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

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

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

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

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

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

When the pens hold enough animals to transport to the BLM adoption facility, they are loaded into the straight deck trailers that hold 35-45 wild horses depending upon their size. The trailers have three compartments so that mares, studs and foals can be transported separately. It may require 3-6+ hours for the wild horses to arrive at the adoption preparation facility. The BMD typically transports wild horses to National Wild Horse and Burro Center at Palomino Valley near Sparks, Nevada; or may ship horses to other facilities if needed.

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

Bait and Water Trapping

If water or bait trapping is used, it may be conducted by BLM staff or one of the water/bait trapping contractors. Corrals built of panels would be constructed around natural or artificial water sources, allowing sufficient time (several weeks) for the wild horses in the area to become acclimated. If necessary, all other water sources may be made unavailable to wild horses in order to encourage them to use the water in the water trapping corrals. Trap corrals would be checked every day, which may be facilitated by the use of remote game cameras. Once in the corrals, the BLM or contractor would load the animals for transportation to a central holding area or transported directly to BLM short term holding facilities. Public observation would typically be limited to morning hours when trap corrals were being checked and when wild horses were being loaded for transportation. Because human presence would preclude the wild horses entering the trap corral, contractor, BLM and public presence would be limited.

D. Data Collection

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

1) Hair Samples/Genetics Analysis

Hair samples from the mane are collected and sent to Dr. Gus Cothran of Texas A&M University for analysis.

2) Herd Health and Viability Data Collection

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

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

3) Fertility Control Data

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

4) Characteristics

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

5) Condition Class

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

E. Euthanasia

The Authorized Office (or designee) will make decisions regarding euthanasia, in accordance with BLM policy as expressed in BLM IM 2009-041. A veterinarian may be called to make a diagnosis and final determination. Euthanasia shall be done by the most humane method available. Authority for humane euthanasia of wild horses is provided by the 1971 WFRHBA, Section 3(b)(2)(A), 43 CFR § 4730.1, BLM Manual 4730 - Euthanasia of Wild horses and Burros and Disposal of Remains. The following are excerpted from IM 2009-41:

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

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

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

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

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

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

F. Special Stipulations

- 1) Private landowners or the proper administering agency(s) would be contacted and authorization obtained prior to setting up gather corrals on any lands which are not administered by BLM. Wherever possible, gather corrals would be constructed in such a manner as to not block vehicular access on existing roads.
- 2) Gather corrals would be constructed so that no riparian vegetation is contained within them. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.
- 3) The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.
- 4) Standard operating procedures in the site establishment and construction of gather corrals will avoid adverse impacts from gather corrals, construction, or operation to wildlife species, including threatened, endangered, or sensitive species.
- 5) Archeological survey by a BLM archaeologist or District Archeology Technician of gather corrals, holding corrals, and areas of potential effects would occur prior to construction of gather corrals and holding corrals. If cultural resources were encountered, those locations would not be utilized. Due to the inherent nature of wild horse gathers, gather corrals and holding corrals would be identified just prior to use in the field. As a result, Cultural Resource staff would coordinate with Wild Horse and Burro personnel to survey proposed locations as they are identified, and complete required documentation.
- 6) Wildlife stipulations
The following stipulations would be applied as appropriate.
 - a. Sage Grouse
 - i. Avoid active leks (strutting grounds) by 2 miles. March 1- May 15
 - ii. Avoid nesting and brood rearing areas (especially riparian areas where broods concentrate beginning usually in June) by 2 miles. April 1 – August 15
 - iii. Avoid sage grouse wintering areas by 2 miles while occupied. Most known wintering grounds in the SERA occur at high elevations and are not likely to be affected. Dates vary with severity of winter
 - iv. Minimize and mitigate disturbance to the vegetation in all known sage grouse habitat.
 - b. Ferruginous Hawk: Avoid active nests by 2 miles. March 15- July 1.

II. Standard Operating Procedures for Wild Horse and Horse Gathers

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

Prior to any gathering operation, the BLM will provide for a pre-capture evaluation of existing conditions in the gather area(s). The evaluation will include animal conditions, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with wilderness boundaries, the location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine whether the proposed activities will necessitate the presence of a veterinarian during operations. If it is

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

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

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

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

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

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

1. The primary concern of the contractor is the safe and humane handling of all animals gathered. All gather attempts shall incorporate the following:

All gather corral and holding facility locations must be approved by the COR/PI prior to construction. The Contractor may also be required to change or move corral locations as determined by the COR/PI. All gather corrals and holding facilities not located on public land must have prior written approval of the landowner.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR who will consider terrain, physical barriers, access limitations, weather, extreme temperature (high and low), condition of the animals, urgency of the operation (animals facing drought, starvation, fire rehabilitation, etc.) and other factors. In consultation with the contractor the distance the animals travel will account for the different factors listed above and concerns with each HMA.
3. All gather corrals, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
 - a. Gather corrals and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All gather corrals and holding facilities shall be oval or round in design.
 - b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes larger than 2"x 4".
 - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for horses and 1 foot to 6 feet for burros. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.

- d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for horses and 2 feet to 6 feet for burros.
- e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking or sliding gates.
4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.
5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.
6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or mares with small foals, sick and injured animals, estrays, or other animals the COR determines need to be housed in a separate pen from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the capture area(s). In areas requiring one or more satellite gather corrals, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.
7. The Contractor shall provide animals held in the gather corrals and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the gather corrals or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility through the night is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.
8. It is the responsibility of the Contractor to provide security to prevent loss, injury, or death of captured animals until delivery to final destination.
9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if animals must be euthanized and provide for the destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.
10. Animals shall be transported to their final destination from temporary holding facilities as quickly as possible after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in gather corrals and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday or Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours in any 24 hour period. Animals that are to be released back into the capture area may need to be transported back to the original gather site. This determination will be at the discretion of the COR or Field Office Wild Horse and Burro Specialist.

B. Capture Methods That May Be Used in the Performance of a Gather

1. Capture attempts may be accomplished by utilizing bait (feed, water, mineral licks) to lure animals into a temporary gather corral. If the contractor selects this method the following applies:
 - a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
 - b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.
 - c. Gather corrals shall be checked a minimum of once every 10 hours.
2. Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:
 - a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one half hour.
 - b. The contractor shall assure that foals shall not be left behind, and orphaned.
3. Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor with the approval of the COR/PI selects this method the following applies:
 - a. Under no circumstances shall animals be tied down for more than one half hour.
 - b. The contractor shall assure that foals shall not be left behind, or orphaned.
 - c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. Use of Motorized Equipment

1. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals. The Contractor shall provide the COR/PI with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.
2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.
3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.
4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer, which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their

hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the COR/PI.

5. Floors of tractor-trailers, stock trailers and loading chutes shall be covered and maintained with wood shavings to prevent the animals from slipping.
6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers:

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

7. The COR/PI shall consider the condition and size of the animals, weather conditions, distance to be transported, or other factors when planning for the movement of captured animals. The COR/PI shall provide for any brand and/or inspection services required for the gathered animals.
8. If the COR/PI determines that dust conditions are such that the animals could be endangered during transportation, the Contractor will be instructed to adjust speed.

D. Safety and Communications

1. The Contractor shall have the means to communicate with the COR/PI and all contractor personnel engaged in the capture of wild horses utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.
 - a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the contracting officer or COR/PI violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.
 - b. The Contractor shall obtain the necessary FCC licenses for the radio system
 - c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.
2. Should the contractor choose to utilize a helicopter the following will apply:
 - a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.
 - b. Fueling operations shall not take place within 1,000 feet of animals.

E. Site Surveys

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

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

F. Animal Characteristics and Behavior

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

G. Public Participation

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

H. Responsibility and Lines of Communication

The CORs and the PIs have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Mount Lewis Field Office will be the lead office for completion of the gather. The CORs and PIs have the direct responsibility to ensure the Contractor's compliance with the contract stipulations. The Mount Lewis Field Manager will ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, and BLM Holding Facility offices. All employees involved in the gather operations will keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries will be handled through the Nevada State Office, Field Managers and District Office Public Affairs Officers. These individuals will be the primary contact and will coordinate with the COR on any inquiries.

The COR will coordinate with the contractor and the BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

The contract specifications require humane treatment and care of the animals during removal operations. These specifications are designed to minimize the risk of injury and death during and after capture of the animals. The specifications will be vigorously enforced.

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

III. Agency Expectations To Ensure Safe and Humane Handling of All Gathered Wild Horses – Fish Creek HMA Gather 2015

Based on the BLMs experience with previous wild horse/burro gathers and the need to adapt some gather practices to specific local conditions, the following information will be discussed with all gather personnel before gather operations begin. This discussion will serve as a reminder that the humane handling of wild horses and burros during gather operation is always a primary concern. The Contracting Officer's Technical

Representative (COTR) will address any actions or issues that seem inhumane promptly and within contract specifications. Some guidelines include the following:

1. The helicopter will not be operated in a manner where internal or external forces could cause it to come into contact with an animal. Hovering by the helicopter over the wild horse and burro is acceptable so long as there is no risk of contact.
2. Handling aids (including body position, voice, flags, paddles, electric prods will be used in a manner that is consistent with domestic livestock handling procedures. Flags and paddles will be used as signaling and noise making devices first with only light contact of the flag or paddle end allowed. Animals will not be whipped or beaten.
3. Flagging and paddles will be used strategically to guard against desensitizing the wild horses and burros.
4. Kicking or hitting of wild horses and burros is not acceptable.
5. Electric prods (hotshots) will not be used routinely on wild horse and burro. Electric prods will only be used to shock animals, not to tap or hit animals. Electric prods will not be applied to sensitive areas such as the face, head, genitals or anus. Electric prods may only be used when wild horse and burro or human safety is in jeopardy or other handling aids have been tried and are not working.
6. Gates and doors will not be deliberately slammed or shut on wild horse and burro. Gates can be used to push wild horse and burro but will not be used in a manner that may catch legs.
7. Pursuing single wild horse and burro should be a rare event and not standard practice. Only the COTR will identify and request the contractor to pursue single wild horse and burro.
8. The contractor will make every effort to ensure that foals are not left behind or orphaned in the field. If a foal has to be dropped from a group being brought to the trap because it is getting too tired or cannot keep up for any reason, the contractor/pilot will document the location of the foal and the description of the mare to facilitate "pairing- up" at temporary holding, (if the foal is young enough to require this). In this case, the contractor will provide trucks/trailers and saddle horses for the retrieval of the young foal(s), and transport the foal(s) to the gather site or temporary holding. The method of capture will be authorized or requested by the COTR.
9. If during the gather any wild horses being brought in by helicopter (including foals or horses that may be aged, lame, injured or otherwise appear weak or debilitated) appear to be having difficulty keeping up with the group being brought in, the contractor will slow down to accommodate the individuals having difficulty, pause to allow those animals to rest before proceeding, drop those individuals from the group or drop the entire group. It is expected that animals may be tired, sweaty and breathing hard on arrival at a trap, but they will not be brought in by the helicopter in a manner that results in exhaustion, collapse or distress.
10. The need to rope specific wild horse and burro will be determined by the COTR on a case by case basis. The COTR will identify what wild horse and burro need to be roped.
11. While gathering, there may be wild horse and burro which escape or evade the gather site while being moved with the helicopter. In these cases there may be multiple attempts to recapture and push the wild horse and burro to the gather site. In these instances, animal condition and fatigue will be evaluated on a case by case basis to determine the number of attempts that can be made to capture/recapture. Animals will not be pursued to a point of exhaustion.
12. Any foals that are not weaned and have been maintained with their mares at the gather temporary holding corral will be transported to the BLM preparation facilities as soon as practical. Mares with dependent foals will be separated from other animals and moved to a designated mare/foal pen until they can be shipped to the BLM preparation facility.
13. All sorting, loading, or unloading of wild horse and burro will be performed during daylight hours unless approved by COTR.
14. Screening on panels will be provided where loading operations occur as a visual barrier and to block holes, gaps, or openings where wild horse and burro could attempt to escape or be injured.
15. As determined by the COTR, appropriate dust control measures will be implemented as noted in the gather contract.

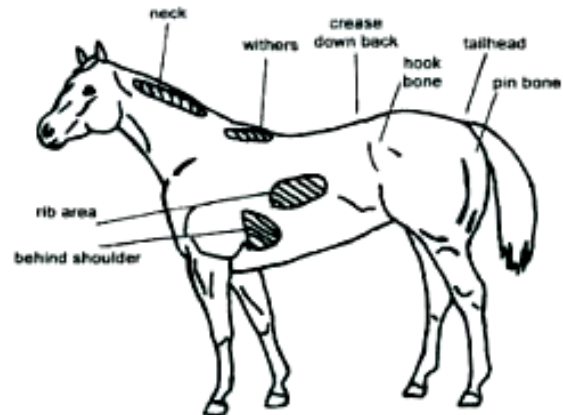
16. When possible, the contractor will have the trailer floor at ground level to ease the loading of wild horse and burro at the gather site.
17. If the pilot is moving wild horse and burro and observes an animal that is clearly injured or suffering, the animal should be left on the range and its location noted. The BLM COTR or Project Inspector with APHIS veterinary assistance, if necessary, will then go to the area to determine the condition of the wild horse and burro and the appropriate actions necessary to address the welfare of the animal including euthanasia if needed.
18. All gather personnel; including contractors will be monitored for fatigue.
19. Injuries that required veterinary examination or treatment, deaths, and spontaneous abortions that may occur will be noted in gather reports and statistics kept by the COTR.
20. At the discretion of the COTR, if a wild horse or foal is injured during gather operations, gather operations may be temporarily suspended if necessary to provide care for the animal and safe transportation to the temporary holding corrals or BLM preparation facility as indicated.
21. The contractor, per the gather contract, shall provide animals held in the gather corrals and/or holding facilities with a supply of fresh clean water at a minimum rate of 10 gallons per adult animal per day. Troughs will be placed in scattered locations within pens to allow more area for horses to access the water.
22. Animals held overnight or for 10 hours or more in the gather corrals or holding facilities shall be provided good quality hay at a rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. Hay will be distributed around the pens such that each animal can eat at one time without overcrowding.
23. When extreme environmental conditions exist (temperature) during this gather, the overall health and well-being of the animals will be monitored and the COR will adjust gather operations as necessary to protect the animals from climatic and gather related health issues. There may be days when gather operations cease based on temperatures.
24. The success of gathering and safely and humanely caring for or handling wild horse and burro will be based on contractor and BLM staff's patience, expertise and experience.
25. The IC, COTR and contractor will ensure that the distance animals are brought to the gather site is based on the terrain, environmental conditions, and animal health. With foals, pregnant mares, or horses that are weakened by body condition, age or poor health the appropriate trailing/gather distance will be determined on a case by case basis considering the weakest or smallest animal in the group and the range and environmental conditions present. The maximum gather distance will depend on the specific animal and environmental conditions on the day of the gather, and direct dialogue with the pilot/contractor and COTR/PI will take place for each 'run' to provide important information as to numbers, number of foals, locations distance and/or overall animal and/or environmental conditions.



Fish Creek HMA, Resource Flight, Nine Mile Use Area, Aspen Community. September 17, 2014

Henneke Equine Body Condition Scoring System

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



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

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

Photos

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



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



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



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



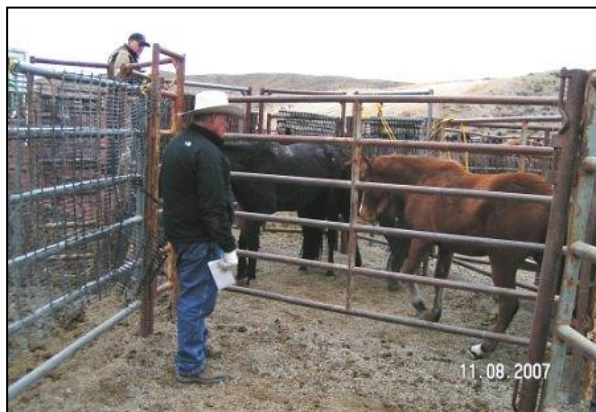
5. New Pass/Ravenswood Gather, November 2007. Mares settle in at the Holding Corrals and enjoy some hay.



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



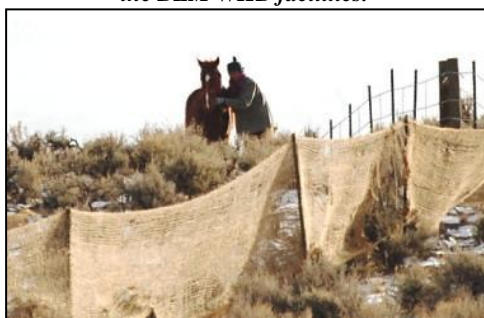
7. The "Judas" or "prada" horse on the far left is released ahead of the group of horses and then leads them into the jute wings of the trap corrals (photo on the right). Callaghan HMA Gather December 2008.



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



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

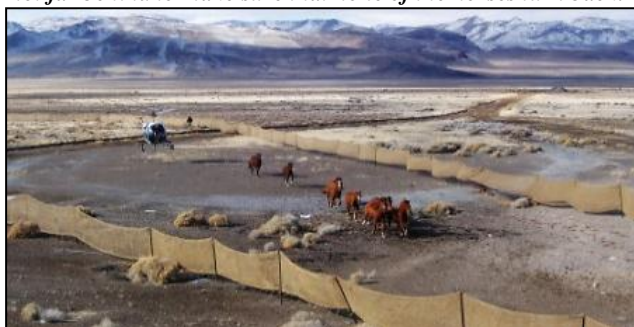


10. A gather crew member holds the prada or Judas horse inside the wings, waiting for the helicopter to push the horses into the mouth of the wings. As soon as the wild horses see the prada horse, the crew member releases him. Callaghan HMA Gather, December 2008.





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



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



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



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



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



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

Appendix B: Herd Management Area Background Information

The Fish Creek HMA is located a few miles south of Eureka, Nevada in the Antelope and Little Smokey Valleys and in the Antelope and Fish Creek Mountains. The majority of the HMA is comprised of north-south trending mountain ranges that include all or portions of the Fish Creek Range, the Mahogany Hills, and the Antelope Range. Elevations range from 6,030 feet in the wide valley bottoms, reaching 10,100 feet at Ninemile Peak.

The HMA is bordered on the east by U.S. Highway 50 in part, and natural barriers and fences to the south. U.S. Highway 50 borders the majority of the HMA on the north; however, a small portion of the HMA exists north of U.S. Highway 50, which is separated by highway right-of-way fences. This portion of the HMA is only 19,300 acres and is managed with the Whistler Mountain and Roberts Mountain HMAs. The Fish Creek HMA shares its southern boundary with the Sevenmile HMA to the south west and the Pancake HMA (administered by the Ely District) to the south east. Refer to maps 1 and 2.

The AML for the Fish Creek Ranch Allotment portion of the Fish Creek HMA was initially established at 75 wild horses in 1994 through a Final Multiple Use Decision (FMUD).

The remaining AML for the allotments within the Fish Creek HMA, (and the AML range for the Fish Creek Ranch Allotment) was established through the FMUD issued by the MLFO September 27, 2004 following the analysis of monitoring data and completion of the Fish Creek Complex Evaluation and Rangeland Health Assessment and EA #NV062-EA04-69. The total AML for the HMA was established as a range of 107 to 180 wild horses year round. The AML for the portion of the HMA south of U.S. Highway 50 is 101-170.

Wild Horse Background/Herd History

The original Herd Area (HA) boundaries are limited to areas of the public lands identified as being habitat utilized by wild horses and/or burros at the time of the passage of the Wild Free-Roaming Horse and Burro Act of 1971. The Fish Creek HMA was identified as a Herd Area (HA) following passage of the Act, and has been identified for long-term management as an HMA. The Fish Creek HMA boundary is identical to the Fish Creek Herd Area boundary with the exception of the portion of the HMA north of U.S. Highway 50.

According to the book *The DAMELES and the American Curly Horse* by Dale E. Woolley, Tom Dixon was one of the largest horse breeders in the Eureka Area, owning over 10,000 horses ranged all around Eureka, east in Long Valley, north in Diamond Valley, west in Kobeh and Monitor Valleys, southwest in Antelope Valley, south in the Fish Creek Valley and in the Newark Valley.

Tom Dixon arrived in Eureka in early 1869. After learning of the thousands of mustangs roaming Nevada, he decided to pursue business opportunities. He imported Irish mares and stallions, some Clydesdale stallions from England, and some Percherons, Shires and Clydesdales from the eastern states. With these heavy breeds, he developed a respected breeding program. He also purchased lighter breeds such as Morgan, Thoroughbred, Hambletonian and Palominos from eastern states, and imported a White Spanish Pacer from Spain. Tom bred draft, saddle, trotting horses and a few for color. He turned these horses out on the range with groups of mustangs and later gathered the offspring for sale. He became one of the best known and respected horse breeders in the state.

He is said to have brought back three curly horses from a horse trader in Delhi in early 1874 that were reported to have been from Russia. One of these horses was released to the north in the Buckskin Mine area, located between Kelly Creek and Birch Creek in the vicinity of Pete Hanson Canyon. Another was released in White Pine County. The following year, young curly horses were seen in both regions and were later seen in Fish Creek Valley. Curly horses were also known to exist where mustangs congregated in Antelope and Kobeh Valleys. For more information about the Fish Creek area, Eureka, Nevada history or Tom Dixon, refer to the book identified above.

Herd Characteristics and Genetics

Typically, the wild horses found in the Fish Creek HMA are medium-sized, fine-boned horses, reaching approximately 14.2 hands and 800-1000 pounds when fully grown. Prominent colors include blue and red roans with other colors including palomino, buckskin, grulla, sorrel, gray, brown, and bay. The roan colors have been popular with adopters over the years.

Genetic Analysis

During the 2005 gather, 23 samples were collected for genetics analysis. The report indicates a higher than average number of variants in the Fish Creek herd. The number of rare variants was somewhat above the average percentage of rare variants and indicates some risk of future loss of alleles. Allelic diversity is well above the average for feral herds.



July 2013 trail camera photo of a large group of Roan horses gather around the water trough at the Slough water haul location.

Genetic variation in the Fish Creek herd is relatively high. The analysis indicates a possible recent population bottleneck or the possibility of mixing. Highest mean genetic similarity of the Fish Creek herd was with the Old World Spanish breeds but the values for all of the non-cold blood horse groups were similar. There was no strong allelic indication of Spanish ancestry. The Fish Creek herd does not fit into any specific group but is on the outside of the cluster of riding horses of several types. Genetic variability within the Fish Creek herd is fairly high probably due to mixed ancestry as the herd appears to be of mixed origins. The AML of this herd is fairly high as is variability so no action is required at this time according to Dr. Gus Cothran of Texas A&M.

Hair samples were collected from all four HMAs during the most recent gathers and analyzed by HMA for genetic variability. The reports were received spring and summer 2010. The following table includes information from the 2010 Genetic Analysis Report also attached to this Final EA in Appendix I.

Table 1. Results of Genetics Analysis

HMA/Area	Genetic Variants	Genetic Variation	Genetic Similarity (Domestic)	Genetic Similarity (Feral)
Fish Creek HMA	61	High	Old World Spanish Breeds (no strong indication of Spanish ancestry)	Jackson Mountains South, Nevada
	The samples collected in 2005 were blood samples and a small sample size was collected. A larger sample size of hair will be collected during future gather events.			

Curly horses are known to exist within the Fish Creek HMA, and since the mid 1990's, has been touted as the Home of the Curly Horse. During the 1994 gather, a total of 11 wild horses captured were noted to have curly characteristics. In 1995 seven curly horses were relocated from the Roberts Mountain HMA into the Fish Creek HMA. Ten curly coated wild horses were captured during the 1998 gather. Many of these animals were released back to the HMA. The emergency gather of 600 animals in 2000 resulted in the capture and removal of 10 curly coated wild horses. Coat characteristics were not documented during the 2004 emergency gather. Approximately nine horses with curly coats were documented during the 2005 and 2006 gathers. All adults were selected for release back to the HMA.

Wild horses exhibiting the curly coat characteristics included sorrel, black, bay, grey, brown and roan. Genetics testing has not been done to analyze the curly genetics. It is currently unknown whether the curly characteristic is a dominant trait. With so few animals exhibiting the characteristic, it would seem reasonable that it is not.

Colors of the wild horses have been tabulated for the gathers that have been completed within the Complex. The

results may vary due to time of year and differences of color expression, or discrepancies in color classification by the observers. This information is displayed in the following series of tables.

Table 2: 2005 Fish Creek Colors

Color	% of Total
Bay	34%
Dark Bay	1.5%
Sorrel	14%
Black	9%
Brown	7%
Dark Brown	0.9%
Buckskin/Dun	2%
Chestnut	1.5%
Flaxen Sorrel	0.6%
White	1.5%
Grey	8%
Grulla	0.9%
Palomino	1.5%
Blue Roan	6%
Red Roan	4%
Strawberry Roan	2%
Roan	4%
Sabino Paint	0.3%
Sorrel Paint	0.6%

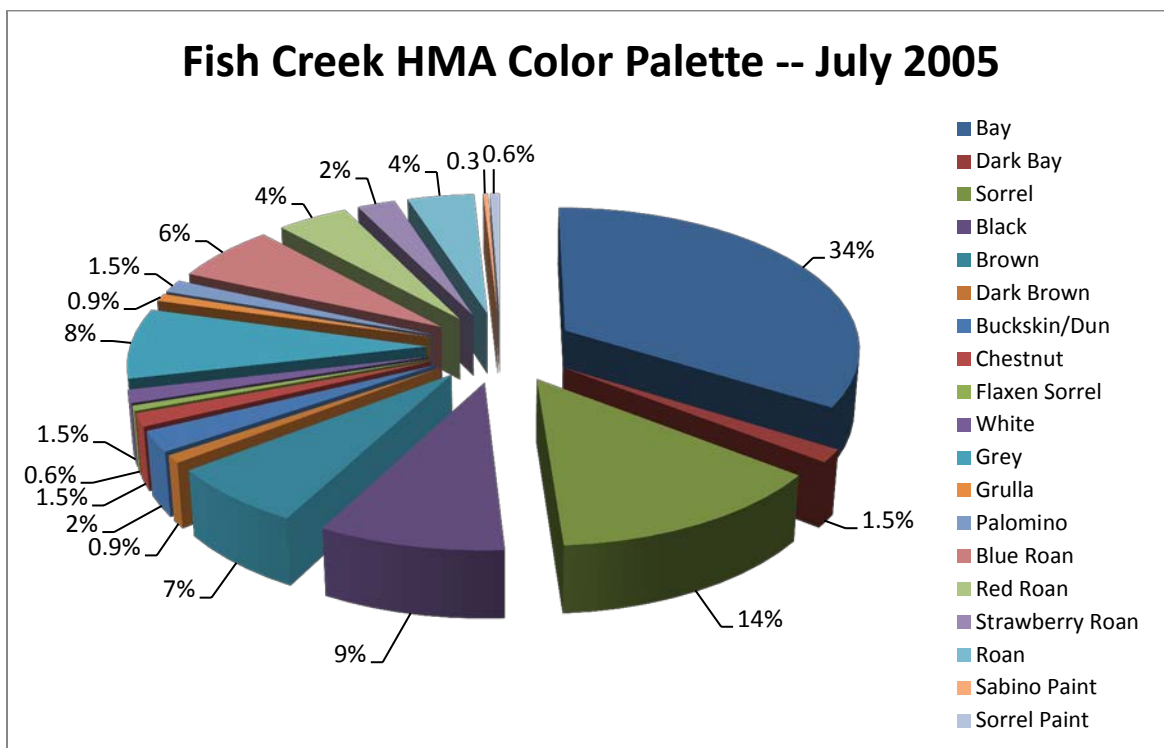


Figure 1: Fish Creek HMA Colors, 2005 Gather

Table 3: 2004 -- Emergency Gather Fish Creek Colors

Color	Number	Percent
Bay	17	31.5%
Black	9	16.6%
Brown	8	14.8%
Sorrel	6	11.1%
Red roan	4	7.4%
Dun	2	3.7%
Blue roan	2	3.7%
Roan	2	3.7%
Gray	2	3.7%
Buckskin	1	1.9%
Strawberry Roan	1	1.9%
Total	54	100.0%

Table 4: 2000 -- Emergency Gather Fish Creek Colors

Color	Percent
Bay	30.0%
Black	11.0%
Brown	5.5%
Sorrel	13.0%
Red roan	14.9%
Dun	0.2%
Blue roan	4.2%
Gray	10.0%
Buckskin	2.9%
Strawberry Roan	4.4%
Appaloosa	0.34%
Paint	0.7%
Chestnut	0.8%
Palomino	1.4%

Table 5: 1998 Fish Creek Gather Colors

Color	Female	Male	Total	
			Number	Percent
Appaloosa	--	2	2	0.32%
Bay	122	93	215	34.62%
Black	17	18	35	5.64%
Blue Roan	5	6	11	1.77%
Brown	70	54	124	19.97%
Brown	1	1	2	0.32%
Buckskin	1	2	3	0.48%
Chestnut	--	2	2	0.32%
Grey	30	31	61	9.82%
Grey Appaloosa	1	--	1	0.16%
Red Dun	--	1	1	0.16%
Red Roan	47	30	77	12.40%
Roan	9	8	17	2.74%
Sorrel	33	29	62	9.98%
Strawberry Roan	5	2	7	1.13%
White	--	1	1	0.16%
Total	341	280	621	100.00%

Table 6: 1994 Fish Creek Gather Colors

Color	Female	Male	Total	
				Percent
Bay	150	107	257	28.46%
Bay Curly	1	1	2	0.22%
Bay Paint	--	1	1	0.11%
Black	27	27	54	5.98%
Black Curly	2	2	4	0.44%
Blue Roan	26	33	59	6.53%
Brown	55	68	123	13.6%
Brown/Curly	1	1	2	0.22%
Buckskin	7	16	23	2.55%
Chestnut	2	11	13	1.44%
Gray	12	11	23	2.55%
Gray/White Paint	--	1	1	0.11%
Grey	12	15	27	3.00%
Grulla	3	1	4	0.44%
Palomino	2	4	6	0.66%
Red Roan	81	76	158	17.50%
Red Roan Curly	--	1	1	0.11%
Roan	--	1	1	0.11%
Sevina	1	--	1	0.11%
Sorrel	76	59	135	14.95%
Sorrel Curly	1	1	2	0.22%
Strawberry Roan	--	2	2	0.22%
White	1	3	4	0.44%
Total	460	442	903	100.00%

Wild Horse Age Structure

The following table displays the age structure of all horses gathered during the July 2005 gather activities.

Table 7, 2005 Age Structure

Age	
Weanling	19.2%
1	6.6%
2	20.2%
3	9.6%
4	9.6%
5	4.0%
6	4.5%
7	5.1%
8	3.5%
9	1.5%
10	1.0%
11	1.5%
12	0.5%
13	0.5%
14	1.0%
15	0.5%
16	0.5%

Fish Creek Age Structure, July 2005	
Age	% of total
18	0.5%
19	0.5%
20	7.6%
23	0.5%
25	0.5%
30	0.5%
32	0.5%

The table above shows an incongruity within the yearling and two year old categories which is quite common. The ages of these younger horses are typically estimated during gathers, and the mouths of these young horses are not examined to determine age, in order to avoid any additional stresses on them. Often larger yearlings are mistaken for young two-year olds. Similarly, a smaller three year old might be mistaken for a two year old as well. Likewise, the 20 year old category shows a jump in the percentage of animals represented which in reality was likely comprised of horses in their late teens and early 20's. Determining age of horses by dental examination of older animals is not an exact science, particularly in wild horse herds. This age structure analysis provides the best available information as estimated by individuals trained and experienced in the skill of wild horse age estimation.

Wild Horse Inventory

Since the most recent gather in 2006, inventory flights were completed in September 2007, September 2011 and March 2014, with resource flights conducted in August 2012, April 2013 and January 2014. Map 2 displays the wild horse locations noted during the last inventory.

Since 2001, the Fish Creek HMA inventory has been completed in conjunction with the adjoining Sevenmile HMA and Butler Basin Wild Horse Territory (WHT) and Little Fish Lake HMA/WHT. Other nearby HMAs and WHTs have also been included. In the most recent inventory, a comprehensive inventory of a large complex of every HMA and WHT between U.S. Highway 50 and the Nellis Test Site was completed including an inventory of the adjoining Pancake HMA by the Ely District.

The inventory flight in 2007 was completed in September. This inventory represented two foaling seasons after the last gather in February 2006, and was a direct count. A total of 7.2 hours were utilized for the flight. The table reflects 17.7% of the population consisted of foals born in 2007.

Table 8: September, 2007 Inventory Results

HMA	Inside HMA			Outside HMA			Totals		
	Adult	Foal	Total	Adult	Foal	Total	Adult	Foal	Total
Fish Creek	76	16	92	3	1	4	79	17	96

A helicopter inventory of the Fish Creek HMA was conducted on August 17, 2011. The table below displays the results, as compared to the 2011 estimate and the AML. Both the HMA and areas outside of the HMA were covered. Approximately 8.0 hours were used to complete the flight. Note the percent foals observed during this summer inventory is 19.5%. The results below reflect a direct count, however new best management practices developed by USGS were implemented during the flight.

Table 9: August, 2011 Inventory Results

HMA							
Fish Creek	215	192	23	19.5	101-170	113%	Sept. 2007

In the table above, the 2011 estimated population was based on 17.5% average annual increase since the 2007 inventory. The portion of the HMA covered, and the AML reflected in the table pertains to the portion south of U.S. Highway 50.

On March 5, 2014, a helicopter inventory was conducted of the Fish Creek HMA. Approximately 7.0 hours were used to complete the flight. Both the HMA and areas outside of the HMA were covered. Because this flight was conducted in the winter/early spring months, the number of foals documented is only a portion of what would have been born during the 2014 foaling season. The estimated annual rate of increase applied to derive a 2014 post foaling estimate was 19%. Additionally during this flight, the numbers of yearlings were estimated. Estimation of yearlings is not as accurate as documentation of foals, especially in winter months because the heavy winter coat can make differentiation of yearlings from small adults difficult. A total of 55 horses or 11.5% of the population documented was estimated to be yearlings.

Table 10: March 2014 Inventory Results

HMA									
	Adults	Foals	Total	Adults	Foals	Total	Adults	Foals	Total
Fish Creek	312	7	319	155	6	161	467	13	480

In addition to the above inventory information, the following table is presented to illustrate the population estimates, and inventory results in conjunction with gathers and removals in 2005 and 2006.

Table 11: 2005-2007 Population and Inventory Comparison

HMA										
Fish Creek	383	381	166	195	188	114	57	67	79	96

2012-2014 Resource Monitoring Flights

As drought conditions intensified in 2012, resource monitoring flights were initiated to allow BLM staff to document wild horse body condition, and forage and water availability aerially. The intention was not to conduct a complete count of all of the horses within the HMA, but to focus on areas of known concentration or potential issues and document the largest array of resources possible.

August 22, 2012. Approximately 3.0 hours were spent completing a flight within and outside of the Fish Creek HMA via helicopter. The intent was not to conduct an inventory. A total of 145 wild horses were observed, including 27 foals. This represented 18.6% foals in the population.

March 1, 2013, a resource flight within and outside of the Fish Creek HMA was conducted in order to document wild horse body condition, and overall resource conditions. Approximately 1.75 hours were spent documenting wild horse condition and locations. A total of 130 wild horses were observed during the flight.

January 22, 2014, a resource flight via helicopter was completed of the Fish Creek HMA. Approximately 2.50 hours were used to conduct the flight within and outside of the HMA. The goal of the flight was to document wild horse and resource conditions in light of continuing drought. A total of 280 wild horses were observed

during the flight.

Wild Horse Gather History

Nine gathers have taken place within and outside of the Fish Creek HMA boundaries. These gathers were completed in 1980, 1986, 1987, 1994, 1998, 2000, 2004, 2005 and 2006. MLFO records indicate that over 2,700 wild horses have been removed from the Fish Creek HMA through these gathers. The 2000 and 2004 gathers were the result of emergencies.

1980 Wild Horse Removal

In 1980, records indicate that the BLM removed as many as 413 wild horses from the Fish Creek HMA. A total of 105 were removed from the Browns Canyon area and 56 were removed from Antelope Valley in the Lucky C Allotment. The remaining 253 were removed from Antelope Valley in the Fish Creek Ranch Allotment. No animals were released. It was estimated that over 300 animals remained inside of and in allotments surrounding the Fish Creek HMA.

1986 Wild Horse Gather

The estimated population within the Fish Creek HMA gather area was 737 wild horses. Records indicate that 99 animals were removed. A post removal inventory was conducted in September 1986 showing 658 wild horses remaining within the Fish Creek HMA.

1987 Wild Horse Gather

The records for the August 1987 removal stated that 165 wild horses were brought in from the Antelope Valley and Dry Lake area and another 138 wild horses were brought from Antelope Valley near the Number 3 Well for a total of 303 removed from the HMA. No animals were released back to the HMA.

1994 Wild Horse Gather

A wild horse gather took place within the Fish Creek HMA during August of 1994. The gather was conducted in the Fish Creek Ranch Allotment and the Lucky C Allotment north of U.S. Highway 50. Wild horses were gathered both inside and outside of the Fish Creek HMA boundary. A total of 889 were captured and 246 were released back to the HMA according to age removal criteria in place that mandated release of animals 10 years old and older.

1995 Relocation of Curly Horses from Roberts Mountain HMA

In 1995, 7 curly horses were gathered and removed from the Roberts Mountain HMA and relocated within the Fish Creek HMA.

1998 Wild Horse Gather

In 1998, wild horses were gathered from the Fish Creek Ranch and Lucky C Allotments and portions of Antelope Valley outside of the Fish Creek HMA boundary. The portions of the Lucky C and Arambel Allotments within the HMA or the area north of Highway 50 were not gathered. The eastern portion of the Fish Creek Ranch Allotment, the eastern slopes of the Fish Creek Range, Little Smoky Valley, and the southwest tip of the Fish Creek Ranch Allotment including Cottonwood and Indian Creek were not gathered at this time.

A total of 622 wild horses were captured during this gather. A total of 144 were released back into the Fish Creek HMA according to age removal criteria in place that mandated release of animals 10 years old and older. 479 of the horses that were captured were shipped to Palomino Valley Center north of Sparks, Nevada for preparation into the adoption program. The gathered horses included many sorrels, red and blue roans, black, brown, white, and gray horses. A total of 11 curly horses, and two appaloosas were captured.

Fertility control (Porcine Zona Pellucidae) was administered to 52 mares older than 10, and 13 mares younger than 10 years of age being released back into the Fish Creek HMA. The vaccine was a 1-year formulation, and would have prevented pregnancy of these mares in 1999.

2000 and 2004 Drought Emergency

Drought emergency gathers were conducted in 2000 and 2004 that resulted from drought conditions and populations of wild horses that exceeded the capacity of the habitat to provide forage and water specifically in the Lucky C Allotment.

In 2000, wild horses were moving outside of the HMA boundaries due to insufficient forage and water resources within the HMA boundaries. Limited snowfall during the winter of 1999-2000 caused springs and reservoirs within the HMA to dry up, leaving little available water for wild horses. Water hauls were set up within the HMA to alleviate some of the pressures on remaining water and range resources. A total of 600 wild horses were captured and removed from the range north of Fenstermaker Wash in the Arambel, Lucky C and Fish Creek Ranch Allotments to prevent death due to starvation and lack of water. No wild horses were released back into the Fish Creek HMA. An estimated 113 wild horses remained within the HMA following the gather.



July 2004, the Slough became a deep pit of mud, preventing wild horses from being able to drink.



The Slough, July 2004.

The last emergency occurred in July 2004 when an estimated 50 wild horses were discovered using the Coils Creek Slough (The Slough), which had become a drying mud hole. Water tanks were put in the area, and Browns Canyon Well pumped, to supply water to the wild horses until an emergency gather could be conducted.

In August 2004, 55 wild horses were removed from the Lucky C Allotment portion of the Fish Creek HMA. The large numbers of wild horses using existing sources in conjunction with the past years of drought conditions caused water sources to dry up. For this reason, the decision was made in the 2004 Final Multiple Use Decision not to return wild horses to the Arambel or Lucky C Allotments (southern portion) until BLM staff could ensure that adequate water sources exist to support the established AML.

None of the gathers completed within the Fish Creek HMA prior to 2005/2006 were complete gathers of the entire HMA, and AML was not achieved. The 1994 and 1998 gathers involved age removal criteria in which wild horses 10 years old and older were released back to the range and younger animals were transported to BLM facilities Adoption Program.

2005 and 2006 gathers

Gathers were conducted in July 2005 and February 2006 to achieve the AML. A total of 309 wild horses were removed during these gathers.

The 2005 portion of the Fish Creek Complex gather was completed in July 2005. The 2006 portion was completed in January and February 2006. The gather involved the following areas:

1. Little Fish Lake HMA and WHT
2. Sevenmile HMA and Butler Basin WHT
3. North Monitor HMA
4. Fish Creek HMA
5. Outside of HMA: Hicks Station/Snowball Ranch Allotments (BLM) and Hot Creek and Morey Allotments USFS.

Table 8: Fish Creek HMA Gather Results

Planned Gather #	362	151
Actual Gathered #	200	131
Planned Removal #	336	151
Actual Removal #	165	114
Released	34	17
Number left on range	195	57
Appropriate Management Level	101-170	101-170

Wild Horse Distribution and Movement Patterns

Wild horse movement is influenced by climate and resulting precipitation, availability of forage and water, and population size which is directly related to animal density and resulting competition and conflict between bands. Movement of wild horses may also be influenced by the presence of livestock.

Wild horse distribution within the Fish Creek HMA fluctuates year long as animals move through the allotments associated with the HMA in response to snow cover and forage and water availability. The wild horse population size, and nature of the movement throughout the year, has resulted in large numbers of wild horses concentrating in portions of the Lucky C and Fish Creek Ranch Allotments, impacting vegetative resources. Population levels have caused wild horses to move outside of the HMA boundaries in Lucky C and Fish Creek Ranch Allotments.

The northern and southern halves of the Lucky C Allotment are divided by U.S. Highway 50, and the highway right of way fence, preventing the wild horses from moving throughout the allotment. The portion of the Fish Creek HMA north of U.S. Highway 50 is not extensively utilized by wild horses. Little water exists within HMA boundaries north of U.S. Highway 50, and as a result, wild horses do not remain inside the HMA but move throughout Kobeh Valley and drift into Whistler and Roberts Mountain HMAs. Due to lack of available water, a group of wild horses had to be removed from Kobeh Valley in 2001. There are no fences dividing the Fish Creek HMA from the Whistler Mountain HMA in Lucky C Allotment (northern portion).



Thin palomino drinking from a small pool at McCullough Springs, June 2012.



Wild horses near Fenstermaker Wash. Dead sagebrush community in the foreground. June 2014.

Wild horse use and distribution appears to be from a combination of forage and water availability, generally utilizing higher elevations during the summer and moving to the valley floor and foothills during winter months.

Wild horses located in the northern portion of the HMA are known to water at Slough Creek, trailing east into Mahogany Hills as water is available at Dry Lake, McCullough Spring and other seasonal water sources. Wild horses have also been observed utilizing the areas between Antelope Valley and southern Mahogany Hills, watering at Davis Pipeline and or developed water sources within the valley.

The population within the Fish Creek Ranch Allotment fluctuates through the year as wild horses move into the allotment from Lucky C and Arambel Allotments in response to snow cover or dwindling water sources. Wild horses tend to move into Antelope Valley predominantly during the winter months. This portion of their range contains large areas of winterfat, which has been documented in the past as receiving moderate to severe grazing by both wild horses and livestock. Past documentation indicates wild horses have congregated in the winterfat flats during the spring months as long as water is available placing use on winterfat during its critical growing season.

When the Arambel Allotment is covered with snow, wild horses move into the Fish Creek Ranch, and Lucky C Allotments. In early spring, as snow melts, wild horses move back into the Arambel Allotment. They remain there until water sources become limited, at which time they again move into the Fish Creek Ranch, and Lucky C Allotments. Wild horses within the Lucky C Allotment move outside of the HMA boundaries west into Antelope Valley. Depending upon the population size, time of year and environmental conditions, use outside of the HMA boundaries can be (and has been) extensive.

Within the Fish Creek Allotment, horses move into the lower elevations, valleys, and foothills during the winter when snow covers the mountains (Antelope and Fish Creek Ranges). As snow melts in the summer, wild horses use higher elevations in both mountain ranges. A portion of the wild horse population typically remains in the valleys and can be predictably observed in certain locations throughout the summer months. Wild horses are frequently observed using the foothills east of Antelope Valley. They also use the foothills north of Fenstermaker Wash. Depending upon population size, and environmental conditions, the wild horses may utilize the east flank of the Fish Creek Range and Little Smoky Valley. Their use of the Ninemile Peak area in the Antelope Range fluctuates with snow cover and moisture conditions. Minimal numbers of animals have been observed in the area in most years, with the exception of 2000, which was a drought year.

Aerial inventory and field monitoring data does not indicate wild horses make more than incidental use of the Ruby Hill Allotment. Adequate water and forage resources exist for wild horses within the allotment. Wild horses may not use the area due to the proximity to Eureka, topography limitations, the presence of recreationalists, and historic and current mining activity.

Wild horses move outside of the HMA boundaries into Antelope and Little Smoky Valleys, with the occurrence mostly tied to wild horse population size. Aerial inventory data shows wild horses frequently located in areas outside of the HMA. Additionally Fish Creek HMA wild horses are suspected to move south into Sevenmile HMA, and east and south into the Pancake HMA. These suspicions have been documented in the MLFO files since the late 1980's.

Fertility Control

During the January 1998 gather of the Fish Creek HMA, fertility control vaccine (PZP) was administered to all (52) mares 10 years and older released back onto the HMA. The vaccine was a 1-year formulation, and would have prevented pregnancy of these mares in 1999. 13 mares under 10 years of age were also given the drug and released, for a total of 65 mares treated. The mares were freeze marked with a large "X" on the left hip. There were no injuries or other problems encountered during the administration of fertility control vaccine. A follow-up flight completed in September 1999 indicated that the treatment was 90% effective.

During the 2000 emergency gather, 34 of the mares freezemarked with the X on the hip were captured and removed from the HMA. These animals were not aged at the holding corrals; however lactation status, sex and

color was documented for the 600 animals captured. Of the 34 mares, 23 (68%) were noted to be lactating (“wet”), indicating that they had foals.

While gathering the Fish Creek HMA in 2005, several mares were captured that had been administered Fertility Control vaccine during the 1998 gather. A total of six mares with an X freezemarked on the left hip were captured from the Fenstermaker Wash trap. The mares were 19-20+ years of age. Four of the six were noted to be lactating. Most mares were noted to be in exceptionally good condition for their age.

WILD HORSE OBJECTIVES FOR THE FISH CREEK COMPLEX **Established in 2004 through the Fish Creek Complex Evaluation**

- **Key Species:** All key perennial species as identified in the Key Management Area Objectives for those key areas located within the HMAs
- **In addition to those allotment specific short and long term objectives identified for each key area, the following management and monitoring objectives are proposed:**
 - Improve the forage component of wild horse habitat. Emphasize improving habitat as indicated by achieving desired plant community objectives within the HMA.
 - Manage the portion of the Fish Creek HMA north of U.S. Highway 50 as a complex with Whistler Mountain and Roberts Mountain HMAs since the wild horses move freely between these areas.
 - Manage the Fish Creek HMA south of U.S. Highway 50 as a complex with the Sevenmile HMA since the wild horses move freely between these areas.
 - Manage the Fish Creek and Whistler HMA AML as a population range where the upper limit of the range is the level where the optimum number of wild horses can exist without causing resource degradation. The lower limit of the range would be based on the historical documented annual rates of increase between gather cycles as determined through inventory monitoring.
 - Rangeland monitoring within the HMAs would be accomplished with the goal of obtaining data specific to areas utilized by wild horses that would be used to modify AML and propose future management actions.
 - Manage the Fish Creek and Whistler Mountain HMAs population to preserve and enhance physical and biological characteristics that are of historical significance to the herd: these traits include:
 - Colors, which include the historic colors of the herd.
 - Fish Creek HMA: primarily roan colorations in addition to the typical colors associated with wild horses such as brown, black, palomino and bay.
 - Whistler Mountain HMA: Colors similar to those of Roberts Mountain HMA such as buckskin, palomino, chestnut and dun
 - Fish Creek HMA: Curly characteristics of the hair coat.
 - Maintain sex ratios and age structures, which will allow for the continued physical, reproductive and genetic health of the Fish Creek and Whistler Mountain HMAs.

- Preserve and maintain a healthy and viable wild horse population that will survive and be successful within the HMA during poor years when elements of the habitat are limiting due to severe winter conditions, drought, or other uncontrollable and unforeseeable environmental influences to the herd.
- Preserve the characteristic wild free-roaming behavior of wild horses within the Fish Creek and Whistler Mountain HMAs by limiting management actions that would prohibit wild horse access to portions of the HMAs or restrict historical patterns of use
 - Where fences are needed within HMAs to meet other resources objectives, fences will be planned so as to not restrict movement patterns of wild horses. An example would be the construction of carefully planned drift fences, which allow wild horses to maintain historic patterns of use within the HMA. Fences built within the HMA will include posts with white tops to provide visual warning and prevent injury and death to wild horses.

RATIONALE:

Implementation of these objectives would ensure the long term health of the wild horses and their habitat within the Fish Creek and Whistler Mountain HMAs, while maintaining historic characteristics as well as characteristics to enhance adoptability of the wild horses. Preserving historic patterns of movement would allow the year round habitat, forage and water needs of the wild horses to be met. As a result, wild horse condition would be maintained and emergency gathers avoided.

Managing the Fish Creek and Whistler Mountain as complexes with adjacent HMAs would facilitate efficient and accurate census and inventory and improve the success of wild horse gathers. Management of the AML as a range will ensure resource degradation is prevented and that the minimal stress is experienced to wild horses through wild horse gathers. These objectives would be implemented through future wild horse gathers and incorporated into a wild horse Herd Management Area Plan (HMAP).

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

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

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

1. PZP vaccine would be administered only by trained BLM personnel or collaborating research partners.
2. Mares that have never been treated would receive 0.5 cc of PZP vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA). Mares identified for re-treatment receive 0.5 cc of the PZP vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
3. The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP is administered using an 18-gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14-gauge needle. These are delivered using a modified syringe and jabstick to inject the pellets into the gluteal muscles of the mares being returned to the range. The pellets are designed to release PZP over time similar to a time-release cold capsule.
4. Delivery of the vaccine would be by intramuscular injection into the gluteal muscles while the mare is restrained in a working chute. The primer would consist of 0.5 cc of liquid PZP emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA). The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
5. In the future, the vaccine may be administered remotely using an approved long range darting protocol and delivery system if or when that technology is developed.
6. All treated mares will be freeze-marked on the hip or neck to enable managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

Monitoring and Tracking of Treatments:

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



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



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



Injecting the hip of the mare with the jabstick

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

Appendix D: Precipitation, Drought and Monitoring

Precipitation-Eureka Weather Station²⁰

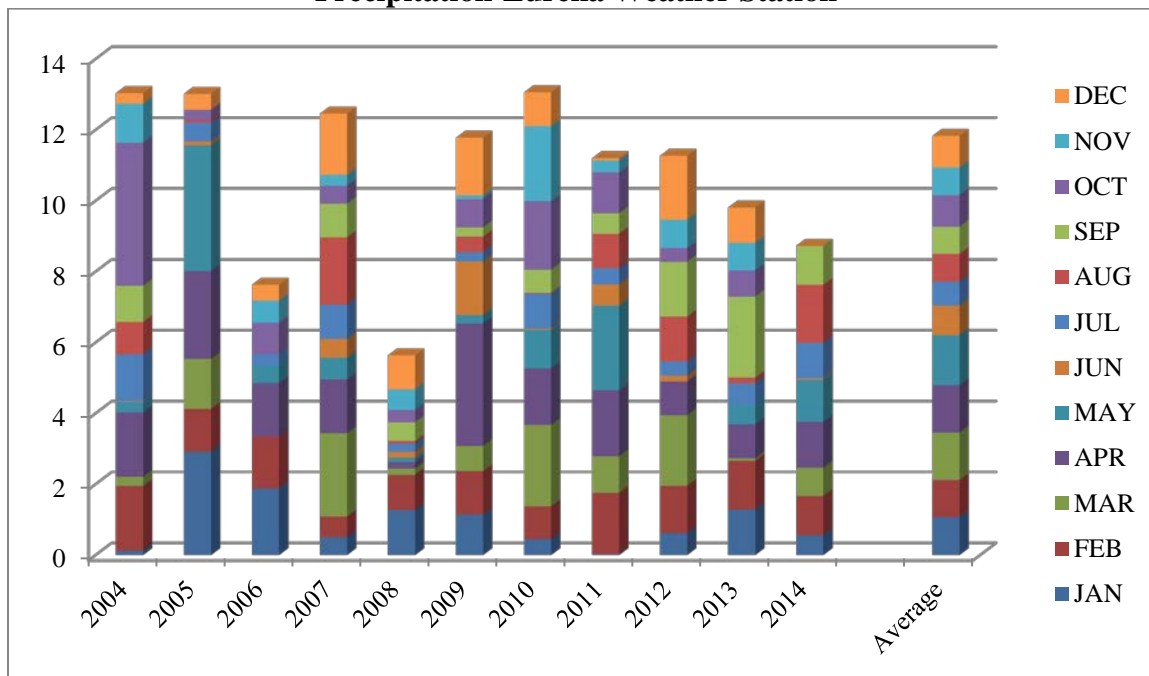


Figure D.1

Table 1: Monthly Precipitation Totals, Eureka, Nevada

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
2004	0.13	1.82	0.26	1.82	0.29	0.02	1.33	0.91	1.02	4.04	1.1	0.3	13.04
2005	2.92	1.21	1.41	2.48	3.55	0.1	0.54	0.08	0	0.28	0	0.45	13.02
2006	1.89	1.46	0	1.51	0.49	0	0.32	0	0	0.89	0.62	0.45	7.63
2007	0.51	0.58	2.35	1.52	0.61	0.53	0.97	1.9	0.95	0.51	0.3	1.73	12.46
2008	1.27	1	0.18	0.18	0.12	0.17	0.23	0.07	0.53	0.35	0.58	0.96	5.64
2009	1.15	1.22	0.71	3.45	0.25	1.51	0.26	0.44	0.26	0.8	0.1	1.63	11.78
2010	0.45	0.93	2.3	1.59	1.08	0.04	0.99	0.02	0.65	1.94	2.12	0.95	13.06
2011	0.02	1.74	1.03	1.86	2.39	0.6	0.46	0.97	0.58	1.15	0.34	0.06	11.2
2012	0.62	1.34	1.99	0.95	0	0.17	0.4	0.7	NA	NA	NA	NA	6.17
2012	0.62	1.34	1.99	0.95	0	0.17	0.4	1.26	1.55	0.39	0.8	1.8	11.27
2013	1.29	1.37	0.08	0.95	0.54	0	0.62	0.16	2.29	0.74	0.77	1	9.81
2014	0.57	1.1	0.8	1.29	1.19	0.04	1	1.64	1.1	0	-----	-----	8.73
Average	1.07	1.05	1.34	1.34	1.41	0.83	0.68	0.78	0.77	0.89	0.78	0.89	11.82

²⁰ Precipitation data obtained from the Nevada Climate Summaries available from the Western Regional Climate Center.
<http://www.wrcc.dri.edu/climate-summaries/>

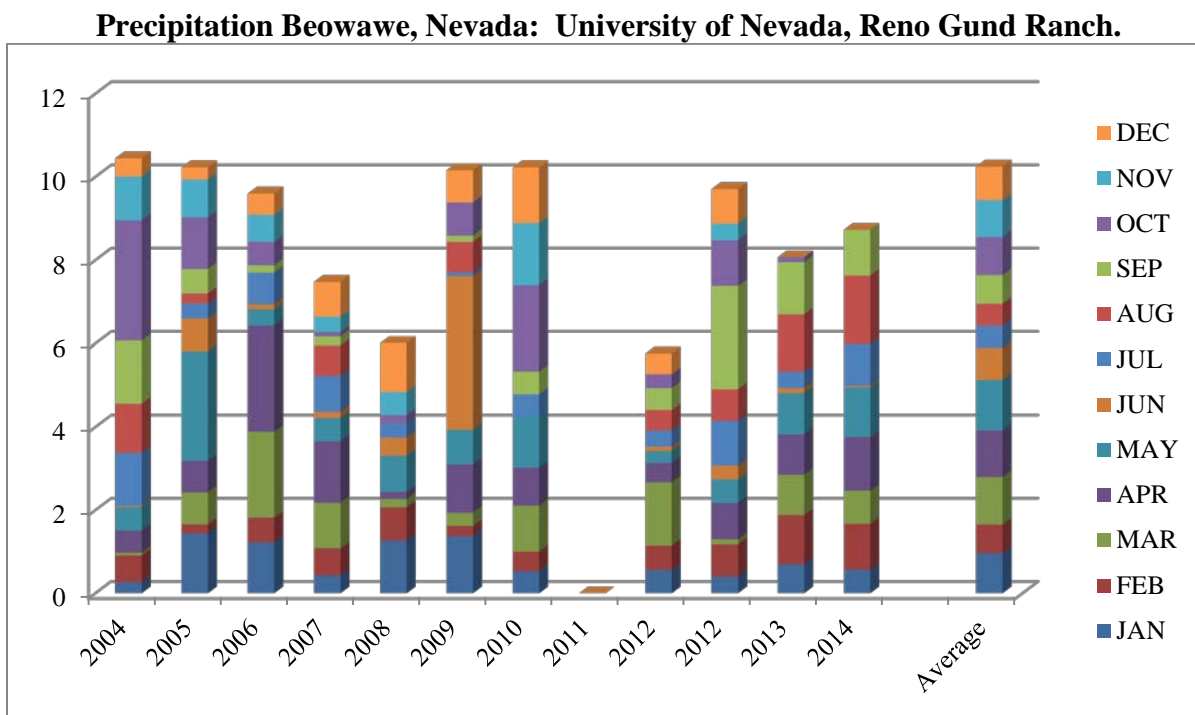


Figure D.2

Table 2: Monthly Precipitation Totals, Beowawe, NV

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
2004	0.27	0.64	0.07	0.53	0.56	0.03	1.28	1.18	1.51	2.89	1.05	0.44	9.81
2005	1.44	0.22	0.77	0.76	2.63	0.78	0.35	0.25	0.59	1.24	0.91	0.29	10.23
2006	1.22	0.6	2.07	2.54	0.38	0.13	0.76	0	0.18	0.56	0.65	0.51	9.6
2007	0.43	0.65	1.1	1.48	0.56	0.15	0.86	0.72	0.22	0.1	0.37	0.84	7.48
2008	1.27	0.8	0.2	0.17	0.87	0.44	0.36	0.01	0	0.17	0.55	1.17	6.01
2009	1.38	0.24	0.32	1.16	0.83	3.69	0.09	0.73	0.15	0.8	0	0.77	10.16
2010	0.53	0.47	1.11	0.91	1.21	0	0.56	0	0.54	2.07	1.49	1.34	10.23
2011	Unavailable												
2012	0.56	0.59	1.52	0.47	0.29	0.1	0.39	0.64	NA	NA	NA	NA	3.53
2012	0.56	0.59	1.52	0.47	0.29	0.1	0.39	0.49	0.53	0.33	-----	0.5	5.27
2013	0.41	0.77	0.12	0.88	0.56	0.33	1.08	0.76	2.47	1.1	0.4	0.83	9.71
2014	0.7	1.18	0.97	0.98	0.99	0.12	0.39	1.37	1.25	0.12	-----	-----	7.95
Average	0.96	0.69	1.15	1.12	1.21	0.77	0.53	0.52	0.69	0.91	0.89	0.81	10.23

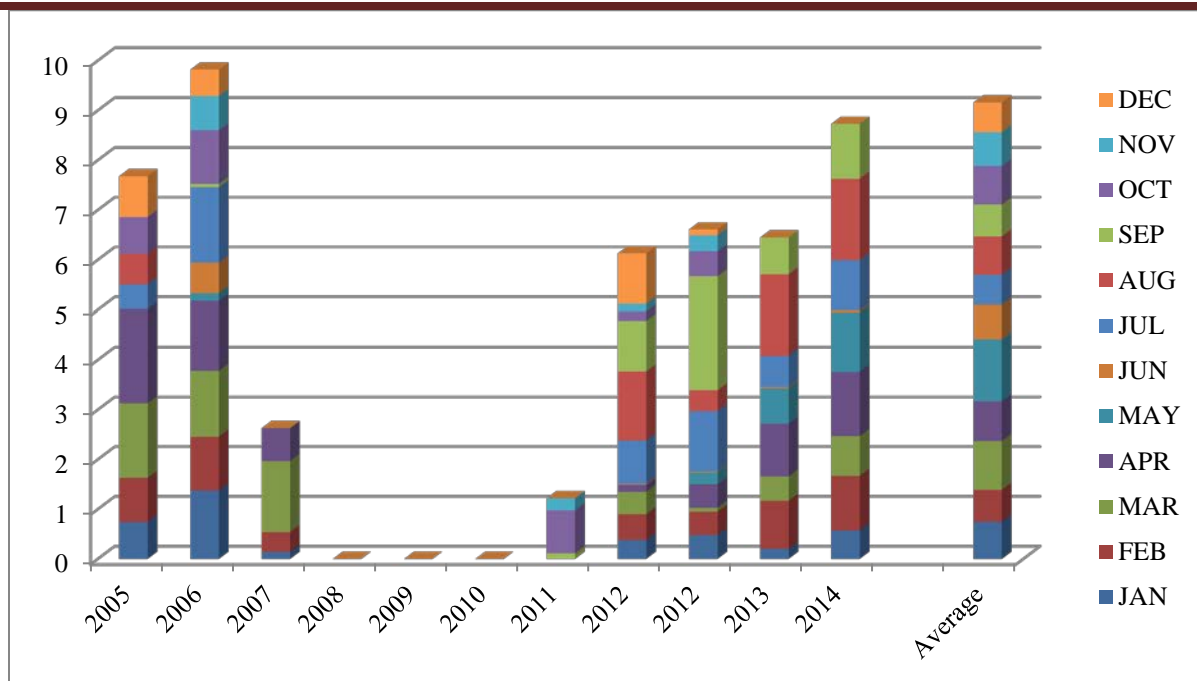


Figure D.3

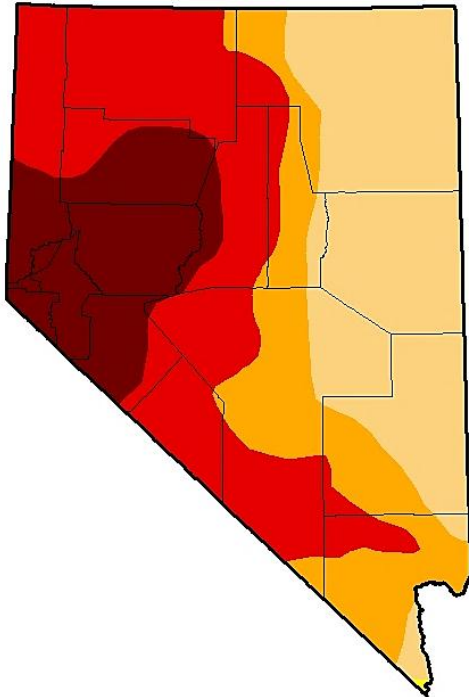
Table 2: Monthly Precipitation Totals, Diamond Valley, NV

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
2005	0.74	0.89	1.5	1.89	----	----	0.49	0.61	----	0.74	----	0.82	7.68
2006	1.37	1.09	1.32	1.4	0.15	0.61	1.52	0	0.06	1.08	0.69	0.53	9.82
2007	0.14	0.4	1.43	0.66	----	----	----	----	----	----	----	----	2.63
2008	----	----	----	----	----	----	----	----	----	----	----	----	0
2009	---Not Available---												
2010	----	----	----	----	----	----	----	----	----	----	----	----	0
2011	----	----	----	----	----	----	----	----	0.11	0.87	0.24	0	1.22
2012	0.38	0.52	0.45	0.14	0	0.02	0.87	1.39	1.01	0.19	0.15	1.01	6.13
2013	0.48	0.47	0.08	0.47	0.24	0.02	1.21	0.42	2.28	0.5	0.32	0.12	6.61
2014	0.2	0.97	0.49	1.06	0.71	0.03	0.62	1.63	0.74	0	----	----	6.45
Average	0.75	0.64	0.98	0.8	1.24	0.69	0.6	0.77	0.64	0.77	0.68	0.6	9.16

Drought and Drought Monitoring

Much of the west has been experiencing severe to exceptional drought since 2012 as illustrated through the climate data. The BLM uses data provided by the U.S. Drought Monitor (<http://droughtmonitor.unl.edu>) to further forecast potential drought and plan monitoring activities. The following map represents the Drought Monitor for Nevada as of January 27, 2015. Similar maps are released every month and archived maps and other data are available on the website provided.

U.S. Drought Monitor Nevada



January 27, 2015
(Released Thursday, Jan. 29, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.93	68.25	50.06	17.43
Last Week 1/20/2015	0.00	100.00	96.97	68.25	48.38	12.18
3 Months Ago 10/2/2014	0.00	100.00	97.07	69.89	48.38	11.89
Start of Calendar Year 12/2/2014	0.00	100.00	96.98	68.25	48.38	11.89
Start of Water Year 9/30/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 1/28/2014	0.00	100.00	96.80	80.30	38.17	5.37

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Brian Fuchs
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

The Fish Creek HMA area is currently within the Severe Drought classification, and has been in Severe and Extreme drought since 2012. Locally, degrees of drought impacts varied widely due to precipitation events, soil and vegetation factors and rangeland health. Throughout the region, little perennial vegetation grew throughout the low elevations and foothills, and drought stress was widespread and severe.

Late summer thunderstorms and rain events helped provide regrowth of some perennial species, which exceeded the original spring growth in many locations. However, the additional precipitation was not sufficient to provide adequate growth or recovery of forage. The 2013 season brought continued drought. Effects of drought included stunted plant growth and poor plant vigor. Again, late summer rainstorms provided much needed relief and provided for regrowth of many of the perennial grasses. Though the precipitation shows highly variable results between the stations, monitoring data showed that the lower elevation valley bottoms were continuing to suffer the effects of drought, with poor production of perennial grasses, and drought stressed plants. Concerns since 2012 have been for water availability in the summer and for forage availability, particularly in winter months.

Drought conditions have continued into 2014; however the precipitation data shows some improvement during spring months over the previous years. The effects of drought continued to impact subsoil moisture which likely has caused widespread death of Wyoming Sagebrush throughout the area (photos).

Waters are somewhat limited within the Fish Creek HMA. Many springs quickly dried up in spring 2012, and have supported little water since, mostly in the early spring. As a result, several developed water sources were maintained and operated for wild horses, and water hauling occurred at two locations since 2012.

Monitoring of these escalating issues has been ongoing as the forage and water availability threatens to lead to declining wild horse body condition and potential emergency situation. Large portions of the Fish Creek HMA are in diminished ecological condition and have limited forage availability. Progress towards improved rangeland health is a lengthy process in arid western rangelands under the best of conditions.

Drought Monitoring

Monitoring included completion of Drought Summary Forms, Utilization Studies, photographs and general observation notes of range and wild horse condition. The Battle Mountain District Drought Detection and Monitoring Plan included within the Battle Mountain District Drought Management EA DOI-BLM-NV-B000-2012-0005-EA, describes the drought indicators and response triggers documented during the 2012 monitoring season.



Lowest of five troughs on Davis Pipeline, June 2014.



McCullough Springs June 2012, this was the only water available to the horses in the area.

Monitoring showed new vegetation growth was minimal during the 2014 growing season due to continuing drought conditions. During monitoring conducted in July, monitoring indicated minimal growth to no growth on winterfat and minimal growth of grass species. Rain storms that passed through the area produced enough precipitation to provide for moderate regrowth of grasses and winterfat in late summer. On December 1st utilization monitoring was conducted at monitoring areas in the Antelope Valley Use Area. Two key species were recorded when monitoring, Indian ricegrass and winterfat. Indian ricegrass, a key forage specie, ranged from 8.16 % to 60.6% utilization across 7 monitoring areas. Winterfat ranged from 2.5% to 22.98% utilization at six monitoring locations. Utilization triggers for drought monitoring are 25% for key species in salt desert shrub, and 30% for sagebrush grassland communities. Current livestock authorized in this particular area reflect only a portion of the permit, and the BLM is working with the permittee to reduce utilization levels, and avoid the winterfat communities within and adjacent to the HMA. Wild horse use of these areas will continue to increase due to winter conditions and snow accumulation in the mountains which causes wild horses to move down into the valleys.

Utilization in the valley has increased during drought years for numerous reasons. The current drought conditions are minimizing the available water for wild horses, due to decreased spring and stream flows. With the growing population, and limited waters, wild horses are concentrating on existing waters, and are also dependent on wells pumped by the livestock operator. Should livestock numbers be further reduced or removed from the grazing allotments, these wells will not be pumped, and no longer available to wild horses.

Most monitoring has been conducted in the valley and foothills. Much of the lower elevation foothills which provide valuable winter habitat for wild horses and wildlife are degraded. Over population of wild horses and historic use by livestock has contributed to the current condition of these sites.

The relative quantity of vegetative cover removed by grazing also affects soil properties. In general, vegetative cover provides shading for soils, which increases their ability to retain moisture, reduces soil erosion by intercepting precipitation and reducing surface wind velocities, and provides organic input into the soil (Beever and Herrick 2006).

Fish Creek HMA Monitoring Summary

Since 2012, continued monitoring has documented the following:

- The occurrence of or increased occurrence of pedestalling of grasses, particularly Sandberg bluegrass and Indian ricegrass, often due to hoof action and/or erosion.
- Increased occurrence of key forage grasses being caged in shrubs as the “exposed grasses” in the interspaces were grazed or have disappeared from the plant community. Caged grasses were frequently noted as being more vigorous than those in the interspaces.
- Increased occurrence of trailing by wild horses
- Shrubs and grasses chewed or grazed down to the soil level.
- Dead grass crowns pulled from the soil.
- Increased occurrence of soil movement.
- Increased documentation of poor vigor.
- Declining health of sites.
- Increased hedging of shrubs.

In 2007 Nested Frequency was conducted to document conditions after the 2005/2006 gathers and 2004 Fish Creek Complex Rangeland Health Evaluation, which reduced AUMs allocated to livestock grazing. Future monitoring will include continued drought and utilization monitoring, and monitoring of the Indicators of Rangeland Health for future Rangeland Health Evaluations.

During monitoring field work, observers collect observational data including hoof tracks, droppings and animal sightings. In many cases, it is possible to identify the primary animal using the area by the tracks, trails and sign. This information is also useful to track trends of use throughout the year, and identify wildlife use patterns as well. Wild horse tracks and cattle tracks are easily differentiated, as are droppings. When possible, the age of droppings is estimated (fresh, old, very old), as indicated by color and texture. When studies are conducted prior to livestock grazing, it is possible to document the degree of use of an area and utilization by wild horses, pronghorn and mule deer. When livestock are present, or after livestock are removed in the fall, field observers document the abundance of tracks, trailing and droppings as well as known use patterns, and the utilization of the vegetation.



Indian ricegrass and winterfat at the monitoring location FC-5 in Fenstermaker Wash.

Changes in vegetation communities in the Great Basin are slow and may take decades to be measurable. Protecting the wild horse habitat in these areas from further decline and ensuring continued upward trends depends on the ability to maintain wild horse populations at proper levels over the long-term.

For additional information about Drought in Nevada and the Western U.S., refer to the following websites:

US. Drought Portal:

http://www.drought.gov/portal/server.pt/community/drought_gov/202;jsessionid=B225BB1B2A6C3E988AE64056A67F4D52

US Drought Monitor: <http://droughtmonitor.unl.edu/>

Vegetation Drought Response Index: <http://www.drought.unl.edu/MonitoringTools/VegDRI.aspx>

The following photos display representative conditions of the vegetation as documented in June and December 2014.



Fish Creek HMA Winterfat Community June 2012.



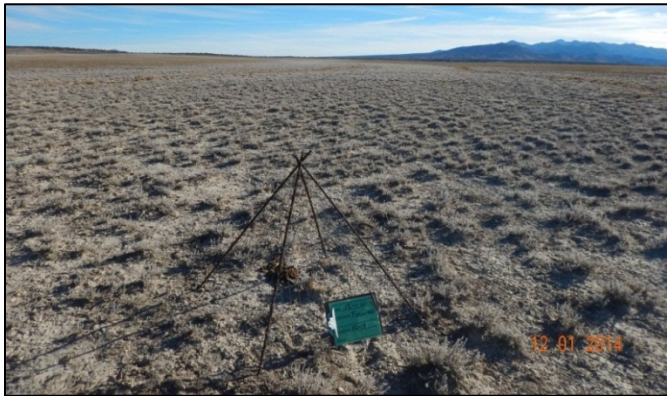
Drought stressed Indian ricegrass, June 2014.



Monitoring site FC-5, Winterfat Community December 2014.



Monitoring site FC-8, Winterfat Community December 2014.



Monitoring site FC-18, Winterfat Community December 2014.



Supplemental monitoring site, Winterfat Community December 2014.



Wild horses run through degraded winterfat communities in Antelope Valley. Reddish vegetation is Halogeton, and invasive weed. September 2014 Resource Flight.

Appendix E: Summary of Population Modeling

The WinEquus Feral Horse Population Model, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist Wild Horse and Burro Specialists evaluate various management plans and possible outcomes for management of wild horses that might be considered for a particular area. Windows version 3.2 of the model is accessible at www.wolfweb.unr.edu/homepage/jenkins.

The purpose of the modeling was to compare the potential results of the Proposed Action and Alternatives including the No Action to include population size over time, growth rates, and the number of animals that could be gathered, removed and treated for fertility control over the next 10 years.

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

The current WinEquus Population Model includes options for management by Fertility Control Only, Removals only or Removals and Fertility Control. The model was created to show implementation of all of the management through actual gathers, removals and treatment of horses. Currently, there are no options to implement booster treatment of fertility control via darting or initial or repeat treatment of PZP-22 via bait and water trapping.

The program is also limited in that a specific number of horses to remove cannot be identified for various gather scenarios. For example, the program will not allow the user to show an initial gather event and removal of 200 horses with initial treatment of PZP, and then follow up boosting of ZonaStat-H via darting, or capture by bait and water trapping with no future removals. In order to overcome this obstacle for modeling of the Proposed Action, the estimated “post-gather” population after the initial phase of the gather was modelled out through the 10 years showing annual booster treatment of 90% of the mares. The model was set to show annual “gathers” of 90% of the population in order to achieve this.

Therefore, the results for “Gathered” under the Proposed Action are not representative, and actually shows that 90% of the population was gathered annually. Additionally, under the Proposed Action, the objective is to follow up with boosting of mares to the extent possible using bait and water trapping and darting, with the understanding that periodic helicopter gathers could be necessary to effectively identify mares born on the range following the initial gather, collect genetics samples, apply freezemarks and implement limited removals of young animals to make progress towards achieving or maintaining the established AML. It is possible that these activities could be achieved through bait and water trapping. However it is also realistic that bait and water trapping may not be effective enough to meet the needs for the long term management plan. For the purposes of this analysis, it is assumed that under the Proposed Action, that a second helicopter gather may be necessary at approximately 5 years or 2020, at which time any mares born since 2015 would be vaccinated with PZP-22 or other current formulation and properly identified for future boosting and monitoring. At this time as well, the assumption is made that at least weanlings and yearlings would be removed, if not additional horses in order to achieve the established AML.

Within the tables below, the modeling for the proposed action was initiated with an estimated post gather population of 349. So in Maximum population, the existing population of 549 is not included. Additionally, it is not included in the Average Population, and animals Removed. Therefore, when reviewing this data, the absence

of the 200 wild horses identified for removal in the initial gather should be considered. Additionally, the mares identified for PGS during the initial gather in 2015 are not included under the Modelling for the Proposed Action. Because the model result show the entire population “gathered” annually for PZP boosting, this column is not reflecting the objectives of the Proposed Action which would include only mares being boosted each year via darting or bait and water trapping, supplemented by bait and water trapping and helicopter gathers as necessary. This is the case for Alternative 2 as well, which does not include helicopter gathers or removals in the management plan, and control of the population only through bait and water trapping and darting with fertility control. The model shows the entire population gathered annually in order to booster or treat mares.

Alternative 1 was initiated with the current estimated population of 549, with a gather implemented in 2015. Young age groups were selected for removal only (≤ 4), through gathers planned for every 3 years.

Alternative 2 does not involve any gathers and was set to “gather” (bait/water trap and darting) 90% of the population annually starting with the initial population of 549.

Refer to the end of this Appendix for the parameters used in the modeling.

Population Modeling Tables

Table 1: Population Sizes in 11 years - Minimum

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	137	77	157	101	549
10 th percentile	243	130	362	139	558
25 th percentile	280	150	429	160	568
Median Trial	314	168	494	178	592
75 th percentile	353	208	572	204	626
90 th percentile	401	239	606	233	683
Highest Trial	475	289	815	290	786

Table 2: Population Sizes in 11 years - Average

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	244	265	446	263	1367
10 th percentile	349	300	518	298	1543
25 th percentile	375	328	569	318	1716
Median Trial	408	366	627	342	1829
75 th percentile	446	399	680	360	1976
90 th percentile	486	426	740	386	2216
Highest Trial	545	516	932	453	2510

The average populations of the Alternative with fertility control treatments with no removals and the No Action reflect the highest levels. The Proposed Action, Alternative 1 and 3 include removals with or without fertility control, which is reflected in lower population figures overall.

Table 3: Population Sizes in 11 years - Maximum

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1	Alternative 2 FC No	Alternative 3	No Action
Lowest Trial	367	552	608	551	2603
10 th percentile	448	564	650	560	3096
25 th percentile	476	576	702	574	3526
Median Trial	506	597	752	598	3910
75 th percentile	544	622	806	636	4294
90 th percentile	582	658	864	678	4621
Highest Trial	661	932	1065	788	5943

Table 4: Average Growth Rate in 10 Years

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	-10.8	9.9	-11.6	-1.5	15.6
10 th percentile	-4.2	16.0	-5.2	3.4	18.2
25 th percentile	-3.1	18.1	-3.3	5.2	19.4
Median Trial	-2.1	20.7	-1.7	6.4	20.5
75 th percentile	-0.6	22.6	-0.5	8.3	21.6
90 th percentile	0.6	24.0	0.3	9.5	22.3
Highest Trial	2.0	26.8	2.0	11.9	25.9

As expected, the Proposed Action and Alternative 2 which involve the most intense plans for implementation also reflect the lowest growth rates, with the median trials for both reflecting negative growth rates. Alternative 3 involves the application of fertility control only during gathers, and though reflects a lower growth rate than the Alternative 1 and No Action, is still much lower than normal growth rates in untreated herds.

Table 5: Totals in 11 Years -- Gathered

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	2283	1055	4198	957	0
10 th percentile	3126	1306	4764	1150	0
25 th percentile	3311	1403	5220	1250	0
Median Trial	3633	1546	5664	1320	0
75 th percentile	3954	1680	6180	1393	0
90 th percentile	4262	1760	6682	1464	0
Highest Trial	4879	2183	8466	1723	0

Since the post gather population was used for the model under the Proposed Action, the gathered figures do not reflect the approximate 500-549 gathered initially in 2015. The Proposed Action and Alternative 2 reflect what the model estimated as 90% of the population gathered each year, which is not the case. At this time, it is not possible to model the number of wild horses that might be gathered through helicopter, bait and water trapping under the Proposed Action and through bait and water trapping for Alternative 2. Alternative 1 and 3 each

involve gathers every 3 years to remove wild horses. Alternative 1 does not include fertility control, while Alternative 3 does. The differences are reflected in slightly lower gather numbers under Alternative 3.

Table 6: Totals in 11 Years -- Removed

Trial					
Lowest Trial	Variable, see discussion	681	0	452	0
10 th percentile		849	0	548	0
25 th percentile		914	0	588	0
Median Trial		1000	0	634	0
75 th percentile		1088	0	674	0
90 th percentile		1170	0	723	0
Highest Trial		1392	0	812	0

Because the actual gathers that could be completed under the Proposed Action through bait and water trapping and helicopter gathers are not known, and cannot be entered into the model with the current program, no data is available for the number of removed wild horses as the model was structured for Fertility Control Only. Also, the model was set to begin scenarios after the initial 2015 gather, and using the estimated post gather population. An estimated 200 horses would be removed in 2015. Through bait and water trapping efforts small numbers of young, adoptable horses could be removed, which would hinge on National holding facilities, resource concerns and management targets. It is estimated that by 2020, a gather conducted by helicopter would be needed to identify, freezemark and treat mares born on the range since 2015. For this example, it is estimated that an average of 400 horses total would be removed from this HMA.

Alternative 1 does not include fertility control, while Alternative 3 does. The differences are reflected in much higher removal numbers under Alternative 1, without the fertility control to reduce population growth. Both Alternatives include removal of only wild horses four years old or younger.

Table 7: Totals in 11 Years -- Treated

Trial	Alternative				
	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Lowest Trial	1118	0	2002	182	0
10 th percentile	1274	0	2203	212	0
25 th percentile	1393	0	2404	231	0
Median Trial	1486	0	2602	244	0
75 th percentile	1634	0	2810	261	0
90 th percentile	1731	0	2981	273	0
Highest Trial	2009	0	3826	321	0

The Proposed Action includes the boosting of mares with PZP through darting and bait and water trapping to supplement helicopter gathers. Since the post gather population was used for the model under the Proposed Action, the gathered figures do not reflect the approximate 150 mares treated initially in 2015. Alternative 2 only includes bait and water trapping and darting of wild horses with no removals. The model was set to show annual “gathers” to treat 90% of the mares with PZP for both the Alternatives. Because Alternative 2 does not involve any removals (particularly in 2015), the population is higher from the start, and therefore involves more mares

that would be treated. Under the typical trial, the Proposed Action reflects a treatment of 1417 mares over the 11 year time frame, ranging from 87 to 173 and averaging 129 per year.

Alternative 2 reflects an average of 252 mares treated annually in the typical trial, ranging from 149 to 314 annually and totaling 2776 over the 11 year period modelled.

As the table shows, Alternative 3 involves treatment of fewer mares as they would only be treated for fertility control during gathers. The model was set to implement the PZP-22 and gather 90% of the population every three years. The typical trial reflects the number of mares treated totaling 233 over the 11 years, ranging from 24 to 100 during each gather event.

The data from the log file for each Alternative was opened in Excel and Pivot tables used to display the number of wild horses per year for the Most Typical Trial. Comparison among the alternatives is useful to assess the relative size of the population over time. Table 9 includes removal numbers reflected for the Most Typical Trial, by alternative.

Table 8: Typical Trial Populations

Year	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Typical Trial Population					
Year 1 - 2015	354	586	623	588	577
Year 2 - 2016	497	355	667	410	606
Year 3 - 2017	497	431	632	399	772
Year 4 -- 2018	478	507	581	435	803
Year 5 - 2019	453	285	585	324	805
Year 6 - 2020	424	338	692	308	882
Year 7 - 2021	403	397	654	307	997
Year 8 - 2022	367	252	603	225	1166
Year 9 - 2023	359	270	489	214	1235
Year 10 - 2024	348	314	477	230	1239
Year 11 -- 2025	324	204	420	183	1417
Average	409	364	579	340	925

Table 9: Typical Trial Removals

Year	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Typical Trial Removals					
Year 1 - 2015	200	310	0	279**	0
Year 2 - 2016	0	0	0	0	0
Year 3 - 2017	0	0	0	0	0
Year 4 -- 2018	0	263	0	148	0
Year 5 - 2019	0	0	0	0	0
Year 6 - 2020	Est 200*	0	0	0	0
Year 7 - 2021	0	212	0	50	0

Year	Proposed Action FC/Darting	Alternative 1 No FC	Alternative 2 FC No Removals	Alternative 3 CTR/SRA	No Action
Typical Trial Removals					
Year 8 - 2022	0	0	0	0	0
Year 9 - 2023	0	0	0	0	0
Year 10 - 2024	0	155	0	65	0
Year 11 -- 2025	0	0	0	0	0
Total	400	940	0	542	0

*Only an estimate under the most limited removal scenario, and is not within the model analysis for population size or growth rates in years 2012-2015. Wild horses could be removed with any bait or water trapping, and helicopter gather scheduled during any year if approved nationally and necessary to achieve the established AML. The population at 2020 on the most typical trial shows 424.

**Only 200 would be removed, but not possible to set the model for a specific number of removals during a specific gather event.

Conclusions

Proposed Action

The objectives of the Proposed Action include a helicopter gather initially to remove 200 young wild horses and treat all mares released to the range with PZP 22. Boosting and future treatment goals include the use of both bait and water trapping and helicopter gathers, as well as the use of darting of individual mares on the range. The population model shows that this plan would result in an average population over the course of the next 10 years of 409 wild horses without future removals (beyond 2015). Within future bait and water trapping or helicopter gathers, young adoptable horses could be selected for removal which would reduce the average population levels and the established AML range might be achieved. Though an intensive program of gathering, trapping and darting would be necessary, the model does not show substantial reductions in the population size over the 11 years, with the most typical trial reflecting a population of 324 by year 11 despite the model set to “gather” and treat 90% of the mares annually at a PZP effectiveness of 94%.

Alternative 1

This alternative is a standard gather and removal scenario with reduced removal numbers to reflect only removal of younger horses 4 years of age or younger. No fertility control is implemented. Though the average population is shown to be 364 horses, nearly 1000 wild horses must be removed over the 11 years to maintain that population level, which does not achieve the AML. The model was set to only reflect removal of younger horses. Therefore, if AML was to be achieved in any future gathers, several hundred more horses would have to be removed during any one gather. The model was set to only show removal of younger horses as a reasonable attempt to refrain from removing horses that might not be adoptable. Any future gathers under this Alternative could involve any age groups if needed to achieve management targets.

Alternative 2

This alternative does not include any removals of wild horses and uses fertility control only to control the population growth implemented through bait and water trapping and darting. The starting population is the current population (549 wild horses). The typical trial shows a slow reduction of the population from 623 (population after foaling 2015 and before the fertility control becomes effective) to 420 by year 11. Despite the low growth rates shown for the model, and “gather” and treat of 90% of the mares, the population reduction is slow, and AML is not achieved. In the process, a substantial number of mares would need to be treated annually to maintain the population reductions that are shown by the model.

No Action

This alternative does not reflect any management to control the population through removals or fertility control. The population steadily increases with average population sizes exceeding 1600 wild horses by year 9, which is likely much slower growth than what would actually happen due to what is known about population growth rates in the Battle Mountain District.

Population Modeling Graphs

Most Typical Trial Graphs

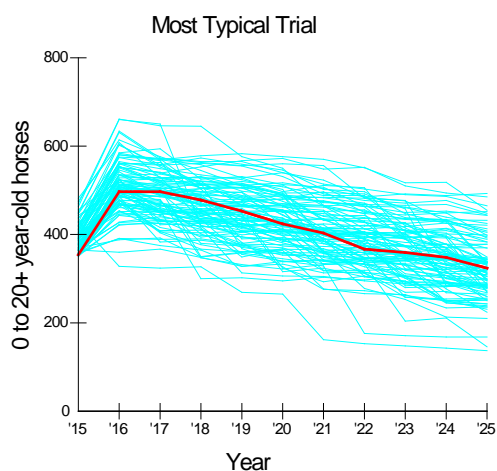


Figure 1: Proposed Action

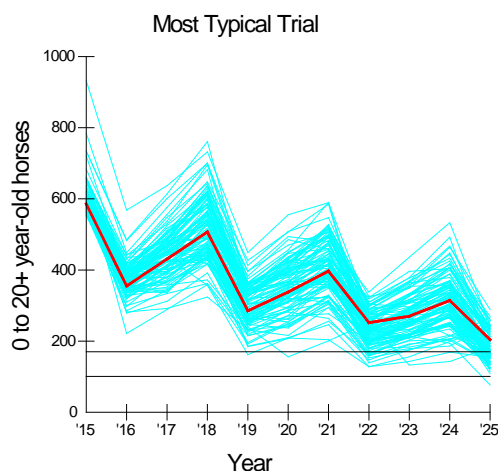


Figure 2: Alternative 1

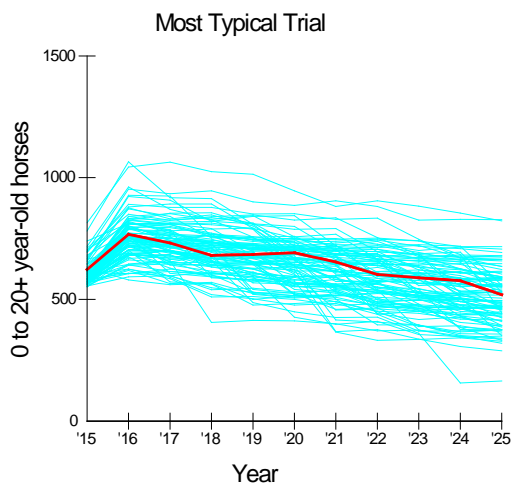


Figure 3: Alternative 2

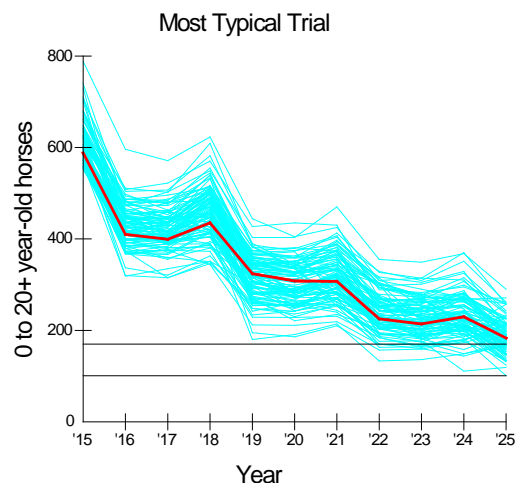


Figure 4: Alternative 3

Modeling Parameters

Table 10: Proposed Action Modeling Parameters

Age Percentages Class Treatment	Initial Base for Population		Survival Probabilities		Foaling Rates	Percentages of Removals		Fertility
	Females	Males	Females	Males		Females	Males	
foal	4	4	0.919	0.877	0.00	0%	0%	100%
1	3	3	0.996	0.950	0.00	0%	0%	100%
2	6	6	0.994	0.949	0.52	0%	0%	100%
3	29	25	0.993	0.947	0.67	0%	0%	100%
4	29	26	0.990	0.945	0.76	0%	0%	100%
5	21	19	0.988	0.942	0.89	0%	0%	100%
6	14	13	0.985	0.939	0.76	0%	0%	100%
7	13	12	0.981	0.936	0.90	0%	0%	100%
8	11	10	0.976	0.931	0.88	0%	0%	100%
9	13	12	0.971	0.926	0.91	0%	0%	100%
10-14	28	25	0.947	0.903	0.81	0%	0%	100%
15-19	17	16	0.870	0.830	0.82	0%	0%	100%
20+	11	10	0.591	0.564	0.75	0%	0%	100%

Sex ratio at birth: 58% males

Scaling factors for annual variation: survival probabilities = 1.00, foaling rates = 1.00

Correlation between annual variation in survival probabilities and foaling rates = 0.00

Management by fertility control only

Starting year is 2015

Gathering occurs at minimum interval of 1 years

Initial gather year is 2015

Gathers for fertility treatment occur regardless of population size.

Gathers do not continue after removals to treat additional females.

Threshold population size for gathers is 0.

Foals are excluded from AML.

Percent of population that can be gathered = 90%.

Percent effectiveness of fertility control: year 1 is 94%, year 2 is 94%, year 3 is 94%, year 4 is 94%, year 5 is 94%.

Table 11: Alternative 1 Modeling Parameters

Age Percentages Class Treatment	Initial Base for Population		Survival Probabilities		Foaling Rates	Percentages of Removals		Fertility
	Females	Males	Females	Males		Females	Males	
foal	46	41	0.919	0.877	0.00	100%	100%	100%
1	34	30	0.996	0.950	0.00	100%	100%	100%
2	42	37	0.994	0.949	0.52	100%	100%	100%
3	45	39	0.993	0.947	0.67	100%	100%	100%
4	33	29	0.990	0.945	0.76	100%	100%	100%

Age Percentages Class Treatment	Initial Base for Population		Survival Probabilities		Foaling Rates	Percentages of Removals		Fertility
5	23	21	0.988	0.942	0.89	0%	0%	100%
6	15	14	0.985	0.939	0.76	0%	0%	100%
7	14	13	0.981	0.936	0.90	0%	0%	100%
8	12	11	0.976	0.931	0.88	0%	0%	100%
9	15	13	0.971	0.926	0.91	0%	0%	100%
10-14	31	27	0.947	0.903	0.81	0%	0%	100%
15-19	19	18	0.870	0.830	0.82	0%	0%	100%
20+	13	11	0.591	0.564	0.75	0%	0%	100%

Sex ratio at birth: 58% males

Scaling factors for annual variation: survival probabilities = 1.00, foaling rates = 1.00

Correlation between annual variation in survival probabilities and foaling rates = 0.00

Management by removals only

Starting year is 2015

Gathering occurs at minimum interval of 3 years

Initial gather year is 2015

Threshold population size for gathers is 170.

Target population size following removals is 101.

Foals are excluded from AML.

Percent of population that can be gathered = 90%.

Table 12: Alternative 2 Modeling Parameters

Age Percentages Class Treatment								
Age Groups	Females	Males	Females	Males		Females	Males	
foal	47	42	0.919	0.877	0.00	0%	0%	100%
1	35	31	0.996	0.950	0.00	0%	0%	100%
2	43	38	0.994	0.949	0.52	0%	0%	100%
3	46	40	0.993	0.947	0.67	0%	0%	100%
4	34	30	0.990	0.945	0.76	0%	0%	100%
5	24	21	0.988	0.942	0.89	0%	0%	100%
6	16	14	0.985	0.939	0.76	0%	0%	100%
7	14	13	0.981	0.936	0.90	0%	0%	100%
8	13	11	0.976	0.931	0.88	0%	0%	100%
9	15	13	0.971	0.926	0.91	0%	0%	100%
10-14	31	28	0.947	0.903	0.81	0%	0%	100%
15-19	20	19	0.870	0.830	0.82	0%	0%	100%
20+	13	11	0.591	0.564	0.75	0%	0%	100%

Sex ratio at birth: 58% males

Scaling factors for annual variation: survival probabilities = 1.00, foaling rates = 1.00

Correlation between annual variation in survival probabilities and foaling rates = 0.00

Management by fertility control only

Starting year is 2015

Gathering occurs at minimum interval of 1 years

Initial gather year is 2015

Gathers for fertility treatment occur regardless of population size.

Gathers do not continue after removals to treat additional females.

Threshold population size for gathers is 0.

Foals are excluded from AML.

Percent of population that can be gathered = 90%.

Percent effectiveness of fertility control: year 1 is 94%, year 2 is 94%, year 3 is 94%, year 4 is 94%, year 5 is 94%.

Table 13: Alternative 3 Modeling Parameters

Age Percentages Class Treatment								
Age Groups	Females	Males	Females	Males		Females	Males	
foal	40	36	0.919	0.877	0.00	100%	100%	100%
1	30	26	0.996	0.950	0.00	100%	100%	100%
2	37	33	0.994	0.949	0.52	100%	90%	100%
3	39	34	0.993	0.947	0.67	100%	90%	100%
4	29	26	0.990	0.945	0.76	0%	80%	100%
5	20	18	0.988	0.942	0.89	0%	0%	100%
6	13	12	0.985	0.939	0.76	0%	0%	100%
7	12	11	0.981	0.936	0.90	0%	0%	100%
8	11	10	0.976	0.931	0.88	0%	0%	100%
9	13	11	0.971	0.926	0.91	0%	0%	100%
10-14	27	24	0.947	0.903	0.81	0%	0%	100%
15-19	17	16	0.870	0.830	0.82	0%	0%	100%
20+	10	10	0.591	0.564	0.75	0%	0%	100%

Sex ratio at birth: 58% males

Scaling factors for annual variation: survival probabilities = 1.00, foaling rates = 1.00

Correlation between annual variation in survival probabilities and foaling rates = 0.00

Management by removals and fertility control

Starting year is 2015

Gathering occurs at minimum interval of 3 years

Initial gather year is 2015

Gathers for fertility treatment only occur if population exceeds threshold.

Gathers continue after removals to treat additional females to be released.

Threshold population size for gathers is 170.

Target population size following removals is 101.

Foals are excluded from AML.

Percent of population that can be gathered = 90%.

Percent effectiveness of fertility control: year 1 is 94%, year 2 is 82%, year 3 is 68%, year 4 is 94%, year 5 is 82%.

Table 14: No Action Modeling Parameters

Age Percentages Class Treatment					
Age Groups	Females	Males	Females	Males	
foal	43	38	0.919	0.877	0.00
1	32	28	0.996	0.950	0.00
2	40	35	0.994	0.949	0.52
3	42	37	0.993	0.947	0.67
4	31	27	0.990	0.945	0.76
5	22	19	0.988	0.942	0.89
6	14	13	0.985	0.939	0.76
7	13	12	0.981	0.936	0.90
8	12	10	0.976	0.931	0.88
9	14	12	0.971	0.926	0.91
10-14	29	26	0.947	0.903	0.81
15-19	18	17	0.870	0.830	0.82
20+	12	11	0.591	0.564	0.75

Sex ratio at birth: 58% males

Scaling factors for annual variation: survival probabilities = 1.00, foaling rates = 1.00

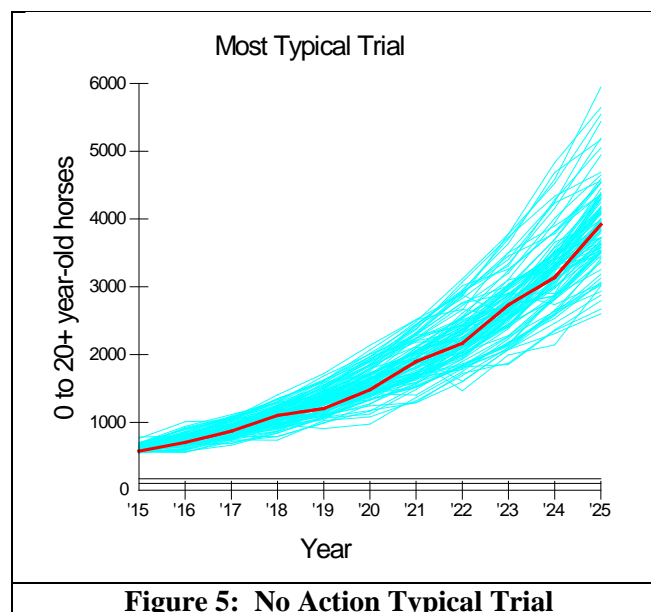
Correlation between annual variation in survival probabilities and foaling rates = 0.00

No management

Starting year is 2015

Initial year is 2015

Foals are included in AML.



Appendix F: Daily Visitation Protocol and Ground Rules



Daily Visitation Protocol and Ground Rules for the Fish Creek HMA Wild Horse Gather



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

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

General Daily Protocol

- A Wild Horse Gather Info Phone Line will be set up prior to the gather so the public can call for daily updates on gather information and statistics. Visitors are strongly encouraged to check the phone line the evening before they plan to attend the gather to confirm the gather and their tour of it is indeed taking place the next day as scheduled (weather, mechanical issues or other things may affect this) and to confirm the meeting location.
- Visitors must direct their questions/comments to either their designated BLM representative or the BLM spokesperson on site, and not engage other BLM/contractor staff and disrupt their gather duties/responsibilities - professional and respectful behavior is expected of all. BLM may make the BLM staff available during down times for a Q&A session. However, the contractor and its staff will not be available to answer questions or interact with visitors.
- Observers must provide their own 4-wheel drive high clearance vehicle, appropriate shoes, winter clothing, food and water. Observers are prohibited from riding in government and contractor vehicles and equipment.
- Gather operations may be suspended if bad weather conditions create unsafe flying conditions.
- BLM will establish one or more observation areas, in the immediate area of the gather and holding sites, to which individuals will be directed. These areas will be placed so as to maximize the opportunity for public observation while providing for a safe and effective horse gather. The utilization of such observation areas is necessary due to the use and presence of heavy equipment and aircraft in the gather operation and the critical need to allow BLM personnel and contractors

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

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

Public Outreach and Education Day-Specific Protocol

A public outreach and education day provides a more structured mechanism for interested members of the public to see the wild horse gather activities at a given site. On this day, BLM attempts to allow the public to get an overall sense of the gather process and has available staff who can answer questions that the public may have. The public rendezvous at a designated place and are escorted by BLM representatives to and from the gather site.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240
<http://www.blm.gov>

July 22, 2010

In Reply Refer To:
4710 (260) P

EMS TRNASMISSION 07/23/2010
Instruction Memorandum No. 2010-164
Expires: 09/30/2011

To: All Field Officials (except Alaska)
From: Assistant Director, Renewable Resources and Planning
Subject: Public Observation of Wild Horse and Burro Gatherers

Program Area: Wild Horse and Burro Program

Purpose: The purpose of this Instruction Memorandum (IM) is to establish policy for public observation of wild horse and burro (WH&B) gathers.

Policy/Action: The Bureau of Land Management's (BLM's) policy is to accommodate public requests to observe a gather primarily through advance appointment, on days and at times scheduled by the authorized officer. Planning for one public observation day per week is suggested.

Specific viewing opportunities will be based on the availability of staff with the necessary expertise to safely and effectively host visitors, as well as other gather-specific considerations (e.g., weather, terrain, road access, landownership). The public should be advised that observation days are tentative and may change due to unforeseen circumstances (e.g., weather, wildfire, trap relocation, equipment repair, etc.). To ensure safety, the number of people allowed per observation day will be determined by the District Manager (DM) and/or Field Office Manager (FM) in consultation with the Contracting Officer's Representative/WH&B Specialist (COR) for the gather.

The DM/FM has the primary responsibility for effectively planning and managing public observation of the gather operation. Advance planning will:

- Ensure that the public have opportunities to safely observe wild horse gathers;
- Minimize the potential for disruption of the gather's execution;
- Maximize the safety of the animals, visitors, and the BLM and contractor personnel;
- Provide for successful management of visitors; and
- Ensure preparedness in the event of unanticipated situations.

The authorized officer will consider the following when planning for public observation of WH&B gather

operations. Also see Attachment 1 (Best Practices When Planning for Public Observation at Gathers).

A. Safety Requirements

During WH&B gathers, the safety of the animals, the BLM and contractor personnel, and the public is of paramount importance. Because of the inherent risk involved in working with WH&B, the public will not be allowed inside corrals or pens or be in direct contact with the animals. Viewing opportunities during the gather operation must always be maintained at a safe distance (e.g., when animals are being herded into or worked at the trap or temporary holding facility, including sorting, loading) to assure the safety of the animals, the BLM and contractor personnel, and the public.

Unless an emergency situation exists, the BLM's policy prohibits the transportation of members of the public in Government or Contractor-owned or leased vehicles or equipment. Therefore, observers are responsible for providing their own transportation to and from the gather site and assume all liability for such transportation.

The helicopter/aircraft is the private property of the gather contractor. Due to liability and safety concerns, Bureau policy prohibits observers from riding in or mounting cameras onto the aircraft. Should observers create unsafe flying and gathering conditions, for example, by hiring an aircraft to film or view a gather, the COR, in consultation with the gather contractor, will immediately cease gather operations.

The COR has the authority to stop the gather operation when the public engage in behavior that has the potential to result in harm or injury to the animals, employees, or other members of the public.

B. Planning for Public Observation at WH&B Gathers

During advance planning for public observation at WH&B gathers, the authorized officer should consult with the State External Affairs Chief or appropriate Public Affairs office. An internal communications plan will be developed for every gather (Attachment 2). It may also be helpful to prepare answers to frequently asked questions (Attachment 3).

C. Law Enforcement Plan

A separate Law Enforcement Plan should be developed if the need for law enforcement support is anticipated. The Law Enforcement Plan must be approved in advance by the Special Agent-In-Charge (SAC) or the State Staff Ranger of the State in which the gather is occurring.

D. Temporary Closure to Public Access

Under the authority of section 303(a) of the Federal Land Management and Policy Act (43 U.S.C. 1733(a)), 43 CFR 8360.0-7, and 43 CFR 8364.1, the authorized officer may temporarily close public lands within all or a portion of the proposed gather area to public access when necessary to protect the health and safety of the animals, the public, contractors and employees. Completion of a site-specific environmental analysis of the environmental impacts associated with the proposed closure and publication of a Federal Register Notice is required.

E. Gather Contract Pre-Work Conference

· Talk to the contractor about how many members of the public are expected and when. Discuss, and reach mutual agreement, about where best to position the public at the individual trap-sites to allow the gather to be observed, while accomplishing the gather objectives and assuring the humane treatment of the animals and the

safety of the BLM and contractor personnel, and public.

- No deviation from the selected viewing location(s) should be made, unless the gather operation is being adversely impacted. The COR will consult with the gather contractor prior to making any changes in the selected viewing locations.

- The BLM's policy prohibits it from ferrying observers in the helicopter or any other mode of conveyance unless an emergency situation exists. Review this policy with the contractor during the pre-work conference.

F. Radio Communication

- Assure there is effective radio communication between law enforcement personnel, gather COR or project inspectors (PIs), and other BLM staff.

- Identify the radio frequencies to be used.

- Communication with the gather contractor is through the BLM COR or PI, and from the gather contractor to the helicopter pilot. Direct communication between BLM personnel (other than the COR) and the helicopter pilot is not permitted, unless agreed upon by the BLM authorized officer and the contractor in advance, or the pilot is requesting information from the COR.

G. Pre- and Post-Action Gather Briefings

- Pre-briefings conducted by knowledgeable and experienced BLM staff can be helpful to the public.

- The pre-gather briefing is an opportunity to explain what individuals will see, why the BLM is conducting the gather, how the animals will be handled, etc.

- Post-action briefings may also be helpful in interpreting and explaining what individuals saw, what happened, why certain actions were taken, etc.

H. Summary of Individual Roles and Responsibilities

1. District and/or Field Office Managers

DMs and/or FM's are responsible for keeping the State Director and State WH&B Lead fully informed about the gather operation. Included is working with State/local public affairs staff to prepare early alerts if needed. An additional responsibility is determining if a law enforcement presence is needed.

2. Public Affairs Staff

The local district/field office public affairs staff is responsible for working with the COR, DM/FM, other appropriate staff, the State WH&B Program Lead, and the State Office of Communications to implement the communications strategy regarding the gather.

3. Law Enforcement

Develop and execute the law enforcement plan in consultation with District/Field Office Managers, the COR/PI, and the State's Special Agent-In-Charge or State Staff Ranger.

4. Contracting Officer's Representative (COR)/Project Inspectors (PIs)

The COR and the PI's primary responsibility is to administer the contract and manage the gather. A key element of this responsibility is to assure the safe and humane handling of WH&B. The COR is also responsible for working closely with the DM/FM and Public Affairs Staff to develop the communication plan, and for maintaining a line of communication with State, District, and Field Office managers, staff and specialists on the progress of, and any issues related to, the gather operation.

Timeframe: This instruction memorandum is effective immediately.

Budget Impact: Higher labor costs will be incurred while accommodating increased interest from the public to

attend gather events. The budget impacts of unanticipated situations which can occur during WH&B gathers include substantial unplanned overtime and per diem expense. Through advance planning, necessary support staff can be identified (e.g., law enforcement, public affairs, or other BLM staff) and the cost-effectiveness of various options for providing staff support can be evaluated. In situations where public interest in a gather operation is greater than anticipated, the affected state should coordinate with the national program office and headquarters for assistance with personnel and funding.

Background: Heightened interest from the public to observe WH&B gathers has occurred. Advance planning for public observation of gather operations can minimize the potential for unanticipated situations to occur during WH&B gathers and assure the safety of the animals, the BLM and contractor personnel, and the public.

Manual/Handbook Sections Affected: No change or affect to the BLM manuals or handbooks is required.

Coordination: This IM was coordinated among WO-200 and WO-260 staff, State WH&B Program Leads, field WH&B Specialists, public affairs, and law enforcement staff in the field.

Contact: Questions concerning this policy should be directed to Susie Stokke in the Washington Office at (202) 912-7262 or Lili Thomas in the National Program Office at (775) 861-6457.

Signed by:
Bud C. Cribley
Acting, Assistant Director
Renewable Resources and Planning

Authenticated by:
Robert M. Williams
Division of IRM Governance, WO-560



July 2012, two horses near Brown Well.



July 2012, Water hauling at the McCullough Springs location.



United States Department of the Interior

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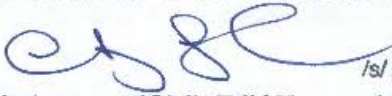
In Reply Refer To:
4720 (NV930)

JUL 25 2014

EMS Transmission
Memorandum

JUL 25 2014

To: Nevada State Leadership Team
Nevada Employees Involved with the Wild Horse and Burro Program

From: State Director  /s/ Amy L. Luaders

Subject: Public and Media Access to BLM's Wild Horse and Burro Helicopter Gathers in Nevada

The purpose of this Memorandum is to reaffirm for BLM Nevada staff the importance of providing effective public and media access to wild horse and burro helicopter gathers in Nevada and my commitment to ensuring public and media access and viewing opportunities in a manner that is consistent with applicable federal law, regulation, policy, the BLM mission, and with public transparency. This Memorandum supplements National Instruction Memorandum ("IM") 2013-058 on Wild Horse and Burro Gathers: Public and Media Management as applied in the State of Nevada.

It is BLM policy to maximize opportunities for public and media observation of helicopter gathers while still meeting BLM's mandate to conduct a successful and efficient gather outcome that minimizes the risk of injury and stress to gathered animals and takes into consideration human safety. This Memorandum serves as a reminder to all Nevada staff of the importance of providing meaningful opportunities for public and media access to wild horse and burro gathers in Nevada and of my expectation that BLM staff will make all reasonable efforts to provide meaningful public and media access. In issuing the Memorandum, BLM Nevada's objective is to provide an opportunity for the observation of individual animals when they are gathered, sorted, and/or placed into temporary holding on the date of the gather. While this objective may not always be met, it is the intention of this Memorandum that BLM Nevada will work toward consistently providing such access.

It is important to provide timely information for members of the public and media about the wild horse and burro program in Nevada and gathers undertaken as part of that program. Nevada will continue to provide user-friendly web-based information regarding gather activities on the BLM's Nevada State Office Wild Horse & Burro public website (NVSO WH&B web page), including posting of gather related documents and opportunities for public comment. To the

extent available, gather activity information provided on the public website will include information on which holding facilities excess wild horses and burros are shipped to.

Prior to commencing a helicopter gather, the Lead Contracting Officer's Representative, the Core Gather Team and contractor will identify the best vantage points that allow for observation of the gather activities in as much of their entirety as possible, consistent with ensuring a successful gather and the safety of the wild horses and burros, BLM employees and contractors and the public. When determining the best vantage point, all available tools such as natural topography or physically created blinds or features should be considered.

Daily Gather Expectations

BLM Nevada will provide timely information on gather operations every day, including:

- Use of a gather hotline with daily updates that provide information for the public and media on where to meet each morning if they wish to visit the gather and temporary holding viewing areas.
- Live tweeting of gather updates by the NV Public Affair Officers (PAO) at the gather;
- Daily gather statistics (gather numbers, shipment numbers, and any horse mortality) will be posted each day as soon as possible or no later than 9 a.m. the following day on the NVSO WH&B Web page.

All observers will be advised that proper conduct must be followed including: no movement during capture, speaking will only be permitted in low voices and not at the time of capture, any and all restrictions on movement must be followed. Observers will be advised that failure to follow the rules will result in immediate removal of the offending individual(s) to ensure safety of BLM employees, contractors and the wild horses and burros. BLM Nevada will provide the following types of viewing opportunities to the fullest extent possible:

- Identify a public/media viewing location that allows them to best see the helicopter gather operations and captured wild horses or burros based on the specific geographic and physical characteristics of the trap site. This viewing location would be as close and as unobstructed as possible to the trap pens while taking into account gather efficiency and safety, and BLM will endeavor to find an elevated location for public/media viewing purposes that is not more than a quarter mile from the trap when feasible and as close as 500 feet as feasible.
- The PAO will have access to a radio open channel and relay in real time to the observers information being broadcast, such as when bands are picked up (or dropped), injuries are being addressed, or animals are being roped.
- Identify a public/media viewing location that allows viewers to see the captured wild horses or burros within the temporary holding area. An elevated location (e.g., hill, platform) will be provided, whenever feasible at no greater than 30 feet from the

perimeter of the temporary holding area with a clear view of the processing chute. The expectation is that an elevated viewing location will generally be available. Viewing locations would be as close as possible to the captured horses or burros while taking into account safety, disturbance to the captured animals and sorting operation needs;

- Provide opportunity for a closer guided tour of the temporary holding facility after all feeding and care of the animals in the facility have been completed. This tour would be conducted at a distance which does not disturb the animals as they adjust to facility and settle down to feed and water. As long as it is consistent with wild horse or burro well-being and on-the-ground conditions, an opportunity to view all animals trapped that day will be provided at least once a day.

When the number of public/media observers is small in number (e.g., 2-4 observers in total), the Contracting Officer's Representative (COR) should exercise available discretion to provide closer viewing opportunities of the trap-site on a case by case basis, after the COR has determined that no helicopter or loading activities will occur for a minimum of 45 minutes or if gather operations have concluded for the day so long as any wild horses or burros remaining in the trap have settled down and such viewing opportunities will not result in increased stress to the gathered horses or burros, interfere with the gather activities, or pose a risk to BLM employee, contractor, or observer safety, and efforts should be made to provide an opportunity to view wild horses or burros in the trap at a range of as close as 30 feet if feasible. The COR will seek the concurrence of the Incident Commander (IC) and contractor prior to offering such enhanced viewing opportunities to the public/media.

To the extent possible, an opportunity will be provided for the public and media observers to give feedback on the gather via the PAO who will route any comments and concerns to the gather's IC or authorized officer (AO) to consider and/or address.

As appropriate, the PAO will follow-up with members of the public and media who have made comments or expressed concern to provide a response or resolution.

Members of the public and media may also provide feedback on the gather to the Agency by email (NVSO webmail) or comment (Facebook). The agency will make every effort to respond in a timely manner during business hours.

After Gather Review

As a standard practice, the IC and AO will hold an after action review (AAR) to discuss all aspects of the completed gather activities. As part of this AAR, the public observers and media who attended the gather will be invited to participate and provide feedback for BLM in the portion of the AAR pertaining to public and media viewing and access.

Final gather statistics (gather numbers, shipment numbers, and wild horse mortality) will BE posted as soon as possible following the completion of the gather on the NVSO WH&B Web page.

Summary

It remains of the utmost importance that this Memorandum be implemented consistent with our obligation to ensure safety – to the wild horses/burros; the contractors who gather the animals; to our BLM employees and to the people come to the gathers. This means that visitors and media will be asked to take every precaution not to startle the animals or be too close to the contract helicopter and other gather equipment. This may require visitors to stay behind a barrier; be situated farther away than they might like or to sit or kneel down when they would rather stand to view the gather operations. The IC will be the one to determine what actions observers must take and will typically communicate them through the BLM PAO or other employees who accompany observers. Any violation of rules will not be tolerated and offending individuals will be escorted from the gather location.

To reiterate, BLM Nevada's objective in issuing this Memorandum is to provide an opportunity for the observation of individual animals when they are gathered, sorted, and/or placed into temporary holding on the date of the gather. While this objective may not always be met, it is the intention of this Memorandum that BLM Nevada will work toward consistently providing such access.

Appendix G: Comprehensive Animal Welfare Policy

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

<http://www.blm.gov>

January 23, 2013

In Reply Refer To:
4710 (NV934) P

EMS TRANSMISSION 01/30/2013
Instruction Memorandum No. 2013-059
Expires: 09/30/2015

To: All Field Office Officials (except Alaska)

From: Assistant Director, Renewable Resources and Planning

Subject: Wild Horse and Burro Gathers: Comprehensive Animal Welfare Policy

Program Area: Wild Horse and Burro (WH&B) Program

Purpose: The purpose of this Instruction Memorandum (IM) is to establish policy and procedures to enable safe, efficient, and successful WH&B gather operations while ensuring humane care and treatment of all animals gathered.

Policy/Action: The Bureau of Land Management (BLM) is committed to the well-being and responsible care of WH&B we manage. At all times, the care and treatment provided by the BLM and our Contractors will be characterized by *compassion and concern* for the animal's well-being and welfare needs. Effective immediately, all State, District, and Field Offices must comply with this IM for all gathers within their jurisdiction.

This IM is part of a package of IMs covering various aspects of managing WH&B gathers.

- IM No. 2013-060, Wild Horse and Burro Gathers: Management by Incident Command System
- IM No. 2013-058, Wild Horse and Burro Gathers: Public and Media Management
- IM No. 2013-061, Wild Horse and Burro Gathers: Internal and External Communicating and Reporting

Roles and responsibilities of all gather personnel are covered in IM No. 2013-060, Wild Horse and Burro Gathers: Management by Incident Command System.

The goal of this IM is to ensure that the responsible and humane care treatment of WH&B remains a priority for the BLM and its Contractors at all times. Our objectives are to use the best available science, husbandry, and handling practices applicable for WH&B and to make improvements whenever and wherever possible, while meeting our overall gather goals and objectives in accordance with current BLM policy, standard operating procedures, and contract requirements.

The Lead Contracting Officer's Representative (Lead COR) is the primary party responsible for promptly addressing any actions that are inconsistent with the expectations set forth below. The Lead COR may delegate responsibility to an alternate COR. The responsibilities of a BLM Project Inspector are assigned by the Lead COR and are limited to performing on-the-job government inspection of work accomplished by the Contractor.

The Lead COR has authority to *suspend* gather operations if he/she believes actions contrary to the humane treatment expectations are taking place or that an unsafe condition exists. The Lead COR will promptly notify the Contractor if any improper or unsafe behavior or actions are observed, and will require that such behaviors be promptly rectified and eliminated. Any observed problems shall be reported at the end of each day. The Lead COR and Incident Commander (IC), through coordination with the Contracting Officer (CO) shall, if necessary, ensure that corrective action has been taken to prevent those behaviors or actions from occurring again and all follow-up and corrective actions shall be reported as a component of the Lead COR's daily reports.

Based on past experience with WH&B gathers and the need to adapt some gather practices to specific local conditions, the following information will be discussed with all gather personnel before gather operations begin and shall be incorporated as management's expectations that is included as an appendix to the documentation supporting the gather and made available on BLM's website. Humane care and handling of WH&B during gather operation is always the primary concern. During the pre-work conference facilitated by the Lead COR, expectations for the humane treatment and care of WH&B during gather operations will be discussed. They include the following expectations:

1. The Lead COR will ensure that the gather helicopter(s) will not be operated in a manner where, for any reason, the helicopter could reasonably be expected to come into contact with a WH&B. In cases when it is necessary during gather operations, hovering by the helicopter over the WH&B is acceptable.
2. Handling aids (including body position, voice, flags, paddles and electric prods) will be used in a manner that is consistent with domestic livestock handling procedures. Flags and paddles will be used as signaling and noise making devices first, with only light contact of the flag or paddle end allowed when necessary. Animals will not be whipped or beaten with these or any handling aids. Flagging and paddles will be used strategically and in a manner that avoids desensitizing the WH&B. While it may be necessary on occasion to use a hand or foot to safely move a WH&B, the Lead COR will ensure that kicking or hitting of WH&B does not occur.
3. Electric prods (hotshots) will not be routinely used on WH&B, but rather should only be used as a last resort when WH&B or human safety is in jeopardy or other aids have been tried and are not working. When used, electric prods will only be used to shock animals, not to tap or hit animals. Similarly, electric prods will not be applied to injured or young animals, nor will they be applied to sensitive areas such as the face, genitals, or anus.
4. Gates can be used to push WH&B but will not be used in a manner that may be expected to catch legs. Gates and doors will not be slammed or shut on WH&B.
5. Only the Lead COR will identify and request the Contractor to pursue and capture a single WH&B. Pursuing a single WH&B should be a rare event and not standard practice. If the animal is identified as a stud, further pursuit should be abandoned unless for management purposes (such as public safety, nuisance animals, or animals outside HMA boundaries or on private lands) it is necessary to capture the animal.
6. The Lead COR will ensure every effort is made to prevent foals from being left behind or orphaned in the field. If a foal has to be dropped from a group being brought to the trap because it is getting too tired or cannot keep up, the pilot will relay to the Lead COR and ground crew the location of the foal and a description of the mare to facilitate "pairing-up" at temporary holding. In this case, the Contractor will provide trucks/trailers and saddle horses for the retrieval of the foal and transport the foal to the gather site or temporary holding. If the helicopter is needed to locate and capture the foal, retrieval of the foal should occur prior to another band being located and driven to the trap. The method of capture will be directed by the Lead COR.

7. The Lead COR will ensure that if during the gather any WH&B (including foals or horses that may be aged, lame, injured or otherwise appear weak or debilitated) appear to be having difficulty keeping up with the group being brought in, the Contractor will accommodate the animals having difficulty to allow for rest before proceeding, drop those animals from the group, or drop the entire group. It is expected that animals may be tired, sweaty and breathing heavily on arrival at a trap, but they should not be herded in a manner that results in exhaustion or collapse.
8. The need to rope specific WH&B will be determined by the Lead COR on a case-by-case basis.
9. While gathering, a WH&B may escape or evade the gather site while being moved by the helicopter. If there are foals in the band and an animal that has evaded capture has been identified as a mare that might have one of these foals, the Contractor may make multiple attempts to move the mare by the helicopter to the gather site for capture prior to roping or other alternative for capture. In these instances, animal condition and fatigue will be evaluated by the Lead COR on a case-by-case basis to determine the number of attempts that can be made to capture the animal. Animals will not be pursued to a point of exhaustion or distress.
10. Mares and their dependent foals will be separated from other animals at the temporary holding facility and moved to a designated BLM preparation facility. The Lead COR will ensure that any foals that are not weaned and have been maintained with their mares at temporary holding will be transported with their mares to the BLM preparation facilities as soon as practical.
11. The Lead COR will ensure that all sorting, loading or unloading of WH&B will be performed during daylight hours.
12. All handling pens, including the gates leading to the alleyways, should be covered with a material which serves as a visual barrier (plywood, burlap, plastic snow fence, etc.) and should be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses. Perimeter panels on the holding corrals should be covered to a minimum height of 5 feet for burros and 6 feet for horses. Those panels attached to and leading directly into the trailers from the trap will be covered with a material which serves as a visual barrier. Padding should be installed on the overhead bars of all narrow gates used in single file alleys leading or leaving the squeeze chute set up. Screening will be placed on all division gates in the sorting area and solid fencing placed on panels from the working chute to the semi-trailers in an effort to decrease outside stimuli.
13. When dust conditions within or adjacent to the trap or holding facility so warrant, the Contractor shall be required to wet down the ground with water.
14. When possible (e.g., soil conditions allow) and as needed (e.g., the WH&B are unwilling to step up), the Lead COR should request that the Contractor will have the trailer floor at ground level to ease the loading of WH&B at the gather site.
15. If the pilot is moving WH&B and observes an animal that is clearly injured or suffering, the animal should be left on the range and its location noted. The BLM Lead COR with veterinary assistance from an Animal Plant Health Inspection Service or locally licensed veterinarian will then go to the identified location as promptly as possible so that any animal that cannot make it to the trap will be inspected to determine the problem. The Lead COR will then decide on the most appropriate course of action.
16. Injuries that required veterinary examination or treatment, deaths and spontaneous abortions that occur will be noted in gather reports and statistics kept by the Lead COR.
17. At the discretion of the Lead COR, if a WH&B is injured or in distress during gather operations and the animal is within the wings or first corral of the trap, gather operations may be temporarily suspended if necessary to provide care for the animal and subsequent removal. Such actions should take place prior to the trapping of additional animals whenever possible.

18. The Contractor shall provide animals held in facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Pens containing more than 50 animals will have water provided in at least two separate locations of the pen (i.e. opposite ends of the pen). 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. If the task order notes that weed free hay is to be used for this gather the Contractor will provide certified weed free hay in the amounts stated above. The Contractor will have to have documentation that the hay is certified weed free. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a WH&B 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.
19. When extreme environmental conditions exist (such as temperature) during a gather, the overall health and well-being of the animals will be monitored and the Lead COR will adjust gather operations as necessary to protect the animals from climatic and gather related health issues. The Lead COR should be equipped to take air temperatures periodically throughout the day to help with the monitoring of environmental conditions at the gather site. There may be days when the Lead COR determines that gather operations must be suspended or ceased based on temperatures or other environmental conditions.
20. The rate of movement and distance the animals travel shall not exceed limitations set by the Lead COR who will consider terrain, physical barriers, access limitations, weather, extreme temperature (high and low), condition of the animals, urgency of the operation (animals facing drought, starvation, fire rehabilitation, etc.) and other factors. In consultation with the Contractor, the distance the animals may travel will take into account the different factors listed above and other concerns relevant to individual HMAs. With foals, pregnant mares, or horses that are weakened by body condition, age or poor health, the appropriate herding distance and rate of movement will be determined on a case-by-case basis considering the weakest or smallest animal in the group and the range and environmental conditions present. The maximum gather distance will depend on the specific animal and environmental conditions on the day of the gather and direct dialogue with the pilot/ Contractor and Lead COR to provide important information as to numbers, number of foals, locations distance and/or overall animal and/ or environmental conditions. The trap locations will be moved closer to horse locations whenever possible to minimize the distance the animals need to travel.
21. The Lead COR or IC should be available to provide a short briefing to any members of the public that may be present at the end of daily operations, including the preliminary tallies on the total number of animals captured by sex, number of foals, and any incident that required medical attention or euthanasia. This briefing should occur at temporary holding corral after all animals have been sorted, fed and watered and allowed to settle. The public should be clearly informed that such preliminary tallies may change after all the information is processed from the day's gather and that the final results of the day's gather will be posted to the appropriate BLM website.
22. The Lead COR should ensure that holding alleys will not be overcrowded at temporary holding facilities. If there is a risk of overcrowding, gates should remain open to allow animals to move back out of the alley and be reloaded. If an animal falls in the alley no other animals should be moved through the alleyway until the animal stands on its own or the alleyway is clear.
23. The Lead COR should ensure that animals will not be left in alleyways for any extended period of time (greater than 30 minutes). If personnel are not present at the temporary holding corrals to sort animals, the horses should be placed into a holding pen until such time as they can be sorted and placed into the appropriate pen.
24. Bait/water trapping: All traps will be checked a minimum of once every 24 hours when the traps are "set" to capture without human presence (trip trigger traps, finger traps, etc.). All handling procedures outlined above in this document apply to bait trapping to the extent applicable.

Again, at all times, the care and treatment provided by the BLM and our Contractors should be characterized by *compassion and concern* for the animal's well-being and welfare needs. The IC will ensure that everyone involved in gather operations receives a copy of these expectations prior to the start of the gather and the Lead COR and all BLM employees present shall ensure that gather operations are conducted in compliance with these expectations.

Timeframe: This IM is effective immediately.

Budget Impact: Unit costs for conducting gathers as a result of this interim guidance are not expected to increase significantly when compared to existing costs.

Background: The BLM is committed to the humane treatment and care of WH&B through all of the phases of its WH&B program. To ensure a clearer statement of its expectations and greater consistency in the program, the development of a Comprehensive Animal Welfare Policy has been undertaken. In addition to the standard operating procedures (SOP) for capture operations, SOPs for management on the range, capture operations, short- and long-term holding facilities, transportation, and adoption will be developed.

Manual/Handbook Sections Affected: None

Coordination: This IM was coordinated among WO-200, WO-260, WO-600, WO-610, WO-LE, WH&B State Leads, WH&B Specialists, State External Affairs Leads, public affairs and law enforcement staff in the field.

Contact: Any questions regarding this IM can be directed to Joan Guilfoyle, Division Chief, Wild Horse and Burro Program (WO-260) at 202-912-7260.

Signed by: Authenticated by:
Edwin L. Roberson Robert M. Williams
Assistant Director Division of IRM Governance, WO-560
Renewable Resources and Planning



Fish Creek HMA, July 2005.

Appendix H: BLM Special Status Species

The following list has been reduced to those BLM special status species whose range or migration routes are known or believed to occur within the Fish Creek HMA.

Scientific Name

Common Name

Mammals

<i>Antrozous pallidus</i>	Pallid Bat
<i>Brachylagus idahoensis</i>	Pygmy Rabbit
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat
<i>Eptesicus fuscus</i>	Big Brown Bat
<i>Idionycteris phyllotis</i>	Allen's Lappet-browed Bat
<i>Lasionycteris noctivagans</i>	Silver-haired Bat
<i>Lasiurus cinereus</i>	Hoary Bat
<i>Macrotus californicus</i>	California Leaf-nosed Bat
<i>Microdipodops megacephalus albiventer</i>	Desert Valley Kangaroo Mouse
<i>Microdipodops megacephalus nasutus</i>	Fletcher Dark Kangaroo Mouse
<i>Myotis californicus</i>	California Myotis
<i>Myotis ciliolabrum</i>	Small-footed Myotis
<i>Myotis evotis</i>	Long-eared Myotis
<i>Myotis lucifugus</i>	Little Brown Myotis
<i>Myotis thysanodes</i>	Fringed Myotis
<i>Myotis velifer</i>	Cave Myotis
<i>Myotis volans</i>	Long-legged Myotis
<i>Myotis yumanensis</i>	Yuma Myotis
<i>Nyctinomops macrotis</i>	Big Free-tailed Bat
<i>Ovis canadensis nelsoni</i>	Desert Bighorn Sheep ²¹
<i>Pipistrellus hesperus</i>	Western Pipistrelle Bat
<i>Sorex preblei</i>	Preble's Shrew
<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat
<i>Thomomys bottae abstrusus</i>	Fish Spring Pocket Gopher ²²

Birds

<i>Accipiter gentiles</i>	Northern Goshawk
<i>Aquila chrysaetos</i>	Golden Eagle
<i>Asio flammeus</i>	Short-eared Owl
<i>Asio otus</i>	Long-eared Owl
<i>Athene cunicularia</i>	Burrowing Owl
<i>Baeolophus griseus</i>	Juniper Titmouse
<i>Buteo regalis</i>	Ferruginous Hawk
<i>Buteo swainsoni</i>	Swainson's Hawk
<i>Centrocercus urophasianus</i>	Greater Sage-grouse
<i>Charadrius alexandrinus</i>	Snowy Plover
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo ²³
<i>Falco mexicanus</i>	Prairie Falcon

²¹ Historic resident in Antelope Range

²² Type specimens found on private Fish Creek Ranch in 1950s. No additional information has been recorded since type specimen(s) collected.

Gymnorhinus cyanocephalus
Haliaeetus leucocephalus
Icteria virens
Ixobrychus exilis
Lanius ludovicianus
Melanerpes lewis
Numenius americanus
Otus flammeolus
Pooecetes gramineus
Sphyrapicus nuchalis

Pinyon Jay
Bald Eagle
Yellow-breasted Chat
Least Bittern
Loggerhead Shrike
Lewis's Woodpecker
Long-billed Curlew
Flammulated Owl
Vesper Sparrow
Red-naped Sapsucker

Amphibians

Rana pipiens

Northern Leopard Frog

Fishes

Gila bicolor euchila

Fish Creek Springs Tui Chub

Plants

Phacelia minutissima

least phacelia; dwarf phaceli



Pronghorn antelope, mule deer and elk have all been identified at the water haul locations within the Fish Creek HMA since 2012.

Appendix I: Genetic Analysis Report

Genetic Analysis of the
Fish Creek, NV HMA

E. Gus Cothran

June 3, 2008

Department of Veterinary Integrative Bioscience
Texas A&M University
College Station, TX 77843-4458

The following is a report of the genetic analysis of the Fish Creek, NV HMA.

METHODS

A total of 23 blood samples were received by the University of Kentucky on July 21, 2005. Seventeen genetic marker systems were analyzed. Seven systems were red blood cell alloantigen loci (the A, C, D, K, P, Q and U horse blood groups) tested by standard serological methods of agglutination and complement mediated hemolysis. The other 10 systems were biochemical polymorphisms detected by electrophoretic techniques. These systems were Albumin (*ALB*), Alpha-1-beta Glycoprotein (*A1B*), Serum Cholinesterase (*ES*), Vitamin D Binding Protein (*GC*), Glucose Phosphate Isomerase (*GPI*), Alpha Hemoglobin (*HB*), Phosphoglucosmutase (*PGM*), Phosphoglucuronate Dehydrogenase (*PGD*), Protease Inhibitor (*PI*), and Transferrin (*TRF*). In addition to the above genetic system, DNA was extracted from the blood samples and tested for variation at 12 equine microsatellite (mSat) systems. These were *AHT4*, *AHT5*, *ASB2*, *ASB17*, *ASB23*, *HMS3*, *HMS6*, *HMS7*, *HTG4*, *HTG10*, *LEX33*, and *VHL20*. These systems were tested using an automated DNA sequencer to separate Polymerase Chain Reaction (PCR) products.

A variety of genetic variability measures were calculated from the gene marker data. The measures were observed heterozygosity (*Ho*) which is the actual number of loci heterozygous per individual and is based upon biochemical loci only; expected heterozygosity (*He*), which is the predicted number of heterozygous loci based upon gene frequencies and was calculated for biochemical loci and all marker systems (*Het*); effective number of alleles (*Ae*) which is a measure of marker system diversity; total number of variants (*TNV*); and estimated inbreeding level (*Fis*) which is calculated as $1-Ho/He$. These same measures were calculated for the mSat data. However, the DNA data will not be reported here due to limited comparative information.

Genetic markers also can provide information about ancestry in some cases. Genetic resemblance to domestic horse breeds was calculated using Rogers' genetic similarity coefficient, *S*. This resemblance was summarized by use of a restricted maximum likelihood (RML) procedure.

RESULTS AND DISCUSSION

Variants present and allele frequencies for the blood group and biochemical markers are given in Table 1. No variants were observed which have not been seen in horse breeds. Table 2 gives the values for the genetic variability measures of the Fish Creek horse herd. Also shown in Table 2 are values from a representative group of domestic horse breeds. The breeds were selected to cover the range of variability measures in domestic horse populations. Mean values for feral herds (based upon data from 54 herds) and mean values for domestic breeds (based upon 118 domestic horse populations) also are shown.

Mean genetic similarity of the Fish Creek herd to domestic horse breed types are shown in Table 3. A dendrogram of relationship of the Fish Creek herd to a standard set of domestic breeds is shown in Figure 1.

Genetic Variants: A total of 61 variants were seen in the Fish Creek herd which is well above the average for feral horses. Of these, 13 had frequencies below 0.05. This is somewhat above the average percentage of rare variants and indicates some risk of future loss of alleles. Allelic diversity as represented by *Ae* also is well above the average for feral herds.

Genetic Variation: Genetic variation, as indicated by heterozygosity, in the Fish Creek herd is relatively high. *Ho* is greater than *He* which may be indicative of a recent population bottleneck. But if so, it has not resulted in low variation. There was a significant excess of

heterozygosity at the PGD system which is consistent with the possibility of mixing. This could be the cause of the relatively high allelic diversity and a high number of alleles with low frequency.

Genetic Similarity: Highest mean genetic similarity of the Fish Creek herd was with the Old World Spanish breeds but the values for all of the non-cold blood horse groups were similar. There was no strong allelic indication of Spanish ancestry. As seen in Fig. 1, the Fish Creek herd does not fit into any group but is on the outside of the cluster of riding horses of several types. The tree is somewhat skewed, compared to the expected tree, due to the poor fit of the herd into any group. This result is consistent with a mixed breed origin of the herd.

SUMMARY

Genetic variability within the Fish Creek herd is fairly high probably due to mixed ancestry as the herd appears to be of mixed origins.

RECOMMENDATIONS

The AML of this herd is fairly high as is variability so no action is required at this time.

Table 1. Allele frequencies of genetic variants observed in the FISH CREEK NV feral horse herd.

System	Allele	Frequency
Tf	D	0.304
	D2	0
	E	0
	F1	0
	F2	0.261
	F3	0
	H1	0
	H2	0.174
	M	0
	O	0.239
	R	0.022
A1B	F	0
	K	1.0
	S	0
Es	F	0
	G	0.043
	H	0
	I	0.892
	L	0.065
	S	0
	O	0
Al	R	0
	A	0.5
	B	0.5
Gc	F	1.0
	S	0
PGD	D	0.457
	F	0.543
	S	0
PGM	F	0.065
	S	0.935
GPI	F	0.087
	I	0.913
	S	0
Hb	A	0.13
	AI	0.022
	BI	0.435
	BII	0.413
Pi	F	0
	G	0.022
	H	0.022
	I	0.156
	J	0
	K	0.133
	L	0.268

	L2	0
	N	0.044
	O	0
	P	0.089
	Q	0.044
	R	0.067
	S	0.022
	T	0
	U	0.133
	V	0
	X	0
	Z	0
	E	0
A	adf	0.312
	adg	0.068
	a	0
	b	0.095
	c	0
	e	0
	bc	0.043
	-	0.482
C	a	0.583
	-	0.417
D	ad	0.109
	d	0.117
	dk	0.043
	dgh	0.152
	de	0.182
	deo	0.114
	dek	0
	dfk	0.022
	bc	0.022
	cg	0.152
	cegi	0.087
	cefg	0
	cfgk	0
K	a	0.022
	-	0.978
P	ac	0.187
	ad	0.187
	b	0
	-	0.626
Q	abc	0.14
	ac	0
	b	0.078
	c	0.264
	-	0.518
U	a	0.341
	-	0.659

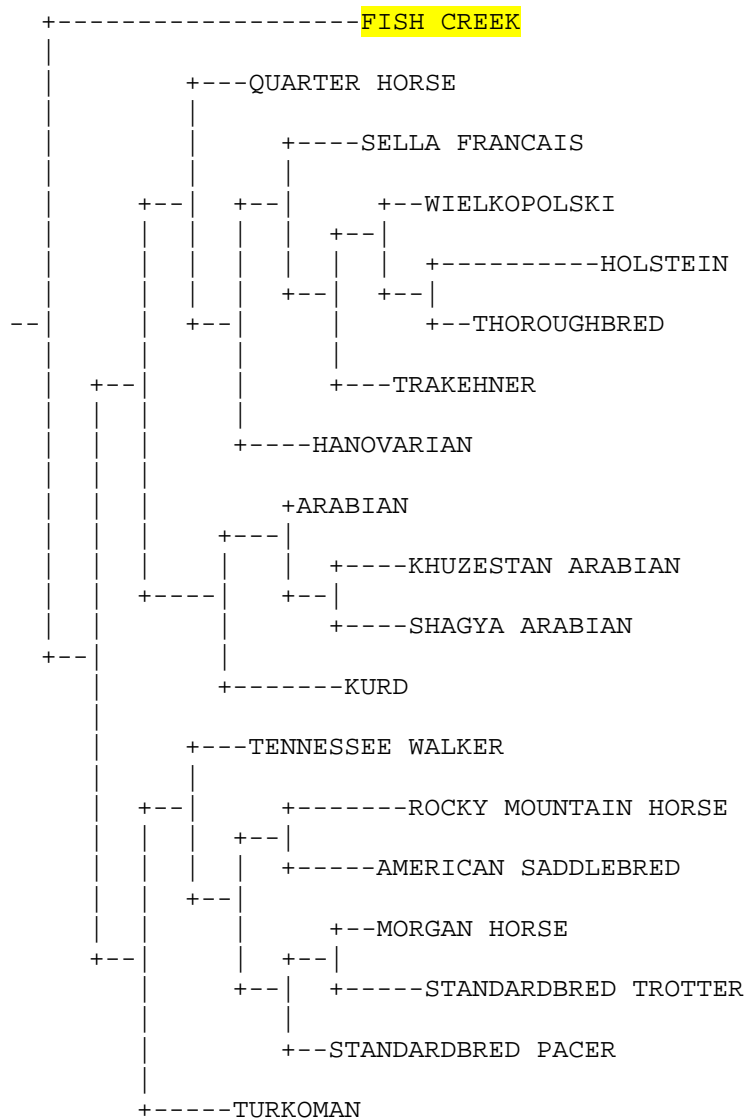
Table 2. Genetic variability measures.

	<i>N</i>	<i>Ho</i>	<i>He</i>	<i>Fis</i>	<i>Het</i>	<i>Ae</i>	<i>TNV</i>
Fish Creek NV	23	0.387	0.370	-0.046	0.434	2.707	61
Thoroughbred	265	0.294	0.288	-0.019	0.325	2.009	64
Arabian	117	0.307	0.327	0.061	0.376	2.132	67
Andalusian	140	0.348	0.362	0.039	0.425	2.508	75
Shetland Pony	50	0.368	0.407	0.095	0.452	2.595	71
Welsh Pony	42	0.388	0.387	-0.002	0.453	2.603	76
American Saddlebred	259	0.404	0.409	0.013	0.435	2.625	96
Peruvian Paso	141	0.451	0.445	-0.014	0.469	2.761	77
Belgian Draft	82	0.427	0.415	-0.028	0.451	2.386	66
Feral Horse Mean	54	0.360	0.351	-0.035	0.385	2.218	53.5
Standard Deviation		0.051	0.053	0.118	0.067	0.339	12.5
Domestic Horse Mean	118	0.371	0.365	-0.014	0.414	2.398	65.4
Standard Deviation		0.049	0.043	0.065	0.039	0.253	11.1

Table 3. Rogers' genetic similarity of the Fish Creek feral horse herd to major groups of domestic horses.

	Mean <i>S</i>	Std	Minimum	Maximum
Light Racing and Riding Breeds	0.829	0.017	0.791	0.869
Oriental and Arabian Breeds	0.829	0.017	0.790	0.872
Old World Iberian Breeds	0.836	0.017	0.799	0.861
New World Iberian Breeds	0.830	0.018	0.791	0.865
North American Gaited Breeds	0.828	0.018	0.786	0.873
Heavy Draft Breeds	0.789	0.022	0.715	0.831
True Pony Breeds	0.790	0.023	0.751	0.841

Figure 1. Partial RML tree of genetic similarity to domestic horse breeds.



Appendix 1. Blood group and biochemical data for individual horses of the Fish Creek NV feral horse herd.

Biochemical Systems													
Blood Group Systems													
Accno.	Loc	TF	AlB	ES	AL	GC	PGD	PGM	GPI	HB	PI		
A	C D			K P	Q	U							
05-06267	fc82	F2H2	K K	I I	A A	F F	D F	S S	I I	A B2	I K		
a--d-	- -	a--de---	-	---	- --	abc a							
05-06268	fc82	D D	K K	I L	A B	F F	D F	S S	I I	B1B1	I K		
a--d-	g -	a-cd--g-	- m--	- --	-bc a								
05-06269	fc82	F2H2	K K	I I	A B	F F	D F	S S	I I	B1B2	L N		
abcd-	- a	---de---	- --o	- --	abc -								
05-06270	fc82	D F2	K K	I I	A A	F F	D F	S S	I I	A B2	P U		
-b---	- a	--cde-ghi-	mn-	- a-	---	-							
05-06271	fc82	D F2	K K	I L	B B	F F	D F	S S	I I	B1B2	I L		
a--d-	- -	--cd--g-	k m--	- a-	-bc a								
05-06272	fc82	D F2	K K	I I	B B	F F	D F	S S	F I	B1B2	K P		
-----	- a	--cd--gh	- m--	- a-	--c -								
05-06273	fc82	O O	K K	I I	B B	F F	D F	S S	I I	B1B2	R U		
a--d-	- a	---def--	k ---	- a-	--c a								
05-06274	fc82	O O	K K	G I	A B	F F	D F	S S	I I	B1B2	L *		
a--d-	- a	--cde-g-	- m--	- a-	---	a							
05-06275	fc82	D D	K K	I I	B B	F F	D F	S S	F I	A2B2	P U		
-b---	- a	--cd--gh	- m--	- a-	abc -								
05-06276	fc82	F2H2	K K	I I	A B	F F	D F	S S	F I	B1B1	L R		
a--d-	- -	a--de---	- --o	- --	--c a								
05-06277	fc82	D H2	K K	I I	A B	F F	F F	S S	I I	B1B2	R U		
a--d-	- a	--cd--g-	k m--	- a-	--c -								
05-06278	fc82	H2H2	K K	G L	B B	F F	D F	S S	I I	B1B2	L L		
-----	- a	-bcde---	- m-o	a --	-b- a								
05-06279	fc82	D H2	K K	I I	A A	F F	D F	S S	I I	A B2	H U		
a--d-	- a	a-cde-g-i-	mn-	- a-	abc -								
05-06280	fc82	D H2	K K	I I	B B	F F	D F	S S	I I	B1B1	I Q		
a--d-	- a	---de---	- -no	- a-	--c a								
05-06281	fc82	F2O	K K	I I	A A	F F	D F	S S	I I	B1B2	K K		
-----	- a	---d--gh	- mn-	- --	---	-							
05-06282	fc82	D F2	K K	I I	A A	F F	D F	S S	I I	B2B2	I Q		
abcd-	- a	--cde-ghi-	mn-	- --	---	a							
05-06283	fc82	O O	K K	I I	A B	F F	D F	S S	I I	A B2	G L		
-----	- a	---de---	- ---	- a-	abc a								
05-06284	fc82	D F2	K K	I I	B B	F F	D F	S S	F I	B2B2	N P		
-b---	- a	--cd--gh	- m--	- a-	--c -								
05-06285	fc82	D F2	K K	I I	B B	F F	D F	S S	I I	B1B1	I L		
-b---	- a	---de---	- -n-	- a-	---	a							
05-06286	fc82	O O	K K	I I	A A	F F	D F	S S	I I	B1B1	L L		
a--d-	g a	---de-gh	- m--	- a-	---	a							
05-06287	fc82	D F2	K K	I I	A A	F F	D F	F S	I I	A B1	I K		
a--d-	- a	---d----	- -n-	- --	--c -								
05-06288	fc82	F2O	K K	I I	A B	F F	D F	F S	I I	B1B2	S U		
-----	- a	--cde-g-i-	mn-	- --	abc -								
05-06289	fc82	O R	K K	I I	A A	F F	F F	F S	I I	A B2	L L		
a--d-	g a	a--de---	- --o	- a-	---	a							

Appendix 2. DNA data for the Fish Creek NV feral horse herd.

ID			Microsatellite Loci															
			V	H	A	H	H	A	H	A	H	H	H	A	A	L	L	
			H	T	H	M	T	H	M	S	T	T	M	M	S	S	E	E
			L	G	T	S	G	T	S	B	G	G	S	S	B	B	X	X
			2	4	4	7	6	5	6	2	1	7	3	2	1	2	3	3
0																		
05-06267	fc	9	MN	MM	JN	MM	**	JK	MP	NO	LL	**	MP	**	JN	II	QQ	MM
05-06268	fc	9	IO	MO	KN	LN	**	KO	MP	MN	LM	**	MP	**	IJ	IU	MQ	FF
05-06269	fc	9	LM	LM	JJ	LM	**	JL	PP	KM	LS	**	IP	**	NQ	JJ	OQ	MM
05-06270	fc	9	LO	MM	HO	LM	**	MO	LP	KK	IL	**	IP	**	KN	II	KQ	HH
05-06271	fc	9	IR	MO	KN	LN	**	KO	MP	MN	LO	**	NP	**	IM	IK	QR	FM
05-06272	fc	9	NN	LP	JN	LN	**	JM	MO	IM	RS	**	IR	**	JN	IS	KR	FP
05-06273	fc	9	IM	LP	NO	LL	**	MM	PP	NQ	IK	**	IP	**	HV	JK	QQ	FM
05-06274	fc	9	IO	LM	HN	LL	**	MN	OP	KQ	IO	**	PR	**	JV	IK	KQ	MM
05-06275	fc	9	LN	MP	HN	LN	**	JM	LM	IM	LR	**	IO	**	IN	IR	QR	**
05-06276	fc	9	MN	LM	JL	LM	**	KO	LP	KM	LP	**	MQ	**	MO	IJ	OQ	MM
05-06277	fc	9	MM	LL	HH	JM	**	JO	PP	NQ	MM	**	PR	**	LL	KU	KK	MM
05-06278	fc	9	IM	LO	HO	LL	**	NO	LM	MN	KO	**	PP	**	NN	JK	OR	LM
05-06279	fc	9	LN	MM	HJ	MM	**	JO	LP	KO	IL	**	MP	**	KN	IL	QR	HM
05-06280	fc	9	IP	MM	IN	LL	**	KN	MM	MN	RS	**	IM	**	JQ	IK	MQ	FM
05-06281	fc	9	NO	LM	JO	NO	**	KL	PP	KO	LP	**	MP	**	QR	II	MQ	FM
05-06282	fc	9	MM	LM	OO	LL	**	LM	LM*KO	RR	**	MR	**	NO	IK	RR	LP	
05-06283	fc	9	JP	KM	OO	LL	**	JL	LL	KQ	IS	**	IO	**	OQ	IK	QQ	FP
05-06284	fc	9	LO	LM	HJ	LN	**	JJ	LL	IM	LR	**	IP	**	MN	RS	KQ	FP
05-06285	fc	9	LN	MO	HJ	KL	**	JL	KP	KM	KL	**	MO	**	MN	IU	OS	PP
05-06286	fc	9	LL	MM	JO	LO	**	LL	MP	OQ	QS	**	IM	**	MQ	IJ	MQ	FP
05-06287	fc	9	JO	MM	JO	MQ	**	JM	MP	NN	IR	**	IM	**	QQ	IU	MQ	FL
05-06288	fc	9	LO	LM	HO	LM	**	LO	PP	KQ	LL	**	IP	**	NN	JJ	KM	HH
05-06289	fc	9	LP	LM	OO	LL	**	LL	MP	OQ	QS	**	IO	**	MQ	IJ	MQ	FP

Appendix F: Response to Comments

Comments received on the Preliminary EA were reviewed and considered in completion of the Final EA. As a result of some of the comments received, some additions were made to the EA to provide additional information or clarification. Some of the additions to the EA included a Genetic Analysis Appendix, information about the inventory and resource flights conducted since the last gather, and Nevada public observation memo. Comments were grouped by general subject. Similar comments were combined/grouped and content of lengthy comments summarized. Wild Horse Education (WHE) and the American Wild Horse Preservation Campaign (AWHPC) each posted a comment letter on their websites, and asked for their followers to sign on electronically to endorse their support for the organizations letter (or use the letter as an example to submit their own original letter). This was done in lieu of individuals forwarding duplicate copies of the letter to the BLM. WHE submitted the names of 892 individuals that endorsed the comments made by WHE. AWHPC submitted the names of 9,420 citizens that endorse their organizations comments made on the Preliminary EA. These names are available upon request. It should be noted that the MLFO greatly appreciates the willingness of both of these organizations to submit names of individuals that endorse their letters rather than submit a duplicate copy to the BLM.

Other individuals and organizations submitted comment letters, including views in support of or against the planned gather, the use of fertility control, the use of helicopter to gather horses. A number of comments received suggested removal of livestock or the increase of the AML, both of which are outside of the scope of the analysis. The following is an outline of the categories that the comments have been sorted into and addressed below.

- | | |
|--|--|
| 1. Provisions of the WFRHBA and other Law | 11. Monitoring and Data Collection |
| 2. Support of Gather | 12. Appropriate Management Level, Perceived Inequality of Livestock and Wild Horses |
| 3. Opposition of Gather | 13. Livestock Management |
| 4. Animal Health and Welfare | 14. Inventory and Population Data |
| 5. Comments to the Alternatives/Proposed Action | 15. NEPA |
| 6. Genetic Health | 16. Land Use Plans/Resource Management Plans |
| 7. Public Observation | 17. Predator Control |
| 8. General Comments | 18. Determination of Excess |
| 9. Analysis of Impacts to Wild Horses | 19. Minimum Feasible Level |
| 10. Population Controls | 20. Drought |

No	Commenter	Comment	Response
1. Provisions of the WFRHBA and other Law			
1.1	Gail Kenney	Isn't the use of helicopters against the law for rounding up wild horses?	<p>The proposed gather is in conformance with the requirements of the WFRHBA, the CFRs, BLM policy and the 1986 SERA RMP. Sec. 3(b)(2) of the WFRHBA requires the BLM to “<i>remove excess animals from the range so as to achieve appropriate management levels. Such action shall be taken . . . until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation</i>”. Further, Section 9 of the Act specifically authorizes the use of helicopter to gather wild horses. The Public Rangelands Improvement Act (PRIA) of 1978 (Pub. L. 95-514, Sec. 4, Oct. 25, 1978, 92 Stat. 1805) also addresses this issue with the direction to “<i>continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values</i>” [emphasis added].</p> <p>Refer also to Section 1.4 and 1.5 of the EA.</p>
	Anne Novak/Protect Mustangs	Your EA is skewed and your roundup proposal is in violation of the 1971 Free Roaming Wild Horse and Burro Protection Act.	
	Rebecca Ashworth Deana Bishop	You are breaking the law/BLM is not following the law.	
	Barbara Bessy	The use of helicopters and motorized vehicles, splitting up herd families, and keeping many Wild Horses in long term holding corrals for years is cruel and inhumane treatment of Wild Horses -- a violation of the Wild Horses and Burros Act.	
1.2	Marybeth Devlin	<p>The WFRHBA, stipulates that their land is to be "devoted principally but not necessarily exclusively to their welfare."</p> <p>Fish Creek HMA is not being managed according to the Law because the wild horses are not allotted principal use of their habitat.</p> <p>BLM-Mount Lewis needs to rescind this EA. Then, it must amend the Land-Use Plan (LUP), Resource Management Plan (RMP), and the Final Multiple-Use Decision (FMUD) to conform with the Law [provide the wild horses principal use of their HMA's resources].</p>	<p>Only the BLM Director or Assistant Director (as per BLM Manual 1203: Delegation of Authority), may establish a Wild Horse and Burro Range after a full assessment of the impact on other resources through the land-use planning process. Neglecting to manage HMAs as multiple use area would not be in conformance with the existing Land Use Plan and is contrary to the BLM's multiple-use mission as outlined in the 1976 Federal Land Policy and Management Act (FLPMA), and also would be inconsistent with the WFRHBA and the Public Rangelands Improvement Act of 1978 (PRIA). It was Congress' intent to manage wild horses and burros as one of the many uses of the public lands, not a single use. Therefore, the BLM is required to manage wild horses and burros in a manner designed to achieve a thriving natural ecological balance and sustainability among wild horse and burro populations, wildlife, domestic livestock, vegetation and other uses.</p> <p>Information about the Congress' intent is found in the Senate Conference Report (92-242) which accompanies the 1971 WFRHBA (Senate Bill 1116): “<i>The principal goal of this legislation is to provide for the protection of the animals from man and not the single use management of areas for the benefit of wild free-roaming horses and burros</i> (emphasis added). <i>It is the intent of the committee that the wild free-roaming horses and burros be specifically incorporated as a component of the multiple-use plans governing the use of the public lands.</i>”</p> <p>The law's language stating that public lands where wild horses and burros were found roaming in 1971 are to be managed "principally but not necessarily</p>
	Anne Novak/Protect Mustangs	Wild horses according to the law have the right to the principal but not exclusive use of the public land where they were found in 1971.	

			<p>exclusively" for the welfare of these animals relates to the Interior Secretary's power to "designate and maintain specific ranges on public lands as sanctuaries for their protection and preservation" -- which are, thus far, the Pryor Mountain Wild Horse Range (in Montana and Wyoming), the Nevada Wild Horse Range (located within the north central portion of Nellis Air Force Range), the Little Book Cliffs Wild Horse Range (in Colorado), and the Marietta Wild Burro Range (in Nevada). The "principally but not necessarily exclusively" language applies to specific Wild Horse Ranges, not to Herd Management Areas in general. The Code of Federal Regulations (43 CFR, Subpart 4710.3-2) states: "Herd management areas may also be designated as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse or burro herds."</p> <p>As stated in Section 1.5 of the EA, the Fish Creek HMA has not been designated as a Range. This comment was also addressed in Section 2.5.6 of the EA.</p>
2. Support of Gather			
2.1	Alice Colton	<p>Thank you for implementing the PZP fertility control and for doing the right thing in managing wild horses in the Fish Creek area. I have participated in a photography workshop with the mustangs of McCullough Peaks in Wyoming and have observed the good condition of the horses and the range. These horses are also managed with PZP. In the future it might be feasible to try gelding some of the stallions to make life easier for them, but this is a start.</p> <p>I am sure the state of Nevada will benefit from growing tourist interest in the wild horse as part of the western landscape.</p>	Comment noted.
2.2	Deborah Hobbs	This is a far better alternative to slaughter.	The BLM does not transport unadoptable wild horses to slaughter and this would also be contrary to Congressional directives set forth in the most current Appropriations bills.
2.3	Susan Humphrey	Gather the overpopulated horses off Fish Creek and bring them down to the AML as mandated by the WFRHBA. The BLM is entrusted to protect the land from overgrazing. With the ongoing drought, the range could very easily be tipped into an unrecoverable state. Livestock can be kept off the land, if necessary. Horses must be gathered when they are overpopulated, to ensure grass and shrubs have a chance to store energy. Constant grazing doesn't allow this energy storage and the plants die. Horses are an invasive species. They are a feral domesticated animal, not native to the current ecosystem. They displace native wildlife. They must be protected under the law...but the law must be followed regarding their management. Lawsuits shouldn't have to be filed in order to get management to obey the law, which is to protect the range and manage for multi-use.	Comment noted. At this time, the Mount Lewis Field Office does not have approval to remove sufficient excess wild horses to achieve the high or low AML. Refer to Sections 2.2.1 of the EA.
2.4	State land Use	Speaking for the State Land Use Planning Agency, I support all efforts by BLM to	Comment noted. Refer to response 2.3 above.

	Planning Agency	reach AML on the range.	
2.5	Cece Neber Judith Fader	I recognize that the BLM Battle Mountain is headed in the right direction and I urge you to go the rest of the way toward a sustainable, humane and publicly acceptable management plan for the Fish Creek HMA.	
2.6	Return to Freedom Helene Beck Joan Black Lisa Boehlein Rosemary Freskos Diane Kastel AWHPC	Support the BLM's plan to use PZP fertility control to manage this population and to maintain natural sex ratios on the range.	
2.7	WHE	Support the proposed action as the option to best achieve all mandated objectives through a moderate adjustable approach (with the inclusion of the comments/revisions and recommendations contained in this letter).	Comment noted.
	WHE Rhonda Lanier	We recognize the flexibility of the proposed action, based on ongoing monitoring, to limit removals and adjust implementation of fertility control to achieve preservation of historic herd composition and to adjust AML.	
2.8	Eureka County Board of Commissioners	We are supportive of the efforts by BLM to reduce the overpopulation of horses and formulate a plan to bring the herd to AML.	
2.9	HSUS ²⁴	<p>The HSUS supports the efforts of the BMD in drafting a Proposed Alternative to use fertility control to slow the HMA's population growth rate. HSUS has long argued that the BLM needs to look further into the future in setting management goals instead of making short-term crisis decisions that prioritize removing horses from the range immediately. Instead we have pushed for the BLM to invest in contraception and other innovative strategies that will lower population numbers gradually.</p> <p>The 2013, NAS report found that BLM's practice of rounding up and removing a significant proportion of the herd's population every three to four years could be contributing to high horse population growth rates. The report suggested that the BLM implement fertility control practices, focusing specifically on PZP as one of the most promising methods for implementation.</p> <p>We are pleased to see that EA prepared by BMD, unlike EAs we have seen from other districts, seriously considers the long term effects of its immediate management decisions and invests in long term solutions that are both humane and fiscally</p>	

²⁴ Humane Society for the United States.

		<p>responsible.</p> <p>While the BLM invests its resources in a population growth suppression program, there will be more horses on the range than it views as optimal. This is because the BLM can't fund additional removals, increased numbers in long-term care, additional adoption marketing promotions, <i>and</i> fertility control. However, we cannot overstate the value of implementing comprehensive, holistic, non-lethal wild horse management approaches by, for example, increasing the use of fertility control – specifically PZP. Such an approach is vital to slowing wild horse population growth rates, leading to a reduction in the need for future roundups and removals.</p> <p>For these reasons, we support plan to implement fertility control on the Fish Creek HMA.</p>	
3. Opposition of Gather			
3.1	Public Interest Coalition Barbara Bessy Linda Arndt Linda Skidmore	Object to any removal of wild horses and burros.	Comment noted. The No Action Alternative was analyzed in the EA. Alternative 2 analyzes the treatment of the population with population growth suppression without removing wild horses from the range.
3.2	Public Interest Coalition Barbara Bessy Linda Arndt Linda Skidmore	Opposed to any type of helicopter roundup.	Comment noted. This was analyzed under Alternative 2 which does not include the use of helicopter.
3.3	Line Ringgaard Martina Truelsen/Nina Clausen Mary Baker Dittman	Oppose the wild horse gather.	Comment noted. The No Action Alternative was analyzed in the EA.
3.4	Chris Fairbanks	The BLM interpretation of the act is not in the horses favor. There is plenty of everything they need to have a viable herd selection. I wish them to remain free and untouched by man thinking pcp22 is needed. ZonaStat formulation is better than PZP-22. Craig Downer explains that with reduced forage and water, nature takes its course and reproductive rates are reduced.	Comment noted. Refer to Section 2.5.3 which discusses an alternative to “let nature take its course”. Also, refer to the No Action Alternative, which is analyzed in the EA, and Section 1.3 which describes the Purpose and Need for the Proposed Action.
3.5	Marybeth Devlin	BLM can -- and must -- cancel this misguided project and, instead, carry out the necessary reforms to achieve compliance with the spirit and the letter of the Law regarding the management of wild horses.	Refer to Response to Comments 1.1 above.
3.6	Lianne/Gwen Teeters	Stop the roundups. It is so expensive to use helicopters, maintain holding facilities, and using fertility treatments. All of which cause so much trauma to the horse families who	Comment noted. Refer to Section 3.2 of the EA which discusses the potential impacts to wild horses, as well as

		get injured or die. Mustangs value being free and keeping their families together and the little ones safe.	the description of gather activities in Appendix A Section I.C. Refer to Section 2.5.3 which discusses an alternative to “let nature take its course”. Also, refer to the No Action Alternative, which is analyzed in the EA, and Section 1.3 which describes the Purpose and Need for the Proposed Action.
3.7	Beth Winfrey Gary Iscoe Greenonyx yay Judy Merrick Kathy Pabst Lana Melby Mark Webb Anne Novak/Protect Mustangs	Leave the horses alone.	Comment noted. Refer to Section 2.5.3 which discusses an alternative to “let nature take its course”. Also, refer to the No Action Alternative, which is analyzed in the EA, and Section 1.3 which describes the Purpose and Need for the Proposed Action.
3.8	Carol Kyer Nicole Lauren Greenonyx yay Jana Hofeditz Joan Eukitis Lana Melby Linda Arndt Line Ringgaard Martina Truelsen/Nina Clausen Valerie Ornatowski Linda Pepin Judy Sheldon	Let the horses and burros remain wild and free/keep them wild. Keep them on the range.	
3.9	Carol Kyer Carol Menninger Diane Kastel Judy Merrick Rosemary Freskos	End/forgo BLM roundups.	
3.10	Nicole Lauren	Disapprove of BLM removing wild horses from their homeland.	
3.11	June Hazen	Not necessary to round up these horses and put into holding pens at the cost of their lives and family units.	Refer to Section 1.3 of the EA which explains the Purpose and Need for Action. Refer also to Section 3.2

			which discusses the potential impacts to wild horses under the Alternatives analyzed, including the Proposed Action.
3.12	Linda Skidmore	Opposed to inhumane method you utilize to gather wild horses.	Refer to Section 2.2 and Appendix A of the EA which describe the different methods used to gather wild horses and the potential impacts to wild horses under the Alternatives analyzed, including the Proposed Action.
3.14	Barbara Bessy	There are not enough Americans in the United States today that can afford to adopt and care for even one horse of those 50,000 horses!	Comment noted. Refer to Section 1.3 of the EA which describes the Purpose and Need for Action in the Fish Creek gather area. The current proposal for the first phase of the project is to remove only 200 wild horses. The objective is to remove only horses three years of age and younger, and highly adoptable which will reduce or eliminate the need for any to be held in LTPs. Alternative 2 does not include the removal of any horses from the range. The proposed action is fully in conformity with the laws and regulations as BLM tries to balance sustainable land management, responsible development and multiple use management based on principles of good land stewardship
3.15	Susan Galentine	Holding an additional 300 horses for adoption is insane when the BLM currently has over 5000 horses in holding that have not yet been adopted out. The BLM's continued practice of round-ups is not sustainable.	
	Return to Freedom	The practice of holding captured horses in short and long-term facilities is grossly expensive. Each horse costs \$1,500+ per year to maintain and there are over 50,000 horses held in such facilities. This roundup calls for adding 200 horses to this equation, which will only amount to more money, spent by taxpayers, in order to maintain them.	
3.16	Emily Pompei	There is no more room in holding so adding to the numbers already in holding is not a viable option for either the animals or the taxpayers.	
3.17	Judith Cassario	The holding areas already are full with too many horses at great cost.	
3.18	Susan Carter	There is no budget or room for additional horses in short-term or long term holding	
3.19	Henry Kimbell	Avoid removal of any additional wild horse and burro populations. With 50,000 horses and burros in holding at great expense to taxpayers, it is time to admit that the adoption program is a failure and further, that the American public is largely in favor of managing wild horse on the range.	
3.20	Return to Freedom	RTF opposes the removal of 200 wild horses in 2015 and any future planned removals.	
3.21	HSUS	Taxpayers are already footing the bill for the feeding of approximately 48,000 wild horses and burros currently in BLM's care. Every animal gathered and placed into holding facilities adds to the financial burden of the Wild Horse and Burro Program, and recent estimates show that one individual animal added could potentially drain the BLM's budget of at least \$46,000 over the course of his/her lifetime.	
4. Animal Health and Welfare			
4.1	WHE Rhonda Lanier	Field monitoring of current population of wild horses in the HMA shows mares in late term gestation. Although we do realize that CAWP is included in its draft form as an Appendix to all proposed actions, we make this notation in recognition that animal safety is a primary concern. Although perhaps outside the scope of this EA we recommend during pre-operation briefing to include a need for parameters of distance, speed, temperature and handling to be strictly monitored and adhered to.	Comment noted. The MLFO plans to discuss these concerns at the Pre-Work Conference. This is also in conformance with the Comprehensive Animal Welfare Policy included in Appendix G. Animal safety and welfare, especially of late term pregnant mares is a high priority. Additionally, conditions of the wild horses, terrain and the general environment will be monitored on a daily and even hourly basis to ensure that operations
4.2	Susan Galentine	The BLM has still not established a standard of care and/or safety precautions for	

		roundups and/or holding.	are in line with maintaining the highest degree of safety possible while still meeting the objectives of the gather. Due to the anticipated locations of trap corrals and of the wild horses, it is estimated that the majority of the wild horses will be located within five miles of the trap corrals. Additional wording was added to the EA to more clearly emphasize the need to exercise extra care when gathering late term mares and young foals. Refer to Appendix G of the EA which includes the Comprehensive Animal Welfare Policy. Refer also to Sections 3.9 of the EA which describe the measures that would be taken to ensure the highest level of safety for the wild horses and workers on site. Appendix A, Section III includes the Agency Expectations for the gather including humane care.
4.3	AWHPC	<p>If BLM does use helicopters to round up horses, AWHPC recommends the addition of strict policies addressing distance, pace, and temperature issues, as detailed below and attached, in the standard operating procedures (SOP) for helicopter roundups and/or the animal welfare policy. If a helicopter is to be used, we ask the BLM to consider and implement the following additional humane standards to improve standards for a helicopter roundup:</p> <p>Limit the distance horses may be chased by a helicopter to no more than five (5) miles.</p> <p>Require that the helicopter <i>not</i> chase/move horses at a pace that exceeds the natural rate of movement of the <i>slowest</i> animal in the band. Every effort should be made to keep older, sick and young animals together with their bands as they are moved into the trap. If there are compromised, old, weak or young animals in a small band – the helicopter should not move or capture animals in those small bands.</p> <p>Establish strict parameters for suspending helicopter roundup operations in temperatures below freezing or over 95 degrees F.</p> <p>The distance, pace, and temperature issues outlined in the BLM’s helicopter SOP, (EA at 108-9), and animal welfare policy is inadequate. For example, chasing wild horses with helicopters for “ten miles or more” is not acceptable in any situation. Equally inadequate is the lack of definition of when “operations may cease based on temperature” – specific temperature parameters are needed rather than relying on inconsistent, subjective personal opinions. We urge the BLM to adopt the above stated specific and quantifiable humane standards rather than allowing the current inadequate</p>	Refer to Response to Comment 4.1 and 4.2 above.

		standards and policies to stand.		
	Return to Freedom	Should a helicopter be deemed necessary, consider the following in order to improve helicopter round ups: <ul style="list-style-type: none">• Do not run horses for over five miles• Necessitate the helicopter to not push horses to run faster than the slowest individual horse or foal.• Outline specific temperature requirements to cancel use of helicopter, for example, below freezing or over 95 degrees F.		
4.4	Helene Beck Lisa Boehlein Molly Metzler Rosemary Freskos Sandra McPherson Emily Pompei Henry Kimbell Diane Kastel Cece Neber Barbara Bessy	If helicopter roundups proceed, they should be conducted under strict animal welfare protocols.		
4.5	AWHPC	Implement AWHPC’s Catch-Treat-Release (CTR) draft SOP (Attachment 5) to ensure humane treatment by maintaining the integrity of wild horse social bands. Tenets included in the CTR SOP should be incorporated into non-CTR helicopter roundups. Maintaining social groups of the captured horses will reduce the stress and trauma of the roundup. The separation of socially bonded horses – or those in social groups either harem bands or bachelor bands – is highly stressful and traumatic. Keeping social groups together will increase the success of future recapture of horses for future applications of PZP fertility control.		Comment noted. The number of bands, density of wild horses and the needs and objectives of the gather operation will likely preclude the ability to gather wild horses by family group during the first phase of the plan. Future phases of the plan using bait and water trapping may allow for the gather and release of wild horses by social group. Due to the terrain and known movement patterns of the Fish Creek HMA, it is anticipated that released wild horses will have an opportunity to re-group. Trail cameras will be used to collect information about groups of horses prior to and following the gather where possible, and through future phases of the plan.
	Donna Canada Elizabeth Brister Helene Beck Joan Black Judy Prisoc Karen Richards Kay Robinson Kimberly Berman Lisa Boehlein	Molly Metzler Emily Pompei Rosemary Freskos Sandra McPherson Henry Kimbell JC Coleman Diane Kastel Betty Fabiani Carol Menninger Judith Cassario Cece Neber	All Catch Treat and Release operations should be conducted in a manner that maintains the integrity of wild horse social bands. When horses are captured and treated, they should be released in their social structures, family bands. Keep horses together with their family groups. They are social animals and suffer when separated from mates and offspring.	
4.6	AWHPC	Concerns about the negative animal welfare implications of helicopter roundups are		Refer to Response to Comment 4.1and 4.2 above. Extra

		particularly acute in winter, when heavily pregnant mares will be subject to helicopter stampedes over miles of difficult terrain. Previous BLM data indicate that these mares suffer a high level of spontaneous abortions and the number of foal deaths can also be high. (See Attachment 4.)	care will be taken to ensure the welfare of the mares being gathered. There is no indication that the Fish Creek wild horses will be in a similar condition to the Calico wild horses. Refer to Section 3.2 of the EA which discusses miscarriage.
4.7	AWHPC	<p>The EA must analyze the humane recommendations made by the Humane Society of the United States (HSUS) regarding roundups. If helicopters are used, the BLM should install real-time video cameras on helicopters and at trap and holding corral locations (Attachment 6). This recommendation of real-time cameras is also supported by a report commissioned by Cattoor Livestock Roundup, a long-time roundup contractor hired by the BLM which states, “Video monitoring of animal operations is a good way to ensure humane handling is taking place on a daily basis. Video cameras mounted in helicopters and in the capture and holding pens can also render the activists videos as simply nothing more than proof that your business ‘walks the walk’ when it comes to upholding animal welfare standards.” The report was prepared by Mark J. Deesing, Animal Behavior & Facilities Design consultant for Grandin Livestock Handling System. Deesing is an assistant to the highly regarded livestock industry consultant Dr. Temple Grandin.</p> <p>Video cameras will improve the transparency of roundup operations and enable the BLM and the public to monitor the direct impact that motorized vehicle usage has on wild horses and the environment. In addition, real-time cameras should be installed on the trap, the corral and temporary holding pens, again, so that BLM personnel, public and media can monitor the entire roundup operation and treatment of the horses. AWHPC would be happy to provide technical assistance and financial assistance to establish these real-time cameras as described above.</p>	There are currently no requirements in the contract for the gather contractor to provide these services. However, as the gather is conducted under professional supervision, best practices are being implemented during the gather. Even if possible, the remoteness and lack of service in the proposed gather location may preclude the ability to transmit video in real-time. Photos and video will be posted on You Tube and Flickr. The public is welcome to attend the gather permitted that visitation protocol is followed. The use of video cameras at a wild horse gather is a National WHB policy issue. Should the BLM Nationally determine that this recommendation is to be implemented, then the MLFO would comply during future gathers.
4.8	AWHPC	<p>Costly and traumatic helicopter roundups should be used only as a last resort. AWHPC supports the use of bait and water trapping and remote darting as the priority management tool over the next ten years, as outlined in Alternative 2.</p> <p>AWHPC recommends that fertility control be administered through remote darting and/or bait and water trapping.</p>	<p>Comment noted.</p> <p>The Proposed Action, Alternative 1 and 2 involve the use of bait and water trapping. Alternative 2 does not include the use of helicopter. The Proposed Action and Alternative 2 involve on the ground field darting to continue PGS treatment. The large size of the HMAs, population size and terrain make the use of bait and water trapping or darting as the sole method of applying fertility control impractical.</p>
	HSUS	Baiting and opportunistic darting to stabilize the herd must replace large-scale helicopter gathers whenever possible. As with most wild animals, any effort to capture, handle, restrain, and transport wild horses and burros, no matter how carefully planned and executed, will inevitably cause a certain amount of stress and discomfort for the animals involved, and under some circumstances, cause injuries, illnesses and deaths. This fact in no way reduces or minimizes the ethical obligation of those charged with managing wild horses to reduce, to the greatest extent possible, the physical and behavioral stress	

		these wild animals endure during gathers operations.	
		We strongly support the use of passive gather techniques, such as bait or water trapping, whenever possible. When feasible, passive gather methods are preferable to helicopter-driven gathers, especially in severe weather conditions where the use of aggressive gather techniques may compromise the health and well-being of the targeted animals. Passive gathers also allow the agency to capture entire family bands, and thus avoid separating band members from one another.	
	Return to Freedom	Helicopter roundups are costly and negatively impact the habitat, wildlife and wild horses; and should be used only as a last resort/when other methods have proven unsuccessful. We support the use of bait and water trapping and darting with fertility control/PZP as means of population management. This reduces stress to these sensitive herd animals and increases the possibility of maintaining the family bands intact.	
	Barbara Bessy	Utilize bait-trapping whenever possible and remote darting for PZP contraceptives. It has been successful in other herds in WY, MT, and CO. It is less traumatic to the Wild Horses, especially the very young. Remote darting results in less injuries to the Wild Horses. These methods are less expensive than a roundup and the expense of long-term holding in a corral.	
	Sheryl Be kooky	Would it not be safer and easier to dart the mares with PZP like is done in other areas of the country? Then leave the herd where they are. Safer, and less traumatizing for the horses. What can the public do to help support darting the mares and leaving the herd there rather than do a gather?	
	Donna Canada Elizabeth Brister Helene Beck Joan Black Karen Richards Kimberly Berman Linda Arndt Lisa Boehlein	Molly Metzler Sandra McPherson Rosemary Freskos Henry Kimbell Judith Cassario Betty Fabiani Cece Neber Diane Kastel	Use bait-trapping when necessary to removed horses--no more helicopters. Use helicopter roundups only as a last resort. Priority must be given to less traumatic bait trapping and remote darting methods for application of PZP birth control and any removals that do take place.
4.9	HSUS	We are disappointed that the BLM's National Standard Operating Procedures for Gathers allow contractors and field personnel an inexplicable amount of discretion with issues related to temperature, the distance horses must run and speed of the stampede. The BLM's National "Standard Operating Procedures for Wild Horse and Horse Gathers" state only that "rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI," and that "there may be days when the Lead COR determines that gather operations must be suspended or ceased based on temperatures or other environmental conditions"	Comment noted. Refer to Response to Comment 4.1 and 4.2 above.

		While we understand that the Battle Mountain office simply included the national SOPs within its draft EA, we request that the several basic minimum parameters are established before conducting gather operations. For instance, we encourage the BLM to cease conducting gathers at this HMA in temperatures above 90F and below 32F.	
4.10	HSUS	The HSUS recognizes that there are certain situations in which the BLM may deem the use of helicopter gathers necessary in order to achieve high gather efficiency. In those cases, we request that gather contractors are held to the most humane standards possible through the implementation and enforcement of its Comprehensive Animal Welfare Program (CAWP).	The Comprehensive Animal Welfare Program (CAWP) has not been approved by BLM at this time. The Comprehensive Animal Welfare <i>Policy</i> is located in Appendix G and will be adhered to. Implementation of Welfare Programs or other policy in the future would be implemented during future phases of the project as these are approved and adopted.
4.11	HSUS	We request that the Battle Mountain District increase transparency of its gather by: Requiring the installation and use of real-time cameras on contractor helicopters during helicopter drive trapping gather operations, and, requiring the installation and use of real-time cameras on traps, corrals, and temporary holding pens. We also request that the Battle Mountain office consider the recommendations included in the attached document "Recommendations on the Bureau of Land Management's Standard Operating Procedures for Wild Horse and Burro Gather Operations."	Refer to Response to Comment 4.6 above. No attachment was submitted with the comment letter from HSUS.
4.12	Gail Kenny	Isn't the use of helicopters a form of abuse?	The potential impacts of the use of helicopters to gather wild horses are discussed in detail in Section 3.2 of the Preliminary and Final EA, with additional discussion of methods to reduce stress and injury to wild horses included in Section 2.1, 3.2, and 3.10. Appendix A, also details Standard Operating Procedures developed over the past 35 years to ensure the well-being of wild horses during gathers and maintain human safety. Section III of Appendix A also includes the Agency Expectations for the planned gather, and Appendix G includes the Comprehensive Animal Welfare Policy. Various professionals of the veterinary and equine community have observed gathers and holding facilities, and followed up with reports of their findings and recommendations to BLM. For the most part, the team members found that wild horse and burro gathers are necessary, and conducted humanely. Many of the recommendations have already been implemented by BLM and the gather contractors. These reports can be
	Linda Pepin Ronald Coon Nicole Lauren Karen Richards	These round ups are cruel/inhumane.	
	Anna Catherman	For a socially complex species like the horse, the experience [gather] is highly stressful.	

			<p>viewed at these locations:</p> <ul style="list-style-type: none"> Office of Inspector General (OIG) report on the WHB program: http://www.doioig.gov/images/stories/reports/pdf/BLM%20Wild%20Horse%20and%20Burro%20Program%20Public.pdf American Horse Protection Association Independent Report: http://www.blm.gov/wo/st/en/info/newsroom/2010/december/NR_12_03_2010A.html American Association of Equine Practitioners Report: http://www.aaep.org/images/files/AAEP%20Report%20on%20the%20BLM%20Wild%20Horse%20&%20Burro%20Program%20Final.pdf
4.13	Renee Espenel	I encourage the exploration of how we can be more humane, eliminate the brutal helicopter round-ups and still maintain a wild herd for PUBLIC enjoyment. I would like to see more of the public tax dollars utilized for preservation.	Comment noted. Refer to Response to Comment 4.11
4.14	Carol Kyer	The BLM sells wild horses to Canada and Mexico for Slaughter and for use in Rodeo. Sale no horse to kill buyers or other countries or rodeo circuits!	The BLM does not transport unadoptable wild horses to slaughter and this would also be contrary to Congressional directives set forth in the most current Appropriations bills. BLM only sells wild horses “with limitations,” which prohibits the purchaser from sending the wild horses for slaughter, or use as bucking stock in rodeos. BLM does not allow the sale of wild horses that would result in slaughter.
4.16	Carol Menninger Judith Cassario Judy Prisoc June Hazen Kay Robinson Linda Skidmore Karen Richards	Don’t use helicopter to gather wild horses. Less harmful and life threatening methods should be utilized than helicopter round-ups.	Comment noted. The EA includes analysis of bait and water trapping under the Proposed Action and Alternatives 2 and 3. Alternative 2 does not include the use of helicopter.
4.17	Judy Prisoc Kay Robinson	Please be kind. I know that these are wild animals and they are dangerous.	Comment noted. Refer to Response to Comment 4.1, 4.2 and 4.12 above.
4.18	June Hazen	Wild horses chased to the point of exhaustion by helicopter then harmed in the holding pens before hauling to bigger pens without proper shelter and care.	
4.19	Marybeth Devlin	Ban the use of whips and electric prods in gathering and maneuvering wild horses. Implement cruelty-free, whip-free, prod-free operations. No ear-pulling or tail-twisting.	

		Any contractor observed abusing a wild horse should be banned.	
4.20	Sheryl Be kooky	Gather the wild ones as gently as possible. Refer to new material used for round pens made of very strong but flexible "screening" type material. It is called a flex pen. Horses bounce right off of it as it gives with them and bounced right back. That might be something to consider for the capture pens either instead of pipe panels or in conjunction with them. .	This information will be passed onto the contractor. It may not be feasible to use the product in a fashion that requires mobility. Thank you for this information.
5.1	WHE Rhonda Lanier	BLM should give additional consideration to reduction in the number of horses removed based on population modeling used in Alternative 2, No Removals. The EA includes this notation from the WinEquus modelling:, <i>"The ending population in 2025 according to the model would be 100 wild horses higher than the Proposed Action."</i> We ask that you consider an initial reduction of numbers removed and incorporate into the "proposed action" a reduction from 200 to 100 wild horses to be removed; with the recognition of ongoing selective removal and fertility control measure (adjustments based on monitoring would be available in the ten year plan). Holding space is a real concern as we move into a potential year of additional stressors due to drought and increasing concerns over availability of space should an emergency such as fire occur.	Comment noted. The conditions discussed in Sections 1.3 , 3.2 and Appendix D of the EA indicates that excess wild horses exist and need to be removed. The current phase of the gather does not achieve the established AML, and only includes approval to remove 200 horses in 2015. The post gather population will still be 175-200% of the established AML. With three years of drought, and another year potentially for 2015, the reduction of the population by 200 wild horses rather than 100 would provide a better opportunity for range recovery and animal health. Additionally, the wild mares that remain on the range after the gather (estimated to be 150-175) will have foals in the spring 2015, further increasing the population by an estimated 50-75+ wild horses. Alternative 2 analyzes a no removal scenario.
5.2	HSUS	Maintaining round-up and removal as a primary management strategy has led to a financially unsustainable Wild Horse and Burro Program. While we recognize that this EA proceeds with the goal of reducing the need for removals over the course of the next 10 years, the initial removal of 200 horses will place additional stress on an already financially crippled Wild Horse and Burro Program. We request that the Battle Mountain Office keep removals to an absolute minimum and instead strive to lower population levels gradually with widespread implementation of fertility control within the HMA.	Comment noted. Alternative 2 analyzes the use of PGS with no removals of wild horses from the range. Though viewed by some members of the public as a less costly alternative and less stressful on the wild horses, Alternative 2 is not the optimal or recommended Alternative for several reasons. The BLM has made the determination that an excess population of wild horses exist, which compounds the issues with drought conditions experienced since 2012. Failure to remove excess wild horses is not consistent with the WFRHBA or proper wild horse management. Though the MLFO has approval to remove 200 of the horses, and will not achieve the established AML. However, this reduction of the population by approximately 1/3 will provide needed relief to the range and should avert emergency conditions in the short term. Currently, the MLFO does not have a fertility control darting program in place. To reduce the population by 200 would reduce the numbers of mares that would need to be darted and re-treated with fertility control, and would enable data collection that can be used on other HMAs in the future and potentially expand the program. Efficient and accurate data collection and re-treatment would also require
	AWHPC	AWHPC opposes the removal of 200 wild horses from the HMA. Accommodate the present wild horse population and reduce its size gradually, over time, through the PZP fertility control program, in accordance with Alternative 2, (EA at 17-18). Through use of PZP fertility control, BLM has successfully managed population growth and attained zero population growth in other HMAs, such as the McCullough Peaks herd in Wyoming, and we believe that your program should be given the time necessary to gradually reduce the herd size through fertility control and natural attrition. Administering PZP and keeping these animals united with their families on the range is more in line with the BLM's mandate for "minimally feasible management" and is a far more humane and fiscally sustainable management approach than permanently removing wild horses from the range.	

	<p>The National Academy of Sciences (NAS) report entitled <i>Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward</i> (Attachment 1) upheld the validity of PZP fertility control for use in wild horses: (MLFO Note: <i>NAS Report also provided by AWHPC, with NAS Report at 306, 216, and 7 referenced and paragraphs included, as well as Attachment 1</i>).</p> <p>Published research documents both the cost-effective nature of using PZP fertility control (Attachment 2) and its success in attaining population goals (Attachment 3).</p> <p>As mentioned in the NAS report and as cited in the EA, the BLM is spending a large percentage of its Wild Horse and Burro Program budget on the stockpiling of approximately 50,000 wild horses in government holding facilities – this is based on the agency’s failure to humanely manage the wild horse herds on the range and its insistence instead on continuing its roundup- remove-warehouse approach. Although this EA outlines a path for increased use of fertility control, it still includes large-scale wild horse removals, which will exacerbate the fiscal crisis currently faced by the BLM’s Wild Horse and Burro Program.</p>		documentation of horses which will be more feasible once the horses have all been captured and receive identification freezebrands. To implement this program without a helicopter gather or removal of any wild horses would make success difficult to improbable. With respect to the number of wild horses in holding, the MLFO is proposing to remove only wild horses three years of age and younger that will be very adoptable, and thereby should avoid contributing to increased numbers in the LTPs.
Helene Beck Kimberly Berman Linda Arndt Lisa Boehlein Cece Neber	Due to the current stockpiling of 50,000 wild horses and burros in government holding facilities, removals must be kept to an absolute minimum and reserved for verifiable emergencies. Too many horses stockpiled in long and short term holding facilities.		
Return to Freedom	<p>RTF strongly opposes removal of 200 wild horses from the Fish Creek HMA.</p> <p>We suggest the BLM implement use of porcine zona pellucida (PZP) fertility control as a means to, over time, decrease wild horse populations. This is in accordance with Alternative 2 (EA at 17-18). This method has already proven effective in other HMAs, National Parks as well as sanctuaries.</p> <p>RTF strongly urges the BLM to not round up more horses. If this must be done, the BLM should consider lowering the number of horses captured and instead allow for the PZP vaccine to control populations over the long term. This plan results in fewer horses in holding facilities and on the range.</p>		
Donna Canada Elizabeth Brister	Betty Fabiani Molly Metzler Sandra McPherson Barbara Bessy	Gradually reducing the population over time/to keep herd size down by using fertility control and natural attrition.	

	Helene Beck Joan Black Karen Richards Kay Robinson Kimberly Berman Lisa Boehlein	Carol Menninger Cece Neber		
5.3	AWHPC	<p>AWHPC supports the BLM's plan to maintain the natural mare to stallion ratio and to refrain from adjusting the sex ratio to favor stallions. AWHPC opposes Alternative 3 which outlines the possibility of unnaturally skewing the sex ratio in the Fish Creek HMA, favoring stallions and resulting in large bachelor bands within the area.</p> <p>The BLM in other wild horse roundup EAs has acknowledged that a natural sex ratio generally favors females, or may be close to a 50:50 distribution. These EAs have predicted that unnatural sex ratios of 60:40 or higher favoring males could have impacts.</p> <p>AWHPC encourages the BLM to strive to maintain natural sex ratios of the individual populations on the range, and that any removals that do take place should be conducted in accordance with that goal.</p>	Comment noted.	
5.4	Eureka County Board of Commissioners	We implore BLM to immediately bring the Fish Creek HMA to AML and dispense with the superfluous efforts outlined in the EA to administer PGS and piecemeal herd reduction schemes.		Currently, the MLFO has approval to only remove 200 wild horses from the Fish Creek HMA area in 2015. Should the MLFO receive approval to remove additional excess wild horses, it would do so through helicopter or bait and water trapping. At this time, the fertility control PZP-22 and ZonaStat-H are the only approved population growth suppressants for use by BLM on wild horses. Due to the low removal numbers approved, the MLFO will plan to implement a successful and efficient fertility control program to control population growth and achieve the AML should additional removals not be approved.
5.5	Return to Freedom	The Fish Creek HMA has abundant water, the horses are healthy and diverse in all seasons and so therefore it is an ideal habitat to implement minimally invasive wild horse management utilizing the PZP contraception vaccine. It satisfies the spirit of the people and will prove to be fiscally responsible as an alternative to the ongoing expense of capture, removal and holding.		As discussed in Sections 1.3, 3.2, 3.6 and Appendix D of the EA, waters are limited for wild horses in the HMA, particularly in drought years. In fact, The MLFO took these factors into consideration when establishing the AML in 2004. Additionally, BLM does not hold water rights for many of the waters within the HMA. A successful Population Growth Suppression program

			via darting, bait and water trapping and helicopter gathers would reduce the need to remove as many horses into the future, as well as to reduce the need for large scale gathers.
5.6	Return to Freedom	The third alternative proposes unnaturally skewing the sex ratio for the released horses in the Fish Creek HMA, favoring stallions which will result in more bachelor bands, increased aggressive competition for mares and breeding of younger fillies within the area.	Comment noted.
5.7	Return to Freedom	We encourage the BLM Battle Mountain District to investigate these suggestions in order to positively reform and revamp the wild horse program. It is time to implement a new approach with proven and humane techniques to restore the balance for wild horses and all wildlife sustained on America's rangelands. We look forward to working with you.	Comment noted.
5.8	Susan Carter	Alternative 2 is preferable.	Comment noted.
5.9	Anna Catherman	This is what I believe would be the best management strategy for Fish Creek horses. What if you used Fish Creek HMA as a study area to gain more data on how to effectively manage horses? I would be curious to find out how a herd would behave, long term, without gathers or fertility control. The money that you would be spending on helicopter driving, and fertility control darting, could be used on tracking individual horses, doing more accurate population studies, and finding out more about wild horse foaling rates. While it is commonly believed that wild horse populations will not self-regulate, I have yet to find an example where the BLM put that well-known "fact" to the test. As Fish Creek has not been gathered for nine years, and no mares have been treated with fertility control since 1999, a ten or twenty year study could begin immediately.	<p>The Proposed Action and Alternatives include a data collection component to document as much about the movement and behavior patterns and the success of the fertility control as possible. It is believed that an intensive and large scale field darting or bait and water trapping plan to continue fertility control treatments will need to have a great deal of information available to develop efficient and successful treatment strategies. Thus, it is possible that much can be learned through this process that will be able to be expanded to other HMAs and to improve the treatment program in the Fish Creek HMA in the future.</p> <p>Refer to Sections 2.5.3 and 3.2 of the EA which discusses self-regulation. The rangelands of central Nevada are extremely arid and easily damaged by overuse. When a wild horse population increases to the point that lack of forage and water cause the population to be limited, widespread, irreparable damage to the rangelands results, and widespread suffering of horses occurs, affecting mares and foals most severely. This is not representative of Thriving Natural Ecological Balance as required by the WFRHBA, constitutes inhumane treatment and would impede or preclude management of healthy wild horses and healthy rangelands into the future.</p>
5.10	Carol Kyer	Capture bachelor stallions, castrate them. Let them heal and set them free again! Capture young mares for adoption to loving family home ranches.	Comment noted. To geld some of the stallions would still leave ungelded stallions available to breed mares, which would not reduce population growth rates substantially. To remove young mares only, would modify the sex ratio which is analyzed in Alternative 3. For the first phase of this project, it is anticipated

			only young horses three years of age or younger would be removed and enter the adoption program.
5.11	Marybeth Devlin	Although the subject EA is said to be "preliminary," the roundup already appears on the National Schedule, and is to be conducted three weeks from now -- February 14-23, 2015.	For planning purposes, and to notify the interested public, a gather schedule is issued when it is anticipated gathers will occur. This does not preclude the completion of appropriate NEPA documentation and issuance of project specific Decisions.
5.12	Janet Schultz	Page 2. 200 excess horses to be taken off out of a total 500-549. 300 to be released back with 150-175 PZP'd or other current formulation at a sex skew of 60% stallions to mares (assuming dry, pregnant, with foals at side, fillies, colts). What will make up the 40%. The plan fails without that disclosure and flies in the face of known behavioral effects of few mares cycling but incapable of settling. This is an attack on the language of the act that the horses shall not be harrassed.	The Proposed Action does not include the adjustment of sex ratio of the post gather population. As stated in Section 2.2.1 and Table 9, the post gather population goal will be 50:50 mares to studs under the Proposed Action. The potential effects of adjustment of sex ratios are discussed in Section 3.2 for Alternative 3.
6.1	WHE	Page 58 notation of genetic analysis: Historically this analysis is utilized to track herd generalities. We strongly suggest inclusion of a tracking method specific to each individual wild horse released. The information could be utilized to create complete analysis of any actions utilizing birth control treatment in order to conform with guidelines 5.4-5.7 of the standards of "Healthy Wild Horse and Burro Populations" noted in Section 1.6.	The MLFO plans to coordinate with Dr. Cothran to develop a genetic monitoring and tracking program. This has been added to the several sections of the Final EA. The MLFO also plans to continue to work with known professionals and geneticists that are researching the genetics of the curly horses in hopes of obtaining additional information about their origin and the nature of the curly genetics. The HMAs have to be managed on a population basis rather than an individual animal basis, though collecting certain types of information about each animal may be of interest and may also be possible under the data collection components of the plan outlined under the Proposed Action.
6.2	Marybeth Devlin	The overstated population of the Fish Creek herd is still below minimum-viable population (MVP).	<p>A minimum-viable population specific to the Fish Creek HMA has not been ascertained. Per WHB Handbook 4700-1: "<i>A minimum population size of 50 effective breeding animals (i.e., a total population size of about 150-200 animals) is currently recommended to maintain an acceptable level of genetic diversity within reproducing WH&B populations (Cothran, 2009). This number is required to keep the rate of loss of genetic variation at 1 percent per generation. Animal interchange between adjacent HMAs with smaller population sizes may reduce the need for maintaining populations of this size within each individual HMA. Research has not yet established a recommended minimum breeding herd size for burros.</i>"</p> <p>As described in Section 3.2 and Appendix B, movement between the Fish Creek and other HMAs likely occurs. Monitoring efforts identified under the Proposed Action may help to increase the knowledge of such</p>

			movement patterns. Refer also to Response to Comment 6.1 above.
6.3	FRER ²⁵	BLM should provide analysis on the current genetic diversity of the herd. The Preliminary EA should be modified to sufficiently analyze the Proposed Action's impact on genetic diversity/viability of wild horses in this HMA. This Preliminary EA includes broad actions that will reduce populations and genetic variability.	<p>Discussion of the genetic variability of the Fish Creek HMA is included in Section 3.2 and Appendix B of the EA. An assessment of the potential impacts to genetic variability is also discussed in several locations in the Environmental Consequences portion of Section 3.2 under the discussions: <i>Wild Horses Remaining or Released into the HMAs following Gathers, Impacts Common to the Proposed Action and Alternative2 (Bait/Water Trap, Booster Via Darting), Impacts Common to the Proposed Action, Alternative2 and 3 (Implementation of Fertility Control), Differences Between Fertility Control Alternatives (Proposed Action, Alternative 2 and 3)</i> and in several locations within Chapter 4 Cumulative Effects Analysis. The 2010 Genetic Analysis Report for the Fish Creek HMA has also been added to the Final EA in Appendix I.</p> <p>As stated in the Section 3.2 of the EA, relevant to the treatment of mares with fertility control and the effects on genetics: <i>every mare prevented from being removed, by virtue of contraception, is a mare that will only be delaying her reproduction rather than being eliminated permanently from the range. This preserves herd genetics, while gathers and adoption do not". Kirkpatrick et al. (2010).</i></p>
6.4	FRER	BLM dismisses any concerns about the effect a gather would have on the genetic diversity of the HMA by citing genetic analysis from 2005.	Genetic variability and health of the Fish Creek HMA is discussed many times throughout the EA as indicated in Response to Comment 6.3. The genetic variability has certainly not been dismissed. Following collection of blood samples during the 2005 gather, Dr. Gus Cothran completed the report on the genetic analysis for the Fish Creek HMA, which was received by BLM in 2010. This is the baseline information on genetics for this HMA. The second part of the Fish Creek HMA gather was completed in 2006, and no other gathers have been completed, thus no other opportunities to collect samples for genetic analysis.
	FRER	Preliminary EA, p. 45. BLM has not performed genetic analysis on wild horses from the Fish Creek HMA since the 2005 gather, and even then only 23 blood samples were submitted for analysis. Preliminary EA, p. 40.	At least 5 HMAs administered by the MLFO have been sampled more than once for genetic variability. Through the analysis, the reports received do not indicate that the gathers or treatment with fertility control resulted in any significant negative or unacceptable impacts to the genetic variability. In the 2010 report received on the Fish Creek HMA genetics, Dr. Cothran concluded that <i>"the AML of this herd is fairly high as is variability so no action is required at this time"</i> . Refer to the Genetic

²⁵ Front Range Equine Rescue.

			Analysis Report which has been added to the Final EA in Appendix I.
6.5	FRER	BLM acknowledges that it does not have a genetic baseline but plans to assemble the necessary genetic information during the gather: “Hair samples would be collected from an adequate sample size of released wild horses during the initial gather project in order to monitor the genetic health of the wild horses.” Preliminary EA, p. 22. This process is backwards; BLM should have current information on herd genetic diversity and health <i>before</i> deciding which animals will be removed and which will be returned to public lands.	The genetic baseline is the report received in 2010 from the samples collected during the 2005 gather of the Fish Creek HMA. Refer to Response to Comment 6.4 above. The 2010 Genetic Analysis report for the Fish Creek HMA has been included in the Final EA as an Appendix so that the reader can view the information presented by Dr. Cothran for this HMA.
6.6	FRER	<p>The 2005 study indicated “some risk of future loss of alleles,” or certain types of genes – in other words, a hindering effect on genetic health and diversity of the herd. Preliminary EA, p. 124.</p> <p>Without more data, there is no way of knowing the genetic viability of the herd and the potential damage to genetic diversity that could result from the Proposed Action.</p> <p>Without clear and reliable science to measure a herd’s current genetic viability, removing animals could have the unintended consequence of leaving a remaining herd that is genetically unviable.</p>	<p>In all Genetic Analysis reports analyzing wild horse genetics, the number of variants with a frequency below 0.05 are identified as a measure of the risk of future loss of alleles which is compared to the “feral” horse mean. Thus, every HMA sampled will reflect some level of risk of future loss.</p> <p>The 2010 Fish Creek Genetic Analysis report also reflects that the high number of alleles with low frequency could be due to mixing.</p> <p>2010 Fish Creek Report concludes that the herd shows a relatively high genetic variation, indication of mixing, and a mixed breed origin of the herd. Additionally, the number of variants (61) is well above the feral mean for wild horses (53.5) at the time of the report.</p> <p>With the current large population, expected post gather population of 300-349 wild horses, suspected mixing with adjoining HMAs and baseline genetic variability that is relatively high, there is no indication that any of the Action Alternatives in the Final EA would lead to a population that is genetically unviable.</p> <p>A larger sample size will be collected during the next gather and the BLM will be collaborating with Dr. Cothran to assess the overall genetic health of the HMA. Refer also to Response to Comment 6.1, 6.3, 6.4 and 6.5 above.</p>
6.7	FRER	<p>BLM must be cognizant that when it removes wild horses and burros from public lands, BLM directly reduces the genetic diversity of the targeted herds.</p> <p>The Preliminary EA presents a Proposed Action that will permanently remove 100 horses from the HMA without any regard for the genetic diversity of the horses that will remain after the gather, thus limiting the extent to which horses and burros can not only exist but actually thrive as</p>	Throughout the EA, the genetic health of the Fish Creek is discussed in numerous locations in context with the Proposed Action and other Alternatives, including removal of 200 young wild horses, and a post gather population of 300-350 wild horses. With the 2010 Genetics report indicating no action needed and relatively high genetic variation of the wild horses returned to the HMA in 2005, it is expected that the genetic variation of the HMA nine years later is just as high as, or higher than it was in 2005. Also, with a post gather population of over 300 horses and

		a metapopulation.	suspected movement with adjacent HMAs there is no indication that the future of this population will be in any way limited. Refer also to Response to Comment 6.1, 6.3, 6.4 and 6.5 above.
6.8	FRER	<p>The NRC Report highlights that BLM does not yet have a reliable model or approach to population monitoring and genetic diversity assessments. BLM provides no genetic baseline for future management actions, and no reliable scientific method being reported as the basis for the conclusions reached.</p> <p>With this existing fundamental concern about population data and herd health, BLM has not presented a supportable management basis for recommending the gather of the entire population of the Fish Creek HMA and removal of 100 animals.</p>	<p>As discussed above, the 2010 Genetic Analysis report provided by Dr. Cothran does provide the genetic baseline for this HMA. The genetics analysis provided by Dr. Cothran is the best available data as to the genetic variability of the Fish Creek HMA. This together with the recommendation that no action was warranted in 2010 due to the relatively high genetic variation, relatively high AML and other factors discussed above provides that the Fish Creek HMA genetic health is at levels above that for concern at this time. Samples collected for genetic analysis during the 2015 gather, and the subsequent analysis will be assessed in comparison to the 2005 baseline will provide for additional analysis and recommendation from Dr. Cothran about the future of the Fish Creek HMA genetic health. Refer also to Section 1.1, 1.2, and 1.3 of the EA for information about the rational and Purpose and Need for Action.</p> <p>Through the Proposed Action, additional data beyond that which is typically collected in most Nevada HMAs will be collected such as future distribution and movement patterns, behavior patterns, foaling rates, and genetic tracking of individual animals to the extent possible. Refer to Response to Comment 6.1 above.</p>
6.9	FRER	<p>BLM intends to vaccinate as many mares as possible with a fertility control drug. Preliminary EA, p. 8. While FRER agrees that fertility control measures are important tools in managing wild equid' populations, there is a concern about the application of fertility control measures in the absence of a reliable, thorough, and scientific evaluation of current population size and, more importantly, genetic health and robust genetic diversity within a population.</p>	<p>Refer to Response to Comment 7.3 above. There is no data to support that application of fertility control would harm the genetic health of the HMA. The fertility control vaccines ZonaStat-H and the time release pellets PZP-22 are both proven reversible and mares that do not continue to be treated would return to fertility. Treatment in the first phase of the plan would be in conjunction with additional genetic sampling of a large sample size. Results from that sampling could influence the number and age of wild horses treated or retreated with fertility control in future phases of the project as stated in 2.3.6. <i>Activities Common to Bait/Water Trapping and Helicopter Gathers</i>, growth rates, genetics data and other herd characteristics would be examined at to determine if all, or which mares should be treated. Within Section 3.2, <i>Monitoring and Animal Identification</i> it is stated that future analysis of population growth or decline, genetics and other factors would be completed to assess the future number of mares to be targeted for initial treatment with PZP-22, booster treatment or no treatment at all.</p> <p>A successful population growth suppression program would mean fewer</p>

			excess wild horses removed from the range in future years, a more stable population, less risk of emergency conditions, and maintenance of genetic health.
6.10	Renee Espenel	I am concerned as to what the temporary sterilization will do to the wild horse gene pool.	Refer to Response to Comments 6.1, and 6.3-6.9 above.
	Anne Novak/Protect Mustangs	When you take too many away from the herd you destroy genetic variability.	
	Diane Kastel Rosemary Freskos	Removal of wild horses over 10 years to 170 may compromise the genetic viability of these herds.	
6.11	Linda Arndt	The BLM was charged to protect the wild horses, not insure their demise by creating genetically non-viable herds numbers.	As discussed in the Response to Comments above, the current genetic variability of the Fish Creek HMA is relatively high according to the Genetic Analysis Report of 2010, which has been added to the Final EA in Appendix I for the reader to review. The large majority of the HMAs administered by the Battle Mountain District exhibit genetic variability above the critical levels identified by Dr. Cothran, and in many cases higher than the feral or domestic horse mean. This information is available from the Battle Mountain District, and has been compiled into table form for the 27 reports received to date.
	Barbara Bessy	Today, 70% of the existing herds have been reduced below genetic viability levels.	
6.12	Marybeth Devlin	With wild horses, herd-size does matter. In a study report provided to USFS and BLM, US Geological Survey researchers cautioned: <i>Wild horses may be more vulnerable than many mammals to inbreeding depression at low population levels due to: (1) a harem breeding structure that limits breeding males mostly to harem holding stallions, and (2) a dominance hierarchy that usually delays harem holding and breeding in males until six to seven years of age or older.</i> http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/wild_horses_and_burros.Par.91906.File.dat/Strategic%20Research%20Plan.pdf	Refer to the Fish Creek HMA Genetic Analysis Report in Appendix I. The Summary and Recommendations of the report state that the genetic variability of the HMA is fairly high, likely due to mixed ancestry, and with a fairly high AML no action is required at the time. No gathers or genetic analysis have taken place since the last gather was completed in 2006. Once the current genetic analysis report is received by BLM, it will be available to the public.
	Marybeth Devlin	BLM-Mount Lewis needs to ensure an optimal number of horses to keep the subject herd genetically viable.	Studies show that up to 30% of foals born are to a stallion other than the harem stallion. There is no study that provides proof of the age group identified. The same report referenced also concludes: “ <i>there does not appear to be any immediate cause for concern about inbreeding depression in wild horse herds</i> ”.
6.13	Marybeth Devlin	The EA implies that the most recent genetic analysis on the Fish Creek herd was in 2010, but states that samples were drawn "from all four HMAs." How specific to Fish Creek were those results, and how valid a sample-size were they based on, given the mixture of samples from multiple HMAs?	The Fish Creek and other HMAs that were gathered in 2005 were all sampled separately. Blood samples were collected from wild horses released back to each HMA and sent separately to Dr. Cothran for analysis. Of the 34 wild horses released back to the Fish Creek HMA, 23

			samples were collected for analysis. The samples from the various HMAs were never mixed. The Genetic Report for the Fish Creek HMA has been included as an Appendix to the Final EA.
6.14	Marybeth Devlin	<p>The EA represents an excerpt from a report issued by Geneticist Dr. Gus Cothran as being from 2010. However, a footnote on that very excerpt cites the "small sample size" (blood samples) from 2004, and states that in "... future gather events" hair samples would be taken and sample-sizes would be larger.</p> <p>These discrepancies are troubling. They make it seem as if the EA is less than honest in regard to the genetic status of the Fish Creek herd. The complete 2010 genetic-analysis report should have been made an addendum to the EA.</p>	As stated in Appendix B of the EA, the samples were collected during the 2005 gather, and the reports were not <i>received</i> from Dr. Cothran until 2010. The notations about the small sample size were not from the genetics report, but were included by MLFO to provide background information about the genetic sampling. In two locations in the EA, the gather was mistakenly identified as being in 2004, which was when the AML was established. Those errors have been fixed. In order to provide the information to the interested public, the entire report is included in the Appendix of the Final EA.
6.15	Marybeth Devlin	<p><u>Recommendations:</u> BLM-Mount Lewis needs to conduct a 100-percent evaluation of the Fish Creek herd's genetic health per DNA samples tested by the Equine Genetics Lab. Per those results, and per guidance from Dr. Gus Cothran, and per consultation with wild-horse-and-burro advocates, BLM must then develop best management practices to restore and maintain gene-pool diversity via robust population-levels.</p>	The MLFO plans to collect hair samples from a large number of the wild horses released to the range, and may sample all of the horses released if possible. Current standards for genetics sampling indicate the need to sample no more than 25% of the population. The BMD has strived to collect large sample sizes of released horses when possible. As indicated in the Genetics Report in Appendix I, Dr. Cothran provides recommendations to BLM for future management of the HMA in light of the results of the genetic analysis. Refer also to Response to Comment 6.1 above.
6.17	Marybeth Devlin	<p>An AML is valid only if it provides for a <i>optimal</i> population -- one that can easily self-sustain its genetic viability and bounce back from random catastrophic events.</p>	<p>Opinion and not based on documented definition of AML. "<i>We interpret the term AML...to mean that "optimum number" of wild horses which results in a thriving natural ecological balance and avoids a deterioration of the range</i>" (109 IBLA 119 API 1989).</p> <p><i>Thriving Natural Ecological Balance -- WH&B are managed in a manner that assures significant progress is made toward achieving the Land Health Standards for upland vegetation and riparian plant communities, watershed function, and habitat quality for animal populations, as well as other site-specific or landscape-level objectives, including those necessary to protect and manage Threatened, Endangered, and Sensitive Species (4700-1 Wild Horses and Burros Management Handbook).</i></p> <p>Also from the 4700-1 handbook: "<i>The AML upper limit shall be established as the maximum number of WH&B which results in a TNEB and avoids a deterioration of the range. This number should be below the number that would cause rangeland damage</i>" (refer to Animal Protection</p>

			<i>Institute of America v. Nevada BLM</i> , 118 IBLA 63, 75, (1991))
6.18	Marybeth Devlin	It is not scientifically valid to conduct removals blindly with regard to the herd's genetics, submitting DNA samples after-the-fact. There should be no removals or contraceptions without genetic data on each herd-member. Make no management decisions until you have studied the resultant report from Dr. Cothran.	Refer to Response to Comment 6.3-6.9 above. The EA includes much discussion about the genetic health of the Fish Creek HMA. Refer also to the Genetic Analysis Report which has been added as an Appendix to the Final EA.
7.1	WHE	Appendix F, Public Observation IM dated 2010, should be replaced or amended to include the state IM of July of 2014. Please update.	The referenced July 2014 document is a memo and not an official Instruction Memorandum (IM). It has been added to Appendix F.
8.1	WHE	Although not noted in the EA as addressing factors of forage allocations are outside the scope we would like noted in our comment record: The proposed action shows the potential to address multiple deficits in historic management and work forward toward full compliance with current Rangeland Health Standards and Guidelines (noted on page 12). The very first removal operation in 1975 faced litigation (203 F. Supp. 1206, D Nev. 1975) that noted historic overuse by domestic livestock was not justifiable cause to remove wild horses.	Comment noted.
8.2	AWHPC	AWHPC strongly urges the BMD to take meaningful steps to reform the wild horse program. There are always reasons why <i>now</i> is not that right time to begin to do things differently. But if not now, when? Creative, out-of-the-box approaches will be needed – and the ability to try new approaches and adjust to make them as successful as possible is paramount. Now <i>is</i> the time, and <i>this is</i> the roundup to start a new chapter for the humane management of wild horses on the range. We look forward to working with you and hope that you find a way to make this happen.	Comment noted.
8.3	Eureka County Board of Commissioners	There has been an overwhelming lack of coordination with Eureka County Board of Commissioners on development of the actions to gather and treat the wild horses. The EA is silent on the plans and policies of Eureka County Board of Commissioners and how the proposals analyzed in the EA will or will not be consistent with these plans and policies. The proposed actions in the EA are, in large part, inconsistent with the plans and policies of the County. The County calls for managing horses at AML within their appropriate HMA. We also have policy related to assessing the status of HMAs on their ability to carry herds in accordance with the mandate for a “thriving natural ecological balance” (TNEB). We have long argued that the water resources available on the Fish Creek HMA are not sufficient to provide for TNEB. This is apparent and acknowledged in the EA through multiple discussions of lack of water and the need to pump ground water	The MLFO has only been approved to remove 200 wild horses during the 2015 gather. In light of not being able to achieve the established AML, opportunities exist to implement a population growth suppression program in this HMA. Since Eureka County Board of Commissioners has not asked to coordinate on wild horse gather EAs in the past, and due to the quick timeframe to complete a Preliminary EA, coordination efforts could not be planned. Due to limited water and other factors, the AML for the Fish Creek HMA was established with that in mind as documented in the Fish Creek Complex Evaluation and Final Multiple Use Decision issued in 2004. The established AML is 101-170 (south of U.S. Highway 50), whereas the current estimated

		and/or haul water, arguably not “natural” under TNEB.	population is 549, or 322% of the AML. Even in non-drought years, many HMAs would be limiting in forage and water with populations that are this high over AML. Lack of water has become an issue only since 2012, when the drought conditions began, and when the estimated population was in excess of the AML.
8.4	Eureka County Board of Commissioners	Please coordinate with the County to provide for management of the horses to immediately bring the horse to AML and then move forward with an assessment on whether the HMA is capable of providing a TNEB “naturally” without having to intensively manage the water availability for the horses.	The MLFO has only been approved to remove 200 wild horses. In light of not being able to achieve the established AML, opportunities exist to implement a population growth suppression program in this HMA. The MLFO will look forward to coordinating with Eureka County in the future to expand population control programs in light of limited opportunities for gathers or removals.
8.5	Eureka County Board of Commissioners	There has not any effort by BLM to coordinate with the County regarding the use of County roads for the gather operations. We wish to avoid issues that have previously occurred with BLM where BLM asserts authority over County roads and prevents or closes areas to access on County roads.	The MLFO is unaware of any County road closures in past years, with the exception of short 10-15 minute delays when the helicopter was actively moving horses in the area.
8.6	Eureka County Board of Commissioners	The EA speaks of using BLM equipment to plow roads should it be necessary. The authority to use BLM equipment on County roads must come from the County and be done according to County specifications.	Comment noted.
8.7	Eureka County Board of Commissioners	Law enforcement authority in the County rests with the County Sheriff and he must be included in any efforts that require such.	BLM Law Enforcement has always coordinated with the County Sheriff when gathers occur. MLFO is unaware of any Law Enforcement coordination issues from past wild horse gather operations.
8.8	Eureka County Board of Commissioners	<p>The EA is replete with water related issues. It is acknowledged that the horses very often, even in non-drought years, must be provided water from wells and water hauling. We argue that the horses are also using fully appropriated water sources in which they have no right to water. We have documented multiple cases of unpermitted use of water by BLM for the Fish Creek wild horses including interbasin transfers of groundwater not allowed under Nevada Water Law. Over the last couple summers, we have documented a BLM contractor trucking thousands of gallons of groundwater not permitted for the horses, multiple times per week, from Diamond Valley into Kobeh Valley (the slough) and to McCullough Spring, an interbasin transfer of water that has special criteria applied to it under Nevada Water Law.</p> <p>BLM has pumped itself (e.g., Bob Brown Well) or extorted the grazing permittee and</p>	<p>These issues are outside the scope of the analysis for the Fish Creek HMA Wild Horse Gather EA. MLFO will be able to meet with County officials later in the year to discuss these issues further.</p> <p>MLFO has pumped Bob Brown Well on which it holds a State water right for and has coordinated with the permittee. It is unclear what the County means by extorted the grazing permittee and mining exploration companies to pump ground water wells to supply water to wild horses.</p>

	<p>mining exploration companies to pump groundwater wells to supply water exclusively to wild horses where there is no right established for such use. In BLM's response to Eureka County Board of Commissioners's comment on the 2012 Drought EA, BLM stated that any water provided to wild horses is only from sources in which the BLM has the exclusive or shared water right for watering horses. This is not the case in reality.</p> <p>In response to this issue by BLM to us previously, BLM asserted that wild horses are able to have "customary" access to water sources since they are considered wildlife under Nevada law. First, "customary" access only applies to surface water sources and only applies to <i>new</i> appropriations of surface water. The allowance for customary access to groundwater sources is not in the law. NRS 533.367, which was adopted in 1981, states that "<i>Before a person may obtain a right to the use of water</i> from a spring or water which has seeped to the surface of the ground, the person must ensure that wildlife which customarily uses the water will have access to it" (emphasis added). Any surface waters that exist in the area were fully appropriated decades before horses became protected in 1971 and most, if not all, before the customary access statute was put into existence.</p> <p>Even if groundwater were mandated to be customarily offered to wildlife, wild horses are not wildlife. NRS 501.097 defines wildlife as "any wild mammal, wild bird, fish, reptile, amphibian, mollusk or crustacean found naturally in a wild state, whether indigenous to Nevada or not and whether raised in captivity or not." BLM has argued that this means wild horses are considered wildlife in Nevada. However, BLM failed to read the statute in context where NRS 501.110 requires the classification of wildlife, in which the State has never classified wild horses. It reads:</p> <p><i>For the purposes of this title, wildlife must be classified as follows: (a) Wild mammals, which must be further classified as either game mammals, fur-bearing mammals, protected mammals or unprotected mammals...2. Protected wildlife may be further classified as either sensitive, threatened or endangered. 3. Each species of wildlife must be placed in a classification by regulation of the Commission and, when it is in the public interest to do so, species may be moved from one classification to another.</i></p> <p>Wild horses have never been classified based on this statute and are therefore not wildlife in the State of Nevada, and cannot receive a water right under the guise of being wildlife.</p> <p>We strongly request BLM cease with the unlawful use of water and clarify this issue</p>	
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		in the EA. This alone provides the impetus for BLM to reduce the herd to AML and do a valid assessment on the efficacy of the HMA remaining an HMA while providing a TNEB.	
8.9	Eureka County Board of Commissioners	<p><u>Mismanagement of Horses and Nexus with Elk Establishment</u></p> <p>The establishment by BLM of quasi-perennial and reliable water sources for the horses has also provided the conditions necessary to allow the pioneering of elk. BLM has documented in the EA elk use of water provided by BLM. Over the past couple years, NDOW has provided “depradation” hunts in order to keep elk from establishing in the area. The Central Nevada Elk Plan and the Eureka County Board of Commissioners Master Plan have identified this area to not have elk since elk have historically not been there and the other wildlife and agriculture uses are preferred and have the resources allocated for use other than elk. The FMUD did not acknowledge elk or allocate any forage for elk. Elk forage, cattle forage, and horse forage have significant overlap. Yet, the EA is silent on the elk using forage, based on BLM actions, that is allocated for horses and livestock. So again, mismanagement of horses by BLM has caused a situation that put even further strain on the resources by allowing elk to establish. As before, the grazing permittee and other wildlife is being forced to take the brunt and restrictions.</p>	<p>Eureka County is referencing a water haul location at McCullough Springs where water is typically available in non-drought years, and if functioning properly would provide water year round to wildlife, wild horses and livestock. This water development would be providing water that Elk may use. Since the development was not functioning, and water levels at the spring were substantially reduced due to drought, the location was identified as a temporary water haul. BLM documented Elk at the location in 2012, but has not documented them at the location since.</p> <p>Elk are included in Section 3.7 of the EA.</p>
8.10	HSUS	When controversial issues involving the management of wild animals arise, we believe it is essential that agencies engage in a full and open dialogue with all affected stakeholders and that a fair, rational and objective information collection and assessment process take place before proceeding with any proposed management action or plan.	Comment noted
8.11	HSUS	<p>The EA notes the limitations of the WinEquus modelling system when considering the benefits of the various management alternatives. We suggest that in order to best determine the economic benefit of the various alternatives, that the BLM replace the current WinEquus© with the Wild Horse Management System (“WHMS”) designed by economist Dr. Charles W. de Seve.</p> <p>The WinEquus© model does not calculate any costs associated with various management options and cannot optimize management options, compare the combined removal and holding costs of alternative management plans to help build an efficient overall strategy, or stimulate multi-year planning. Alternatively, Dr. de Seve created a robust economic model to project the costs and outcomes of various management regimes that can be used by the agency to plan effective, cost-beneficial programs. The management system is designed to simulate range populations and alternative BLM management interventions and costs in either a single HMA or over multiple HMAs. It employs not only simulation methods but also optimization. Thus, it can help make sound management decisions under uncertainty, including allocating resources and reducing costs.</p>	At this time, the WinEquus model is what the BLM has available for use. . Dr de Seve’s program has too many variables and assumptions that do not work with our program. It could be argued that it would not be possible to manage for economic benefit.

8.12	HSUS	<p>Concern that low gather efficiency may contribute to subpar fertility control programs.</p> <p>High gather efficiency is essential in order to conduct successful fertility control programs, and thus, reduce population growth rates, the need and frequency of removals, and ultimately, long- term reductions in off-the-range management costs. We would like to offer our assistance in partnering with the BMDto ensure that the fertility control program is designed and conducted to inoculate the appropriate ratio of total mares in a herd (between 65-85%) at the most efficacious time of year (between November and February) in order to optimize, to the greatest extent possible, the benefits of using the fertility control agent PZP to manage wild horse and burro populations.</p>	<p>Comment noted. The MLFO is aware of the need to maintain high gather efficiency in order to treat a large portion of the mares in a population to maintain high success of the treatment for population growth suppression. The MLFO welcomes the involvement of the HSUS in the current and future phases of the project.</p>
8.13	Return to Freedom	<p>RTF recognizes wild free ranging horses as an intrinsically valuable part of the ecosystem. RTF supports minimally invasive management to protect wild horses and burros where they are naturally occurring and/or where they are existing within a habitat that provides them with adequate food and water. RTF supports resolutions based on the equitable distribution of forage and water to wild horses, wildlife and livestock with preference for wildlife and wild horses on HA's and HMAs. By preserving these free-ranging, sentient mammals we also protect and preserve the open spaces and natural resources they share with other species. RTF is dedicated to preserving the American wild horse in naturally selected free roaming herds for generations to come on America's Federal, state and park lands.</p>	<p>Comment noted.</p>
8.14	Susan Humphrey	<p>Horses that are young enough to be adopted should be placed in an immediate training program and placed on the internet for adoption. Photos and videos are successful in advertising the horses to the public. Many people would like to adopt but aren't equipped to handle a feral horse. It would be well-wroth the expense to hire professional trainers to put 30+ days training on all horses...to at least have them halter-trained, gentle, pick up feet, and lead into a trailer.</p>	<p>Comment noted. This is outside of the scope of the analysis for this EA. However, your views are similar to those that have been presented to the BLM and may being considered and implemented in various degrees in the future.</p>
8.15	Susan Humphrey	<p>Excess horses that must be gathered, that have no demand for adoption, should be humanely disposed of. Currently, US zoos buy horse meat form Canada to feed their big cats. Perhaps the older horses could be euthanized in the field and the bodies transported to zoos...as an option. Placing horses into feedlots when there is no demand for their adoption is agaist the law...according to the WFRH&BA. As a taxpayer, I am tired of paying for hay and pasture for excess horses that aren't going to ever make it into privately owned homes. There are clear laws to follow, and Congress needs to stop holding up the funding for disposal.</p>	<p>Comment noted.</p>
8.16	Renee Espenel	<p>I also would like to have a more transparent and accessible data report on the horses adopted and sold. I have read that a certain cattle rancher is responsible for a high percentage of adoptions and purchases and can no longer provide specifics as to where the animals have gone. It is speculated that he has sold them to other</p>	<p>This is outside of the scope of the analysis. Information about adoptions and sales can be requested of the BLM. BLM sells wild horses "with limitations," which prohibits the purchaser from sending the wild horses for slaughter, or use as bucking</p>

		countries for slaughter, as it is not legal to process in the states.	stock in rodeos. BLM does not allow the sale of wild horses that would result in slaughter.
8.17	Anne Novak/Protect Mustangs	We support management solutions based on holistic management, reserve design and fair allocations of resources for wild horses.	Comment noted.
8.18	Anne Novak/Protect Mustangs	Wild horses help create a thriving natural ecological balance on public land.	Opinion, comment noted.
	Nicole Lauren	Wild Horses help prevent the disastrous wild fires by their foraging on the move and grazing such brush. Horses are an integral, essential contributor to a vital Ecosystem.	
	Linda Arndt	Horses reseed the range because plant seed is not destroyed during food digestion.	
8.19	Anne Novak/Protect Mustangs	Taxpayer dollars should not be used to harass and abuse wild horses. Funding should be used to make improvements to their natural habitat.	Opinion, comment noted.
8.20	Deana Bishop	There is 230, 675 acres. The fact that you are saying 500 horses (which there is no scientific data to back up those numbers. You are estimating on a program that can be easily manipulated by anyone, even a child.) The BLM can not believe that the AML can only be 107 animals.	Refer to the EA in Section 1.1 of the EA. The Fish Creek Complex Evaluation and associated documents that established the AML are available from the MLFO. Establishing AML is not a calculation of how many acres per animal, but is based on many factors such as forage and water availability, animal movement patterns, productivity and limitations of the range, trend, climate and actual use. An AML and adjustments of AML are based on an ongoing program of monitoring.
8.21	Deana Bishop	You are all still operating under the Salazar plan which is to systematically wipe out all of the wild horses.	Opinion. The current on-the-range population of wild horses and burros (approximately 49,200) is greater than the number found roaming in 1971 (about 25,300). The BLM is seeking to achieve the appropriate management level of 26,684 wild horses and burros on Western public rangelands, or about 22,500 fewer than the current West-wide population. In the BMD alone, there are over 6,000 wild horses and burros.
	Anne Novak/Protect Mustangs	BLM is managing wild horses to extinction.	
8.22	Diane Fox	In regards to the forth coming plan to remove 500 wild horses from PUBLIC lands and only return 300 a resounding NO!!!! If you remove 500 you RETURN 500!!! There are already 48000 (yes that is forty eight THOUSAND) wild horses being held in horrible conditions provided by BLM awaiting starvation and abuse and death one way or another. Is this your idea of management? If you removed and vaccinate that is most excellent but RETURN ALL OF THEM!	Refer to Response to Comments 5.1, 5.2. Alternative 2 analyzes a PGS program that does not include removal of any wild horses. Also refer to the Environmental Consequences portion of Section 3.2, 3.9 and Appendix A and G for information about the methods used to gather wild horses, the anticipated impacts, and measures to reduce stress and injury.
8.23	Emily Pompei	Please opt for letting nature takes its course and self-manage itself through natural attrition.	This Alternative was discussed in Section 2.5.3 of the EA.
	Mary Baker	Isn't it about time you left these animals to their own devices, they have managed for	

	Dittman	centuries without your ‘help’. Their population is controlled by nature. It is time man stopped interfering in nature and allowed it to manage in the way it’s supposed to without interference from man.	
	Valerie Ornatowski	Nature will take care of it’s own.	
8.24	Henry Kimbell	While I recognize many positive trends in the preferred proposed actions (PZP use, no sex ratio skewing, selective removal, bait and water trapping) I strongly urge BLM to begin to move public funding to on-range management strategies and abandon the unwanted, inhumane, and failed practices of removal in the Fish Creek HMA and, in fact, thoughtout the HMA system. It is time to bring this program into alignment with the broader will of the American public, the intent of the 1971 Act, and 21st humane standards.	Comment noted.
8.25	Bethany Grunenwald	The primary reason for these actions is an ongoing drought. These conditions alone would naturally reduce the size of these herds.	As a result of drought it is expected that mortality rates have increased and reproductive rates may have decreased slightly. Refer to Section 2.5.3 of the EA.
8.26	Bethany Grunenwald	To try and promote the idea that the horses that will be removed are going to be adopted into a better situation is a complete misleading of the public who own the land that these horses roam and pay millions and millions of dollars for you to manage them. There are thousands of broken, forgotten, and frankly inhumanly held wild horses in BLM holding facilities already. The animals that are in these facilities and that are now being targeted to be put in these facilities are in far better condition when in the wild, even during "an ongoing draught", than they are or will be inside of these holding pens.	Opinion, comment noted.
8.27	Bethany Grunenwald	They are a natural treasure and need to managed as such.	Comment noted.
8.28	Brittany Tomkosky	What happens when there are no more wild horses?	It is unforeseeable that a time will ever come that there are not wild horses existing on public lands throughout the western United States. The BLM is mandated to manage wild free roaming horses and burros as an integral part of the public lands and in the concept of multiple use.
8.29	Nicole Lauren	All wild horses being held should be released back to the range. Release them with their families.	This is outside of the scope of the analysis.
	Linda Arndt	Reduced range acreage needs to be returned to original amounts and wild horses released to the range they were taken from to insure genetic viability.	
	Elizabeth Brister	The horses that are currently in holding pens in several Western states should be released somewhere.	
8.30	Elizabeth Brister	We do not approved of sending horses to slaughter nor do we approve of penning wild horses for the rest of their lives.	BLM sells certain qualifying wild horses “with limitations,” which prohibits the purchaser from sending the wild horses for slaughter, or use as bucking stock in rodeos. BLM does not allow the sale of wild horses that would result in slaughter.

8.31	Jamie Baldanza	<p>I want to keep bands and herds who have already bonded together during round ups and place them on private acreage to live out the rest of their lives on the nonpropfit that I will start.</p> <p>When the BLM announces a round up, our organization will find the nearest property with the most acreage that is most sufficient for the wild horses to live on. We will then make a deal with the BLM to transport them to the new location which will be their forever home. I understand it will take serious fundraising most likely 500k - 5M a purchase, but I think its doable.</p> <p>We will raise money for barrier fencing and keep tabs on all horses. What I need from the BLM are statistics on how many horses per acreage and the growth of a herd over 10 years to start my plan rolling, and a willingness for a partnership to work together.</p> <p>I believe this plan will help save the government and the BLM millions of dollars in the long run with having less horses in holding facilities and happier advocacy groups.</p>	This is outside of the scope of the analysis for this project.
8.32	June Hazen	The ones that should be readied for adoption are the 3-5 yr olds. The younger horses and foals should be left alone. They still need the family unit.	Comment noted. The goal of the gather is to remove the horses three years of age and younger to be available in the adoption program. Foals born in 2014 will be of weaning age.
8.33	Karen Richards	Wild horses should be preserved not like in a zoo or captive but in that natural setting they are use to	Currently, there are over 6,000 wild horses and burros on public lands within the Battle Mountain District and an estimated 49,000 free-roaming wild horses and burros throughout the western states.
8.34	Karen Richards	Why are the native Americans not given more rein over the preservation of these small herds!	Wild horses under the WFRHBA fall under the administration of the BLM and USFS. There are already thousands of feral/wild horses existing on Reservation lands across the west.
8.35	Karen Richards	Please do not destroy the few monuments of living creatures that gives us more insight to what the true wild horse has given us. When they are gone because of our irresponsible acts they will never come back!	Comment noted.
8.36	Linda Skidmore	Opposed to the separation of the young animals from their respective herds. For the most part, these horses stand an iffy chance of being adopted and then many are turned over for slaughter at auction whether legally or illegally	The objectives of the gather are to remove only horses three years of age and younger which are highly adoptable and not yet eligible for the sale program. BLM sells certain, qualifying wild horses "with limitations," which prohibits the purchaser from sending the wild horses for slaughter, or use as bucking stock in rodeos. BLM does not allow the sale of wild horses that would result in slaughter.
8.37	Mary Baker Dittman	Why are you gathering these innocent animals? What is the real reason for rounding up these animals?	Refer to Section 1.3 of the EA which explains the Purpose and Need for the Proposed Action.

		The real reason is not the welfare of the animal but the greed of others. There is plenty of land for them to roam but you want the land for what?	
8.38	Mary Baker Dittman	These horses don't need fertility treatments or adoptions they are FREE - Wild horses.	Opinion.
8.39	Marybeth Devlin	<p>The boundary lines of the Fish Creek and other HMAs may have originally been drawn inaccurately. And, seasonal migration routes and connectivity corridors may have been omitted. Such errors have not been corrected. Thus, wild horses accused of "stepping over the line" may be innocent. Their removal would be wrongful.</p> <p><u>Recommendations:</u> BLM-Mount Lewis needs to investigate how the boundary lines of the Fish Creek HMA were first set and promptly correct any errors and omissions. The boundaries must conform to their proper configuration and must provide corridors for the horses' seasonal migrations as well as access to water.</p>	
8.40	Marybeth Devlin	<p>Horses will roam. Removing horses that have wandered outside the boundaries of an HMA -- "outsiders" -- just creates a vacuum for "insider" horses to fill. Thus, removing "outsiders" is an <i>ineffective</i> population-control strategy. Thus, removal is not a true solution -- it just perpetuates the situation and leads to the elimination of more mustangs than necessary. The outsiders may be temporary, not permanent residents. Given reported unauthorized livestock grazing within the HMA, the wild horses were probably forced out. It is also likely that many horses were stampeded by the helicopter, terrorizing them to flee from it.</p> <p>Also, the checkerboard pattern of Federal, state, and private property area has been the arrangement since 1864. The wild horses pre-date the land-partitioning, and the WFRHBA devotes all of the land in the horses' range, regardless of ownership, for their principal use. For the wild horses, there can be no crime of trespass in the checkerboard lands.</p> <p><u>Recommendations:</u> In legitimate instances of straying, BLM-Mount Lewis should first encourage the outsiders to return to their proper place, then address those factors that caused the animals to leave home. Do fences need repair? Do gates need to be checked frequently and closed? Would palatable plantings draw the wild horses to the areas BLM-Mount Lewis wants them to use? What about siting mineral licks inside the HMA? Have guzzlers been installed to provide water sources within the boundaries? BLM-Mount Lewis should specify preventive measures in this regard as part of its management approach. Return outsiders to the HMA. Fence the HMA's perimeters -- after expanding them to correct all boundary-line discrepancies, migration routes, water-sources, and any herd-area land previously taken away.</p>	<p>There is no indication that the HMA or HA boundaries have been established incorrectly. The history of the area shows that as the population increases above AML, the amount of use outside of the HMA also increases. During the first phase of the project, due to the limited removal numbers and the desire to only remove younger animals, no horses are specifically targeted for removal outside of the HMA. A lower population overall should reduce (even if slightly) the amount of use outside the HMA boundaries.</p> <p>Action to prevent horses from leaving the HMA boundaries is outside of the scope of the analysis. Wild horses typically move outside of HMA boundaries as the populations increase due to increased competition for limited resources within the HMA. Monitoring and inventory data indicates that when the HMAs are not overpopulated, then fewer horses leave the HMAs.</p> <p>There are no checkerboard lands in the Fish Creek HMA.</p>
	Marybeth	The EA insists that a horse whose body-condition appears thin on the Henneke-scale	Comment noted.

	Devlin	<p>is in poor health, thus giving BLM justification to perform euthanasia. BLM defends restricting the Fish Creek herd to a very low population level to improve the horses' Henneke scores. Yet, thinner mares tend to produce fillies -- which are beneficial to a herd's genetic viability -- while mares in good flesh tend to give birth to colts -- which, if in excess, compromise a herd's genetic diversity.</p> <p>Below is the link to a study of foal-gender as correlated with the dam's body-condition. Feral horses were the subjects. Mares in better body-condition tend to produce more colts than fillies. So, with a greatly-reduced herd and fatter mares, more colts will be born. Rather than the normal 50:50 ratio, the resultant foal-crop's gender-ratio could be significantly lopsided in favor of males. http://rsbl.royalsocietypublishing.org/content/3/4/395</p>	
8.41	Marybeth Devlin	Because BLM's helicopter-roundup method tends to capture more females than males, there would likely be an even greater imbalance in the resulting sex-ratio of the herd, again favoring stallions and further diminishing the herd's genetic variability.	There is no indication that more mares would be gathered than males. Current information is that the number of studs and mares gathered are approximately equal.
8.42	Marybeth Devlin	<p>Most wildlife-tour visitors have to search long and hard to find any wild horses to view and photograph in the Fish Creek HMA. Post-roundup, with the foals removed and virtually all the mares contracepted, there would be few families, and especially, few darling "babies" frolicking on the range. Baby animals delight tourists. Adult horses -- lonely bachelor studs, and forlorn, childless mares, disfigured with huge freeze brands on their rumps -- are not what the public is after.</p> <p><u>Recommendations:</u> A herd needs reproductive capacity in order to have foals for the public's wild-horse viewing pleasure. BLM must ensure that the Fish Creek wild horse herd is <i>self</i>-sustaining. By increasing the number of horses present, recreation will be enhanced.</p>	Wild horses are not difficult to find or photograph in the HMA, and it is unclear where this information was derived from. In fact, through the years, the Fish Creek HMA is one of the most frequently visited HMAs and referred to visitors that contact the BLM wanting to view wild horses in the wild. There will be many horses remaining in the HMA for tourists to view and photograph.
8.43	Marybeth Devlin	Natural selection should be the way a wild-horse herd is molded. However, the EA states that horses "selected for release" would be based on "health, demeanor, and other desirable historic characteristics." Thus, BLM is essentially running a breeding program instead of letting Nature determine those horses best-suited for survival. This is not -- and should not be -- BLM's role.	During a selective removal, the BLM must choose the wild horses to release. There is no "natural" way to do it. In years between gathers, "natural selection" would be in effect. During the first phase of the project in 2015, it is the goal to remove only horses three years of age or younger. All other horses would be released back to the range.
8.44	Marybeth Devlin	<p>BLM-Mount Lewis may not be aware that on February 18, 2013, a helicopter belonging to El Aero Services, Inc. took off from its home-base in Elko, Nevada to perform certain operations on behalf of BLM. The helicopter subsequently crashed near Eureka, Nevada. <i>The pilot was killed.</i> Here is the link to the National Transportation Safety Board's (NTSB) report:</p> <p>http://www.nts.gov/aviationquery/brief2.aspx?ev_id=20130218X22833&ntsbno=</p>	The MLFO is aware of these helicopter incidents, and maintains the utmost safety during inventory flights. The issue of helicopter safety on the gather is outside the scope of the analysis.

		<p>WPR13GA128&akey=1</p> <p>Please note that, on one of the helicopter-runs preceding the crash, BLM's Helicopter Manager was aboard. Moreover, the NTSB report seems to suggest that the accident may have been caused, at least in part, by pilot-fatigue. While the crash in question occurred during a seed-dispersal project, the NTSB report discloses that the pilot had experienced a previous accident, on October 18, 2007, ... <i>while herding horses in North Dakota</i>. On that day, the pilot was conducting a helicopter-roundup on behalf of the National Park Service. Please see pages 4 - 7 of the PowerPoint Presentation, found at the link below.</p> <p>https://www.iat.gov/Training/modules/2008accidents/DOI_FY_08_A-200_HO.pdf</p> <p>Per the NTSB report, the probable cause of the 2007 accident was: "The pilot failed to maintain clearance from the fence while maneuvering at low altitude." The pilot and passenger both suffered minor injuries. The report does not say, but that passenger may well have been a Federal employee. Again, it was El Aero Services, Inc. Here is the link to that Probable Cause Report:</p> <p>http://www.nts.gov/aviationquery/brief.aspx?ev_id=20071115X01799</p> <p>I note that, despite the 2013 tragedy and the 2007 accident, El Aero was recently awarded a \$6,000,000 contract for helicopter services relating to the Wild Horse and Burro Program.</p> <p><u>Recommendation:</u> Avoid this dangerous method for counting and gathering wild horses.</p>	
8.45	Marybeth Devlin	<p>Using helicopters for gathering wild horses and burros is inherently risky, with no higher purposes than administrative convenience and "efficiency." BLM is wrong to continue this dangerous activity when a safe alternative is available: bait trapping. This method is kind, gentle and safe, a best management practice. . It keep wild-horse-and-burro families together and promotes ease of record-keeping.</p> <p><u>Recommendations:</u> Use bait trapping exclusively. The goal is for bait-trapping to <i>replace</i> helicopter roundups. Bait-trapping should <i>not</i> be just another method of gathering horses but <i>the</i> method. I urge BLM-Mount Lewis to embrace the superior bait-trapping approach when it is necessary to gather wild horses due to the herd being well in excess of optimal population-levels per IUCN guidelines.</p>	Bait and water trapping is identified in the Proposed Action, Alternative 2 and Alternative 3.
8.46	Marybeth Devlin	If wild horses are straying onto privately-held land, then BLM staff on horseback should be out on the range "shooing" the mustangs back into the HMA. How else	There are currently no private land issues in or outside of the Fish Creek HMA.

		will the horses learn where they can and cannot roam? In short order, they will get the message. The horses cannot be blamed for wandering when it is clear that unauthorized livestock grazing well-beyond the permitted season unlawfully took the herd's rightful resources.	
8.47	Marybeth Devlin	BLM should install multiple guzzlers deep within the boundaries of the HMA so that the wild horses will have water sources available. That will reduce their dependency on stock -tanks operated by permit-holders. BLM should also entice the horses to stay home by placing treats such as mineral licks well-inside the HMA. BLM must remediate conditions that prompt the wild horses to wander. However, if the horses are following a seasonal migration route, then a wildlife corridor for them must be established. If these measures are not enough, then fence the HMA's boundaries. Close monitoring of livestock grazing within the HMA is essential to prevent trespass during the closed season.	This is outside of the scope of the analysis. Guzzlers would only provide water seasonally and not when the need for water is highest. Placing mineral licks in the HMA for wild horses is not consistent with a Thriving Natural Ecological Balance, and runs counter to managing wild horses at levels consistent with the productive capacity of the range. Wild horses naturally have movement patterns within and between HMAs and are highly mobile. They do not require wildlife corridors. Livestock monitoring is outside of the scope of the analysis.
8.48	Marybeth Devlin	Multiple-use does not mean every-conceivable-use. Incompatible uses can be excluded, as Secretary Jewell testified during her Senate hearing after being nominated. Some examples of incompatible uses appear obvious -- mining and off-road vehicles. HMAs should be designated "no surface occupancy" (NSO) areas -- to preserve aesthetic and recreational values and to avoid disturbing the horses' natural behavior. HMAs should also be declared "off-limits" to off-highway-vehicles (OHVs) -- to protect the peace-and-quiet of the range and the cleanliness of the ambient air. Establish no surface occupancy -- NSO -- and ban off-highway vehicles (OHVs) in the HMA.	This is outside of the scope of this analysis and more appropriate for submission for consideration in the Resource Management Plan revision.
8.49	Janet Schultz	Page 8 - if that above ground water trough is fr he horses, I suggest you cap the t-posts.	Comment noted.
8.50	Janet Schultz	Laura Leigh does not represent me and frankly, a picture of her and her organization (a donator supported org only) should not be on a taxpayer paid for document. Decribe why a donation driven organization is featured in this EA.	The photo referenced is an example of collaboration with other local organizations in the management of wild horses and burros. Wild horse education has visited the Fish Creek HMA many times since 2012.
8.51	Public Interest Coalition	We urge the Bureau of Land Management (BLM) to adhere to its mandate to protect wild horses and burros, rather than decimate herds.	There is no indication that the Fish Creek Gather EA Proposed Action will "decimate" the herds.
8.52	Public Interest Coalition	Most disturbing are the rumored underlying real reasons for many, if not most, HMA roundups of wild horses and burrows: (1) that what forage exists will be allocated to cattle and sheep; and/or (2) that fracking and/or other "energy" exploration and extraction activities oppose horses, burros, buffalo, and most other wildlife because their presence interferes with and curtails their profit-making operations. Cattle and sheep grazing rights or permits must be secondary to wildlife (including horses and burros) rights, especially on public lands, and no profit-making operations should supersede wild animal rightful use of public lands.	This comment is outside of the scope of the analysis. The gather is not being conducted in order to increase the allocation of forage to cattle or sheep, and not because of any exploration or extraction activities. There are no buffalo in the Fish Creek HMA. Opinion.
8.53	Public	Many studies have indicated that BLM "minimum herd" numbers that are used to	Please refer to Section 1.1 which discusses how and when the

	Interest Coalition	determine herd sizes are atrociously low, which is a misguided attempt to keep horse and burro herd numbers either below regeneration levels, or at zero, for political purposes. Instead, viable herd numbers should be in the thousands (IUCN Species Survival Commission Equid Specialist Group) in some HMA's.	AML was established and Response to Comment 8.20.
8.54	Public Interest Coalition	Wild horses and burros must be viewed as a natural resource. There is plenty of data to support the fact that these animals benefit our natural ecosystems. They should not be considered "non-native pests" any more than humans and/or other wildlife should be.	Comment noted.
8.55	FRER	<p>The Preliminary EA fails to provide adequate authority for BLM's Proposed Action. It does not manage wild horses at the "minimum feasible level;" and it does not adequately justify the need to remove wild horses and burros located outside of the HMA boundaries;</p> <p><i>The Preliminary EA Does Not Accurately Explain BLM's Reliance on Wild Horses and Burros Located Outside the HMA's Boundaries To Justify Roundup and Removal.</i></p> <p>BLM's Proposed Action of immediately removing wild horses found outside of the HMA without a prior determination that these animals are excess violates BLM's responsibility to maintain the free-roaming behavior of wild horses. Fish Creek's AML of 101-170 is based on the combined AMLs of four allotments. The Preliminary EA describes plans for future gathers "outside of HMA boundaries in the Hicks Station, Snowball Ranch, or Morey Allotments." The horses found in these allotments are explicitly not included in BLM's calculation of the AML for the Fish Creek HMA, and cannot be considered excess under the existing AML unless the boundary for the HMA, and the allotments within the HMA, is also adjusted.</p>	<p>A Herd Management Area may be established in those Herd Areas within which wild horses and burros can be managed for the long term. HMAs are designated through the LUP process for the maintenance of wild horse and burro herds. In delineating each HMA, the authorized officer shall consider the AML for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 43 CFR 4710.4. (WHB Handbook 4700-1)</p> <p>By definition, wild horses are not intended to be managed outside of HMA boundaries and not outside of Herd Area boundaries in conformance with the WFRHBA. Therefore, wild horses existing outside of HMA boundaries do not have an AML, are not allocated forage, and are excess.</p> <p>WFRHBA §1332. Definitions</p> <p>(f) "excess animals" means wild free-roaming horses or burros</p> <p>(1) which have been removed from an area by the Secretary pursuant to application law or,</p> <p>(2) which must be removed from an area in order to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area.</p> <p>The Hicks Station and Snowball Allotments are outside of Herd Areas and are not designated HMAs. Therefore, they do not have an associated wild horse AML, and wild horses residing in those areas are excess wild horses for which no forage has been allocated and are to be removed from the range in accordance with the WFRHBA.</p>
8.56		The Preliminary EA relies on wild horse inventories taken from many points clearly outside of the Fish Creek HMA boundary. There is no indication in the Preliminary	During the first phase of the plan in 2015, due to the limited removal numbers approved for this project and the desire to only

		<p>EA as to how BLM will make the determination that animals outside of the HMA are excess horses subject to removal under the Fish Creek AML.</p> <p>BLM should not have a general management goal of removing wild horses and burros residing outside the HMA when any removal action (from within or outside of the HMA) first requires a determination that any animal subject to removal is “excess.” “It is undisputed that BLM’s removal authority is limited to those wild free-roaming horses and burros that it determines to be ‘excess animals’ within the meaning of the Wild Horses Act.” <i>Habitat for Horses v. Salazar</i>, 745 F. Supp. 2d 438, 452 (S.D.N.Y. 2010) (internal quotation omitted). Because the Preliminary EA authorizes a site-specific action to remove wild horses or burros, the citizenry should not be given the false impression that BLM has non-discretionary authority to remove a wild horse or burro that strays beyond HMA boundaries.</p>	<p>remove younger, more adoptable animals, there will not be any specific areas outside of the HMA targeted for complete removal. Since this EA includes future phases, the removal of wild horses outside of HMA boundaries was included should it become necessary or approved in the future.</p> <p>The determination of wild horses outside of an HMA boundary is made by a visual assessment of the horses physically residing in an area that is outside of the HMA, and monitoring over time that indicates that those horses have established permanent residency outside of the HMA.</p> <p>The determination of excess wild horses is based upon a continuing program of monitoring to include climate, precipitation, actual use, utilization, trend and other data. Refer also to Response to Comment 8.55 above which discusses removal of wild horses outside of HMA boundaries and determination of excess.</p>
8.57	FRER	<p>Although the Preliminary EA describes that the “Fish Creek HMA boundary is nearly identical to the Fish Creek Herd Area boundary,” it does not explain why horses found in allotments outside of the HMA are included in its inventory for the Fish Creek HMA. Preliminary EA, p. 98. BLM’s assertion that the herd area is the same as the HMA, and yet horses in allocations outside of the HMA are subject to gathers is confusing and contradictory and should be clarified. BLM should explain whether it intends to gather all horses both inside and outside of the HMA, or whether it intends to specifically target and remove horses outside of the HMA without a prior determination that they are excess.</p>	<p>When conducting inventory flights, the areas beyond the HMA boundaries are covered in order to discover and document horses that may have moved out of or established permanent residency outside of HMA boundaries. This information is valuable because it provides data about wild horse use where it has not been allocated, as well as movement patterns of wild horses important for future planning. Wild horses observed outside of HMA boundaries are included with the inventory of the HMA because in most cases those horses are associated with or have come from that HMA. Refer to Map 2 in the EA. The fact that the HMA and Herd Area are nearly identical is irrelevant. The fact that wild horses exist outside of the HMA is relevant because no use has been allocated for them in those areas, and managing them outside of HMA boundaries is inconsistent with Land Use Plans and the WFRHBA.</p>
8.58	FRER	<p>The Proposed Action is not consistent with the Standards and Guidelines for Rangeland Health as developed by the Northeastern Great Basin RAC, specifically with regard to healthy wild horse and burro populations. Preliminary EA, p. 12. Guideline 5.7 requires that “[w]ild horse and burro selective removal criteria [be] modified on a per herd basis to correct deficiencies in population age and sex ratios which threaten short and long term genetic diversity and reproductive health.” Preliminary EA, p. 12. The Preliminary EA does not go into any detail as to the</p>	<p>The term “herd” as used in the Standards and Guidelines for Rangeland Health signifies HMA in this respect. It is not customary or reasonable that BLM manage individual bands within an HMA. Refer to Section 2.5.4 in the EA for additional information about this type of removal. As stated in the EA approximately 500-549 wild horses within the Fish Creek HMA would be gathered under the Proposed Action. The wild horses</p>

		specific herds it intends to capture, remove, or release. Without any discussion of the criteria used for removal, the Preliminary EA does not comply with the Standards and Guidelines for Rangeland Health.	three years of age or younger would be removed, and the rest would be released to the range. Objectives for the HMA are described in Section 2.3.6 of the EA: “ <i>Objectives for the Fish Creek HMA regardless of gather method include ensuring that the population consist of diverse age groups and reflect the historic range of characteristics for this HMA. Wild horses would also be selected for release back to the Fish Creek HMA, based on health, demeanor, and other desirable historic characteristics.</i> ” And “ <i>The removal goal for the initial phase of the operation is for wild horses three years of age or younger, though select two or three year olds exhibiting desirable and historic traits could be released back to the range as well (such as those exhibiting curly characteristics)</i> ”.
8.59	FRER	BLM’s attempt to manage populations without first evaluating current herd populations and existing AMLs is the very reason for the type of criticism raised in the NRC Report that “[m]anagement of free-ranging horses and burros is not based on rigorous population-monitoring procedures” and that in fact population estimates used to justify wild horse roundups or “gathers” on HMAs “were often inconsistent and poorly documented.” NRC Report, p. 3.	Refer to Section 1.3 of the EA which describes the Purpose and Need for the Proposed Action as well as the determination that there are excess wild horses and the rationale for that determination. It is not required or reasonable that the AML be completely re-assessed prior to initiating a wild horse gather EA. An assessment of current conditions and changes since the AML was established and since the last gather was completed and did not find that information existed which would indicate that the AML need changed at this time. The Fish Creek Complex Evaluation and associated documents and Final Multiple Use Decision are available upon request.
8.60	FRER	In April 2014, the Wild Horse and Burro Advisory Board recommended that BLM accept these report findings, and BLM agreed. “It appeared that one of the default datasets was used to model population dynamics of most or all HMAs or HMA complexes. It is therefore not surprising that most plans and assessments arrived at identical conclusions regarding the potential effects of the management alternatives considered. . . . Specifically, it was difficult to determine whether [population modeling] results were used to make management decisions or were offered as justification for management decisions that were made independently of modeling results.” NRC Report, p. 9. Given this problematic gap in BLM’s decision making process, these issues, and a more detailed evaluation of removal criteria, must be addressed in the Preliminary EA.	Refer to Appendix E Summary of Population Modeling, and the Results of WinEquus Population Modeling in Section 3.2 which provides detailed discussion about the use of the model. As stated in Section 3.2, The purpose of the model is to “ <i>display a potential range of outcomes for various management activities</i> ”. Appendix E includes a great amount of detail about the modeling and the parameters that were used. The Advisory Board comments are not specific to the Fish Creek Gather EA.
8.62	Sheryl Be kooky	I'd like to see some of the horses have a chance for adoption also. The Mustangs should have top priority to the Wild areas still available and able to support them.	Comment noted. It is anticipated that all wild horses removed from the range will be available for adoption to the qualified public.
8.62	Gail Kenney	I am very concerned about the proposed wild horse "gathers". Are these not roundups? How are these horses "gathered" ?	Refer to the Fish Creek Gather EA which explains the Proposed Action. Appendix A also includes a great deal of detail about

			how a gather is conducted, with photos of various aspects of past gathers.
8.63	Gail Kenney	How can you justify rounding up and drugging our wild horses?	Refer to Section 1.2 of the EA which discusses the Purpose and Need for the Proposed Action. Refer also to Section 2.3.1 which provides information about the fertility control vaccine. The population growth suppression program is also discussed in the Environmental Consequences portion of Section 3.2.
		What becomes of the wild horses that are removed?	Refer to Section 2.3.6 of the EA. They will be transported to the Palomino Valley Corrals, north of Sparks Nevada where they will be prepared for adoption (freezemarked, vaccinated, dewormed etc.).
		How long are they in holding pens, the rest of their life?	Refer to the <i>Adoption or Sale with Limitations, and Long Term Pastures (LTPs)</i> of Section 3.2 of the EA.
		Does BLM plans to offer these horses through the fast internet adoption process and then call them the 3 strikers??	This is outside of the scope of the analysis. It is unknown at this time exactly which adoptions these horses will participate in.
		How does BLM get away with selling our wild horses to kill buyers?	The BLM does not transport unadoptable wild horses to slaughter and this would also be contrary to Congressional directives set forth in the most current Appropriations bills. BLM only sells certain qualifying wild horses "with limitations," which prohibits the purchaser from sending the wild horses for slaughter, or use as bucking stock in rodeos. BLM does not allow the sale of wild horses that would result in slaughter.
		How is the proper documentation that BLM strictly requires for adoption placement done at onsite auctions?	The On-site adoption is no different than a regular adoption, in that the fully completed adoption application is required and must be approved by the Wild Horse Specialist before the applicant can participate in the event. The applicant must also have an approved trailer and facility as documented in the application. The Private Maintenance and Care Agreement is completed by the adopter and BLM, and all compliance requirements apply. A veterinarian is on site to provide the health certificate for out of state travelers, and a brand inspector present to provide that documentation as well.
		If the borders start enforcement of no tattooed wild horses crossing the border will BLM be reclaiming these horses?	The question is unclear and outside the scope of the analysis. Wild horses gathered by the BLM receive a freezemark on the left side of the neck.
8.64	Gail Kenney	<p>Might I ask for numbers, not hma's or other tactics to try to fool the public.</p> <ul style="list-style-type: none"> • How many acres of grazing land (total) does BLM manage? • How many head of wild horses does BLM "estimate" is wild & free on these acres? • How many head of PRIVATELY owned livestock is on this BLM manage 	These questions are not specific to the Fish Creek HMA gather, nor the Battle Mountain District and need to be directed to the BLM Wild Horse and Burro National Program Office.

		<p>acreage at peak grazing season? Do these cattle have access to the area the horses live in? That would be yes or no.</p> <ul style="list-style-type: none"> Do the wild horses have access to all the areas the privately owned cattle are on? Again yes or no What is the ratio of public grazing acres to the number of cattle that are on that land at peak grazing season? What is the ratio of public land to the number of wild horses on our public grazing lands? _____ How many head of our wild horses & burros live in BLM contained unsheltered holding areas? What is the total acreage that these penned horses live on? What does it cost a rancher to graze a cow/calf combination on our public lands per month? \$1.35 Is this correct? What is it costing the taxpayer to have BLM manage 1 of those wild horses in unsheltered holding pens per month? \$150.00 Is this correct? Who does the math to figure this business plan out, so it is so beneficial to charge the taxpayer and have the rancher make a profit off the taxpayers \$\$ and the cost to the wild horses of their freedom and lives? What is the average cost of each helicopter "gather"? 	
8.65	Mike McWilliams	<p>Regarding removal of concentrated groups of horses from the gather area: even small groups of horses that gather around a particular riparian or forage feature can degrade that feature. This can be true regardless of whether the HMA population is at AML or not. Convince me that BLM concern about concentrations of horses in a limited area is not a pretext for additional removals, particularly if that activity would result in a population below AML.</p>	<p>Typically, wild horse concentration within certain portions of an HMA will increase as the population increases in relation to the resources, or in the case of drought that diminishes available water. In some cases, wild horses inherently concentrate in portions of the HMA for reasons that might include desirable foraging areas or limited human interaction. In any case, the monitoring data from field visits, gathers and inventory flights is utilized to determine when excess wild horses are present and need to be removed to maintain a thriving natural ecological balance and prevent resource degradation. This data would also be utilized to determine if the AML is appropriate or if it should be adjusted. Concentrated use by wild horses is not necessarily a reason to remove wild horses, or removal of horses below an AML. It may be an indicator that the population is currently over AML, a larger portion of horses need to be removed from a certain area or that AML needs adjusted.</p>
8.66	Mike McWilliams	<p>In past gathers horses that had taken up residence outside the HMA were removed, period. Is it correct that this gather plan will not remove all horses outside the HMA but is planning to manage these horses where found; including gather, selective removal, PZP treatment and returning horses to lands outside the HMA?</p>	<p>Due to the limited removals approved for the 2015 gather, it was determined that rather than target a certain location for removal of excess wild horses, that removal would be implemented throughout the area (inside and outside of the HMA) in order to</p>

		<p>The March 2014 inventory showed 154 horses outside the HMA. So, if they were all removed as in previous gathers they would not all be candidates for adoption (weanlings to 3 year olds). What then happens to the horses that are not adoptable and how does that affect the numbers that will be removed from within the HMA?</p> <p>My preference would be to only remove adoptable horses whether on the HMA or not; including relocation of older PZP mares and studs to within the HMA, if leaving horses outside does not comply with current policy.</p>	<p>provide relief throughout the larger area, and to remove the most adoptable horses.</p> <p>In gathers where all ages of horses are removed to meet the gather objectives, the horses that are eleven and older are eligible for the sale program, as are horses that are offered for adoption three times, and not adopted. The younger horses (weanlings to 5 years of age) are typically entered into various adoptions and/or training programs. Though the horses 6-10 are still technically adoptable, the chances of them being adopted are less, so they may go into the sale program or to Long Term Pastures where they remain the rest of their lives. The overall program-wide number of wild horses in short and long term holding does affect the number of excess wild horses that can be approved for removal throughout the western states. Thus the reduced gather numbers for the Fish Creek HMA and inability to achieve the AML during the 2015 gather. Moving the horses back into the HMA would not necessarily result in them staying there. The higher the population, typically the more horses move out into Antelope Valley in the west and into Little Smoky Valley in the east.</p>
8.67	Mike McWilliams	P.3: "The gather and treatment activities would involve wild horses both inside and outside of the HMA boundaries within the areas noted on Map 1." Would treated mares be released outside the HMA boundaries?	When released, all wild horses would be released back to the range within the HMA boundaries.
8.68	Mike McWilliams	P.5: "This EA will include analysis for gathers and population growth suppression that could be implemented within the Fish Creek HMA, and areas outside of the HMA over the next ten years." What would trigger the complete removal of horses outside the HMA?	In future phases of the project, if approved for sufficient removal numbers to achieve AML, the wild horses that have established permanent residency outside of the HMA could be targeted for removal.
8.69	Mike McWilliams	P.5: Table 1. Total AML listed as 101-107. Should be 101-170	Thank you. The typo has been fixed.
8.70	Mike McWilliams	P.8: "The lower level represents the number of animals that should remain in the HMAs following a wild horse gather in order to allow for a periodic gather cycle." The lower AML number should reflect BLM thinking about viability and genetic diversity of the harems. If gather frequency were the only concern the lower AML could theoretically be set to zero.	Genetic variability is also a consideration when establishing the AMLs.
8.71	Mike McWilliams	P.9: Typo, 3 rd bullet AML should be 101-170.	Thank you. The typo has been fixed.
8.72	Mike McWilliams	P.15: Under the Proposed Action sex ratios would not be adjusted for horses returned to the HMA. For the Proposed Action why would you not use all the tools available to try to control population growth?	In order to provide an adequate range of alternatives, one Alternative was chosen to include sex ratio adjustment (Alternative 3).

8.73	Mike McWilliams	What consideration is given to whether a mare is in foal as to whether she is removed or released back into the HMA? As many as 50 mares in the gather group will be in foal. Some will be in the under 4 group to be selectively removed. What about the rest?	Mares would be chosen for removal based on age, characteristics, health and demeanor if applicable. Many of the mares that are three years of age or younger would be removed and sent to the BLM facilities for adoption. Many of these mares could be pregnant. They could be adopted as pairs with the foal that is born in spring 2015, or adopted separately once the foal is weaned. In any case, the mares removed from the range will have adequate forage and water at the BLM holding facility which will enable them to provide for the needs of the foal. These younger mares (≤ 3 years of age) are still growing and their metabolic needs are high, especially those that are pregnant or nursing. If left on the range in the fourth year of drought, forage and water will most likely be limiting as it has been since 2012, and their health could suffer. The mares released to the range will mostly be four years old and older. They will be more fully developed, and mature, and have a better chance of remaining healthy with limited resources, as well as raising a foal.
8.74	Mike McWilliams	P.36 Figure-bottom of page: I don't believe the red line on the figure accurately shows AML expressed as AUM.	You are correct. The figure has been corrected.
8.75	Mike McWilliams	P.40 Table 13: Column Headings?	Thank you. The issue has been fixed.
8.76	Mike McWilliams	P.99: "...forms of sterilization of mares or studs could be implemented..." I would hope there would be an environmental assessment made available to the public before the agency so much as attempted to study the effects of castration, vasectomy, laparoscopic ovariectomy, colpotomy on individual horses or on herd behavior.	One of the purposes of the Cumulative Effects Analysis is to identify potential future actions that could also affect the resources analyzed in the EA. These actions are not known at this time. As required, appropriate environmental documentation would be completed regardless of the future actions. A statement has been added to Chapter 4 to clarify this.
8.77	Mike McWilliams	P.108: "...horses are allowed to travel at their own pace, and are not "pushed"..." I believe that horses traveling at their own pace would prefer to remain where they were before the helicopter arrived. It is fair to instruct the pilot to allow the horses as much as possible to walk or trot as they approach the wings of the trap. But words the bureau uses have meaning. And the implication in this case is that helicopter herding is something nice when in fact it is a hard, dangerous business.	The discussion referenced was to differentiate the helicopter drive from one that caused the horses to run at full speed for many miles, which is not the case. Further clarification has been provided to elaborate that wild horses are allowed to set the pace whether a trot or slow lope, as the helicopter follows the horses from a long distance away for most of the drive, and only when nearing the trap corrals at the end of the drive is the distance shortened and the pace increased.
8.78	Mike McWilliams	P.135: "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." Syntax needs a little help.	This has been edited. Thank you.
8.79	Janet	Please do not go forward until your EA is cleaned up of duplicative language and	It is not clear what duplicative language or which scientific

	Schultz	scientific studies revealing concerns for the wellbeing are investigated.	studies are being referred to.
8.80	Janet Schultz	Where are the horses going that are deemed excess?	Palomino Valley Corrals, north of Sparks, Nevada.
9.1	FRER	BLM has not sufficiently considered the impacts of the Proposed Action on wild horses and burros, although it intends to rely on the Preliminary EA to support “a long term management plan with the objective of slowing population growth and achieving the established [AML] over the next ten years.” BLM’s regulations make clear that management of wild horses and burros must conform to the RMP once it is finalized. 43 C.F.R § 4710.1. Although subsequent data gathering and assessment and additional NEPA decision documents are required before this proposed gather and any subsequent on-the- ground action affecting horses and burros could take place, BLM’s current actions nevertheless require the agency to have a supportable basis <i>now</i> for the “gather goals and objectives” that the Preliminary EA prescribes. As currently written, the Preliminary EA does not provide that supportable basis for the gather.	Throughout the EA, detailed information is provided pertinent to the Purpose and Need for the Proposed Action (Section 1.3), <i>Conformance with Existing Land Use Plans</i> (Section 1.4), <i>Relationship to Statutes, Regulations, Policy, Plans or other Environmental Analysis</i> (Section 1.5), <i>Conformance with Rangeland Health Standards</i> (Section 1.6), and information about the Affected Environment and Environmental Consequences to Wild Horses (Section 3.2), Cumulative Effects Analysis (Chapter 4) and a series of numerous Appendices that provide additional supporting information about the Standard Operating Procedures (A), the Wild Horses (B), Precipitation, Drought and Monitoring (D, and Summary of Population Modeling (F). The Final EA has been updated to include additional Appendices, clarification and corrections.
9.2	FRER	Repeated, regular gathers by helicopter and bait methods over the next several years is extremely distressing to the herds and disruptive of their families and social structures.	The potential impacts to wild horses are discussed in Section 3.2. The objectives of the Proposed Action include the application of Population Growth Suppression (fertility control) that if successful, will reduce the need to conduct helicopter gathers in the future.
9.3	Susan Carter	The removal of weanlings and yearlings destroys herd structure. Removal of weanlings and yearlings up to 3 years old is not in conformance with the goal "wild horse and burro herds that exhibit appropriate age structure and sex ratios for short and long term genetic and reproductive health." STANDARD 5. If weanlings and yearlings are removed the goal of "preserving and enhancing physical, biological characteristics that are of historical significance to the herd" are lost. Guideline 5.4 "...ensuring desirable traits are preserved in the herd thus providing a reproductive base to increase highly adoptable horses for future demand" is also interrupted by removal of weanlings and yearlings. Guidelines 5.5, 5.6, 5.7.	Though the removal of most wild horses three years of age and younger will affect the existing age structure, it will not be an extreme departure as was the policy at the time the NEGB RAC Wild Horse and Burro Standards and Guidelines were developed which was to remove horses 9 years of age and younger and release horses 10 years of age and older. There will be a portion of the population that does not get captured which will reflect the existing age structure. Additionally, uncaptured mares will not be treated with fertility control vaccine, and a portion of those treated will not respond to the vaccine and thus will continue to have foals. Being that nearly 64% of the existing population will remain on the range post gather (300-349 wild horses), the characteristic and historic traits of the HMA will remain. Additionally, as stated in Section 2.3.6 of the EA: <i>Objectives for the Fish Creek HMA regardless of gather method include ensuring that the population consist of diverse age groups and reflect the historic range of characteristics for this HMA. Wild horses would also be selected for release back to the Fish Creek HMA, based on health, demeanor, and other desirable historic characteristics.</i>
9.4	Lianne/Gwe	Why can't fair treatment be done out west: round up our herds on horseback	Refer to Section 2.5.2 of the EA. Gathering wild horses on horseback in

	n Teeters	and go at a pace the herd can handle, give special treatment to pregnant mares and mares with foals so as not to injure them or cause them inhumane stress, allow to rest every so often so they can recoup and regroup. These methods employed in the East and there is never trampling or lame horses on these roundups.	the remote and rugged terrain of the HMA is extremely dangerous and ineffective, especially on a large scale. The MLFO is very sensitive to the fact that mares will be heavy with foal and that there may be newborn foals in the population. Extra care will be taken to gather these horses carefully.
9.5	Sheryl Be kooky	It seems that so many horses get injured in the gathers.	Refer to the discussion in the Environmental Consequences portion of Section 3.2 that discusses injury and death rates during gathers.
9.6	Marybeth Devlin	BLM's use of helicopters to round up the wild horses is inhumane. There is no way to make it humane. The horses are terrified by the low-flying helicopter. Panicked, they stampede, injure themselves, and become separated from their babies and bandmates. Mares miscarry. Foals become orphans. Many horses die from stress, even more have to be euthanized. Helicopter-style roundups are abusive, especially to foals, older horses, and pregnant mares.	Opinion. Refer to the Environmental Consequences portion of Section 3.2.
9.7	Marybeth Devlin	As has been documented on video, helicopter pilots conducting roundups appear in a hurry to gather as many horses as quickly as possible, presumably to maximize profits -- they are paid a flat fee plus a per-horse amount. Frustrated by the wild horses' lack of cooperation and impatient to get them moving faster, the pilots ram the horses with the aircrafts' landing skids, in some cases even flipping the animals into a somersault. There is video documentation of such abuses, and a court found that they had indeed occurred. There has also been documentation of contractors whipping wild horses in the face, kicking them in the head, dragging them by the neck with ropes, using electric prods on them. <i>Worse yet, much of the abuse goes undetected because the roundup pilot generally flies solo.</i> <u>Recommendations:</u> Helicopter-style roundups must be <i>abolished</i> . BLM should institute the kind, bait-trapping approach to gathering wild horses -- when truly necessary, which it is not at this time in regard to the Fish Creek herd.	Refer to the description of the Proposed Action Section 2.2, the Environmental Consequences portion of Section 3.2, Wild Horse Gather Mitigation Measures Section 3.9 and the Comprehensive Animal Welfare Policy in Appendix G. Refer also to the SOPs in Appendix A, including the Agency Expectations in Section III. Bait and water trapping is included as an element of the Proposed Action, Alternative 2 and 3.
10.1	Eureka County Board of Commissioners	We argue with the purported benefit of treating mares with PZP and then releasing them. It has been established that this method is sub-par and results in limited efficacy in reducing reproductive rates in the long run.	Comment noted. As detailed in the Proposed Action, the MLFO plans to continue the treatment with the fertility control vaccine regardless of approval to conduct helicopter gathers or removals, which has been one of the reasons for reduced success in other HMAs.
10.2	Eureka County Board of Commissioners	The Fish Creek horses have been "handled" extensively and are very skittish. The horses have already proven difficult to gather on past gathers. The repeated gathering or effort to get near enough to the horses to re-administer the required follow-up doses will prove even more difficult moving forward.	This is completely untrue. The most recent gather of the Fish Creek HMA was 2006 (nine years ago). The horses have not been difficult to gather during past operations any more than other BMD HMAs. Monitoring through 2015 shows that the

			horses are less wary of humans than many other HMAs.
10.3	Eureka County Board of Commissioners	Any treatment of fertility control methods will only be effective if the herd is first brought to low end AML. Applying fertility control to such an overpopulated herd is futile and a waste of taxpayer funds. We implore BLM to immediately bring the herd to AML and administer PZP to only the excess mares gathered below AML than can be released.	Comment noted. At this time, the MLFO has only been approved to remove 200 excess wild horses. Should approval be granted in the future to remove additional excess wild horses, the MLFO would implement the removals.
10.4	HSUS	<p>The HSUS has a long history of involvement in human-wildlife conflict resolution and is committed to working in a positive manner with the BLM to promote the creation of sustainable, humane and fiscally responsible solutions to wild horse population issues. Perceived rangeland conflicts are at an all-time high and it is imperative that the BLM proceed with a humane active management structure which lowers wild horse population numbers.</p> <p>The HSUS is greatly encouraged by the BMDs plan to use fertility control on the Fish Creek Herd Management Area and would like to offer our support to aid in the implementation of the program. We encourage the BMD to contact our Organization, and look forward to working with you.</p>	Comment noted.
10.5	Renee Espenel	The temporary sterilization action is a step forward in animal welfare.	Comment noted.
10.6	Marybeth Devlin	<p>It is inappropriate to treat our Heritage-Horses as pests. But that is exactly what BLM does when it injects wild mares with PZP. Rather than being a medicine, PZP -- also known as ZonaStat-H -- is classified as a pesticide, a contraceptive used on horses labeled "pests."</p> <p>Further, PZP is a biohazard, as reflected in the warnings, excerpted below, which are included in the Environmental Protection Agency's fact-sheet.</p> <p>Personal Protective Equipment requirements include long sleeved shirt and long pants, gloves and shoes plus socks to mitigate occupational exposure.</p> <p>A warning that pregnant women must not be involved in handling or injecting ZonaStat-H and that all women should be aware that accidental self-injection may cause infertility.</p>	<p>The fertility control vaccine ZonaStat-H is manufactured by The Science and Conservation Center from a protein in pig ovaries. It is registered with the EPA. Consistent with the EPA definitions, ZonaStat-H is registered as a pesticide. The EPA glossary provides this definition: pesticide - Substances intended to repel, kill, or control any species designated a "pest" including weeds, insects, rodents, fungi, bacteria, or other organisms.</p> <p>The ZonaStat-H fact sheet is available at the website provided below. It is registered as a "Sterilant/Hormone" and "Mammalian Contraceptive".</p> <p>Because PZP is effective for human use, the precaution for women handling the vaccine is a standard warning.</p> <p>http://epa.gov/pesticides/chem_search/reg_actions/pending/fs_PC-176603_01-Jan-12.pdf</p>
10.7	Marybeth Devlin	<p>Treating with PZP endangers the Fish Creek herd's long-term survival. The PZP contraceptive is not without risk and can have unintended consequences, such as:</p> <p>If mares are in <i>excellent health and condition</i> at the time they are treated, PZP can cause <i>too strong</i> an immune-response, resulting in long delays in</p>	Refer to Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i> which discusses the use of fertility control in detail. It is not known what the commenters statements are based on.

		<p>restoring fertility or outright sterilization after even the initial treatment. Multiple injections are likely to result in irreversible loss of fertility.</p> <p>Ironically, PZP works <i>less well</i> in mares that are in <i>ill health or poor condition</i> -- they are <i>likely to conceive despite PZP</i> treatment. Thus, the fittest mares don't reproduce while the least fit ones -- the immuno-compromised -- often do. Ironically, PZP selects for horses with a weak immune system.</p> <p>PZP does not prevent ovulation and does not change mare behavior toward stallions. As a result, mares suffer repeated, stressful, futile breedings while the band-stallions have to battle continuously to keep their always-in-estrus mares.</p> <p>Out-of-season pregnancies and births occur due to the wearing off of the drug at inopportune times. Foals born at the wrong time of year may not survive, and the mares' health may be endangered as well.</p> <p>There are reports of mares treated with PZP becoming masculinized, a phenomenon that occurs for reasons yet unknown.</p> <p>Mares on PZP are less faithful to their family-band, changing allegiance over and over. Such chaos might be sustainable in a relatively-small, contained environment such as Assateague Island. However, when an HMA spans hundreds of square miles, as does Fish Creek, band-fidelity is crucial to the survival of its members, particularly the foals.</p>	
10.8	Mary Devlin Beth	<p>The meta-analysis linked below was published in the journal <i>Reproduction</i>. Studies of the side-effects of different wildlife contraceptives, including PZP, were reviewed. [Once on the site, page down to the sidebar on the right of your screen next to "Abstract" and click on "Results" and then on "Discussion."]</p> <p>http://www.reproduction-online.org/cgi/content/full/139/1/45</p> <p>Listed below are the findings with regard to PZP:</p> <p>Males lose body condition while the oft-claimed improvement in female body condition did not hold up.</p> <p>Females experienced increased irritability, aggression, and masculine</p>	

		<p>behavior.</p> <p>Mares remained sexually active beyond the normal breeding season and had more "estrus events."</p> <p>The possibility of "selecting for immuno-compromised individuals" is raised.</p> <p>Finally, the analysis questions the supposed benefit of mares living much longer than their normal life expectancy.</p> <p><u>Recommendations:</u> BLM should provide that, until the herd's population reaches the level deemed more-than-adequate for genetic viability, contraceptives will <i>not</i> be used. This provision is critical due to the risk of sterilization from PZP, a drug which has so many adverse effects.</p> <p>Should disaster strike the Fish Creek herd, fertility needs to be quickly restorable. PZP would work against saving a herd hit by disaster.</p>	
10.9	Marybeth Devlin	Reject the use of contraceptive pesticides such as PZP. Human-directed population-control interferes with natural selection and reduces genetic diversity. Moreover, immuno-contraceptives tend to select for immuno-compromised horses.	Alternative 1 analyzes management of the Fish Creek HMA without the use of fertility control.
10.10	Janet Schultz	Please see attached documentation of pigs being negatively impacted by GMO'd feeds and consequently parts containing proteins of the GMO'd feeds may be being administered to our wild horses. Where are necropsies of wild mares who have died after being PZP'd. Where are necropsies of foals from PZP'd mares?	The MLFO has not documented any wild mares that have died after being treated with fertility control, and has not performed necropsies on foals from treated mares. Refer to Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i> which discusses the use of fertility control in detail.
10.12	Janet Schultz	Define what other formulation of PZP.	This question is not clear. The two current formulas of PZP are described in the EA in Section 2.3.1.
10.13	Public Interest Coalition	"Treat and release" operations must become Standard Operating Procedures, especially when fertility controls and natural attrition will appropriately balance herd populations, as needed. Nature will often do the deed much better than private or public agencies.	Opinion. Comment noted
10.14	Susan Carter	Ransom et al. (2010) found that control mares were herded by stallions more frequently than PZP- treated mares, and Nunez et al. (2009) found that PZP-treated mares exhibited higher infidelity to their band stallion during the non-breeding season than control mares. Madosky et al. (in press) found this infidelity was also evident during the breeding season in the same population that Nunez et al. (2009) studied, resulting in PZP-treated mares changing bands more frequently than control mares. Long-term implications of these	This paragraph is already included in the EA Section 3.2.

		changes in social behavior are currently unknown. Kirkpatrick et al. (2010) conclude by stating that “the larger question is, even if subtle alterations in behavior may occur, this is still far better than the alternative” and that the “other victory for horses is that every mare prevented from being removed, by virtue of contraception, is a mare that will only be delaying her reproduction rather than being eliminated permanently from the range. This preserves herd genetics, while gathers and adoption do not.”	
10.15	Sheryl Be kooky	Support PZP	Comment noted.
10.16	Gail Kenney	Who and how many authorities have determined that the drug PZP is not harmful or long lasting for use in equine? Who has determined that the use of this and other drugs in not causing problems with birthing cycles (foals being born in winters) and long term sterilization?	Refer to Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i> which discusses the use of fertility control in detail.
10.17	Lisa Perkins	Concern of using what sounds like an experimental birth-control method on the wild horses. I believe that if they are wild they should not be tampered with in this way, to use them as an experiment so to speak. The natural ways their bodies deal with reproduction and many other aspects could be altered. We disagree with this method. These horses are part of history and culture, a beauty that our country should be very careful in how we handle them, as if they were our own family members. In the animal kingdom, 'survival of the fittest' is the natural law and wouldn't this interfere?	
10.18	Mikolaj Przybylski	I am against the round up and treatment of mares with PZP, we have an under population of wild horses on our public lands. PZP is a pesticide and our wild horses are not a pest.	Refer to Response to Comment 11.6 above. Refer to Section 1.3 of the EA. Alternative 1 does not include the use of fertility control.
10.19	Anne Novak/Protect Mustangs	An animal that is drugged up with pesticides made from slaughterhouse pig ovaries--or sterilized to stop breeding and other normal wild behaviors--quickly becomes a domesticated animal living on the range--not a wild animal.	Refer to Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i> which discusses the use of fertility control in detail. BLM has been implementing fertility control in wild horse populations since the mid 1990's, and PZP has been studied for use in wild horses since the 1980's. Within the MLFO, four HMAs have been treated twice since 2008, and two others treated once. There is no indication from any of the data available that mares treated with the reversible fertility control vaccine become “domesticated” rather than wild and free-roaming.
10.20	Anne Novak/Protect Mustangs	We represent the opinions of thousands of supporters who like us are against your Fish Creek HMA Environmental Assessment and proposed action to roundup, trap, remove, inject wild mares with PZP or any form of fertility control/sterilization, release some and/or skew sex ratios, etc.	Comment noted.
10.21	Anne	This sort of proposed harassment is in violation of the law signed by Richard	This statement is untrue. The WFRHBA states that the Secretary

	Novak/Protect Mustangs	Nixon in 1971 to respect and protect wild horses and burros and their right to roam forever free. This is outrageous harassment of a native species that must be protected better from your years of "birth control" experimentation and abuse.	shall <i>determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization, or natural controls on population levels).</i>
10.22	Anne Novak/Protect Mustangs	PZP (native, 22, etc.) is an EPA approved restricted-use pesticide, made from slaughterhouse pig ovaries that causes sterilization after multiple use as well as behavioral changes in wild horses and their herds.	Refer to Response to Comment 11.6 above and Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control).</i>
10.23	Anne Novak/Protect Mustangs	PZP changes wild horse behavior. Shooting them up with PZP ruins our chance to observe, be inspired by and study real wild horses in the wild. Currently there is a big MRSA problem found in slaughterhouse pigs. How many pig ovaries does it take to temporarily sterilize one wild mare? Why are vegan horse advocates, amongst others, pushing to inject wild horses with pig ovaries? This does not make sense--just like everything surrounding PZP does not make sense.	
10.24	Anne Novak/Protect Mustangs	Having volunteers administer PZP that are not veterinarians should never be allowed but even so we would never support the use of PZP due to the risks involved. We are against giving volunteers--who have little knowledge of even domestic horses--any sort of decision making powers when it comes to America's wild horses.	Qualified, trained applicators will administer the fertility control vaccine.
10.25	Anne Novak/Protect Mustangs	Harassing wild horses by darting them with PZP is wrong and surely illegal. Creating zoo-like exhibits on public land will ruin this native species and is in violation of the spirit of the 1971 Act. We want to observe wild horses living naturally as nature intended--in the natural world.	Application of the fertility control vaccine via darting causes minimal disruption to wild horses on the range, and certainly less than that imposed by helicopter gathers. There is nothing illegal about using darting as a mechanism to treat wild horses with fertility control. A program to implement fertility control on the range would not create a zoo-like environment. Wild horses would remain free-roaming on the range.
10.26	Deana Bishop	PZP is used by slaughtered hogs in an unsterile environment. Ovaries are taken from hogs that have been fed GMO feed. GMO's as we all know cause cancer, death, and disease. Many hogs taken to slaughterhouses are sick, diseased and more often than not are dying. How can anyone possibly believe that the ovaries you are using in PZP isn't contaminated to begin with? You don't test on them. You certainly have no way to determine if the ovaries where from healthy or a diseased pig. So every batch that is made is a experiment. One of your studies said that PZP was not approved and therefore would always be considered experimental. SO effectively you are using PZP as an experiment to complete the geneocide of the wild horses who are native to the area.	Refer to Response to Comments 11.6 and 11.7 above.
10.27	Deana Bishop	There is no reason what so ever to use PZP, sterilize all of the stallions, do hysterectomies on mares, or any of the other horrendous acts that the BLM	Refer to the Purpose and Need for the Proposed Action in Section 1.3. The Fish Creek Gather EA does not analyze gelding of

		has done to wipe out the wild horses.	stallions, performing hysterectomies on mares or any horrendous acts that would wipe out the population.
10.28	Deana Bishop	Pzp should not be used on any wild horses.	Opinion. Comment noted.
10.29	Henry Kimbell	Where wild horse and burro population numbers must be controlled on the range, do so with a rigourously monitored birth control process based on the use of PZP over an extended period of time, allowing for natural attrition. Do not use any permanent, non-reversable birth control proceedures or sex ratio adjustment that may severely limit herd genetic viability, impact animal health, and alter natural animal behavior in the wild	Comment noted.
11.30	JC Coleman	Utilize a carefully planned PZP program-	
10.31	Linda Pepin	If there you feel there is an overpopulation that leads to over grazing you should use sterilization methods. They are less costly and more effecient for the long term.	
10.32	Janet Schultz	<p>I have to laugh at your suggestion that PZP-ing every mare on the HMA, plus boosting, roundups to treat (I imagine every mare) will still yield a growth from the original 150 PZP'd mares, darting and retreating) will STILL yield a population of 409 from the original 300-349 released!</p> <p>You are suggesting that there will be a growth of only 109 horses over a 10 year period. How? This is pure fantasy.</p> <p>If from the original 100-149 mares treated, and a sex skew of 60% stallions - plus continuous darting and treatment (assuming on below sexually mature fillies to prevent impregnation by desperate stallions) you expect a growth of 10.1 horses per year?</p> <p>This is criminal thinking, you know that. This activity is full on against the intent of the Act.</p>	<p>The comment regarding 409 wild horses is assumed to be referencing the Average population provided through the Population Modeling and the results of the most typical trial (Appendix E, Table 8). The model is intended to show the “range of potential outcomes”, and not to predict the exact outcomes. As shown in Appendix E, Table 8, under the Proposed Action, the population in year 2 jumps to 497, presumably due to the foaling by the mares prior to the fertility control vaccine becoming effective. As described in the text following Table 10, the percentage of mares that can be “gathered” or treated through darting or bait and water trapping was set as 90%. Thus, 10% of the mares are not treated every year. Additionally, the effectiveness of the fertility control was set to 94%. With these assumptions in the model, a portion of mares would continue to foal. This would be offset by attrition through normal mortality. With treated mares living longer, healthier lives, the mortality rates would be lower for a portion of the population. Thus, the population decreases slowly from 497 in year 2 to what the model shows as the projected population in year 11 of 324. The <i>average</i> population over the time period shows as 409. The most useful way to assess the modeling results is to compare the results by Alternative in a relative sense – population sizes, numbers removed, animals treated etc.</p> <p>The Proposed Action does not include sex ratio adjustment. Refer to Appendix E which includes a great deal of information about the population modeling.</p>

10.33	Anna Catherman	Also, while a PZP program is an improvement from removals, it is not the perfect solution, as suggested by many groups. The proposed action involves treating as many horses as possible-up to 100% of the total number of mares! This plan would make Fish Creek's program one of, if not the most intensive ever initiated in a wild horse population. The only comparable site is Assateague Island, where mares are treated until they are 5 years old, taken off until they produce one foal, and then put on for the rest of their lives. Another well-known population, the Pryor Mountain Wild Horse Range, also implements a fairly rigorous fertility control program, however the mares there are off treatment from age 4-10 to produce foals. In these and many other herds, some side effects have been observed in which PZP may or may not be a direct factor. For example, a paper published in Applied Animal Behaviour Science entitled, "The effects of immunoneutralization on harem fidelity in a feral horse (<i>Equus caballus</i>) population", notes that "...recent studies on the horses living on Shackleford Banks (a barrier island off the North Carolina coast) and in the western United States, demonstrate differences in recipient behavior and physiology [Nunez et al. 2009, Nunez et al. in review, Ransom et al. 2010]. Shackleford mares receiving PZP change harem groups more often and treated horses in both areas both initiate and receive more reproductive behaviors than do untreated mares. For a gregarious species like the horse, such changes may have serious social and demographic consequences." There is much more data on PZP use for wild horse herds, both positive and negative, but I cannot include all of it here, however I would like to add another section from the paper I previously cited. "If feral horse herds are to be maintained in as natural a state as possible, we recommend that subadult, dispersing females be allowed to have (and keep) at least one foal before receiving contraception [Kirkpatrick 1995], and that mares should not receive PZP for several consecutive seasons." If you do wish to include a PZP program as part of the management of the mustangs in Fish Creek, I strongly encourage you to treat no more than 75% of mares, and to track individual mares to ensure that any one mare under age 15 is given no more than four doses of PZP in a row, (or two doses of PZP-22) to preserve the mares' fertility.	Refer to Response to Comment 11.32 and Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i> .
10.34	Carol Kyer	The drugs you want to use on the mares is unsafe.	Refer to Section 3.2 <i>Impacts Common to the Proposed Action, Alternative 2 and 3 (Implementation of Fertility Control)</i>
10.35	Carol Menninger	Stop darting of PZP birth control, esp by helicopters which will stop serious injuries and trauma to horses, and costs less....have heard this alone has worked in other states, WYO, CO, MT.	The application of fertility control via darting would not be completed using helicopter, but instead qualified personnel on the ground in the field.
10.36	Judith Cassario Judy Prisoc	A well managed PZP program is preferable to removal. Reduce wild horse herd sizes through a carefully planned birth control (PZP) program rather than	Comment noted.

		using round ups to reduce the numbers of wild horses.	
10.37	Elizabeth Brister	In areas where the horses are breeding too fast for attrition to manage the herd size, utilize birth control that is not permanent but allows time for breeding rates to catch up with optimal herd size.	
10.38	June Hazen	I understand the need to sterilize the mares and just like other species there is a need to control their population.	
10.38	Linda Skidmore	Not opposed to the vaccination process to temporarily inhibit the mares fertility,	
10.39	Barbara Bessy	DOI/BLM should use <u>strict</u> animal welfare protocols in administering PZP contraceptives to certain categories of ages of Mares of the Wild Horses.	Refer to Appendix A, C and G of the EA.
11.1	WHE	<p>EA Section 2.3.5, Animal Identification and Monitoring: Recommend specifically an intention to include monitoring to gather additional information on herd dynamics and effects of helicopter drive trapping/ PZP administration/release on existing wild horse population. Comparative data would be available from consecutive years prior to the gather from drought monitoring, and band restructuring information could be obtained through use of game cameras and field monitoring immediately after release. The additional information could be pertinent to complete analysis of determination of appropriate future capture methods in this HMA.</p> <p>Page 58: Noted that PZP branding with additional identifier for mares will be utilized. Recommend utilizing some type of HMA brand to assist in data collection post operation of studs released for tracking purposes relevant to herd structure (including genetics information) and confirmation of HMA exchange.</p> <p>We offer in support of our comments (1-3) the National Academy of Sciences (NAS) review, June 2013, page 3 (Findings) “<i>Management of free-ranging horses and burros is not based on rigorous population-monitoring procedures.</i>” As protocol recommendations from the report are forthcoming, inclusion of such additional actions would be appropriate.</p>	<p>Additional information has been added to Section 2.3.5 and Section 3.2 and Chapter 5 of the EA to provide clarification. Applying individual freezemarks to each mare and potentially HMA freezemarks to studs presents a unique opportunity for data collection through many avenues that could be useful in assessing band structure/restructure/patterns, movement patterns, use patterns, animal health and foaling status, and much more. The MLFO does not intend to restrict the amount of data that could be collected, with the realization that staffing and budget limitations could be factors.</p>
11.2	WHE Rhonda Lanier	We would like to see inclusion of data that tracks wild horse disposition (adoption, holding, Long Term Holding) of the horses removed from Fish Creek. Tracking information could be relative to future analysis of any selective removal alternatives proposed in future action alternatives.	Though this is outside of the scope of the analysis for this project, tracking the wild horses that enter the adoption program or LTPs would be possible through accessing the Wild Horse and Burro Program System which can be done by BLM staff once the horses have been freezemarked. This information can be

			periodically accessed and compiled as part of future planning for this HMA.
11.3	Henry Kimbell	All activities practiced in the management of wild horse should be supported by rigorous data collection so that accurate analysis can be carried out relative to the success of actions taken, for example in application of PZP control. As per the 2103 National Academy Of Sciences report, scientific, data-driven management of free-ranging horses and burros has not been applied and it is critical, if we are to establish accurate AMLs or implement successful on-range management practices, that we take a deep breath and do the job right	Comment noted.
11.4	Marybeth Devlin	<p>BLM procedures call for the mares that are treated with PZP to be freeze-marked. The standard procedure is to brand them with two or three letters, each of which is 4 inches in size. The purpose of these disfigurements is to allow staff to spot and identify these mares from afar or from on high -- that is, from a helicopter.</p> <p>This graffiti is <i>unacceptable</i>. Surely, no horses with such blemishes will ever be adopted. Their ruined appearance will also spoil the wilderness-experience of eco-tourists who come to see mustangs in their natural setting.</p> <p>Contrary to an erroneous claim made in the EA, microchips <i>are</i> available for identifying horses. Please see the article linked below:</p> <p>http://www.sciencedaily.com/releases/2013/06/130625121231.htm?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+sciencedaily%2Fplants_animals%2Fhorses+%28ScienceDaily%3A+Plants+%26+Animals+News+---+Horses%29&utm_content=Yahoo!+Mail</p> <p>Contrary to another incorrect claim made in the EA, tracking collars <i>are</i> in widespread use as well. Certainly it would be preferable to collar wild horses rather than to disfigure them permanently.</p> <p>http://en.wikipedia.org/wiki/GPS_wildlife_tracking</p> <p><u>Recommendations:</u> The use of defacing freeze-marks must be abolished. With regard to tracking and locating wild horses, BLM should employ inconspicuous electronic devices, such as telemetry collars. It should be noted that such collars can also provide a record of each mustang's personal data for longitudinal studies. It is time for BLM to use modern tracking methods instead of desecrating the beauty of our Heritage Horses.</p>	<p>Thank you for providing the link on microchips. Unfortunately, the page doesn't come up. The BLM currently has not identified any approved or safe methods to insert tracking microchips or use tracking collars. Studies are ongoing to develop safe and effective collars, and as soon as improved, and safe tracking mechanisms are available, the MLFO will assess their use.</p> <p>It is not anticipated that any of the freezemarked horses would be removed in the future or offered for adoption.</p>

12. Appropriate Management Level, Perceived Inequality of Livestock and Wild Horses			
12.1	WHE	<p>Although not noted in the EA (as addressing factors of forage allocations are outside the scope) we would like noted in our comment record:</p> <p>All grazing allocations within the Fish Creek HMA (livestock and wild horses) have been based on historic use equations and not on actual grid mapping of appropriate forage availability. Historic patterns of over grazing by domestic livestock have become an "acceptable use" pattern on much of our western landscape. This long standing practice has created much contention. At no time has an actual analysis occurred that has at the focus the determination of management of a healthy wild horse population as mandated by Congress.</p>	Comment noted.
12.2	Anna Catherman	<p>While I understand that adjusting the AML is out of the scope of this EA, I strongly encourage you to consider this in your next RMP. When 5x the AML can exist with reasonable Henneke scores, in severe drought conditions there is certainly a possibility of the AML being underestimated. According to the NAS report, Using Science To Improve the Wild Horse And Burro Program: A Way Forward, "The committee could not identify a science-based rationale used by BLM to allocate forage and habitat resources to various uses within the constraints of protecting rangeland health and listed species and given the multiple-use mandate.</p>	
12.3	Donna Canada Elizabeth Brister Helene Beck Judy Prisoc Karen Richards Kay Robinson Kimberly Berman Lisa Boehlein Emily Pompei Rosemary Freskos Sandra	<p>Reduce/limit livestock grazing to achieve a more equitable usage of the land by all stakeholders/wild horses.</p>	<p>Removing or reducing livestock was addressed in Section 2.5.1, and increasing AML for wild horses was addressed in Section 2.5.5, and is outside of the scope of the analysis.</p> <p>The MLFO understands that members of the public would like to see the wild horses receive a larger "share" of the AUMs within the HMAs.</p> <p>Neither the WFRHBA nor FLPMA require the equal allocation of forage to wild horses and livestock on public lands, or greater allocation to wild horses. It is not a matter of choosing to manage wild horses and burros rather than domestic livestock or native wildlife. By 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 wild horses immediately upon a determination that excess wild horses exist. Excess wild horses are being removed as required by the WFRHBA in order to maintain healthy herds of wild horses on public lands, not for the benefit of livestock. Section 3.3 in the EA discusses relevant information regarding livestock grazing in</p>

McPherson		the Fish Creek HMA. Changes to the overall multiple use relationship and allocations of forage between wild horses; livestock and wildlife would need to be addressed through the land-use planning process and any future land-use plan amendments. Until such time as the RMP is amended, BLM is required to manage the wild horses within the Fish Creek HMA in conformance with the applicable land-use plans. 43 C.F.R. § 4710.1.
Barbara Bessy	DOI/BLM reallocates the appropriate and <u>fair</u> allotment of acreage to the Wild Horses sanctuary as is allotted to livestock grazing. Reduce livestock grazing permanently to achieve a more equitable use of land by Wild Horses, livestock, and stakeholders.	
Marybeth Devlin	Cattle and sheep are allotted many times more grazing slots than are the wild horses within the HMA. This apportionment is obviously inverted. It must be corrected. Wild horses must receive the majority of the grazing slots -- the animal unit months (AUMs) -- within their HMAs. Moreover, both legal and scientific indicators point to the need for a massive increase in herd populations.	
Henry Kimbell	Allow a fair allocation of rangeland resource to wild horses. Stop favoring the interests of livestock grazing over the intent of the 1971 act protecting wild horse and burros. Raising publically subsidized livestock on public lands is no longer a critical industry and accounts for a insignificant fraction of the meat consumed by Americans. Further, meat consumption in the US has been steadily declining for more than a decade. Making 21st century decisions based on 19th century business models makes no sense.	
Cece Neber	Permanent reductions to livestock grazing should be implemented to achieve a fairer allocation of resources to wild horses.	
Bethany Grunenwald	There are far more privately owned cattle grazing these publicly owned and funded lands than wild horses. Surely they should receive the preference over subsidized privately owned cattle feeding only corporate and personal greed.	
Judy Sheldon	There are more cattle than horses on the land that belongs to the horses	
Carol Menninger	Livestock grazing needs to be reduced - currently cattle have a lot more use of the lands than the horses and doing this would make it a whole more equal to those who use these lands, livestock, horses, other wildlife.	
Sandra McPherson	Concerned that so many wild horses are being taken from their natural habitats for the benefit of cattle barons to have more "free range" grazing for their animals. This land belongs to the horses and other wildlife and also to All Americans. It should never have been used for a private person's business.	
AWHPC	The BLM authorizes livestock grazing on four allotments within the Fish Creek Complex, which are allocated a total of 8,855 AUMs. As stated in the EA, approximately 55 percent of these allotments overlap with the Fish Creek HMA. According to the percentages stated, these allotments overlap with the Fish Creek HMA (see EA page 64), and approximately 5,279 AUMs within the HMA are allocated to livestock grazing. Combining the permitted livestock AUMs (5,279) with the 2,040 AUMs (for 170 wild horses) and then equitably reallocating the AUMs, the high AML for wild horses would be 305 horses.	

		While we understand the altering of livestock permitted AUMs is outside the scope of this EA, we want to highlight that we, along with the majority of the American public, support a more equitable allocation of resources for America's wild horses and burros. That nearly 2,000 AUMs of actual use of livestock grazing occurred in the HMA in <i>each</i> of the last two years (2013 and 2014) suggests that the BLM believes the range can continue to support adding private, commercial livestock to this specific area. (It's unclear what actual grazing occurred in 2014 as only billing rates were provided in the EA).	
12.4	FRER	The Preliminary EA fails to provide adequate authority for BLM's Proposed Action. It lacks sufficient analysis on whether the 2004 AML continues to be accurate.	Refer to Section 1.3 <i>Purpose and Need for the Proposed Action</i> , Section 1.5 <i>Relationship to Statutes, Regulations, Policy, Plans or other Environmental Analysis</i> as well as Appendix D. There is no data or other information that indicates that adjustments to AML are warranted at this time, particularly after three years of severe drought, and another potential year of drought in 2015.
12.5	FRER	<p>BLM's Proposed Action is based on alleged drought conditions and on the AML for the Fish Creek HMA that was set over ten years ago in 2004, yet the Preliminary EA disclaims assessment of the existing AML and conclusively accepts that the AML remains appropriate.</p> <p>The Proposed Action also relies heavily on the claimed existence of "[s]evere and extreme drought conditions . . . since 2010," yet BLM cites to its 2004 Rangeland Health Assessment. Preliminary EA, p. 9. If rangeland health is currently affected by drought, lack of forage, and shortage of water, i.e., problems arising as of 2012, BLM should not continue to rely on a rangeland assessment that is 10 years old.</p>	<p>As documented throughout the EA, the Proposed Action and Purpose and Need are based on many factors including not only the ongoing severe drought conditions, but also field monitoring, population inventory and resource flights, and review of rangeland and wild horse monitoring data. The 2004 Fish Creek Complex Evaluation was a comprehensive assessment of many years of monitoring data to evaluate use by livestock, wild horses and wildlife.</p> <p>Review of available information including actual use, climate, precipitation, inventory, animal health, forage and water availability, and drought monitoring was assessed to determine that excess wild horses exist, need to be removed to restore and maintain TNEB, and that the existing AML is still valid.</p>
12.6	FRER	The Preliminary EA should be amended to include a new objective that requires, in a finite and relatively short period of time, that the AML for the Fish Creek HMA be reevaluated so that it accurately represents the number of horses and burros that should be maintained in the HMA.	<p><i>"Proper range management dictates removal of horses before the herd size causes damage to the range land. If the record establishes current resource damage or a significant threat of resource damage, removal is warranted"</i>. (118 IBLA 75).</p> <p>A new Rangeland Health Assessment of the Fish Creek HMA would not be completed in a reasonable timeframe, and could require several years to complete. This is outside of the scope of the analysis. Refer to Section 1.3, 1.7 and 2.5.5 of the EA.</p>
12.7	FRER	BLM already is engaged in the process of preparing a comprehensive Resource Management Plan (RMP) and associated environmental impact statement for the Battle Mountain District. The updated BMD RMP should be of critical importance	The Proposed Action is in conformance with the existing RMP as documented in Section 1.4 of the EA. Though the BMD is in the process of revising the RMP, a completed RMP will not be

		and be given due consideration in reevaluating the AML. BLM cannot serve the spirit or the language of its authorizing legislation, and cannot establish proper goals and objectives for future wild horses and burro management, <i>without first</i> analyzing the underlying information regarding the AML and herd population size and health.	approved in the near future, and could require many years to complete. It is not reasonable to postpone the Proposed Action for completion of an RMP revision. Objectives for the Fish Creek HMA were identified in the 2004 Fish Creek Complex Rangeland Health Assessment and have been added to Appendix B. Refer to Response to Comments 12.5 and 12.6 above.
12.8	FRER	<p>BLM has been publicly criticized for its failure to adequately monitor and adjust existing AMLs and to ensure that AMLs are scientifically defensible. For example, “[h]ow AMLs are established, monitored, and adjusted is not transparent to stakeholders, supported by scientific information, or amenable to adaptation with new information and environmental and social change.” NRC Report, p. 11.</p> <p>This key finding is implicated in BLM’s Proposed Action in the Preliminary EA because the strongest basis for its jurisdiction to remove wild horses from the Fish Creek HMA depends upon the population exceeding the AML. The Preliminary EA does not provide sufficient information to stakeholders to allow the public to understand whether BLM finds the 2004 AML to still be an accurate assessment of the appropriate population range, and whether it intends to rely on this AML for the duration of the Proposed Action’s 10-year period. BLM states that “[t]he AML would be assessed through future Rangeland Health Assessments and the evaluation of monitoring data to determine if adjustments are needed.” Preliminary EA, p. 9. Yet there is no indication of if and when the rangeland’s health would be assessed. Whether the AML is being adjusted or is being maintained for the next 10 years, that plan should be “transparent to stakeholders” and clearly articulated in the Preliminary EA. NRC Report, p. 11. It should also represent a reasonable estimate of the AML for Fish Creek but, given the time that has passed since the 2004 Final Multiple Use Decision, it is not clear that the AML is sufficiently accurate to be relied upon by BLM in reaching its conclusions.</p>	<p>The Fish Creek Complex Evaluation and associated documents are available to the public by request. Refer to footnote 9 in Section 2.1 which states that should the AML for the HMA be adjusted in the future, then the AML targets for the Proposed Action and Alternatives would be adjusted accordingly. Additional language about future changes in an RMP revision is also included. Should future changes to the RMP or AML be substantial enough that the analysis in this EA is no longer valid, a new EA or adequate environmental documentation would be required. The NRC report is not specific to the Fish Creek HMA.</p> <p>The determination of excess wild horses and Purpose and Need for the Proposed Action is located in Section 1.3 of the EA, with supporting information throughout the EA and in Appendix D. The Purpose and Need for the Proposed Action is not solely based on the existing population exceeding the established AML, but also the needs for animal and rangeland health, drought severity, climate data, actual use and other information presented in Section 1.3, 3.2 and Appendix D.</p> <p>Refer to Response To Comment 12.14 below.</p>
12.9	FRER	<p>The independent review and assessment conducted and reported by NRC concluded that BLM’s population estimation methods are <i>not</i> scientific, transparent, or consistent. BLM should not rely on past-established AMLs to remove additional animals until BLM can verify, through reliable scientific methods, that the “appropriate” management level continues to be “appropriate.” Indeed, the implications of the Preliminary EA are far-reaching.</p> <p>If BLM currently possesses sufficient information to declare the soundness of its management strategy of repeated gathers to achieve “the established AML” for the next decade, then it is not clear that BLM has any intention of reevaluating the AML at any time during the life of this management plan. Establishing management actions for the next several years should not be done on the basis of an</p>	<p>The Fish Creek Complex Evaluation and FMUD completed in 2004 involved a comprehensive analysis of many years of monitoring data in addition to inventory data. Since 2011, MLFO has been using additional methods developed by USGS to improve the quality and accuracy of the flight data. Prior to this, flights were conducted with the most effective strategies known such as inclusion of multiple experienced observers, familiarity with the areas covered, and use of GPS technology. This information is available upon request.</p> <p>The re-evaluation of AMLs for the MLFO are typically accomplished during Rangeland Health Evaluations, which are</p>

		old AML, especially in light of BLM's recognition of changes in rangeland health.	completed on a priority basis across the District. At this time, the Fish Creek area is not the highest area on the priority list for re-evaluation.
12.10	Susan Carter	The projected AML of 101-107 wild horses in Fish Creek is not a viable number to maintain wild horse populations "so as to manage for healthy wild horse populations and healthy rangelands."	Opinion. There is no data or other information to suggest this is true. The AML was based on extensive review of monitoring and other information in the 2004 Fish Creek Complex Evaluation.
12.11	AWHPC	This AML is based on the BLM allocation of 72 percent (72%) of forage resources in the HMA to privately owned livestock that are permitted by the agency to graze in the HMA. Livestock grazing in this HMA is extensive, and BLM has disproportionately allocated resources on these public lands to private livestock interests instead of federally protected wild horses. It is unreasonable of the BLM to continue to allocate to livestock thousands of AUMs while continuing to enforce the unreasonably low AMLs established in wild horse and burro HMAs.	Refer to Response to Comment 12.3. The figure of 72% provided in the comment is misleading. The livestock AUMs provided in Tables 19 through 22 of the EA reflect the actual and permitted use for the full allotment which expands beyond the HMA boundaries in all but one allotment. Substantial acreage of most of the allotments spans outside of the HMA. The level of livestock use for an allotment cannot be compared equally to the HMA. Refer to Table 18 which displays the relationship of the allotments to the HMA.
12.12	Marybeth Devlin	<p>The latest scientific guidelines call for an increase the low-bound of the AML to at least 2,500 and the high-bound to at least 5,000. BLM has the authority to modify AMLs. The Fish Creek-South HMA encompasses 230,675 total acres -- 360 square miles. That means the current low-end of the AML -- 101 wild horses -- is equivalent to 2,284 acres -- or 3½ square miles -- per wild horse. It is absurd to have assigned such a sparse population-density.</p> <p>Establishing a scientific AML follows the recommendations of the International Union for Conservation of Nature (IUCN) regarding sufficient herd-size for equids.</p> <p>Increasing the AML also comports with the results of a recent meta-analysis regarding minimum viable population (MVP). Here are the links to the IUCN discussion on equid herd-size and to the MVP meta-analysis report.</p> <p>http://coreybradshaw.files.wordpress.com/2011/03/traill-et-al-2007-biol-conserv.pdf</p> <p>http://data.iucn.org/dbtw-wpd/edocs/1992-043.pdf</p> <p><u>Recommendations</u> BLM-Mount Lewis should amend the Resource Management Plan to increase the AML per IUCN guidelines and per MVP. Doing so will result in a stocking rate of 46 to 92 acres per horse, which compares favorably with the 150 acres per cow+calf <i>pair</i> -- which means 75 acres per cow or calf -- that BLM allows on federal lands [annualized figures].</p>	Refer to Section 2.5.5 of the EA. There is no factual evidence to suggest that the resources exist to support such a large AML in this or any other HMA managed by the BMD.
12.13	Elizabeth	It is difficult to understand why less than 400 horses cannot live on better than	A comprehensive analysis of the Fish Creek HMA was

	Brister	260,000 acres.	completed as part of the Fish Creek Complex Evaluation in 2005 from which AML was established. This analysis took into account forage availability and rangeland health, water availability and the capability of the range to support healthy wild horses even in poor years. Nevada rangelands are arid, and support limited productivity in many areas, as well as rocky, or steep terrain that does not support forage, and limited waters. The acres of the HMA are not indicative of the number of wild horses that the area can support year round and ensure that degradation of the range does not occur and that wild horses continue to thrive.
12.14	AWHPC	<p>Pursuant to § 1333(b)(1) of the WFRHBA, the agency must: <i>“make determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals.”</i></p> <p>The fact that a population is over the arbitrarily established AML does not automatically equate with an “excess” determination.</p> <p>The law does not require that the BLM remove horses merely because they are over the arbitrarily set AML. Rather, the law requires BLM to show that the existence of the horses on the range – as opposed to livestock or other factors – are causing harm to the “thriving natural ecological balance” in an HMA. The damage to public rangelands caused by livestock greatly outweighs any damage caused by wild horses. Therefore, we maintain our strong opposition to the removal of any horses from this HMA.</p>	<p>The BLM is not proposing to remove wild horses simply because the population is over AML. The action alternatives were developed to address the excess wild horse numbers to restore and maintain the thriving ecological balance of the area. Refer to Section 1.3 of the EA. Ongoing and current monitoring has been completed in the Fish Creek HMA (including review of climate data, actual use, trend, utilization, inventory, and water and forage availability), which in conjunction with other factors considered resulted in the determination that excess wild horses exist and that a gather needs to be conducted to remove them. The AML was based on interdisciplinary review of monitoring data and other relevant information within the Fish Creek Complex Evaluation and FMUD, which included coordination with the interested public (refer to Sections 1.1 and Appendix B of the EA).</p> <p>There is nothing to suggest that these AMLs are arbitrary or established for administrative reasons or that the determination of excess wild horses is not based on review of current data, to include climate, population inventory, and monitoring data. Refer also to Section 1.3 of the EA.</p>
13.1	AWHPC	<p><i>The BLM Should Reduce or Suspend Livestock Grazing in Order to Accommodate the Current Wild Horse Population.</i></p> <p>The BLM should select the alternative that would result in the suspension or reduction of livestock grazing, as permitted by law, in order to accommodate the current wild horse population until it is gradually reduced through the use of fertility control and natural attrition. Holders of grazing permits could be</p>	Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 12.3 above. There is no requirement of the WFRHBA or the regulations to reduce or eliminate livestock as a means to restore thriving natural ecological balance. Administration of livestock grazing on public lands fall under 43 CFR Subpart D, Group 4100. Additionally, livestock grazing is also managed under each Districts respective RMP. Livestock grazing on

		<p>compensated for non-use, an action that would still be cost-effective given the high cost of rounding up, removing and warehousing wild horses in holding facilities.</p>	<p>public lands is also provided for in the Taylor Grazing act of 1934.</p> <p>Removal or reduction of livestock would not be in conformance with the existing RMPs, is contrary to the BLM's multiple-use mission as outlined in the FLPMA and PRIA, and would be inconsistent with the WFRHBA, which directs the Secretary to immediately remove excess wild horses. Additionally this would only be effective for the very short term as the horse population would continue to increase. Eventually the HMA and adjacent lands would no longer be capable of supporting the wild horse populations.</p> <p>The BLM understands the opinion of members of the public who would like to see an increase in wild horse AMLs and decrease in livestock grazing. The purpose of the EA is not to adjust livestock use, or increase the level of AML for these HMAs, which was discussed in Section 2.5.1 and 2.5.5 of the EA. Adjustments to livestock grazing cannot be made through a wild horse gather EA. A land-use plan amendment or revision would be necessary to reallocate use between livestock and wild horses.</p>
13.2	AWHPC	<p><i>Livestock Grazing Poses a Greater Threat to Public Rangelands than Wild Horse Populations</i></p> <p>We acknowledge that the actual use of livestock AUMs within the HMA is reduced from the permitted numbers. However, the <i>permitted AUMs</i> must be more fairly allocated. Voluntary retirement opportunities should be explored with permittees to determine an equitable means to achieve a fairer allocation of resources for wild horses on public lands.</p> <p>A recent study conducted by Public Employees for Environmental Responsibility (PEER), and hereby incorporated in these comments, found that the BLM's method in assessing rangeland conditions is seriously skewed toward minimizing impacts from domestic livestock and magnifying those from wild horses and burros, (<i>see BLM Weighs Wild Horse Impact Much More Heavily Than Cattle, available at http://www.peer.org/news/news-releases/2014/09/16/blm-weighs-wild-horse-impact-much-more-heavily-than-cattle/</i>). PEER found that the BLM's approach to range management targets scattered wild horses and burros while ignoring far more numerous cattle. The organization based this finding on an appraisal of the BLM's report assessing the factors influencing the Great Sage-</p>	<p>This is outside of the scope of the analysis. Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 12.3 and 13.1 above.</p>

		<p>Grouse habitat. The BLM found that twice the area of sage grouse habitat is negatively impacted by wild horses and burros than the area negatively impacted by livestock. However, PEER's review of this report concluded that the agency did not use the same approach for calculating the area of influence of livestock within BLM grazing allotments on sage grouse habitat as it did for wild horses and burros. If it had, then the area of influence for livestock would be roughly 14 times that given in the report and more than six times that of wild horses and burros.</p> <p>Furthermore, the NAS also concluded that there are significant differences between grazing habits of wild horses and livestock:</p> <p><i>Cattle and horses are both primarily generalist grazers, consumers of palatable herbaceous vegetation. Horses and burros, however, are able to use lower-quality forage than cattle because of their cecal-digestive system (Hanley, 1982; Hanley and Hanley, 1982). Burros preferentially consume woody vegetation (shrubs, dwarf shrubs, stemmy forbs, and small trees). Horses and cattle use similar habitats, but they also diverge with respect to mobility and accessibility. Horses can travel great distances in a short time, they can travel further from water, and they can use rugged topography more readily than can cattle (Ganskopp and Vavra, 1987; Hampson et al., 2010).</i></p> <p><i>Although it is often assumed that cattle, horses and burros, or wildlife always compete, recent research on zebras and cattle and on cattle and donkeys (donkeys served as surrogates for zebras in controlled experiments) showed that it is not always the case. (NAS Report at 239)</i></p>	
13.3	AWHPC	<p><i>The Alternative that Includes Suspension or Reduction of Livestock Grazing Must Not be Dismissed</i></p> <p>The preservation of wild horses must take precedence over access by livestock on public lands. If the agency believes that the range is being damaged, it should first eliminate or reduce substantially the private livestock from these areas before resorting to removing more wild horses. The annual equivalent of thousands of livestock which continue to be permitted to graze within the HMA should temporarily be suspended in order to provide forage for wild horses until the populations can be controlled through the use of humane PZP fertility control.</p> <p>BLM wild horse roundups, removals and off-the-range warehousing of captured wild horses cost taxpayers \$60 million annually, while taxpayers pay in excess of</p>	<p>Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 12.3 and 13.1 above. The reasons why the Alternative to Remove or Reduce Livestock in the Fish Creek HMA was dismissed are provided in Section 2.5.1.</p>

		<p>\$500 million per year to subsidize livestock grazing on public lands. Yet, the BLM presents the public with what amounts to a foregone conclusion to remove 200 wild horses from the Fish Creek HMA in contravention of the letter and the spirit of the NEPA mandate to take a hard look at all reasonable alternatives. Indeed, the BLM once again dismisses alternatives to reduce livestock grazing in the HMA, despite the significant impacts of the Proposed Action, including the addition of 200 wild horses to a holding system that is already overburdened by the warehousing of over 50,000 wild horses at taxpayer expense. Indeed, given that that the 200 horses targeted for removal will, in all likelihood, be warehoused in short-term facilities for <i>at least</i> the first year (and possibly for many years to come) ... at a cost of \$1,500+ per horse per year ... removing 200 horses will cost \$300,000 in holding costs each year. This staggering cost is in addition to the approximately \$100,000 it will cost to use a helicopter to remove the 200 horses.</p> <p>The BLM asserts that, although the agency is authorized to remove livestock from HMAs “<i>if necessary to provide habitat for wild horses or burros, to implement herd management actions, or to protect wild horses or burros from disease, harassment or injury</i>” (43 C.F.R. § 4710.5), “<i>this authority is usually applied in cases of emergency and not for general management of wild horses and burros,</i>” (EA at 27), and that reduction or elimination of livestock grazing would be “<i>inconsistent with the current LUP/RMPs and/or FMUDs for the grazing allotments within the Fish Creek HMA or with multiple use management,</i>” (<i>id.</i>).</p> <p>The BLM cannot dismiss this alternative by claiming that its discretion under 43 C.F.R. §§ 4710.3-2 and 4710.5(a) is limited to "emergency" situations, as there is no such restriction in the regulations. Even if such a restriction did exist, an emergency does exist, since BLM holding facilities are at capacity, with little room left to house more captured wild horses.</p> <p>It is not acceptable – and is, in fact, a flagrant violation of NEPA – for the BLM to dismiss this alternative from consideration in the EA. The BLM has the clear legal authority to reduce or eliminate livestock grazing in allotments associated with the Fish Creek HMA, pursuant to 43 C.F.R. §§ 4710.3-2 and 4710.5(a), in order to improve conditions and forage availability for wild horses. An alternative that appropriately considers this approach within the EA of any wild horse management proposal, which the public continues to demand, is clearly the most cost-effective, humane and publicly supported approach.</p>	
13.4	Return to Freedom	<p><i>Reduction and or suspension of livestock grazing to accommodate wild horses</i></p> <p>Often there are disputes related to AUMs of cattle and AMLs of wild horses. When</p>	Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 13.3 and 14.1 above.

		<p>this arises we suggest the BLM make use of its ability to temporarily suspend commercial livestock grazing (43 C.F.R 4710.5(a) and (c). With regards to the Fish Creek HMA, this suspension should be placed into effect until the range is able to sustain appropriate numbers of livestock and wild horses. This can be done once wild horse population is adequately controlled with the PZP fertility control vaccine.</p> <p>Livestock grazing in the Fish Creek HMA is extensive due to excessively allocated resources aimed at supporting livestock instead of wild horses. Resulting environmental impacts are due to livestock and not wild horses. In order to disprove this claim, the law requires the BLM to provide evidence that horses and not other factors, such as livestock, are negatively impacting the habitat. We do not believe the wild horse population is the sole impact on habitat nor are they a negative influence on the environment and therefore should not be removed from this HMA.</p>	<p>The BLM is not required by law to separate out the impacts of wild horses from those of livestock in order to determine and remove excess wild horses from the range. As noted by the IBLA: “<i>Proper range management dictates removal of horses before the herd size causes damage to the range land.</i>” (118 IBLA 75).</p>
13.5	Return to Freedom	<p>We strongly advise the BLM to consider suspending livestock grazing within the Fish Creek HMA in order to allow the land to restore itself to forage levels that will support both wild horses and livestock. Appropriate horse levels can be reached through use of PZP fertility control.</p>	<p>Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 12.3 and 13.1 above. Management of wild horses with fertility control and no removals was analyzed under Alternative 2 of the EA.</p>
13.6	AWHPC	<p>The BLM that it has a <i>statutory mandate</i> under the Wild Free Roaming Horses and Burros Act (WFRHBA) to protect and preserve wild horses, whereas commercial livestock grazing is authorized at the <i>discretion</i> of the Secretary of the Interior. The BLM’s multiple use mandate does not require livestock grazing, but rather can be achieved through other uses of the public lands. BLM managers must manage the health of our public lands with all conflicting land uses and alternatives considered in a comprehensive, common sense way.</p>	<p>Refer to Section 1.7 and 2.5.1 of the EA and response to Comment 12.3 and 13.1.</p>
13.7	AWHPC	<p>The BLM could accommodate the current wild horse population living in the HMA by temporarily suspending commercial livestock grazing, pursuant to 43 C.F.R. 4710.5(a) and (c), which authorize the BLM to temporarily or permanently close a public land area to livestock grazing “<i>[i]f necessary to provide habitat for wild horses or burros, to implement herd management actions, or to protect wild horses or burros from disease, harassment or injury.</i>”</p>	<p>This is discussed in Section 2.5.1 of the EA.</p>
13.8	Mikolaj Przybylski	<p>Please stop renewing grazing leases for cattle, they are the ones destroying the land.</p>	<p>This is outside of the scope of the analysis.</p>
13.9	Renee Espenel	<p>I feel extremely discouraged that your primary objective is to provide usage for ranchers to graze.</p>	<p>This is untrue. The MLFO administers the public lands for multiple use in accordance with the SERA RMP, FLPMA CFRs and other applicable law and policy. Wild horses are not being</p>

			removed to accommodate livestock grazing.
13.10	Anne Novak/Protect Mustangs	Livestock outnumber wild horses and is damaging the range. Members have witnessed sage grouse living in harmony with wild horses--unlike livestock and industrialization--who destroy the habitat.	This is outside of the scope of the analysis.
13.11	Deana Bishop	I would like to know what the number of cattle/sheep in this area is.	Refer to Section 3.3 of the EA.
13.12	Deana Bishop	What is the BLM doing to stop the overpopulation of cattle and sheep? Since they hand out permits for ranchers. Why not hand out the permits to ranchers who advocate for the wild horses. I would be more than willing to do permits for the wild horses and make sure there is fair use.	This is outside of the scope of the analysis. Refer to Section 3.3 of the EA.
13.13	JC Coleman	Reduce Cattle presence-!! they are NOT an indigenous species and cause great ecosystem damage. Ranchers must learn they will no longer have low cost pasture subsidized by the American tax payer and at the expense of our American Mustang heritage	This is outside of the scope of the analysis. Refer to Section 1.7 and 2.5.1 of the EA and Response to Comment 12.3 and 13.1 above.
	Judith Cassario	Livestock grazing should not infringe on rightful horse ranges.	
	Diane Kastel	Permanently reduce livestock grazing.	
	Elizabeth Brister	If a rancher is caught with too many cows, he/she loses their grazing rights for a specific number of years, say, 10. That is a significant enough penalty to stop over grazing by cows.	
	Elizabeth Brister	Surely the money acquired from the sale of grazing rights does not even begin to cover the cost of feed, hay and vet bills for those horses captured in previous round-ups.	
	Kathy Pabst	Stop grazing rights of ranchers of cattle or any domesticated animals.	
	Kim2britt	Remove the cattle and miners from the mustangs land.	
	Linda Arndt	Limit cattle/sheep to private property. Curtail land leases to oil/gas companies or other foreign interests.	
	Ronald Coon	As a United States taxpayer I'm requesting that Bureau of Land Management be audited for their outside activities with the cattle industry.	
	Susan Galentine	The cattle are degrading the grazing and water resources not only for horses, but for many other wildlife species. Get rid of welfare ranching for the benefit of the long-term health of the range and for all the other wildlife on the range.	
	Barbara Bessy	There is not an over population of Wild Horses ~~ there is an over population of livestock on federal lands. "The BLM manages 245 million acres of our public lands, with livestock grazing permits on 155 million acres. Wild Horses are designated to share a mere 26.9 million acres. That means only 17% of BLM managed public land are made available to Wild Horses. Wild Horse populations	

		vary between 32,000 and 50,000 while livestock grazing allocations accommodate numbers in the millions. Yes, in the millions." (emphasis added). Since 1971, "22.2 million acres of Wild Horse and burro habitat has been lost."	
	Susan Carter	Because of the presence of unauthorized livestock all numbers related to this EA are skewed. Forage consumed by trespass livestock is attributed to horses. All decisions on fish creek should be deferred.	
	Marybeth Devlin	<p>Permittees are required to submit an annual report of how many livestock they put out on their respective allotments and for how long. Form 4130-5 "Annual Grazing Use Report" is used for this purpose.</p> <p>http://www.blm.gov/style/medialib/blm/noc/business/eforms.Par.2064.File.dat/4130-005.pdf</p> <p>http://www.gpo.gov/fdsys/pkg/FR-2014-08-22/html/2014-20049.htm</p> <p>Form 4130-5 is the basis on which BLM bills the permit-holders. Thus, grazing-use is a self-reporting, self-certifying system that is rarely verified. The ease with which permittees could game the system is obvious. Consequently, the veracity of the reports is suspect.</p> <p>BLM argues that <i>actual</i> livestock use is much lower than authorized or permitted use. But because actual use is whatever the permit-holders report on Form 4130-5, and because BLM essentially takes the permit-holders' at their word and bills accordingly ... eventually ... after-the-fact ... maybe ... or maybe not (see Bundy, Cliven), the actual-use number is unverified and likely grossly under-reported.</p>	
13.14	Marybeth Devlin	Pdf-page 66 of the EA reports that permit-holders were found to have engaged in unauthorized livestock-grazing "consistently for six months" outside the permitted use. That violations of this long-standing -- <i>within the HMA no less</i> -- could go unnoticed by BLM shows the inadequacy of BLM oversight. The assumption can be made that such abuses by permittees are widespread. Cliven Bundy is not alone in this regard	Opinion.
13.15	Janet Schultz	AUMS for cattle and sheep far outweigh use by wild horses on land wild horses and burros are to have managed PRINCIPALLY for their use. These figures must be adjusted down. As a matter of fact, until the grasslands have recuperated to their carrying capacity of 1890 - all domestic grazig should be stopped on public land.	Refer to Response to Comments 1.3 and 13.13.
13.16	Janet Schultz	I also expect to see more specific information comparing horse AMLs to domestic grazing AUMs on a per month use.	The information regarding livestock use in the Fish Creek area is identified in Section 3.3 of the EA.
13.17	FRER	BLM seeks to gather and remove 100 horses under the 2004 AML without sufficient analysis of the alternative to remove or reduce livestock within the Fish	Refer to Sections 1.7 and 2.51 of the EA as well as Response to Comments 12.3 and 13.1 above. 200 wild horses are identified

		Creek HMA. Preliminary EA, p. 27.	for removal under the Proposed Action.
13.18	Barbara Bessy	<p>Ranchers hold nearly 18,000 grazing lease permits on BLM land alone. Grazing costs on BLM land goes for \$1.35 per cow and calf pair, well below the market rate of \$16. This price disparity derived from BLM's current permit policy establishes an uneven playing field on grazing economies. Cattle do the destructive grazing of native grasses leaving the land barren and a fire hazard, not the Wild Horses</p> <p>Cliven Bundy's non-payment of grazing fees since 1993. Bundy owes the U. S. Government over \$1 million dollars! Just think what other land could be purchased to reallocate as Wild Horse sanctuaries that have been stolen by livestock operations if the BLM collected from all the ranchers that owe back taxes!</p>	This issue is outside of the scope of the analysis.
13.19	Chris Fairbanks	AML numbers should be higher allowing more horses to remain free on the range as protected by the 1971 wild horse and burro act.	Refer to Section 2.5.5 of the EA.
13.20	Lianne/Gwen Teeters	BLM should not make these [gather] decisions so ranchers can make more money off land they haven't paid for. They [BLM] are there to prioritize a common ground with protection for our wild mustangs.	Refer to Response to Comment 13.9.
14.1	Anna Catherman	<p>This herd has not been gathered since 2006 after which, according to AUM usage data, 82 horses remained. The herd grew an average of 33% the first two years after the gather, then slowed to the normal percentages between 17% and 20% from 2008-2013. But 2013-2014 shows a 39% increase in horses! I believe the herd was likely compensating from the removal the first two years after the gather, then slowed to the average reproduction rate for five years. But how did the herd have a 39% increase in one year, eight years after the last gather?</p> <p>I wonder about the accuracy of the latest surveys for the herd, especially the estimate of a total of 549 horses, 100 horses more than were sighted.</p>	<p>The figures provided in Table 11 are based on estimated actual use from inventory flights in 2007, 2011 and 2014. In the years in between the flights, the AUMs were estimated. The inventory data is based on the direct counts during the flights.</p> <p>The most recent inventory was completed prior to peak foaling season. The estimated increase to the population through spring 2014 foaling was incorporated to arrive at the estimated post foaling population of 549. Additional information about the inventory and populations of the Fish Creek HMA has been added to Appendix B for clarification.</p>
14.2	Marybeth Devlin	<p>Improbable increase from 256 horses in 2013 to 461 horses for 2014, which reflect an 80% increase.</p> <p>http://www.blm.gov/wo/st/en/prog/whbprogram/herd_management/Data.html</p>	The 2014 data represents the preliminary results of the March 2014 inventory flight. The 2013 population figures reflect the pre-foaling estimate derived from the last inventory in 2011. Between flights, the population is estimated based on historic rates of increase, which account for foals born and mortality within the population annually. It is not feasible, nor reasonable to conduct annual inventory flights of all of the HMAs managed by the BLM. Additional information about the inventory and populations of the Fish Creek HMA has been added to Appendix B for clarification.
14.3	Marybeth	Your population estimates are flawed, giving the mistaken impression of an excess	Opinion.

	Devlin	that does not exist. Saying that the population is "over AML" is not a meaningful statement because the AML does not provide for a self-sustaining, genetically-viable herd. Therefore, BLM has no valid justification for removing any horses from the Fish Creek HMA.	
14.4	Marybeth Devlin	<p>BLM conducted a direct-count of the herd in December 2014 using the helicopter-flyover method. Staff made 478 sightings of wild horses. (many of the sightings were bound to be duplicates due to the inventory-method and the nature of horses to flee from fearful situations.)</p> <p>The 478 sightings, unique and duplicative, included 15 foals (three-percent of those horses sighted). BLM assumed -- inappropriately -- that it had missed 56 foals -- 79 percent of the foal-crop -- and added them in, making it seem as if the birth-rate were higher than the inventory suggested. BLM then represented the current population as 549 wild horses, and is using that figure as the basis for removing 200 of them -- <i>initially</i>, that is. This approach to population-estimating is invalid.</p> <p>Given the invalid assumption that trained observers had missed 79 percent of the 2014 foals, and the biologically-impossible population-increase over 2013, the most reasonable conclusion is</p> <p>The population-estimate for the Fish Creek herd in 2015 is over-stated.</p> <p>I urge BLM-Mount Lewis to stop employing erroneous assumptions regarding herd-growth -- assumptions that are in this case eight times the actual rate. Instead of assuming a 20-percent increase -- let alone an 80-percent increase -- assume a maximum increase of 10 percent.</p>	<p>This flight was conducted in March 2014. Only 15 foals were observed, because the foaling season was not over yet. An estimated increase was computed to account for the increase to the population through the remaining foaling, in order to provide for a reasonable estimate of the horses that would be present post-foaling.</p> <p>Annual population increases across the MLFO average 18-20% per year and are validated by inventory data that provides the proportion of the population that is comprised of foals and in some cases yearlings. Additionally, analysis of multiple years' worth of flight and gather data substantiate these population increase estimates. As stated in the 2013 NAS report <i>Using Science to Improve the BLM Wild Horse and Burro Program: A Way Forward</i>, it was the committee's judgment that the reported annual population statistics are probably substantial underestimates of the actual number of horses occupying public lands inasmuch as most of the individual HMA population estimates are based on the assumption that all animals are detected and counted in population surveys—that is, perfect detection. A large body of scientific literature focused on inventory techniques for horses and many other large mammals clearly refutes that assumption and shows estimates of the proportion of animals missed on surveys ranging from 10 to 50 percent depending on terrain ruggedness and tree cover (Caughley, 1974a; Siniff et al., 1982; Pollock and Kendall, 1987; Garrott et al. 1991a; Walter and Hone, 2003; Lubow and Ransom, 2009). The committee went on to state that a reasonable approximation of the average proportion of horses undetected in surveys throughout western rangelands may be 20% to 30%. An earlier National Research Council committee and the GAO also concluded that reported statistics were underestimates.</p>
14.5	Marybeth Devlin	The International Society for the Protection of Mustangs and Burros (ISPMB) has just completed a 14-year study of wild-horse population-growth. The ISPMB herds have been managed per the "hands-off" minimum-feasible level specified in the WFRHBA. The study-herds grew from five-to-10 percent a year -- <i>in the absence</i>	Refer to Response to Comment 14.4. The ISPMB and Protect Mustangs data is not consistent with current and historical information about population growth rates within the BMD, or the Fish Creek HMA.

		<p><i>of predators</i>. Here is the link to the letter sent in this regard from ISPMB to the Department of the Interior and Bureau of Land Management.</p> <p>http://www.ispmb.org/Letter.html</p>	
14.6	Marybeth Devlin	<p>A study of BLM roundup-records for a representative sample of four herd management areas was recently published (Gregg, LeBlanc, and Johnston, 2014). The researchers found an <i>effective</i> foal-survival-rate of just 10 percent. No matter the birth-rate, what counts is <i>survival</i>. The same pattern likely holds true for the Fish Creek herd.</p> <p>http://protectmustangs.org/wp-content/uploads/2014/04/PM-Population-Growth-4.25.14-FINAL.pdf</p>	
14.7	Marybeth Devlin	<p>In a discussion of the history of the Fish Creek HMA, the EA reveals on pdf-page 128 that, in 2005, yearlings composed just 6.6 percent of the herd. Realizing how this information weakened the claim that herds increase 20 percent per year, BLM went to considerable effort to try to explain away this "incongruity," blaming it on variations in the age-estimates conducted by BLM staff. However, it is doubtful that age-estimates by professional employees would deviate to such a degree. Therefore, BLM's excuse is rejected as implausible. The inescapable conclusion is that ...The 2014 Fish Creek herd foal-crop survival-rate was three percent.</p>	
14.8	Marybeth Devlin	<p>It is reasonable to assume that there are about 300 wild horses populating the Fish Creek herd.</p> <p>Taking the 2013 estimate -- before the erroneous 80-percent growth-rate was applied in 2014 -- and extrapolating per a ten-percent foal-survival rate each year -- <i>which, I acknowledge, still appears overstated given the three-percent foal-sighting rate during inventory</i> -- here are the resulting estimates:</p> <p style="text-align: center;">256 x 110% = 282 in 2014</p> <p style="text-align: center;">282 x 110% = 310 in 2015</p> <p>Therefore, if BLM were to remove 200 horses, the herd would lose two-thirds of its population, a drastic blow to herd-stability and devastating to genetic viability. Moreover, if the mares were contracepted, the herd would likely lose two entire future foal-crops, creating an age-structure imbalance.</p>	<p>Opinion. Refer to additional information about inventory and resource flight data that has been added to Appendix B.</p>
14.9	Marybeth	Concern that helicopter inventory is not accurate:	The BLM has historically employed the "direct count" method

	Devlin	<ul style="list-style-type: none"> • hard to tell horses apart and to know for sure that they haven't been counted already. • probability that horses are double-counted, literally by counting many horses twice, perhaps even more than twice. • difficulty in differentiating wild horses from rocks, cows or deer. • observer fatigue and airsickness may become an issue • confirmation bias at work as the goal is to locate excess wild horses projected by the models and for which funds for removals have been allocated. <p><u>Recommendations:</u> BLM needs an accurate method of taking inventory. The current approach results in the false impression of an excess population, and has proven unreliable. Rather than add 20-percent "unobserved" imaginary horses, BLM needs to subtract 20 percent to adjust for double-counted horses.</p> <p>BLM should contract the census-taking function to independent experts, ideally ones associated with a university that has a strong animal-sciences program.</p> <p>BLM should research new technologies for remotely tracking wild horses with accuracy and then procure the telemetry system that best serves the purpose.</p>	<p>for conducting wild horse inventory. It has become well accepted that this method results in observers not seeing and therefore counting all of the horses, due to tree cover, terrain, and overall visibility factors. Without a statistical/scientific way to determine the number of "missed" horses, most BLM offices have not added correction factors to the direct flight results. The flight and gather data has continually shown that direct count flights undercount wild horses on the range. The Government Accountability Office (GAO) concluded through their review that <i>"research and experience have shown that BLM's on-the-range population estimates are too low"</i>, and stated that <i>"regardless of which method is used, counting wild horses and burros can be challenging, particularly when the animals are obscured by trees or when the rangeland is covered with snow"</i> (GAO 09-77).</p> <p>In order to improve inventory methods and results, the USGS has been working with BLM for many years to study existing and potential methods that could be implemented. The BLM is currently implementing some of the methods developed by USGS. Specifically, the BMDO in 2011 began using the Simultaneous Double Count technique. The results are analyzed by a statistician using multiple parameters that affect the sightability of the horses, and sighting accuracy of the observers. The outcome will be an estimated population range. You can read more about the work of USGS and these methods at this website. http://www.fort.usgs.gov/WildHorsePopulations/Counting.asp</p> <p>The BLM may employ both a direct count and a simultaneous double count method to determine the population of wild horses during helicopter inventory. For the direct counts, the BLM uses no correction factor or extrapolation to correct for any wild horses or area that may have missed.</p> <p>During inventories the BLM maintains Best Management Practices to ensure the highest quality data and most accurate inventory. On most flights, three experienced BLM observers participate, in addition to the pilot, who is also very skilled at completing wild horse inventory. Inventory flights are conducted at low altitude (below 100' at times) and low speeds, with trained</p>
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14.10	Marybeth Devlin	<p>The helicopter contractors used by BLM for conducting inventories and roundups know the score. If "excess" horses are found and/or if "outsider" horses are spotted, a roundup will be scheduled and they can make some serious money. Thus, the contractors are motivated to find -- or create the appearance of -- an over-population and horses outside the HMA's boundaries.</p> <p>Doing so is easy. During inventory, they can criss-cross the same area multiple times, deceiving the census-takers into counting the same horses over and over. In fact, just flying over a herd with a chopper can spook the horses into a stampede, sending them fleeing outside their HMA, which would again target them for removal. Such tricks accomplish four things that inure to the financial benefit of the helicopter contractor. They ...</p> <p>Gin up the number of horses that appear to populate the HMA, Cause horses to be counted over and over -- one or more times inside, at least once</p>	<p>Refer to Response to Comment 15.9 above. Different aircraft companies are used to conduct population inventory flights than those used during the gather operations. Gather contractors employ their own helicopter pilots.</p>

		<p>outside, Automatically target "excess" and "outsider" horses for removal, and Result in the appearance of a need for a roundup -- and the need to remove more horses.</p> <p>Thus, the helicopter inventory method presents an apparent conflict of interest. The potential conflict pertains to the incentive to increase revenues through providing billable services and more billable horses.</p> <p>A second conflict of interest arises at roundup. The helicopter pilot flies off <i>alone</i> across an area spanning many square miles. When he returns with a band, all he has to do is self-certify to the agency-officials that the horses were found outside the HMA boundaries in order to collect the per-horse fees.</p> <p><u>Recommendations:</u> First, reform census methods as earlier advised. Then, reform roundup procedures by abolishing the helicopter-stampede method and instead, employing bait trapping. These corrective actions should reduce the conflicts of interest.</p>	
14.11	Marybeth Devlin	<p>The EA predicts that the "gather efficiency" will be less than 100 percent -- although 100 percent is the goal. Thus, BLM assumes that the difference between the number of wild horses it has over-estimated to be present, minus the number gathered, will be the number that evaded capture. Such ghost-horses will then be included in the post-roundup population-report, upon which future herd-growth will be estimated.</p> <p>BLM further assumes that half the number of horses that will supposedly elude the helicopter will be <i>un</i>contracepted mares, who will add to the population-growth. This latter assumption is invalid because bachelor-stallions are more likely to escape capture due, in part, to not having foals to protect.</p> <p>Mares are more easily intimidated and caught, especially if they have a foal. Thus, if horse-escapees -- if any -- would skew the post-gather sex-ratio toward the males.</p> <p>BLM's gather-efficiency assumptions come in handy to cover up the invalid population-estimates made pre-roundup and to justify future roundups by counting phantom mares and their phantom foals.</p>	Opinion.
14.12	Marybeth Devlin	<p>The helicopter contractors are incentivized to leave no horse ungathered. In addition to the flat-fee-for-service, they earn a per-horse-fee. Thus, they have reason to go after every last horse in order to "make their numbers."</p>	This is outside the scope of the analysis.

		<p>During the November 2012 Wassuk (NV) HMA roundup, we saw how determined the contractors were to get their per-horse payment. We also observed how the attending USDA veterinarian and the BLM officials present did nothing to stop the abuse.</p> <p>http://www.youtube.com/watch?v=pemjKJX8Muc&feature=youtu.be</p>	
14.13	Marybeth Devlin	<p>Given the crash-proneness of helicopters, BLM could face a tragedy — with loss of key personnel, friends, and colleagues in an accident. Counting wild horses does not justify this risky method. Instead, consider bait-and-or-water trapping every member of each herd -- without removals. Fit the horses with telemetry collars, and track them.</p>	Bait and water trapping are identified in the Proposed Action, and Alternatives 2 and 3.
14.14	Gail Kenney	<p>How many actual horses are in the area, not some estimate?</p>	A complete “census” of every single horse on the range is not possible to obtain. Therefore, MLFO utilizes the best available information from field visits, inventory flights and gathers to compute an estimated population. Refer to the EA Sections 1.2, 3.2 and Appendix B.
15.1	AWHPC	<p><u>NEPA Requires Further Analysis and Public Input Opportunity for Future Actions</u></p> <p>The National Environmental Policy Act (NEPA) requires that the BLM conduct further environmental analysis and public comment for additional wild horse roundups and management actions over the next 10 years. Due to changing environmental conditions, a blanket, ten-year EA cannot be considered sufficient under NEPA.</p>	<p>The MLFO acknowledges that conditions change. The Fish Creek Gather EA outlines the activities that could take place over ten years to achieve and maintain AML. It is recognized in the EA that should the AML be adjusted, the objectives in the EA/plan would also change. Prior to future management actions, a review would be completed to determine if the management direction has changed which may require a new NEPA document. Additional language has been added to the EA to provide clarification. If it is found that the existing NEPA is not adequate, additional NEPA documentation would be necessary.</p> <p>The phased approach was adequately detailed in the Preliminary and Final EA in Sections 2.0, 2.1, 2.2 and 3.2. The exact timing of follow-up gathers over the next 10 years is not known at this time, but such gather would be conducted consistent with the initial gather procedures, though with significantly fewer excess horses requiring removal to achieve low range AML and a greater focus on fertility treatment for gathered mares. BLM would notify the public when a follow-up gather has been scheduled and would provide public observation opportunities as for the initial gather. With success of a fertility control program</p>
15.2	Marybeth Devlin	<p>This long-term document appears to be an attempt to bypass required site-specific EA for each subsequent roundup. The ten-year time-line is unacceptable. Conditions change.</p>	

			via on the ground darting and bait and water trapping, removal of horses from the range may become less and less necessary.
15.3	Eureka County Board of Commissioners	<p><u>Socioeconomics</u> There is not any socioeconomic analysis or discussion in the EA. This is disingenuous and wrong. BLM must include the analysis providing the socioeconomic impacts to our local residents and economy due to the overpopulation and overuse by the horses of the forage allocated for wildlife and livestock under the FMUD. It is acknowledged in the EA that the grazing permits have been cut by ~50%, but there is little to no language describing that most of the cuts were due to wild horse impacts and there is no analysis of the economic impacts of doing so.</p> <p>We are aware of additional actions the BLM is planning to take against the permittee to further reduce livestock grazing. This is in addition to the major impacts to wildlife species in the area, including sage grouse. We find BLM has a cavalier attitude regarding proper management of the horses and has compassed the payback for degradation of resources by wild horses to fall upon the ranching operations and wildlife. Please acknowledge and include the socioeconomic implications in doing to.</p>	<p>This type of cost data was not developed for this EA, is not part of the mandates under the WFRHBA and therefore has no bearing on the action alternatives and need and purpose. The WFRHBA does not authorize a cost-based decision-making process if excess horses are present. <i>“Proper range management dictates removal of horses before the herd size causes damage to the range land. If the record establishes current resource damage or a significant threat of resource damage, removal is warranted”</i>. (118 IBLA 75).</p>
15.4	AWHPC	The BLM routinely presents the public with what amounts to foregone conclusions to roundup and remove wild horses in contravention of the letter and the spirit of the NEPA mandate to take a “hard look” at all reasonable alternatives.	For planning purposes, and to notify the interested public, a gather schedule is issued when it is anticipated gathers will occur. This does not preclude the completion of appropriate NEPA documentation and issuance of project specific Decisions.
15.5	FRER	While FRER appreciates that BLM has attempted to strike a balance among the multiple uses of the Fish Creek Herd Management Area (“HMA”), the Preliminary EA fails to sufficiently support and explain the proposed actions that would negatively affect wild horses or burros.	Refer to Sections 1.3 Purpose and Need for the Proposed Action, Chapter 2, Proposed Actions and Alternatives and the Environmental Consequences portion of Section 3.2 for this information.
15.6	FRER	BLM has not sufficiently considered the No Action Alternative, which would allow natural selection to cull the herd in the face of drought.	The No Action Alternative was described in Section 2.2.5 and carried forward for analysis in all of the Environmental Consequences discussions. It is also included in the Population Modeling summarized in Section 3.2 and Appendix E.
16.1	FRER	<p>The Preliminary EA does not explain how the Proposed Action will be impacted by the updated RMP for the BMD. For these reasons, the Preliminary EA should be amended. BLM Should Refrain from Conducting the Gather Until an Updated Resource Management Plan Is Finalized.</p> <p>BLM should avoid implementing long-term management decisions until a finalized</p>	The Proposed Action is in conformance with the existing RMP as documented in Section 1.4 of the EA. Though the BMD is in the process of revising the RMP, a completed RMP will not be ready in the near future, and could require many years to complete. It is not reasonable to postpone the Proposed Action for completion of an RMP revision.

	<p>resource management plan (RMP) is issued. The Preliminary EA relies on an RMP from 1986 and does not address whether and how the Proposed Action will be reevaluated upon the impending issuance of the new RMP. BLM is currently in the process of preparing a comprehensive RMP and associated environmental impact statement (EIS) for the Battle Mountain District which encompasses these areas. The new RMP will “reflect the changed needs of the planning area that have developed in the thirty years since the SERA RMP was issued. These “changed needs” should be addressed in the Proposed Action as well.</p> <p>The Proposed Action should be postponed until BLM can implement the standards established in the new RMP.</p> <p>The Preliminary EA does not disclose what steps BLM took to consider the AML for wild horses in Fish Creek and whether the existing AML would remain in place after the new RMP is issued. Rather, the Preliminary EA vaguely describes that the revised RMP “could influence management of wild horses within the District in the future” in, among others, actions such as “gathers, population control, allocation of use to wild horses, burros, livestock and wildlife, monitoring and setting and adjusting AMLs.” Preliminary EA, p. 100.</p> <p>The updated RMP could also provide guidance as to how to balance the environmental demands of wild horses with those of commercial livestock.</p> <p>As BLM has acknowledged, changes to livestock grazing numbers, including allocation of livestock forage to wild horses and the elimination or reduction of livestock grazing, are properly made during revisions to land use plans and RMPs. Preliminary EA, p. 27; <i>Cloud Foundation v. U.S. Bureau of Land Management</i>, 802 F. Supp. 2d 1192, 1206 (D. Nev. 2011) (noting that “livestock allotments may only be changed through amendment of the RMP”).</p> <p>Given that the permitted use for livestock in the HMA is over four times that of wild horses and burros, BLM should reassess livestock grazing numbers during the RMP revision process.</p> <p>The RMP revision process is the appropriate time for BLM to examine and establish AMLs. <i>In Def. of Animals</i>, 909 F. Supp. 2d at 1192 (“AMLs are determined through revisions to the applicable Resource Management Plan”); <i>Rock Springs Grazing Ass’n v. Salazar</i>, 935 F. Supp. 2d 1179, 1189 (D. Wyo. 2013) (“The AMLs for the HMAs are established in the Green River RMP”).</p> <p>If BLM believes that the existing AML need to be reexamined before BLM could take site-specific actions, such as a gather or roundup, in reliance upon that AML,</p>	<p>Additional information has been added to the EA to clarify that changes in the RMP (should it become final while this EA is still effective), would be carried forward into the future activities for wild horses under this EA. Prior to future management actions, a review would be completed to determine if the management direction has changed which may require a new NEPA document.</p>
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17.1	Marybeth Devlin	<p>Pumas are better population control than PZP. There can be no "thriving natural ecological balance" without apex predators. Mountain lions, wolves, and other such carnivores effectively control wild horse populations by targeting the weak, the sick, the young, and the old. Predators ensure survival of the fittest, as Nature intends. The best approach is for BLM to concentrate on promoting and then protecting native predators to permit natural control of the wild horse population on the range.</p> <p>A puma-conservation program would tend to strengthen the herd, and it would save costs. Many studies have established that mountain lions prey on wild horses more frequently than previously believed.</p>	<p>This is outside of the scope of the analysis. The BLM manages the habitat for which wildlife species depend on public lands. The Nevada Department of Wildlife manages the wildlife throughout the state. BLM and NDOW work together to monitor wildlife, wildlife habitat, plan restoration or enhancement activities and coordinate on management activities. The BLM does not manage the wildlife of Nevada, nor does the BLM manage any predator control programs.</p>
17.2	Linda Arndt	<p>If the US Wildlife Service would not destroy the predator population at the whim of western ranchers, the environment and predators would contribute to horse/burro population control along with the use of fertility drugs</p>	
18.1	FRER	<p>The Preliminary EA Does Not Accurately Present BLM’s Authority to Remove “Excess” Wild Horses or Burros.</p> <p>Despite the lack of analysis on whether the 2004 AML continues to be appropriate, BLM relies on this AML in finding that excess animals are present and require removal. The Preliminary EA states: <i>By law, BLM is required to remove excess animals once a determination has been made that excess animals are present and removal is necessary to address the current population.</i> Preliminary EA, p. 3. However, BLM’s Wild Horses and Burros Management Handbook clarifies that “[j]ustifying a removal [of horses] based on nothing more than the established AML is not acceptable.” BLM Wild Horses and Burros Management Handbook, p. 47.</p>	<p>The BLM is not proposing to remove wild horses simply because the population is over AML. The action alternatives were developed to address the excess wild horse numbers to maintain the thriving ecological balance of the area. Refer to Section 1.3 of the EA which includes the Purpose and Need for the Proposed Action and a discussion of the factors that were assessed in determining that excess wild horses were present and needed to be removed.</p> <p>Ongoing and current monitoring has been completed in the Fish Creek HMA (including review of climate data, actual use, trend, utilization, inventory, and water and forage availability), which in conjunction with other factors considered resulted in</p>

		<p>Although that BLM's statutory mandate requires that excess horses be removed from the range "immediately," the legislative history of the Act states that removal should only take place after a "cautious" determination of "what constitutes excess numbers." H.R. Rep. No. 95-1737, at 4131 (1978).</p> <p>The Proposed Action should be amended to expressly state the requirement that an existing AML must be reassessed and confirmed to be accurate before BLM would take action "to remove excess animals." Preliminary EA, p. 3.</p>	<p>the determination that excess wild horses exist and that a gather needs to be conducted to remove them. The AML was based on interdisciplinary review of monitoring data and other relevant information within the Fish Creek Complex Evaluation and FMUD, which included coordination with the interested public (refer to Sections 1.1 and Appendix B of the EA). Refer also to Response to Comment 12.5, 12.8, and 12.14.</p>
18.2	Janet Schultz	<p>Define excess if you are returning 300 (still above the fabricated AML). What "other formulation" are you generally attempting to have authorized.</p>	<p>Refer to Section 1.3 of the EA. It is unclear what "formulation" is referencing.</p>
18.3	Anne Novak/Protect Mustangs	<p>There is no evidence of excess wild horses.</p> <p>AML is biased to favor livestock. Rounding up or trapping wild horses and taking them away only causes the birthrate to increase and the ecology to suffer. BLM's harvesting system is the problem--as is killing predators</p>	<p>Refer to Response to Comment 19.1 and Section 1.2 of the EA.</p>
18.4	Bethany Grunenwald	<p>There is a substantial lack of evidence that these herds are oversized & not in balance with the natural ecosystem. The term "excess" in reference to this dwindling natural treasure is profane.</p>	<p>Refer to Response to Comment 18.1 and Section 1.2 of the EA. There is no evidence that the population of wild horses in Nevada or the BMD is dwindling. In fact, the current estimated population among the 28 HMAs in the Battle Mountain District is over 6,000 wild horses and burros.</p>
19.1	FRER	<p>BLM should be further constrained by the regulatory mandate that "[m]anagement shall be at the minimum level necessary to attain the objectives identified in approved land use plans and herd management area plans." 43 C.F.R. § 4710.4.</p> <p>BLM's allegation that removal of wild horses is justified by the impacts of extreme drought conditions also demonstrates its failure to carry out the "minimum management necessary" required by the Act.</p>	<p>"Minimally feasible level" does not refer to gathers specifically, but originates from early congressional hearings and is meant to prevent the wild horses and burros from being managed in "zoo like" settings. <i>"The committee wishes to emphasize that the management of the wild free-roaming horses and burros be kept to a minimum both from the aspect of reducing costs of such a program as well as to deter the possibility of "zoo like" developments. An intensive management program of breeding, branding and physical care would destroy the very concept that this legislation seeks to preserve."</i> 92nd Congress, Senate Report 92-242, June 25, 1971.</p>
19.2	FRER	<p>BLM plans to gather 500-549 horses, in a total population of 549 horses, and permanently remove 100 horses without any prior determination of whether any of these wild horses are in fact excess. Preliminary EA, p. 16. In effect, the Preliminary EA advocates a management action that would indiscriminately gather <i>all</i> of the wild horses from the Fish Creek HMA and then determine which animals are excess and require permanent removal. By doing so, BLM cannot meet its statutory obligation to manage herds "at the minimum feasible level" by unnecessarily removing every single wild horse in Fish Creek, even wild horses that are not found to be excess. 16</p>	<p>Refer to Section 2.5.4 of the EA and Response to Comment 19.1 above.</p>

		U.S.C. § 1333(a).	
19.3	Marybeth Devlin	<p>The Federal Regulations at 43 CFR 4710.4 "Constraints on management" state, in part: "Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd area plans."</p> <p>This point has been misconstrued. Many BLM offices interpret it to mean that the Agency is required to reduce herd size to the low -- or below the low -- AML.</p> <p>For the herd in question, there is no justification to reduce its population at all at this time because its numbers have yet to reach science-based levels. Reducing the herd anyway, is excessive.</p>	Refer to Response to Comment 19.1 above.
20.1	FRER	<p>The Preliminary EA describes that the Proposed Action is necessary to correct "the effects of severe drought on forage and water availability, causing concentrated use by wild horses on remaining resources." Preliminary EA, p. 71. However, BLM concedes that "[n]o weather stations exist in close proximity of the Fish Creek HMA that provides precipitation data." Preliminary EA, p. 72. The data provided from the Eureka and Gund Ranch Weather Stations shows that from 2012-2014, "[u]ncharacteristically high precipitation levels in the form of late summer showers occurred July-October and is reflected by both weather stations. Though data differed by year and station, precipitation levels were as high as 200-300% of the average during this time frame." Preliminary EA, p. 72. This information directly conflicts with BLM's assertion that from 2012-2014, "precipitation was far below normal levels resulting in Severe and Extreme drought conditions across much of Nevada." Preliminary EA, p. 71.</p>	<p>The BLM uses many tools to assess drought including meteorological data, available precipitation monitoring stations and on the ground field observations. All of these tools have been used since early 2012 to assess the drought conditions in the Fish Creek HMA area. As described in Section 3.5, rangeland vegetation within the Fish Creek HMA was affected by drought. Appendix D discusses the precipitation, drought and drought monitoring in more detail, including observations of the rangeland vegetation since 2012. The existing precipitation monitoring stations (Eureka, Gund Ranch, and Diamond Valley all show total precipitation levels below normal or far below normal for the years 2012, 2013 and 2014. Very low precipitation levels during the spring months as shown in the tables in Appendix D affected plant growth and water availability. The unusual rain storms received in the late summer/early fall provided some relief in the form of vegetation regrowth and some filling of water basins. Though these storms benefited the rangeland vegetation and the wild horses, they were not enough to offset the impacts of the drought. Review the data in Appendix D for more information.</p>
20.2	FRER	<p>BLM has failed to show that the alleged drought conditions support the permanent removal of 100 horses under the Proposed Action. Even if extreme drought conditions could be established in the Fish Creek HMA, wild horse and burro populations have thrived for centuries without human intervention in the face of extreme weather conditions. BLM has not sufficiently considered assessing rangeland health <i>now</i>, before conducting a gather, to determine if conditions in the HMA warrant the removal of 100 wild horses.</p>	<p>Since the Rangeland Health Evaluation for the Fish Creek Complex was completed in 2004, monitoring of the rangeland and the wild horses has continued to be completed. This information has been assessed and reviewed in terms of the established AML in 2004 and the need to remove excess wild horses from the range. It is not reasonable that the BLM would conduct a full scale Rangeland Health Evaluation prior to initiating a wild horse gather.</p> <p>Refer to Section 1.3 which details the Purpose and Need for the Proposed Action and the rationale for the determination that excess wild horses are present and that a removal is necessary.</p>

			<p>The BLM employs approved methods for monitoring which are detailed in Technical References. Data is collected objectively in conformance with monitoring protocols by experienced personnel. Rangeland Health Assessments are lengthy documents and are available from the respective Field Office. It is not appropriate to include the Rangeland Health Assessments in a wild horse gather EA, but the relevant information is summarized in the EA, along with available monitoring data.</p> <p>Ongoing and current monitoring has been completed in the in the HMA (including review of climate data, actual use, trend, utilization, inventory, and water and forage availability), which in conjunction with other factors considered resulted in the determination that excess wild horses exist and that a gather needs to be conducted to remove them.</p>
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