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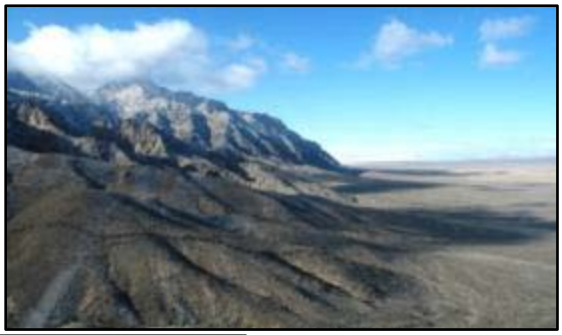
Bureau of Land Management

Tonopah Field Office **July 2010**

Montezuma Peak and Paymaster Herd Management Areas

Final Wild Horse and Burro Gather Plan and Environmental Assessment
DOI-BLM-NV-B020-2010-0113-EA.



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Battle Mountain District

Montezuma Peak/Paymaster HMAs Gather Environmental Assessment

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Photos, clockwise from top: Burro under a Joshua tree, Montezuma Peak HMA, northern end of Paymaster HMA, wild burros in the Montezuma Peak HMA, wild horse outside of Paymaster HMA, wild horses in valley between Montezuma Peak and Paymaster HMAs, Key Area 3, Montezuma Allotment.

Montezuma Peak and Paymaster Herd Management Areas Wild Horse and Burro Gather Environmental Assessment DOI-BLM-NV-B020-2010-0113-EA.

1. Introduction

The Bureau of Land Management (BLM) Tonopah Field Office (TFO) is proposing to conduct a wild horse and burro gather to remove excess wild horses and burros from within and outside the established boundaries of the Montezuma Peak and Paymaster Herd Management Areas (HMAs)[1]. The proposal includes the capture and removal of approximately 182 excess wild horses and burros residing primarily outside the established boundaries of the HMAs. Approximately 23 wild horses would remain within the Paymaster HMA and 3 wild horses and 10 burros within the Montezuma Peak HMA after the gather. The proposed gather would occur in September 2010 and would be conducted in accordance with the Gather Plan and Standard Operating Procedures (SOPs) located in Appendix A.

An Environmental Assessment (EA) is a "concise public document" that is designed to "briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI)."[2] 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 completion of a gather and removal of excess wild horses and burros outside of the Montezuma Peak and Paymaster HMAs and inside if needed. Should a determination be made that implementation of the Proposed Action or alternative actions would not result in "significant environmental impacts" a FONSI will be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

By law, BLM is required to immediately remove excess animals once a determination has been made that excess animals are present and removal is necessary. In the past two decades, program goals have expanded beyond analyzing data and setting the population levels necessary to achieve a "*thriving natural ecological balance*" (i.e. establishing Appropriate Management Levels (AMLs) for individual herds) to activities designed to achieve and maintain wild horse populations within the established AML so as to manage for a healthy, self-sustaining wild horse and burro population. BLM's management of wild horses and burros must also be consistent with Standards and Guidelines for Rangeland Health and for Healthy Wild Horse and Burro Populations developed by the Mojave/Southern Great Basin Resource Advisory Council (RAC).

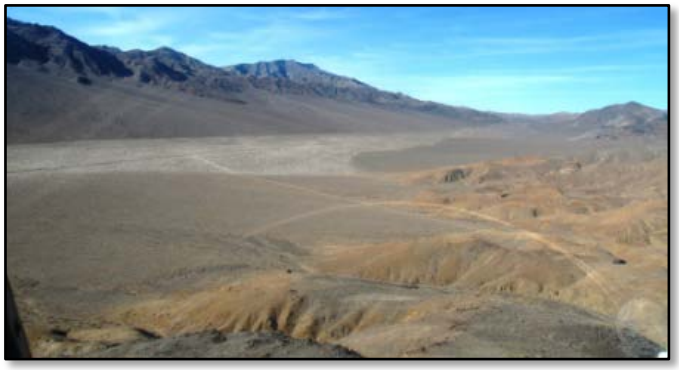
1.1 Background

The Montezuma Peak HMA is located west of the town of Goldfield, 26 miles south of Tonopah in Esmeralda County, Nevada. The HMA encompasses an area approximately 9 miles wide and 21 miles

1. Excess animals would be removed from within the HMAs if needed to achieve the Appropriate Management Levels for each HMA and to achieve post-gather management objectives.
2. 40 CFR Sec. 1508.9.

long, and is approximately 77,931 acres in size. The majority of the HMA is dominated by shrubs with little grass. The area receives only 3 inches of precipitation in the valley bottoms and 12 inches on the mountain tops. This HMA is in the transition zone between the Great Basin (cold desert) and the Mojave Desert (hot desert). Habitat in the Montezuma Peak HMA is well suited for wild burro use, but contains little forage suitable for wild horses.

The Paymaster HMA is approximately 100,500 acres and is less than five miles north of the Montezuma Peak HMA and 7 miles west of Tonopah in Esmeralda County. Few fences exist across much of the area, which allows the wild horses unrestricted movement both within the HMA as well as to areas outside the HMA boundaries, including the adjacent Montezuma Peak HMA. Because of steep terrain, limited forage, and few accessible perennial waters, most of the wild horse and burro population resides outside the boundaries of the HMA (see below).



Paymaster Canyon, Paymaster HMA. February 2010

1.2. Appropriate Management Level (AML)

The AMLs for the Paymaster and Montezuma Peak HMAs were established through Final Multiple Use Decisions (FMUDs) issued following completion of Rangeland Health Evaluations, Watershed Assessments and Allotment Evaluations for the Magruder Mountain, Monte Cristo, Montezuma, Yellow Hills and Sheep Mountain Allotments between 1999 and 2007. Refer to Section 1.7 for a list of these documents.

These decisions involved analysis of all or a combination of monitoring data including utilization, trend, riparian functional condition ratings, precipitation, wildlife habitat studies, and wild horse and burro inventory data to assess these areas for rangeland health and to subsequently adjust AMLs for HMAs within these allotments. Throughout all of these evaluations, a common theme became the inherent lack of suitable habitat for wild horses, reflected by poor forage and limited water availability. The evaluations resulted in carrying capacity analyses for livestock, wild horses and wild burros within these areas, and setting a more conservative AML appropriate for these arid ecosystems in order to prevent degradation to the vegetation and riparian resources and to maintain healthy animals.

AMLs for the Paymaster and Montezuma Peak HMAs are identified in the table below. The BLM's current guidance is to establish AMLs as a range; however the AMLs for the Paymaster and Montezuma Peak HMAs were established prior to this guidance and they were set as single numbers with provisions to allow for removal to a lower number in order to provide for population growth for three years without exceeding the AML between gathers, which is consistent with BLM's management of wild horses within an AML range. The interested public was involved throughout the decision-making process establishing the AMLs. Refer to Appendix B for more information about the AMLs for these HMAs.

The most recent helicopter population inventory flight of the Montezuma Peak and Paymaster HMAs was conducted in February, 2010 which resulted in a direct count of 129 wild horses and 61 wild

burros with 132 of the 190 animals observed (69%) located outside of the HMA boundaries. With the 2010 foaling season, BLM estimates that the post-foaling population is currently 149 wild horses and 71 wild burros. Tables 1 and 2 display the AMLs and population estimates for the HMAs.

Table 1. Montezuma Peak HMA Summary

HMA	Acres	Allotment[3]	AML	Current Estimated Population[4]
Montezuma Peak	77,931	Montezuma	0	70 horses, 61 burros
		Magruder Mountain	2 horses, 10 burros	
		Yellow Hills	1 horse	
		Total	3 horses, 10 burros	

Table 2. Paymaster HMA Summary

HMA	Acres	Allotment	AML	Current Estimated Population
Paymaster	100,591	Montezuma	0	59 horses
		Monte Cristo	8 horses	
		Yellow Hills	1 horse	
		Unallocated	1 horse	
		Sheep Mountain	28 horse	
		Total	38 wild horses	

The post foaling populations will increase to an estimated 81 wild horses and 71 wild burros within and outside of the Montezuma Peak HMA and 68 wild horses within and outside of the Paymaster HMA based on an average annual increase of 16%[5], which exceed the established AMLs by approximately 108 wild horses and 61 wild burros. Based on a review of all population and resource information available at this time, the TFO has determined that excess wild horses and burros are present within and outside of the Montezuma Peak and Paymaster HMAs, and removal of excess wild horses and burros is required under the Wild Free-Roaming Horses and Burros Act. The gather would achieve a population of wild horses and burros consistent with the established AMLs, which will protect the wild horses and burros from declining body condition and poor health due to a lack of forage and water, restore a thriving natural ecological balance and prevent degradation of rangeland resources resulting from the overpopulation of wild horses and burros. This assessment is based on factors including, but not limited to the following rationale:

- The existing and estimated post foaling 2010 population exceeds the established AMLs (41 wild horses and 10 wild burros) as established through FMUDs.
- The 2010 aerial inventory documented 69-71% of wild horses and burros residing outside of HMA boundaries.
- Recurrent drought and sporadic precipitation patterns occur within the region.
- Attributes of the region including inherently low precipitation and undeveloped soils result in undesirable or limited habitat for wild horses.

3. AMLs were established by individual Allotment; however, the total identified is the AML for the entire HMA, as few fences exist to hinder movement between Allotments. Refer to Section 3.2, 3.3 and Appendix B for more information.
4. The current population prior to spring foaling in 2010.
5. The average annual rate of increase takes into account annual foaling and average annual mortality and represents the expected increase over time based on inventory and gather data. This actual increase annual may differ due to herd, climate or habitat attributes.

- Excess wild horses and burros have contributed to some of the Standards for Rangeland Health not being met in accordance with the Mojave/Southern Great Basin Resource Advisory Council (RAC; 1997), particularly where use is occurring outside of the HMA boundaries.
- Emergency gathers have occurred in the region due to overpopulation of animals compounded by drought.
- History of poor wild horse health and Henneke body condition scores of 3 (thin) or less (refer to the end of Appendix A in the Final EA for a diagram and description of the Henneke System).
- The AMLs for Montezuma Peak and Paymaster HMAs were established at a level necessary to maintain a thriving natural ecological balance and management of wild horses and burros at AML is necessary to allow for progress towards achieving the Standards for Rangeland Health in accordance with the Mojave/Southern Great Basin RAC and to prevent diminishing animal health and death resulting from an overpopulation of wild horses and burros.

Based on the above factors, the TFO has determined that an estimated 123 excess wild horses and 61 excess wild burros are present both within and outside of HMA boundaries.

The Tonopah Resource Management Plan (RMP) defines AML as "*the maximum number of wild horses and/or burros to be managed within a herd management area and has been set through monitoring and evaluation or court order*" (pg 15), and mandates "*when the AML is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the AML*".

Wild horses outside of the Montezuma HMA, February 2010

Large portions of the Paymaster and Montezuma Peak HMAs are "dry" with no water available for wild horses or burros, and many areas are inaccessible due to steep terrain. Refer to Sections 3.6 and Appendix B of this EA. Additionally, the vegetation communities in these HMAs are affected by various climatic influences such as extremely variable precipitation, due to the transition between the Great Basin and Mohave Deserts. Soils within the HMAs are undeveloped, producing low amounts of usable forage for wild horses and burros. Condition of the rangeland resource is detailed in the documents identified in Sections 1.7, 3.5 and Appendix C.

The AMLs need to be achieved and maintained so that wild horses and burros remain within the HMAs designated for their use through the Tonopah RMP consistent with the 1971 WFRHBA and CFR 4710.4. Achievement of AML is also needed to prevent diminishing animal health and to maintain healthy vegetative communities that provides important habitat to wild horses, burros, livestock and wildlife. Maintaining wild horse and burro populations consistent with the established AMLs would also ensure

the long-term health and well-being of the wild horses and burros through variable environmental conditions (such as in low precipitation years) and is necessary for progress towards attainment of RAC Standards and for Rangeland Health, RMP and Allotment Specific Objectives.

1.3. Purpose and Need for Action

The purpose of the Proposed Action is to remove excess wild horses and burros from outside of the boundaries of the Montezuma Peak and Paymaster HMAs first, and remove any remaining excess wild horses and burros from inside the boundaries of the HMAs as necessary.

This action is needed to remove wild horses and burros from non-HMA areas not designated for their use, and to remove excess wild horses and burros from within the HMAs in accordance with the established AMLs. Furthermore, the action is needed to protect rangeland resources from deterioration associated with an overpopulation of wild horses and burros, and to 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 *Wild Free-Roaming Horses and Burros Act of 1971* (WFRHBA).

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 Wild Horse and Burro Objectives of the Tonopah Resource Management Plan (RMP) Record of Decision dated 1997. Pertinent excerpts from that document are as follows:

Objective: To manage wild horses and/or burro populations within Herd Management Areas at levels which will preserve and maintain a thriving natural ecological balance consistent with other multiple-use objectives (pg 14).

1. Continue the following management determinations:
   a. Manage wild horses and/or burros in 16 HMAs listed in Table 3 of the RMP.
   b. Manage wild horses and/or burros at AML or interim herd size (IHS) for each HMA outlined in Table 3. Future herd size or AMLs within each HMA will be adjusted as determined through short-term and long-term monitoring data methods as outlined in the *Nevada Rangeland Monitoring Handbook* and BLM Technical References.
2. When the AML is exceeded, remove excess wild horses and/or burros to a point which may allow up to three years of population increase before again reaching the AML.

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

The Proposed Action is in conformance with the WFRHBA of 1971 (Public Law 92-195, as amended) the Code of Federal Regulations (CFR) at 43 CFR §4700, and BLM policies.

Section 2 (f) of the WFRHBA defines excess animals as follows: *"excess animals" means wild free-roaming horses or burros (1) which have been removed from an area by the Secretary pursuant to applicable law or, (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.*

Furthermore, 3 (b) (2) of the Act states:

> *"Where the Secretary determines on the basis of (i) the current inventory of lands within his jurisdiction; (ii) information contained in any land use planning completed pursuant to section 202 of the Federal Land Policy and Management Act of 1976; (iii) information contained in court ordered environmental impact statements as defined in section 2 of the Public Rangelands Improvement Act of 1978; and (iv) such additional information as becomes available to him from time to time, including that information developed in the research study mandated by this section, or in the absence of the information contained in (i-iv) above on the basis of all information currently available to him, that an overpopulation exists on a given area of the public lands and that action is necessary to remove excess animals, 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".*

43 CFR § 4700.06 Policy.
(a)Wild horses and burros shall be managed as self- sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.

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

43 CFR § 4720.1 Removal of excess animals from public lands
Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.

43 CFR § 4740.1 Use of motor vehicles or aircraft
(a) Motor vehicles and aircraft may be used by the authorized officer in all phases of the administration of the Act, except that no motor vehicle or aircraft, other than helicopters, shall be used for the purpose of herding or chasing wild horses or burros for capture or destruction. All such use shall be conducted in a humane manner.

(b) Before using helicopters or motor vehicles in the management of wild horses or burros, the authorized officer shall conduct a public hearing in the area where such use is to be made.

43 CFR § 8364.1 Closures and Restrictions
(b) To protect persons, property, and public lands and resources, the authorize officer may issue an order to close or restrict use of designated public lands.

1.6. Conformance with Rangeland Health Standards and Guidelines

The Proposed Action, Alternative 1 and 2 are in conformance with the Mojave/Southern Great Basin RAC Rangeland Health Standards and Guidelines which require BLM to manage wild horses and burros within AML and in balance with other uses. Applicable excerpts are as follows:

> *The standards for rangeland health will be reached and maintained by managing wild horse and burro numbers so as not to exceed Appropriate Management Levels for each Herd Management Area. Controlling wild horse and burro numbers through gathers and other control programs is essential.*
>
> *Wild horses and burros within Herd Management Areas should be managed for herd viability and sustainability. Herd Management Areas should be managed to maintain a healthy ecological balance among wild horse and/or burro populations, wildlife, livestock, and vegetation.*

Guideline 4.1: Wild horses and burro population levels in HMAs should not exceed AML.

Guideline 4.2: AMLs should be set to reflect the carrying capacity of the land in dry conditions based upon the most limiting factor: living space, water or forage. Management levels will not conflict with achieving or maintaining standards for soils, ecological components, or diversity of habitat and biota.

Guideline 4.3: Interaction with herds should be minimized. Intrusive gathers should remove sufficient numbers of animals to ensure a period between gathers that reflects national wild horse and burro management strategies.

The Mojave/Southern Great Basin RAC Rangeland Health Standards and Guidelines can be accessed at www.blm.gov/nv/st/en/res/resource_advisory/mojave-southern_grat.html or by contacting the TFO.

The allotments within the Montezuma Peak and Paymaster HMAs were evaluated for Rangeland Health within Assessments/Evaluations and Allotment Evaluations completed between 1999 and 2007. It was determined through the analysis of monitoring data and evaluation of RMP and Allotment Specific Objectives that some of the Rangeland Health Standards were being met, and some were not. The reasons identified for Standards not being met included past livestock management, drought, wild horse use outside of HMAs, overlap of wild horse and livestock use, lack of habitat for wild horses and stocking levels in certain areas that were too high for the resources. As a result of these analyses, BLM determined that adjustments to the livestock management systems were necessary and that more conservative stocking rates were needed. Wild horse and burro AMLs were also adjusted to ensure that the populations were in balance with the limited resources in the arid region in order to maintain healthy animals and provide improvement to the habitat. These changes were implemented in FMUDs issued subsequent to the Evaluation/Assessments. Refer to the documents identified below in Section 1.7 for more information.

1.7. Other NEPA Analysis

This EA analyzes the impacts to the human environment that could result from gathering and removing wild horses and burros within the Montezuma Peak and Paymaster HMAs. Multiple Use Evaluations, Rangeland Health Assessments, and EAs have been completed in the process of establishing AML for wild horses and burros within these HMAs. Additionally, the Paymaster HMA was included within the Paymaster/Silver Peak Gather EA, 2006. This EA tiers to the prior NEPA documents and will incorporate relevant portions of those documents by reference, where applicable. The other relevant NEPA and decision documents are identified below:

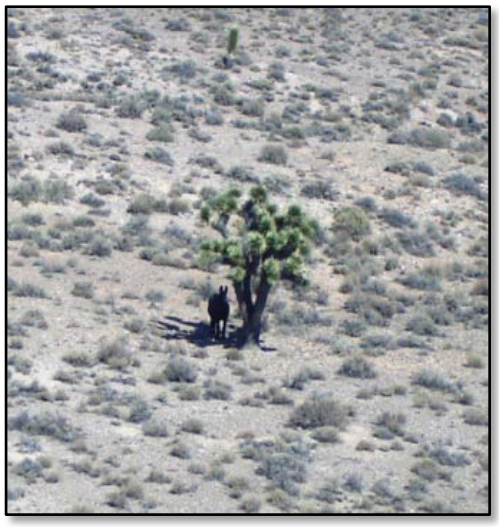
- Montezuma Complex Rangeland Health Evaluation, 2007

- Final Multiple Use Decision for the Montezuma Complex, 2007
- Montezuma Complex Rangeland Health Evaluation EA NV065-2005-042
- Magruder Mountain Allotment Watershed Assessment, 2004
- Notice of Final Multiple Use Decision, Magruder Mountain Watershed Assessment, 2004
- Magruder Mountain Watershed Assessment EA NV065-2004-042
- Sheep Mountain/Yellow Hills Allotment Evaluation, 2003
- Yellow Hills Proposed Multiple Use Decision/FMUD, 2009
- Final Multiple Use Decision for Sheep Mountain and Yellow Hills Allotments, 2003
- Sheep Mountain and Yellow Hills Allotment EA NV065-2003-025
- Monte Cristo Allotment Evaluation, 1999
- Final Multiple Use Decision for Monte Cristo Allotment, 2002
- Monte Cristo Allotment EA NV065-2002-042
- Silver Peak and Paymaster HMA Wild Horse Removal EA NV065-EA06-149

1.8 Decision to be made

Based on the analysis presented in the EA, the authorized officer will select an alternative that meets the Purpose and Need for the proposed action, which is to manage the Montezuma Peak and Paymaster HMAs for a thriving natural ecological balance.

The decision would not establish or adjust the AMLs, which were established through previous planning-level decisions. Monitoring and population inventory indicates that an excess population of wild horses and burros exists within and outside of the Montezuma Peak and Paymaster HMAs, and that excess wild horses and burros need to be removed in order to preserve a thriving natural ecological balance and to comply with the WFRHBA. Future decisions regarding long-term management within the HMAs would continue to be accomplished with public involvement through a Herd Management Area Plan, other activity level management plans specific to the HMAs or Battle Mountain District Resource Management Plan Revisions. The gather decision would not adjust livestock use, which use has been allocated through prior planning-level processes and decisions.



Wild burro taking shade beneath a Joshua tree, September 2006.

The No Action Alternative would not achieve the identified Purpose and Need identified in Section 1.3. However, it is analyzed in this EA to provide a basis for comparison with the other 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 the public range and to manage for a thriving natural ecological balance, 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 and would not allow for progress towards attainment of the RAC Standards for Rangeland Health, or Land Use Plan/Allotment Specific Objectives for the involved allotments or HMAs.

1.9. Scoping and Issue Identification

As part of the preparation of this EA, a scoping letter dated April 26, 2010 was mailed to 28 individuals, agencies and organizations on the interested public list for the Montezuma Peak and Paymaster HMAs. Additionally, through the Nevada State Clearinghouse, the letter was distributed to an additional 37 individuals associated with Nevada State agencies.

Responses were received from Nevada Department of Wildlife. Refer to Appendix F for a summary of the comments received and responses to the comments. These comments/concerns were considered and incorporated in the preparation of this EA. Through the evaluation process and consultation with the interested public, the following issues have been identified:

1. *Substantial numbers of wild horses and burros are using areas outside of the established HMA boundaries in areas not designated for their use,*
2. *Long term health and viability of wild horses and burros,*
3. *The potential for inbreeding and population crashes,*
4. *Impacts, stress and humane treatment to wild horses and burros through helicopter removals,*
1. *Limited habitat available for wild burros and especially wild horses due to the lack of water and forage in the arid desert environment,*
2. *Potential for emergency conditions due to drought and an overpopulation of wild horses or burros,*
3. *Potential impacts to threatened, endangered and sensitive wildlife species through completion of the proposed gather,*

The Montezuma Peak and Paymaster Herd Management Areas Wild Horse and Burro Gather Preliminary Environmental Assessment (EA) DOI-BLM-NV-B020-2010-0113-EA (Montezuma Peak and Paymaster HMA Gather EA) was made available to the interested public on June 15, 2010 through notification of its availability for a 30 day review and comment period to the interested public mailing list for these HMAs, and was also posted on BLM's website at: www.blm.gov/nv/st/en/fo/battle_mountain_field. Additionally, the Nevada State Office issued a news release notifying the general public of the availability of the document for review on June 23, 2010 that was posted on BLM's external website. The news release was issued to a list of over 100 media sources in Nevada and California as well as Nevada Congressional representatives. BLM reviewed and considered all comments received in finalizing the Final Montezuma Peak and Paymaster HMA Gather EA. Letters supporting, as well as opposing the gather were received in addition to numerous automatically generated form letters. Minor additions for clarity have been made to the EA; however significant changes to the analysis were not warranted. Refer to Appendix F for a summary of the comments received and the responses to those comments.

Some members of the interested public believe that livestock should be removed from the range before or instead of wild horses or burros. However, management of livestock is an appropriate multiple use of public lands, and decisions pertaining to the use of livestock on public lands have been made through the Tonopah RMP Record of Decision dated 1997, and FMUDs for the Montezuma, Magruder Mountain, Yellow Hills, Sheep Mountain and Monte Cristo Allotments between 2002 and 2009. The allocation of forage to livestock, wild horses and wild burros was made through decisions that were issued following analysis of monitoring data, carrying capacity analysis, and consultation with the interested public. The purpose of this EA is not to assess or adjust livestock use. Any necessary

adjustments to livestock use would be determined based on the collection and evaluation of monitoring data and after the coordination with the interested public as required under federal regulations.

2. Description of the Proposed Action and Alternatives

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 following alternatives are analyzed in detail:

Table 3. Proposed Action and Alternatives

Proposed Action	Montezuma Peak HMA: Capture and remove approximately 61 burros and 78 wild horses leaving a post-gather population of 10 burros and three horses inside the HMA boundary.
	Paymaster HMA: Capture and remove approximately 45 wild horses, leaving a post-gather population of approximately 23 wild horses within the HMA.
Alternative 1	Montezuma Peak HMA: Same as for the Proposed Action.
	Paymaster HMA: Capture approximately 65 wild horses, returning 13 studs and 7 mares to the HMA, for a post-gather population of 23 animals (adjusting sex ratios).
Alternative 2	Montezuma Peak HMA: Same as for the Proposed Action.
	Paymaster HMA: Same as for Alternative 1, with the exception that the 7 mares would be treated with fertility control.
No Action	No gather or removal of wild horses or burros.

The Proposed Action was developed to meet the Purpose and Need (i.e. to remove excess wild horses and burros, manage wild horses and burros within identified HMA boundaries, maintain AML and ensure a thriving natural ecological balance). Alternatives 1 and 2 considered current National Wild Horse and Burro Program direction that dictates the BLM implement population controls during gathers in an effort to reduce population growth rates, and consequently reduce gather frequency and the number of excess wild horses that ultimately must be removed from the range in order to maintain populations at AML. The Action Alternatives (Proposed Action, Alternative 1 and 2) were also developed based on the issues identified during internal and external scoping and agency consultation.

The post-gather target of 23 wild horses in the Paymaster HMA was determined based on a projected 16% annual increase and a 3-year interval until AML would be exceeded and another gather would be necessary.

2.1. Management Actions Common to the Proposed Action and Alternatives 1 & 2

The proposed gather would be completed in accordance with this EA, Wild Horse and Burro Gather Plan and SOPs (Appendix A).

- The helicopter drive trapping method would be used with multiple locations for trap corrals.
- The BLM would be responsible for contractor compliance to national contract specifications including SOPs.
- The gather operation would take place in September 2010.

- The gather would be in accordance with Washington Office Instructional Memorandum No. 2010-135 *Gather Policy, Selective Removal Criteria, and Management Considerations for Reducing Population Growth Rates.*
- Excess wild horses and burros removed from the range would be transported to BLM Wild Horse and Burro facilities to be offered for adoption or transport to long term holding pastures.
- Hair samples would be collected for genetics analysis as described in Appendix A.
- A helicopter inventory flight may be conducted following the gather to collect information about numbers and locations of remaining wild horses or burros within the HMAs.
- Wild horses and burros captured outside of HMA boundaries would be removed regardless of age.
- Temporary closure of roads within the HMA during gather operations may be instituted as necessary under 43 C.F.R. 8364.1, to allow for safe and effective operations to proceed.

The February 2010 population inventory of the Montezuma Peak and Paymaster HMAs indicates that 69-71% of the current population of wild horses and burros may be residing outside of the HMA boundaries. Under the Action Alternatives, these animals would be gathered and removed first. Depending upon the actual number of animals captured from outside of the HMA boundaries, the gather would then continue within the HMA boundaries in order to remove an estimated total 123 wild horses and 61 wild burros to achieve a post-gather population of 41 wild horses and 10 wild burros. The following table displays the estimated removal numbers both inside and outside the HMAs that would be necessary to achieve the AMLs.

Table 4. Removal Estimates Inside and Outside of HMAs

HMA	Remove Outside HMAs		Remove Inside HMAs		Total Removed	
	Horses	Burros	Horses	Burros	Horses	Burros
Paymaster	45	0	0	0	45	0
Montezuma Peak	43	61	35	0	78	61
Total	88	61	35	0	123	61

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

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

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

Table 5a. Proposed Action Gather Estimates

HMA	AML	Est. Population[6]	Est. Gather Number[7]	Est. Un-gathered	Est. to Remove	Est. to Release	Est. Post-gather
Montezuma Peak	10 burros 3 horses	71 burros 81 horses	61 burros 78 horses	10 burros 3 horses	61 burros 78 horses	0	10 burro 3 horse
Paymaster	38 horses	68 horses	45 horses	23 horses	45 horses	0	23 horses
Total	10 burros 41 horses	71 burros 149 horses	61 burros 123 horses	10 burros 26 horses	61 burros 123 horses	0	10 burros 26 horses

Table 5b. Alternative 1 and 2 Gather Estimates

HMA	AML	Est. Population	Est. Gather Number[8]	Est. Un-gathered	Est. to Remove	Est. to Release	Est. Post-gather
Montezuma Peak	10 burros 3 horses	71 burros 81 horses	61 burros 78 horses	10 burros 3 horses	61 burros 78 horses	0	10 burro s 3 horses
Paymaster	38 horses	68 horses	65 horses	3 horses	45horses	13 studs 7 mares	23 horses
Total	10 burros 41 horses	71 burros 149 horses	61 burros 143 horses	10 burros 6 horses	60 burros 123 horses	20 horses	10 burros 26 horses

2.2. Actions that differ among the Proposed Action and Alternatives

2.2.1. Proposed Action: Gather and remove excess wild horses and burros to achieve AML with post-gather populations of 3 wild horses and 10 wild burros in Montezuma Peak HMA and 23 wild horses within Paymaster HMA.

Through the Proposed Action, the primary goal would be to remove all the wild horses and burros residing outside of HMA boundaries as required by law. For the Montezuma Peak HMA, approximately 61 wild burros and 43 wild horses would be removed from outside of the HMA boundaries[9.] An additional 35 wild horses would be removed from within the HMA. The objective of

6. Estimated population represents the population following 2010 foaling. The most recent inventory was conducted February 2010.
7. Estimated gather numbers based on the capture of animals outside of the HMAs and only the number required to achieve the AML as no population control methods would be applied. Assumes ability to capture 95% of the population, which would vary depending on terrain, animal location, weather conditions and actual population size experienced during the proposed gather.
8. Estimated gather numbers based on the ability to capture 95% of the population, which would vary depending on terrain, animal location, weather conditions and actual population size experienced during the proposed gather.
9. Actual gather and removal numbers within and outside of the Montezuma Peak and Paymaster HMA boundaries will be dependent upon animal location/distribution and spring 2010 foaling.

the gather would be to leave 3 wild horses and 10 wild burros undisturbed within the HMA boundary. Because no additional animals would be released, no age selection or population controls would be implemented.

For the Paymaster HMA, approximately 45 wild horses would be removed from outside of the HMA boundary, leaving approximately 23 wild horses undisturbed inside of the HMA. The population distribution would be evaluated during the gather to make a determination as to whether additional wild horses should be removed from within the HMA to achieve a post-gather population consistent with the AML.

2.2.2. Alternative 1: Gather approximately 95% of the wild horses within and outside of the HMA boundaries and adjust sex ratios to favor males. No implementation of fertility control.

The Montezuma Peak HMA would be gathered in the same manner as that proposed for the Proposed Action, and animals removed to achieve a post-gather population of 3 wild horses and 10 wild burros within the HMA. No animals would be released back to Montezuma Peak HMA. For the Paymaster HMA, the primary goal would be to gather and remove all wild horses outside of the HMA boundary. The secondary goal would be to continue gathering within the HMA to capture approximately 95% of the horses within the HMA. The sex ratio of approximately 20 release horses would be adjusted to favor males (60% studs, 40% mares), resulting in the release of an estimated 13 studs and 7 mares to achieve a post-gather population of 23 wild horses within the HMA. Modification of sex ratios through the release of fewer mares can have the effect of slowing growth rates of the population.

This alternative was developed to support current BLM direction to reduce gather frequencies and the number of animals that need to be removed from the range over time through application of fertility control and/or adjustment of sex ratios to favor studs, which reduces the proportion of the population that would give birth to foals.

Following the capture of wild horses, animals would be sorted by age, sex and for release back to the Paymaster HMA or for transport a BLM Wild Horse and Burro facility.

Wild horses and burros captured from outside of the HMA boundaries would be removed regardless of age, because these animals have established permanent residency outside of the HMA and would be likely to leave the HMA again if returned to the HMA. Any animals gathered from inside the Paymaster HMA boundaries would be subject to the National Selective Removal Policy to the extent possible (refer to Appendix A).

Only wild horses captured from within the Paymaster HMA would be re-released back into the HMA. For example, if 23 wild horses are captured from within the Paymaster HMA, then those wild horses would be released regardless of age in order to attain the post-gather population objective of 23 wild horses.

If removal of animals within HMA boundaries is necessary in order to achieve the post-gather population goals, then the priority for removal would be for animals that were four years of age or younger for which a greater adoption demand exists. If necessary to achieve the post-gather population objective, animals within the eleven to nineteen age class could be selected for removal.

An emphasis would be placed on older mares and studs (15-19 years of age and primarily those 20+ years of age) to be released back into the HMAs to avoid the stress of transportation and handling to these older horses. BLM Wild Horse and Burro Specialists would adhere to the Wild Horse and Burro Euthanasia Instruction Memorandum WO-2009-041 (refer to Appendix A) when necessary.

Wild horses to be released would be selected for body condition and overall health. Weak, unhealthy, or unthrifty animals would not be selected for release back into the HMA. Refer to Appendix B for detailed information about the anticipated age structures and sex ratios.

2.2.3. Alternative 2: Gather as for Alternative 1 with the addition of fertility control

The Montezuma Peak HMA would be gathered in the same manner as that proposed for the Proposed Action. The Paymaster HMA would be gathered in the same manner as that proposed for Alternative 1 with the exception that fertility control would be applied to the 7 mares identified for release back to the HMA.

Current National Wild Horse and Burro Program direction is for BLM to implement population controls during gathers in an effort to reduce population growth rates, gather frequency and the number of excess wild horses that ultimately must be removed from the range in order to maintain populations at AML. For these reasons, population control methods would be evaluated in order to bring the population and population growth to a level that would allow 3-5 years before another gather is necessary.

Through application of fertility control and adjustment of sex ratios to favor studs, population growth rates could be reduced, extending the time before another gather was required, and reducing the number of additional excess wild horses would have to be removed during future gathers.

Fertility control would be applied to 100% of the mares released back to the range through inoculation with a single dose of the two-year contraceptive vaccine Porcine Zona Pellucida (PZP), for fertility control research. When injected, PZP (antigen) causes the mare's immune system to produce antibodies and these antibodies bind to the mare's eggs, which effectively blocks sperm binding and fertilization (Zoo, Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and the environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible. Fertility control has not been researched for use with burros.

The highest success obtained for fertility control has been achieved when applied during the timeframe of November through March. Refer to Appendix C for more information about fertility control application procedures. The efficacy for the application of the two-year PZP vaccine based on summer application is as follows:

Table 6. Fertility Control Efficacy (Effectiveness)

Year 1	Year 2	Year 3	Year 4
Normal	80%	65%	50%

One-time application at the capture site would not affect normal development of the fetus (unborn foal), hormone health of the mare or behavioral responses to stallions, should the mare already be pregnant when vaccinated (Kirkpatrick, 1995). The vaccine has also proven to have no apparent effect

on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Mares would foal normally in Year 1. Treated mares would be freezemarked on the left hip for future identification. The objective for the sex ratio of the post-gather population would be 60% studs (males) and 40% mares.

2.2.4. Alternative 3: No Action Alternative (No Wild Horse and Burro Gather)

Under the No Action Alternative, a wild horse gather would not be conducted within the Montezuma Peak or Paymaster HMAs. Wild horse or burro populations would not be actively managed at this time, and wild horses or burros would not be removed from areas outside of HMA boundaries in areas not designated for their use. The current population of 129 wild horses and 61 wild burros would continue to increase at an estimated rate of 16% annually. The established AMLs 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 Land Use Plan or Allotment Specific Objectives for the affected allotments or either HMA.

The No Action Alternative is in violation of the Wild Free-Roaming Horses and Burros Act of 1971 (PL 92-195, as amended) and is not in conformance with BLM wild horse and burro management requirements contained in 43 CFR Subpart 4700. The No Action Alternative would not achieve the identified Purpose and Need; however, it is analyzed in this EA to provide a basis for comparison with the other action alternatives, and to assess the effects of not conducting a gather at this time.

Table 7. Comparison of Alternatives

Alternative	Est. Capture	Est. Removal	Est. stud:mare ratio	Est. Treated Mares for Fertility Control	Post-gather Population goal
Proposed Action	61 burros, 123 horses	61 burros, 123 horses	50:50	0	10 burros, 26 horses
Alternative 1	61 burros, 143 horses	61 burros, 123 horses	60:40	0	10 burros, 26 horses
Alternative 2	61 burros, 143 horses	61 burros, 123 horses	60:40	7	10 burros, 26 horses
Alternative 3 (No Action)	0	0	50:50	0	NA

2.3. Alternatives Considered but Eliminated from Detailed Analysis

Through completion of EAs for proposed wild horse gathers in Nevada in 2009 and 2010, several alternatives have been proposed for consideration and are discussed below. Through the 30 day comment period for the preliminary EA, no additional alternatives were identified that would achieve the purpose and need for this management action.

2.3.1. Gathering the Montezuma Peak HMA below AML

The AML for the Montezuma Peak HMA is 3 wild horses and 10 wild burros as determined through FMUDs issued between 2002 and 2007. The AML is low due to the inherently limited ability for the habitat to provide adequate forage and water for the wild horses and burros while ensuring healthy

animals and improved rangeland health. Because the AML is already low, it was determined that reducing the population below these levels is not warranted at this time. Future monitoring would document the status and growth rates of this herd, and be applied to future management actions to adjust the population or the AML if necessary.

2.3.2. Control the excess wild horses with only the use of fertility control treatment

An alternative to gather a significant portion of the existing population and implement fertility control treatments only, without any removal of excess horses or burros would not result in attainment of the AMLs for the Montezuma Peak or Paymaster HMAs. Fertility control has also not been developed for use on wild burros. The wild horse population that is presently above AML would continue to increase, adding to the current wild horse overpopulation, albeit at a slower annual rate of growth. The wild burro population that is presently above AML would continue to grow at the same annual rate. Currently 69-71% of the wild horses and burros exist outside of HMA boundaries. This alternative would not achieve a primary purpose for this gather, namely the removal of wild horses or burros from the non-HMA areas which are not designated for their use. Progress would not be made towards attainment of Rangeland Health Standards or Land Use Plan or Allotment Specific Objectives and resource concerns from the overpopulation of wild horses and burros would continue. Wild horse and burro habitat and animal health would continue to be at risk. This alternative would not meet the Purpose and Need identified in Section 1.3, and was eliminated from further consideration.

2.3.3. Use of Bait and/or Water Trapping

Another alternative considered was to accomplish the removal of excess wild horses and burros through the use of bait and/or water trapping as the primary gather method. Water trapping involves the construction of gather corrals, and baiting wild horses or burros into the corrals with the use of water. Specialized one-way gates are often used to prevent the animals from leaving the corral once inside. Bait and water trapping methods are usually only effective in areas where water access is limited or absent, resulting in high motivation for wild horses or burros to enter the trap to access them. All other water sources except the water trap source must be fenced off from the horses and burros (and other range users).

This alternative was dismissed from detailed study for the following reasons: (1) the size of the area is too large to use this method; and (2) the presence of water sources on both private and public lands inside and outside the HMA boundaries would make it almost impossible to restrict wild horse and burro access to the trap sites to the extent needed to effectively gather and remove the excess animals.

The large geographic area involved and the extended time necessary to trap the wild horses and burros under this alternative would result in a significant increase in gather cost and would make it difficult to limit the gather to a reasonable time. The gather period could be extended to 1-2 months under this alternative, even assuming BLM could establish effective trap sites. Given the impracticalities of implementing this alternative for such a large geographic area, this alternative was eliminated from detailed study.

2.3.4. Remove or Reduce Livestock within the HMAs

This alternative would involve no removal of wild horses or burros but instead addresses the isse of excess wild horse and burro numbers through the removal or reduction of livestock grazing within the HMA. This alternative was not brought forward for analysis because it is inconsistent with the

Tonopah RMP objectives, Montezuma Complex, Monte Cristo, Magruder Mountain, Yellow Hills and Sheep Mountain FMUDs and is inconsistent with BLM's multiple use management mandate.

The proposal to reduce livestock would not meet the Purpose and Need identified in Section 1.3 and is not consistent with the WFRHBA, which directs the Secretary to manage wild horses and burros in balance with other multiple uses and to immediately remove excess wild horses and burros. Analysis of population inventory and monitoring data resulted in the determination that limited forage resources are available within the Montezuma Peak and Paymaster HMAs, particularly for wild horses and due to the current overpopulation , some 69-71% of the populations of wild horses and burros have moved outside the HMA boundaries in search of forage and water. AMLs established through the above referenced FMUDs were based on conservative allocations consistent with the inherent limitations in habitat in order to maintain healthy animals at thriving natural ecological balance and allow for improvement to rangeland health. Under this alternative, wild horses and burros would continue to permanently reside in non-HMA areas that are not designated for their use.

Livestock grazing can only be reduced or eliminated following the process outlined in the regulations at 43 CFR Part 4100 and following changes to the multiple use allocations made through the land-use plan. Such changes cannot be made through a wild horse or burro gather decision. Changes in forage allocations between livestock and wild horses and burros would have to be re-evaluated and implemented through a public decision-making process in order to modify the current multiple use relationship established in the RMP.

The grazing allotments where the HMAs are located have been evaluated against the standards for rangeland health. These processes were completed with public involvement and following monitoring data and carrying capacity analysis, which determined the appropriate level of AUMs to be allocated to wild horses, burros, wildlife and livestock. These management actions were finalized in the FMUDs, following public comment, and resulted in reductions in the level of permitted grazing use for three of the five allotments or a 23% reduction in livestock AUMs overall. Grazing management systems were also implemented and various rest seasons mandated to ensure progress towards RAC Standards for Rangeland Health and RMP/Allotment Specific Objectives. Many of the areas within the Montezuma Peak and Paymaster HMAs are not suitable for use by livestock and little livestock grazing use within the HMAs occurs. Refer to Section 3.3 and the documents identified in Section 1.7 for more details.

While 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), this authority is usually applied in cases of emergency and not for general management of wild horses or burros, since the allocation of forage between livestock and wild horses is set through the land-use planning process, and BLM is required to manage multiple uses of the public lands consistent with the RMP.

For these reasons, this alternative was dropped from detailed analysis and this Gather Plan and EA would not involve reductions of permitted livestock or increases of the established AMLs. Allocations to livestock, wild horses and burros would be re-evaluated in future years and implemented through appropriate decision and environmental analysis documents.

Wild horse outside of the Paymaster HMA, visible in the background. 2004

2.3.5. Alternative capture techniques instead of helicopter capture of excess wild horses

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

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

3. Affected Environment and Environmental Consequences

To comply with the National Environmental Policy Act (NEPA), the Bureau of Land Management 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, Alternative 1, 2 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 and removal of wild horses and burros. Indirect impacts are those impacts that occur once the excess animals are removed.

Table 8a: Elements

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 Standard Operating Procedures (SOPs) (Appendix A), potential impacts to cultural sites would be eliminated. Archeological clearance of gather corrals, holding corrals and others areas of potential effects would occur prior to construction. If cultural resources should be encountered, those locations would not be utilized unless impacts could be avoided.
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	**Yes**	**Yes**	Discussed in detail below under Vegetation.
Noxious Plant Species and Invasive Nonnative Species	**Yes**	**Yes**	Discussed below.
Migratory Birds	**Yes**	**Yes**	Discussed below under Wildlife.
Native American Religious Concerns	**No**	**No**	There are no known Native American concerns.
Prime or Unique Farmlands	**No**	**No**	Resource 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**	Not Present.
Water Quality	**Yes**	**No**	Resource would not be affected.
Wetlands and Riparian Zones	**Yes**	**Yes**	Discussed in detail below.
Wild and Scenic Rivers	**No**	**No**	Resource not present.
Wilderness	**No**	**No**	Wilderness Study Areas are not present.

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

Table 8b. Other Resources

OTHER RESOURCES	PRESENT YES/NO	AFFECTED YES/NO	RATIONALE
Grazing/Livestock Management	**Yes**	**Yes**	Discussed below.
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	**No**	**No**	Resource is not affected by the proposed action or alternatives. There is a minimal likelihood that resources would be present. 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.
Socio-Economic Values	**Yes**	**No**	Resource is not affected by the proposed action or alternatives.
Soils	**Yes**	**Yes**	Discussed below.
Special Status Species (plants and animals)	**Yes**	**Yes**	Discussed below under Wildlife.
Vegetation	**Yes**	**Yes**	Discussed below.
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 and burros	**Yes**	**Yes**	Discussed below.
Wildlife	**Yes**	**Yes**	Discussed below.

3.1. General Setting

The Proposed Gather Area is located just to the west and south of Tonopah, Nevada within Esmeralda County. The area covers over 320,000 acres varying from playas and salt desert shrub plant communities to pinyon-juniper and low sagebrush communities on Montezuma Peak. Elevations range from over 9,000 feet in the mountains to 4,800 feet in the valley floors. The area receives only 3-5 inches of precipitation in the valley bottoms and 12 inches on the mountain tops. The weather station at the Tonopah Airport shows an average annual precipitation during the period of record (1954-2009) of just 5.08 inches. The Magruder Mountain rain gauge reflects an even lower annual average since 1985 of just 3.51 inches.

Wild horses are mainly grazers and make little use of browse species such as shrubs. The majority of the Montezuma Peak HMA is dominated by shrubs with little grass, particularly in dry years. Perennial grasses comprise ten percent or less of the total vegetative production throughout the HMA. Habitat in the Montezuma Peak HMA is well suited for wild burro use, but contains little forage suitable for wild horse use. Few waters exist within the HMA for use by wild horses and burros. Refer to Section 3.6 and Appendix B.

Because of steep terrain, limited forage, and few accessible perennial waters, the Paymaster HMA itself receives little actual use by wild horses, instead have taken up residence in the Montezuma Allotment outside the boundaries of the HMA. Refer to Section 3.6 and Appendix B. A large portion of the HMA is comprised of salt desert shrub vegetation. Perennial grasses comprise less than twenty percent of the potential natural community of these sites which are poorly suited for wild horse or livestock grazing.

This Proposed Gather Area is located within the transition zone between the Great Basin (cold desert) and the Mojave Desert (hot desert). Extremes in precipitation from year to year tend to be more pronounced in Esmeralda County than in northern Nevada or southern Nevada because this region is influenced by an orographic rain shadow of the California Sierra and by two different weather patterns (Continental Tropical and Maritime Polar). This causes highly variable precipitation, by year and by season. The effect of drought on this area can be pronounced when both weather patterns are weak for their respective traditional season. Likewise, rainfall well in excess of "normal" can result from a strong winter (maritime) pattern followed by a strong summer (continental) pattern. Soils and vegetation within the region reflect the arid conditions. Winters are characterized by light to moderate snowfall and cold temperatures. Summers are usually hot and dry. Afternoon thundershowers may occur in late summer and fall. The mean annual temperature in Tonopah is 53 degrees Fahrenheit. January temperatures reach a low of 18 degrees Fahrenheit and July temperatures can reach 92 degrees.

Key Area 3, outside of the Paymaster HMA boundaries.

The high temperatures during the summer months produce virgas, dust devils and microburst activities. Flash flood potential during the summer months is high. Central Nevada has many windy days because the geographical location favors the development of high and low pressure zones.

Drought is a recurrent feature of arid central Nevada. Drought should not be confused with aridity. Drought has been defined as a period when precipitation is less than 75 percent of the average amount (Society for Range Management 1989) while aridity refers to areas of low rainfall that are a permanent feature of climate.

Using this definition, from 1944 to 1984 drought occurred in 17 out of 40 years in the southwestern United States (Holechek et al. 1995). On average drought conditions occur one of every 3-4 years within the Paymaster/Montezuma Peak Proposed Gather Area. Klages (1942) concluded that "even slight reductions from normal precipitation can cause severe reductions in plant yield in areas below 300 mm (≈11.81 inches) of precipitation Two or more consecutive years of drought have far more impact on vegetation than one year of drought followed by normal or above-normal precipitation.

3.2. Wild Horses

Affected Environment

The Montezuma Peak and Paymaster HMAs are located just west and south of Tonopah, Nevada. The Montezuma Peak HMA is approximately 77,931 acres and the Paymaster HMA is approximately 100,500 acres in size; however, a large proportion of the wild horses and burros these HMAs reside outside HMA boundaries in the valley between the two HMAs. The Proposed Gather area consists of the Paymaster and Montezuma Peak HMAs and surrounding areas outside of HMA boundaries and is approximately 332,000 acres in size. The Paymaster and Montezuma Peak HMAs are nearly identical to the original Herd Area boundaries for these areas. Refer to Map 1 which displays the HMAs and the Proposed Gather Area.

The region is very arid, with inherently low annual rainfall and sporadic precipitation patterns. The soils are poorly developed, and the vegetation communities limited in their ability to produce forage for grazing animals. These HMAs (and others within Esmeralda County, Nevada) are characterized by low forage and water availability for wild horses and burros. Wild burros are more likely to consume shrubs and can persist for much longer without water than wild horses. As a result, these HMAs are generally better suited to management of burros than for wild horses. However, conversion of use from wild horses to wild burros must be accomplished within an RMP revision and cannot be done through a Rangeland Health Assessment, FMUD or gather EA. The Battle Mountain District plans to analyze such conversion as an alternative in a future RMP revision.

Currently, the AML for the Montezuma Peak HMA is 3 wild horses and 10 wild burros. The Paymaster AML is 38 wild horses. These AMLs were established following Allotment Evaluations and Rangeland Health Assessments completed 1999-2007 that culminated in FMUDs issued in 2002-2007. The AMLs were established conservatively because of the inherent low precipitation and subsequent low producing vegetation communities, frequent drought and lack of suitable habitat for wild horses. The AMLs were also established to protect key vegetation species and to prevent wild horse and/or burro emergency conditions.

TFO staff completed the most recent helicopter inventory of the proposed gather area in February 2010, which resulted in a direct count of 59 wild horses within and outside of the Paymaster HMA and 70 wild horses and 61 wild burros within and outside of the Montezuma Peak HMA. Of the animals observed, over 69% were located outside of HMA boundaries. Following the spring 2010 foaling season, the population will grow to an estimated total of 220 animals consisting of 68 wild horses within and outside of the Paymaster HMA and 81 wild horses and 71 wild burros within and outside of the Montezuma Peak HMA. The average annual population growth rate for these HMAs is 16%.

It is anticipated that the age structure for the Paymaster and Montezuma Peak HMAs wild horses and burros resembles a normal age structure with ages ranging from foals to animals in excess of 20 years of age (particularly burros, which often live longer than wild horses). The sex ratio is estimated to be approximately 50% mares/jennies and 50% studs/jacks with possible variations of up to 10% below or above these levels.

Genetic baseline sampling analysis has been completed for the Paymaster HMA, which indicates a herd of mixed ancestry with average genetic variants and high genetic variability. Baseline sampling has not been completed for the Montezuma Peak HMA wild horses or burros and this data would be collected during the proposed gather.

During the Evaluations/Rangeland Health Assessments of the allotments associated with these HMAs, it was determined that the populations of wild horses and to a lesser extent wild burros had contributed to some of the Standards for Rangeland Health, RMP and Allotment Specific Objectives not being met. Most of the reasons included utilization levels which exceeded allowable levels, and wild horses moving outside of HMA boundaries and impacting rangeland outside of areas designated for their use.

Wild horses east of the Paymaster HMA, outside of HMA boundaries. February 2010.

Wild horses and burros are able to move freely between the Paymaster and Montezuma Peak HMAs, as there are no fences to restrict movement. A fence exists between the Montezuma and Magruder Mountain Allotments that prevents movement into the southern portion of the Montezuma Peak HMA. Most of the population from both HMAs reside in the valley between the HMAs outside of the HMA boundaries. Others exist outside of HMA boundaries to the southeast of the Montezuma Peak HMA. Wild horses and burros move out of the HMAs in search of food and water. During the February 2010 inventory, 132 of the 190 animals observed (69%) were located outside of the HMA boundaries.

Throughout the history of the Montezuma Peak and Paymaster HMAs, wild horses and to a lesser extent wild burros have not maintained adequate body condition due to the inherent nature of the environment, which is characterized by scarce forage and water in this region. Two emergency gathers were conducted in the Montezuma Peak and surrounding HMAs in 1996 due to a lack of forage as a result of consecutive years of drought. The wild horses were emaciated and wild burros were stressed. All animals that could be located were removed from the Montezuma Peak HMA at this time. No animals were removed from the Paymaster HMA as the wild horses had adequate forage outside of the HMA boundaries and were not significantly impacted by the lack of feed. During the 2006 Paymaster HMA gather, many of the wild horses captured were rated as condition class 3 (thin) or lower, with hip bones, back bones and ribs prominent on many horses. Five percent (9) of the wild horses captured suffered from severe club foot, which causes lameness.

Wild horses observed during aerial inventory both within and outside of the Montezuma Peak HMA have averaged Henneke condition class 3.0-3.5 during summer months. During the inventory in February 2010, body condition was estimated to be 4.0-4.5. The wild horses within the Paymaster HMA can average slightly higher condition than the Montezuma Peak wild horses; however ribs and hipbones are typically visible on these horses during the summer months. Burros tend to maintain stable body condition in this arid region and do not experience body condition decline unless the area is enduring serious drought.

The wild horses within the Paymaster and Montezuma Peak HMAs are small in size, with adults weighing approximately 750-950 pounds, and reaching 13-14 hands in height. Colors consist of primarily brown, black and bay and sorrel. Wild burros within and outside of the Montezuma Peak HMA are black and white and grey and white. Refer to Appendix B for more information about the history of these HMAs.

Wild horses and burros are a long-lived species with documented survival rates exceeding 92% for all age classes and do not have the ability to self-regulate their population size. Predation and disease have not substantially regulated wild horse or burro population levels within or outside the Montezuma Peak or Paymaster HMAs.

Paymaster HMA wild horse gather, September 2006. Wild horses were moderately thin to very thin, Henneke Body Scores of 2-4.

Throughout the HMAs administered by the Battle Mountain District, there are few predators that exist to control wild horse or burro populations. Some mountain lion predation occurs, but it is not believed to be substantial. Coyote are not prone to prey on wild horses or burros unless young, or extremely weak. Other predators such as wolf or bear do not exist. Wild horses and burros 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 plagued by domestic horses or burros. Wild horses and to a lesser extent burros typically do not begin to show signs of body condition decline until the habitat components are severely deficient. Once the decline begins, especially with wild horses, their health deteriorates rapidly.

The Wild Horse and Burro Gather Plan and SOPs located in Appendix A provides discussion of gather procedures, as well as photos of recent gather activities conducted by the BMDO. Appendix B provides additional information about the AMLs, and gathers and inventory history of these HMAs. Refer to the documents identified in Section 1.7 as well.

Environmental Consequences

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, Alternative 1, 2 or the No Action Alternative. This section covers impacts that are common to all of the Action Alternatives, and impacts that differ among alternatives. The Population Modeling analysis is also summarized within this section.

<u>Proposed Action and Alternative 1 & 2</u>
<u>*Direct and Indirect Impacts of the Proposed Gather – Action Alternatives*</u>
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, Alternative 1 or 2 or the No Action Alternative.

The BLM has been gathering excess wild horses from public lands since 1975, and has been using helicopter for such gathers since the late 1970's. Refer to Appendix A for information about methods that are utilized to reduce injury or stress to wild horses and burros during gathers. Since 2004, BLM Nevada has gathered over 26,000 excess animals. Of these, gather related mortality has averaged only 0.5% which is very low when handling wild animals. Another 0.6% of the animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. This data affirms that the use of helicopters and motorized vehicles is a safe, humane, effective and practical means for gathering and removing excess wild horses and burros from the range. BLM policy

prohibits the gathering of wild horses during the period of March 1 to June 30 which includes and covers the six weeks that precede and follow the peak of foaling. This period during which helicopters are not used to gather wild horses is from March 1 through June 30. Wild burros have no identified foaling season and foal year round so are not covered by the spring gather closure period.

The BLM TFO has been actively conducting wild horse and burro gathers since the mid 1970's. Over time, methods and procedures have been developed and refined so as to minimize stress and impacts to wild horses and burros during implementation of gathers. The capture of wild horses and burros utilizing helicopter is the safest and most efficient method to remove large numbers of these animals from public lands. Injury and death as a direct result of the helicopter herding is minimal and occurs in less than 1% of animals gathered. In fact, most injuries or death occur *after* the animal is gathered, e.g., when the animals are sorted or loaded for transport, or while in the holding corrals. BLM staff is on-site at all times to observe the gather, monitor animal health, and coordinate the gather activities with the contractor. The SOPs outlined in Appendix A would be implemented to ensure that the gather is conducted in a safe and humane manner, and to minimize potential impacts to or injury of the wild horses and burros.

Over the past 30 years, various impacts to wild horses and burros from 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 and burros 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 or burros captured acclimate quickly to the holding corral situation, becoming accustomed to water tanks and hay, as well as human presence. Wild burros are generally calm, less aggressive and sustain fewer injuries than 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 foals as well as all wild horses captured during gathers, and ensuring their health, safety and well being during and after the gather is a focus and priority.

Accidental death or the need to humanely euthanize animals as a direct result of gather activities is infrequent and averages less than one half to one percent of the wild horses or burros gathered (0.5-1.0%). Injuries sustained during gathers include nicks and scrapes to legs, face, or body from brush or tree limbs while being herded to the gather corrals by the helicopter. Rarely, wild horses will encounter barbed wire fences and will receive wire cuts. These injuries are not fatal and are treated with medical spray at the holding corrals until a veterinarian can examine the animal.

Most injuries are sustained once the animal has been captured and is either within the gather corrals or holding corrals, or during transport between the facilities and during sorting. These injuries result from kicks and bites, and from animals making contact with corral panels or gates. Transport and sorting is completed as quickly and safely as possible to reduce the occurrence of fighting, and then the wild horses and burros 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. Despite precautions, occasionally a wild horse will rear up or make contact with panels hard enough to sustain a fatal neck fracture.

Indirect individual impacts are those impacts which occur to individual animals after the initial stress event, and may include spontaneous abortions 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.

Burros within the Montezuma HMA, 2006

Injuries and death may occur within the holding pens containing mares awaiting fertility control and studs awaiting release, though these incidences are rare. Oftentimes, these animals must be held for 7-10 days or longer while the gather in a given area is being completed and before they can be released. During this time, through fighting and other behaviors, injuries can occur and but rarely result in death. Spontaneous abortion events among females following capture is rare, though poor body condition can increase the incidence of such spontaneous abortions. Given the timing of this gather, which will occur after most foaling has occurred, spontaneous abortion is not considered to be an issue for the proposed gather.

Through the capture and sorting process, wild horses and burros are examined for health, injury and other defect. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals that meet the criteria and should be euthanized (refer to SOPs Appendix A). Animals that are euthanized for non-gather related reasons include those with old injuries (broken hip, leg) that have caused the animal to suffer from pain or prevents them from being able to travel or maintain adequate body condition; old animals that have lived a successful life on the range, but now have few teeth remaining, are in poor body condition, or are weak from old age; and wild horses 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.

In a recent gather completed by the Battle Mountain District in January 2009, a total of 1,705 wild horses were captured. Eleven of these animals (0.65%) were humanely euthanized in accordance with BLM policy due to pre-existing conditions such as blindness, excessive tooth wear or congenital defects. Eight additional animals (0.47%) were euthanized (5) or died (3) from injuries attributable to the gather. These injuries occurred within the holding corrals several days after the animal was captured, or occurred during the actual capture activities. All total, 19 wild horses were euthanized or died, which equates to 1.1% of the total number captured.

Foals may be orphaned during gathers, but this generally is rare. This may occur due to:

- The mother rejects the foal. This occurs most often with young mothers or very young foals,

- The foal and mother become separated during sorting, and cannot be matched,
- The mother dies or must be humanely euthanized during the gather,
- The foal is ill, weak, or needs immediate special care that requires removal from the mother,
- The mother does not produce enough milk to support the foal.

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

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. For example, during the summer, the gather activities occur in the early morning, when temperatures are coolest, and stop well before the hottest period of the day. If there are extreme heat conditions, gather activities are suspended during that time. Water consumption is monitored, and horses or burros are often lightly sprayed with water as the corrals are being sprayed to reduce dust. The wild horses and burros appear to enjoy the cool spray during summer gathers. Individual animals are also monitored and veterinary or supportive care is administered as needed. Electrolytes can be administered to the drinking water during gathers that involve animals in weakened conditions or during summer gathers. Additionally, Battle Mountain District Wild Horse and Burro staff maintains supplies of electrolyte paste if needed to directly administer to an affected animal. Heat stress does not occur often, but if it does, death can result.

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

Wild horses and burros could be located at higher elevations and denser tree cover during summer months, increasing the difficulty of the gathering. Wild horses and burros are often located in lower elevations, in less steep terrain during winter gathers due to snow cover in the higher elevations. Subsequently, the animals are closer to the potential gather corrals, and need to maneuver less difficult

terrain in many cases. Snow cover can increase fatigue and stress during winter gathers. The helicopter pilot allows horses to travel slowly at their own pace. The Contractor may plow trails in the snow leading to the gather corrals to make it easier for animals to travel to the gather site.

During summer months, foals are typically small, and average 4 months old. Newborn foals are often gathered, and many foals are too young to wean and are matched up with their mothers after being gathered. By fall and winter, most foals are of bigger body size, and can easily be weaned. Fall and winter time-frames are less stressful to foals than summer gathers. Young foals in summer months may be more prone to dehydration and complications from heat stress. Additionally, the handling, sorting and transport is a stress to the young animals and increases the chance for them to be rejected by their mothers. For this reason, the BLM staff on site takes every precaution to assure that the wild horses and burros are handled and maintained to reduce these concerns and to ensure the well-being of young foals, along with that of all of the animals.

Indian Springs, Montezuma HMA, spring, 2010.

Wild Horses Remaining or Released into the HMAs following Gather

Under all three action alternatives, approximately 61 excess wild burros and 78 excess wild horses would be gathered and removed from the Montezuma Peak HMA, leaving a post-gather population of 3 wild horses and 10 wild burros in accordance with the established AML. The goal would be to first remove excess wild horses and burros from outside of the HMA boundaries. Under this strategy, inventory data indicates that approximately 10 wild burros would be left within the HMA boundary. Approximately 35 additional excess wild horses would be removed from inside the HMA boundary to bring the population to the post-gather level of three wild horses. It is anticipated that the three wild horses and ten wild burros would not be gathered, and would be left within the HMA undisturbed. Therefore, no age selection or sex ratio adjustment would be implemented and no animals released to the Montezuma Peak HMA.

The post-gather population goal for the Paymaster HMA is 23 wild horses, which would allow 3-4 years of population growth before another gather would be required to remove excess wild horses (considering the average annual population increase of 16%). Population control treatments differ under each alternative and are discussed below under Effects that differ by Alternative.

Reducing population size would ensure that the remaining wild horses and burros are healthy and vigorous, and not at risk of death or suffering from starvation due to insufficient habitat coupled with the effects of frequent drought (lack of forage and water).

The wild horses and burros that are not captured may be temporarily disturbed and move into another area during the gather operations. With the exception of changes to herd demographics, direct

population wide impacts have proven, over the last 20 years, to be temporary in nature and with most if not all impacts to individual animals that have been gathered and then released disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release except a heightened awareness of human presence.

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

As a result of lower density of animals across the HMAs, competition for resources would be reduced, allowing wild horses and burros to utilize preferred, quality habitat. Fighting among stud horses would decrease since they would protect their position at water sources less frequently. Injuries and death to all age classes of animals would also be expected to be reduced as competition for limited forage and water resources is decreased.

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

It is not expected that genetic health of the Paymaster HMA would be substantially impacted by the Proposed Action, Alternatives 1 or 2 in the short term. 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). However, 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). Refer to the genetics discussion under the Affected Environment Section and in Appendix B.

Genetic data would be collected during the proposed gather and would allow for future monitoring of the Paymaster HMA so as to ensure that the genetic health of the wild horses would not be compromised during future gathers or other management activities. Should future genetic analysis indicate the need for concern, future Herd Management Area Planning documents would address the findings and would include potential solutions such as augmentation through introducing animals from similar HMAs into the Paymaster HMA.

The genetic health of the Montezuma Peak HMA wild horse and burro populations would likely be affected by the Proposed Gather due to the small post-gather populations. Hair samples would be collected from both wild burros and wild horses for genetics analysis of this HMA. The TFO plans to evaluate the Paymaster and Montezuma Peak HMAs for suitability for wild horses and burros in the future RMP revision. Should the need be identified, future planning documents could identify introduction of burros from the Bullfrog HMA into Montezuma Peak to improve the genetic health of the herd. The long term health of the arid rangelands and of the animals takes precedence over genetic health and does not allow for management of large numbers of wild horses or burros in these HMAs.

Because the AML is low, it is possible that environmental factors or natural mortality could cause the remaining animals within the Montezuma Peak HMA to die, leaving no wild horses or burros within the HMA. The TFO would consider augmentation from other similar herds to repopulate the wild horses (if appropriate) and/or burros within the HMA.

The primary benefit of achieving and maintaining the established AML within these HMAs would be the improvement of the health and sustainability of habitat attributes. Interdisciplinary evaluation of the allotments associated with these HMAs found the vegetation communities to have poor potential to provide abundant forage or to undergo substantial change or improvement due to the inherent climatic and soil attributes of the region. Achieving the AMLs would protect forage and water resources from degradation due to excess populations of wild horses and burros, allowing these resources to improve in quality and quantity where possible. Maintaining healthy plant communities and riparian areas would help to ensure adequate resources exist for wild horses, burros and wildlife during periods of drought. Within the established AMLs, animals would be less likely to leave the HMA boundaries in search of forage and water. Reduced competition for scarce resources among wild horses, burros and wildlife would occur. Through maintenance of AML, progress would be made towards the Mojave/Southern Great Basin RAC Standards for Rangeland Health and Guidelines for Wild Horse and Burro Management, Allotment Specific and RMP Objectives.

A thriving natural ecological balance between wild horses, wild burros and other resource values would be maintained throughout these HMAs, and future deterioration of the range would be avoided. Managing wild horse populations in balance with the habitat and other multiple uses would ensure that the populations are less affected by drought or other climate fluctuations, and that emergency gathers are either avoided or minimized, thus reducing stress to the animals, and increasing the long-term success and health of these herds.

Temporary Holding Facilities During Gathers

Wild horses and burros 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 and burros would be sorted into different pens based on sex. The horses would be aged and fed good quality hay and water. Mares or jennies and their 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 or burros are 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

Approximately 61 excess wild burros and 78 excess wild horses would be removed. Animals would be transported from the capture/temporary holding corrals to the designated BLM short-term holding corral facility(s). From there, they would be made available for adoption or sale to qualified individuals or to long-term pastures (LTPs).

Wild horses and burros selected for removal from the range are transported to the receiving short-term holding facility in a straight deck semi-trailers or goose-neck stock trailers. Vehicles are inspected by the BLM COR or PI prior to use to ensure wild horses or burros can be safely transported and that the

interior of the vehicle is in a sanitary condition. Wild horses and burros are segregated by age and sex and loaded into separate compartments. A small number of mares or jennies may be shipped with foals. Transportation of recently captured wild horses or burros is limited to a maximum of 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 or burros 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 and burros are off-loaded by compartment and placed in holding pens where they are fed good quality hay and water. Most wild horses and burros 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 or burros. 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 or burros in very thin condition or animals with injuries are sorted and placed in hospital pens, fed separately and/or treated for their injuries as indicated. Recently captured wild horses, generally mares, in very thin condition may have difficulty transitioning to feed. Some of these animals are in such poor condition that it is unlikely they would have survived if left on the range. Similarly, some mares may lose their pregnancies. Every effort is taken to help the mare make a quiet, low stress transition to captivity and domestic feed to minimize the risk of miscarriage or death.

After recently captured wild horses and burros 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 and burros are similar to those that can occur during handling and transportation. Serious injuries and deaths from injuries during the preparation process are rare, but can occur.

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

Adoption or Sale with Limitations, and Long Term Pastures

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

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

slaughter buyers or anyone who would sell the animal to a commercial processing plant. Sales of wild horses are conducted in accordance with Bureau policy. Wild burros, due to public demand are more easily adopted or sold, so they are not placed on LTP.

Water source outside of the Paymaster HMA, discharge from the Tonopah Sewer Treatment Ponds, spring 2010.

Between 2007 and 2009, nearly 62% of excess wild horses or burros were adopted and about 8% were sold with limitation (to good homes) to qualified individuals. 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 and/or burros from transport to adoption, sale or LTP are similar to those previously described. One difference is that when shipping wild horses and/or burros 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 22,700 wild horses, that are in excess of the existing adoption or sale demand (because of age or other factors), are currently located on private land pastures in Iowa, Kansas, Oklahoma, and South Dakota. Located in mid or tall grass prairie regions of the United States, these LTP are highly productive grasslands as compared to more arid western rangelands. These pastures comprise about 256,000 acres (an average of about 8-10 acres per animal). The majority of these animals are older in age. Due to the adoption demand and fewer numbers of burros available, burros are not sent to LTPs.

Mares and castrated stallions (geldings) are segregated into separate pastures except one facility where geldings and mares coexist. No reproduction occurs in the long-term grassland pastures, but some foals are born to mares that were pregnant when they were removed from the range and placed onto the 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 Body Condition Score 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 2011 appropriated funds.

Effects that differ between the Proposed Action, Alternative 1 & 2:
The differences between the Action Alternatives pertain to the Paymaster HMA and involve the adjustment of sex ratios to favor studs for both Alternatives 1 and 2, and the addition of fertility control application to released mares for Alternative 2.

Under the Proposed Action, the objective would be to remove all wild horses and burros from outside of HMA boundaries and an adequate number of wild horses or burros from within the HMAs if needed to achieve AML. Most wild horses within the Paymaster HMA and wild burros within the Montezuma Peak HMA boundaries would not be gathered or disturbed, and would not be subject to sex ratio modification or application of fertility control. Mares would not undergo the additional stress of receiving fertility control injections or freeze marking. Mares would foal at normal rates until the next gather is scheduled.

For Alternatives 1 and 2, the objective would be to first gather and remove all animals outside of the Paymaster HMA boundaries, then to continue to gather within the HMA in order to capture the maximum number of animals possible so as to apply population control measures. Once animals were captured from within the HMA, they would be sorted by sex and age and specific animals identified for release back to the range.

The National Selective Removal Criteria of selecting wild horses for release (Appendix A) would be followed to the extent possible. It is estimated that most horses released to the range within the HMA would be 5 years old or older. The core breeding aged horses of 5-10 years of age would be first priority for release back to the range, followed by horses aged 10-20+.

Herd shifts favoring older age horses (over 15 years) have been observed resulting in a favoring of studs over mares in some herds. Explanations include differences in reproductive stress and biological stress between mares and studs through different times of the year and through different periods of their lives (mating, protecting the harem, giving birth to and nursing foals).

The effects of successive removals on populations causing shifts in herd demographics favoring younger horses (under 15 years) would also have direct consequences on the population. These

impacts are not typically considered as adverse to a population, as they include development of a population, which is expected to be more biologically fit, more reproductively viable, and more capable of enduring stresses associated with traumatic natural and artificial events.

Under Alternative 1, the sex ratio of approximately 20 release horses would be adjusted to favor males (60% studs, 40% mares), resulting in the release of an estimated 13 studs and 7 mares to achieve a post-gather population of 23 wild horses within the HMA. This alternative would not involve fertility control and mares would not undergo the additional stress of receiving fertility control injections or freeze marking. Mares would foal at normal rates until the next gather is scheduled.

Population control methods including the adjustment of sex ratios to favor studs would be expected to have relatively minor impacts to overall population dynamics. Impacts 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. Conversely, a selection criterion, which leaves more mares than studs, would be expected to result in fewer and smaller bachelor bands, increased reproduction on a proportional basis with the herd, lengthening of the time after birth when individual mares begin actively reproducing, and larger band sizes.

Modification of sex ratios for a post-gather population favoring studs 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. As a result, gather frequency could be reduced as well as the numbers of horses gathered and removed in future gathers.

Alternative 2 also involves the application of fertility control in addition to the adjustment of sex ratios to favor studs as described above. The procedures to be followed for the implementation of fertility control are detailed in Appendix E. Approximately 7 released mare would receive a single-dose of the two-year PZP contraceptive vaccine. When injected, PZP (antigen) causes the mare's immune system to produce antibodies and these antibodies bind to the mare's own eggs, and effectively block sperm binding and fertilization (Zoo Montana, 2000). PZP is relatively inexpensive, meets BLM requirements for safety to mares and environment, and can easily be administered in the field. In addition, among mares, PZP contraception appears to be completely reversible, and to have no ill effects on ovarian function if the mare is not contracepted for more than three consecutive years.

This one-time application, applied 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 effects on pregnancies in progress, the health of offspring, or the behavior of treated mares (Turner, 1997). Mares would foal normally in 2011 (year 1).

The efficacy for the application of the two-year PZP vaccine based on summer application is as follows:

Table 9. Fertility Control Efficacy (Effectiveness)

Year 1	Year 2	Year 3	Year 4
Normal	80%	65%	50%

The injection would be controlled, handled, and administered by a trained BLM employee. Mares receiving the inoculation would experience slightly increased stress levels from increased handling while being inoculated and freeze marked. There would be additional impact to animals at the isolated injection site following the administration of the fertility control vaccine. Injection site injury associated with fertility control treatments is extremely rare in treated mares, and may be related to experience of the technician. Any direct impacts associated with fertility control would be minor in nature and of short duration. The mares would quickly recover once released back to the HMA.

Population wide indirect impacts are more difficult to quantify and would occur over time. A large percentage of inoculated mares would experience reductions in fertility. Recruitment of foals into the population would be reduced over a three-year period. Up to 80% of the mares treated would not foal the second year following implementation of fertility control, and 65% and 50% of mares in the following two years. The potential multi-year reprieve from foaling would greatly increase overall health and fitness of the mares, as well as the health of the foals born after fertility returns.

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

Following resumption of fertility, the proportion of mares that conceive and foal could be increased (rebound effect) due to the increased fitness. Additionally, fertility control treatment could cause breeding and foaling seasons to become “out of sync” with foals born earlier or later in the year, or throughout the year but is generally associated with the timing of the treatment and not the vaccine itself. Research is continuing to document and quantify these effects.

The indirect effect of fertility control and adjustment of sex ratios to favor studs would be to extend the time before another gather is required. According to the population modeling (Appendix D), the application of fertility control could extend the need for a gather by one or more years when compared a gather without implementation of fertility control.

Wild horses would experience reduced stress and disruption to population dynamics as a result of less frequent gathers. By reducing population growth rates and the need for gathers, the number of wild horses that would have to be removed during future gathers would be reduced.

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

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

Population Modeling Summary

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. The model is not suitable for use on burro populations. Several scenarios were put through the model (simulated) to assess potential effects to the population by implementation of the Proposed Action and Alternatives. The simulations were run for 10 years for 100 trials. Several forms of outputs were produced including tables and graphs of population sizes, growth rates and gather schedules.

When compared to no population controls at all being implemented following a wild horse gather, fertility control and adjustment of sex ratios could reduce the number of animals that would have to be removed in 11 years by about 15-25 animals in total. The use of sex ratio adjustment alone could reduce the number of excess wild horses that would have to be removed by about 1-10 wild horses.

The results of the model indicate that the number of gathers that would be necessary within 11 years could be reduced with the implementation of Alternative 2 and to a lesser degree Alternative 1.

The following table provides a summary of all of the results of the modeling that are displayed in Appendix D. The ranges presented are the spans of results between the lowest and the highest trials. Refer to Appendix D for more detailed discussion about the results of the Population Modeling.

Table 10. WinEquus Population Model Results for Paymaster HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
No Action	65-68	133-265	226-626	12.8-24.9%	0	0	0
Proposed Action Removal Only	17-31	28-44	68	4.0-30.5%	42-133	40-128	0
Alternative 1 -- 60% studs, No Fertility Control	16-28	29-39	68	6.4-24.3%	60-121	51-105	0
Alternative 2 -- 60% studs, With Fertility Control	16-28	30-38	68	2.3-20.3%	61-177	43-93	6-43

No Action Alternative (No Wild Horse Gather)

If No Action is taken, excess wild horses and burros would not be removed from within or outside the Montezuma Peak or Paymaster HMAs at this time. The animals would not be subject to the individual direct or indirect impacts as a result of a gather operation in September 2010. Under the No Action alternative, AML would not be achieved within the HMAs. There would be no active management to control the size of the population at this time, and the wild horse and burro population would steadily increase in the foreseeable future at an average rate of 16% per year. Refer to Appendix D for more detail.

Through the interdisciplinary evaluations completed for the allotments within these HMAs, it was determined that wild horses and burros were contributing to non-attainment of Rangeland Health Standards, and Allotment Specific and RMP Objectives. Utilization levels above allowable use levels, and use by wild horses outside of HMAs were included in some of the conclusions. These impacts would continue and increase without a gather to remove excess animals from these areas. Furthermore, the TFO concluded that due to the arid, drought prone and unproductive rangeland in the region, that conservative AMLs were needed to ensure long term vegetation and animal health.

The increasing population of wild horses and burros in excess of AML would compete for the available water and forage resources. Social stress would increase as the density of the wild horses and burros increases, and more animals would move out of the established HMA boundaries to areas not designated for their use. Fighting among stud horses would increase, particularly at water sources.

Leaving excess horses on the range under the No Action Alternative, as advocated by some, would lead to severe and potentially irreparable degradation of the range; damage to riparian resources and continued movement of wild horses and burros to areas outside the designated HMAs, intensifying habitat loss and competition between wild horses and burros, and wildlife. Experience has shown that because wild horses and burros are so resilient, the herds do not display changes in growth rates, declining body condition or sudden and catastrophic mortality rates until the habitat has already become severely and potentially irreparably degraded.

Wild horse with typical body condition of those horses removed during the emergency gathers in 1996. This horse was gathered from Goldfield, just east of Montezuma Peak HMA. Refer to Appendix B for additional photos.

The wild horses within the Montezuma Peak HMA already exhibit decline of body condition during summer months. In subsequent summers, an increasing population would continue to suffer. Mares and mares with foals would be most affected, through poor body condition, and overall poor biological fitness (susceptibility to disease or predation, growth and development, reproduction, developmental issues etc.).

In 1996, 101 starving wild horses were removed from this HMA. The 2010 post foaling population of Montezuma Peak HMA is anticipated to grow to 81 horses and 71 burros, (152 total) which is 27 times the AML for wild horses and 7 times the AML for wild burros, or the levels at which it was determining a thriving natural ecological balance and the health of the animals could be maintained.

During the most recent inventory of the Paymaster HMA, over 70% of the population was located outside of the HMA, and the animals were using the effluent from the Tonopah Sewer Ponds as a water source. The current 2010 post- foaling population is estimated to be 68 wild horses or 178% of the established AML.

The current population of wild horses and burros in these HMAs cannot be sustained in a healthy state, particularly during drought conditions which occur on average one of every 3-4 years in this region. Due to the nature of the arid habitat and limited water and forage in the area, emergency conditions could occur at any time, resulting in water starved, thin and emaciated animals with potentially high mortality as the existing habitat is unable to sustain the overpopulation of animals.

Continued decline of rangeland health and irreparable damage to vegetative, soil and riparian resources, would have detrimental impacts to the future of the Montezuma Peak and Paymaster HMAs and all other multiple uses of the public lands, including habitat for wildlife. As a result, the No Action Alternative would not ensure healthy rangelands that would allow for the management of a healthy, self-sustaining wild horse or burro populations, and would not promote a thriving natural ecological balance.

The BLM realizes that some members of the public advocate "letting nature take its course", however allowing wild horses or burros to die of dehydration and starvation would be inhumane treatment and clearly indicates that an overpopulation of wild horses and burros exists in the HMA. The Wild Free-Roaming Horses and Burros Act of 1971 mandates the Bureau to "*protect the range from the deterioration associated with overpopulation*", "*remove excess animals from the range so as to achieve appropriate management levels*", and "*to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area*".

Promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state "*Wild horses and burros shall be managed as self- sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat*" (emphasis added).

3.3. Livestock Management

Affected Environment

The purpose of this section is to assess the potential direct and indirect effects to livestock management within the various grazing allotments as a result of the Proposed Gather. The information presented here is to supply the reader with a general background of the history and degree of livestock use that occurs within the gather area. Please refer to Map 2, which displays the allotment boundaries in the Proposed Gather Area.

The Montezuma Peak and Paymaster HMAs fall within the boundaries of several allotments administered by the Tonopah Field Office. The following table displays the acreage of these allotments that are located within the HMAs and shows corresponding permitted AUMs.

Table 11. Livestock Allotments within the Paymaster and Montezuma Peak HMAs

Allotment	HMA	Total Allotment Acreage	% of Allotment in HMA	% of HMA in Allotment	Permitted AUMs (entire allotment)
Montezuma	Montezuma Peak	66,033	11%	85%	0
	Paymaster	5,198	1%	5%	0
	Other HMAs	164,087	27%	--	0
	Non-HMA	380,076	62%	--	2,765
Total		615,394	--	--	2,765
Magruder Mountain	Montezuma Peak	11,136	2%	14%	6,300
	Other HMA	224,428	33%	--	
	Non-HMA	439,375	65%	--	
Total		674,939	--	--	

Allotment	HMA	Total Allotment Acreage	% of Allotment in HMA	% of HMA in Allotment	Permitted AUMs (entire allotment)
Yellow Hills	Paymaster	1,808	3%	2%	180[10]
	Montezuma Peak	761	1%	1%	
	Non-HMA	54,634	96%	--	
Total		57,203	--	--	
Sheep Mountain	Paymaster	61,350	65%	61%	1,740
	Non-HMA	33,131	35%	--	
Total		94,481	--	--	
Unallocated	Paymaster	15,179	50%	15%	0
	Non-HMA	15,441	50%	--	
Total		30,620	--	--	
Monte Cristo	Paymaster	17,057	3%	17%	9,352
	Other HMAs	223,773	43%	--	
	Non-HMA	279,547	54%	--	
Total		520,377	--	--	

As shown in the table above, no livestock use is allocated within either of the HMAs for the Montezuma Allotment. Additionally, only a portion of the Allotments fall within the HMAs, so there is not a direct overlap of the Allotments to HMAs or the allocated use within. The following table displays the average actual use made by livestock within the Allotments (both inside and outside of the HMAs) between 2003 and 2009, as well as the percent of the authorized use that was made.

Table 12. Average Actual Use by Livestock 2003-2009

Allotment	Average Actual Use	Percent of Permit
Montezuma	1,126	41
Magruder Mountain	See below	See below
Sheep Mountain	914	53
Yellow Hills	310[10]	26
Monte Cristo	See below	See below

The Monte Cristo Allotment is split into north and south by State Highway 6. The portion within and outside of the Paymaster HMA is located south of the highway. The lessee has decided not to use the southern portion of this allotment as part of their grazing management strategy.

The portion of the Magruder Mountain Allotment that overlaps with the Montezuma Peak HMA is not typically used by livestock. Also, the allotment boundary fence that separates the Magruder Mountain and the Montezuma Allotment prevents wild horses and burros in the Montezuma Peak HMA from using the portion of the HMA that is within the Magruder Mountain Allotment. This portion of the

10. The grazing lease was issued for five years from 2004 to 2009 which implemented a reduction in the AUMs from 1,212 to 180 over a five year period starting in 2004. A Proposed Multiple Use Decision was issued on September 16, 2009 and became final after 30 days, and establishes permitted AUMs for the Yellow Hills Allotment at 180 AUMs.

HMA also has no water sources available. Therefore, utilization by permitted livestock, wild horses and burros is negligible in this area.

The Montezuma Allotment contains portions of both the Montezuma Peak and Paymaster HMAs, however, livestock grazing is not permitted on the Montezuma allotment in areas that overlap with the two HMAs.

Through the Evaluation/Assessments of the Monte Cristo, Magruder Mountain, Montezuma, Sheep Mountain and Yellow Hills Allotments, and subsequent FMUDs issued between 2002-2009, grazing use within the allotments has been evaluated and adjusted. Through the FMUDs the use allocated to livestock was reduced by 23%, and changes to livestock systems in all allotments implemented. In general, the allotments within the Montezuma Peak and Paymaster HMAs provide limited areas suitable for livestock grazing. Topographic limitations (slope, terrain), lack of water/distance to water and limited forage production are some of the restricting factors. The following sections provide some background about each of the allotments.

Montezuma Allotment

Prior to the 2007 Rangeland Health Evaluation (RHE), the Montezuma Allotment was vacant. The BLM had permitted Temporary Non-Renewable (TNR) grazing on the Montezuma Allotment between 2001 and 2007.

Subsequent to the RHE, an FMUD was issued in 2007 which made adjustments to allotment boundaries and established three Forage Reserve pastures and a ten year lease for one pasture in the allotment for a maximum use of 2,765 AUMs. A Forage Reserve is an area set aside for ranchers other than the lessee to use when unfavorable conditions affect their ability to graze livestock in their grazing allotment. These unfavorable conditions include drought, fire, insects or other resource problems.

The allocation in the FMUD represented a 47% reduction from pre-1997 permitted AUMs. Other provisions of the FMUD included restrictions on use during the growing season and on the livestock herd size allowed in the pastures, maximum allowable utilization levels and rotational grazing systems. No AUMS were allocated for livestock use within the Montezuma Peak or Paymaster HMAs. These changes to the livestock system were made due to the frequent droughts, low rainfall and limited potential for forage production.

Magruder Mountain Allotment

A Rangeland Health Assessment (RHA) was completed for the Magruder Mountain Allotment in 2004. Prior to 2004, the allotment was not leased and the grazing authorization was granted in only certain portions of the allotment under TNR grazing. The grazing lease had been cancelled in 1997 due to unresolved trespass livestock issues. In the Magruder Mountain Allotment FMUD, a maximum of 6,300 AUMs were allocated within the allotment. A reduction of 29% of the AUMs was made from the previous FMUD issued in 1994.

The allocation of the forage resources was developed based on a conservative approach with consideration of the cyclical drought in the region to assure long-term productivity so that the forage utilization is not exceeded. The FMUD also included provisions for critical growth season rest, allowable utilization levels for uplands, residual stubble height requirements for riparian areas and other specific terms and conditions of the grazing permit.

Yellow Hills, Sheep Mountain and Unallocated Area

The Yellow Hills and Sheep Mountain Allotment and an unallocated area were assessed within an Allotment Evaluation in 2003 which resulted in the issuance of an FMUD that instituted changes to livestock use within these areas.

Paymaster HMA, 2006

The FMUD changed the season of use for the Sheep Mountain Allotment to provide for rest during the growing season and defer use to the fall and winter months. The permitted use levels remained unchanged at 1,740 AUMs. Allowable utilization levels were also implemented. The grazing lease for the Yellow Hills was issued for five years from 2004 to 2009 which implemented a reduction in the AUMs from 1212 to 180 over a five year period starting in 2004. A PMUD was issued on September 16, 2009 and became final after 30 days implementing the permanent 86% reduction in permitted use to 180 AUMs for the Yellow Hills Allotment. A rest rotation grazing system and allowable utilization levels were also implemented.

The changes implemented for the Sheep Mountain Allotment were primarily due to the dominance of shrubs, and lack of grasses that make the area more suitable for winter grazing use. The changes for the Yellow Hills Allotment were made to prevent over-utilization within the allotment and to address impacts to vegetation resulting from annual use during the critical growth period.

Monte Cristo

The Monte Cristo Allotment underwent a rangeland health/allotment evaluation in 1999. As a result, an FMUD was issued in 2002 that identified changes to the livestock management system within the allotment. These changes included implementation of a grazing agreement and allowable use levels. The FMUD also provided for a rest rotation grazing system, maximum livestock herd sizes and other terms and conditions of the permit. Permitted use for the allotment remained unchanged at 9,352 AUMs. Changes identified in the FMUD were developed in order to prevent over-utilization of forage within the allotment and to address impacts to vegetation resulting from annual use during the critical growing season.

Refer to the documents identified in Section 1.7 for more information about the livestock use within the Proposed Gather Area.

Environmental Consequences

Proposed Action and Alternative 1 & 2

The proposed gather would not directly impact livestock operations within the allotments or within the gather area. Operations involved in removing wild horses may temporarily disturb livestock present during the removal process. Livestock owners within the area would be notified prior to the gather, enabling them to take precautions and avoid conflict with livestock grazing.

The indirect effects of achieving the established AML would include promotion of improved rangeland health throughout the Proposed Gather area. Managing wild horses and burros within the established AMLs would promote a thriving natural ecological balance between wild horses, burros and other resource values and uses, allowing for improvement of rangeland health as excess wild horses and burros both within and outside the HMA boundaries are removed. Wild horses and burros would be less likely to leave the HMA and move onto non-HMA areas not designated for their use in search of forage or water. As a result, availability and quality of forage and water resources would be maintained and improved for use by livestock in those areas where they graze.

No Action Alternative (No Wild Horse Gather):
The effects of implementation of the No Action Alternative would be the continued increase of the population wild horses and burros within and outside of the Montezuma Peak and Paymaster HMAs. More uncontrolled increases of population size beyond the AML would result in continued use by wild horses and burros of rangelands falling outside of HMA boundaries which would affect utilization levels of native forage and use of riparian areas. Within the HMAs, use by excess wild horses and burros would also continue and effects to rangeland health would be commensurate with population size, increasing utilization levels, causing declines in plant health and diminished frequency of desirable key plant species which would affect the use of these areas by permitted livestock. With decline of rangeland health, forage and water availability and quality would also decline for use by livestock.

3.4. Noxious Plant Species, Invasive and Non-Native species

Affected Environment

Any surface disturbance activity can create a potential environment and opportunity for noxious and invasive plant species to establish and spread. Although a complete inventory has not been done, two noxious plant species and three invasive plant species are known to be present on public lands within the Proposed Gather Area and HMAs. The Noxious plant species on the Nevada Noxious Weed List present in the gather area are Russian knapweed (*Centaurea repens*) and Salt Cedar (*Tamarisk chinensis*). Halogeton (*Halogeton glomeratus*), Cheat grass (*Bromus tectorum*), and Russian thistle (*Salsola kali)* are the other invasive plant species known to exist in the Proposed Gather Area and HMAs. Populations of Russian knapweed and Salt Cedar were discovered in the north east corner of the Paymaster gather area in 2009. These populations were treated in the summer of 2009. Another treatment will be applied in the summer of 2010.

Environmental Consequences

Proposed Action and Alternative 1 & 2
The proposed wild horse and burro gather could potentially result in the direct spread of existing populations of noxious and invasive plant species. Precautions would be taken prior to the set up of gather corrals and holding facilities to minimize or eliminate the spread of weeds. If noxious species are found, different locations would be selected to prevent the spread of seed. The Contracting Officers Representative (COR), Project Inspector (PI), or other qualified specialist would examine proposed holding facilities and gather corrals prior to construction to determine if noxious or invasive species are present.

Indirect impacts of the proposed gather relate to wild horse and burro population size, as it affects ground disturbance and rangeland health. Noxious, invasive, and non-native species can increase with over-utilization of the vegetation by grazing animals or through surface disturbance. Maintaining

healthy populations of native perennial plant species reduces the potential infestation of noxious, invasive and non-native species through competition. The projected outcome of the proposed gather would be improved conditions of the native rangeland and riparian areas throughout the gather area. As a result, the spread of noxious and invasive plant species would be reduced.

No Action Alternative (No Wild Horse Gather):
Without completion of the proposed wild horse and burro gather, ground disturbing activities associated with the gather that could cause some limited spread of invasive and noxious plant species would not occur. However, there would be an increased risk of spread by noxious weeds and invasive species within the gather area since concentrated utilization by wild horses and burros in this area would continue and potentially increase. If wild horse and burro populations continue to exceed AML, healthy rangeland conditions would not be achieved, which could encourage the spread of invasive or noxious species, particularly along trails and near water sources.

3.5. Rangeland Vegetation Resources (Forest and Rangeland)

Affected Environment

Vegetation in the gather area varies from pinyon pine and juniper woodlands to salt desert shrub plant communities. The following vegetation categories exist in these areas: salt desert shrub, sagebrush, pinyon pine and juniper woodlands, barren areas, washes, riparian zones, saline meadows, and sodic areas. Salt desert shrub is the most common vegetation type in the area. Refer to Appendix C for a more detailed summary of the rangeland vegetation resources within the Proposed Gather Area.

Salt desert shrub ecological sites are dominated by shadscale saltbush (*Atriplex confertifolia*), Bailey greasewood (*Sarcobatus vermiculatus baileyii*) and spiny menodora (*Menodora spinescens*). Associated species are wolfberry (*Lycium* spp.), cheeseweed (*Hymenoclea salsola*), Nevada ephedra (*Ephedra nevadensis*), bud sagebrush (*Picrothamnus desertorum*), winterfat (*Krascheninnikovia lanata*), Nevada dalea (*Psorothamus polydenius*), fourwing saltbush (*Atriplex canescens*), Douglas rabbitbrush (*Crysothamnus viscidiflorus*), green molly (*Bassia Americana*) Joshua tree (*Yucca brevifolia*), Indian ricegrass (*Achnatherum hymenoides*), and galleta grass (*Pleuraphis jamesii*).

Aerial view of a typical salt desert shrub plant community within the Montezuma Peak HMA. Photo by Andrea Felton, WHBS, BLM, TFS. Inventory Flight, BLM, TFS, 2006.

Sagebrush sites are common in the Paymaster and Montezuma Peak HMAs. They mainly grow on higher, cooler areas in the 8–12 inch and above precipitation zones. Spiny menodora often occupies the south facing slopes.

Sagebrush ecological sites are dominated by either black sagebrush (*Artemisia nova*) or Wyoming big sagebrush (*Artemisia tridentata wyomingensis*). Associated species are green ephedra (*Ephedra viridis*), rabbitbrush (*Chrysothamnus* spp.), cliffrose (*Purshia mexicana*), Indian ricegrass (*Achnatherum hymenoides*), and bottlebrush squirreltail (*Elymus elymoides elymoides*).

Pinyon pine and juniper woodlands are prevalent in mountainous areas within a 12–16 inch precipitation zone. These areas are on the highest points in the HMAs. They occur in the Montezuma Range, and Lone Mountain. These woodlands are dominated by pinyon pine (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) with an understory of black sagebrush and/or big sagebrush along with associated species. These sites provide some spring and summer range for wild horses and burros.

In general, the soils within the allotments associated with the Paymaster and Montezuma Peak HMAs are poorly developed and do not support productive communities of vegetation useable by wild horses. Some of the vegetation within the HMAs is in the 3 to 5 inch precipitation zones, and some soils are dominantly sodic and saline (high alkalinity, salty soils). Forage is extremely limited in 3 to 5 inch precipitation zones for cattle and wild horses. Wild burros are more opportunistic and will utilize shrubs more readily than wild horses. Wild burros can also maintain their health with fewer visits to water.

Production recorded in 2004 at key areas within the Montezuma Allotment within HMAs or areas utilized by wild horses and burros ranged from 355-733 lbs/acre of perennial vegetation, with 80-98.5% of this comprised of shrub species that are not used by wild horses, but may be used by wild burros. Perennial grass species comprise less than 10-20 percent of the plant community at many of these sites.

Vegetation production and frequency trends have generally been decreasing within both HMAs. Both climate/drought, historic and current wild horse use, and past use by livestock could be responsible for these trends. Most key areas within the HMAs have been evaluated and were characterized by production of Indian ricegrass at levels below the potential for the site or below the Potential Native Community (PNC), with downward trends in frequency. In many cases, Indian ricegrass comprised only 1-10% of the plant community, which should have been present at 25-45%. The common and consistent denominator at keys areas was the decrease in the frequency of Indian ricegrass rather than an isolated event. Improvement in the vegetation resources will require a long time because arid rangeland do not readily recover from past deterioration.

Currently, shadscale is declining throughout much of the Tonopah Planning Area. Shadscale can go through frequent population decreases because of the cyclic pattern of seedling establishment which is limited to wet years, and causes many stands of shadscale to be one age class. Budsage and Nevada ephedra have also increased in some areas to fill the niche left by a decrease in the shadscale component .

In drought years, grass production is low, and the already limited forage becomes almost non-existent, especially for wild horses. Residual cured grasses from previous years have little to no nutritional value, however; some browse remains available for wild burros. Shrubs are deeper rooted than grasses or forbs. Therefore, fewer shrubs die in extreme drought conditions.

Rangeland Health Standards Summary

The Monte Cristo, Yellow Hills, Sheep Mountain, Magruder Mountain and Montezuma Allotments were evaluated for conformance with Mojave/Southern Great Basin (MSGB) RAC Standards for Rangeland Health. The MSGB Standards consist of Standard 1: Soils; Standard 2: Ecosystem

Components, and; Standard 3: Habitat and Biota. These analyses determined that some of the Rangeland Health Standards were being met, some were not and some were partially met. The reasons identified for Standards not being met included past livestock management, drought, wild horse use outside of HMAs, overlap of wild horse and livestock use, and lack of habitat for wild horses. Evaluation of the Tonopah RMP and Allotment Specific Objectives was also completed. As a result of these analyses, it was determined that adjustments were warranted to the livestock management systems and that more conservative stocking rates were needed. Wild horse and burro AMLs were also adjusted to ensure that the populations were in balance with the limited resources in the arid region in order to maintain healthy animals and provide improvement to the habitat. These changes were documented in FMUDs issued subsequent to the Evaluations/Assessments. Refer to the documents identified in Section 1.7 for more detail.

Because of the inherent low precipitation levels received in the Great Basin and Mojave Desert, and the frequency of drought occurrence, vegetation improvement is very slow to manifest itself. Improvement in vegetative condition can be further impeded and may even be reversed should these areas continue to receive over-use caused by excess numbers of wild horses and burros. Proper management of wild horses and burros is paramount to ensure that further decline of the wild horse and burro habitat and of rangeland resources does not occur does not occur.

Environmental Consequences

Proposed Action and Alternative 1 & 2

Disturbance would occur to native vegetation in and around temporary gather corrals and holding facilities due to the use of vehicles and concentration of horses in the immediate area of such facilities. The disturbed area, however, would make up less than one acre. Gather corrals and holding facility locations are usually selected in areas easily accessible to livestock trailers and standard equipment, often utilizing roads, gravel pits or other previously disturbed sites, and which are accessible using existing roads. New roads are not created to construct capture corrals. Based on typical wild horse gather operations, it is estimated that approximately two to four trap-sites and one set of holding corrals would be needed within the Proposed Gather Area.

Wild horses and burros affect vegetation through utilization of the above ground forage, and through trampling or trailing. In general, wild horses and burros disperse throughout the landscape and are not as apt to congregate in some areas as livestock sometimes do, and will utilize steeper terrain. A wild horse may consume 20 to 25 lbs of forage per day to maintain its metabolic, physiological and energy levels. A wild burro will typically use approximately half as much forage as a wild horse. Therefore, wild horses and burros must travel various distances to locate enough forage to maintain metabolic function. An increasing herd size further increases the rate of forage depletion which could cause the plant communities to deteriorate to a lower seral stage.

Achieving and maintaining the established AML, would benefit the vegetation by reducing the grazing pressure on the forage resources. Removal of excess wild horses and burros would reduce the populations to levels that would be in balance with the available water sources and forage availability.

Maintaining AML within the Proposed Gather area would prevent overgrazing, damage by trampling or pawing, and would help promote improved rangeland health. Increased cover, frequency, production, and vigor of desirable key species would also be promoted consistent with soil capacity. Repeated utilization during the critical growing period would not be as likely to occur, and heavy

utilization would be minimized or avoided. By bringing the wild horse and burro population within established AML, degradation of the rangeland by wild horses and burros would not occur, and limited vegetation available during drought years would not be damaged by an overpopulation of animals.

Implementation of the proposed gather and resulting improved rangeland health would promote attainment of the 1997 Tonopah RMP vegetation objectives, and objectives identified through the Rangeland Health Assessments completed for the allotments within these HMAs and summarized in the documents identified in Section 1.7. The removal of the excess wild horses and burros would also result in significant progress towards meeting the Standards and Guidelines for Rangeland Health over the long-term and help to maintain vegetation resources that are important for wild horse, burro and wildlife habitat.

Wild horses and burros outside of the boundaries of the Montezuma HMA. Spring, 2010.

According to the modeling, average population sizes would be similar under all alternatives. Among the alternatives, population growth for the Paymaster HMA would be lowest under Alternative 2, which involves both sex ratio adjustment and fertility control. Reduced growth rates would have the effect of slightly reducing gather frequency. In turn, rangeland health would benefit slightly more from Alternative 2 than under the Proposed Action or Alternative 1. All Action Alternatives would maintain the population at levels consistent with the established AML; however a gather to remove excess wild horses would need to occur sooner under the Proposed Action or Alternative 1.

<u>No Action Alternative (No Wild Horse Gather)</u>
Through the interdisciplinary evaluations completed for the allotments associated with these HMAs, it was determined that wild horses and burros were contributing to not achieving Rangeland Health Standards, along with Allotment Specific and RMP Objectives. Wild horse use outside of the HMAs contributed to utilization that exceeded allowable levels. These impacts would continue and increase without a gather to remove excess animals from these areas. Furthermore, the TFO concluded that conservative AMLs were needed to ensure long term vegetation and animal health due to the arid environment, frequent droughts, and limited rangeland production in the region.

To continue to exceed these established AMLs risks continued decline of important wild horse, burro and wildlife habitat. The increasing population of wild horses and burros in excess of AML would compete for the available water and forage resources. Habitat decline would occur as a result of uncontrolled increases of the population, including depletion of forage and water resources affecting the long term health of the habitat and the wild horses and burros within these HMAs.

The No Action Alternative would not allow for improvements in plant community structures and dynamics. By 2014, if a gather is not conducted, the estimated population of the HMAs would be 123 wild horses for the Paymaster HMA, 147 wild horses for the Montezuma Peak HMA and 128 Burros for the Montezuma Peak HMA. Persistent overpopulation of excess animals at these levels would

cause detrimental impacts to the rangeland health in the gather area through over-utilization, trampling, decreased key species vigor and frequency.

Increased trailing and trampling would occur as horses travel longer distances from water sources to locate available forage. Key forage species would further decrease within the plant communities, along with increases in undesirable species. The majority of the Proposed Gather Area receives less than 8 inches of annual precipitation and has very low potential for improvement under even optimal conditions. Without a gather to achieve AML, continued downward trends, reductions in ecological condition, and irreparable damage to rangeland health is expected. It would not be possible to make significant progress towards attainment of RAC Standards for Rangeland Health, RMP, or Allotment Objectives under the no action alternative.

3.6. Riparian-Wetland Resources and Water Quality

Affected Environment

Riparian areas play a significant role in restoring and maintaining the chemical, physical, and biological integrity of the nation's water. Water is one of the limiting factors in the proposed gather area, and distance between springs is substantial. This results in heavy utilization of the riparian vegetation. Springs become easily degraded due to the concentrated use at water areas. In most cases, wild horses and burros briefly visit water sources. The exception may include large open springs or meadows.

Large wild horse and burro populations in relationship to limited water sources often result in degradation of riparian and wetland habitat. Wild horses utilize lotic (streams) and lentic (springs) sites differently because of inherent social behaviors. Wild horses typically move away from lotic sites quickly to avoid dangerous encounters with other horses or predators. Lentic sites have a valley landform that is wider and capable of being viewed from further distances. These sites deteriorate faster with continuous concentrated use. In addition to potential physical impacts to riparian areas, dominant horses can physically exclude other wildlife and livestock species especially during periods of very limited water. Refer to the documents identified in Section 1.7 for more detail.

Effluent discharge from the Tonopah Sewer Treatment Plant, where wild horses outside of the Paymaster HMA obtain water.

There are 27 known springs within the Proposed Gather Area of which three are located on private land. Riparian areas are a minor component in the Proposed Gather area and are usually less than one acre in size. The majority are found throughout the mountainous areas in the Proposed Gather Area. They usually consist of small patches of wet soil at seeps and springs, which are dominated by riparian grasses, sedges and rushes. The Proposed Gather

Area is subject to periodic droughts which result in springs drying out for a period of time. In 1996 an attempt was made to remove all wild horses and burros from the Montezuma HMA due to drought. This management action was taken because the animals were extremely unhealthy, due to lack of forage and available surface water at springs.

Waters within the HMAs themselves are limited, and many of the small springs or water developments are located in rugged steep terrain that limits wild horse and burro. Some of these waters are not used by wild horses or burros at all.

Of the 27 known springs within the gather area, 17 have been assessed for Functioning Condition. Seven springs are Functioning at Risk (FAR), and four springs are Non-Functioning (NF). Six were found to be in Proper Functioning Condition (PFC) at the time of the assessment. The following table displays the ratings for springs within the Yellow Hills and Sheep Mountain Allotments.

Table 13. Sheep Mountain and Yellow Hills Allotments Spring Evaluation

Riparian Name	Developed Status	Rating	Trend
Sheep Mtn. Spring	Developed	Functioning at Risk (FAR)	Upward
Unnamed Spring #1	Developed	Not Rated, Seep developed no riparian left.	N/A
Twin Springs Complex	Not Developed	N/A	N/A
Pearl Hot Springs Complex	Not Developed	N/A	N/A

Sheep Mountain Spring is located on land administered by the BLM within the proposed gather area, but lies outside of the Paymaster HMA, and is fully developed. In 1991 photographs showed no cattails visible in the pond. However in 2003, the pond was filled with cattails and the edge of the pond had rush species growing. The conclusion was in 2003 that the trend was upward. During the last inspection, Unnamed Spring #1 had no riparian vegetation growing. The water flow was extremely slow with a drip or two every two to three seconds. It is unlikely this site will produce a pond with riparian vegetation. The Twin Spring Complex and Pearl Hot Spring Complex have dried up and were not rated. No riparian vegetation or surface water exists. In the Unallocated portion of the Proposed Gather Area, the only naturally occurring wet areas are playas that fill seasonally with water. Due to soil compaction, season and amount of rainfall, little riparian vegetation occurs.

Water source within the Montezuma Peak HMA, February 2010

In the portion of the gather area that lies in the Monte Cristo allotment 10 springs were evaluated in 1998, 1999, and 2009. All of the springs and seeps listed below are inside the Paymaster HMA; however, many are unavailable to wild horses due to rugged topography and large areas of exposed rock.

Unnamed Spring in the table is the only spring in this area that is located on private property while all others are on land administered by the BLM. The following table displays the results of the riparian assessment.

Table 14. Monte Cristo Allotment Spring Evaluation

Spring Name	Rating Date	Rating	Trend
Little Barrel	1998 and 2009	NF	Not Apparent
Crevice	1998 and 2009	PFC	N/A
Lobo	1999 and 2009	FAR	Not Apparent
Seep	1999 and 2009	FAR	Not Apparent
Unnamed Seep #1	1998 and 2009	PFC	N/A
Unnamed Seep #2	1999 and 2009	PFC	N/A
Unnamed Seep #3	1999 and 2009	PFC	N/A
Unnamed Spring (Private)	1999 and 2009	FAR	Down
Chuckar Spring NW	1999 and 2009	FAR	Not Apparent
Chuckar Spring	1999 and 2009	FAR	Not Apparent
Unknown Seep	1999 and 2009	PFC	N/A

There are several functional springs within the Paymaster HMA on Lone Mountain. Trail cameras were used in the summer and fall of 2009 and summer of 2010 to help monitor spring use by wildlife, wild horses, and livestock at these springs. The TFO had field scouting camera stations on Lobo Spring from October 8 – October 23, 2009 resulting in 272 events (photos); Miners Spring from September 30 – October 23, 2009, resulting in 988 events; and Bootleg Spring from September 17 – September 30, 2009, resulting in 329 events. Cameras were placed on Bootleg Spring and Miners Spring again during 2010 from June 20 – July 14. Both of these 2010 stations recorded 1,177 events each, which was the maximum capacity of the data cards. A camera station was also placed on Springdale Spring from June 21 – July 20, 2010, resulting in 209 events.

Out of over 4,100 camera events, not a single wild horse was recorded (whereas other wildlife such as song birds and game birds, including chukar partridge and mourning dove, desert bighorn sheep, mule deer, mountain. lion, coyote, and foxes were recorded). Further, there was no evidence recorded in any of the areas associated with these particular springs of current or past wild horse use. These areas around Lone Mountain are very dry, rocky, and inhospitable to wild horses and wild horses are not expected to access these waters. It would offer moderate habitat for burros, however, no burros have been recorded on or near Lone Mountain. One of the main sources currently being utilized by the wild horses is the discharge source from the Tonopah Sewer Ponds which is located approximately eight miles *outside* of the boundaries of the Paymaster HMA (refer to photo above).

The Montezuma Allotment contains springs located in both HMAs, though these sources are small and unproductive. The first table below shows the springs that are present in the Paymaster HMA along with any available riparian assessment data. The second table below shows the springs that are present in the Montezuma Peak HMA along with any available riparian assessment data. The only spring that is in the Montezuma Allotment that is not in either HMA is Alkali Hot Spring, which is located on private land and has no riparian assessment data. All springs other than Alkali Hot Spring and Indian Springs are located on public lands administered by the BLM.

Table 15. Montezuma Allotment Spring Evaluation in the Paymaster HMA

Spring Name	Rating Date	Rating	Trend
Willow Spring	No Data	N/A	N/A
Springdale Spring #1, 2, & 3	1999	PFC	N/A
Spring Above Mike's Well	1999	NF	Not Apparent

Table 16. Montezuma Allotment Spring Evaluation in the Montezuma Peak HMA

Spring Name	PFC Rating Date	PFC Rating	Trend
Brickyard spring	1995	NF	Not Apparent
Daga Joe Spring	1995	NF	Not Apparent
Unnamed Seep	1995	FAR	Upward
Indian Springs (Private)	No data	N/A	N/A
Slaughterhouse Spring	No data	N/A	N/A
West Spring	No data	N/A	N/A
Unnamed Spring	No data	N/A	N/A
Unnamed Spring	No data	N/A	N/A
Rabbit Spring	No data	N/A	N/A

There is little water available to wild horses and burros in the Montezuma Peak HMA. The most dependable source is on private property and could be fenced and made unavailable to wild horses at any time. Few other dependable water sources exist within the HMA, and these exhibit signs of long-term, heavy use by wild horses, burros, wildlife, and livestock indicating potential resource competition problems. No water sources exist within the Magruder Mountain Allotment portion of the Montezuma Peak HMA.

Environmental Consequences

Proposed Action and Alternative 1 & 2

The proposed gather would not have any direct impacts to riparian or wetland zones within the Proposed Gather Area because gather corrals and holding corrals would not be constructed near riparian areas.

The proposed gather would indirectly impact and benefit riparian wetland zones by decreasing utilization, trailing and trampling by wild horses or burros in these sensitive areas, thus allowing for riparian wetland areas to improve through natural processes. Achieving and maintaining the established AMLs would relieve some of the grazing pressure on the springs and riparian areas and would further ensure that wild horse and burro populations are in balance with forage and water availability.

Alternative 2 would slow population growth rates for remaining wild horses and burros within the Paymaster HMA and could therefore result in the greatest benefits to riparian areas. However, very few riparian areas exist within the HMA and a majority of the wild horses are currently residing outside the HMA and utilizing water sources outside of the HMA (i.e., effluent from the Tonopah Sewer Ponds).

Effluent discharge from the Tonopah Sewer Treatment Plant, where wild horses outside of the Paymaster HMA obtain water. Spring, 2010.

No Action Alternative (No Wild Horse Gather):

Wild horse and burro population would continue to increase even further in excess of the established AMLs at an expected rate of 16% annually. Should an emergency gather not occur sooner, the total population could grow to nearly 300 wild horses and burros by

2012, and nearly 400 wild horses and burros by 2014. An overpopulation of excess wild horses and burros at these levels would have obvious consequences to the health of riparian areas within the Proposed Gather Area through overutilization, trampling, erosion and potential infestation of invasive species. The No Action Alternative could cause irreparable damage to these critical wildlife habitats and to wildlife and other species that depend on these areas.

3.7. Soils

Affected Environment

Soils in the Proposed Gather Area are typical of soils found throughout the Great Basin and Nevada. The geophysical configuration of the gather area consists primarily of north-south trending mountain ranges with intervening valleys and playas. Most of Nevada's mountains were originally formed from either volcanism or related, plate tectonic processes. Refer to the Natural Resource Conservations Service (NRCS) Soil Survey for Nye County. Soils within the Proposed Gather Area vary widely in their physical and organic characteristics. They are described in very broad taxonomic classifications as aridisols, entisols and inceptisols.

Most of the Proposed Gather Area receives 8 inches or less of annual precipitation and soils are poorly developed, with little or no organic matter, and are shallow and well drained. Many of the ecological types within the Proposed Gather Area inherently support large proportions of bare ground in shrub interspaces.

Environmental Consequences

Proposed Action and Alternative 1 & 2

Direct impacts such as soil erosion and compaction would potentially occur at gather corrals, which are one acre or less in size. Gather corrals are typically situated in areas of previous disturbance such as gravel pits or along roadsides. Procedures identified in the Gather Plan and SOPs would be followed to minimize impacts to soils during gather operations.

Achievement of the AMLs, in balance with the capacity of the habitat, would result in maintenance and improvements to vegetation communities, reduced erosion of soil by wind and water, reduced trailing, and reduced concentrations of wild horses or burros around water sources. This would benefit soils. Achievement of the AMLs would improve or maintain biological crusts, where present, due to reduced hoof action by wild horses and burros.

No Action Alternative (No Wild Horse Gather)

Existing levels of soil disturbance would continue as wild horse and burro populations continue to increase at approximately 16% annually. Concentrated use of areas around water, and trailing would increase proportionally with increases in the populations. Soils would be disturbed more frequently, and wind and water erosion would increase. Loss of soils would promote degradation of the native plant communities, reducing available forage, and increasing vulnerability for establishment of annual invasive plants such as halogeton, Russian thistle, and cheatgrass.

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

Affected Environment

Threatened, Endangered and Special Status Species

There are no federally listed threatened or endangered species in the Montezuma Peak or Paymaster HMAs, therefore they would not be affected and they will not be further discussed in this document.

BLM protects by policy, *special status* plant and animal species. The list includes certain species designated by the state of Nevada, as well as species designated as "sensitive" by the Nevada BLM State Director. Refer to the table below for the list of BLM Sensitive Species whose range or migration routes are known or believed to occur within the gather area.

Table 17. Special Status Species

Special Status Species that may occur in the gather area	
Mammals	**Common Name**
Antozous pallidus	Pallid bat
Eptesicus fuscus	Big brown bat
Corynorhinus townsendii	Townsend's big-eared bat
Myotis califoricus	California myotis
Myotis ciliolabrum	Small-footed myotis
Myotis evotis	Long-eared myotis
Myotis lucifungus	Little brown myotis
Myotis volans	Long-legged myotis
Ovis canadensi nelsoni	Desert bighorn sheep
Birds	**Common Name**
Aquila chrysaetos	Golden eagle
Athene cunucularia	Burrowing owl
Buteo regalis	Ferruginous hawk
Falco mexicanus	Prairie falcon
Grus Canadensis	Loggerhead shrike
Lanius ludovicianus	Vesper sparrow

Migratory Birds

"Migratory bird" means any bird listed by the United States Fish & Wildlife Service (USFWS) in 50 CFR 10.13. All native birds found commonly in the United States, with the exception of native resident game birds, are protected under the Migratory Bird Treaty Act (MBTA) (16 United States Code 703711). The MBTA prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. Executive Order 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices.

Additional direction is provided within the, Memorandum of Understanding (MOU) between the BLM and the USFWS dated January 17, 2001. This MOU strengthens migratory bird conservation through enhanced collaboration between the two agencies, in coordination with state, tribal, and local

governments. The MOU identifies management practices that could impact populations of high priority migratory bird species including migratory bird nesting, migration, and overwintering habitats, and develops objectives and recommendations that would avoid or minimize these impacts. A variety of migratory birds use the habitat types within the Proposed Gather Area for breeding and foraging.

Potential migratory bird species that may be found within the Proposed Gather Area could include but are not limited to the Ash-throated Flycatcher, Bewick's Wren, Black-headed Grosbeak, Black-throated Gray warbler, Black-throated Sparrow, Blue-gray Gnatcatcher, Brewer's Sparrow, Brown-headed Cowbird, Bushtit, Cassin's Finch, Chipping Sparrow, Common Raven, Costa's hummingbird, Gray Flycatcher, Horned Lark, House finch, House Sparrow, House Wren, Le Conte's Thrasher, Lesser Goldfinch, Loggerhead Shrike, Mourning Dove, Northern Mockingbird, Rock Wren, Sage Sparrow, Say's Phoebe, Spotted Towhee, Swainson's thrush, Vesper Sparrow, Western Scrubjay, and the White-crowned sparrow (Great Basin Bird Observatory 2007).

Wildlife
Wildlife species found in the Proposed Gather Area include, mountain lion, coyote, bobcat, badger, long-tailed weasel, black-tailed jackrabbit, numerous birds, reptiles and small mammals. Hoofed mammal species include mule deer, pronghorn antelope and bighorn sheep. Refer to the documents identified in Section 1.7 for more details.

Environmental Consequences
Proposed Action and Alternative 1 & 2
Conducting a gather of excess wild horses and burros would have minimal, short-term direct impacts to wildlife in the Proposed Gather Area. Individual animals of all species that could be present in or near gather corrals or holding facilities could be temporarily displaced. The possibility exists that special status plant and animal species could be disturbed during the gather activities. However, gather corrals would typically be located in areas that have previously been disturbed (i.e. gravel pits), and would be used for short periods of time (1-3 days). Once the gather corrals were dismantled and the helicopter gone, animals should return to normal activities. Should it be determined necessary by a qualified biologist, gather sites would be inventoried prior to selection to determine the presence of sensitive species. If potential impacts could not be mitigated, these areas would be avoided. There would be minimal to no direct impacts to animal populations as a result of the gather operations.

Because the proposed gather would not occur during the nesting season, (roughly March through July) wild horse gather activities would not affect birds protected under the Migratory Bird Treaty Act. The proposed gather activities constitute relatively low potential for disturbance to individual nesting birds and no potential for impact to migratory bird populations because no gather corrals would be located at riparian areas that many migratory bird species depend heavily on.

Wildlife and wildlife habitat would be indirectly affected by the Action Alternatives. Removal of excess wild horses and burros and achievement of the established AMLs would provide the best opportunity for conservation, protection, and preservation of wildlife and sensitive species and their habitats. Implementation of the proposed gather would reduce utilization on key forage species, improving the quantity and quality of forage available to wildlife and decrease competition for water sources. Habitat conditions within riparian areas, and uplands would be expected to be maintained and improved to the benefit of most wildlife, sensitive species and migratory birds.

Under Alternative 2, the population growth would be slower for the Paymaster HMA than under the Proposed Action or Alternative 1 according to the population modeling. However, average population sizes would be similar under all three alternatives. Reduced growth rates could equate to reduced gather frequency. In turn, wildlife, sensitive species and migratory bird habitat (upland and riparian areas) would benefit slightly more under Alternative 2. Competition between wildlife and wild burros or wild horses would also be slightly less and reduced gather frequency would equate to fewer disturbances to wildlife.

No Action Alternative (No Wild Horse Gather):
If a gather is not conducted to remove excess animals within the Proposed Gather Area, the existing populations could increase to nearly 300 animals by 2012 and nearly 400 by 2014. If population reaches these numbers, there would be severe damage to wildlife habitat, and serious conflicts would occur between wildlife and wild horses or burros as competition for forage and water becomes more acute.

The No Action Alternative would have no direct impact to migratory birds since the gather would not take place. However, indirect impacts would be decreased forage and cover caused by large numbers of wild horses and burros, which could cause a loss of preferred habitat for some species of migratory birds, sensitive species and other wildlife.

Heavy and severe use of vegetation resources would occur, and forage would be depleted. Irreparable degradation to plant communities and sensitive riparian areas that wildlife life, sensitive species and migratory birds rely on, would occur. The outcome would be substantial loss of wildlife habitat. The no action alternative would result in greater degradation of habitat conditions for wildlife, BLM Special Status Species and migratory birds as a result of excess numbers of wild horses and burros impacting vegetation and riparian resources.

Water source within the Montezuma HMA

4. Cumulative Impact Analysis

The NEPA regulations (40 CFR 1508.7) define cumulative impacts as the 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 other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Cumulative Effects Study Area (CESA) for this project includes the Montezuma Peak and Paymaster HMAs. The time frame for analysis is from the passage of the Wild Free-Roaming Horses and Burros Act of 1971 to 2020, ten years past the proposed gather which is a reasonable time frame to consider potential future actions within this analysis.

Cumulative analysis for the Paymaster HMA wild horse gather was completed within the Silver Peak and Paymaster HMA Wild Horse Gather EA # NV065-EA06-149, in 2006. Cumulative analysis has also been completed within the EAs identified in Section 1.7. The analysis has been reviewed and found to provide an adequate analysis that is still pertinent for most resources. Therefore, cumulative analysis focuses on Wild Horses, which are the subject of the action and the most likely to be cumulatively affected by the actions.

Any future proposed projects within the Paymaster or Montezuma Peak HMAs would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

Effects of Past, Present, and Reasonably Foreseeable Future Actions

Past Actions

The Esmeralda-Southern Nye Resource Management Plan, Record of Decision (ROD) was signed on October 10, 1986, and established the original HMA boundaries. The 1997 Tonopah Resource Management Plan brought forward these designations and established an interim herd size. The HMA boundaries are nearly identical to the original Herd Area boundaries, with minor differences due to mapping corrections.

AMLs for the Montezuma Peak and Paymaster HMA were evaluated and modified within the Evaluations and Rangeland Health Assessments identified in Section 1.7. These documents also evaluated livestock grazing systems within the allotments associated with the HMAs. FMUDs issued for these areas resulted in adjustments to season of use, implementation of allowable use levels, herd sizes and rotational grazing systems and establishment of Forage Reserve Pastures. Through these Decisions, the total AUMs allocated to livestock was reduced by 23%. No livestock use is permitted within the Montezuma Peak or Paymaster HMA portions of the Montezuma Allotment or the unallocated area (outside of any grazing allotment).

The gather area has been utilized by domestic livestock since the area was settled over 100 years ago. The BLM instituted structured and organized administration of domestic livestock use of the public lands in the Tonopah area in the 1960's.

Historic domestic livestock, wild horse and to a lesser extent wild burro use has contributed to degradation of range condition within the gather area. However, livestock numbers within the Proposed Gather Area have been substantially reduced since the 1990's. Recreation, mineral exploration, and invasive weed treatment have had, and are expected to continue to have negligible impacts to grazing or wild horse and burro management within the project area.

Two gathers (emergency gathers) were completed within the Montezuma Peak HMA in 1996. Gathers of the Paymaster HMA were completed in 1992 and 2006. Refer to Appendix B for more detailed information about the past gathers.

Population controls such as fertility control and sex ratio modification have not been implemented within these HMAs in the past. Gather of the Paymaster HMA in 1992 involved the release of wild

horses older than 10 years of age and removal of younger animals. This would have resulted in a population that favored older horses and very young horses. Growth rates through the years have not indicated that the population was negatively affected by these actions.

Past activities, which may have affected wild horses within these HMAs primarily include livestock grazing impacts on vegetation condition and availability, as well as water quality and quantity. Although there are mining claims (lithium) and geothermal leases in the gather area at the present time, exploration activities have not been conducted.

Present Actions

Currently, the population (2010 pre-foaling estimate) within the Proposed Gather Area is estimated to be 129 wild horses and 61 wild burros. The post foaling population estimate is 149 wild horses and 71 wild burros. This population exceeds the established AMLs, and a substantial portion of the population resides outside of HMA boundaries due to insufficient habitat within the HMAs. Permitted livestock use is the primary use that occurs within the Proposed Gather Area; though grazing is very limited within the HMAs due to poor habitat and changes to management identified within the FMUDs listed in Section 1.7.

Reasonably Foreseeable Future Actions

Future activities which could occur include adjustments to livestock grazing numbers or season of use, water developments and spring enclosures, and mineral exploration activities. Geothermal or lithium exploration activities may have temporary and isolated impacts to the wild horses and burros in the future. The TFO would also evaluate these two HMAs and others within Esmeralda County for suitability for use by wild horses and burros during the next land-use planning process. Changes that could be considered involve the re-allocation of use from wild horses to wild burros, as many of these areas are better suited to use by wild burros. Through future RMP decisions that would be implemented through a Record of Decision, the appropriate level of burro use would be determined based upon inventory, use patterns, and availability and condition of water and forage.

The future may also involve development of Herd Management Area Plans (HMAPs). Other activities, such as future gathers to maintain AML, implementation of fertility control and/or modification of sex ratios could occur. Should these areas be converted to management for burros, gathers would be conducted to remove all remaining wild horses. Should the genetic analysis indicate concerns with genetic variability, specific treatment protocols would be developed to address these concerns such as potential augmentation of wild horses (if appropriate) or burros from other similar HMAs.

The BLM would continue to conduct monitoring to assess progress towards meeting Rangeland Health Standards, RMP objectives and Allotment Specific Objectives. Where suitable and sustainable, wild horses and/or burros would continue to be a component of the public lands, managed within a multiple use concept.

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

Impacts

Cumulative beneficial effects from the Proposed Action, Alternative 1 and Alternative 2 would include continued maintenance and improvement of the rangeland vegetation and riparian areas, which in turn would positively impact wildlife, wild horse and burro populations, and livestock as forage and water availability and quality is maintained and improved.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Gather should result in more stable, healthier rangelands, healthier wild horses and burros, and fewer multiple-use conflicts within the Montezuma Peak and Paymaster HMAs.

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

The Proposed Gather is expected to result in indirect impacts that would contribute to improved rangeland health, proportional to the number of animals on the range via the alternatives. In the long term, the achievement of AML in conjunction with other foreseeable actions would lead to improved habitat for wild horses, burros and wildlife. An overall lower population and density of wild horses and burros across the landscape would promote recovery of native vegetation currently in a state that is less than the potential or desirable condition, as well as reduce or eliminate additional degradation to vegetation and riparian areas.

With implementation of the Proposed Action, Alternative 1 or Alternative 2, excessive use by wild horses or burros would not occur as the AML is maintained. Key forage species could improve in health, abundance and robustness, and would be more likely to set seed and reproduce, which in turn would contribute to their increase within the plant community.

As future wild horse or burro decisions are implemented and future gathers conducted to remove excess wild horses and burros the benefits of maintaining population at AML are expected to continue and result in overall improvements to the forage availability for livestock, wild horses and wildlife. Wild horse and burro habitat would be protected from further losses of important key forage species, which would increase in frequency, vigor and production. Animal health would be maintained and the need for emergency gathers reduced through drought years.

Cumulatively, application of fertility control through Alternative 2 could increase the health of mares within the Paymaster HMA over many years to come with reduced biological costs due to raising foals. Once normal fertility resumes, mares would reflect higher body condition which would result in larger, stronger foals more apt to reach their genetic potential and survive adverse conditions.

The proposed gather and other foreseeable actions would begin to offset past negative trends in habitat modification by allowing for progress toward attainment of Rangeland Health Standards and Allotment Specific Objectives. When combined with past, present, and reasonably foreseeable future actions, and incorporating mitigation measures, the potential for cumulative impacts to wildlife habitat from the Proposed Gather would also be beneficial.

Should a future RMP Revision determine that wild horses should not be managed within the Paymaster or Montezuma Peak HMAs; decisions would be made for potential management of wild burros within these areas. AMLs for wild burros would be established in order to maintain Thriving Natural Ecological Balance, and prevent degradation of the range that could occur from wild burros. In order to improve and maintain genetic health of the wild burros, augmentation may occur through relocation of wild burros from the Bullfrog HMA or other suitable areas to the Montezuma Peak and/or Paymaster HMA.

The Montezuma Peak HMA currently maintains an AML of 3 wild horses and 10 wild burros. It is possible that these populations could suffer a loss through drought, harsh winters or natural mortality that would eliminate any animals within the HMA. Should this occur, appropriate actions could be taken to relocate wild horses and/or burros to the HMA.

The No Action Alternative would not result in any long-term cumulative benefits to any rangeland user. As the population of wild horses and burros increase, eventually an emergency gather would be required as the population exceeds the capacity of the range to provide adequate forage or water. This could be further compounded or accelerated by the frequent occurrence of drought and substantial precipitation extremes of the region. An emergency gather would likely result in all animals being removed from both HMAs in order to prevent suffering and death of these animals.

The No Action Alternative would allow continued degradation of vegetation by an excess population of wild horses and burros which in the long term would cause continued loss of key perennial forage species. Past impacts would not be offset, and downward trends would continue or accelerate.

Deterioration of uplands and riparian areas through an overpopulation of wild horses or burros would not improve habitat for future generations of wild horses, burros and other wildlife. Chronic and long term degradation of rangeland resources could result in irreparable damage to the arid habitat and could result in the need to discontinue management of any animals within the Paymaster or Montezuma Peak HMAs due to degraded habitat.

Range deterioration and degradation of riparian and upland habitat in conjunction with any reasonably foreseeable projects or other management actions would not improve forage availability for wild horses, burros, livestock or wildlife. In the long term, the No Action Alternative could result in further reductions of livestock numbers and wildlife within the gather area.

In light of other foreseeable actions, the No Action Alternative would result in long-term and potentially permanent and severe degradation to the health of public lands throughout the Proposed Gather Area. Cumulative impacts of the No Action Alternative, coupled with the impacts from past, present, and reasonably foreseeable actions, would hinder success in attaining RMP Objectives and Standards for Rangeland Health, and would preclude any improvement to the health of vegetative communities and the ecological condition of the range as a whole.

5. Suggested Monitoring

The BLM would continue to conduct the necessary monitoring to periodically evaluate the effects of livestock grazing and use by wild horses and burros and wildlife, and determine if progress is being made in the attainment of multiple use objectives and Standards for Rangeland Health. Monitoring

would be in accordance with BLM policy as outlined in the *Nevada Rangeland Monitoring Handbook* and other BLM technical references.

The TFO would continue to plan for periodic inventory flights to monitor the growth and distribution of the wild horse and burro populations within the Montezuma Peak and Paymaster HMAs and the effects of fertility control on growth rates (if applied). Vegetation monitoring consisting of utilization, trend, frequency, cover, production, species composition, proper functioning condition and other rangeland studies would continue to be completed.

6. Consultation, Coordination and List of Preparers

Refer to Section 1.9 for a summary of the public scoping issuance of the Preliminary EA. During the 30 day comment period for the Preliminary EA, in excess of 3,000 comments were received via letters, emails or phone calls to the Tonopah Field Office. Comments were received from individuals, various organizations and agencies. The overwhelming majority of these comments were fashioned from a mass form letter. These form letters were reviewed and considered, however, this form letter only yielded five distinct comments. Several other comments were reviewed and considered, resulting in 58 responses to comments.

All comments received were reviewed and considered in finalizing this EA and accompanying Decision and Finding of No Significant Impact (FONSI). Minor additions for clarity have been made to the EA; however substantial changes to the analysis were not warranted. The Response to Comments table is located in Appendix F of the EA.

Most comments reviewed fell among but were not limited to the following themes:
Support the action/promote balance with limited resources
Herd growth/animal numbers incorrect
Post-gather population's genetic health
Appropriate management levels are too low
Affected environment/monitoring data
Concerns/effects/results of fertility control
Outside of scope of analysis
Viewpoint/matter of opinion
Concerns/effects of use of helicopters
Concerns/effects of Long Term Pastures
Concern on population modeling program
Develop water/range improvements

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

Interested Party Mailing List

Name	Organization
Robin Lohnes	American Horse Protection Association
Tim Brown	Arlemont Ranch
Nancy Boland	Esmeralda County Commissioners
RJ Gillum	Esmeralda County Commissioners
Larry Schutte	Colvin & Son LLC
Rob Mrowka	Center for Biological Diversty
Terri Slatauski	NDOW
D. Bradford Hardenbrook	NDOW Southern Region
Tracy Kipke	NDOW Southern Region
Joni Eastley	Nye County Commissioner
Richard A. Orr	Sustainable Grazing Coalition
Robert Williams	US Fish and Wildlife Service
Dawn Lappin	Wild Horses Organized Assistance (WHOA)
Makendra Silverman	The Cloud Foundation
June Sewing	National Mustang Association
Joe Dahl	Lida Livestock LLC
Alberto Jauregui	Nevada Land Commercial Realty
Dave Pulliam	NDOW
Bud Johns	Indiviual
Mike Johns	Individual
Barbara Durham	Timbisha Shoshone Tribe
Russel Berg	Indivdual
Joe Kennedy	Timbisha Shonshone Tribe
Katie Fite	Western Watersheds Project
	Bob and Ersyla Dewhurst
	Marybeth Devlin
	J. Capozelli
	Linda Chene
	Safari Club International
	Cindy McDonald
	Mary Wrightman
	Kathleen Wattle
	Nevada State Clearinghouse
	Nevada Cattelmens Association

List of Preparers

Marc Pointel	Supervisory Natural Resource Specialist
Shawna Richardson	Wild Horse and Burro Specialist
Sheryl Post	Rangeland Management Specialist
Dustin Hollowell	Wild Horse and Burro Specialist
Devin Englestead	Wildlife Biologist
Adam Stephens	Rangeland Management Specialist
Scott Stadler	Archaeologist
Angelica Rose	Planning and Environmental Coordinator

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

I. Gather Plan

The purpose of the gather plan is to outline the methods and procedures for conducting a gather to remove excess wild horses and burros from public lands administered by the TFO. Implementation of the Proposed Action would require the capture and removal of approximately 123 wild horses and 61 burros to achieve a post-gather population of 27 wild horses and 10 burros within the Paymaster and Montezuma Peak HMAs.

A. Gather Area

The Proposed Gather Area includes the Montezuma Peak and Paymaster HMAs and areas outside of HMA boundaries where wild horses and burros reside. The area is approximately 500,000 acres in size, which includes 178,431 acres within and approximately 321,569 acres outside of HMA boundaries. Refer to Map 1 and 2, which display the HMA, grazing allotment and the gather area.

B. Administration of the Contract /Gather Operations

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

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

It is estimated that between 2 to 4 gather corrals and 1 set of central holding corrals would be necessary to complete the gather. Ideally, gather corrals would be established in areas of previous soil or vegetation disturbance (such as gravel pits, roads etc.), to avoid impacts to unaltered vegetation and soils. A cultural resources investigation would be conducted prior to the construction of gather corrals and temporary holding facilities. Refer to the SOPs, Section H for more detailed information.

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

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

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

C. General Overview of Wild Horse and Burro Gather Methods

The gather contractor supplies and transports all equipment needed to conduct a gather to a central location where Holding Corrals are constructed. These corrals consist of six or more pens constructed of sturdy panels, with a central alleyway and working/squeeze chute in the center. Corral panels are covered with snow fencing to keep animals calm, and water tanks 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 and burros from stock trailers into the pens, and facilitates the loading of the horses and burros to be transported to facilities onto large straight deck trucks. Refer to photos 5, 8, and 14-17 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 or burros are loaded into stock trailers and transported to the central Holding Corrals for sorting. Horses and burros 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 and burros settle down once gathered and do not appear to be more than slightly annoyed by the helicopter.

The pilot locates groups of wild horses and burros within the HMA and guides them towards the gather corrals. In most cases, horses are allowed to travel at their own pace, and are not "pushed". Distances average 4-7 miles over mixed terrain which may consist of rolling foothills, or steeper terrain, drainages, ridges and valley bottoms. The horses often follow their own trails. The pilot and the BLM staff monitor the condition of the horses and burros 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 and burros to them. Generally, wild horses and burros are very fit, and recover quickly from being captured. Distances that the horses or burros travel are modified to account for summer temperatures, snow depth, animals in weakened condition, young foals, or older/lame animals. Under ideal conditions, some horses and burros could 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 and burros 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 and 7. Crewmembers rush in to secure gates once the horses and burros are within the corrals. Refer to photos 2-3 and 10-13. 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 being injured 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 for difficult to gather areas) helicopter-assisted roping is implemented, in which the pilot moves a small group of horses or burros to the gather area, and the crewmembers rope the animals by horseback. This method often prevents overstressing the wild horses and burros 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. Burros are more difficult to gather than wild horses and often will not enter the wings of the trap corrals. Oftentimes, more wild burros need to be roped in order to capture them.

Once horses and burros 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. Burros are more difficult to estimate age by the teeth, and may not be aged at the gather location.

Injuries are noted and treated if needed. Once sorted, the wild horses and burros 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 or 45-55 burros depending upon their size. The trailers have three compartments so that mares/jennies, studs/jacks and foals can be transported separately. It may require 3-6+ hours for the wild horses and burros to arrive at the adoption preparation facility. The TFO typically transports wild horses and burros to National Wild Horse and Burro Center at Palomino Valley near Sparks, Nevada; or may ship horses and burros to the facility at Ridgecrest, California Arizona 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 and 18.

Before the wild horses and burros are transported to adoption facilities or released, hair is sampled for genetic testing. Data collected during the gather in conjunction with genetic analysis report will be incorporated into a Herd Management Area Plan (HMAP) in the future.

F. Data Collection

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

1) Hair Samples/Genetics Analysis

Hair samples would be collected and analyzed to establish genetic baseline data of wild horses and burros (genetic diversity, historical origins, unique markers, and norms for the population).

WHB Specialists would collect a minimum sample size of 25 hair samples from captured wild horses/burros. Hair would be collected from both males and females in a ratio similar to the sex ratio released/captured. Age would not be a defining factor in determining which animals to sample. Samples would be sent to Dr. Gus Cothran of the 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 from each animal captured. An estimate of the number of wild horses/burros evading capture would also be recorded.

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

3) Characteristics

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

4) Condition Class

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

H. Euthanasia

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

> *A Bureau of Land Management (BLM) authorized officer may authorize the euthanasia of a wild horse or Burro in field situations (includes free-roaming horses and burros encountered during gather operations) as well as short- and long-term wild horse and Burro holding facilities with any of the following conditions:*
>
> *(1) Displays a hopeless prognosis for life;*
> *(2) suffers from a chronic or incurable disease, injury or serious physical defect; (includes severe tooth loss or wear, severe club feet, and other severe acquired or congenital abnormalities)*
> *(3) would require continuous treatment for the relief of pain and suffering in a domestic setting;*
> *(4) is incapable of maintaining a Henneke body condition score greater than two, in its present environment;*
> *(5) has an acute or chronic injury, physical defect or lameness that would not allow the animal to live and interact with other horses or burros , keep up with its peers or exhibit behaviors which may be considered essential for an acceptable quality of life constantly or for the foreseeable future;*
> *(6) suffers an acute or chronic infectious disease where State or Federal animal health officials order the humane destruction of the animal as a disease control measure.*
>
> *There are three circumstances where the authority for euthanasia would be applied in a field situation:*
>
> *(A) If an animal suffers from a condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal. If the animal is euthanized during a gather operation, the authorized officer will describe the animal's condition and report the action using the gather report in the comment section that summarizes gather operations (See attachment 1). If the euthanasia is performed during routine monitoring, the Field Manager will be notified of the incident as soon as practical after returning from the field.*
>
> *(B) Older wild horses and burros encountered during gather operations should be released if, in the opinion of the authorized officer, the criteria described in 1-6 above for euthanasia do not apply, but the animals would not tolerate the stress of transportation, adoption preparation, or holding and may survive if returned to the range. This may include older animals with significant tooth wear or tooth loss that have a Henneke body condition score greater than two. However, if the authorized*

officer has inspected the animal's teeth and feels the animal's quality of life will suffer and include health problems due to dental abnormalities, significant tooth wear or tooth loss; the animal should be euthanized as an act of mercy.

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

I. Special Stipulations

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

2) Gather corrals would be constructed so that no riparian vegetation is contained within them. No vehicles would be operated on riparian vegetation or on saturated soils associated with riparian/wetland areas.

3) The helicopter would avoid eagles and other raptors, and would not be flown repeatedly over any identified active raptor nests. No unnecessary flying would occur over big game on their winter ranges or active fawning/calving grounds during the period of use.

4) Standard operating procedures in the site establishment and construction of gather corrals will avoid adverse impacts from gather corrals, construction, or operation to wildlife species, including threatened, endangered, or sensitive species.

5) Archeological clearance by a BLM archaeologist or District Archeology Technician of gather corrals, holding corrals, and areas of potential effects would occur prior to construction of gather corrals and holding corrals. If cultural resources were encountered, those locations would not be utilized unless they could be modified to avoid impacts. Due to the inherent nature of wild horse or burro gathers, gather corrals and holding corrals would be identified just prior to use in the field. As a result, Cultural Resource staff would coordinate with Wild Horse and Burro personnel to inventory proposed locations as they are identified, and complete required documentation.

6) Wildlife stipulations
The following stipulations would be applied as appropriate.

a. Sage Grouse
   i. Avoid active leks (strutting grounds) by 2 miles. March 1- May 15
   ii. Avoid nesting and brood rearing areas (especially riparian areas where broods concentrate beginning usually in June) by 2 miles. April 1 – August 15
   iii. Avoid sage grouse wintering areas by 2 miles while occupied. Most known wintering grounds in the Shoshone-Eureka Resource Area occur at high elevations and are not likely to be affected. Dates vary with severity of winter
   iv. Minimize and mitigate disturbance to the vegetation in all known sage grouse habitat.

b. Ferruginous Hawk: Avoid active nests by 2 miles. March 15- July 1.

II. Standard Operating Procedures for Wild Horse and Horse Gathers

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

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

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

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

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

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

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

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

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

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors. Under normal circumstances, this travel should not exceed 10 miles and may be much less dependent on existing conditions (i.e. ground conditions, animal health, extreme temperature (high and low)).

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”x4”.

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

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

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

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

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

6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or mares with small foals, sick and injured animals, estrays, or other animals the COR determines need to be housed in a separate pen from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal’s age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the capture area(s). In areas requiring one or more satellite gather corrals, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

C. Use of Motorized Equipment

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

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

3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.

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

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

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

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

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

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

D. Safety and Communications

1. The Contractor shall have the means to communicate with the COR/PI and all contractor personnel engaged in the capture of wild horses utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way

radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.

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

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

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

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

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

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

E. Site Clearances

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

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

G. Public Participation

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

H. Responsibility and Lines of Communication

The Contracting Officer’s Representatives (CORs) and the project inspectors (PIs) have the direct responsibility to ensure the Contractor’s compliance with the contract stipulations. Shawna Richardson, Wild Horse and Burro Specialist would serve as the primary COR. Alternate COR and PI(s) would be selected prior to the start of the gather. Marc Pointel, Supervisory Natural Resources and Thomas Seley, Field Manager, TFO will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office,

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

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

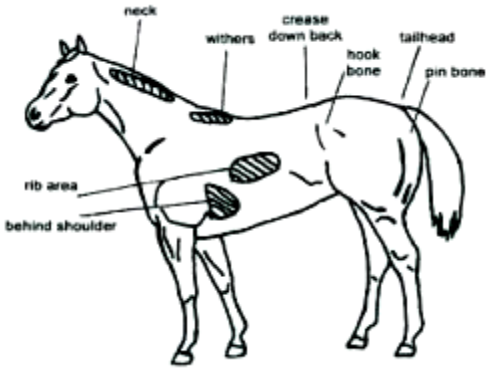
The COR will coordinate with the contractor and the BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

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

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

Henneke Equine Body Condition Scoring System

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



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

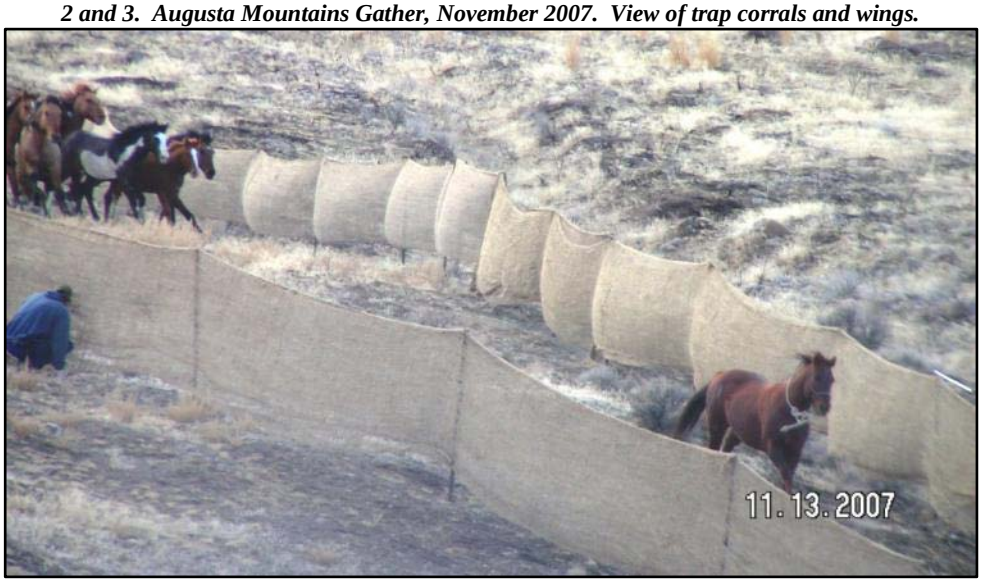
Condition	Neck	Withers	Shoulder	Ribs	Back	Tailhead Area
1 Poor (*extremely emaciated*)	Bone structure easily noticeable	Bone structure easily noticeable	Bone structure easily noticeable	Ribs projecting prominently	Spinous processes projecting prominently	Tailhead, pinbones, and hook bones projecting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

Photos

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

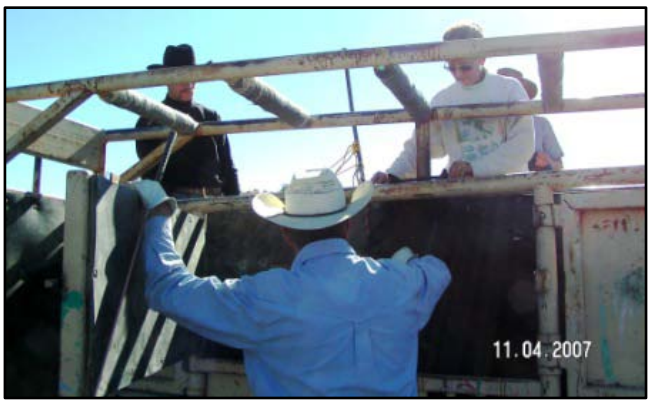
1. Young foal safely released with its mother back to the Fish Creek HMA, February 2006.

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



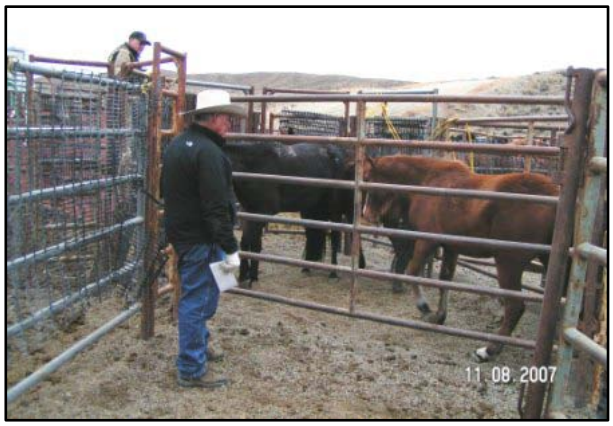
4. Augusta Mountains Gather, November 2007. Prada horse leads the wild horses into the mouth of the trap. Crew stands by to secure gates.

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



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

7. New Pass/Ravenswood Gather, November 2007. The contractor gets ready to release the Prada horse (far left) as the helicopter guides the horses closer to the gather corrals.



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 and 11. South Shoshone HMA Gather, January 2008. The helicopter (far left) guides the horses closer to the gather corrals built at a gravel pit.

12 and 13. South Shoshone HMA Gather, January 2008. The wild horses are funneled around the gravel pit and into the gather corrals.

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

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

16. Roberts Mountain HMA Gather, January 2008. Studs offered at the Trap-Site Adoption.

17. Roberts Mountain HMA Gather, January 2008. Animals marked for potential release back to the range.

18. Wild horses released back to the Roberts Mountain HMA in January 2008.

Appendix B: Herd Management Area Background Information

The following sections provide additional background information about the Montezuma Peak and Paymaster HMAs. Refer to the documents identified in Section 1.7 of the EA for more detail.

Montezuma Peak HMA

The Montezuma Peak HMA is located just to the west of the town of Goldfield, 26 miles south of Tonopah in Esmeralda County, Nevada. The area encompasses an area approximately 9 miles wide and 21 miles long. The majority of the HMA is dominated by shrubs with little grass, particularly in dry years. The area receives only 3 inches of precipitation in the valley bottoms and 12 inches on the mountain tops. This HMA is in the transition zone between the Great Basin (cold desert) and the Mojave Desert (hot desert). Habitat in the Montezuma Peak HMA is well suited for wild burro use, but contains little forage suitable for wild horse use.

Burro next to a Joshua Tree in the Montezuma Peak HMA, February 2010.

Vegetation data show that the HMA may be better suited for burros than wild horses. Two of the key habitat variables, food and water, are scarce in Montezuma Peak HMA. During the Evaluations and Rangeland Health Assessments of the Allotments within this HMA (1999-2007), it was determined that water is the key limiting factor to wild horse distribution. Wild horse populations have historically endured long periods of hardship on the vegetation and water there. A history of droughts and emergency gathers causes the HMA to be unsuitable for wild horses, but highly suitable for burros. Burros, however, have survived quite well in the existing habitat. Wild horses cannot and will not consume the shrub species in the region, and must rely on grasses, which are very scarce.

There is little water available to wild horses and burros in the Montezuma Peak HMA. The most dependable source is outside of the HMA boundaries on private property and could be fenced and made unavailable to wild horses and burros at any time. Few other dependable sources exist, and these exhibit signs of long-term, heavy use by wild horses, burros, wildlife, and livestock indicating potential resource competition problems.

In 1996, the horses in Gold Mountain and Montezuma Peak were dying because of severe drought. Burros were stressed. The BLM completely gathered the wild horses and burros from the Montezuma Peak and Gold Mountain HMAs.

In late September, 1996, after the first emergency gather of Montezuma HMA, a rangeland specialist and a wildlife biologist monitored the area. They found that outside the Paymaster HMA between

Tonopah and Lone Mountain, "there seemed to be enough forage to maintain these horses throughout the winter." However, west of Montezuma Peak inside the HMA, of all the horses they saw,

> *"all of the ribs showed, the butts were flat, the necks and legs were thin and the backbones showed. . . . These horses looked as bad as the horses gathered out of the Goldfield HMA this summer [August 1996]. . . . Old cured forage . . .must not be providing enough nutrition for horses. It seems likely that other horses in the Montezuma Peak HMA may be starving. These horses need to be removed."* (Valerie Metscher, BLM, Tonopah Field Station, Rangeland Management Specialist, Tonopah, NV, 1996).

Subsequently, in November 1996, another 56 wild horses were removed from Montezuma Peak HMA. In 1996, a total of 102 horses were removed from the Montezuma Peak HMA due to severe drought conditions. No wild horses or burros were left in the HMA after the gathers in 1996. Today, several small bands of wild horses and burros have immigrated to the HMA. These animals may have come from the Goldfield, Paymaster, and Silver Peak HMAs though some small bands may be Montezuma Peak horses that were not located during the 1996 gathers.

Wild horses gathered from the Montezuma Peak and Goldfield HMAs during emergency gathers in 1996. Wild horses were emaciated from lack of forage and water.

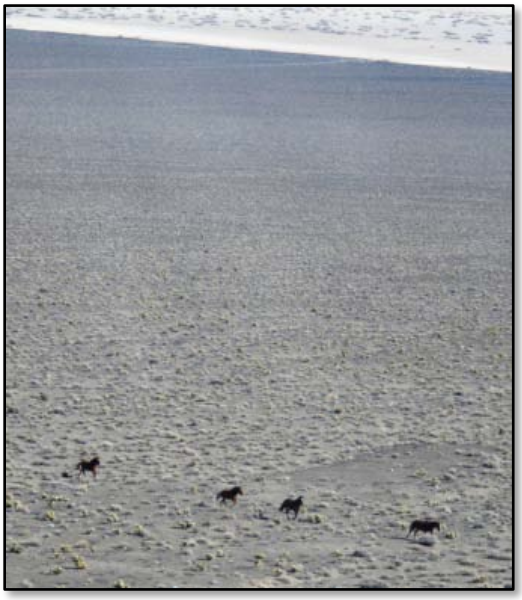
Wild burros gathered from the Montezuma Peak and Goldfield HMAs during emergency gathers in 1996. Wild burros were stressed, but were not in as bad of condition as the wild horses.

The previous AML for the Montezuma Peak HMA was established at 146 horses and 10 burros (the 10 burros were allotted for the Magruder Mountain allotment). No gathers occurred within the HMA until the drought in 1996 when 101 horses and one burro were removed. Due to the drought, an attempt was made to remove all animals from the HMA because they were extremely thin and was starving due to lack of forage. Within the Montezuma Complex Rangeland Health Assessment, it was determined that the 146 horse AML greatly exceeded the amount of forage available in the Montezuma Peak HMA. Furthermore, many of the horses from the Montezuma Peak HMA reside outside the HMA due to the lack of good quality forage inside the HMA.

There are no fences between the Montezuma Peak and Paymaster HMAs. There is a fence line separating the Magruder Mountain Allotment from the Montezuma and Yellow Hills Allotments. This fence prevents movement of horses or burros between the two allotments. Many springs in the Montezuma Peak HMA are close to the town of Goldfield (less than a mile). Springs in Montezuma Peak HMA available for wild burro use include West Spring, Slaughter House Spring and other waters on the eastern edge of the HMA. These waters are less than a mile from the town center.

Paymaster HMA

The Paymaster HMA lies 7 miles west of Tonopah in Esmeralda County, Nevada, and comprises approximately 100,500 acres. Few fences exist across much of the area, which allow the wild horses unrestricted movement areas outside the HMA boundaries as well as the adjacent Montezuma Peak HMA. Because of steep terrain, limited forage, and few accessible perennial waters, the Paymaster HMA itself receives little actual use by wild horses, which reside in the Montezuma Allotment outside the boundaries of the HMA. Burros have been observed in the adjacent Silver Peak and Montezuma Peak HMAs. This accounts for the mules that are sometimes observed outside the Paymaster HMA.



Wild horses in the southern portion of the Paymaster HMA, February 2010

There have only been two gathers of the Paymaster HMA. The first was in 1992 in which 396 animals (including 5 mules) were captured, 290 excess wild horses were removed, and 100 (50 mares and 50 studs) were released back into the HMA.

During the 1996 drought, it was not necessary to conduct an emergency gather of the Paymaster HMA. In 1996, horses were permanently residing outside the HMA in the Montezuma Allotment between Lone Mountain and the town of Tonopah. Wild horses were in acceptable condition at that time and adequate forage and water remained available in the northern end of the Montezuma Allotment despite the fact that it was outside of HMA boundaries.

A gather was conducted in September 2006 to remove excess wild horses and achieve the AML in the Paymaster HMA. (At the time, the HMA was 448 percent above AML.) A total of 178 wild horses were

gathered from the area. Most were residing outside the HMA boundaries. Horses gathered in 2006 were generally in poor condition (average Henneke Condition Class Score of 3). In all, 150 excess wild horses were removed from the range, leaving approximately 28 wild horses post-gather.

In the mid-1980s, the lessee of the Montezuma Allotment to the east of Paymaster HMA developed a new water source in a formerly ungrazed area, either by wild horses or cattle. This area was a very productive source of quality forage and surpassed the HMA forage values in quality and quantity. When the wild horses discovered this water and forage, they left the HMA and have not returned. In the mid-1990's, the lessee removed his cattle from the area and turned off the water. Cattle have not used this portion of the allotment since 1996.

There are several water sources available to Paymaster HMA wild horses, but few of them are located within the boundaries of the HMA. A majority of the springs are located in steeper canyons and are difficult to access causing wild horses to wander outside of the HMA in search of water. Refer to discussion in Section 3.6 regarding lack of wild horse use of the springs within the HMA in the Lone Mountain area. They trail as far as Miller's tailings ponds, the discharge from the Tonopah sewage treatment ponds, as well as playas which may be seasonally inundated with runoff from the town of Tonopah and the surrounding mine tailings. Limited water within the HMA, combined with little forage on the HMA, makes managing for wild horses within the boundaries very difficult, and makes future management of the herd questionable.

Wild horses have continued to forage on this area outside the Paymaster HMA. Heavy utilization by horses has occurred for many years in this portion of the Montezuma Allotment outside the boundaries of the HMA. Impacts of such over-utilization have led to deterioration of the range and loss of key forage species. Currently, very few wild horses reside within the Paymaster HMA boundaries. Instead, they remain in the valley bottom between Lone Mountain (Paymaster) and U.S. Highway 95/6 (Montezuma Allotment).

Several wild horses gathered from the Paymaster HMA in 2006 exhibited signs of illness and weakness. There is a history of unhealthy wild horses and the presence of club foot. This defect cripples the horse and limits its movement across the landscape in search of food and water. Five percent of the Paymaster wild horses suffered from club foot and were in very poor condition (Henneke Score 1 or 2).

Wild Horse and Burro Population Inventory

The most recent aerial inventory flight of the HMA was conducted in February 2010 which resulted in a direct count of 59 wild horses within and outside of the boundaries of the Paymaster HMA, and 70 wild horses and 61 wild burros within and outside of the Montezuma Peak HMA. The following table displays the inventory results and projected 2010 post foaling population.

Table 1. 2010 Inventory and Post Foaling Population Estimates

HMA	February 2010 Inventory			2010 Estimated Population Post Foaling		
	Inside	Outside	Total	Inside	Outside	Total
Paymaster	17	42	59	20	49	68
Montezuma Horses	33	37	70	38	43	81
Montezuma Burros	8	53	61	9	61	71
Montezuma Total	41	90	131	48	104	152
Complex Total	**58**	**132**	**190**	**67**	**153**	**220**

The average annual rate of increase for the Montezuma Peak and Paymaster HMAs is 16%.

Gather History of Montezuma Peak and Paymaster HMAs

Table 2. Gather History of Montezuma Peak and Paymaster HMAs

HMA Name	Gather Date	Animals Captured			Animals Removed			Animals Released		
		horse	burro	mule	horse	burro	mule	horse	burro	mule
Montezuma Peak	Aug-96	45	1	0	45	1	0	0	0	0
	Nov-96	56	0	0	56	0	0	0	0	0
Paymaster	1992	391	0	5	290	0	5	100	0	0
	2006	178	0	0	150	0	0	28	0	0

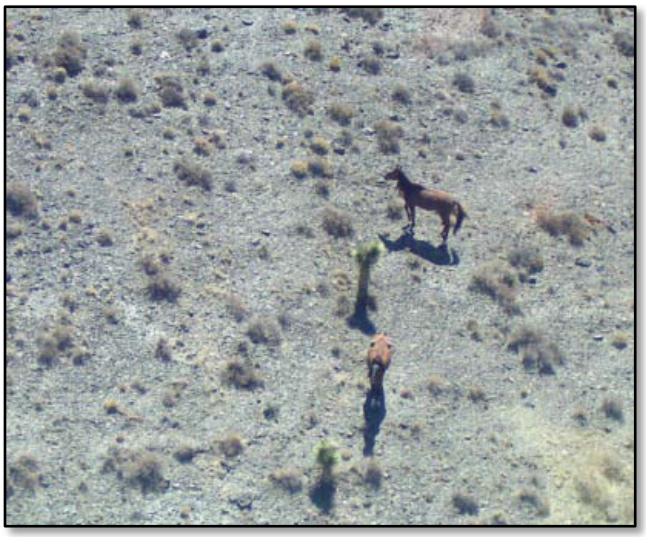
Appropriate Management Level (AML)

The wild horse and/or burro interim herd sizes (IHSs) for the Paymaster and Montezuma Herd Management Areas (HMAs) were carried forward into the Tonopah Resource Management Plan (RMP) issued October 6, 1997. The AMLs were further evaluated and adjusted following the analysis of climate, vegetation, trend, water, and inventory data in the documents identified in Section 1.7 and discussed below.

Large portions of the Paymaster and Montezuma Peak HMAs are “dry” with no water available for wild horses or burros. Wild burros are able to withstand longer periods without water than wild horses. Additionally, the vegetation communities in these HMAs are influenced by various climate forces resulting from being located in the transition between the Great Basin and Mojave Deserts which result in weather patterns that causes extreme variability in precipitation. Soils within the HMAs are unproductive and undeveloped, producing low amounts of usable forage for wild horses.

Emergency removals of wild horses were required in the mid 1990’s from Montezuma Peak, Goldfield and Stonewall HMAs in Esmeralda County due to lack of forage and drought conditions. The Paymaster HMA wild horses have established permanent residency outside of HMA boundaries since the 1980’s and currently 70% of the wild horses exist outside of the HMA.

Through evaluation of Rangeland Health Standards, an interdisciplinary team evaluated the wild horse and burro populations within the Paymaster and Montezuma Peak HMAs. Through this work, it was determined that inadequate forage and water existed within the Montezuma Peak HMA for wild horses, and that resources were limited within the Paymaster HMA.



Wild horses within the Montezuma Peak HMA in Thin to Very Thin condition (Henneke score 2-3), observed during an inventory in September 2006.

As a result of these issues, the TFO acknowledged the need to approach forage allocations in these areas conservatively to not only protect key forage, but to prevent wild horse or burro emergencies. Through the Evaluation/Assessments of the Monte Cristo, Yellow Hills, Sheep Mountain, Magruder Mountain and Montezuma Allotments, forage allocations to wild horses, burros and livestock were made and wild horse and burro AMLs were established.

It was determined that the Montezuma Peak HMA is more suitable for use by burros than by wild burros. There were plans to convert some of the AUMs from wild horses to wild burros. Despite the evidence that burros existed within the Montezuma Peak HMA since prior to the passage of the WFRHBA, an oversight in writing the 1997 Tonopah Resource Management Plan (RMP), resulted in burros not being allocated AUMs in the Montezuma Allotment, consisting of the majority of the Montezuma Peak HMA. Burros have not been allocated to Paymaster HMA either. Future plans when the RMP is revised in 2010-2014 are to consider use by burros in these areas, and possible conversion of wild horse AUMs to wild burros.

The following section summarizes the background for AMLs within the various allotments within the HMAs:

Paymaster HMA

Montezuma Allotment

Only a small portion of the Paymaster HMA is within the Montezuma Allotment. No AUMs were allocated to wild horses or cattle in the Montezuma Allotment portion of the Paymaster HMA because the adjacent allotment (Sheep Mountain) is over-allocated to both cattle and wild horses AUMs. Not allocating AUMs for wild horses or cattle in this portion of the HMA would relieve grazing pressure on the Paymaster HMA as a whole.

Yellow Hills/Sheep Mountain Allotments

Water availability, water distribution, and lack of potential to produce forage are the limiting factors for these allotments. Approximately 58% of the Paymaster HMA lies within the Sheep Mountain Allotment approximately 2 percent lies within Yellow Hills, and 15% lies within unallocated lands.

Because of steep terrain, limited forage, and few accessible perennial waters, the Lone Mountain, General Thomas Hills, and Weepah Hills areas receive little or no use by wild horses. Because no allotment boundary fences exist, wild horses in the Sheep Mountain, Yellow Hills Allotments, and the Unallocated Areas do move to find better forage and water sources depending on the precipitation levels and forage availability. The HMA occurs in the portion of Yellow Hills, a 3 to 5 inch precipitation zone, poorly suited for wild horse use. These soils support vegetation with less than 5% grass. Wild horses have difficulty finding enough green grass for forage especially during dry years.

Burros outside of the Montezuma HMA, spring, 2010.

Use pattern mapping data, wild horse censuses, and distribution maps indicate that wild horse use contributed to the 5% of the allotment that received heavy and severe grazing use in the Sheep Mountain Allotment portion of the Paymaster HMA in 1989, 1990, 1991, and 1992. During these years wild horse numbers exceeded the interim herd size. Wild horses did not significantly contribute to the use in the Yellow Hills Allotment and Unallocated area portions of the Paymaster HMA. The Unallocated Area is almost completely without vegetation, and is unsuited for wild horse habitat. However, wild horses still travel through the area.

It was determined that the habitat needs (forage and water) of the wild horses are being met at levels which can support the AML of 28 wild horses within the Sheep Mountain Allotment, 1 wild horse for the Yellow Hills portion, and 1 wild horse for the unallocated portion.

Monte Cristo Allotment

The habitat needs (forage, water, and cover) of the wild horses are being met at levels which can support eight wild horses. However, this portion of the HMA receives little or no horse use because of topography, forage, small numbers, and water.

The acreage of the Paymaster HMA located within the Monte Cristo Allotment is approximately 15,101 acres. Of these 15,101 acres, approximately 9,481 acres are inaccessible and virtually unusable to wild horses. This leaves approximately 5,060 usable acres to wild horses and livestock, of which 560 acres are private land. More wild horses utilize the allotment outside of the HMA. Approximately 15% of the Paymaster HMA is encompassed by the Monte Cristo Allotment and is not fenced separate from the rest of the HMA which allows mixing with the remainder of the HMA as well as the adjacent Montezuma Peak HMA. Through the Monte Cristo Allotment FMUD issued in 2002, wild horse AML was established as 8 horses for the Monte Cristo Allotment portion of the Paymaster HMA.

Montezuma Peak HMA

Yellow Hills Allotment

Less than 1 % of the Montezuma Peak HMA lies within the Yellow Hills Allotment. The allotment boundaries are not fenced; therefore, the horses are not restricted to these areas and can interact with

horses in neighboring allotments and HMAs within the rest of the HMA. The Montezuma Peak HMA has water available in the Montezuma Range for grazing animals on the northern three quarters of the HMA. The southern quarter of the HMA is without a water source.

The HMA occurs in the portion of Yellow Hills, a 3 to 5 inch precipitation zone, poorly suited for wild horse use. These soils support vegetation with less than 5% grass. Palatable shrubs provide the majority of the winter forage. Wild horses have difficulty finding enough green grass for forage especially during dry years. The AML for horses in the Yellow Hills portion of the Montezuma Peak HMA was established as one horse.

Montezuma Allotment

Through the assessment of monitoring data, it was determined that this HMA will support more wild burros than either wild horses or cattle. Wild horses do not do well in the Montezuma Peak HMA in dry years due to the lack of grass.

During the completion of the Montezuma Complex Rangeland Health Evaluation, there were plans to convert some of the AUMs from wild horses to wild burros. Despite the evidence that burros existed within the Montezuma Peak HMA since prior to the passage of the WFRHBA, an oversight in writing the 1997 Tonopah Resource Management Plan (RMP), resulted in burros not being allocated AUMs in the Montezuma Allotment, the majority of the Montezuma Peak HMA. Future plans when the RMP is revised in 2010-2014 are to consider use by burros in these areas, and possible conversion of wild horse AUMs to wild burros.

Magruder Mountain Allotment

The forage resources within this allotment were allocated based on a conservative approach that considered the recurrent drought in the watershed area to assure long term productivity of the forage. Based on the forage assessment data, water availability, current populations and recurring drought, the it was determined that the area is poorly suited for wild horses.

Very few animals reside in the Magruder Mountain portion of the Montezuma Peak HMA. The majority of the animals reside in the northern portions of the HMA. A lack of suitable habitat to support a permanent population may be the reason for so few animals in the area. The AML for this portion of the Montezuma Peak HMA was conservatively allocated for an AML of 2 horses and 10 burros.

Burros observed in the Montezuma Peak HMA, September, 2006.

Summary

Through the Evaluation/Assessments for the Montezuma Complex, Magruder Mountain and Yellow Hills Allotments, it was determined that forage and water sources were lacking to support large numbers

of healthy wild horses in the Montezuma Peak HMA and that the area was more suitable for management of wild burros. A change in allocation from wild horses to burros cannot take place in an FMUD or wild horse or burro gather EA, but must be evaluated and implemented through a Land Use Plan decision. The Battle Mountain District will be re-evaluating and revising the existing Land/Resource Management Plans in the coming years and plans to evaluate the HMAs within Esmeralda County for use by wild burros. This would occur with involvement by the interested public. Due to the cyclic nature of the precipitation and the arid nature of the region, conservative allocations are needed to ensure healthy plant communities. The undeveloped soils in the area support very sparse vegetation, particularly grasses which are needed by wild horses. The habitat is harsh for wild horses.

Through the Evaluation/Assessments for the Montezuma Complex, Magruder Mountain and Yellow Hills/Sheep Mountain and Monte Cristo Allotments, it was determined that little suitable habitat exists within the Paymaster HMA for use by wild horses, and that most wild horses have left the HMA to locate suitable forage and water sources elsewhere. The Paymaster HMA could be considered for use by burros in future planning documents as identified above for the Montezuma Peak HMA.

Genetics

Due to small population sizes, there is concern that inbreeding issues may be or could occur in the Montezuma Peak and Paymaster HMAs. Wild horses readily move between the Montezuma Peak HMA and the area just outside the Paymaster HMA. There is no fence between the Montezuma and Sheep Mountain Allotments blocking this movement. Some of the movement out of the HMA is to unfenced private property at Alkali Hot Springs, a water source just north of the HMA. From Alkali, wild horses move to Tonopah, outside the Paymaster HMA. This exchange of animals allows some genetic diversity of the smaller populations of these two individual HMAs. However, these herds have been fairly isolated from other herds since the 1970's, and emergency gathers have subsequently reduced genetic variability throughout the region.

Wild horses located between the Montezuma Peak and Paymaster HMAs outside of HMA boundaries, February 2010.

During the Paymaster HMA gather in September 2006, blood samples were taken from 27 wild horses released back onto the Paymaster HMA. According to the genetics analysis completed by Dr. Gus Cothran of Texas A&M, genetic variability of this herd could be considered mixed. The values related to allelic diversity (genetic variants) are near the average for feral herds, while heterozygosity (genetic variation) is high. Results suggest a herd with mixed ancestry that is primarily North American. The Paymaster HMA genetic similarity fits most closely to the Saddlebred and is near to the Tennessee Walker, which indicates the most likely ancestry is from the North American breeds. There is no strong evidence for Spanish relationship even though the highest similarity was with this group. This could be due to the Spanish heritage of many of the North

American breeds. In comparison to neighboring HMAs, the Paymaster herd does not show particularly high similarity to the closest herds, such as Silver Peak. There is a possibility that this herd has seen a recent loss of population size and genetic diversity.

As long as the area between Paymaster and Montezuma Peak is unfenced, horses and burros will not be isolated from each other. However, the Montezuma Peak and Paymaster HMAs are suitable burro habitat, conversion of the wild horse AUMs to Burro AUMs could be considered within the upcoming RMP revision. There is over two and half times as much forage available for burros than for wild horses in the Montezuma Peak HMA.

Appendix C – Vegetation and Monitoring Information

The vegetation resources of the Allotments within the Montezuma Peak and Paymaster HMAs have been assessed in detail in the documents identified in Section 1.7. This Appendix serves to provide a summary of some of the relevant and background information. Please refer to those documents for more information.

Management Objectives

Tonopah Resource Management Plan and Record of Decision, October 6, 1997:

> *Management of the vegetative resource will provide for the physiological needs (such as critical growth periods, biomass production, root reserve increase, and seed production) of the key forage plant species.*
>
> *Objective: To provide for vegetative and ecological diversity.*

The Mojave-Southern Great Basin Area Resource Advisory Council Standards and Guidelines:

> *Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses.*
>
> *Habitat indicators: Vegetation composition (relative abundance of species); Vegetation structure (life forms, cover, height, and age classes); Vegetation distribution (patchiness, corridors); Vegetation productivity; and Vegetation nutritional value.*

Ecological Sites

Vegetation in the Montezuma Peak and Paymaster HMAs varies from pinyon pine and juniper woodlands to hot desert shrub. At higher elevations, vegetative communities consist of pinyon-juniper woodlands, mountain-mahogany, and black sagebrush. The lower elevations consist of fourwing saltbush, Douglas rabbitbrush, greasewood, sagebrush, and spiny menodora. A few Joshua trees are scattered throughout the area.

Table 1. Ecological Sites of the Paymaster and Montezuma HMAs

Major Plant Community Common Name	*Major Plant Community Scientific Name*	*Ecological Site*	*Ecological Site Reference*	*Potential Production Normal Year lbs/ac*	*% composition with in the HMA*
Montezuma Peak HMA					
Wyoming big sagebrush/Indian ricegrass, needleandthread	*Artemesia tridentatassp wyomingensis/ Achnatherum hymenoide, Hesperostipa comata*	*Loamy Slope 8-10" p.z*[11].	*029XY010NV_3*	*350*	*23%*

11. p.z. indicates Precipitation Zone

Major Plant Community Common Name	***Major Plant Community Scientific Name***	***Ecological Site***	***Ecological Site Reference***	***Potential Production Normal Year lbs/ac***	***% composition with in the HMA***
Black sagebrush/ Indian ricegrass, needleandthread	*Artemesia nova/Achnatherum hymenoide, Hesperostipa comata*	*Shallow Calcareous Slope 8-12" p.z.*	*029XY014NV*	*200*	*20%*
Spiny Menodora/shadscale/Indian ricegrass	*Menodora spinescens/ Atriplex confertifolia, Achnatherum hymenoides*	*Cobbly Loam 5-8" p.z.*	*029XY036NV*	*300*	*16%*
Saltbrush shadscale/ Indian ricegrass-Jame's galleta	*Atriplex confertifolia/Achnatherum hymenoides - Pleuraphis jamesii*	*Loamy Slope 5-8" p.z.*	*029XY022NV*	*250*	*13%*
Saltbrush shadscale- bud sagebrush/Indian ricegrass-Jame's galleta	*Atriplex confertifolia-Picrothamnus desertorum/Achnatherum hymenoides*	*Loamy 5-8" p.z.*	*029XY017NV*	*450*	*11%*
Pinyon pine-Utah juniper-black sagebrush - muttongrass	*Pinus monophylla-Juniperus ostersperma – Artemisia Nova-Poa fendleriania*	*Forest Type*	*F029XY069NV*	*400*	*7%*
Paymaster HMA					
Saltbrush shadscale Indian ricegrass-	*Atriplex confertifolia/Achnatherum hymenoides -*	*Loamy Slope 3-5" p.z.*	*029XY033NV*	*50*	*23%*
Black sagebrush/ Indian ricegrass, needleandthread	*Artemesia nova/Achnatherum hymenoide, Hesperostipa comata*	*Shallow Calcareous Slope 8-12" p.z.*	*029XY014NV*	*350*	*21%*
Spiny Menodora/shadscale/Indian ricegrass	*Menodora spinescens/ Atriplex confertifolia, Achnatherum hymenoides*	*Cobbly Loam 5-8" p.z.*	*029XY036NV*	*300*	*18%*

Major Plant Community Common Name	*Major Plant Community Scientific Name*	*Ecological Site*	*Ecological Site Reference*	*Potential Production Normal Year lbs/ac*	*% composition with in the HMA*
Saltbrush shadscale/ Indian ricegrass-Jame's galleta	*Atriplex confertifolia/Achnatherum hymenoides - Pleuraphis jamesii*	*Loamy Slope 5-8" p.z.*	*029XY022NV*	*250*	*7%*

The remaining 10% of the Montezuma Peak HMA is comprised of lesser ecological sites which include Mountain Ridge 16+ p.z., Loamy 8-10" p.z., Shallow Calcareous Loam 8-12" p.z., Silty 5-8" p.z., Loamy Hill 5-8" p.z., Shallow Droughty Loam 5-8" p.z., Loamy Slope 3-5" p.z., Sandy Loam 5-8" and 8-12" p.z..

Four percent of the Paymaster HMA ecological sites are unclassified, with the remaining 10% comprised of Dry Sodic Terrace, Dry Wash, Saline Bottom, Sodic Flat, Pinyon-Juniper, Coarse Gravelly Loam 3-5"p.z., and Cobbly Slope 5-8"p.z.

Key Area 4, Montezuma HMA

For more information about the vegetation within this area, refer to the Natural Resource Conservation Service (NRCS), Nevada Ecological Site Descriptions for Major Land Resource Areas (MLRA) 29.

Salt Desert Shrub (Precipitation Zones; 3-5" and 5-8")

Salt desert shrub ecological sites are dominated by shadscale, Bailey greasewood (*Sarcobatus vermiculatus baileyii*) and spiny menodora. Associated species are wolfberry (*Lycium* spp.), cheeseweed (*Hymenoclea salsola*), ephedra (*Ephedra nevadensis*), bud sagebrush, winterfat (*Krascheninnikovia lanata*), Nevada dalea (*Psorothamus polydenius*), fourwing saltbush (*Atriplex canescens*), Joshua tree (*Yucca brevifolia*), and Indian ricegrass. Compared to other rangelands the salt desert range is much less productive. Average rainfall is between 3 and 8

inches a year. This vegetation type occurs mainly on valleys and hills throughout the Proposed Gather Area.

This is one of the most common vegetation types in the Montezuma Peak and Paymaster HMAs, comprising 24% of the Montezuma Peak HMA and 30% of the Paymaster HMA. Salt desert rangeland is mainly browse, dominated by shrubs and half shrubs. Most of the palatable shrubs (fourwing saltbush, winterfat) are high in protein, while the energy is provided by cured bunchgrasses (Indian ricegrass). Shadscale saltbush is the most common shrub on these sites. Salt desert shrub vegetation provides winter range for cattle and yearlong range for burros. Shadscale is not utilized by wild horses. Perennial grasses comprise 5 to 10% of the total annual production on most salt desert shrub ecological sites. Wild horses have difficulty finding enough green grass for forage in extremely dry years.

Total site production is between 50 and 440 pounds per acre during a normal precipitation year in Potential Natural Community (PNC) of which 10-45% should be comprised of perennial grass species. The most productive sites are on sandy soils located within drainages. One of the salt desert shrub communities falls within the 3-5" p.z. and is capable of producing only 50 pounds per acre of annual above ground vegetation in a normal year. This site comprises 23% of the Paymaster HMA. At PNC, the site should produce approximately 10% grasses.

Sagebrush (Precipitation Zone 8-12")

Sagebrush dominated sites are common within the Montezuma Peak HMA and less common within the Paymaster HMA. These ecological sites grow on higher cooler areas in the 8–12 inch and above precipitation zones and are dominated by either black sagebrush or Wyoming big sagebrush. Associated species are Nevada ephedra and green ephedra (*Ephedra viridis*), rabbitbrush (*Chrysothamnus* spp.), Mexican cliffrose (*Purshia mexicana*), Indian ricegrass and bottlebrush squirreltail (*Elymus elymoides* var. *elymoides*).

Wild horses and some livestock have grazed in these higher elevation sites. In sagebrush plant communities, wild horses and cattle prefer the grasses. Sagebrush plant communities are important mule deer habitat.

Black sagebrush grows on less productive soils on hillsides. Since black sagebrush is not browsed by cattle, horses or burros, there is less available forage on these sites. Some grasses grow on these soils, which is suitable for cattle or horse use, but is limited and would not support a large number of either cattle or wild horses. These soils are often on higher and steeper ground than the surrounding valleys and receive less use by cattle than valleys. The black sage vegetation communities represent approximately 20% of the Montezuma Peak HMA and 21% of the Paymaster HMA throughout higher elevations in the center of each of the HMAs.

Wyoming big sagebrush grows on deeper soils in the Montezuma Range consisting of approximately 23% of the Montezuma Peak HMA. These soils have the potential to produce more grasses on healthy sites than the black sagebrush sites.

Spiny Menodora, (5 to 8 inch Precipitation Zone)
This vegetation type occurs on upper alluvial fans on the west and east slopes of the Paymaster HMA, representing about 18% of the HMA. The dominant vegetation is spiny menodora. Other common shrubs are shadscale, Bailey greasewood, and bud sagebrush. Perennial grasses make up less than 20% of this ecological site. These ecological sites are very similar to saltbrush sites dominated by shadscale in the 5 to 8 inch precipitation zone and are poorly suited for wild horse or livestock grazing.

Pinyon Pine & Juniper Woodlands (Precipitation zone 10-16")
Pinyon pine and juniper woodlands grow in the highest elevations of the Paymaster HMA within a 12–16 inch precipitation zone. These areas also occur in the Montezuma Range. The woodlands in the allotment are dominated by pinyon pine and Utah juniper. Understory species include black sagebrush or Wyoming big sagebrush with associated species such as rabbitbrush and bunchgrasses.

Very little suitable forage species for cattle, horses, burros or big game species grow under dense woodlands. The most palatable species are bitterbrush or cliffrose, both important deer forage. These woodlands are best suited to deer and other big game species. These sites provide some spring and summer range for wild horses and to a limited extent cattle on open areas. Much of these areas are inaccessible to cattle use due to steep slopes. Cliffrose and bitterbrush grow in open areas in woodlands. Both are important mule deer browse.

Vegetation Summary within the Paymaster and Montezuma Peak HMAs

Within the Yellow Hills, Sheep Mountain, Montezuma, Magruder Mountain, and Monte Cristo Allotments, key management areas have been established within and outside of the Montezuma Peak and Paymaster HMAs for monitoring of use by grazing animals and long term trend and vegetation composition changes. Studies have been established within the area since the early 1970's.

Paymaster HMA

A large portion of the HMA is comprised of Salt Desert Shrub vegetation. Perennial grasses consist of less than 20 percent of these sites which are poorly suited for wild horse or livestock grazing. Some of the vegetation within the HMA is in the 3 to 5 inch precipitation zone, and some soils are dominantly sodic and saline (salty/alkaline/high pH). Forage is extremely limited in 3 to 5 inch precipitation zones for cattle and wild horses. The upper alluvial fan and low hills near Lone Mountain support some forage consisting of grasses. Cattle and wild horses do not normally graze on the upper alluvial fans and low hills in the HMA because more palatable forage exists in the valley outside the HMA.

In the mid 1980s water became available in this northern portion of the Montezuma Allotment and wild horses moved out of the Paymaster HMA into this area. It has since become degraded due to wild horse use and drought. Use by livestock on this area has declined since 1990. The former lessee ran full numbers of livestock on the allotment until 1991 when he removed most of them.

For the Paymaster HMA, trend has generally decreased due to use by wild horses outside of HMA boundaries. Trend data shows a decrease in between 1991 and 2002 in Indian ricegrass and shadscale and an increase in bud sagebrush and winterfat. The loss of ricegrass between 1991 and 2002 is due to wild horse use and drought. The loss of shadscale between 1991 and 2002 is mainly due to drought. Wild horses do not use shadscale and it is not important forage for cattle. The increase in winterfat and bud sagebrush between 1991 and 2002 would be due to the open niche left by the loss of ricegrass and shadscale.

The ecological site at several of these key areas is a loamy 5–8". In PNC this ecological site is dominated by shadscale, bud sagebrush and Indian ricegrass. Important key forage species at these key areas are Indian ricegrass and winterfat. Excessive grazing, especially during the growing season, can substantially reduce the number of these plants in the vegetative community.

Paymaster HMA, February 2010.

These sites should produce 25-45% Indian ricegrass and 20-35% shadscale at PNC, with 45% of the total composition comprised of perennial grasses. When monitoring was completed for evaluation of Rangeland Health Standards, the sites produced 12-56 lbs per acre of Indian ricegrass which equated to 2-10% of the composition. The remaining composition consisted of shadscale, bud sagebrush and winterfat. The common and consistent denominator at keys areas was the decrease in the frequency of Indian ricegrass rather than an isolated event. Improvement in the vegetation resources may take a long time because arid rangelands do not readily recover from past deterioration.

Montezuma Peak HMA

The majority of the HMA is in the Montezuma Range. The Montezuma Range is dominated by saltbrush or menodora vegetation on the lower hills (5–8" precipitation zone) and black sagebrush (8–10 or 12" precipitation zones) on the lower portions of the mountains and by pinyon-juniper woodlands (above 10" precipitation) on the highest mountains with Wyoming big sagebrush in mountain valleys and higher alluvial fans. The Montezuma Range is surrounded by valleys that are dominated by saltbrush and spiny menodora vegetation in 5–8 and some 3–5 precipitation zones. Portions of these valleys are included in the HMA.

The HMA was allocated for wild horse use in the 1997 Tonopah RMP. Wild horses are mainly grazers and make little use of browse. However, the majority of the available forage in this HMA is browse. Perennial grasses comprise only ten percent or less of the total vegetative production throughout the HMA. The majority of forage for wild horses exists on big sage-dominated ecological sites in open areas in the Montezuma Range. Some grasses also grow on alluvial fans in saltbrush ecological sites and in black sage ecological sites on the Montezuma Range. The least productive ecological sites for grasses in the HMA are on hillsides dominated by saltbrush and in pinyon-juniper woodlands.

In extremely dry years such as 1996 and 2002, no grasses are produced – they do not grow. In these extremely dry years perennial bunch grasses die and rhizomatous grasses die back and produce little or no green forage. Almost no nutritious forage is available for wild horse use. The only forage available is old dry grass with little nutritive value. However, some browse remains available for burro use. Shrubs are deeper rooted than grasses or forbs and fewer shrubs than grasses die in extreme droughts. There were, however, significant die offs of some saltbrush species, mainly shadscale, during 2002.

Numerous key areas have been evaluated within or near the Montezuma Peak HMA. In general, the sites reflect inherent low productivity due to the soils of the area. Many of the ecological sites fall within the 3-5' or 5-8" precipitation zones and support vegetation communities that are poorly suited for wild horse or livestock grazing.

Since 1990, use by livestock has declined. Few cattle used the area between 1992 and 2007. Since the early 1990's use of the Montezuma Peak HMA has mostly been by wild horses and burros; however most wild horses were removed from the area in 1996.

Wild Horses in the Montezuma Peak HMA, September, 2006

In general, the key areas within the Montezuma Peak HMA reflect deviations from PNC and Desired plant Community (DPC) and reduced production of perennial key grasses with increases in less desirable species such as galleta grass, and Bailey greasewood, which increase to fill the niche left by a decrease in Indian ricegrass. Indian ricegrass declined between 1991 and 2002, mainly due to drought.

Currently, shadscale is declining throughout much of the Tonopah Planning Area. Shadscale goes through frequent die-offs. Throughout the Planning Area, the majority of all shadscale vegetation at any site is in one age class. This is because shadscale seed sprouts in only a very few wet years. On sites with an open niche in wet years, shadscale will dominate. Since the majority of shadscale is in one age class, the loss of shadscale at some key areas is due to a decadent population gradually dying. Drought, insects or other natural events accelerate this loss of shadscale. Budsage and Nevada ephedra have also increased in some areas to fill the niche left by shadscale.

According to data collected to evaluate Rangeland Heath Standards, trend on most sites within the HMA appears to be downward. However, highly variable precipitation, by year and by season leads to losses of both Indian ricegrass and shadscale in this area. Sudden increases in

plant species are also possible in wet years especially when there is a large open niche. These soils have some potential to allow a small increase in Indian ricegrass during wet years only.

Available information suggested that the vegetation changed mainly due to drought conditions experienced in 1991, 1996 and 2002. Use by grazing animals did not appear to be a factor. Few cattle have used the area since 1991. There has been some light use by burros and wild horses. The vegetation at some sites within the HMA has little potential to change due to the dry climate and poor quality soil.

At PNC many of these sites should produce 10-45% perennial grasses in the understory. Monitoring collected at the key areas within Montezuma Peak HMA shows 5-62# per acre of perennial grasses, with Indian ricegrass producing only 5-10 lbs per acre and comprising approximately 1% of the plant community.

The loamy slope 3-5" precipitation zone ecological site is only capable of producing 50 pounds of annual above ground vegetation, of which ten percent or less of the vegetation on this ecological site is grass in PNC. This is a less productive soil. At the key area monitored within this ecological site, 69% of the production was Bailey greasewood, generally an unpalatable shrub. Other sites within the Montezuma Peak HMA consist of less productive Cobbly Loam 5–8 p.z., dominated by spiny menodora and shadscale.

Key Area 5, Montezuma Peak HMA

Precipitation Data

A BLM rain gauge is located Magruder Mountain Allotment and precipitation data has been collected at this location since 1985. This data is displayed by moisture year (June to June) through 2009 in Figure 1 at the end of this Appendix. Annual rainfall has ranged from 1.22 inches in 1991 to the maximum recorded precipitation of 10.26 inches in 1998. The average annual precipitation received since 1985 was 3.51 inches. During 6 of these years, precipitation received met the definition of drought (<75% of average), and during 9 years, the precipitation was considered above normal (>125% of average). From review of these figures it is very clear that annual precipitation is extremely limited in this area due to drought and extreme fluctuation of annual and seasonal precipitation.

Precipitation data collected at the Tonopah Airport from 1985 to 2009 were also analyzed. This data is displayed in Figure 2 by moisture year through 2009. Annual rainfall at this location has

ranged from a minimum of 1.54 inches in 2003 to a maximum of 8.03 inches in 1998. Average precipitation received at this station throughout the period of record (1954-2009) is 5.08 inches annually. Eight years at this location meets the criteria of a drought year and 6 years are recorded as above average. Drought conditions occurred one year of three on average.

The precipitation patterns within the area demonstrate wide fluctuation as indicated in Figures 1 and 2. As a result, it is important to manage the resources within the Montezuma Peak and Paymaster HMAs conservatively so as to allow protection of vegetation resources and health of wildlife and wild horses and burros through the poorest of years when drought can result in markedly reduced forage resources and water.

A review of precipitation data from other areas within the United States can provide a useful comparison. The annual precipitation received for the Tonopah Airport and Magruder Rain Gauge is 5.08 and 3.51 inches respectively. The eastern half of Oregon receives over 10 inches of precipitation with the west coast receiving more than 30 inches and some areas receiving over 100 inches of precipitation annually. Texas receives more than 14 inches of precipitation, with a large portion of the state receiving over 30 inches annually. Northern California generally receives over 15 inches of precipitation annually. Kentucky receives over 14 inches annually with a large portion of the state receiving over 30 inches. Nebraska generally receives over 16 inches, with most of the state receiving over 30 inches annually. For more information, refer to www.wrcc.dri.edu/precip.

Summary

South Central Nevada lies between two different weather patterns. This causes highly variable precipitation, by year and by season. This variability in precipitation leads to sudden changes in the plant community, such as mass die-offs due to drought and sudden increases in plant species in wet years, especially when there is an open niche. Trend is seldom static, and the changes are often not solely due to grazing. The sensitivity of these species to large changes in available moisture leads to the need to more conservatively graze these plant communities than is necessary in places with more stable weather patterns. The stocking rate for cattle, wild horses and wild burros needs to be based on the amount of forage available in most dry years.

From 1991 onward, the majority of use was by wild horses and burros, only a few cattle remained. Some of the changes in vegetation have been due to weather changes. The following years were dry: 1986, 1989, 1992, 1996, 2002, & 2003 and 1987, 1995, 1998, 2000 & 2005 were wet. The loss of shadscale and Indian ricegrass is mainly due to the effects of drought on a decadent plant community. Wild horse use did contribute to the loss of Indian ricegrass prior to 1996 in the Montezuma Peak HMA, and up until 2006 in the area between Lone Mountain and Tonopah.

In 1996, wild horses were removed from the Montezuma Peak, Goldfield and Stonewall HMAs to prevent further death from starvation. Available forage in these HMAs was scarce due to poor quality soils. Since the 1990's, wild horses have continued to use the areas outside of the boundaries of the Paymaster HMA between Tonopah and Lone Mountain. The continued use by wild horses in this area has damaged the vegetation. Excess wild horses were removed from this area in 2006; however, some wild horses were returned to the Paymaster HMA after the gather

and they have now moved back out of the HMA into the area between Lone Mountain and Tonopah. Until wild horses are permanently removed, this area will continue to receive use by wild horses.

Grasses comprise the majority of the horses' diet; however grasses in this region comprise only a small percentage of the overall composition within the Paymaster and Montezuma Peak HMAs. The lack of grass is due to low levels of precipitation and very young, poorly developed soils. These poorly developed soils in 3-5 and 5-8 inch precipitation zones do not hold water in the upper portion of the soil where it would be available for grass. Instead, these soils are dominated mainly by deep rooted shrubs. In HMAs with higher elevations in sagebrush dominated vegetation, access is limited by steep slopes and tree cover.

Since these HMAs support very little grass, they have little forage available for wild horse or cattle use. Grass may be available on some soils, but during the frequent droughts, important perennial grasses often die off. This means shrubs provide the majority of the available forage in these HMAs. During 1996, a very dry year, little or no grass was available and the wild horses would have starved if an emergency gather wasn't conducted to remove them. The available grass was two years old and lacking nutrition. The lack of grass makes much of Esmeralda County poorly suited for horses. Burros are opportunistic and will browse; and graze and are better suited for this area. They make better use of available forage in these HMAs. Because more forage is available for burros, these HMAs can support larger numbers of burros than wild horses or cattle. Many of the areas within these allotments are poorly suited to livestock grazing and appropriate changes to livestock grazing systems have been made through FMUDs.

The Montezuma Peak and Paymaster HMAs are on the transition area between two major deserts, the Great Basin Desert (salt desert scrubland) and the northern edge of the Mojave Desert (hot desert). These HMAs are subjected to regular drought periods lasting more than one growing season which decreases the vigor of the plants. Improvement in these dry areas comes during above average annual precipitation years, when seedlings sprout, if there are consecutive years of above average rainfall to allow establishment.

Arid rangelands do not readily recover from improper grazing management and may take a decade to demonstrate any improvements in the vegetation resources (Anderson and Holte 1981). Cook and Child (1971) discovered when "desert plants are defoliated to the extent that vigor is even moderately reduced, it required a rather long period of nonuse for complete restoration of vigor. Defoliation in the winter and again in the spring at even moderate intensities was considered deleterious to plant welfare. Late spring harvesting was significantly more harmful to plants than early spring harvesting." Furthermore, the authors explained that "the rate of recovery within a species was proportional to the stage of vigor: the lower the vigor, the less rapid the recovery."

Empirical work has demonstrated time lags of 10-50 years following changes in nutrient stress and competition (Brown & Heske 1990, Heske et al. 1994; Milchunas & Lauenroth 1995, Havstad et al. 1999)." Thus "arid grasslands may be characterized by substantial inertia and may respond slowly to substantial changes in disturbance regime. Holecheck et al. (2003) concluded that "during a 13-year study on the Chihuahuan desert rangelands that an upward trend occurred

on lightly grazed rangeland while a downward trend occurred on an adjacent moderately grazed rangeland." Hart et al. (1989) concludes that the stocking rate and distribution are much more important than rotation in determining the success of a grazing system. The effects of a few years of excessive stocking can be difficult to correct in arid lands."

Through the analysis of climate and vegetation data, it was determined that because of the highly variable precipitation in the region and frequent droughts conservative stocking levels were needed. The forage needs of wild horses, burros and livestock were taken into account to complete proper carrying capacity analysis and determine available forage within these allotments. More browse species were considered for burros, and key grasses and winterfat considered for wild horses.

Conservative forage allocation levels were selected in consideration of cyclical droughts in the region. The goal during the drought period is to guarantee the survival of the plant communities. The strategy is to maintain the long term productivity without adding additional stress to the plants during drought periods. The conservative allocations of AUMs assure that during the worst case scenario, forage productivity does not decrease and excess forage would be available during favorable years.

Through the Allotment Evaluations and Rangeland Health Assessments for the Montezuma, Magruder Mountain, Yellow Hills, Sheep Mountain and Monte Cristo Allotments, and subsequent Multiple Use Decisions, it was determined that 38 wild horses within the Paymaster HMA and 3 wild horses and 10 wild burros for the Montezuma Peak HMA was the maximum population allowed to ensure that a thriving natural ecological balance exists and to promote progress towards improvement in the health of these rangelands into the long term.

Through the review of climate, actual use, ecological status, trend, forage availability, and wild horse distribution, the following conclusions can be made:

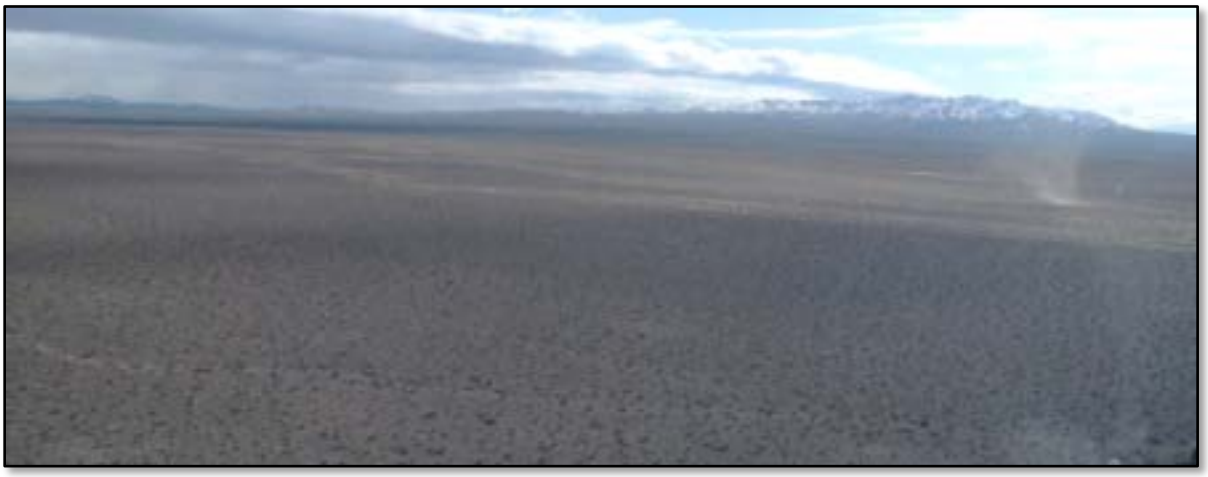
- Drought conditions have occurred an average of 24-33% of the precipitation years since 1985, or 1 out of every 3-4 years. Precipitation received within the region fluctuates greatly from season to season and from year to year.
- Much of the Montezuma Peak and Paymaster HMAs are not suitable to use by wild horses due to scarce water and forage resources as the habitat is not capable of supporting large numbers of animals, especially in dry/drought years.
- Many vegetation communities do not reflect proper composition of perennial key forage species as compared to the Potential Natural Community of Desired Plant Community.
- Wild horse and burro habitat is at risk of further decline.
- Wild horse and burro populations currently (pre-foaling 2010) exceed the AML established through the FMUDs by 88 wild horses and 51 wild burros.

Because of the current condition of the rangeland and riparian resources within these HMAs, it will be very important to maintain the population consistent with the established AML in order to minimize future over use of the resources, and promote improved habitat condition and long term population health.

Periodic monitoring of wild horse and burro use throughout these HMAs will continue to include wild horse and burro distribution, census, nested frequency, utilization and water availability/riparian condition.

Genetics data, as well as data collected during the proposed gather and future monitoring data would be incorporated into an HMAP to outline long term management strategies for these HMAs. Future Rangeland Health Assessments completed for these allotments and HMAs will consider the use by wild horses, burros, livestock and wildlife in addition to rangeland condition, and make appropriate changes to the wild horse and burro AMLs.

Paymaster HMA, February 2010.



Montezuma Peak HMA, February 2010

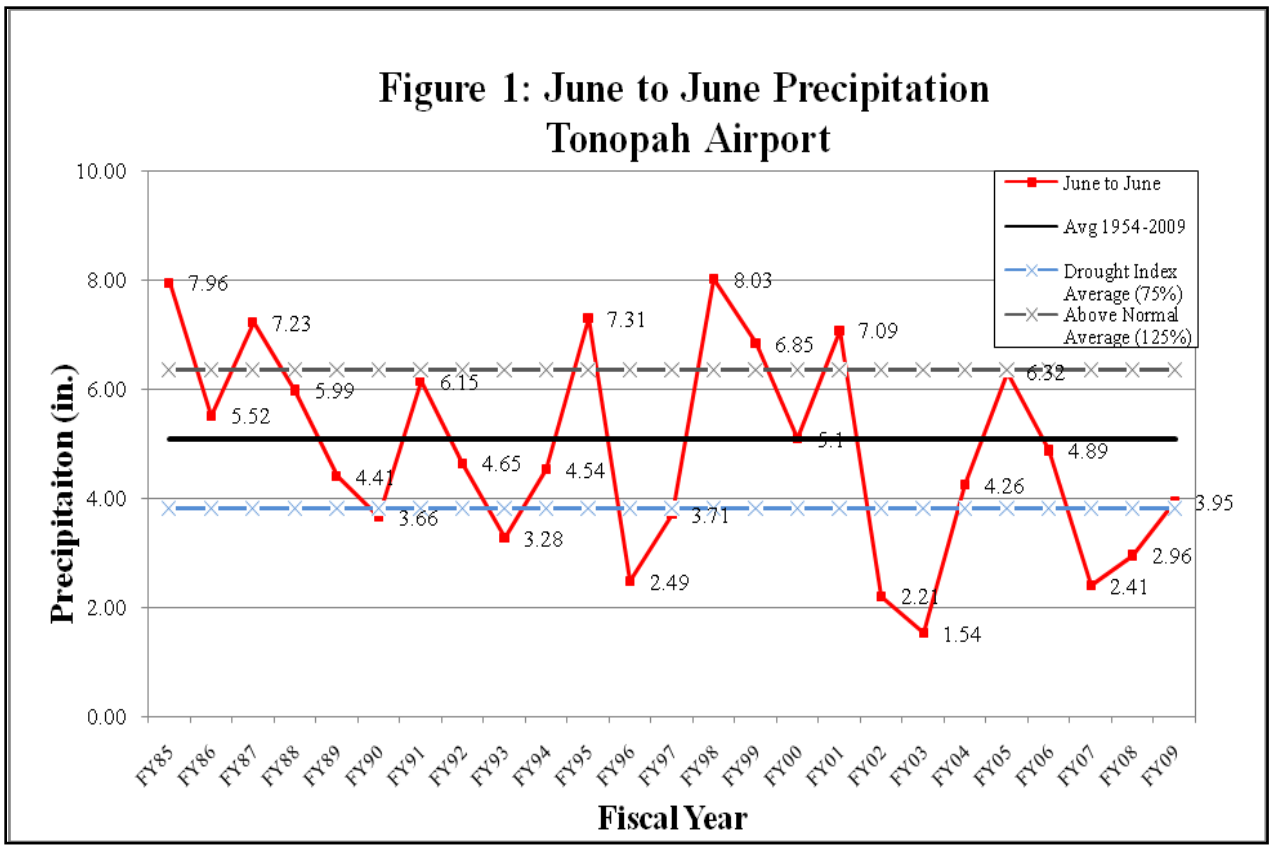


Figure 1: June to June Precipitation
Tonopah Airport
Precipitaiton (in.)
Fiscal Year
June to June
Avg 1954-2009
Drought Index Average (75%)
Above Normal Average (125%)
10.00
8.00
6.00
4.00
2.00
0.00
FY85 FY86 FY87 FY88 FY89 FY90 FY91 FY92 FY93 FY94 FY95 FY96 FY97 FY98 FY99 FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09
7.96
5.52
7.23
5.99
4.41
3.66
6.15
4.65
3.28
4.54
7.31
2.49
3.71
8.03
6.85
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7.09
2.21
1.54
4.26
6.32
4.89
2.41
2.96
3.95

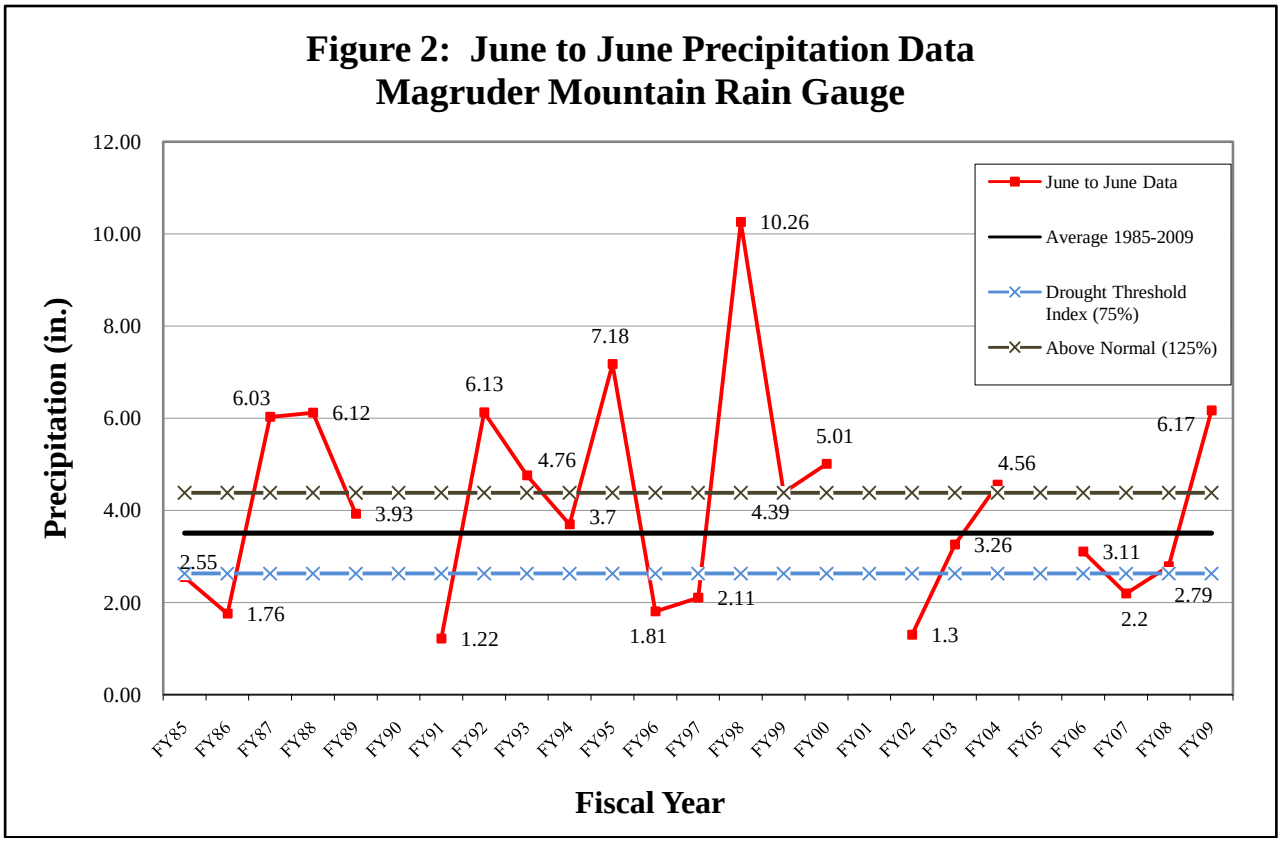


Figure 2: June to June Precipitation Data
Magruder Mountain Rain Gauge
Precipitation (in.)
Fiscal Year
June to June Data
Average 1985-2009
Drought Threshold Index (75%)
Above Normal (125%)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
FY85 FY86 FY87 FY88 FY89 FY90 FY91 FY92 FY93 FY94 FY95 FY96 FY97 FY98 FY99 FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09
2.55
1.76
6.03
6.12
3.93
1.22
6.13
4.76
3.7
7.18
1.81
2.11
10.26
4.39
5.01
1.3
3.26
4.56
2.2
3.11
2.79
6.17

Appendix D: Summary of Population Modeling

Population Model Overview

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. The population model is not applicable for burros. Windows version 1.40 of the model is accessible at www.equinox.unr.edu/homepage/jenkins.

The model uses average survival probabilities and foaling rates of wild horses to simulate population growth for up to 20 years. The model accounts for year-to-year variation in these demographic parameters by using a randomization process to select survival probabilities and foaling rates for each age class from a distribution of values based on these averages. This aspect of population dynamics is called environmental stochasticity, and reflects the fact that future environmental conditions that may affect horse populations cannot be known in advance. Therefore, each trial with the model will give a different pattern of population growth. Some trials may include mostly "good years", when the population grows rapidly; other trials may include a series of several "bad" years in succession. The stochastic approach to population modeling uses repeated trials to project a ***range of possible population trajectories*** over a period of years, which is more realistic than predicting a single specific trajectory.

The model incorporates both selective removal and fertility control treatment as management strategies. A simulation may include no management, selective removal, fertility control treatment, or both removal and fertility control treatment. Wild horse and burro specialists can specify many different options for these management strategies such as the schedule of gathers for removal or fertility control treatment, the threshold population size which triggers a gather, the target population size following a removal, the ages and sexes of horses to be removed, and the effectiveness of fertility control treatment.

The model was not designed to be used on small populations such as those for Paymaster and Montezuma Peak HMAs; however, all alternatives were modeled for the Paymaster HMA in order to project potential population differences as a result of population controls such as fertility control. The Proposed Action was not modeled for the Montezuma Peak HMA as the model is only appropriate for wild horses, and is not appropriate for a small post-gather population of three horses. The No Action Alternative was modeled for the Montezuma Peak HMA in order to project the population growth should a gather not be completed at this time. All simulations used the survival probabilities and foaling rates supplied with the WinEquus population model for the Garfield Flat HMA. Survival and foaling data was collected by M. Ashley and S. Jenkins at Garfield Flat, Nevada between 1993 and 1999.

The model was run for 100 trials for a 10 year period to assess the potential outcomes for these management scenarios over a long period of time. This provides for a more useful comparison of alternatives when assessing small populations. The model output provides information for 11 years.

For each simulation, a series of graphs and tables were generated which included the "most typical" trial, projected population sizes, growth rates, and gather numbers, and minimum, average, and maximum population sizes. These numbers are useful to make relative comparisons of the different

alternatives, and potential outcomes under different management options. This output, together with the time series and most typical trial graphs are useful representations of the results of the program in terms of assessing the effects of the management plan because it shows not only expected average results but also extreme results that might be possible. The following parameters were used for the population modeling:

- Initial population was set as exact under advance options to remove variation due to random starting populations.
- The initial population for Paymaster HMA was set as 68. The initial population for Montezuma Peak was set as 81 horses (burros were not modeled).
- Starting year is 2009 (see note below).
- Gathering occurs at minimum interval of 3 years.
- Initial gather year is 2009 (see note below).
- Threshold population size for gathers is 38.
- Target population size following removals is 23.
- Foals are included in AML.
- Percent of population that can be gathered = 95%.

The starting year of 2009 and initial gather year of 2009 were utilized because the model automatically inserts a foaling season during the first year. Because this gather is being proposed for September 2010 (after foaling for that year), it was undesirable for that to occur.

For the fertility control with gather scenarios, the model was set to gather on a minimum interval of 3 years, and to gather when the threshold level of 38 animals was reached. The setting was to continue to gather to treat females after adequate removals ad been made.

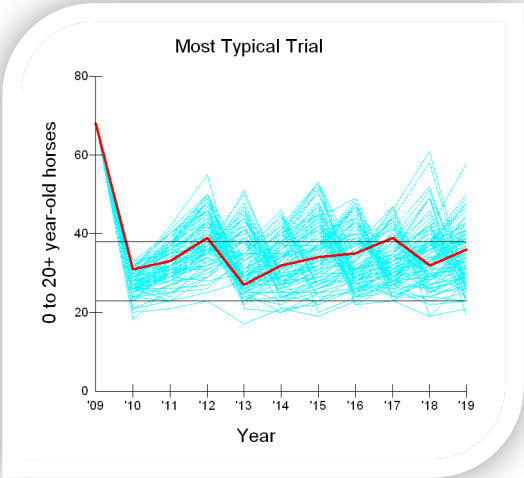
The application of fertility control should reduce growth rates, increase the time until the next gather is necessary, and reduce the number of animals that need to be gathered and removed from the range. The manipulation of the sex ratio to favor more studs than mares in the post-gather population should also result in reduced growth rates of the population (over a Gather Only simulation). The population model generates standard tables that display this information for the various trials. The “Spaghetti” and most typical trial graphs are generated by the model. Each line on the graph represents a trial simulated by the model. All data in the following section were generated by the model. Refer to the summary provided in Section 3.2 of this document.

Proposed Action

For the Proposed Action, modeling was completed with the Removals Only Option. The model displayed results for 11 years through year 2019.

Average population growth rates for the Proposed Action simulations were 4.0-30.5%, with average population size over eleven years of 28-44 wild horses.

Average growth rates were within reasonable ranges, and none of the trials reflect a "crash" in the population. The graph above depicts the "most typical trial" (indicated in red) of the 100 trials (indicated in blue) simulated for this alternative. The graph shows a gather occurring between 2009 and 2010, then increasing to 2012 when another gather would occur, followed by another in 2017/2018.



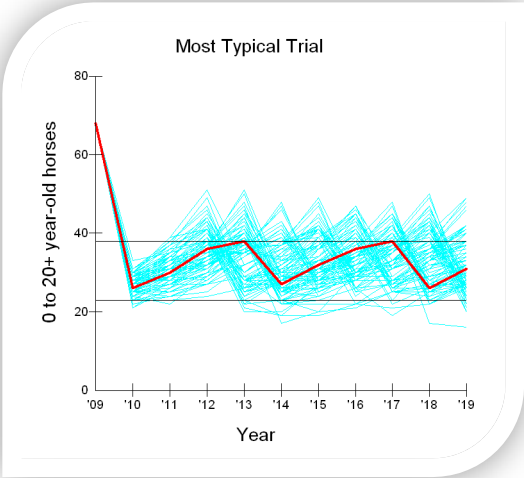
Most Typical Trial – Proposed Action

Alternative 1

This alternative was modeled using the Removal Only Option and selection criteria for removed animals set to simulate a 60:40 sex ratio favoring studs. The results are similar to the Proposed Action, but show slightly lower minimum and average population sizes and growth rate ranging from 6.4-24.3%.

The primary difference between the Proposed Action and Alternative 1 is the numbers of gathers that might occur within 11 years. Within the 11 years, only 23% of the trials reflect up to 4 gathers, whereas 44% of the trials reflect 4 gathers under the Proposed Action. Only 38% of the trials reflect a gather occurring in 2012/2013, for Alternative 1, and 55% under the Proposed Action. The graph depicts the "most typical trial" for Alternative 1. A gather is completed between 2009 and 2010, at which time the population grows to a point in 2013 when a gather is triggered, followed by another in 2017.

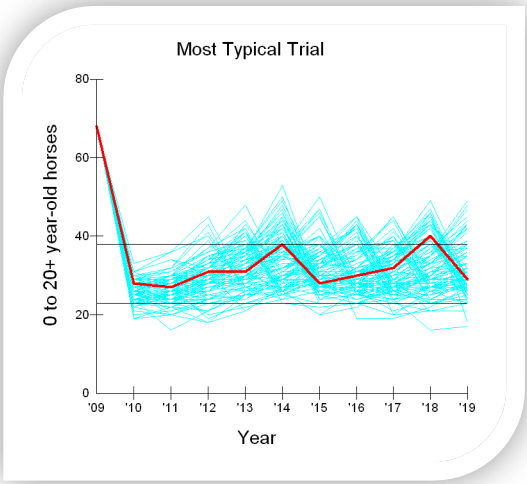
The number of animals needing to be removed within 11 years is slightly lower than the Proposed Action. According to the model, with all other parameters being equal, the use of sex ratio modification could result in the need to conduct fewer, less frequent gathers and remove fewer excess animals in eleven years.



Most Typical Trial – Alternative 1

Alternative 2

This Alternative involved the Fertility Control and Removal Options with selection criteria for removed animals set to simulate a 60:40 sex ratio favoring studs. As expected, the results are similar to those obtained for the Proposed Action and Alternative 1, but reflect lower population sizes and growth rates as a result of the application of the application of fertility control with sex ration modification. The average growth rates were 2.3-20.3%, with a median growth rate 4-7% lower than that for the Proposed Action or Alternative 1. Average population sizes were slightly lower than the other action alternatives. The most substantial data obtained from the modeling is that in 11 years, the number of horses that would have to be removed was very much lower than for the Proposed Action or Alternative 1.



Most Typical Trial – Alternative 2

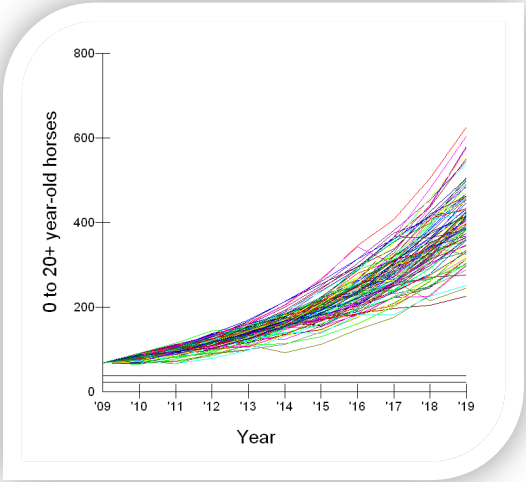
Between the 10th and 90th percentile of the trials simulated, Alternative 2 reflects 55-79 horses removed in 11 years as compared to 69-94 for Alternative 1 and 70-104 for the Proposed Action. The model also shows that more wild horses would ultimately have to be gathered in order to administer the fertility control as compared to the other alternatives, which may be considered a "cost" of reducing population growth rates. In 11 years, the model shows approximately 20-30 additional horses gathered under this alternative. The most typical trial graph shows a gather occurring in 2009/2010, with another gather not occurring until 2014 (2 years longer than for the Proposed Action), followed by another in 2018. Only 1% of the trials depict four gathers occurring within 11 years, with 49% reflecting 2 gathers and 49% reflecting 3 gathers.

No Action

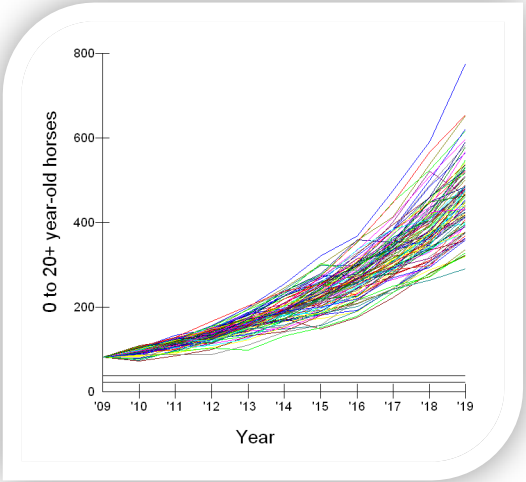
The No Action Alternative was also simulated through the model and produced expected results consisting of continued herd growth with average growth rates of 12.8-24.9%. The average population within 11 years reflects 133-265 wild horses, with a maximum of 226-626 identified.

The No Action Alternative was also modeled for the Montezuma Peak HMA. Average growth rates obtained ranged from 159-313 horses, with the maximum population sized in 11 years reflecting 291-775 horses.

The graphs depict the modeling simulation of the No Action Alternative for both HMAs.



Paymaster HMA, Most Typical Trial -- No Action



Montezuma Peak HMA, Most Typical Trial -- No Action

The results of the population modeling are summarized below.

- **Do any of the Alternatives "crash" the population?**

Results of the modeling do not indicate that implementation fertility control or adjustment of sex ratios would result in a crash of the population. Minimum population levels and growth rates are all within reasonable levels, and adverse impacts to the population are not likely.

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

The results of the modeling suggest that implementation of fertility control (Alternative 2) when compared to Alternative 1 could result in reduced population growth rates. The median growth rates obtained are displayed in the table below.

Table 1. Median Trial for Average Growth Rates in 11 years

Proposed Action	Alternative 1	Alternative 2	No Action
18.6	15.5	11.7	19.3

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

The results of the model indicate that implementation of fertility control and sex ratio modification to favor studs could result in average population sizes that are slightly lower than for Alternative 1 or the Propose Action. The model suggests that manipulation of sex ratios to favor studs without fertility control (Alternative 1) would have less notable influence. Through reduced growth rates and lower average population sizes over time, the frequency of gathers would be reduced, as would the total number of excess wild horses that would need to be removed in the future to maintain

AML. Because the frequency of gathers would likely be lessened, the disturbance to individual animals and the population as a whole through gathers would also be reduced.

The following tables display the average population sizes produced and projected gather and removal numbers for each Alternative between the 10th and 90th percentile. These numbers may be interpreted as in 100 trials and 11 years, only 10 percent of the trials produced results lower than presented below, and 10 percent produced results higher than those presented below. In other words, 80 percent of the trials had results that fell within the ranges given in these tables.

Table 2. Average Population Sizes in 11 years – 10th -90th Percentile

Proposed Action	Alternative 1	Alternative 2	No Action
34-39	33-38	31-36	160-226

Table 3. Horses gathered, removed and treated in 11 years – 10th -90th Percentile

Action	Proposed Action	Alternative 1	Alternative 2	No Action
Gathered	73-108	79-108	96-140	0
Removed	70-104	69-94	55-79	0
Treated	0	0	10-25	0

When compared to no population controls implemented at all following a wild horse gather, fertility control and adjustment of sex ratios could reduce the number of animals that would have to be removed in 11 years by about 15-25. The use of sex ratio adjustment alone could reduce the number of excess wild horses that would have to be removed by about 1-10 wild horses.

The results of the model indicate that the number of gathers that would be necessary within 11 years could be reduced with the implementation of Alternative 2 and to a lesser degree Alternative 1. The following table displays the results.

Table 4. Percent of trials reflecting gathers by Alternative

Alternative	% of trials with 1 gathers	% of trials with 2 gathers	% of trials with 3 gathers	% of trials with 4 gathers
Proposed Action	1	5	50	44
Alternative 1	0	6	71	23
Alternative 2	1	49	49	1

The following table displays the range of outcomes produced by the model. Detailed tables follow below.

Table 5. WinEquus Population Model Results for Paymaster HMA

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
No Action	65-68	133-265	226-626	12.8-24.9	0	0	0
Proposed Action Removal Only	17-31	28-44	68	4.0-30.5	42-133	40-128	0

Alternative	Minimum Populations	Average Populations	Maximum Populations	Average Growth Rates	Gathered	Removed	Treated
Alternative 1 -- 60% studs, No Fertility Control	16-28	29-39	68	6.4-24.3	60-121	51-105	0
Alternative 2 -- 60% studs, With Fertility Control	16-28	30-38	68	2.3-20.3	61-177	43-93	6-43

Table 6. Percent of Trials Reflecting Gathers by Alternative

Year	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Year 1 – 2009/10	100	100	100	0
Year 2 - 2011	0	0	0	0
Year 3 - 2012	55	38	5	0
Year 4 - 2013	29	39	16	0
Year 5 – 2014	10	13	33	0
Year 6 – 2015	33	22	16	0
Year 7 – 2016	33	27	21	0
Year 8 – 2017	20	26	13	0
Year 9 – 2018	26	31	27	0
Year 9 – 2019	31	21	19	0

Table 7. Population Sizes in 11 years - Minimum

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	17	16	16	65
10th percentile	22	22	20	68
25th percentile	23	22	22	68
Median Trial	24	25	24	68
75th percentile	26	26	25	68
90th percentile	27	26	26	68
Highest Trial	31	28	28	68

Table 8. Population Sizes in 11 years - Average

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	28	29	30	133
10th percentile	34	33	31	160
25th percentile	35	35	33	176
Median Trial	37	36	34	191

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
75th percentile	38	37	35	209
90th percentile	39	38	36	226
Highest Trial	44	39	38	265

Table 9. Population Sizes in 11 years - Maximum

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	68	68	68	226
10th percentile	68	68	68	304
25th percentile	68	68	68	357
Median Trial	68	68	68	398
75th percentile	68	68	68	447
90th percentile	68	68	68	503
Highest Trial	68	68	68	626

Table 10. Average Growth Rate in 11 Years

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	4.0	6.4	2.3	12.8
10th percentile	12.1	11.5	7.4	16.2
25th percentile	15.4	13.1	8.5	18.0
Median Trial	18.6	15.5	11.7	19.3
75th percentile	21.1	18.0	13.5	20.7
90th percentile	23.4	20.9	15.6	22.2
Highest Trial	30.5	24.3	20.3	24.9

Table 11. Totals in 11 Years -- Gathered

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	42	60	61	0
10th percentile	73	79	96	0
25th percentile	78	82	98	0
Median Trial	88	87	114	0
75th percentile	102	96	136	0
90th percentile	108	108	140	0
Highest Trial	133	121	177	0

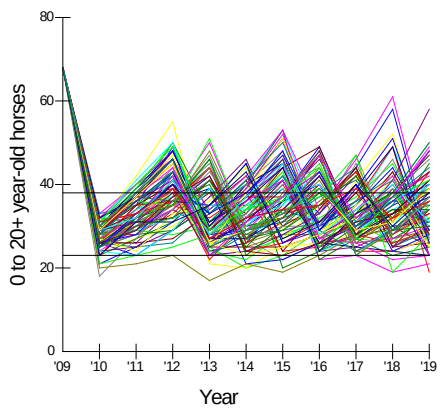
Table 12. Totals in 11 Years -- Removed

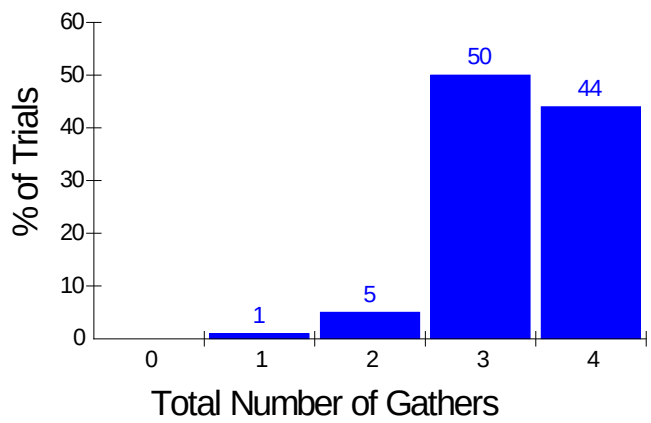
Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	40	51	43	0
10th percentile	70	69	55	0
25th percentile	76	72	58	0
Median Trial	84	76	66	0
75th percentile	97	84	75	0
90th percentile	104	94	79	0
Highest Trial	128	105	93	0

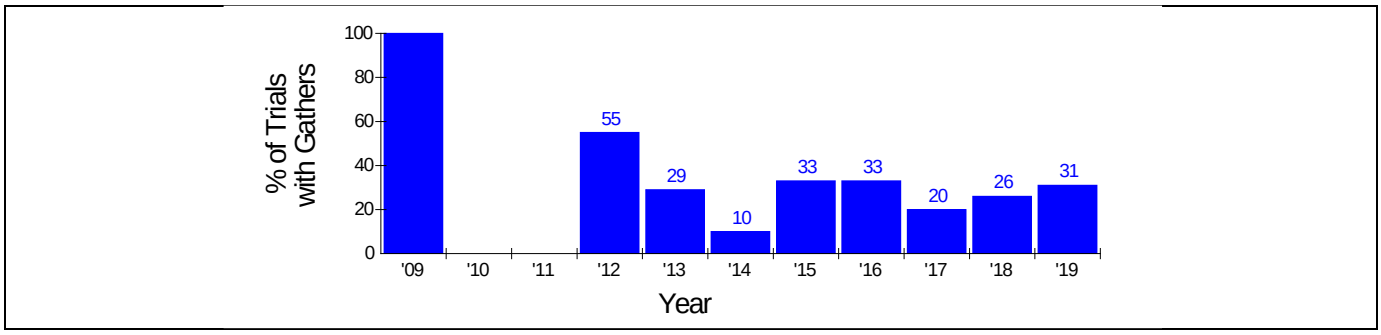
Table 13. Totals in 11 Years -- Treated

Trial	Alternative			
	Proposed Action	Alternative 1	Alternative 2	No Action
Lowest Trial	0	0	6	0
10th percentile	0	0	10	0
25th percentile	0	0	12	0
Median Trial	0	0	18	0
75th percentile	0	0	23	0
90th percentile	0	0	25	0
Highest Trial	0	0	43	0

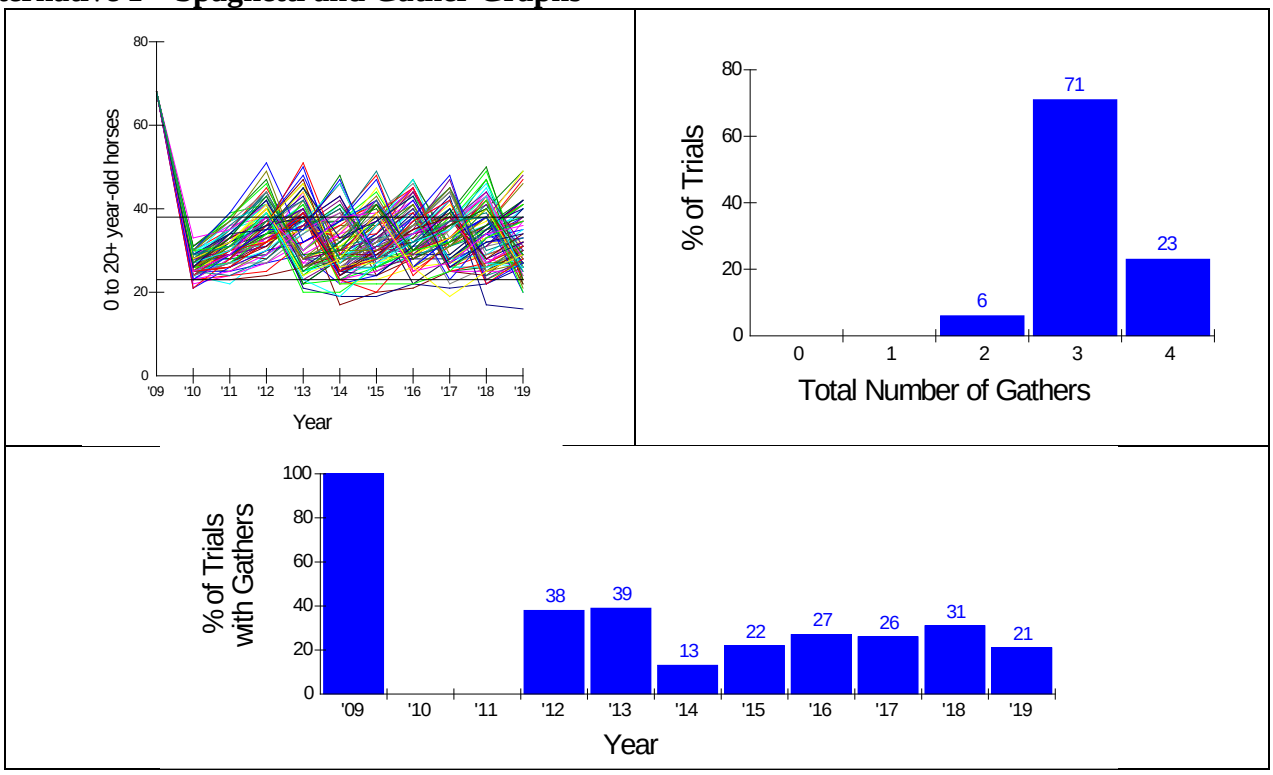
Proposed Action – Spaghetti and Gather Graphs



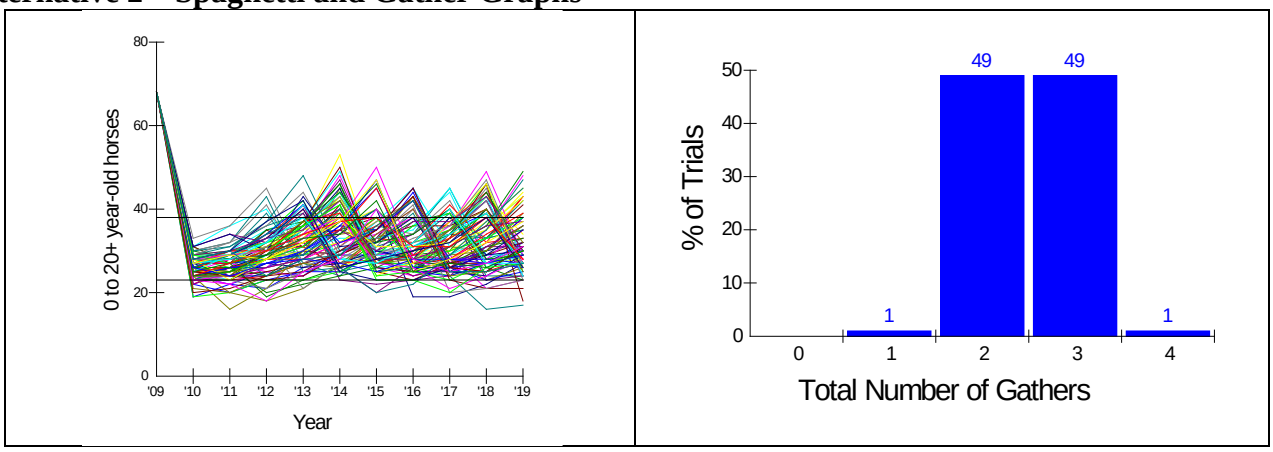


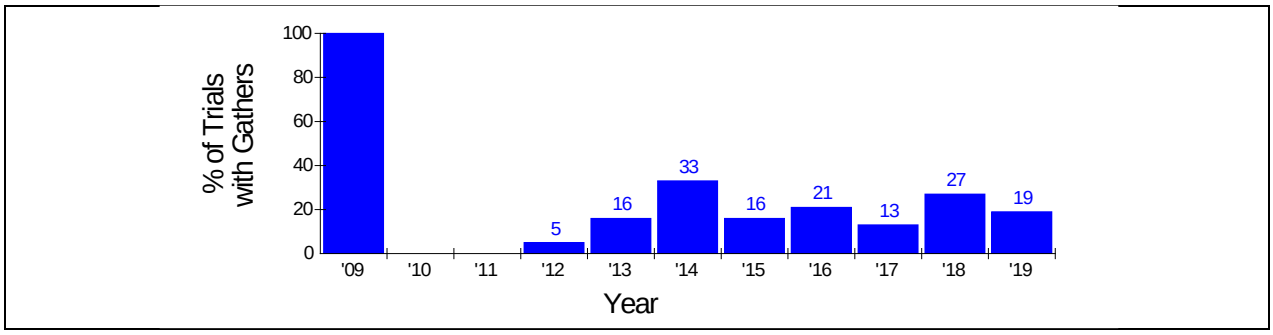


Alternative 1 – Spaghetti and Gather Graphs



Alternative 2 – Spaghetti and Gather Graphs





No Action – Montezuma Peak HMA

Table 14. Montezuma Peak HMA– No Action Population Sizes in 11 Years

Trial	Minimum	Average	Maximum
Lowest Trial	73	159	291
10th percentile	81	187	362
25th percentile	81	206	405
Median Trial	81	222	464
75th percentile	81	238	509
90th percentile	81	257	566
Highest Trial	81	313	775

Table 15. Montezuma Peak HMA– Average Growth Rates in 10 Years

Trial	Percent
Lowest Trial	13.6
10th percentile	16.2
25th percentile	17.5
Median Trial	19.1
75th percentile	20.1
90th percentile	21.5
Highest Trial	25.3

Appendix E: 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 Freunds Modified Adjuvant (FMA). The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid or pellets would be injected into the left hind quarters of the mare, above the imaginary line that connects the point of the hip (hook bone) and the point of the buttocks (pin bone).
5. In the future, the vaccine may be administered remotely using an approved long range darting protocol and delivery system if or when that technology is developed.
6. All treated mares will be freeze-marked on the hip or neck HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.

Monitoring and Tracking of Treatments:

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

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

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

Injecting the hip of the mare with the jabstick

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

Appendix F: Response to Public Scoping Comments

In excess of 3,000 comments were received via letters, emails or phone calls to the Tonopah Field Office. Comments were received from individuals, various organizations and agencies. The overwhelming majority of these comments were fashioned from a mass form letter from an animal welfare organization. These "form letters" were reviewed and considered, however, only yielded 5 distinct comments. Several other comments were reviewed and considered, resulting in 58 responses to comments.

Most comments reviewed fell among but were not limited to the following themes:
Support the action/promote balance with limited resources
Herd growth/animal numbers incorrect
Post-gather population's genetic health
Appropriate management levels are too low
Affected environment/monitoring data
Concerns/effects/results of fertility control
Outside of scope of analysis
Viewpoint/matter of opinion
Concerns/effects of use of helicopters
Concerns/effects of Long Term Pastures
Concern on population modeling program
Develop water/range improvements

No.	Commenter	Comment	BLM Response
1	Nevada Department of Wildlife	The Nevada Department of Wildlife supports the proposed gather intended to restore the Montezuma Peak and Paymaster herd management areas to a thriving natural ecological balance.	Comment noted.
2	Nancy Boland, Esmeralda County Commissioner, District 2.	I support this action. It will benefit the health and well being of the horse and burros by reducing their numbers to be in balance with the available feed and water. The Montezuma Allotment is close to completely void of feed for cattle or horses in many places and reducing the wild herd numbers may allow for beneficial vegetation to gain a foothold and eventually return.	Comment noted.
3	Individuals	The proposed gather risks the genetic health of these herds, by reducing the herd numbers to unsustainable levels. Inbreeding will occur.	Refer to Section 3.2 and Appendix B of the Gather EA. Also refer to the Montezuma Allotment Rangeland Health Evaluation (RHE) (2007) and Final Multiple Use Decision (FMUD) for the Montezuma Complex (2007) which addresses the genetic health of these two HMAs.
4	Individuals	BLM is required to consider the "related social and economic effects of their proposed actions." Accordingly the Environmental Assessment (EA) must analyze the social response/impact to the Proposed Action, any and all alternatives that can achieve the goal of maintaining a "thriving ecological balance," and the economic effects of the Proposed Action.	The BLM has made the determination that excess wild horses and burros are present and require immediate removal consistent with the authority provided in the Wild Free Roaming Horses and Burros Act (WFRHBA). The alternatives were identified so as to achieve the purpose and need. The EA analyzes potential impacts of the proposed action and alternatives in Chapter 3 of the EA
5	Individuals	The EA states that scarce water resources	Many of these springs are not located within

No.	Commenter	Comment	BLM Response
		justify such low wild horse and burro numbers . . . . just six of 24 springs in the gather area are known to be properly functioning. BLM should undertake a program of range enhancement, including ecologically sound restoration of springs and protection of spring heads, on this range as an alternative to inhumane and costly wild horse and burro roundups.	the HMA boundaries. Also, many of the springs are not accessible to wild horses due to topography. Video cameras set up at some springs in the Paymaster HMA show no use by wild horses of these springs at all. The BLM will continue to manage springs for riparian health and improve water sources where appropriate and practical. Waters are inherently sparse within both HMAs and developing or improving a few small sources would not resolve all water issues or preclude the need for BLM to remove excess wild horses and burros. Lack of appropriate forage adequate to support wild horses was also a reason for the conservative AMLs in these HMAs, especially for Montezuma Paymaster HMA.
6	Individuals	As a part of the "human environment" it is imperative that public opposition to the Proposed Action and the negative social impacts be considered, analyzed and included in the EA.	This comment is outside the scope of this analysis to the extent it conflicts with BLM's statutory mandates. The BLM has made the determination that excess wild horses and burros are present and require immediate removal consistent with the authority provided in the WFRHBA. The BLM has not identified any significant impacts associated with the proposed gather and removal, and the post-gather estimated population size between the two HMAs will be 26 wild horses and 10 wild burros. Based on the BLM's analysis, the population will be allowed to grow over the next 3-5 years, before another gather to remove excess WHB is needed. Interested public will continue to have the opportunity to enjoy the Montezuma and Paymaster HMA wild horses now and into the future.
7	Individuals	By removing wild horses from these HMAs and failing to conduct on-the-range management to control populations, the BLM ignores viable alternatives available.	Refer to section 2.3.2 of the EA for an explanation of why possible on-the-range population control was not feasible to address the excess wild horse and burro population for the HMAs. No viable alternatives were recommended by the interested public during scoping or during the 30 day comment period.
8	Safari Club International and Safari Club International Foundation	Safari Club fully supports the Proposed Action. This alternative will allow the Bureau to satisfy its statutory duties in regard to managing wild and free-roaming horses and burros on public lands, while protecting other important resources of the area. Safari Club supports continued sustainable and well-regulated hunting on and near the Montezuma Peak and Paymaster HMAs and surrounding areas. We particularly support the proposed action as it helps ensure a	Comments noted.

No.	Commenter	Comment	BLM Response
		thriving ecological balance where all wildlife, including horses, burros, game species, and non-game species, can exist.	
9	Safari Club International and Safari Club International Foundation	The EA thoroughly analyzes all the relevant issues and ensures that the Bureau will continue to consider alternatives to and the environmental consequences of the decision being made. (This comment letter is lengthy, the following statements summarize the content) • The Bureau Has Analyzed a Reasonable Range of Alternatives • The Disposition of Excess Horses Post-Gather Was Properly Not Part of the • Decision to be Made Here, Requiring only Consideration of Indirect Impacts on the • Horses Post-Gather • The Montezuma Peak and Paymaster EA Acknowledges that the Ecosystem • Damage from Excess Horses and Burros Harms Other Wildlife • The Montezuma Peak and Paymaster Gather EA Meets All NEPA Standards • FLPMA Provides Additional Authority for the Gather Faced with a serious problem of excessive numbers of wild horses and burros on the Montezuma Peak and Paymaster HMAs, the Bureau has prepared an excellent EA that analyzes the problem, the alternatives to address the problem, and the consequences of various alternatives. By doing so, the Bureau is fully informed of the environmental consequences of its proposed action. The Bureau should adopt the proposed action as its final action and commence the planned gather.	Comments noted.
10	Cindy McDonald	I participated and provided comments in the MUD for the Montezuma Peak Complex . . . let me reiterate the same points made back then.	These comments are outside the scope of this analysis. Comments will be briefly responded to as a courtesy.
11	Cindy McDonald	BLM stated in its evaluation that there is limited grasses available for wild horse use yet the grass species, galleta, was cited as often grazed, very resistant to grazing, and in the few instances BLM provided information on this grass species, indicated that PNC and frequency was quite high with upward trends,	The TFO analyzed extensive data, available forage determination and wild horse and burro issues within both HMAs in the Montezuma Complex Rangeland Health Evaluation, available at the TFO. Refer to the discussions in Section 3.3.6 of the Montezuma Complex EA NV065-2005-

No.	Commenter	Comment	BLM Response
		especially so in areas that had not been grazed by cattle. The fact that this key grass species was curiously absent from most monitoring reports, utilization levels, trends, etc., while citing this as a primary reason due to lack of this same grass in order to issue a zero AML for the Montezuma's Allotment without providing any relative or current information on this key species, continues to be questionable at best and a failure to conform to best management practices.	042. The primary reasons for the AMLs established for these two HMAs were scarcity of forage and water. This was due to not only the inherently low producing soils of the arid, hot desert environment, but also the highly variable precipitation, frequency of drought and past over use by wild horses in some cases livestock and to a lesser extent wild burros. Extensive discussion was included in the RHE pertaining to the issues in these HMAs and determining an AML. Because the current Tonopah Resource Management Plan (RMP) does not designate the Montezuma Peak HMA for use by burros, no AUMs could be allocated to burros. The HMA was not "zeroed out", or reverted to Herd Area status. This issue will be addressed when the RMP is revised, which will consider increasing the burros allocated within the Montezuma Peak HMA. The HMA is not suitable to wild horses due to the lack of grasses and the dominance of shrub vegetation. As described during the Rangeland Health Evaluation process, "Grass makes up only ten percent or less of the total vegetative production throughout the HMA".
12	Cindy McDonald	. . . at that time, BLM stated that the current AMLs are too high due to current utilization levels but no current populations were provided to reflect what populations were at the time of the RHA and MUD EA. A chart was included with population estimates but no date is included to indicate at which point in time these reflect wild horse and burro populations. How did BLM determine wild horse and burro populations were excessive without providing a population figure to support that determination? Furthermore, how does BLMs failure to report those population levels to the public during the MUD process conform with NEPA requirements?	Historical inventory and Actual Use data was available in the Montezuma Complex Rangeland Health Evaluation available at the TFO. The adjustments to AML were made following the analysis of climate, vegetation, inventory and water data, which concluded that water and forage were scarce within the Montezuma Allotment portion of the Montezuma and Paymaster HMAs. This data was used to determine how many animals could be supported within the Montezuma Allotment portion of the HMAs. Conservative AMLs were established to protect animal and rangeland health. .
13	Cindy McDonald	During the 2007 RHA process, I had request BLM provide the current number of horses cited as causing excess utilization while BLM failed completely to cite any "excess" use by wild burros whatsoever – despite reducing AMLs for the wild burro population in the Montezuma's Peak FMUD. Please provide in this gather proposal what BLM published in the 2007 FMUD as the current inventory of what the wild horse and burro population was censused at when they issued	AMLs were established through prior public decision-making processes following the analysis of all available data, which determined how many wild horses could be supported in these areas (as burros are not allocated to either HMA in the Tonopah RMP).

No.	Commenter	Comment	BLM Response
		these new AMLs for the Montezuma's Peak Complex.	
14	Cindy McDonald	The BLM also used pictures of starving pictures of wild horses after the 1996 emergency drought removals to justify why these areas are not suitable for wild horse use. Yet the population levels at that time far exceeded the current AMLs and the horrendous conditions of the wild horses were merely a result of BLM failing to properly manage them in thriving ecological balance with other rangeland users and resources. BLMs failure to keep wild horse populations within the parameters of AML was not justification to reduce current AMLs. All it shows is that AMLs cannot be established at those population levels.	The TFO analyzed all available data concerning the history of these HMAs, known issues, forage and water data and historical gather data to assess these areas for suitability of wild horses and determine AMLs. The RHE and EA for the Montezuma Complex involve extensive discussion. The photos were provided as documentation of animal condition during the previous gathers. In 1996, 101 wild horses and 1 burro were removed during the emergency gather of the Montezuma Peak area. Currently, there are an estimated 152 wild horses and burros within and outside of the HMA. Refer to comments11, 12 and 13 above pertaining to AML establishment.
15	Cindy McDonald	At the time BLM issued the RHA for the Montezuma's Peak HMA, the only rangeland health data provided regarding forage utilization was by making a blanket statement that allowable levels on Indian ricegrass had been exceeded back in the early 1990's. According to the 2007 RHA, that was the only time BLM measured Indian ricegrass in the HMA. BLM also went on to state that the largest two allotments in the Complex, Montezuma and Razorback, received little to no use by livestock between 1991 and 2007 and cited this reason as the reason no recent or current use pattern map data were collected, analyzed or provided for public review on these two allotments in the RHA. How then did BLM determine the areas are unsuitable for wild horse and burro use if no data had been collected and nothing had been analyzed since the "90's"?	The BLM analyzed available data such as utilization, wild horse and burro inventory, wild horse and burro history and health, actual use, Functioning Condition Riparian Assessments, Trend, Production and Ecological Site Inventory in the Montezuma Complex Rangeland Health Evaluation. Current information supports the established AMLs for these HMAs, and habitat conditions remain a limiting factor. Also refer to responses 11, 12, 13, and 14 above.
16	Cindy McDonald	BLM also stated, "There are several water sources available to Paymaster wild horses, but few of them are located within the boundaries of the HMA. This fact, combined with little forage on the HMA, makes managing for horses within the boundaries very difficult, and makes future management of the herd questionable". Why did the BLM draw HMA boundaries and declared them "suitable" for long term management and granted them HMA status if the "several water sources" were all located outside the boundaries BLM determined were "suitable" for management [sic]? How did BLM "approve" of this HMA as suitable for wild horse use during the creation of the HMAs if the water sources were outside the HMAs?	When Herd Area boundaries were originally delineated in the 1970's little detail was known about these areas. The intent was to identify where wild horses or burros were located when the Act passed. Still, when the 1997 RMP was approved, the character of the habitat was not fully understood, as most of the wild horses had been removed from the Montezuma Peak HMA in 1996, and a large gather has been completed of the Paymaster HMA in 1992. During the extensive analysis completed for the Montezuma Complex Rangeland Health Evaluation and other Allotment Evaluations and RHEs completed between 1999-2007, it became clear that these areas could not support healthy populations of large

No.	Commenter	Comment	BLM Response
			numbers of wild horses into the long term. Therefore, these areas will be further addressed in the future revision of the RMP with the new data and analysis that has been compiled. Additionally, information about genetic variability has increased since early 2000, information which was not available when Herd Areas were delineated or when the Tonopah RMP was approved in 1997.
17	Cindy McDonald	In the 2007 MUD EA, BLM stated that, "Subsequently, in November 1996, another 56 wild horses were removed from Montezuma Peak HMA. No wild horses were left in the HMA after the gathers in 1996. Today, several small bands of wild horses reside in the HMA." So why do the wild horses, who depend on available resources, think the Montezuma Peak HMA is suitable for living due to habitat conditions, which is why they came back, but the BLM does not? Doesn't the obvious fact that wild horses migrated back into the HMA reflect an obvious inconsistency with BLMs public reporting of its rangeland health analysis in comparison to what wild horses think is suitable habitat?	At the time, it was assumed that all wild horses had been removed, but experience has shown us that it is likely that wild horses and burros remained in the Montezuma Peak HMA following the emergency gather in 1996. Montezuma Peak HMA has not been gathered since the emergency gather in 1996. Factoring a 16% annual rate of increase, there would have only been 10 horses and 9 burros left in or near the HMA in 1996 to have increased to the population documented in the area in February 2010. It is certainly feasible that these few animals were "missed" during the 1996 gather. Some may have moved from Paymaster HMA. HMAs in Esmeralda County all reflect very poor habitat for wild horses, consisting of scant water and sparse forage. If movement has occurred into the Montezuma Peak area, it would likely be due to high populations in the neighboring Paymaster HMA area, and the equalizing of populations between the HMAs as wild horses move in an attempt to leave areas of higher concentration and competition to areas of lower competition. Burros have been known to travel back and forth between Goldfield and Montezuma Peak HMAs. The fact that up to 70% of the current population has been documented outside of HMA boundaries is evidence that insufficient habitat exists within the HMAs.
18	Cindy McDonald	Now BLM is stating they are migrating back outside the HMA. Did BLM drive the horses outside the HMA, install new fencing since then, turn off water sources or choke the land with Temporary Grazing Permits to push them outside of the HMA boundaries?	Wild horses maintaining presence outside of the Paymaster and Montezuma Peak HMAs has been documented for many, many years. Refer to the documents identified in Section 1.7 of the Montezuma and Paymaster HMA Gather EA. No horses have been driven outside of the HMAs. Fences have not been constructed, and livestock grazing has been permitted in accordance with the FMUDs for these allotments (refer to Section 1.7 of

No.	Commenter	Comment	BLM Response
			the EA). Also refer to Section 3.3 of the EA for more information about the livestock use in the HMAs.
19	Cindy McDonald	Please provide a complete list of all projects that have impacted the Montezuma Peak and Paymaster HMAs, including fencing, whether permanent, drift or temporary, all Temporary Non- Renewable Grazing Permits issued since 1996, as this is when BLM claimed they stopped permanent grazing in the RHA but continued to issued TNR's for livestock use, and whether any activities such as hunting, off road vehicles, mining and/or exploration, geothermal activities, etc. that have been present in or adjacent to the HMAs since BLM issued the 2007 FMUD as this is when BLM had reported wild horses had migrated back into the HMA but by 2010 BLM is now claiming they have migrated back out again.	Outside of the scope. Refer to documents identified in Section 1.7 of the EA and Section 3.3 of the EA. BLM analyzed historical wild horse and burro movement patterns in the Montezuma Complex Rangeland Health Evaluation (available from the TFO) when it established the AML. This comment mischaracterizes discussions of wild horse movement, BLM did not state that wild horses migrated back into the HMAs in 2007. Wild horses and burros have long been known to exist outside of HMA boundaries, particularly between the two HMAs and are known to move in and out of HMA boundaries in response to climate factors, and availability of forage and water in relation to the population size. Refer to response to other comments above.
20	Cindy McDonald	Additionally, BLM used a four mile buffer zone around water sources to compute available habitat within the HMAs evaluated in the Montezuma's Peak Complex MUD. As I stated then, and will state now, this is inconsistent with known wild horse and burro migration and foraging patterns. BLM severely shortened the distance to water in order to justify reductions in AMLs that have no data or literature to support this parameter. Can BLM refute this with peerreviewed [sic] literature versus BLM wild claims of "insufficient habitat"?	At its widest points, the Montezuma Peak HMA is only about 7 miles wide and 20 miles long. Through the Montezuma Complex RHE, it was determined that the northern 73% of the HMA had some waters available, but that the southern 27% does not. The southern 27% of the HMA diagramed in the RHE is only about 6 miles wide by 7 miles long. The four mile buffer was used as a reasonable average of estimated travelling distance for healthy populations of wild horses and burros. Any farther apart than 4 miles would be outside of the HMA in most cases. Waters outside of the HMA boundaries were not considered, and no waters exist within the HMA in the southern portion. The RHE stated that if waters could be developed, then additional AUMs could be allocated to wild burros.
21	Cindy McDonald	BLM repeatedly cites in the proposal that they are obligated to remove wild horse and burro populations to achieve established AMLs to maintain the thriving natural ecological balance. However, BLM could not provide current rangeland health data, utilization levels, use pattern maps, water sources or water flow data regarding wild horse and burro use within those areas covered by the Montezuma's Complex FMUD in 2007 or how they made the determination that wild horse and burro use	Refer to comment 15 above. No livestock was allocated within the Montezuma Allotment portion of either HMA. No data or other information available indicates that an increase to the AMLs within the Paymaster or Montezuma HMAs is warranted.

No.	Commenter	Comment	BLM Response
		was considered comparable with other resources in the area.	
22	Cindy McDonald	The AML objectives BLM is seeking to achieve in this proposal failed to conform to Code of Federal Regulations outlining the requirements BLM must use to establish those AMLs. Therefore, the AMLs are invalid by default because BLM failed to follow appropriate rangeland monitoring and this was clearly reflected in the decision-making processes that led up to the FMUD.	Refer to Responses 11, 12, and 13, 14, and 15 pertaining to establishment of AML in these HMAs. A comprehensive analysis of forage and water was completed within the Montezuma Complex Rangeland Health Evaluation which led to the establishment of AML. No burros are currently allocated to either HMA in the Tonopah RMP, which will be re-addressed in the future RMP revision.
23	Cindy McDonald	Finally, the Montezuma Complex FMUD clearly stated that wild horses and burros would not be removed until the release of the pending Resource Management Plan. The BLM has failed to release the RMP but still intends to reduce wild horse and burro populations to their nonsubstantiated level, despite the FMUD incorporating a non-removal policy within its decision record.	This statement is not correct. The Wild Horse and Burro Management Decision in the Montezuma Complex FMUD states that a "revision to the RMP, potentially scheduled for approximately 2009 will address this issue", There was no "non-removal policy" in the FMUD. The Battle Mountain District has been planning for a RMP revision for many years, and is still planning to complete one in the next few years dependent upon available staffing and funding.
24	Stephanie Kalfayan	What will happen to the 182 excess wild horses and burros that are removed from this area? Will they be relocated? Has the BLM considered birth control? I feel the most humane thing to do would be to relocate and use birth control. I believe it is cruel to kill the wild horse or sell it for human consumption.	Refer to Section 2.1, 3.2 and Appendix A of the EA. Also refer to description of Alternative 2 at 2.2.3 and Section 2.3.2. The BLM cannot relocate animals to areas where they did not exist when the WFRHBA passed. Nor can the TFO relocate these animals to another HMA because most of them have populations of wild horses or burros that are in excess of the established AMLs. Vacant HMAs or HMAs with few animals are inherently so due to lack of water or forage. The BLM does not euthanize (or otherwise destroy) healthy wild horses and does not sell them to slaughter.
25	Shirley VerHoef	If there is enough water available to sustain thousands of heliostats, surely there is enough to support our national heritage, the WILD HORSES. So, I am to believe that the desert tortoise is more important!! I know that energy is important, but there must be a way to accommodate both entities.	This comment falls outside of the scope of the analysis.
26	Betty Foreman	Really? One horse left? That is foolish. If there is water enough for cattle, which you are not tasked by law to preserve, surely there is water enough for horses and burros which you ARE TASKED TO PRESERVE! If there are healthy springs there, you can	Between both HMAs, the post-gather population goal is 26 wild horses and 10 wild burros. There are no cattle AUMs allocated within the Montezuma Peak or Paymaster HMA portions of the Montezuma Allotment, and very, very little livestock use

No.	Commenter	Comment	BLM Response
		develop and improve those springs for far less than the cost of a round up. Those springs could be developed to water both cows and horses as well as the other wild life in the area. Ridding the land of horses and leaving a single wild horse out there is nothing short of criminal. Shame on you! Develop the water that is there and manage the herds to preserve and protect them and the land	occurs within either HMA. Refer to Section 3.3 of the Gather EA for more information. These areas are very dry, with less than 4 inches of precipitation received in the Magruder Mountain area. Springs are limited and existing ones produce very little. The BLM cannot develop water that does not exist. It is not consistent with the requirements of the WFRHBA to conduct management activities "at the minimal feasible level" by installing expensive wells and other artificial water systems that would require long term, continual maintenance. Forage is one of the key factors for determining that the Montezuma Peak HMA is not suitable for wild horses. The Magruder Allotment portion of the HMA has an AML of 3 horses and 10 burros. That is the basis for the existing AML.
27	Individuals	I urge BLM to utilize its "adaptive management" policy to amend land use planning documents accordingly. The agency's multiple use mandate does not require livestock grazing. The Proposed Action should be postponed while such a process is undertaken.	The WFRHBA requires that the BLM remove excess wild horses immediately, thus adaptive management is not appropriate. Future management strategies will be identified during revision of the RMP and completion of an HMAP for these HMAs with public input. The Tonopah RMP cannot be modified through adaptive management. An RMP revision would be required and is currently planned for completion within the next 4 years. Livestock grazing is identified as a "principle or major use" under the multiple use mandate of the Federal Land Policy and Management Act of 1976 (Public Law 94-579).
28	Individuals	The EA must include …. a detailed economic analysis of the long- and short-term costs associated with the capture, removal and warehousing of these horses, and a full consideration of the impacts of capture, removal and warehousing on the horses taken from the range.	An economics analysis of the costs of compliance with the WFRHBA falls outside the scope of the EA analysis. The BLM has made the determination that excess wild horses are present and require immediate removal under the WFRHBA. Refer to the Final EA Section 3.2 for discussion of potential impacts of the proposed gather.
29	Individuals	The Proposed Action must be tabled until all alternatives and impacts are adequately evaluated.	The EA analyzed three alternatives and the No Action Alternative. Additionally, five other Alternatives were considered and eliminated from detailed analysis in Section 2.3. Impacts of the proposed gather are detailed under each resource in Chapter 3, and in the Cumulative Impacts Analysis in Chapter 4.
30	Marybeth Devlin	The EA was completed without Herd Management Area (HMA) plans in place. The Nevada Department of Wildlife (NDOW) advised BLM that it is "very much	Response to Comments received from the initial scoping letter were addressed in an Appendix at the end of the document, as they are being addressed here. The TFO

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		concerned that rationale presented are in the absence of cohesive and focused HMA plans for the Montezuma and Paymaster units." BLM brushed aside this deficiency, however, saying it will formulate such plans "in the coming years." BLM relegated the NDOW's comments to the bottom of the stack -- burying them on page 112.	responded to and considered all comments received. A Herd Management Area Plan is not required prior to completing a gather to remove excess wild horses or burros12.
31	Marybeth Devlin	The EA makes use of feral horse population growth estimates, which it derives by running simulation trials through a software program. However, the software in question is not designed to be run for small herd sizes such as those to be left in the Montezuma Peak and Paymaster HMAs. Therefore the resulting projections are questioned. BLM knows that it is inappropriate to use the software program in such cases but does so anyway, thereby invalidating its own conclusions.	The WinEquus population model is a tool to assist wild horse and burro specialists evaluate various management plans and display the possible outcomes for management of wild horses. That was the purpose for the use of the model to display the relative outcomes for the various alternatives for the Paymaster HMA. The model was not used for the Montezuma Peak HMA.
32	Marybeth Devlin	BLM would have us believe that these HMAs, which encompass more than 175,000 acres, can support just 26 horses and 10 burros. These figures are presented as "appropriate management levels" (AMLs). Moreover, the remaining 26 horses are not members of one band but scattered into small units -- microcosms including one area assigned just three horses and another with just one horse.	The table in Section 1.2 displays the AML by allotment for each HMA, which is how the AMLs were established. The AML for each HMA is the total of these numbers. There are no fences in most of these areas and wild horses and burros are allowed to move throughout the HMAs. In many cases, the allotments comprised a very small portion of the HMA (refer to Section 3.3) and thus reflect a very small allocation to the wild horses or burros. Refer to the documents identified in Section 1.7 and Responses to comments 11-15, and 22, above pertaining to how AMLs were established in these HMAs.
33	Marybeth Devlin	BLM acknowledges the possibility that natural mortality could mean the complete loss of the mere three horses it plans to leave in the Montezuma Peak area. BLM assures us it would address this problem in "future HMA planning" and, in the meantime, would just relocate horses from other HMAs to replace those lost. And anyway, BLM also indicates that it may ban horses entirely from these HMAs and allow only burros.	The TFO completed comprehensive analysis of these HMAs in the Montezuma Complex RHE. Due to the arid climate, history of animal distribution and health an low production of suitable forage and sparse waters, it was determined that the Montezuma Peak and Paymaster HMAs were not suitable for large numbers of wild horses and burros, and in the case of Montezuma Peak HMA, not suitable to management of wild horses at all. The TFO completed an appropriate analysis to assess

12. The Interior Board of Land Appeals (IBLA) has ruled "...that it is not necessary that BLM prepare an HMAP as a basis for ordering the removal of wild horses, so long as the record otherwise substantiates compliance with the statute. Indeed, 43 CFR 4710.3-1 does not require preparation of an HMAP as a prerequisite for a removal action. Thus, we are not persuaded that preparation of an HMAP must in all cases precede the removal of wild horses from an HMA/WHT, and decline to order preparation of HMAP's." (IBLA 88-591, 88-638, 88-648, 88 679, at 127).

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			the issues with these HMAs and will continue to complete appropriate analysis in the RMP revision to ensure "self sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat" per 43 CFR 4700.06 (a). This may mean that in the future, some of the TFO HMAs are no longer administered for use by any wild horses or burros, some managed for only wild burros, and others managed for wild horses. Future decisions regarding these HMAs will occur only after a public scoping process, appropriate NEPA documentation, and public involvement in BLM's decision-making process.
34	Marybeth Devlin	BLM considers implementing further population control measures on those few horses allowed to stay, such as manipulating the sex ratio to favor non-producing stallions and administering long-acting contraceptives to the lowered percentage of mares. A herd consisting of only 26 animals cannot achieve a self-sustaining, genetically viable population as it is, without the added birth control measures. Indeed, in another recent EA, BLM cited 150-200 individuals as the minimum level necessary to prevent loss of diversity. Even that many may not be enough. BLM has already noted a high incidence of limb malformations in horses from these areas.	The BLM has acknowledged genetic health concerns of these wild horses and burros in the Montezuma Complex RHE, and FMUD. Through the assessment of all available data, the TFO determined that neither HMA could support large numbers of wild horses or burros. Refer to response 3 above. Neither the WFRHBA nor the Code of Federal Regulations requires the BLM to maintain genetically "viable" populations, especially where the habitat conditions are a limiting factor to wild horse population size.
35	Marybeth Devlin	BLM meddles with natural selection by choosing which animals will be allowed to breed and castrating or euthanizing those deemed undesirable. Thus, human preference regarding the horses' age, sex, and conformation is the driving factor rather than an individual animal's proven ability to survive and thrive in the wild.	The proposed gather does not involve castration. The BLM does not euthanize "undesirable" animals. Refer to Section 2.2 for more detail about the Proposed Action. The objective would be to remove all wild horses and burros from outside of the HMA boundaries, leaving the desired number of wild horses and burros in the HMAs undisturbed. As discussed in Section 2.2.2, under Alternative 1, "Wild horses to be released would be selected for body condition and overall health. Weak, or unthrifty animals would not be selected for release back into the HMA".
36	Marybeth Devlin	BLM describes the wild horses as small in stature and thus well-suited for life in low-quality habitats. But then BLM boasts that its drastic reduction of the herd will lead to larger foals -- which we assume will be less likely to do well on limited forage, once again reflecting man's preference but not nature's. The subject herds are truly endangered and on their way to extinction if BLM is allowed to proceed with its plans.	The statements in the EA refer to the body size as an indication of health and strength and do not refer to the animal's genetic potential to reach a certain size. Experience has shown that over-population and lack of adequate forage and water results in small, weak and unthrifty foals. Healthy animals have the best opportunity for long term success on the range particularly in these harsh environmental conditions.

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			According to research conducted by Joel Berger*13*.on the Granite Range of Nevada in the early 1980's, many factors affect wild horse population dynamics, reproductive success, and overall success on the range through harsh winters and drought summers. The research determined that foals raised in better range conditions suckled longer as foals, matured to puberty faster, and attained "critical body mass" sooner than those raised on poorer quality ranges. Berger states ". . . females that occupied better home-range areas produced more offspring; those offspring then suckled longer and grew faster. Experience has also shown that despite low numbers after a gather, these populations continue to thrive and increase. There is no evidence to suggest that these herds will go extinct. The Battle Mountain District administers 28 HMAs with a total population of over 4,300 wild horses and burros.
37	Marybeth Devlin	BLM treats the horses as interlopers and the cattle as constituents. The horses are described as "wild" but not treated as wildlife. Despite having the clear authority per 43 CFR 4710.5(a) to close livestock grazing on areas of public lands if necessary to provide habitat for wild horses or burros, BLM declines to avail itself of this -- or any other -- option. Instead, it repeatedly cites the need to strictly comply with 43 CFR 4720.1 and effect the immediate removal of "excess" wild horses. This supposed excess horse population, along with the need to deal with it, are creations of BLM's own invention -- excuses to reduce an excess that does not exist. BLM sets the AML at a drastically low level, declares an excess, and then decimates the herd.	Wild horses and burros are managed per the WFRHBA, FLPMA and the Code of Federal Regulations. Under these statutes they are not defined as wildlife which are owned and managed by the State of Nevada, not the BLM. The BLM manages the habitat for wildlife. Refer to Section 3.3 of the EA. In contrast to wildlife, BLM manages wild horses under the WFRHBA, not the State of Nevada. Very little livestock use is permitted or occurs within either HMA. Closure of these HMAs to the little livestock use that occurs would not preclude the need to conduct a gather to remove excess wild horses and burros. Refer to responses 11-15 and 22 for information about how AML was established within these HMAs.
38	Marybeth Devlin	Roundups and removals of wild horses appear to be BLM's sole strategy of managing the rangeland, its vegetation, and its water resources. The EA reflects, however, that past livestock management, stocking rates, and trespass by those livestock were the primary factors leading to the degradation of the range. Indeed, in a	The Magruder Mountain rain gauge reflects an average annual precipitation of 3.51 inches. The Tonopah rain gauge reflects just 5.08 inches annually. Due to the arid nature of the habitat and limited resources, few types of improvements would be possible that could allow increases in the AML at this time. Improvement of these

13. Berger, J. 1986. Wild Horses of the Great Basin, The University of Chicago Press, Chicago. 326 pp.

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		rare act, BLM significantly reduced the allotment of cattle in 2007. But merely taking animals off the range does not constitute range management. If BLM truly aims to manage for multiple use, it must not remain inactive while native forage species such as Indian ricegrass are displaced by invasive scourges such as Cheatgrass. BLM reactively removes grazing animals but does not proactively institute forage recovery measures, such as reseeding native plants or relocating the horses within the HMAs on a range-rotation basis. BLM needs to redress this matter and formulate a corrective action plan that provides for range-pasture management and water site development consistent with the multiple-use objective. It is not acceptable to blame and, in effect, punish the wild horses when the real culprits are past livestock damage and BLM's inaction regarding restoring the indigenous vegetation and enhancing the productive capacity of water resources.	areas through seedings or other work would be very costly with little chance of success due to the low rainfall received in the area and the inherent potential of the soils. As discussed in Section 3.5 and Appendix C, these HMAs are inherently low producing due to the precipitation and the soils. The potential is not present to produce hundreds of pounds per acre of grasses. Managing wild horses or burros on a rotational basis within the HMAs would not be consistent with the requirements of the WFRHBA to maintain free roaming behavior and manage populations at the minimum feasible level. While livestock can be confined to and rotated between various pastures as part of a grazing system, wild horses move freely and are not confined to specific areas within an HMA.
39	Marybeth Devlin	BLM's use of helicopters to chase the horses is inhumane and outdated. The horses are terrified by the noise and commotion involved. They stampede, injure themselves, and become separated from their babies and bandmates. Many die from stress, even more are euthanized. BLM is stuck in the 70's, which is when they started using this cruel but "practical" approach. Per standard operating procedures, a veterinarian may be present if large numbers of horses are deemed in need of euthanasia. But otherwise contractor staff may be required to put down horses and dispose of their carcasses.	Refer to additional discussion in Section 3.2 and Appendix A of the EA. Wild horses and burros do not stampede into capture corrals. During normally scheduled gathers (that do not result from emergencies or involve unhealthy animals), animals euthanized or killed as a direct result of the gather operations averages less than one half of one percent (<0.5%). A veterinarian will be on site during the gather of these HMAs. The contractor does not make the decision to euthanize wild horses. The wild horse and burro specialist on site at the gather consults with a veterinarian to make these determinations.
40	Marybeth Devlin	Although BLM claims that safety precautions are taken, it allows only limited observation of the roundup by the public. If BLM had nothing to hide, then it would have no objection to allowing full and open viewing of the process. However, BLM is reportedly planning to further restrict public access, including road closures, to prevent documentation of the brutality that occurs during these rodeos. BLM cites statistics (its own) that fewer than one percent of the horses die in the roundups. That's akin to an airline bragging that fewer than one percent of its planes crash. All gathers need to be monitored by independent animal welfare	To ensure human and animal safety, the BLM cannot allow unrestricted access by several hundred individuals at the gather location. Disruptions by the public can cause animals to be injured or killed. Gather crew members can also be severely injured or killed due to actions by the public. BLM is aware of the public's interest in viewing the gather operations and will ensure adequate opportunity and access for the public and media to view the gather operations in a manner that does not place humans or wild horses at risk of injury.

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		organizations to ensure no horses are harmed. But because there is no true excess of horses, roundups are unnecessary.	
41	Marybeth Devlin	The EA reflects BLM's stubborn insistence that any proffered alternatives just cannot work. It seems no matter what options are put forth, BLM dismisses them in favor of continuing to do what it has been doing. BLM merely "eliminates" all contrary opinions and cannot be said to sincerely consider the public's comments for even trial implementation of suggestions. For instance, BLM claims that water is scarce in the subject HMAs. When the public then suggests using water trapping as a humane alternative to helicopter roundups, BLM rejects the idea, saying it would not work "due to the presence of water sources" in the area. In another example, BLM claims that the wild horses must be removed from the HMAs due to lack of forage leading to possible starvation. Yet when the public suggests conducting the gather by riders on horseback, BLM says the idea would not work because the wild horses "are typically in top fitness" and "often outrun and outlast domestic horses carrying riders."	No realistic or detailed Alternatives were provided during the public scoping or comment period. The EA analyzed three Alternatives and the No Action Alternative. Additionally, five other Alternatives were considered and eliminated from detailed analysis in Section 2.3. The BLM has been conducting wild horse gathers for over 30 years. Through this time, BLM has gained knowledge of wild horse and burro behavior. It is for these reasons that the BLM gives the explanations for not conducting detailed analysis of the alternatives identified in Section 2.3.
42	Marybeth Devlin	The EA does not support the proposed wild horse and burros gather in the Montezuma Peak and Paymaster HMAs. Until proper scientific studies are conducted and herd management plans are in place, I support the **No Action Alternative** -- suspend roundups. BLM needs to examine its methods and implement corrective action to achieve sound, proactive management practices.	The determination of excess wild horses and burros was made in section 1.2 based on the available inventory climate and monitoring data for these HMAs. The Purpose and Need for Action was further identified in Section 1.3. The Proposed Action is consistent with the WFRHBA and Code of Federal Regulations. The EA analyzed the potential direct, indirect and cumulative impacts that could result with the completion of the proposed gather and removal of excess wild horses and burros.
43	Individuals	The BLM is “zeroing out” these HMAs.	Refer to response 11 above. The TFO does not have any intentions of returning these HMAs to Herd Area status at this time. These HMAs will be assessed for suitability for wild horses and burros during the revision of the RMP, which is a decision-making process that includes public involvement and input.
44	Kathleen Wattle	I want to be able to make trips to this area to take photographs. As this is my vocation and my livelihood, it affects me greatly. I am not the only one who will be harmed by having basically NO wild horses to see, gain inspiration from, make art from. There are MANY photographers, artists and writers who look to America's wild horses for	The Battle Mountain District alone administers 28 HMAs with over 4,300 wild horses and burros over 3.6 million acres of HMA. As stated in the EA, the long term health of the arid rangelands and of the animals takes precedence and does not allow for management of large numbers of wild horses or burros in these particular

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		subjects and inspiration. If they are removed from the wild, we all lose a significant component of this world that affects our work. I want to be able to come to the HMAs in the American West and be able to view large herds of wild horses in their natural environment. I want to view their family relationships, take photographs and make art of their beauty and grace.	HMAs. There are a total of 180 HMAs administered in the 10 western states on over 26 million acres of public land, which support an estimated 38,400 wild horses and burros.
45	Kathleen Wattle	Further, we have already seen the EXTREMELY bad decisions BLM has made about rounding up horses in drought conditions with the horror of deaths at Tuscarora on 7/10/10. I don't ever want to see anything like that again - there was simply NO EXCUSE for it as every horseman knows in basic horsekeeping principles: you NEVER let a hot horse drink his fill, water MUST be limited over time to avoid deaths like those the BLM caused in that Tuscarora herd.	Veterinarian examination of the wild horses gathered from the Owyhee Complex and review by a diverse team of BLM experts, wild horse advocates and veterinarians determined that the animals were affected by water starvation **prior** to the gather due to water holes that had dried up (reports available at http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_programs/wild_horse_and_burro/owyhee_rock_creek.html.) Neither the BLM nor the contractor advocate letting recently gathered horses drink large amounts of water and implemented procedures to address the condition of the gathered horses after it discovered the horses had been without water on the range. The Tuscarora situation is a unique situation where a non-emergency gather became a rescue operation because of the condition of the horses and the lack of water on the range that apparently evolved shortly before the start of the gather operations. The Montezuma and Paymaster HMAs are being monitored for water availability and if concerns arise, water will be hauled to temporary locations prior to the gather to ensure that the animals are not affected by water starvation/dehydration prior to gather. Additionally, recently gathered animals will be observed by a veterinarian and actions taken according to veterinarian recommendations. Refer to the expanded discussion in Section 3.2 of the EA.
46	Kathleen Wattle	There are economic opportunities for photographers and artists with wild horses beyond seeing them and making our own art. Many of us conduct clinics, retreats, seminars to teach others how to make art and we look for unique places to conduct these events. I have done this in the past and plan to do it again in the near future. As BLM continues to try to remove as many horses and whole herds as it can from places all over the West, those of us citizens who would like to do location clinics cannot even begin to plan for	This issue is outside of the scope of the analysis. Refer to response 44. The BLM manages HMAs within the Appropriate Management Levels which vary by HMA depending on the size of the HMA and the habitat. AMLs may reach nearly 1,000 wild horses in certain areas, but typically average 150-350. Some HMAs are arranged in "complexes" which may support several thousand wild horses at AML. BLM wild horse and burro statistics can be accessed at www.wildhorseandburro.blm.gov

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		one (takes a year of planning) because the BLM has shown us by it's actions that we can count on nothing remaining the same year to year. We can expect that due to BLM's constant meddling and removal of horses that where there are horses this year, they will be removed and thus there will be nothing to see next year. How can you plan a seminar photographing wild horses, show up and find there are now none or so few in a HA/HMA, that there is nothing to photograph? This is a real and valid loss of opportunity for people such as myself. I resent it greatly to say the least.	
47	Individual	BLM round ups are cruel, and inhumane. Horses are run until bloody and frothing. . . . . permanent separation of the herd families.	Refer to Response 39 above, and Section 3.2 and Appendix A of the EA.
48	Individual	Scientific data links the DNA of our current wild horses to those that roamed the North American continent over 3.3 million years ago. The horrific tragedy being thrown upon are wild horse is nothing short of what we did to the bison that once roamed our plains.	Outside the scope of the analysis. Comment noted.
49	Individuals	I oppose the proposed gather.	Comment noted
50	Individuals	The BLM is acting above the law/ is acting against the law by conducting wild horse and burro roundups.	Refer to response 37 above.
51	Individual	For the record, the horses are supposed to be the primary residents of the land, but the law no longer applies to a government agency, correct?	Per the WFRHBA, Code of Federal Regulations and FLPMA, wild horses and burros are to be managed as an integral part of the public lands in balance with other multiple uses. Wild horse and burro "ranges" are "devoted principally but not necessarily exclusively to their welfare in keeping with the multiple-use management concept for the public lands". Neither the Paymaster nor the Montezuma Peak HMAs are designated "ranges". Refer also to response 37.
52	Paul Botari	Please reduce the Wild horse and burro numbers in this area to below the management levels established so that the resource will be protected from overgrazing. It is contrary to multiple-use management of our public lands to allow these feral animals to continue to overgraze our public rangelands.	Refer to the Proposed Action in the EA.
53	Individual	Rather than rounding up and "holding" wild horses and burros, please implement public lands management and protection strategies that allow wild horses and burros to remain on the range.	Refer to responses 5, 7, 26, 29, 33, 38 and 41 above.
54	Individual	HMAs should be devoted to the welfare of wild horses and burros.	Refer to response 51 and 37 above.

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55	Individual	Range improvement strategies, such as access to prime forage and water sources, should be designed for the benefit of wild horses and burros. Range improvements are meant to protect and improve the condition of rangeland ecosystems for the benefit of wild horses and burros, not exclusively livestock and/or wildlife to the detriment of horses (43 CFR § 4100.0-5).	Refer to response 5, 26, 28 and 38 above.
56	Individual	Reduction or closure to livestock grazing should be implemented *immediately* to provide habitat for wild horses. This authority (43 CFR § 4710.5) should be utilized for the general management of wild horses and burros; reservation of this authority solely for cases of emergency is incredulous. AMLs should be adjusted accordingly.	Refer to response 37 and 51 above. Refer to Section 3.3 of the EA. Very minimal grazing by livestock takes place in either of the HMAs. Livestock are not permitted to use the Montezuma Allotment portion of either HMA.
57	Individual	The proposed roundup and long-term holding of horses and burros is inhumane, potentially deadly, will disrupt natural social structures and distort populations, and is not a good use of taxpayer dollars.	Refer to response 39 above. Also refer to Section 3.2, Chapter 4 and Appendix B of the EA. Potential impacts of the proposed gather were extensively analyzed in the EA. Cost of the gather is outside of the scope of this analysis.
58	Individual	There are viable range management alternatives and giving land to cattle farmers is <u>not</u> one of them!	Refer to response 7, 27, 29, 37, 41 and 56 above.