

Introduction

Introduction

This Environmental Assessment (EA) has been prepared to analyze the proposal by Bureau of Land Management (BLM) Ely District's Egan Field Office (E-FO) and the Elko District's Wells Field Office (W-FO) to gather and remove excess wild horses from within and outside the Triple B, Maverick-Medicine, and the western and central portions of the Antelope Valley Herd Management Areas (HMA) (hereafter referred to as the Three HMA Water and Bait Gather or Project Area), using non-helicopter gather techniques. The proposed action is designed to maintain herd health and remove pressure caused by wild horses on site specific areas and restore and help maintain a thriving natural ecological balance and multiple-use relationships. The gather would begin as soon as the EA process is complete and environmental conditions allow. The analysis provided in this EA is for potential impacts to issues by alternatives identified during the interdisciplinary team review. The EA assists both field offices (FOs) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA) in making a determination as to whether any significant impacts could result from the proposed actions.

This document is tiered to the following documents:

- Ely Proposed RMP (2007) (Resource Management Plan) and Final Environmental Impact Statement (*FEIS-RMP/EIS 2008*),
- Ely District Record of Decision and Approved Resource Management Plan (2008) (*Ely RMP*),
- Proposed Wells RMP and FEIS US DOI 1983 (Wells RMP), approved July 16, 1985,
- Wells RMP Wild Horse Amendment and Decision Record, approved August 1993 (US DOI 1993) (*Wells RMPWHA*),
- 2011 Triple B, Maverick-Medicine, and western portion Antelope Valley Herd Management Areas Wild Horse Gather Plan EA, DOI-BLM-NV-L010-2011-0004 EA,)
- Antelope Complex Wild Horse Gather Plan EA (DOI-BLM-NV-N030-2010-0019-EA).

Tiering within the Antelope Complex Wild Horse Gather Plan EA is only related to the central portion of the Antelope Valley HMA west of Alternate U.S. Highway 93 and does not include the remaining HMAs analyzed within that EA. The documents for which this EA is tiered to are available at: http://www.blm.gov/nv/st/en/fo/elko_field_office.html, or can be accessed at the Elko District Office, 3900 East Idaho Street, Elko, NV 89801. Questions or additional assistance can also be requested at (775) 753-0200.

Tiering

Tiering, a form of *incorporation by reference*, is used in this analysis to reduce paperwork and avoid redundant analysis of issues and for information that have already been analyzed in a broader EA or EIS, and that are clearly consistent with the decision to be made for this project. Using tiering allows the interdisciplinary team to focus on issues and mitigation measures specifically relevant to the narrower action within this EA. Incorporation by reference is used to provide summaries of peer-reviewed documents, along with a citation referring the reader to the document source, which for this EA are listed in the Reference section.

Location of Proposed Action

The Project Area is located approximately 30 miles northwest of Ely, Nevada, and 70 miles southeast of Elko, Nevada, within White Pine and Elko Counties (see maps on pgs. 9–10). Table 1 below displays the total acreage and established Appropriate Management Levels (AML) for each of the HMAs as outlined in 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and the Antelope Complex Wild Horse Gather Plan EA.

Table 1 Herd Management Area, Acres, AML, Estimated 2012 Population

Herd Management Area (HMA)	Total Acres Private and Public land	Appropriate Management Level	Estimated 2012 Population
Triple B	1,225,000	250-518	498
Maverick-Medicine	337,134	166-276	587
Western portion of Antelope Valley HMA(1)	97,701	16-27	19
Central Portion of Antelope Valley HMA(2)	179,624	116–194	445
Total	1,839,459	548-1,015	1,549

(1) Acres only represent the portion of Antelope Valley HMA west of U.S. Highway 93.

(2) Acres only represent the portion of Antelope Valley HMA west of Alternate U.S. Highway 93 and east of U.S. Highway 93.

Summary of Proposed Action

The Proposed Action would gather and remove or relocate excess wild horses where they are causing impacts to site specific riparian areas or other areas of resource concern (such as upland areas with limited forage).

Purpose and Need for Action

The purpose of the proposed action is to reduce impacts occurring to the ecological environment within the Project Area, now being caused by excessive wild horse numbers. Impacts are specifically related to limited water and forage in specific areas within the Project Area.

The need for the proposed action is based on the ability of limited water and/or forage resources to adequately support wild horses and impacts caused by wild horses concentrating on site specific areas within the HMAs. Attempts were made during 2011 gather operations to reduce these areas of concentrated wild horses and to achieve appropriate management level (AML) for the HMA. These efforts were unsuccessful due to vegetation cover, terrain and weather conditions.

Since gather operations were completed the Elko and Ely District Offices have been monitoring water and vegetative resources throughout the project area. From June 2011 through the end of September 2011, the Elko District Office hauled over 60,000 gallons of water to Deer and Cherry springs. Monitoring conducted in May 2012 determined that there was a lack of water at Cherry Spring, thus BLM began hauling water to there in early June 2012. Since June 2012 escalating drought conditions have warranted including the central portion of the the Antelope Valley HMA (Dolly Varden Range) in these water hauling efforts (Deer Spring). Since June 2012 an estimated

75-100 wild horses have been observed at Deer Spring conveyance. BLM is currently hauling water to the conveyance at Deer Spring, which was only flowing at approximately 10 gallons/hour.

Monitoring in 2012 indicates that throughout the project area that very limited growth on herbaceous and shrub species has occurred. With limited vegetative growth and lack of forage, wild horses will utilize their available summer range before the end of the season. This lack of forage will force them to move down into their winter range in late summer or fall which will deplete their winter forage base before the end of winter. Poor forage availability due to low productivity or forage covered by snow would lead to poor herd health and potential starvation.

The Wild Free — Roaming Horses and Burro Act (WFRHBA) requires the Bureau of Land Management (BLM) to manage horses in a manner that will achieve and maintain a “thriving natural ecological balance” on the public lands (16 USC § 1333(a)). *See also Animal Protection Institute of America*, 109 IBLA 112, 115 (1989) (...the benchmark test ‘...for determining the suitable number of wild horses on the public range is ...thriving natural ecological balance...’) (*Dahl v. Clark*, 600 F. Supp. 585, 594 (D. Nev. 1984)).

Scoping, Public Involvement and Issues:

On June 14, 2012, the Wells Field Office issued a scoping letter for 15 days comment period. In excess of 180 comment letters/emails were received from individuals, organizations and agencies following the issuance of the scoping letter, many of which were form letters. All comment letters were reviewed and considered and resulted in approximately 94 unique substantive comments. Comments received after 5 PM PST on June 28, 2012, were not accepted. Substantive comments were utilized in the EA as appropriate. Many of the comments regarding helicopters; use of fertility control and adjusting sex ratios were not addressed as they are not part of the proposed action. Other comments were general in nature and did not identify specific issues. Remaining comments received were organized into the following general categories:

- Herd growth/*animal* numbers are incorrect
- Appropriate management levels are too low
- Concerns over the use of helicopters
- Affected environment/monitoring data
- Concerns/effects/results of fertility control
- Eco-Sanctuary support
- Concerns/effects of Long Term Pastures
- Concern about modeling program

The Council on Environmental Quality guidelines (2007) state that public comments:

1) should be respectful, organized, and edited, remembering that personal identification (i.e. address, phone number, or an email address) may be made publicly available along with the comment at any time, 2) are options for the lead agency to consider and 3) if repeating the same basic message (for support or opposition to a NEPA document), or on form-based letters would be typically responded to collectively.

Proposed Action and Alternatives

Proposed Action and Alternatives

The Proposed Action is to remove wild horses from site specific areas (as opposed to removing wild horses from throughout the entire HMA or project area) because of the impacts caused by concentrated wild horses to the ecological environment and/or due to limited or declining forage and water resources within the Project Area. A BLM interdisciplinary team developed a Proposed Action Alternative and a No Action Alternative. Other considerations were not developed into alternatives and can be found on pages 12–18 of the 2011 Triple B, Maverick-Medicine and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and page 16–21 of the 2010 Antelope Complex Wild Horse Gather EA. Additional alternatives not discussed in the 2011 and 2010 EAs are outlined in Section 2.2 below.

Alternative A: Proposed Action —Water/bait Trapping of Wild horses in Excess of Appropriate AMLs. The Proposed Action would be to gather excess wild horses from sites identified through resource monitoring efforts using bait or water trapping. These specific activities would occur for up to five years following approval for this action. Gathering of the excess wild horses utilizing bait/water trapping could occur at any time of the year and would extend until the target number of animals are removed to relieve concentrated use by wild horses in an area; reach AML for the HMA is achieved; and/or to remove animals residing outside HMA boundaries. Generally, bait/water trapping is most effective when a specific resource is limited, such as water, during the summer months. For example, in some areas, a group of wild horses may congregate at a given watering site during the summer because few perennial water resources are available nearby. Under those circumstances, water trapping could be a useful means of reducing the number of wild horses at a given location, which can also relieve the resource pressure caused by too many wild horses. As the proposed bait and/or water trapping in this area is a low stress approach to gathering of wild horses, such trapping can continue into the foaling season without harming the mares or foals.

Although the trap would be set in a high probability area/site for capturing excess wild horses residing within the area and at the most effective time periods, a period of days is required for the horses to acclimate to the trap and/or decide to access the water/bait. Trapping involves setting up portable panels around an existing water source or around a pre-set water or bait source. The portable panels would be set up to allow wild horses to go freely in and out of the corral until they have adjusted to it. When the wild horses fully adapt to the corral, it would be fitted with a gate system. The acclimatization of the horses creates a low stress trap. During this acclimation period the horses would experience some stress due to the panels being setup and a perceived restricted access to the water/bait source.

When actively trapping wild horses, the trap would be manned or checked on a daily basis by BLM personnel or gather contractor. Trapped wild horses would be removed from the trap immediately. All animals identified for removal would be transported to a temporary holding facility or an adoption preparation facility such as Palomino Valley Center. All horses removed would be prepared for adoption or sale to qualified individuals or placed in long-term holding pastures. During their placement in a temporary holding facility they would be fed and watered. There would be no application of fertility control and no adjustment of the sex ratio

If an HMA is above AML (low end of established AML) captured wild horses would be removed from the HMA and placed into the adoption system. If the HMA is at or near the low end of an established AML, BLM would attempt to relocate wild horses into areas within the HMA with

sufficient resources to support them as well as the existing population within the area. Should any of the relocated wild horses return to the areas from which they gathered, they would again be trapped and removed from the HMA as outlined above..

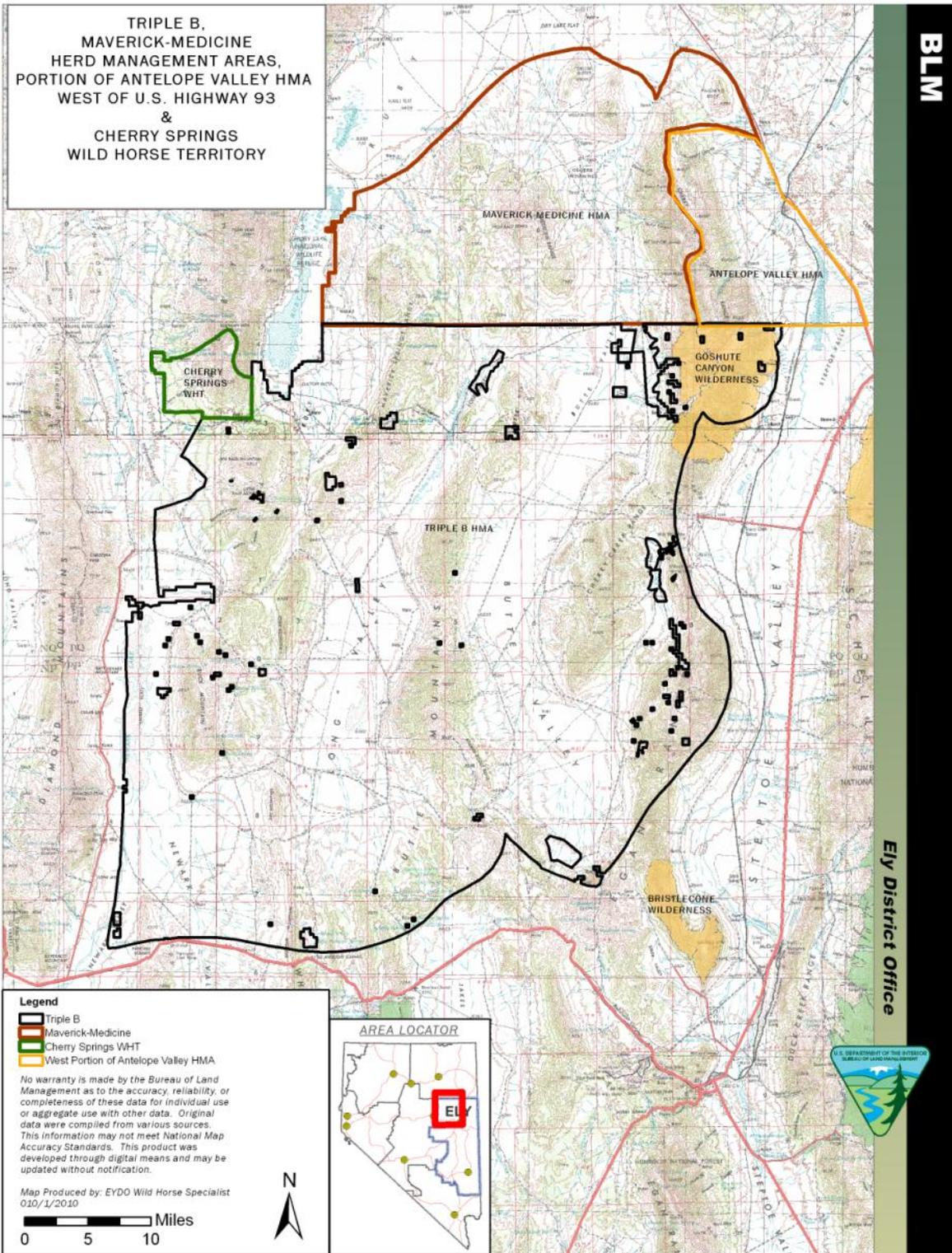
Management actions would include:

- Existing roads would be used to access the trap sites.
- Multiple trap sites could be used to capture wild horses. The traps would consist of portable panel pens set up either at water sources or areas frequented by wild horses. The pens typically consist of 15–25 panels with each panel being 12 ft. long and 6 ft. high. Water, certified weed-free hay or other attractants (such as mineral/salt blocks or processed cubes) would be used to lure wild horses to the area. Prior to any wild horses being captured, the trap or bait may be in place to accustom wild horses to its presence. When a group of wild horses or individual wild horses enter the trap, the gate would be closed by a contractor or BLM personnel.
- Appropriate site-specific inventory and review for cultural resources and non-native and invasive weeds would be conducted at each trap site prior to set up. Gather sites and temporary holding facilities would be monitored and treated as needed for noxious weeds annually in the spring and summer for the five years following use. All sites would be assessed for the need for post-gather reseeding. All capture and handling activities (including capture site selection) would be conducted in accordance with the standard operating procedures (SOPs) found in Appendix I.
- Vehicles would be limited to existing roads except where gather sites are established, where some off-road travel may be necessary. Gather sites would be established in previously disturbed areas, where possible. Gather sites would be seeded with a certified weed free mix following the gather as appropriate. . This mix would consist of site-adapted species that would be broadcast and dragged by the BLM. Weed treatments and inventories would continue in the reseeded areas as part of regular duties of the Weeds Program.
- All temporary corrals and other affiliated facilities, in addition to parking, would be placed within previously disturbed areas whenever possible. For all facilities a Class III inventory would first be conducted. a District Archeological Technician (DAT) may conduct the inventory for the purposes of facility placement. If the DAT observes cultural material they would immediately contact a district archaeologist to discuss avoidance measures. If a water trap site contains undisturbed cultural resources which may be potentially eligible to the National Register of Historic Places (NRHP), the trap location would be relocated. All cultural resources would be avoided to prevent adverse effects to any properties potentially eligible to the NRHP.
- Trap sites located in areas with riparian vegetation or hydric soils would only be placed in areas that have already sustained heavy impacts from wild horse use. Wild horses would be removed from these traps on a daily basis to prevent additional physical damage to soils.
- In the event that trapping should become necessary during the sage grouse breeding season of March 1 through May 15, traps that are proposed within 2 miles of an active lek would be inventoried by a BLM Biologist to determine if the proposed trap site could be used.

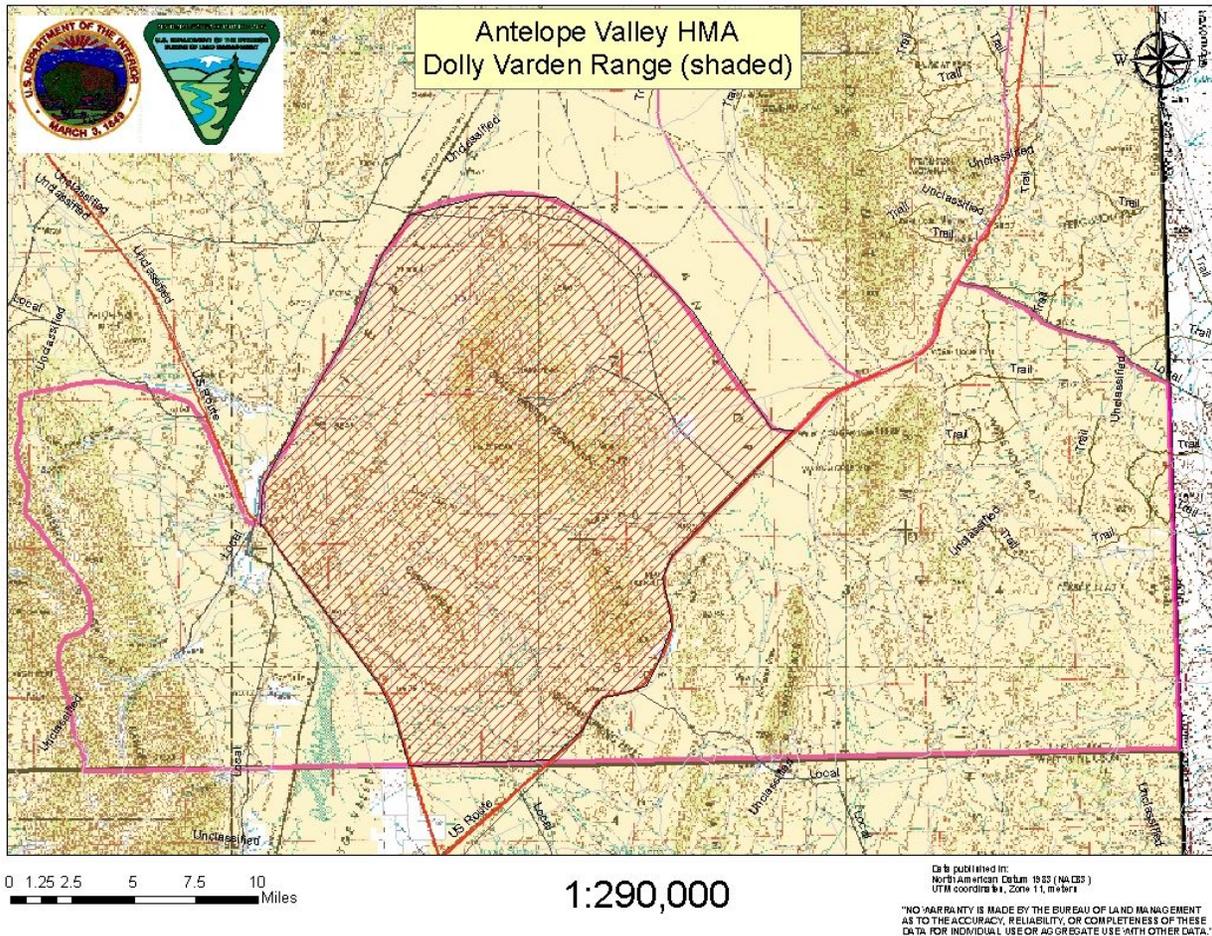
- Herd health and characteristics data including sex and age distribution, condition class information (using the Henneke rating system), color, size and other information may be recorded for all gathered wild horses.
- Monitoring of forage condition and utilization, water availability, aerial surveys of population and animal health of wild horses would continue post-gather as part of the normal Bureau wild horse and burro program monitoring.

Alternative B: No Action - Although the No Action Alternative does not comply with the WFRHBA of 1971 and does not meet the purpose and need for action in this EA, it is included as a basis for comparison with the Proposed Action. Under the No Action Alternative, water or bait trapping to remove excess wild horses from site specific areas would not occur. Current wild horse health, water resources and forage concerns would remain. The BLM could schedule a helicopter-drive gather method as evaluated in the 2010 and 2011 Final EAs as a separate action.

The No Action Alternative would not be in conformance with existing law and regulation which requires the authorized officer to remove wild horses immediately upon determination that excess wild horses are present nor would it meet the legal requirement to manage wild horses in a manner that will achieve and maintain a thriving natural ecological balance.. However, the No Action Alternative is required for NEPA analysis to provide a baseline for comparison impact analysis.



Graphic explanation



Graphic explanation

Alternatives Considered but not Analyzed in Detail

Other considerations, which were not developed or discussed in the 2011 and 2010 EAs are provided below.

1. ***Designate the HMAs to be managed principally for wild horse herds under 43 C.F.R. 4710.3-2.***

HMAs are areas designated in the Land Use Planning process for the long term management of wild horses. The Elko and Ely Districts administer 14 HMAs but do not administer any Congressionally designated Wild Horse or Burro Ranges, which are by definition in the Wild Horse and Burro Act “devoted principally but not necessarily exclusively to their welfare in keeping with the multiple-use management concept for the public land.” This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the HMAs. In essence, this alternative would exchange use by livestock for use by wild horses. This alternative would be converting the HMAs to wild horse ranges, but would first require an amendment to the RMP, which is outside the scope of this EA. This alternative was not brought forward for analysis because it is inconsistent with the 1985 Wells RMP, the 1993 Wells RMP Wild Horse Amendment, the 2008 Ely RMP, and the WFRHBA which directs the Secretary to immediately remove excess wild horses. This alternative is also inconsistent with the

BLM's multiple use management mission under FLPMA. Such changes to livestock grazing cannot be made through a wild horse gather decision. Furthermore, even with significantly reduced levels of livestock grazing within the gather area from the levels authorized in the 1985 Wells RMP and 2008 Ely RMP, there is insufficient habitat for the current population of wild horses, as confirmed by monitoring data. As a result, this alternative was not analyzed in detail.

2. ***Re-evaluate and increase wild horse AMLs by reassessing and amending plans under BLMs Adaptive Management Policy (established by Interior Secretary Order N0. 3270, March 9, 2007).***

AMLs are not established in Resource Management Plans. Refer to Sections 3.1.1 and 3.1.7 and Appendices E and F of the 2010 Antelope Complex Gather EA for additional clarification about establishment of AMLs.

The Ely District Land Use Plan and Final Environmental Assessment and Record of Decision were approved in 2008.

The pre-planning for Elko District's Land Use Plans is currently scheduled for 2013 with start of the RMP revision in 2014. The Final EIS and Record of Decision would not be complete until 2017-2018. Delay of a gather until that time is not consistent with the WFRHBA, PRIA or FLPMA or the existing Elko and Wells RMPs. Severe range degradation would occur in the meantime and large numbers of excess wild horses would ultimately need to be removed from the range in order to achieve the AMLs or to prevent the death of individual animals under emergency conditions. This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to manage the rangelands to prevent the range from deterioration associated with an overpopulation of wild horses.

This alternative was not brought forward for detailed analysis because it would be outside of the scope of the analysis, and would be inconsistent with the WFRHBA which directs the Secretary to immediately remove excess wild horses and to manage wild horses in a manner that will achieve a thriving natural ecological balance.

This alternative would also be inconsistent with the 1985 Wells RMP and the 2008 Ely RMP which directs the Ely District and Wells Field Office to retain AMLs within the HMAs and to manage wild horses consistent with plan objectives.

3. ***Relocate any horses outside of the HMAs back into the designated area instead of removing them and remedy the conditions that are causing horses to leave the HMAs.***

Relocating wild horses that have taken up residency outside HMA boundaries would not permanently keep those wild horses within the HMAs. These wild horses would return to their "home range" (the area outside an HMA where they are located) shortly after the hazing or gather. The majority of movement out of an HMA is for forage, water and space or is population size related. This alternative was not considered for further detail because it does not meet the purpose and need for the EA.

4. **Letting Nature take its course**

While some members of the public have advocated "letting nature take its course," allowing horses to die of dehydration and starvation would be inhumane treatment and would be

contrary to the WFRHBA, which mandates removal of excess wild horses. The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to “*protect the range from the deterioration associated with overpopulation,*” “*remove excess animals from the range so as to achieve appropriate management levels,*” and “*to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area*”. “Once the vegetative and water resources are at critically low levels due to excessive utilization by an over population of wild horses, the weaker animals, generally the older animals and the mares and foals are the first to be impacted. It is likely that a majority of these weaker animals would die from starvation and dehydration. The resultant population would be extremely skewed towards the stronger stallions which would lead to significant social disruption in the HMA. By managing the public lands under this alternative, the vegetative and water resources would be impacted first and to the point that they have low potential for recovery. As the vegetation resources are over utilized to the point of low recovery, wild horses begin showing signs of malnutrition and starvation which lead to a catastrophic die off. The vegetative and water resources would be impacted first and to the point that they have limited potential for recovery. For these reasons, this alternative was eliminated from further consideration.

5. Control of Wild Horse Numbers by Natural Means

This alternative would use natural means, such as natural predation and starvation, to control the wild horse population. The alternative of using natural controls to achieve a desirable AML has not been shown to be feasible in the past. Wild horse populations in the Triple B ,Maverick-Medicine and Antelope Valley HMAs are not substantially regulated by predators, as evidenced by the 20-25% annual increase in the wild horse populations that has been documented within these HMAs. In addition, wild horses are a long-lived species with documented foal survival rates exceeding 95% and are not a self-regulating species. This alternative would result in a steady increase in the wild horse populations which would continue to exceed the carrying capacity of the range until severe or unusual conditions that occur periodically-- such as blizzards or extreme drought-- cause a catastrophic mortality (or die off) of wild horses in the HMAs. This alternative was eliminated from further consideration because it is contrary to the WFRHBA which requires the BLM to manage the rangelands to prevent the range from deterioration associated with an overpopulation of wild horses. It is also inconsistent with the Ely RMP, Wells RMP and Wells RMPWHA which direct that the Ely and Elko Districts of the BLM conduct gathers as necessary to achieve and maintain a thriving natural ecological balance.

6. *Defer Gather; wait until 2013. Improve water for wild horses.*

The process to improve water for wild horses (wells, etc.) would require site specific NEPA analysis, funding approval and water rights permitting for all water development projects which could take a few to several years to complete. This alternative was not considered in detail because the extended delay would not meet the purpose and need, would not meet the objectives to manage for a thriving natural ecological balance and would not maintain wild horse herd health within the HMAs.

7. Remove or Reduce Livestock within the HMAs

This alternative would involve no removal of wild horses and would instead address excess wild horse numbers through removal or reduction of livestock within the HMAs. In essence, this alternative would simply exchange use by livestock for use by wild horses.

This alternative was not brought forward for analysis because it is inconsistent with the 1985 Wells RMP, the 1993 Wells RMP Wild Horse Amendment, the 2008 Ely RMP, and the WFRHBA which directs the Secretary to immediately remove excess wild horses. This alternative is also inconsistent with the BLM's multiple use management mission under FLPMA. This alternative was not brought forward for analysis because it would be inconsistent with the current land use plans and Final Multiple Use Decisions (FMUDs) and with multiple use management. Additionally, livestock grazing can only be reduced or eliminated following the process outlined in the regulations found at 43 CFR Parts 4100. Furthermore, even with no livestock grazing or significantly reduced levels of livestock grazing within the Project Area from the levels authorized in the 1985 Wells RMP and 2008 Ely RMP, there is insufficient habitat for the current population of wild horses, as confirmed by monitoring data. As a result, this alternative was not analyzed in detail.

Conformance

The Proposed Action is in conformance with the 2008 Ely District ROD and Approved RMP (August 2008, pg. 46) and as required by regulation (43 CFR 1610.5-3(a)) as follows:

- **Goal:** "Maintain and manage healthy, self-sustaining wild horse herds inside herd management areas within appropriate management levels to ensure a thriving natural ecological balance while preserving a multiple-use relationship with other uses and resources."

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

- **Objective:** "To maintain wild horse herds at appropriate management levels within herd management areas where sufficient habitat resources exist to sustain healthy populations at those levels."

The Proposed Action is in conformance with the Wells RMP and the Wells RMPWHA. In the Wells RMP on page 2-2 under Issue 7: Wild Horses, the following objective is stated:

- **Objective:** "To continue management of the six existing wild horse herds...consistent with other resource uses."

Management Actions 1, 2, and 3 under Issue 7 on pages 2-2 and 2-3 of the Wells RMP direct the management in the project area. The Wells RMPWHA further outlines the level of management for wild horses within the Maverick-Medicine and Antelope Valley HMAs.

Relationship to Statutes, Regulations and Other Plans

This EA also tiers to the Relationship to Statutes, Regulations, and other Plans stated in 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather

Plan EA Gather EA (pgs. 8 and 9, Section 1.4., and as noted in the Antelope Complex Gather Plan EA (pgs. 5 and 6).

The Proposed Action is consistent with all applicable regulations at Title 43 Code of Federal Regulations (CFR) 4700 and policies. The Proposed Action is also consistent with the Wild Free-Roaming Horses and Burros Act of 1971 (WFRHBA), which mandates the Bureau to “prevent the range from deterioration associated with overpopulation” and “remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area.” Additionally, promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state “Wild horses shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat (emphasis added).”

The Interior Board of Land Appeals (IBLA) in Animal Protection Institute et al., 118 IBLA 75 (1991) found that under the Wild Free-Roaming Horses And Burros Act of 1971 (Public Law 92-195) “excess animals” must be removed from an area in order to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area. Regulations at Title 43 CFR 4700.0-6(a) also direct that wild horses be managed in balance with other uses and the productive capacity of their habitat. The Proposed Action is in conformance with federal statute, regulations and case law.

Affected Environment

Geographical Setting

The Project Area is located in northwestern White Pine and southern Elko Counties approximately 30 miles northwest of Ely, Nevada, and 70 miles southeast of Elko, Nevada (2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA, Map 1, pg. 7). The area is within the Great Basin physiographic regions, characterized by a high, rolling plateau underlain by basalt flows covered with a thin loess and alluvial mantle. On many of the low hills and ridges that are scattered throughout the area, the soils are underlain by bedrock. Elevations within the HMAs range from approximately 5,000 feet to over 10,000 feet. Precipitation ranges from approximately 5 to 7 inches on the valley bottoms to 16 to 18 inches on the mountain peaks. Most of this precipitation comes during the winter months in the form of snow. Temperatures range from greater than 90 degrees Fahrenheit in the summer months to minus 15 degrees in the winter. The area is also utilized by domestic livestock and numerous wildlife species. The central portion (Dolly Varden Range) of the Antelope Valley HMA is very dry with very few perennial waters. The majority of the limited water resources are small seeps and springs that are mainly found in the mountains.

2012 Drought

Data from the National Regional Climate Center shows that the average precipitation (December 2011 to July 2012) on the Triple B, Maverick-Medicine and Antelope Valley HMAs is about 5 inches. Information can be found at the link: <http://www.wrcc.dri.edu/>.

The U.S. Drought Monitor for mid-August 2012 stated that the entire complex was in Severe to Extreme drought. Updated information can be found at the following link: <http://droughtmonitor.unl.edu/>.

Management Setting

The 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (DOI-BLM-NV-L010-2011-0004 EA, pgs. 18–48) and the 2010 Antelope Complex Herd Management Areas Wild Horse Gather Plan EA (DOI-BLM-NV-N030-2010-0019 EA, pgs. 23–89) identified and analyzed the effects to the environment. The setting and effects noted in both EAs are not different for the concerns and proposed actions noted in this EA.

Since the passage of the Wild Free-Roaming Horses and Burros Act of 1971, management knowledge regarding wild horse population levels has increased. For example, it has been determined that wild horses are capable of increasing their numbers by 18% to 25% annually, resulting in the doubling of wild horse populations about every 4 years. This has resulted in the BLM shifting program emphasis beyond just establishing appropriate management level (AML) and conducting wild horse gathers to include a variety of management actions that further facilitate the achievement and maintenance of viable and stable wild horse populations and a “thriving natural ecological balance.” Management actions resulting from shifting program emphasis include: increasing fertility control, adjusting sex ratio, and collecting genetic baseline data to support genetic health assessments. The AML is defined as the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance.

The Egan RMP (1987 Ely District) designated the Buck and Bald, Butte, and Cherry Creek HMAs for the long-term management of wild horses. These HMAs were later combined into the Triple B HMA in the August 2008 Ely District Record of Decision (ROD) and Approved Resource Management Plan (RMP) due to the interchange between the three HMAs. The HMA is nearly identical in size and shape to the original Herd Areas representing where wild horses were located in 1971. Fences do exist within the HMA but do not restrict wild horse movement due to the fact that the fences are open at the end (open ended to allow for movement by wild horses). Currently, management of HMAs and wild horse populations is guided by the Ely District RMP. The AML range for the Triple B HMA is 250-518 wild horses. The wild horses from this HMA travel back and forth across the Elko and White Pine County line, mixing with the wild horses from the Maverick-Medicine HMA and western portion of the Antelope Valley HMA. Wild horses from this HMA also travel back and forth throughout the HMA as there is limited fencing which could impede their movement. The population within this HMA may fluctuate depending on the seasons due to the wild horse's migration patterns.

The Wells RMPWHA established a baseline AML of 389 wild horses for the Maverick-Medicine HMA and stated that adjustments would be based on monitoring and grazing allotment evaluations in conformance with BLM policy and case law. The baseline AML for the Maverick-Medicine HMA was adjusted to 166-276 wild horses through a combination of the 1998 Spruce Final Multiple Use Decision, the 1994 Area Manager's Final Multiple Use Decision (FMUD) for the West Cherry Creek Allotment, and the 2001 Final Multiple Use Decision for the Maverick-Medicine Complex. The wild horses from this HMA travel back and forth across the Elko and White Pine County line, mixing with the wild horses from the Triple B HMA. They also mix with wild horses from the west portion of the Antelope Valley HMA west of U.S. Highway 93. The population within the Maverick-Medicine HMA and the western portion of the Antelope Valley HMA (west of U.S. Highway 93) can fluctuate depending on the seasonal movement of the wild horses.

The Antelope Valley HMA is separated into three distinct areas, each one separated by U.S. Highway 93 and Alternate U.S. Highway 93 (see map 2). In 2001, the Nevada Department of Transportation (NDOT) fenced the U.S. Highway 93 Right of Way (ROW) to improve public safety as numerous vehicle/horse collisions had occurred in previous years. This fence separates the western portion of the Antelope Valley HMA from the rest of the HMA. The wild horses in the western portion of the HMA move freely back and forth with wild horses from the adjacent Triple B and Maverick-Medicine HMAs. The Wells RMPWHA established a baseline AML for the entire Antelope Valley HMA of 240 wild horses. The baseline AML for the Antelope Valley HMA was adjusted to 155-259 wild horses in the 1994 Antelope Valley FMUD 1998 Badlands-Goshute Mountain FMUD, 1998 Spruce FMUD, 2001 Sheep Allotment Complex FMUD and 2001 Maverick/Medicine Complex FMUD.

Only the central portion (Dolly Varden Range) and western portions of Antelope Valley HMA (west of U.S. Highway 93) are included in this analysis. In the western portion of the Antelope Valley HMA the wild horse seasonal movements are between the Maverick-Medicine HMA and Triple B HMA. In the central portion of the Antelope Valley HMA (Dolly Varden Range) the wild horses move regularly between the Goshute and Spruce-Pequop HMAs.

Population inventory flights and counts have been conducted in the project area every two to three years. Both inventory flights and counts are in compliance with the BLM IM 2010-057 Wild Horse & Burro Population Inventory and Estimation and the H-4700-1 Wild Horse and Burro Handbook. These population inventory flights have provided information pertaining to

population numbers, foaling rates, distribution, and herd health. These population flights have shown the interchange between the HMAs with a large portion of the wild horse population summering on the Maverick-Medicine HMA and spending the fall/winter within the Triple B, Maverick-Medicine, and western portion of the Antelope Valley HMAs. A population inventory was conducted November 2010 utilizing a direct count method, and 1,832 wild horses were observed throughout the project area. At the time of implementation for the 2011 Triple B gather operation, it was estimated that the population within the combined area (Triple B, Complex) was 2,198 wild horses following the 2011 foal crop. The 2011 gather removed 1,265 wild horses, but failed to gather to AML. The current population estimate for the Triple B and Maverick-Medicine HMAs is 1,085 wild horses and the current population estimate for the western portion of the Antelope Valley HMA is 19 wild horses. These wild horses regularly move back and forth and mix with wild horses from the Triple B and Maverick-Medicine HMAs. . March 2012 inventory flights found 426 wild horses around the Dolly Varden Range (central portion of the Antelope Valley HMA). Wild horse body condition scores (BCS) within the HMAs range from a score of 2-4 based on the Henneke Body Condition Chart.

For this EA the impact analysis is for the Proposed Action and the No Action Alternatives and is designed to only analyze potential impacts associated with conducting a non-helicopter gather. Potential impacts to the resources listed in the following table were evaluated in accordance with criteria listed in the NEPA Handbook H-1790-1 (2008) page 41, to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely and Elko Districts BLM in particular.

Resource/ Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Air Quality	N	The affected area is not within an area of non-attainment or areas where total suspended particulates or other criteria pollutants exceed Nevada air quality standards. Any increased particulate matter (dust) resulting from the Proposed Action would be short term (temporary) and minimal.
Areas of Critical Environmental Concern (ACEC)	N	Not present in the designated HMA boundaries.
Cultural Resources	Y	Potential impacts for cultural resources are analyzed in Section 4.11 of this EA.
Forest Health	N	The Proposed Action would have a negligible direct, indirect or cumulative impact to forest health. Detailed analysis not required.
Migratory Birds	Y	Potential impacts for migratory birds are analyzed in Section 4.3 of this EA.
Rangeland Standards and Guidelines	N	The Proposed Action would continue to achieve or move towards achievement of Rangeland Health Standards and Guidelines. No detailed analyses necessary.
Native American Religious and other Concerns	N	No potential traditional religious or cultural sites of importance have been identified within the project area.
Wastes, Hazardous or Solid	N	No hazardous or solid wastes exist in the designated HMA boundaries, nor would any be introduced under the Proposed Action.
Water Resources and Riparian/Wetlands	Y	Potential impacts for Water Resources and Riparian/Wetlands are analyzed in Section 4.2 of this EA

Resource/ Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis
Environmental Justice	N	No environmental justice issues were identified in scoping for the proposed action in this EA or for the any of the tiered documents.
Floodplains	N	No floodplains have been identified by HUD or FEMA within the project area. Floodplains as defined in Executive Order 11988 may exist in the area but would not be affected by the Proposed Action.
Farmlands, Prime and Unique	N	Soils within the Triple B HMA have been designated by the Natural Resource Conservation Service as meeting the requirements for prime farmlands. Localized trampling of these soils may occur at the gather Sites. The Proposed Action would not contribute either directly or indirectly to loss of potential farmlands. The effects would be minimal and no further analysis is necessary.
Threatened and Endangered Species	Y	Potential impacts for Threatened and Endangered Species are analyzed in Section 4.4 of this EA.
Wetlands/ Riparian Zones	Y	Potential impacts for Wetlands/Riparian Zones are analyzed in Section 4.2 of this EA
Non-native Invasive and Noxious Species	Y	Potential impacts for Non-native Invasive and Noxious Species are analyzed in Section 4.7 of this EA
Wilderness/ WSA	Y	Potential impacts for Wilderness/WSA are analyzed in Section 4.6 of this EA
Human Health and Safety	Y	Potential impacts for Human Health and Safety are analyzed in Section 4.10 of this EA
Wild and Scenic Rivers	N	Not Present.
Special Status Animal Species, other than those listed or proposed by the FWS as threatened or Endangered.	Y	Potential impacts for Special Status Animal Species, other than those listed or proposed by the FWS as threatened or Endangered. are analyzed in Section 4.4 of this EA
Special Status Plant Species, other than those listed or proposed by the FWS as Threatened or Endangered. Also, ACECs designated to protect special status plant species.	Y	Potential impacts for Special Status Plant Species, other than those listed or proposed by the FWS as threatened or Endangered Also, ACECs designated to protect special status plant species are analyzed in Section 4.4 of this EA.
Fish and Wildlife	Y	Potential impacts for Fish and Wildlife are analyzed in Section 4.4 of this EA
Wild Horses	Y	Potential impacts for Wild Horses analyzed in Section 4.1 of this EA
Soils	Y	Potential impacts for Soils/Watershed are analyzed in Section 4.9 of this EA
Mineral Resources	N	There would be no effects on mineral resources through the Proposed Action.
Vegetation Resources	Y	Potential impacts for Vegetation Resources are analyzed in Section 4.8 of this EA
Lands with Wilderness Characteristics	Y	In the Ely District, four units of LWC have been identified. This resource was not analyzed in either of the previous documents.

Environmental Effects

The environmental consequences for this EA are analyzed for a non-helicopter gather of wild horses and associated resources within and adjacent to trap sites. The 2011 and 2010 EA's being tiered to analyzed the impacts of management options utilizing a combination of methods for removals. Population modeling is outlined in Appendix II (pgs. 97-78) in the 2011 EA and Appendix H of the 2010 EA.

Wild Horses

Affected Environment

In the project area there are declining water availability at Cherry and Deer Springs as well as other water sources. Heavy to severe of forage use has been documented on winter range. white sage is an estimated 2" high on majority of valley range sites (winter range for wild horses) with no residual forage available for the upcoming winter. Large numbers of wild horses are travelling 8-10 miles from water to feed in winter use areas.

Triple B HMA

The Egan RMP (1987 Ely District) designated the Buck and Bald, Butte, and Cherry Creek HMAs for the long-term management of wild horses. These HMAs were later combined into the Triple B HMA in the August 2008 Ely District Record of Decision (ROD) and Approved Resource Management Plan (RMP) due to the interchange between the three HMAs. The HMA is nearly identical in size and shape to the original Herd Areas representing where wild horses were located in 1971. Fences do exist within the HMA but do not restrict wild horse movement due to the fact that the fences are open at the end (open ended to allow for movement by wild horses). Currently, management of HMAs and wild horse populations is guided by the Ely District RMP. The AML range for the Triple B HMA is 250-518 wild horses. The wild horses from this HMA travel back and forth across the Elko and White Pine County line, mixing with the wild horses from the Maverick-Medicine HMA and western portion of the Antelope Valley HMA. Wild horses from this HMA also travel back and forth throughout the HMA as there is limited fencing which could impede their movement. The population within this HMA may fluctuate depending on the seasons due to the wild horse's migration patterns.

Maverick-Medicine HMA

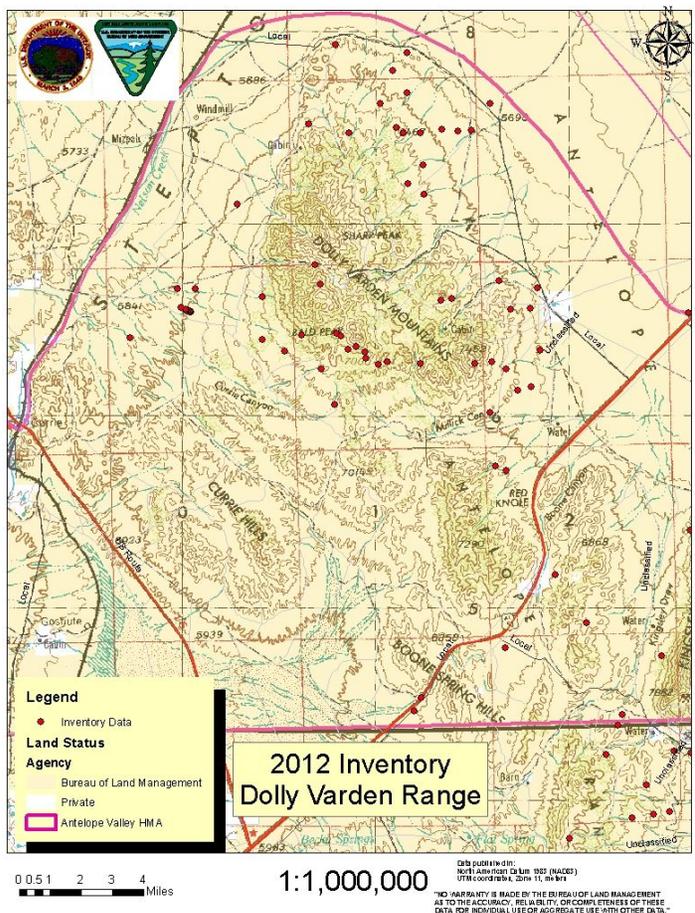
The Wells RMPWHA, approved in August 1993 established a baseline AML of 389 for the Maverick-Medicine HMA. The amendment also stated that adjustments will be based on future monitoring and grazing allotment evaluations. The AML for the Maverick-Medicine HMA was further adjusted to a range of 166-276 through the West Cherry Creek Final Multiple Use Decision in 1994, the Spruce FMUD in 1998, and the Maverick/Medicine Complex FMUD in 2001, based on available data. The wild horses from this HMA travel back and forth across the Elko and White Pine County line, mixing with the wild horses from the Triple B HMA. The population within this HMA may fluctuate depending on the seasons due to the wild horse's migration patterns.

Antelope Valley HMA

The central portion (Dolly Varden Range) of Antelope Valley HMA is included in this analysis. In 2001, the NDOT fenced the U.S. Highway 93 ROW to improve public safety as numerous vehicle/horse collisions had occurred in previous years. This fence separates the western portion of the Antelope Valley HMA from the rest of the Antelope Valley HMA as numerous

vehicle/horse collisions had occurred in previous years. In 2007, the NDOT fenced the Alternate U.S. Highway 93 ROW to also improve public safety. This fence separates the central portion of the Antelope Valley HMA from the eastern and western portions of the Antelope Valley HMA. The wild horses in the central portion (Dolly Varden Range) move freely back and forth with wild horses from the adjacent Spruce-Pequop and Goshute HMAs. The Wells RPMWHA established a baseline AML for the entire Antelope Valley HMA of 240 wild horses. The baseline AML for the entire Antelope Valley HMA was adjusted to 155-259 wild horses in the 1994 Antelope Valley FMUD, 1998 Badlands–Goshute Mountain FMUD, 1998 Spruce FMUD, 2001 Sheep Allotment Complex FMUD and 2001 Maverick/Medicine Complex FMUD.

A population inventory of the Antelope Valley HMA in March 2012 found 426 wild horses (which includes this year’s foal crop) in and around the Dolly Varden Range (see map 3 below).



Map 3 - Showing inventory points from the March 2012 inventory flights.

Horses need 15–20 gallons per day (Valentine 1980). However more water is generally consumed when temperatures are high and the forage is dry (Valentine 1980). The flow rates at the springs in the Dolly Varden Range ranges from 10 gallons/hour to no measurable flow. Based on a wild horses using a minimum of 15 gallons per day, these springs in the Dolly Varden Range can only support 28–40 wild horses. The current wild horse population does not have sufficient natural available water on public lands to support their numbers. Based on lack of water, to maintain wild

horses in adequate health, these wild horse numbers are considered excess or more than the range can support in a natural thriving ecological balance.

No livestock grazing has occurred around Cherry Spring since 2001. Monitoring in 2010 found that there was only enough available water for 40 wild horses in the Dolly Varden Range; however, in March 2012 inventory flights found 426 wild horses around the Dolly Varden Range. Dolly Varden Spring (located on private land) is currently supporting the wild horse population in the Dolly Varden Range. The BLM can not base AML (wild horse numbers) on water that is located on private land.

Triple B HMA

Utilization data collected for the Triple B HMA in April 2012 represents 2011 winter use and 2012 spring use. The key forage species that utilization was collected on in April 2012 are Indian ricegrass (*Achnatherum hymenoides*), winterfat (*Krascheninnikovia Lanata*), Squirreltail (*Elymus elymoides*) and Needleandthread (*Hesperostipa Comata*) using the key forage plant method... Use pattern mapping in April 2012 shows wild horse utilization for 16% of the monitoring locations as slight (1–20%), 30% as light (21–40%), 14% as moderate (41–60%), 8% as heavy (61–81%), and 15% as severe (81–100%)

Maverick-Medicine HMA

Rangeland resources have been and are currently being affected within the Maverick-Medicine HMA due to the over-population of wild horses. Current monitoring data collected using Range Utilization Key Forage Plant Method during spring 2012 showed Moderate (41-60%) and Heavy (61-80%) and Severe (81–100%) utilization attributable to wild horses (use could be attributed to wild horses bases on water and animal distribution.) Use pattern mapping in the Ruby Wash area conducted in April 2012 showed moderate, heavy and severe utilization directly attributable to wild horse has occurred.

Utilization collected using the Key Forage Plant Method in the Maverick/Ruby #9 Allotment within the Maverick-Medicine HMA was completed in the spring 2012. Wild horse use was noted at the monitoring site. The key area 4323-02 received 74% use in the Maverick/Ruby #9 Allotment (read in April 2012). The heavy use levels at key area 4323-02 could be directly attributed to the site's proximity to Cherry Spring (wild horses graze in the Ruby Wash area and trail up to Cherry spring to water) and the high concentration of horses in that area due to the scarcity of water during the hot season and inadequate water sources for the number of wild horses present in the area.

Utilization data collected using the Key Forage Plant Method in the Maverick/Ruby #9 and Valley Mountain Allotments within the Maverick-Medicine HMA was completed in the summer 2012. Wild horse use was noted at both of the monitoring sites. The key area 4323-01 located in the Maverick/Ruby #9 Allotment (wintering area for wild horses) had received 46% use (August 2012). At key area SP-24 (wintering area for wild horses) received 52% in the Valley Mountain Allotment (August 2012). However, allowable uses for these key areas is 10% pre-livestock turnout.

Antelope Valley HMA.

Utilization collected using the Key Forage Plant Method in the Spruce Allotment within the Antelope Valley HMA was completed in the spring 2012. Wild horse use was noted at the

monitoring sites. The key area SP-14 received 24% use on white sage with the white sage showing poor vigor. At monitoring site AY-02 white sage received 68% use by wild horses while just to east near Antelope Well (not in use) 71% use on white sage was recorded. The heavy use levels at the monitoring sites can be directly attributed to the site's proximity to the Dolly Varden Range (wild horses graze on the flats in the late evening and night hours before moving into the trees during the day) and the high concentration of horses in that area due to the scarcity of water and inadequate water sources for the number of wild horses present in the area. When these sites were visited in August 2012, there was little to no growth was observed on either herbaceous or shrub species.

Monitoring data collected near Deer spring conveyance found heavy use (79% POA++) and a lack of current years herbaceous growth.

Throughout the HMAs a lack of growth on both herbaceous and shrub plants was observed with little if any residual forage from previous years. The high use levels and the lack of growth are a cause for concern as there would be little if any forage for wild horses during the fall and winter months. Wild horse body condition scores (BCS) throughout the project area range from a score of 2-4 based on the Henneke Body Condition Chart

In general during summer months and dry years, water resources become very limited within these HMAs. As water resources become limited, wild horses tend to concentrate around the limited water sources causing negative effects to riparian resources. Due to the limited water resources within the HMAs on public lands and because many of these sources have insufficient water to supply the current wild horse population, the BLM has been hauling water to designated spring sources within the HMAs. The Egan Field Office hauled water during summer 2010 to Sabala Spring in the Antelope Mountain Range in the southern portion of the Triple B HMA. The Egan Field Office counties to monitor water resources within the Triple B HMA. Water availability at perennial springs fluxuates widely depending on the year and season. The Wells Field Office has hauled water annually during mid-July through mid-October since 2005 to Cherry Springs in the Maverick Mountain Range for wild horses in the western portion of the Maverick-Medicine HMA. No livestock use has occurred in this area since 2001.

Since gather operations were completed in 2011 the Elko and Ely District Offices have been monitoring water and vegetative resources throughout the project area. From June 2011 through the end of September 2011, the Elko District Office hauled over 60,000 gallons of water to Deer and Cherry springs. Monitoring conducted in May 2012 determined that there was a lack of water at Cherry Spring, thus BLM began hauling water to there in early June 2012. Since June 2012 escalating drought conditions have warranted including the central portion of the the Antelope Valley HMA (Dolly Varden Range) in these water hauling efforts (Deer Spring). Since June 2012 an estimated 75-100 wild horses have been observed at Deer Spring conveyance. BLM is currently hauling water to the conveyance at Deer Spring, which was only flowing at approximately 10 gallons/hour

The Wells Field Office has also hauled water to Deer spring conveyance in 2007, 2008, 2010, 2011 and 2012. In 2011 the BLM hauled over 60,000 gallons of water for wild horses in the Triple B Complex and Antelope Valley HMA.



Cherry Spring July 2012. Wild horses in poor condition (BCS #3)



Wild horses waiting for water to flow into the trough at Cherry Spring June 28, 2012. The spring produces about 12.5 gallons per hour.



Wild horse trying to get a drink at Deer Spring conveyance June 26, 2012. The number of wild horses around the Dolly Varden Range currently exceeds the available amount of water on public (and private) lands to adequately support them. BLM cannot base AML on water on private lands.



Wild horses waiting for water to flow to the conveyance at Deer Spring conveyance June 26, 2012. The spring produces about 10 gallons per hour.



Wild horses waiting for water to flow to the conveyance at Deer Spring conveyance June 26, 2012. The spring produces about 10 gallons per hour.



Severe utilization on white sage sites in the Ruby Wash area of the Maverick-Medicine HMA (winter range for wild horses) in late June 2012.

Moderate utilization and lack of current year's growth on white sage sites in the Antelope Valley HMA (winter range for wild horses) in mid August 2012.

Diet/Dietary Overlap with Other Species

Numerous studies identify dietary overlap of preferred forage species and habitat preference between horses, cattle, and wildlife species in the Great Basin ecosystems for all seasons (Ganskopp 1983; Ganskopp et al. 1986, 1987; McInnis 1984; McInnis et al. 1987; Smith et al. 1982; Vavra et al. 1978). A strong potential exists for exploitative competition between horses and cattle under conditions of limited forage (water and space) availability (McInnis et al. 1987).

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

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

Menard and others 2002, Beever 2003). As a result, areas grazed by horses may retain fewer plant species than areas grazed by other ungulates. A potential benefit of a horse's digestive system may come from seeds passing through system without being digested but the benefit is likely minimal when compared to the overall impact wild horse grazing has on vegetation in general.

Wild horses also compete with wildlife species for various habitat components, especially when populations exceed AML and/or habitat resources become limited (i.e. reduced water flows, low forage production, dry conditions, etc.). Smith (1986) determined that elk and bighorn sheep were the most likely to negatively interact with wild horses. Hanley and Hanley (1982) compared the diets of wild horses, domestic cattle and sheep, pronghorn antelope, and mule deer and found that horse and cattle diets consisted mostly of grasses, pronghorn and mule deer diets consisted mostly of shrubs (>90%) and sheep diets were intermediate. Due to different food preferences, diet overlap between wild horses, deer, and pronghorn rarely reaches above 20% (Hubbard and Hansen 1976, R. Hansen, R. Clark, and W. Lawhorn 1977, Meeker 1979, Hanley and Hanley 1982).

Environmental Impacts

Proposed Action

Under the proposed action, excess wild horses would be captured and removed from the Triple B, Maverick-Medicine and the western and central portions of the Antelope Valley HMAs utilizing a combination of bait and water trapping. Traps would be constructed of portable steel panels typically consisting of 15 to 25 panels, each twelve foot long by six foot high, placed either around a water source (water trapping) or in an area where regular wild horse use occurs (bait trapping). The traps would be constructed in a manner that allows wild horses to initially move freely through them until they are accustomed to their presence. The traps would also have an alley attached for loading captured excess wild horses. The captured/trapped wild horses would be loaded onto horse/stock trailers and pulled behind appropriate motorized vehicles.

Prior to capture, trap sites could be baited before panels are set up to allow for wild horses to become accustomed to coming into an area for feed, salt or other attractant. Once the panels are set up, one or two sides would be left open to allow wild horses to walk through. When trapping occurs one side would be closed off and wild horses would only be allowed to enter one side. That side would have a panel or a gate that would be closed by personnel at the trap after a band of wild horses or an individual wild horse enters the trap. Once captured, the wild horse(s) would be immediately loaded in a horse/stock trailer and transported to a temporary holding facility where they would be sorted into the holding pen to await transport.

Water traps would be designed similarly to a bait trap, except only one entrance would be in place with the initial panel setup. A water trap would leave a much wider opening initially to allow wild horses to enter and drink without creating a situation where the horses are unwilling to drink due to the presence of the panels. As the wild horses become more accustomed to the panels, the mouth or opening would be slowly closed until there is only a gate or one panel for an opening. Once animals are inside the trap, the gate system would be closed. After capture, the impacts to the wild horses would be the same as described above for a bait trap.

Impacts to individual animals could occur as a result of stress associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts would vary by individual and would be indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is rare but can occur. Other impacts to individual wild horses include separation of members of individual bands and removal of animals from the population.

Indirect impacts can occur to horses after the initial stress event and could include increased social displacement or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries could occur and typically involve biting and/or kicking bruises. Lowered competition for forage and water resources would reduce stress and fighting for limited resources (water and forage) and promote healthier animals. The proposed action would also allow for the continued collection of information on herd characteristics, determination of herd health through direct examination of animals, and collect genetic samples for monitoring of genetic variation.

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

Adherence to the SOPs as well as techniques used by the gather contractor or BLM Staff would help minimize the risks of heat stress if any trapping would occur in the summer. Heat stress does not occur often, but if it does, death can result. Most temperature related issues during a gather can be mitigated by adjusting daily trapping times to avoid the extreme hot or cold periods of the day. The BLM and the contractor would be pro-active in controlling dust in and around the holding facility and the gather corrals to limit the horses' exposure.

Through the capture and sorting process, wild horses are examined for health, injury and other defects. Decisions to humanely euthanize animals in field situations would be made in conformance with BLM policy. BLM Euthanasia Policy IM-2009-041 is used as a guide to determine if animals meet the criteria and should be euthanized (refer to SOPs Appendix I). Animals that are euthanized for non-gather related reasons include those with old injuries (broken hip, leg) that have caused the animal to suffer from pain or which prevent them from being able to travel or maintain body condition; old animals that have lived a successful life on the range, but now have few teeth remaining, are in poor body condition, or are weak from old age; and wild horses that have congenital (genetic) or serious physical defects such as club foot, or sway back and should not be returned to the range.

All other handling analysis of wild horses are addressed on pages 28–31 of the Triple B, Maverick-Medicine and Antelope HMAs Gather EA and pages 35–37 of the Antelope Complex Gather Plan EA.

Wild Horses Remaining in the HMA following Gather

Under the Proposed Action, reducing population size at areas of concern and/or limited resources (water and forage) would ensure that the remaining wild horses remain healthy and vigorous, and that the wild horses in the HMAs are not at risk of death or suffering as a result of starvation or dehydration due to insufficient forage and/or water as a result of frequent drought conditions. The wild horses that are not captured may be temporarily disturbed and may move into another area during the gather operations. With the exception of potential minor changes to herd demographics, direct population wide impacts from a gather have proven, over the last 20 years, to be temporary in nature with most if not all impacts disappearing within hours to several days of

when wild horses are released back into the HMAs. With the Proposed Action, most of if not all wild horses captured would be removed from the HMA. Therefore, stress on wild horses remaining within HMAs would be reduced as compared to large scale gathers. In those instances here wild horses are relocated minimal impacts could be expected for wild horses for several days as described. No observable effects associated with these impacts would be expected within one month of release, except for a heightened awareness of human presence.

As a result of lower density of wild horses across the HMAs following the removal of excess wild horses, competition for resources would be reduced, allowing wild horses to utilize preferred, quality habitat. Confrontations between stallions would also become less frequent, and conflicts among wild horse bands at water sources and or areas of limited forage would also diminish. The primary effects to the wild horse population as a direct result of this proposed gather at selected areas would be to reduce the impacts to riparian or upland sites by wild horses.

The wild horses that remain in the HMAs following the gather 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.

Adverse impacts to the rangeland especially around water sources and riparian areas as a result of the current overpopulation of wild horses would be reduced under the Proposed Action. Fighting among stud horses would decrease since they would protect their position at limited 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 would be decreased.

No Action Alternative

If No Action is taken, excess wild horses would not be removed from within or outside the Triple B and Maverick-Medicine HMAs, and the western and central portions of the Antelope Valley HMA. The wild horse populations would not maintain herd health and wild horses would continue to impact site specific areas throughout the HMAs at this time. The animals would not be subject to the individual direct or indirect impacts as a result of a gather operation. Over the short-term, individual animals in the herd would be subject to increased stress and possible death as a result of increased competition for water and/or forage as the population continues to grow even further in excess of the land's capacity to meet the wild horses' habitat needs. The areas currently experiencing heavy to severe utilization by wild horses would increase over time. This would be expected to result in increasing damage to rangeland resources throughout the HMAs. Trampling and trailing damage by wild horses in/around riparian and site specific upland areas would also be expected to increase, resulting in larger, more extensive areas of poor range condition. Competition for the available water and forage among wild horses, domestic livestock, and native wildlife would continue and further increase.

Wild horses are a long-lived species with survival rates estimated between 80 and 97%, and may be the determinant of wild horse population increases (Wolfe 1980, L Eberhardt et al 1982, Garrott and Taylor 1990). Predation and disease have not substantially regulated wild horse population levels within or outside the project area. Throughout the HMAs few predators exist to control wild horse populations. Some mountain lion predation occurs but does not appear to be substantial. Coyotes are not prone to prey on wild horses unless they are young, or extremely weak. Other predators such as wolf or bear do not inhabit the area. Being a non-self regulating species, there would be a steady increase in wild horse numbers for the foreseeable future, which would continue to exceed the carrying capacity of the range. Individual wild horses would be

at risk of death by starvation and lack of water as the population continues to grow. The wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as well as injuries and death to all age classes of animals as the studs protect their position at scarce water sources. Significant loss of the wild horses in the HMAs due to starvation or lack of water would have obvious consequences to the long-term viability of the herd. Allowing wild horses to die of dehydration and starvation would be inhumane treatment and would be contrary to the WFRHBA, which mandates removal of excess wild horses. The damage to rangeland resources that results from excess numbers of wild horses is also contrary to the WFRHBA, which mandates the Bureau to “*protect the range from the deterioration associated with overpopulation*”, “*remove excess animals from the range so as to achieve appropriate management levels*”, and “*to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area.*” Once the vegetative and water resources are at critically low levels due to excessive utilization by an over population of wild horses, the weaker animals, generally the older animals and the mares and foals, are the first to be impacted. It is likely that a majority of these animals would die from starvation and dehydration. The resultant population would be extremely skewed towards the stronger stallions which would lead to significant social disruption in the HMA. By managing the public lands in this way, the vegetative and water resources would be impacted first and to the point that they have limited potential for recovery. This degree of resource impact would lead to management of wild horses at a much lower AML if BLM is able to manage for wild horses at all on the HMA in the future. As a result, the No Action Alternative would not ensure healthy rangelands that would allow for the management of a healthy wild horse population, and would not promote a thriving natural ecological balance.

As populations increase beyond the capacity of the habitat, more bands of horses would also leave the boundaries of the HMAs in search of forage and water, thereby increasing impacts to rangeland resources outside the HMA boundaries as well. This alternative would result in increasing numbers of wild horses in areas not designated for their use and would not achieve the stated objectives for wild horse herd management areas, namely to “prevent the range from deterioration associated with overpopulation”, and “preserve and maintain a thriving natural ecological balance and multiple use relationship in that area.”

Water Resources and Riparian/Wetland Areas

Affected Environment

The affected environment is described and incorporated by reference from pages 34-36 of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and pages 47-51 and 55-63 of the 2010 Antelope Complex Wild Horse Gather Plan EA. Those documents adequately address the affected environment for water resources and riparian/wetland areas and this document does not repeat that analysis. Data collected since those documents were completed is presented below.

In addition to the data presented in previous analysis, BLM has collected water quality data at the Deer Spring conveyance which is relevant to management issues regarding wild horses. The water from Deer Spring is conveyed to a small pond which is a principle drinking source for wild horses in the Dolly Varden Mountain Range area. Water quality analysis quantified that bacterial levels of the water is very high. Total coliform and E-coli colony forming units (cfu) per 100 were too numerous to count.

Poor water quality at the Deer Spring conveyance is caused by the high level of wild horse use along with the type of structure in which water is contained. Bacteria in the pond are probably the result of wild horses defecating in or near the pond and tracking fecal matter into the pond when they drink. There have also been several documented cases of wild horses dying in the conveyance and carcasses partially decomposing in the pond water. BLM replaced the pond with a trough in 2012.

Proposed Action

Traps placed at or near springs would not cause new damage to water resources and riparian areas since only locations with existing heavy use would be used. The proposed action would lead to a temporary reduction (approximately 1–10 years, depending on numbers and frequency of wild horses removed) of wild horses that use water resources and a commensurate reduction in the types of negative impacts that wild horses cause would also occur. These impacts are discussed in detail in the documents incorporated by reference as mentioned above in the Affected Environment.

No Action Alternative

If the proposed gather does not occur the conditions described under the Affected Environment would continue to occur and would increase in intensity as the wild horse population increases.

Wildlife Including Migratory Bird

Affected Environment

The affected environment is described and incorporated by reference in pages 36-39 of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and in pages 67-72 of the 2010 Antelope Complex Wild Horse Gather Plan EA.

Environmental Impacts

Proposed Action

In contrast to the Alternatives described in The Triple B/Maverick-Medicine/Antelope Valley and Antelope Complex Environmental Assessments, the proposed action consists only of water and/or bait trapping. There would be no disturbance from a helicopter gather, no fertility control, no selective sorting of horses with some being released at the trap site, and no manipulation of horse sex ratios. Temporary disturbance or displacement would occur to wildlife and migratory birds only during set up of traps and when horses are captured in a trap and transported to temporary holding facilities. Limited, if any, impacts would occur to wildlife habitat since trap sites and temporary holding facilities would be located primarily in previously disturbed sites. If a trap is located in intact habitat, the proposed action prescribes monitoring and treating of any established invasive species following trapping, and reseeding of impacted areas, thus reducing or eliminating potential adverse impacts to wildlife and migratory bird habitat.

Trapping could occur during the migratory bird nesting season (April 1-July 30), requiring surveys for migratory bird nests or nesting behavior within the vicinity of the trap site activity center prior to setups and trapping (Appendix 2). Such surveys shall be conducted no more than 14 days prior to commencement of surface-disturbing activities in an area. If disturbance does not occur within 14 days of the survey, the site shall be resurveyed. If during any surveys, nests or nesting behavior are documented within 300' of the proposed trap site or temporary holding facility, the area must be avoided (i.e. an alternative trap or temporary holding facility would be

relocated) until the young have fledged from the nest or the nest fails. This requirement would remove potential impacts to migratory birds.

No Action Alternative

Wildlife (including migratory birds) would not be disturbed or displaced under the No Action alternative. However, competition between wildlife and wild horses for forage and/or water resources would continue in certain areas of concern where resources are limited. Wild horses are aggressive around water sources and some wildlife may not be able to compete, which could lead to the death of individual animals. Wildlife habitat conditions would deteriorate as wild horses continue to exceed AML or concentrate in certain areas and reduce wildlife forage and herbaceous vegetative cover. This concentration and over use of limited resources could also result in lower nest and brood success for Sage-Grouse and/or migratory birds.

Special Status Plant and Animal Species – Federally listed, proposed, or candidate threatened or endangered species, State listed species, and BLM sensitive species

Affected Environment

The affected environment is described and incorporated by reference in pages 37-39 of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and in pages 68-70 of the 2010 Antelope Complex Wild Horse Gather Plan EA.

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and the 2010 Antelope Complex Wild Horse Gather Plan EA.

Special Status Plants – Nachlinger catchfly (*Silene nachlingerae*), a BLM Sensitive Species, is known to occur on Telegraph Peak in the Egan Range and in the southern Cherry Creek Range. It is designated sensitive because it inhabits ecological refugia, or specialized or unique habitats: generally dry, exposed or somewhat sheltered carbonate (rarely quartzite) crevices in ridgeline outcrops, talus, or very rocky soils on or at the bases of steep slopes or cliffs, on all aspects but predominantly on northwesterly to northeasterly exposures, mainly in the subalpine conifer zone (Nevada Natural Heritage Program 2001).

Special Status Animals - Several special status animal species are found within the project area including bats, raptors, birds, mollusks, and fish. Appendices J and K of the 2010 Antelope Complex Wild Horse Gather Plan EA and Appendices IV and V of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA provide a detailed description of Special Status Species, outline BLM policy regarding those species, and contain lists of Special Status Species known or likely to occur within the project area.

Greater Sage-Grouse(*Centrocercus urophasianus*)

The Greater Sage-Grouse (Sage-Grouse) is a Candidate Species under the Endangered Species Act of 1970, as amended. As such, it is the focus of numerous conservation efforts aimed at avoiding listing as Threatened or Endangered. Since completion of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and the 2010 Antelope Complex Wild Horse Gather Plan EA, BLM has designated Preliminary Priority Habitat and Preliminary General Habitat for Greater Sage-Grouse within Nevada. Instructional Memorandums 2012-043 and 2012-044 direct the BLM, in part, to consider how

proposed projects would affect Sage-Grouse and whether projects lie in Preliminary Priority Habitat, Preliminary General Habitat, or outside of these habitat designations:

Preliminary Priority Habitat (PPH): Areas that have been identified as having the highest conservation value to maintaining sustainable Greater Sage-Grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas.

Preliminary General Habitat (PGH): Areas of occupied seasonal or year-round habitat outside of priority habitat.

Within the project area there are 796,855 acres of PPH and 266,817 acres of PGH. In general, Sage-Grouse breed, nest, and winter in sagebrush habitats in the valley bottoms, and both genders move to high elevation mountain sagebrush communities during mid-summer through fall. Instruction Memorandum 2012-043 describes the intent of interim management policies and procedures in PPH is to maintain, enhance, or restore conditions for Sage-Grouse and its habitat, and within PGH is to reduce and mitigate adverse effects on Sage-Grouse and its habitat to the extent practical.

Environmental Impacts

Proposed Action

The Proposed Action may have temporary, limited negative effects on Special Status Species, including disturbance and/or displacement. Sage-Grouse and/or its habitat could be impacted through disturbance and/or displacement. However, removal of excess horses would benefit Sage-Grouse in the short-term through improved access to water sources and in the long-term through improved habitat conditions, both at water sources/riparian areas and in upland habitat containing sagebrush. Project design features aimed at removing and/or mitigating adverse effects include locating traps and temporary holding facilities at least two miles from leks during the breeding season (Appendix 3) where possible.

Sites inhabited by Nachlinger catchfly are generally quite inaccessible and would not be used as gather sites. Therefore, there would be no impact from the proposed action.

No Action Alternative Sensitive or special status species would not be disturbed or displaced by gather operations because they would not occur. However, habitat conditions for all special status animal species would continue to deteriorate at those areas of wild horse concentration as wild horse numbers increase and further reduce herbaceous vegetative cover and increase trampling damage to riparian areas, springs, and stream banks.

Sites inhabited by Nachlinger catchfly are generally quite inaccessible and dry and are not likely to be used by wild horses. There would be no impact to Nachlinger catchfly under the no action alternative.

Livestock

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather EA (pgs. 39-42) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 73-77). These EAs contain summaries of actual use for the 2002-03 to 2009-10 grazing fee years, permitted use

in AUMs, type of permitted livestock, allotment season of use, and percentage of individual allotments in an HMA. Updated actual use for the 2010-11 and 2011-12 grazing fee years for the allotments affected by the Proposed Action is listed in the table below.

Table 1. Updated Actual Use for 2011 and 2012

Allotment	2010–11 (AUMs)	2011–12 (AUMs)	Allotment	2010–11 (AUMs)	2011–12 (AUMs)
Antelope Valley	888	1,781	Newark	3,028	3,588
Badlands	1,079	1,482	North Butte	2,121	2,257
Bald Mountain	303	303	North Butte Valley	678	1,233
Becky Creek	185	ND	North Steptoe	2,121	ND
Becky Springs	2,099	1,074	North Steptoe Trail	ND	ND
Boone Springs	931	882	Odgers	vacant	vacant
Cherry Creek	9,682	9,385	Ruby #8	1,512	1,587
Chin Creek	3,987	1,297	Ruby Valley	396	408
Currie	4,669	4,691	Sampson Creek	1,165	981
Deep Creek	3,143	4,657	Schellbourne	206	252
Dry Mountain	664	107	South Butte	180	560
Ferber Flat	992	891	Spruce	1,996	nonuse
Goshute Basin	79	ND	Steptoe	1,666	1,502
Goshute Mountain ¹	-	-	Sugarloaf	851	1,740
Gold Canyon	ND	ND	Thirty Mile Spring	7,374	1,017
Harrison	222	563	Tippett	6,446	1,280
Horse Haven	18	18	Tippett Pass	2,153	3,273
Indian Creek	7,423	6,649	UT/NV South	1,291	1,492
Lovell Peak	ND	ND	Valley Mountain	3,672	3,628
Maverick/Ruby #9	nonuse	nonuse	Warm Spring	4,642	13,122
Maverick Springs	1,504	1,504	Warm Springs Trail	ND	ND
McDermid Creek ²	-	-	West Cherry Creek	1,240	1,386
Medicine Butte	8,829	926	West White Horse	332	304
Moorman Ranch	3,596	1,752	White Horse	1,741	1,414

¹ Goshute Mountain is managed and grazed in conjunction with the Badlands Allotment. Goshute Mountain actual use AUMs are included under the Badlands Allotment's AUMs summarized above. ² McDermid Creek is managed and permitted as apart of the Currie Allotment. McDermid Creek permitted AUMs are included under the Currie Allotment's AUMs summarized above.

Environmental Impacts

Proposed Action

Wild horse trapping operations have minor, short term, negative direct impacts to cattle and sheep grazing. Livestock located near trapping activities could be temporarily disturbed or displaced by the increased vehicle traffic during the trapping operations. Typically livestock would move back into the area once trapping operations cease. It is possible that livestock, if present, could be attracted to water and/or bait trapping sites. Livestock operators would be notified of trapping activities and any livestock that may be trapped would be released.

Indirect impacts to livestock grazing from the Proposed Action would be an increase in forage availability and improved vegetative resources at certain site specific areas that have been impacted by wild horses and reduced competition for water and forage, and improved vegetative resources. However, these impacts are expected to be minor in many areas since often water

sources of concern are not used by livestock. However, impacts may be positive and greater where reduced competition for forage allows livestock grazing operators to utilize their permits.

No Action Alternative

Livestock would not be displaced or disturbed due to trapping operations under the No Action Alternative; however, there would be continued competition with wild horses for limited water and/or forage resources in site specific areas within the HMAs. As wild horse numbers increase, and combined with dry conditions, livestock grazing within the HMAs would continue to be impacted by wild horses and may be further reduced in an effort to slow the deterioration of the range to the greatest extent possible.

Wilderness

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (pgs. 42-43) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 77-85).

Environmental Impacts

Proposed Action – No impacts to wilderness character would be anticipated because gathers would not occur in wilderness or wilderness study areas.

No Action Alternative – There would be no direct impacts to wilderness or wilderness study areas because gather operations would not occur. Impacts to naturalness could be threatened through the continued growth of wild horse populations. Wilderness or wilderness study areas currently receive moderate use by wild horses during certain times of the year. Increasing wild horse populations would be expected to further degrade the condition of vegetation and soil resources. The sight of heavy horse trails, trampled vegetation and areas of high erosion would continue to detract from the wilderness experience.

Noxious Weeds and Invasive Non-Native Species

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (pgs. 33–34) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 7–8).

Environmental Impacts

Proposed Action

The proposed gather may spread existing noxious or invasive weed species. This could occur if vehicles drive through infestations and spread seed into previously weed-free areas or inadvertently carry seeds that are attached to the vehicle or equipment. This is of particular concern if a gather crew moves from valley to valley. Black henbane is primarily found in Newark Valley and there is a small amount in Long Valley; however this weed is not currently documented in Butte Valley or Steptoe Valley. The contracting officer's representative or project inspector (COR/PI) would examine proposed gather sites and proposed temporary holding corrals for noxious weeds prior to set-up to eliminate the potential for noxious weed spread to other sites.

If invasive or noxious weeds are found, a different the location would be selected. Any equipment or vehicles exposed to weed infestations or arriving on site carrying dirt, mud, or plant debris would be cleaned before moving into or within the project area. All gather sites, holding facilities, and contractor camping areas on public lands would be monitored for the presence of noxious and invasive weeds and treated as necessary for five years following use.

Noxious weeds can also spread into disturbed areas such as denuded and degraded areas subject to heavy or severe utilization or to trampling damage. The Proposed Action would help improve vegetative health, reduce disturbed or degraded areas, and reduce the vulnerability of the project area to noxious weed spread by reducing the potential or occurrence of over utilization of vegetation or severe trampling.

Despite short-term risks, over the long term the reduction in wild horse numbers and the subsequent recovery of the native vegetation would result in fewer disturbed sites that could be susceptible to non-native plant species invasion. The overall outcome for this action would be a long-term positive for non-native or noxious weeds.

No Action Alternative

Under this alternative, the wild horse gather would not take place at this time. The likelihood of noxious weeds being spread by limited water or bait trapping gather operations would not exist. However, increased wild horse numbers and continued overgrazing of the present plant communities could lead to an expansion of noxious weeds and invasive non-native species in disturbed and degraded areas of the range. The no action alternative would provide for an overall increased risk for noxious weed invasion in the long-term in site specific areas.

Vegetation

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (pgs. 44–45) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 63–67). These EAs contain descriptions of the plant communities in certain areas that can be found in the areas affected by the Proposed Action, as well as the typical plant species of each community.

Areas that are regularly subjected to the congregation of animals generally show signs of greater disturbance and grazing utilization than areas with more dispersed use. Over-utilization of plants reduces photosynthetic capability, vigor, reproductive capability, and root structure.

2012 Drought Conditions

A survey of soil moisture conditions was conducted in the Maverick-Medicine and Antelope Valley HMAs in March and April 2012, using the USDA Guide “Estimating Soil Moisture by Feel and Appearance”. Soil moisture throughout the area fell between the driest and second driest categories (but closer to the driest). At that time the available soil moisture was 25%. Available water capacity is the portion of water in soil that can readily be absorbed by plant roots. The available water moisture is generally high in the spring time when plants begin to grow. However, this spring the available soil moisture was 25% and little if any precipitation fell during the spring and early summer (active growing period for plants) to offset the lack of soil moisture.

Spring precipitation did not make any significant gains to available soil moisture and these low levels would persist as long as drought conditions continue.



Indian ricegrass plant showing limited growth in late June 2012.



Utilization on white sage in early June 2012.



White sage site in August 2012 showing heavy use by wild horses northeast of Deer Spring Conveyance in the central portion of the Antelope Valley HMA.

Throughout the HMAs plants exhibited signs of drought stress. Very little current year's growth was observed for a majority of plants, both herbaceous and shrub species.

Environmental Impacts

Proposed Action

The Proposed Action would initially have a negative, short term direct impact on vegetation as a result of trampling and disturbance of vegetation occurring at water trap sites, bait sites and holding locations. Disturbance and trampling of vegetation would occur due to the use of vehicles and concentration of horses in the immediate area of such facilities. The new additional disturbed area would make up less than 2 acres.

Bait sites and holding facilities are usually placed in areas easily accessible to livestock trailers and standard equipment; generally roads, gravel pits or other previously disturbed sites, all accessible by existing roads, are used. Water trap sites would most likely be at locations already disturbed by wild horse and other animal activity. However, the disturbance and trampling that would occur under the Proposed Action is very similar to the disturbance and trampling that is currently taking place. It is expected that under the Proposed Action, trampling and disturbance of vegetation would be reduced in the long term due to reduction of overall trampling and re-seeding of the trap sites and temporary holding facility locations where appropriate.

The Proposed Action of removing wild horses from specific areas of habitual congregation would have a positive, indirect long term impact on the vegetation in and adjacent to those areas by reducing grazing pressure and hoof action, despite the initial disturbance of trapping activities. The reduction in grazing pressure and hoof action would result in healthier plants, via increased photosynthetic capability, vigor, reproductive capability, and improved root structure.

No Action Alternative

The No Action Alternative would have negative, short and long term impacts on vegetation. Vegetation would continue to be disturbed by wild horse hoof action in areas of habitual congregation. Heavy utilization of forage species by wild horses would continue, resulting in weak plants with reduced photosynthetic capability, vigor, reproductive capability, diminished root structure, and increased plant mortality. Heavy utilization combined with drought conditions would further diminish plant health and reduce the ability of plants to recover moderate to severe from grazing utilization. Sustained heavy utilization would result in a reduced plant population with decreased forage production capability; the carrying capacity of the range would be reduced and rangeland health standards could not be achieved.

The size of the areas impacted should vary from relatively small areas around and near water sources to far more extensive areas, depending on the length and severity of the drought, the number of wild horses competing for limited resources, and the amount of non-use or reduction in livestock numbers that the permittees continue to take.

Soils

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (pgs. 45–47) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 52–55).

Environmental Impacts

Proposed Action

Project implementation would primarily stay on existing roads, washes and horse trail areas, and only relatively small areas would be used for gathering and holding operations. Horses may be concentrated for a limited period of time in traps. Traps placed on upland areas may result in some new soil disturbance and compaction, but these impacts would be temporary and would not be expected to adversely affect soil quality in the long term. Soil quality may improve in the long term since physical impacts from wild horse use would decrease due to the proposed gather.

No Action Alternative

If the proposed gather does not occur the conditions described under the Affected Environment would continue to occur and would increase in intensity as the wild horse population increases, particularly in areas of congregation around water and/or in specific upland areas .

Public Health And Safety

Affected Environment

The affected environment is described and incorporated by reference from pages 46-47 of the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA and the pages 88-89 of the 2010 Antelope Complex Wild Horse Gather Plan EA.

In recent gathers, members of the public have increasingly traveled to the public lands to observe BLM's gather operations. Members of the public can inadvertently wander into areas that put them in the path of wild horses that are being herded or handled during the gather operations, creating the potential for injury to the wild horses and to the BLM employees and contractors conducting the gather and/or handling the horses as well as to the public themselves. Because these horses are wild animals, there is always the potential for injury when individuals get too close or inadvertently get in the way of gather activities. However, the concerns are primarily associated with helicopter use and visitors coming too close to the holding facilities. Because visitors would be limited to viewing temporary holding facilities, public safety concerns would be minimal.

Environmental Impacts

Proposed Action

Due to this type of operation (luring wild horses to bait) spectators and viewers would be prohibited as it would have impacts on the ability to capture wild horses. Only essential personnel (COR/PI, veterinarian, contractor, contractor employees, etc.) would be allowed at the trap sites during operations. Visitors would be allowed to view wild horses from a safe distance at any temporary holding facilities.

No Action Alternative

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

Cultural Resources

Affected Environment

The affected environment is described and incorporated by reference from the 2011 Triple B, Maverick-Medicine, and Antelope Valley Herd Management Areas Wild Horse Gather Plan EA (pgs. 47-48) and the 2010 Antelope Complex Wild Horse Gather Plan EA (pgs. 95-88).

Environmental Impacts

Proposed Action

All temporary corrals and other affiliated facilities, in addition to parking, would be placed within previously disturbed areas whenever possible. Prior to placing a facility, A Class III inventory would first be conducted. A District Archeological Technician (DAT) may conduct the inventory for the purposes of facility placement. If the DAT observes cultural material they would immediately contact a district archaeologist to discuss avoidance measures. If a water trap site contains undisturbed cultural resources which may be potentially eligible to the National Register of Historic Places (NRHP), the trap location would be relocated. All cultural resources would be avoided to prevent adverse effects to any properties potentially eligible to the NRHP.

No Action Alternative

Wild horses would continue to increase in numbers and the overpopulation of wild horses may impact Cultural Resources, especially at water resource areas and other areas of congregation and from additional trailing patterns.

Lands with Wilderness Characteristics

Affected Environment

On June 1, 2011, the Secretary of the Department of the Interior issued a memorandum to the BLM Director that in part affirms BLM's obligations relating to wilderness characteristics under Sections 201 and 202 of the Federal Land Management Policy Act. The BLM Released Manuals 6310 and 6320 in March 2012, which provide direction on how to conduct and maintain wilderness characteristics inventories and provides guidance on how to consider whether to update a wilderness characteristics inventory.

The primary function of an inventory is to determine the presence or absence of wilderness characteristics. An area having wilderness characteristics is defined by:

- Size - at least 5,000 acres of contiguous, roadless federal land,
- Naturalness, and
- Outstanding opportunities for solitude or primitive and unconfined types of recreation.
- The area may also contain supplemental values (ecological, geological, or other features of scientific, educational, scenic, or historical values).

The Nevada BLM completed the original wilderness review in 1979, and issued an initial wilderness inventory decision in 1980. In the original wilderness inventory, only 17 units of the 69 that cover the Triple B HMA were intensively inventoried. One was found to possess wilderness character, and was designated as a WSA. The Goshute Canyon WSA was designated as a wilderness in 2006.

In 2011, the Ely and Elko District Offices BLM began updating the lands with wilderness characteristics (LWC) inventory on a project-by-project basis until there is a land use plan revision. Only a small portion of the Ely District that overlaps the Triple B HMA has had a Lands with Wilderness Characteristics Inventory update completed. The 39 units that have had the inventory updated in the Ely District cover less than half of the 1.2 million acre Triple B HMA. Of this, four units were found to possess LWC: three were due to being contiguous with the Goshute Canyon Wilderness; the fourth on its own merits. There has not been a land use plan amendment to determine if or how this unit of LWC would be preserved for its wilderness characteristics. Elko District currently has 46 polygons that need to be updated and inventoried for LWC overlapping these HMAs.

Environmental Impacts

Proposed Action

The proposed action would improve the naturalness of the units by reducing impacts to riparian areas from current excess population of wild horses. There may be a short term impact to solitude while the gather is being implemented, people are working in the area. However, there are no anticipated impacts to size, or opportunities for primitive recreation.

No Action Alternative

Under the No Action alternative, there would be continued adverse impacts to riparian areas from the excess horse population. Trampling and trailing damage by wild horses in/around riparian and upland areas would also be expected to increase, resulting in larger, more extensive areas of bare and denuded ground. Competition for the available water and forage between wild horses, domestic livestock, and native wildlife would continue and further increase. All of these adverse effects would impact the naturalness of the units. There are no anticipated impacts to size or opportunities for solitude or primitive recreation.

Cumulative Impacts and Past, Present and Reasonably Foreseeable Actions

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

The area of cumulative impact analysis is the Triple B Maverick-Medicine HMAs, the western and central portion of the Antelope Valley HMA (i.e. Dolly Varden Range) (Maps 1 and 2).

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

Past, Present, and Reasonably Foreseeable Actions

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

Project -- Name or Description	Status (x)		
	Past	Present	Future
Issuance of multiple use decisions and grazing permits for ranching operations through the allotment evaluation process and the reassessment of the associated allotments and vegetation treatments .	x	x	x
Livestock grazing	x	x	x
Wild horse and burro gathers	x	x	x
Mineral exploration/geothermal exploration/abandoned mine land reclamation/mineral extraction	x	x	x
Recreation	x	x	x
Spring development (including fencing water sources)	x	x	x
Wildlife guzzler construction	x	x	x
Non-native, Invasive and noxious weed inventory/treatments	x	x	x
Wild horse and burro management: issuance of multiple use decisions, AML adjustments and planning	x	x	x

Any future proposed projects (such as water developments) within the Triple B, Maverick-Medicine and Antelope Valley HMAs would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

Past Actions

In 1971 Congress passed the Wild Free-Roaming Horses and Burros Act which placed wild and free-roaming horses and burros that were not claimed for individual ownership, under the protection of the Secretaries of Interior and Agriculture. In addition herd areas were identified as areas occupied by wild horses at the passing of the Act in 1971. In 1976 the Federal Land Policy and Management Act (FLPMA) gave the Secretary the authority to use motorized equipment in the capture of wild free-roaming horses as well as continued authority to use helicopters in the inventory of wild horses on the public lands. FLPMA sec. 9 {16 U.S.C. 1338a} In administering this act, the Secretary may use or contract for the use of helicopters or, for the

purpose of transporting captured animals, motor vehicles. Such use shall be undertaken only after a public hearing and under direct supervision of the secretary or of a duty authorized official or employee of the Department. In 1978, the Public Range Improvement Act (PRIA) was passed which amended the WFRHBA to provide additional directives for BLM's management of wild free-roaming horses on public lands.

Past actions include establishment of wild horse HMAs, establishment of AML for wild horses, wild horse gathers, vegetation treatment, mineral extraction, oil and gas exploration, livestock grazing and recreational activities throughout the area. Some of these activities have increased infestations of invasive plants, noxious weeds, and pests and their associated treatments.

Triple B HMA

The Ely District Egan MFP (1987) designated the Buck and Bald, Butte, and Cherry Creek HMAs for the long-term management of wild horses. These HMAs were later combined into the Triple B HMA in the Ely District Record of Decision (ROD) and Approved Resource Management Plan (RMP) in August 2008 due to the interchange between the three HMAs. The HMA is nearly identical in size and shape to the original Herd Areas representing where wild horses were located in 1971. Currently, management of the Triple B HMA and wild horse population is guided by the 2008 Ely District ROD and RMP. The AML range for the HMA is 250-518 wild horses. The Land Use Plan analyzed impacts of management's direction for grazing and wild horses, as updated through Bureau policies, Rangeland Program direction, and Wild Horse Program direction. Forage was allocated within the allotments for livestock use and range monitoring studies were initiated to determine if allotment objectives were being achieved, or that progress toward the allotment objectives was being made.

Maverick-Medicine and Antelope Valley HMAs

The HMA was established in the late 1980s through the land use planning process as areas where wild horse management was a designated land use. Since the mid-1980s, AMLs have been established on the Elko BLM District HMAs.

In 1993 the Wells RMPWHA combined the western portion of the Cherry Creek Herd Area with the Maverick-Medicine HMA and eastern portion of the Cherry Creek Herd Area with the Antelope Valley HMA. This established a baseline AML of 389 wild horses for the Maverick-Medicine HMA and an AML of 240 wild horses for the Antelope Valley HMA. The Maverick-Medicine baseline AML was adjusted to 166-276 wild horses through a combination of the 1994 Area Manager's Final Multiple Use Decision for the West Cherry Creek Allotment, the 1998 Spruce Final Multiple Use Decision, and the 2001 Final Multiple Use Decision for the Maverick/Medicine Complex.

In 2001, the NDOT fenced the US Highway 93 ROW to improve public safety as numerous vehicles-horse collisions had occurred in previous years. This fence separates the western portion of the Antelope Valley HMA from the rest of the Antelope Valley HMA.

In 2007 the NDOT fenced the Alternate US Highway 93 ROW to improve public safety as numerous vehicles-horse collisions had occurred in previous years. This fence separates the Dolly Varden portion of the Antelope Valley HMA from the eastern portion of the Antelope Valley HMA.

Project Area

Due to laws and subsequent court decisions, **integrated** wild horse management has occurred in the Triple B, Maverick-Medicine and Antelope Valley HMAs. Eight gathers have been completed in the past on part or all of the HMAs. Approximately 10,470 wild horses have been removed from the HMAs in the last 25 years. Following each gather, populations have responded with the expected approximate 20% annual increase. Populations have not been negatively impacted by gathers over the long term.

Adjustments in livestock season of use, livestock numbers, and grazing systems were made through the allotment evaluation/multiple use decision process. In addition, temporary closures to livestock grazing in areas burned by wildfires, or due to extreme drought conditions, were implemented to improve range conditions.

The Northeastern Great Basin Resource Area Council (RAC) developed standards and guidelines for rangeland health that have been the basis for assessing rangeland health in relation to management of wild horse and livestock grazing within the Ely and Elko Districts since 1998. Adjustments in numbers, season of use, grazing season, and allowable use have been based on the evaluation of progress made toward reaching the standards.

Several oil and gas exploration wells have been drilled across the Cumulative Effects Study Area; (CESA) however none of these wells have gone into production. The Ely RMP/EIS summarized the history of oil and gas exploration on page 3.18-7 to 3.18-9.

Historical mining activities have occurred throughout the CESA.

Present Actions

Today the Triple B, Maverick-Medicine and the Antelope Valley HMA (west of U.S. Highway 93) have a combined estimated population of 1,085 wild horses (including projected 2012 foal crop). The central portion of the Antelope Valley HMA around the Dolly Varden Range has an estimated population of 426 based on the 2012 inventory flights. Resource damage is occurring at various areas in the HMAs due to excess numbers of wild horses. Program goals have expanded beyond establishing a “*thriving natural ecological balance*” by setting AML for individual herds to now include achieving and maintaining healthy and stable populations.

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

The BLM is continuing to administer grazing permits and may conduct vegetation treatments to improve watershed health. Within the proposed project area, sheep and cattle grazing occurs on a yearly basis.

The focus of wild horse management has also expanded to place more emphasis on achieving rangeland health as measured against the standards for rangeland health. The Northeastern Great Basin RAC Standards and Guidelines for Rangeland Health are the current basis for assessing rangeland health in relation to management of wild horse and livestock grazing within the Ely and

Elko Districts. Adjustments to numbers, season of use, grazing season, and allowable use are based on evaluating progress toward reaching the standards.

Mineral exploration and mining is on-going in the CESA, occurring primarily in the Buck, Bald, and Cherry Creek Mountain Ranges and the Dolly Varden Range. The Bald Mountain Mine is planning on expanding their current mining and exploration process.

Active oil and gas leases occur throughout the CESA. An oil and gas lease sale was completed for March 2012 and includes several parcels within the CESA.

The Falcon to Gondor Utility Corridor crosses the CESA in Newark Valley north of Highway 50. This is a half mile wide corridor interconnecting with the Ely-to-Utah State Line portion of the Southwest Intertie Project corridor (see Ely RMP, LR-34B).

The Southwest Intertie Project Corridor crosses the CESA in Butte Valley north of Highway 50. This is a three quarter mile wide corridor from the Elko/White Pine County Line to the point where it parallels Highway 93 and the Pahranaagat Wildlife Refuge and is a half mile wide from that point to the Clark County line (See Ely RMP, LR-34D).

Reasonably Foreseeable Future Actions

In the future, the BLM would continue to manage these HMAs for wild horses consistent with available habitat, achieving a thriving natural ecological balance, maintaining genetic diversity, age structure, and sex ratios. Current policy is to express all future wild horse AMLs as a range, to allow for population growth between gathers, as well as better management of populations. The Ely BLM District completed the *Ely Proposed Resource Management Plan/Final Environmental Impact Statement* (RMP/EIS, 2007) released in November 2007 which analyzed AMLs expressed as a range and addressed wild horse management on a programmatic basis. Future wild horse management in the BLM's Ely District will focus on an integrated ecosystem approach with the basic unit of analysis being the watershed. Currently the Egan Field Office is completing the Newark Watershed analysis. This process will identify actions associated with habitat improvement within the HMA. The BLM would continue to conduct monitoring to assess progress toward meeting rangeland health standards. Wild horses would continue to be a component of the public lands, managed within a multiple use concept.

Under the Director's proposed new Wild Horse and Burro management strategy (currently in draft), the BLM would place greater emphasis on the use of fertility control, including "catch, treat and release" (CTR) gathers, boost adoptions, establish a comprehensive animal welfare program, and call on the National Academy of Sciences (NAS) to review previous wild horse management studies and make recommendations on how the BLM should proceed in light of the latest scientific research. At the conclusion of the NAS study, the BLM would determine whether there is a need for a comprehensive EIS that would analyze the potential impacts of the several wild horse and burro management options – or if changes in federal law are needed in order to place the Wild Horse and Burro Program on a more sustainable track over the long-term.

Fertility control should also become more readily available as a management tool, with treatments that last longer between gather cycles, reducing the need to remove as many wild horses, and possibly extending the time between gathers. The combination of these fore mentioned factors should result in an increase in stability of gather schedules and longer periods of time between gathers.

The proposed water/bait trapping gather area contains a variety of resources and supports a variety of uses. Any alternative course of wild horse management has the opportunity to affect and be affected by other authorized activities ongoing in and adjacent to the area. Future activities which would be expected to contribute to the cumulative impacts of implementing the Proposed Action include: future wild horse gathers; continuing livestock grazing in the allotments; oil, natural gas, and mineral exploration; new or continuing infestations of invasive plants, noxious weeds, and pests and their associated treatments; and continued native wildlife populations and recreational activities historically associated with them. The significance of cumulative effects based on past, present, proposed, and reasonably foreseeable future actions are determined based on context and intensity.

A wild horse eco-sanctuary has been proposed for the central portion of the Antelope Valley HMA as well as a portion of the Spruce-Pequop and Goshute HMAs.

The Southwest Intertie Project (a major transmission line) has identified a route through the Antelope Valley HMA.

Impacts Conclusion

Past management of wild horses has resulted in the current wild horse overpopulation within the Triple B and Maverick-Medicine HMAs and the western and central portions of the Antelope Valley HMA. Wild horse management has contributed to the present at-risk resource conditions within the gather area.

The combination of the past, present, and reasonably foreseeable future actions, along with the Proposed Action, should result in more stable wild horse populations, healthier rangelands, fewer adverse impacts to site specific areas, healthier wild horses, and fewer multiple-use conflicts within the HMAs. Habitat for wildlife including migratory birds and special status plant and animal species would be improved both in the short and long-term. Impacts to site-specific areas that are currently heavily impacted by excessive numbers of wild horses would be lessened, resulting in improvements to riparian, soils, upland vegetation, and cultural resource conservation.

Mitigation Measures and Suggested Monitoring

Mitigation and monitoring are incorporated into the Proposed Action through SOPs, which have been developed over time. These SOPs (Appendix I) represent the "best methods" for reducing impacts associated with gathering, handling, and transporting wild horses and collecting herd data.

Tribes, Individuals, Organizations, or Agencies Consulted:

In addition to the information provide in Section 1.3, BLM also consulted local, county, state, and Federal agencies.

List of Preparers

Elko District Office		
Name	Title	Responsible for the Following Section(s) of this Document
Bruce Thompson	Wild Horse Specialist	Project Lead/Wild Horses, Elko District
Terri Dobis	Rangeland Management Specialist	Livestock Grazing, Vegetation
Pat Coffin	Fisheries Biologist	Wildlife, Migratory Birds, Special Status Species
Cameron Collins	Wildlife Biologist	Wildlife, Migratory Birds, Special Status Species
Matt Werle	Archaeologist	Cultural Resources
Mark Dean	Hydrologist	Soil, Water, Wetlands and Riparian/Flood Plains
Bryan Mulligan	Natural Resource Specialist	Non-native Invasive Species and Noxious Weeds
Donna Jewell	Assistant Field Manager Renewable Resources	Livestock Grazing, Special Status Species, Wildlife, Migratory Birds
Ely District Office		
Name	Title	Responsible for the Following Section(s) of this Document
Ruth Thompson	Wild Horse and Burro Specialist	Wild Horse Specialist
Marian Lichtler	Wildlife, Biologist	Wildlife, Migratory Birds, Special Status Species
Mindy Seal	Environmental Coordination	NEPA, Environmental Justice
TJ Maybe	Forester	Forestry
Melanie Peterson	Environmental Protection Specialist	Human Health and Safety, Hazardous Wastes
Emily Simpson	Wilderness Planner	Wilderness
Mark D'Aversa	Hydrologist	Soil, Water, Wetlands and Riparian/Flood Plans
Chris Mayer	Supervisory Rangeland Management , Invasive, Non-native Species, Vegetative Resources	Livestock Grazing
Leslie Riley	Archaeologist	Cultural Resources
Elvis Wall	Native American Coordinator	Native American Religious Concerns
Lisa Gilbert	Archeologist/Historic Paleontologist	Cultural Resources

Bibliography

- Beever, E. 2003. Management Implications of the Ecology of Free-Roaming Horses in Semi-Arid Ecosystems of the Western United States. *Wildlife Society Bulletin* 31 (3):887-895. .
- Beever, E. A. and P.F. Brussard. 2004. Community- and Landscape-level Responses of Reptiles and Small Mammals to Feral-Horse Grazing in the Great Basin. *Journal of Arid Environments*59: 271-297..
- Beever, E.A. and J.E. Herrick. 2006. Effects of Feral Horses in Great Basin Landscapes on Soils and Ants: Direct and Indirect Mechanisms. *Journal of Arid Environments* 66: 96-112..
- Beever, E.A., R. J. Tausch, and P.F. Brussard. 2003. Characterizing Grazing Disturbance in Semiarid Ecosystems Across Broad Scales, Using Diverse Indices. *Ecological Applications* 13 (1): 119-136..

- Coates-Markle, L. 2000. Summary Recommendations, BLM Wild Horse and Burro Population Viability Forum April 1999, Ft. Collins, CO. Resource Notes 35:4pp.
- Eberhardt, L.L., A.K. Majorowicz, and J.A. Wilcox. 1982. Apparent Rates of Increase for Two Feral Horse Herds. *Journal of Wildlife Management* 46 (2): 367-374. .
- Elko County Natural Resource Management Advisory Commission. 2008. Elko County Public Lands Policy Plan. Elko County Commissioners, Elko County Natural Resource Management Advisory Commission, Elko, NV.
- Floyd, Ted et al. 2007. Atlas of the Breeding Birds of Nevada. University of Nevada Press, Reno NV.
- Ganskopp, D.C. and M. Vavra. 1986. Habitat Use by Feral Horses in the Northern Sagebrush Steppe. *Journal of Range Management* 39(3):207-211.
- Ganskopp, D.C. and M. Vavra. 1987. Slope Use by cattle, feral horses, deer, and bighorn sheep. *Northwest Science*, 61(2):74-80.
- Ganskopp, D.C. 1983. Habitat use and Spatial Interactions of Cattle, Wild Horses, Mule Deer, and California Bighorn Sheep in the Owyhee Breaks of Southeast Oregon. PhD Dissertation, Oregon State University.
- Garrott, R.A., D.B. Siniff, and L.L. Eberhardt. 1991. Growth Rates of Feral Horse Populations. *The Journal of Wildlife Management* 55(4):641-648. .
- Garrott, R.A., and L. Taylor. 1990. Dynamics of a Feral Horse Population in Montana. *Journal of Wildlife Management* 54 (4): 603-612. .
- Great Basin Bird Observatory. 2003. Nevada Bird Count. A habitat-based monitoring program for breeding birds of Nevada. Instruction package and protocol for point count surveys.
- Hanley, T.A. 1982. The Nutritional Basis for Food Selection by Ungulates. *Journal of Range Management* 35 (2): 146-151. .
- Hanley, T.A., and K.A. Hanley. 1982. Food Resource Partitioning by Sympatric Ungulates on Great Basin Rangeland. *Journal of Range Management* 35 (2): 152-158..
- Hansen, R.M., R.C. Clark, and W. Lawhorn. 1977. Foods of Wild Horses, Deer, and Cattle in the Douglas Mountain Area, Colorado. *Journal of Range Management* 30 (2): 116-118.
- Heilmann, T.J., Garrott, R.A., Caldwell, L.L., Tiller, B.L. 1998. Behavioral response of free-ranging elk treated with an immunocontraceptive vaccine. *Journal of Wildlife Management* 62:243-250.
- Herbel, H. Carlton., Jerry L. Holechek., Rex D. Pieper., 2004. *Range Management Principles and Practices*. Fifth Edition. Pgs. 141-142.
- Hubbard, R.E., and R. M. Hansen. 1976. Diets of Wild Horses, Cattle, and Mule Deer in the Piceance Basin, Colorado. *Journal of Range Management* 29 (5): 389-392. .

Bibliography

Error: no bibliography entry: d7934e2470 found in <http://docbook.sourceforge.net/release/bibliography/bibliography.xml>

109 Interior Board of Land Appeals 115, 119 API 1989..

118 Interior Board of Land Appeals 75..

Interior Board of Land Appeals 88-591, 88-638, 88-648, 88-679 at 127.

Krysl, L.J., M.E. Hubbert, B.F. Sowell, G.E. Plumb, T.K. Jewett, M.A. Smith, and J.W. Waggoner. 1984. Horses and Cattle Grazing in the Wyoming Red Desert, I. Food Habits and Dietary Overlap. *Journal of Range Management* 37 (1): 72-76. .

McInnis, M.A. 1984. Ecological Relationships among Feral Horses, Cattle, and Pronghorn in Southeastern Oregon. PhD Dissertation. Oregon State University.

McInnis, M.A. and M. Vavra. 1987. Dietary relationships among feral horses, cattle, and Prognhorn in southeastern Oregon. *Journal of Range Management*. 40(1):60-66.

Meeker, J.O. 1979. Interactions Between Pronghorn Antelope and Feral Horses in Northwestern Nevada. Master's Thesis. University of Nevada, Reno, Nevada.

Menard, C., P. Duncan, G. Fleurance, J. Georges, and M. Lila. 2002. Comparative Foraging and Nutrition of Horses and Cattle in European Wetlands. *Journal of Applied Ecology* 39 (1): 120-133. .

Olsen, F.W., and R.M. Hansen. 1977. Food Relations of Wild Free-Roaming Horses to Livestock and Big Hame, Red Desert, Wyoming. *Journal of Range Management* 30 (1): 17-20. .

Ostermann-Kelm, S.D., E.A. Atwill, E.S. Rubin, L.E. Hendrickson, and W.M. Boyce, 2009. Impacts of Feral Horses on a Desert Environment. *BMC Ecology* 9:22. .

Neel, L.A. (Editor). 1999. Nevada Partners in Flight Bird Conservation Plan. Nevada Department of Wildlife. 007. www.ndow.org/March.

Nevada Division of State Lands. 1986. Nevada Statewide Policy Plan for Public Lands. Nevada Division of State Lands, State of Nevada, Carson City, NV.

Nevada Natural Heritage Program. 2008. <http://www.heritage.nv.gov/March>..

Nevada Natural Heritage Program. 2001. Fact sheet for Nachlinger Catchfly (*Silene nachlingerae*). Online database accessed 7/20/2012: <http://heritage.nv.gov/atlas/silennachl.pdf> .

NOAA. <http://www.wrcc.dri.edu/>.

Paige, C., and S.A. Ritter. 1999. Birds in a Sagebrush Sea: Managing Sagebrush Habitats for Bird Communities. Partners in Flight Western Working Group, Boise, ID.

Platts, W.S., and J.N. Rinne. 1985. Riparian and stream enhancement management and research in the Rocky Mountains. *North American Journal of Fisheries Management* 5:115-125.

- Protection Institute of America V. Nevada BLM, 109 Interior Board of Land Appeals 115 API 1989. 118 Interior Board of Land Appeals 75.
- Siniff, D.B., J.R. Tester, and G.L. McMahon. 1986. Foaling Rate and Survival of Feral Horses in Western Nevada. *Journal of Range Management* 39 (4): 296-297. .
- Smith, M.A. 1986a. Impacts of Feral Horses Grazing on Rangelands: An Overview. *Equine Veterinary Science*, 6(5):236-238.
- Smith, M.A. 1986b. Potential Competitive Interactions Between Feral Horses and Other Grazing Animals. *Equine Veterinary Science*, 6(5):238-239.
- Smith, M.A and J.W. Waggoner, Jr., et al. 1982. Vegetation Utilization, Diets, and Estimated Dietary Quality of Horses and Cattle Grazing in the Red Desert of Westcentral Wyoming. BLM Contract No. AA851-CTO-31.
- Society for Range Management. 1989. A glossary of Terms Used in Range Management (Third ed.). Society for Range Management, Denver, CO.
- USDA. <http://droughtmonitor.unl.edu/>.
- USGAO. 2008. Bureau of Land Management Effective Long-Term Options Needed to Manage Unadoptable Wild Horses. GAO-09-77.
- USDOI. 1983. Proposed Wells Resource Management Plan and Final Environmental Impact Statement. U.S. Department of the Interior, Bureau of Land Management.
- USDOI. 1985. Approved Wells RMP and Record of Decision. U.S. Department of the Interior, Bureau of Land Management.
- USDOI. 1993. Wells RMP Wild Horse Amendment and Decision Record. U.S. Department of the Interior, Bureau of Land Management. BLM-EK-PT-93-001-1610.
- USDOI, BLM. 2008. National Environmental Policy Act. Handbook-1790-1.
- USDOI. 2007. Ely Proposed Resource Management Plan/Final Environmental Impact Statement. U.S. Department of the Interior, Bureau of Land Management. BLM/EL/PL-07/09+1793. DOI No. FES07-40. November.
- USDOI. 2008. Ely District Record of Decision and Approved Resource Management Plan. U.S. Department of the Interior, Bureau of Land Management. BLM/NV/EL/PL-GI08/25+1793.
- USDOI, Bureau of Land Management. 1994. Guidelines for assessing and documenting cumulative impacts. WO-IB-94-310.
- USGAO. 2008. Bureau of Land Management Effective Long-Term Options Needed to Manage Unadoptable Wild Horses. GAO-09-77..
- Vavra, M. and F. Sneva. 1978. Seasonal diets of five ungulates grazing the cold desert biome. *Proceedings of the First International Rangeland Congress*. Society for Range Management. Denver, CO.
- Wolfe, M.L. 1980. Feral Horse Demography: A Preliminary Report. *Journal of Range Management* 33 (5):354-360. .

Wolfe, M.L., Ellis, L.C., and MacMullen, R.. 1989. Reproductive Rates of Feral Horses and Burros. *Journal of Wildlife Management* 53 (4): 916-9 .

Other Bibliography can be found in pages 55–58 of the 2011 Triple B, Maverick–Medicine and Antelope HMAs Gather EA and pages 102–106 of the Antelope Complex Gather EA..

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