Nevada Wild Horse Range

Herd Management Area Plan

INTRODUCTION

Background Information

The Bureau of Land Management (BLM) Las Vegas Field Office (LVFO) proposes to prepare a Herd Management Area Plan (HMAP) for the Nevada Wild Horse Range Herd Management Area (NWHR HMA) that would establish short and long term management and monitoring objectives for the wild horse herd and their habitat. These objectives would guide management of the NWHR HMA wild horses over the next 10-20 year period.

The NWHR HMA is located in the north-central portion of the Nevada Test and Training Range (NTTR) within portions of Clark, Lincoln and Nye Counties, in south-central Nevada. The NWHR HMA comprises 1.3 million acres of public land withdrawn for use by the military. Refer to Maps 1 and 2. Appendix C outlines the current security and safety requirements associated with obtaining access to the NTTR.

The appropriate management level (AML) was re-established in July 2004 as a population range of 300-500 wild horses. As discussed in the Record of Decision (ROD) for the approved NTTR Resource Management Plan (RMP) and Final Environmental Impact Statement (FEIS - page 14), the upper limit of the AML is the maximum number of wild horses which can graze in a thriving natural ecological balance. This number would result in balanced multiple uses based on analysis of the available water, the military's operations mission, and other uses of the water resources. This document, together with the RMP/FEIS, is incorporated by reference.

This Environmental Analysis (EA) contains the site-specific analysis of potential impacts that could result with the implementation of the No Action (Alternative 1), Proposed Action (Alternative 2), and the other action alternatives (Alternatives 3 and 4). The EA ensures compliance with the National Environmental Policy Act (NEPA). Based on the following analysis of potential environmental consequences, a determination can be made whether to prepare an Environmental Impact Statement (EIS) or issue a "Finding of No Significant Impact" (FONSI). A FONSI documents why implementation of the selected alternative will not result in environmental impacts that significantly affect the quality of the human environment.

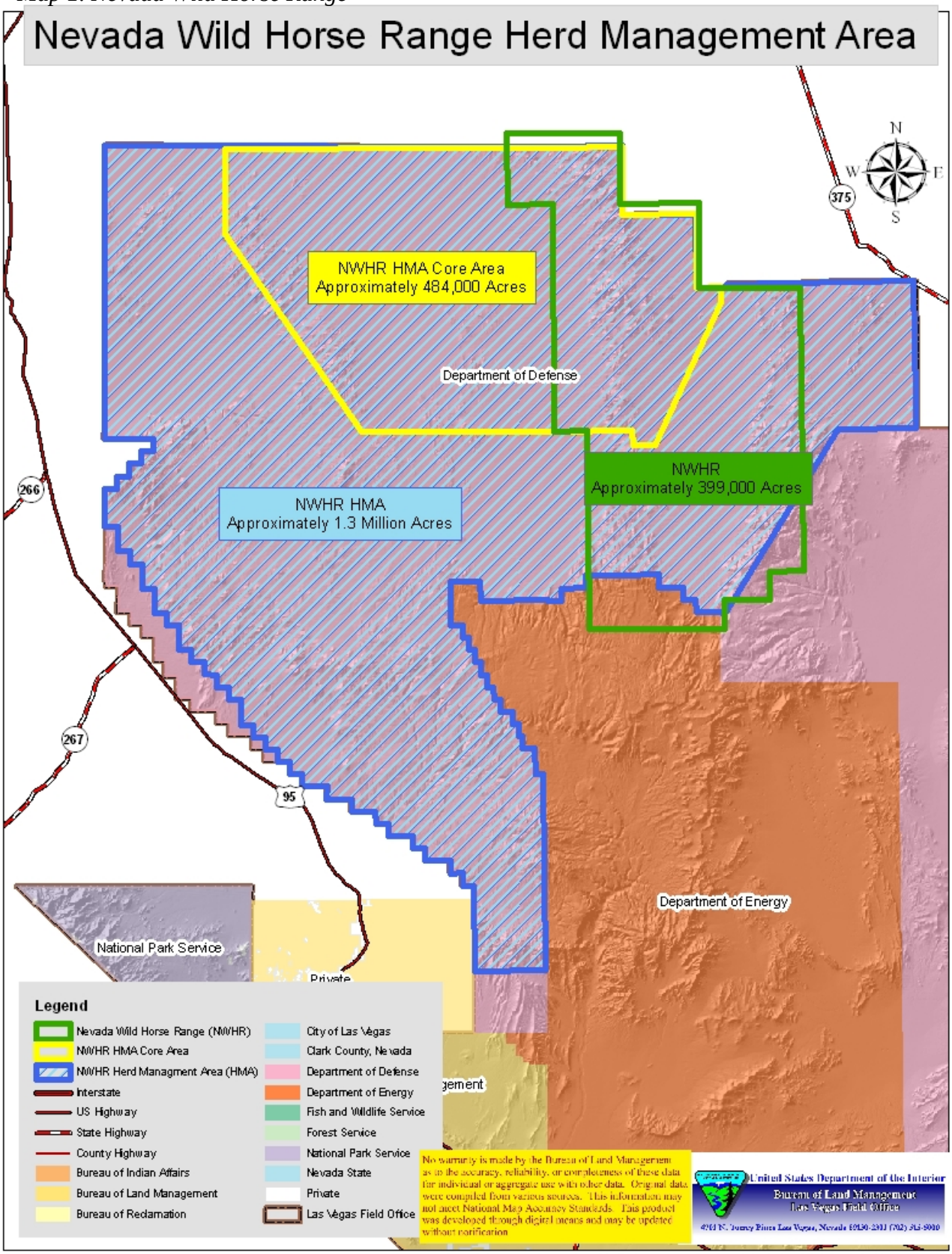
Purpose and Need

The purpose of the Proposed Action is to implement a HMAP consistent with the authority provided in 43 Code of Federal Regulations 4700 and the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA). The need for the HMAP is to manage wild horses within the NWHR HMA at the minimum level necessary, to maintain a self-sustaining population of healthy animals in balance with other uses and the productive capacity of their habitat over the long term.

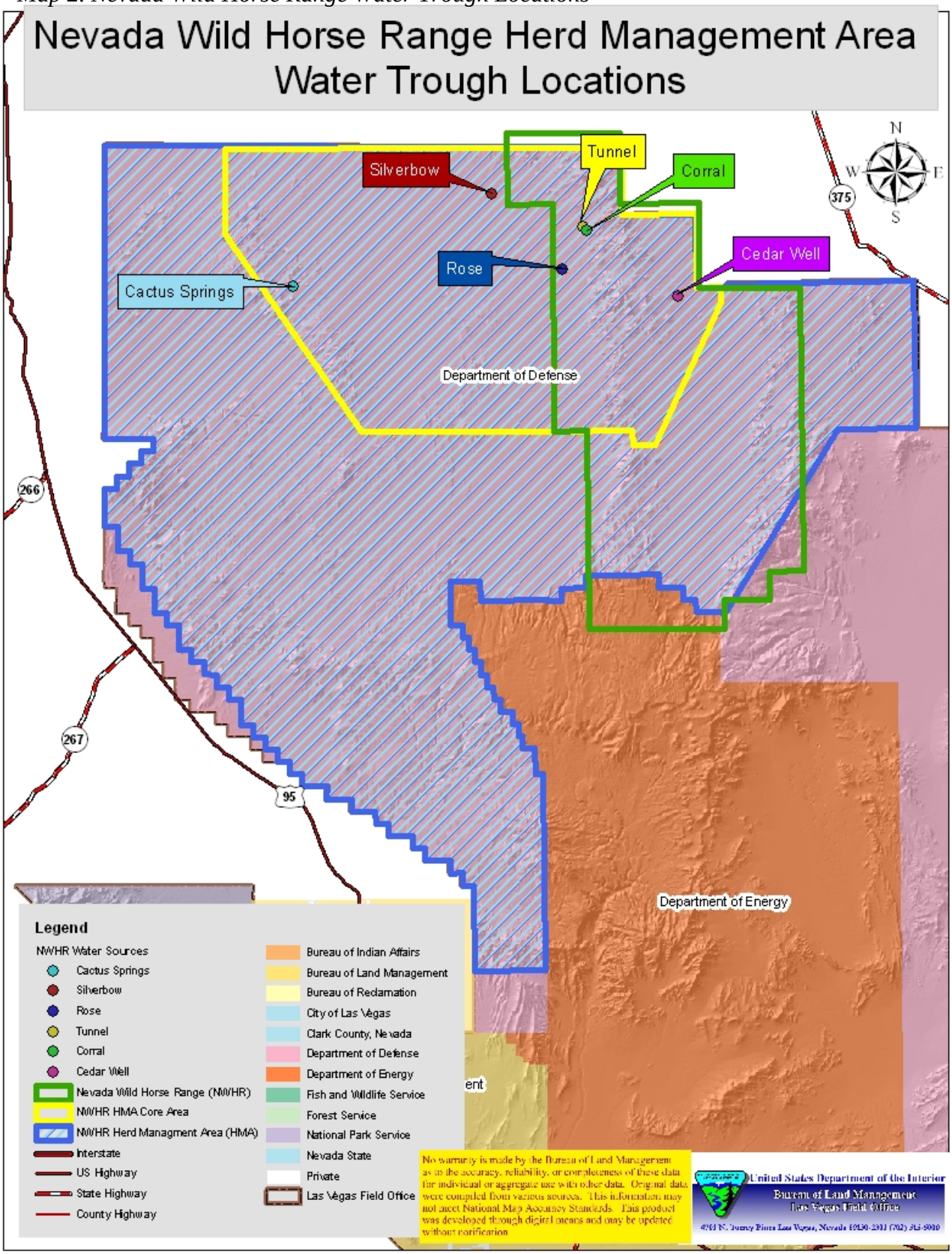
Conformance with Existing Land Use Plans

Management of wild horses within the NWHR HMA is guided by the July 2004 ROD for the approved NTTR RMP and FEIS (refer to ROD, pages 14-15). The Proposed Action has been determined to be in conformance with this plan as required by regulation (43 CFR 1610.5-3(a)). The RMP restricts the active management of wild horses to the Herd Management Area (HMA) Core Area (refer to Map 1). The proposed HMAP is an activity plan which conforms to the objectives and management direction in the RMP (refer to Appendix A).

Map 1. Nevada Wild Horse Range



Map 2. Nevada Wild Horse Range Water Trough Locations



Conformance with Rangeland Health Standards and Guidelines

The NWHR HMA has not yet been assessed for conformance with Rangeland Health Standards. A rangeland health assessment is tentatively planned for not later than FY2010. Refer to Appendix B for a summary of the applicable Rangeland Health Standards.

Relationship to Statutes, Regulations or Other Plans

The Proposed Action and other action alternatives are in conformance with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700 and policies. Included are:

- ❒ **43 CFR 4710.3-1:** Herd management areas shall be established for the maintenance of wild horse and burro herds. In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 4710.4. The authorized officer shall prepare a herd management area plan, which may cover one or more herd management areas.
- ❒ **43 CFR 4710.3-2:** Herd management areas may also be designated as wild horse or burro ranges to be managed principally, but not exclusively, for wild horse or burro herds.
- ❒ **43 CFR 4710.4:** Management of wild horses and burros shall be undertaken with limiting the animals' distribution to herd areas. Management shall be at the minimum feasible level necessary to attain the objectives identified in approved land use plans and herd management area plans.
- ❒ **43 CFR 4720.1:** Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately.

Decision to Be Made

The authorized officer will select a management strategy for the NWHR HMA wild horse herd and their habitat. The selected management actions, together with the associated management and monitoring objectives, will guide management of the NWHR HMA over the life of the current plan. The HMAP is an activity plan to implement the selected strategy. All future wild horse actions would be subject to further site-specific environmental analysis as well as an independent decision making process, as appropriate.

Scoping and Issue Identification

During preliminary gather planning for the proposed December 2007 removal of excess wild horses from the NWHR HMA, a scoping letter was sent to 74 interested individuals, groups, and agencies on June 13, 2007; comments were received from 12 individuals, groups, and agencies during the 30-day comment period. The preliminary gather plan environmental assessment was sent to 19 interested individuals, groups, and agencies on September 17, 2007 for a 30-day review and comment period; comments were received from 12 individuals, groups, and agencies. Many of the comments received expressed concern about the long-term management strategy for the NWHR HMA, including water development maintenance/reconstruction, development of additional water, the genetic diversity of the herd, and the long-term strategy for population management. These comments/concerns are summarized in Appendix J and were incorporated in the preparation of the preliminary environmental assessment and the Proposed HMAP. Additionally, the proposed HMAP was discussed extensively with the Nevada Department of Wildlife (NDOW), the Air Force, and the Nevada Commission for the Preservation of Wild Horses. The Preliminary Environmental Assessment for the NWHR HMAP was sent to 26 interested individuals, groups, and agencies on April 30, 2008; comments were received from 7 individuals, groups, and agencies during the 30-day comment period. These comments, concerns, and BLM's responses are summarized in Appendix K and have been incorporated in this final assessment.

The following concerns were identified as a result of public and internal scoping:

1. Impacts to vegetation, riparian, soil and water resources. Measurement indicators for this issue include:
   - Expected forage utilization and distribution
   - Potential impacts to vegetation resources, including upland range and riparian communities
   - Potential impacts to water quality
   - Potential impacts to water available for use by wild horses in the NWHR HMA core area
   - Potential for soil displacement, trampling or disturbance

2. Impacts to wildlife, migratory birds and special status species and their habitat. Measurement indicators for this issue include:
   - Potential for displacement, trampling or disturbance
   - Potential competition for forage and water over time (expected change in actual forage utilization by wild horses)

3. Impacts to individual wild horses and the herd. Measurement indicators for this issue include:
   - Expected effectiveness of proposed population control and management (WinEquus population modeling)
   - Potential impacts to animal health and condition
   - Expected impacts to herd social structure
   - Potential effects to genetic diversity
   - Expected impacts to individual wild horses from handling stress

4. Impacts to the wild horse herd's habitat. Measurement indicators for this issue include:
   - A need to reconstruct the existing water developments
   - Opportunity to better distribute actual use of the available forage by wild horses
   - A need to reduce extensive trailing by wild horses which can lead to lameness

Alternatives

This chapter describes the Proposed Action and alternatives, including any that were considered but eliminated from detailed analysis. Alternatives analyzed in detail include the following:

- ❒ **Alternative 1: No Action** – Continue Existing Management.
- ❒ **Alternative 2: Proposed Action** – Implement a management strategy which would include a number of population control methods, together with maintenance and/or reconstruction of existing water developments.
- ❒ **Alternative 3:** Implement a management strategy which would include some population control methods, together with the development of new and reconstruction of existing water developments.
- ❒ **Alternative 4:** Implement a management strategy which would include only two primary methods of population control and maintenance of existing water developments only.

The action alternatives (2-4) were developed to meet the Purpose and Need and respond to the identified issues to varying degrees. All the action alternatives are designed to meet the need to remove excess animals in order to protect the range from deterioration associated with overpopulation. The No Action alternative meets the Purpose and Need in part, but may not fully comply with the WFRHBA (as amended); it is included as a basis for comparison with the action alternatives.

Management Actions Common to All Alternatives

- ❑ Future gather operations would be conducted in accordance with the Standard Operating Procedures (SOPs) described in the National Wild Horse Gather Contract. Appendix D outlines the SOPs currently in effect.
- ❑ When gather objectives require gather efficiencies of 50-80% or more of the animals to be captured from multiple gather sites (traps) within the NWHR HMA during the winter, the helicopter drive method and helicopter assisted roping from horseback will be the primary gather methods used. To the extent possible gather sites (traps) will be located in previously disturbed areas. Post-gather, every effort would be made to return released animals to the same general area from which they were gathered.
- ❑ Given a summer gather window, bait and/or water trapping may be used provided the gather operations timeframe does not conflict with the military's operations mission and is consistent with current animal and resource conditions. Bait and/or water trapping may also be selected in other special circumstances as appropriate.
- ❑ An Animal and Plant Inspection Service (APHIS) or other licensed veterinarian may be on-site during future gathers, as needed, to examine animals and make recommendations to BLM for care and treatment of wild horses. Decisions to humanely euthanize animals in field situations will be made in conformance with BLM policy (applicable Washington Office Instruction Memorandums). Refer to Appendix F for BLM's current policy.
- ❑ Animals would be removed using a selective removal strategy. Selective removal criteria for the NWHR HMA include: (1) First Priority: Age Class - Five Years and Younger; (2) Second Priority: Age Class - Six to Fifteen Years Old; Third Priority: Age Class Sixteen Years and Older.
- ❑ Data including sex and age distribution, reproduction, survival, condition class information (using the Henneke rating system), color, size and other information may also be recorded, along with the disposition of that animal (removed or released).
- ❑ Hair and/or blood samples would be acquired every gather, to determine whether BLMs management is maintaining acceptable genetic diversity (avoiding inbreeding depression).
- ❑ Any burros residing within the boundaries of the NTTR will be removed during the regular gather cycle and placed into the BLM adoption program.

Proposed Action and Alternatives

Alternative 1: No Action Alternative -- Continue Existing Management

Under this Alternative, the HMA would be managed as a range of 300-500 animals as follows:

- The sex ratio of animals released back to the range following future gathers would be approximately 36% males and 64% females.
- Existing monitoring including: utilization, forage condition, water availability, animal health and periodic population census and sampling for genetic diversity would continue.
- Club-footed horses and animals under age 5 would have the highest priority for removal during gather operations.
- Existing water developments would be periodically maintained, but not replaced or reconstructed when they outlive their useful life.
- AML would be adjusted, as needed, based on remaining available water resources.
- Fertility control would not be applied to animals released back to the range following future gathers.

Table 1. No Action (Continue Existing Management) in HMAP Format

Management Objective(s)	Monitoring Objective(s)	Implementation Objective(s)
A. Control Population Numbers Manage wild horse populations within the established AML range to protect the range from deterioration associated with overpopulation.	Census populations a minimum of once every 3-4 years. Determine population number and annual growth rate.	Schedule gathers to remove excess wild horses when the total wild horse population exceeds the AML for the NWHR HMA (about every 3 years), when animals permanently reside on lands outside the NWHR HMA core area (i.e. use is more than seasonal drift), or whenever animal health/condition is at risk.
B. Age Distribution Assure all age classes are represented post-gather.	Monitor post-gather results.	Manage wild horses to achieve the following relative age distribution: • 10-25% Young Age Class (Ages 0-5) • 50-80% Middle Age Class (Age 6-15) • 10-25% Old Age Class (Age 16+)
C. Additional Selective Removal Criteria **Objective 1**: Club-footed horses would have a high priority for removal from the herd before they can breed, consistent with Dr. Gus Cothran's recommendations in the June 2004 genetics report. **Objective 2:** Maintain or improve animal conformation over the next twenty years.	Record number of club-footed horses gathered/removed as part of the final gather report.	Prioritize removal of any club-footed horses from the herd. In selecting animals for return to the range post-gather, animal size and conformation will have priority over color.
D. Assure Rangeland Health **Objective 1.** Assess rangeland health not later than 2010. **Objective 2.** Limit utilization by all herbivores to 50% of the current year's above ground primary production for key grasses and 45% for key shrubs and forbs.	Locate key monitoring areas within the NWHR HMA core area. Assess rangeland health using procedures outlined in Technical Reference 1734-6. Establish baseline trend studies using the frequency sampling procedures as outlined in the Nevada Rangeland Monitoring Handbook. Measure utilization at key areas/use pattern mapping annually.	Pending completion of the rangeland health assessment, establish additional site-specific resource management objectives for key areas, as needed. Based on above, re-adjust AML or identify management actions to address/resolve rangeland health issues, as needed/appropriate.
E. Sustain Healthy Populations of Wild Horses Manage wild horses to achieve an average body condition class score of 3+.	Visual observations of wild horse body condition (Henneke Condition Class Method) and foot health at key watering locations annually. Record average body condition and document lameness/incidence of club-footed horses during periodic gather operations.	Maintain existing water developments until they outlive their useful life, and then remove them. Re-adjust AML as needed based on the remaining available water in the NWHR HMA core area. Conduct emergency removals when needed if animal body condition is less than Henneke condition class score 3 due to drought, wildfire or other unplanned/unforeseen event.

F. Sex Distribution Adjust the sex ratio immediately following gathers to favor females over males (64% females/36% males) consistent with past management actions.	Document number of mares and stallions released following each gather.	Manage a breeding population of 300-500 animals within any given 4-5 year period.

Alternative 2: Proposed Action (Proposed HMAP)

The Proposed Action would implement a management strategy which would incorporate a number of population control methods, together with maintenance and/or reconstruction of existing water developments. Under this strategy, wild horses would be managed within the established AML range of 300-500 animals over the next 10-20 year period, as follows:

- Approximately 240-400 animals would be managed as a breeding population.
- The balance of the herd (about 60-100 animals) would be managed as a non-breeding population of geldings. The management of a non-breeding population of geldings would be implemented as a pilot project, 30-35 stallions during the next gather (tentatively planned for December 2012). Pending evaluation of the monitoring results for the initial pilot study another 30-65 stallions could be gelded during subsequent regularly schedule gathers, for a total non-breeding population of 60-100 geldings.
- During future gathers, the sex ratio of the population would be adjusted slightly in favor of males as compared to females (60/40 male/female sex ratio). The adjusted sex ratio includes males in both the breeding and non-breeding populations.
- Excess animals would be removed to the low-range of the AML upon determination that excess animals are present.
- Immunocontraceptive research would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures. Breeding age mares selected for release back to the range would be treated with Porcine Zona Pellucida (PZP) vaccine, which would slow reproduction of the treated mares for one to three breeding seasons (see Appendix E for the current SOPs for the use of PZP vaccine and post-treatment monitoring).
- Spring boxes at Cactus Springs and Cedar Well (dependent upon spring flow) would be reconstructed and cement water troughs would be installed along pipelines at all water sources (Cactus Springs, Cedar Well, Corral, Rose, Silverbow, and Tunnel Spring). Water storage would also be added at several of the sources within the next five years. Once the developments are reconstructed, they would be maintained annually to the construction standard or as needed.
- AML would be evaluated, as needed, following an in-depth analysis of resource conditions, including; actual use, utilization, available forage and water, range condition and trend, precipitation and the military's operations mission.

Table 2. Alternative 2 (Proposed Action/Proposed HMAP) in HMAP Format

Management Objective(s)	Monitoring Objective(s)	Implementation Objective(s)
Items A-D from Table 1 above, plus the following:		
E. Assure Genetic Diversity Maintain genetic diversity within the herd (avoid inbreeding depression) as evidenced by no additional loss (>10%) of genetic diversity (H_o) over the next twenty years.	Collect blood and/or hair samples every regularly schedule gather to detect any changes from the baseline genetic diversity (H_o = .344, June 2004).	If genetics sampling indicates greater than a 10% loss in genetic diversity over the next 1-20 years, introduce 4 mares from genetically similar HMA(s) every other gather.
F. Sustain Healthy Populations of Wild Horses **Objective 1:** Manage wild horses to	Visually observe wild horse body condition (Henneke Condition Class Method) and foot health annually at	Reconstruct existing water developments to assist in limiting the distance horses trail to/from water.

achieve an average body condition class score of 3+. **Objective 2:** Manage wild horses to limit lameness.	key water locations. Record average body condition and document lameness/incidence of club-footed horses during periodic gather operations.	Annually maintain developments following reconstruction. Conduct emergency removals when needed if animal body condition is less than Henneke condition class score 3 due to drought, wildfire or other unplanned/unforeseen event.
G. Assure Riparian/Wetland Area Health Improve riparian condition at Cactus Springs, which is currently being impacted by heavy to severe wild horse use. Improve riparian condition at other springs in the NWHR HMA core area which may be impacted by heavy to severe wild horse use.	Re-evaluate riparian functionality every 5 years using the Proper Functioning Condition (PFC) method on springs within the NWHR HMA core area. Assess utilization annually.	Reconstruct the existing Cactus Springs development to provide off-site water for use by wild horses; then exclude the riparian area from use by wild horses. If trend remains static or is downward by 2012, exclosure fences may be constructed to promote riparian recovery, or additional management measures including adjusting AML or developing off-site water for wild horses could be considered where feasible.
H. Disperse Wild Horse Use **Objective 1.** Decrease utilization by wild horses within a 1-3 mile radius of the existing water developments within the NWHR HMA core area from heavy/severe to light/moderate by 2010. **Objective 2.** Assure adequate water is available throughout hot summer months until additional water sources can be developed.	Measure utilization at key areas/use pattern mapping annually. Monitor water sources continuously through the summer months to assure adequate water availability and to determine if/when supplemental water hauling will be needed.	Reconstruct spring boxes at Cactus Springs and Cedar Well (dependent upon spring flow), install cement water troughs along pipelines at all water sources (Cactus Springs, Cedar Well, Corral Spring, Rose, Silverbow, and Tunnel Spring), and add additional water storage at several of the sources within the next five years.
I. Additional Population Control Measures **Objective 1.** Adjust the sex ratio of the breeding population slightly in favor of males following future gathers. **Objective 2.** Manage a portion of the herd as a non-breeding population of geldings. **Objective 3:** Gather to the low-range of AML and apply fertility control to mares released back to the range following future regularly scheduled gathers (pending additional site-specific environmental analysis and population modeling).	Document number of mares/stallions and geldings released following each gather. Conduct post-fertility control monitoring in accordance with established procedures.	Manage a breeding population of 240-400 animals and a non-breeding population of 60-100 geldings within any given 6-7 year period. Within the population, achieve a 60%/40% ratio of males to females immediately following future gathers. The following management requirements apply to the non-breeding population: ✓ Limit gelding to stallions between 5 and 15 years of age ✓ Limit geldings to stallions that have a body condition score of 4 or above. ✓ Surgery would be performed at a temporary holding facility, at a BLM managed holding center, or in the field by a Nevada licensed veterinarian in good standing, using appropriate anesthetic agents and surgical techniques. ✓ When gelding is done in the field, geldings would be released near a water source approximately 24-48 hours following surgery. When the gelding is performed at a BLM-managed facility, selected stallions would be shipped to the facility, gelded, held in a separate pen to minimize risk for

		disease, and returned to the range near water within 30-60 days following recovery (recovery is indicated by animals moving freely to/from forage and water). ✓ Gelded animals would be monitored for approximately 7-10 days post-surgery. ✓ Gelded animals would be branded with a "G" high on their hip to minimize the potential for future recapture and to facilitate post-treatment monitoring. ✓ Individual behavior of geldings would be observed during the first breeding season following treatment (i.e. June-October). Monitoring would be designed to determine if they interfere with breeding harems (i.e. demonstrate stallion-like behavior). Observations would be made as needed to determine the behavior of the geldings at key water locations within the NWHR HMA core area. Observations would also be made when completing other scheduled field work. ✓ The herd behavior of geldings post-treatment would also be observed. Anecdotal evidence suggests geldings will form bachelor bands. Monitoring will be completed to determine whether or not bachelor bands form as expected, or if geldings intermix with the breeding population. ✓ Periodic population census, together with gather data from future gathers, will be used to determine whether managing a portion of the NWHR HMA herd as geldings is effective in slowing the average annual population growth. Immunocontraceptive research would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures. Breeding age mares selected for release back to the range would be treated with Porcine Zona Pellucida (PZP) vaccine that would slow reproduction of the treated mares for one to three breeding seasons (see Appendix E for the SOPs for the use of PZP vaccine and post-treatment monitoring which are currently in effect).

Alternative 3:

Alternative 3 would implement a management strategy which would include some population control methods, together with the development of new and reconstruction of existing water developments. Under Alternative 3, wild horses would be managed within the established AML range of 300 to 500 animals over the next 10-20 year period, as follows:

- Approximately 50% of the male population of the herd (about 75-125 animals) would be managed as a non-breeding population of geldings.
- The balance of the herd (or about 225-375 animals) would be managed as a breeding population.
- Sex ratio of the breeding population would be maintained at about half males and half females over time.
- Excess animals would be removed to the low-range of the AML range upon determination that excess animals are present.
- Immunocontraceptive research would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures. Breeding age mares selected for release back to the range would be treated with Porcine Zona Pellucida (PZP) vaccine which would slow reproduction of the treated mares for one to three breeding seasons (see Appendix E for the current SOPs for the use of PZP vaccine and post-treatment monitoring).
- Existing water developments would be reconstructed over the next 1-5 year period and maintained annually to the construction standard, or as needed.
- A minimum of two and up to four new water developments (wells) would be constructed over the next ten year period within the NWHR HMA core area.
- AML would be adjusted, as needed, based on in-depth analysis of the available forage and water within the NWHR HMA core area.

Table 3. Alternative 3 in HMAP Format

Management Objective(s)	Monitoring Objective(s)	Implementation Objective(s)
Items A-D from Table 1, together with Items E-H in Table 2 above, plus the following:		
G. Assure Riparian/Wetland Area Health **Objective 3:** Disperse wild horse use throughout the NWHR HMA core area.	Monitor utilization to determine whether construction of new water developments is effective in reducing wild horse utilization from heavy to light or moderate within the NWHR HMA core area.	Develop a minimum of two and up to four new water developments to better disperse wild horse use. Prior to construction of any new water developments, the following would be required: ✓ Acquisition of the necessary water rights. ✓ Planning and design of the water developments. ✓ Completion of a site-specific environmental analysis. ✓ Completion of a site-specific cultural resource inventory. ✓ Acquisition of necessary funding. Annually maintain developments following construction and/or reconstruction.
H. Additional Population Control Measures **Objective 1.** Manage up to half of the male population of the herd (low-range of AML) as a non-breeding population of geldings.	Document number of mares/stallions and geldings released following each gather; conduct post-fertility control monitoring as outlined in Appendix E.	Manage a breeding population of 225-375 animals and a non-breeding population of 75-125 geldings within any given 4-5 year period. The management and monitoring requirements outlined in Table 2, Item I above apply to the non-breeding population in this alternative.

Objective 2: Gather to the low-range of AML and apply fertility control to mares released back to the range following future gathers (pending additional site-specific environmental analysis and population modeling).		Immunocontraceptive research would be conducted in accordance with the approved standard operating and post-treatment monitoring procedures. Breeding age mares selected for release back to the range would be treated with Porcine Zona Pellucida (PZP) vaccine that would slow reproduction of the treated mares for one to three breeding seasons (see Appendix E for the SOPs for the use of PZP vaccine and post-treatment monitoring which are currently in effect).
I. Assure Rangeland Health Construct up to seven exclosures to help assess resource conditions.	Establish up to seven exclosures within the dominant vegetation types. Establish range condition/trend studies within and outside established exclosures. Conduct studies every five years.	Establish site-specific resource management objectives for dominant ecologic types. Based on analysis of range condition and trend data, re-adjust AML or identify management actions to address/resolve rangeland health issues, as needed/appropriate.

Alternative 4:

Alternative 4 would implement a management strategy which would include two primary methods of population control and maintenance of existing water developments only. Under Alternative 4, the low-range of AML would be adjusted from 300 animals at present to 210 animals to allow the population to increase at an average annual growth rate of 18% over a four year gather cycle without exceeding the high-range of the AML (500 animals). In summary, Alternative 4 would implement a population management strategy for the NWHR HMA in which wild horses would be managed within a population range of 210-500 animals over the next 10-20 year period, as follows:

- During future gathers, the sex ratio of the breeding population would be adjusted slightly in favor of males as compared to females (60/40 male/female sex ratio).
- Excess animals would be removed to the low-range of the AML upon determination that excess animals are present.
- Immunocontraceptive research would not be conducted under this alternative.
- Existing water developments would be reconstructed over the next 1-5 year period and maintained annually to the construction standard, or as needed.
- AML would be adjusted further, as needed, following in-depth analysis of resource conditions, including: actual use, utilization, available forage and water, range condition and trend, precipitation and the military's operations mission.

Table 4. Alternative 4 in HMAP Format

Management Objective(s)	Monitoring Objective(s)	Implementation Objective(s)
Items A-D from Table 1, together with Items E-H in Table 2 above, plus the following:		
I. Control Population Numbers **Objective 1.** Adjust the sex ratio of the breeding population slightly in favor of males following future gathers. **Objective 2:** Gather to the low-range of AML without fertility control.	Document number of males and females released following each gather.	Achieve a 60%/40% ratio of stallions to mares immediately following future gathers. Immunocontraceptive research would not be conducted.

Table 5. Summary Comparison of the Impacts of the Alternatives

Item	Alternative 2 (Proposed HMAP)	Alternative 3	Alternative 4	No Action
Population Management Range	The NWHR HMA wild horses would be managed within the established AML range of 300-500 animals, over the next 10-20 year period, or until AML is adjusted as described below.		The low-range of AML would be adjusted to 210 animals to allow the herd to grow over a four year period at an average rate of 18% per year to the high-range of the AML without need for additional gathers to remove excess wild horses in the interim.	Same as Alternative 2 and 3.
Future Adjustments to AML	As needed, AML would be adjusted following in-depth analysis of resource conditions, including: actual use, utilization, available forage and water, range condition and trend, precipitation and the military's operations mission.	AML would be adjusted, as needed, based on in-depth analysis of the available forage and water within the NWHR HMA core area.	Same as Alternative. 2.	AML would be adjusted, as needed, based on available water resources.
Population Control Methods	Future gathers to remove excess wild horses would be implemented under all alternatives as outlined below.			
	Additional population control methods include managing a portion the herd as a non-breeding population of geldings, slightly adjusting the sex ratio in favor of males immediately following future gathers, and applying fertility control to mares released post-gather.	Additional population control methods include managing a portion the herd as a non-breeding population of geldings, and applying fertility control to mares released post-gather.	Additional population control methods include slightly adjusting the sex ratio in favor of males immediately following future gathers.	No additional population control methods would be applied under this alternative.
Size – Breeding Population	240-400 animals	225-375 animals	100%	100%
Size – Non-breeding Population	60-100 animals managed as geldings	100-150 animals managed as geldings	0 (no geldings)	0 (no geldings)
Desired Sex Ratio (immediately following future gathers)	60/40 Males/Females	50/50 Males/Females	Same as Alternative 2.	36/64 Males/Females
Approx. # Mares Treated with Fertility Control During Future Gathers	80-100	125	0	Same as Alternative 3.
Total # Wild Horses Remaining Following Future	300 (low-range AML)	400 (mid-range AML)	210 (revised low-range AML)	Same as Alternative 2.

Gathers				
Age Distribution	Future gathers will ensure representation of all age classes based on the following relative age distribution: 10-25% young, 50-80% middle and 10-25% older.			
Selective Removal Criteria	Club-footed horses would have a high priority for removal from the herd before they can breed, consistent with Dr. Gus Cothran's recommendations in the June 2004 genetics report. Selection would also focus on returning animals with good conformation or size as compared to color over the next twenty years.			
Genetic Diversity	The objective under all alternatives is to maintain genetic diversity within the herd (avoid inbreeding depression, i.e. maintain H_o at .344 (+ or – 10%)).			
	Under Alternatives 2-4, if future genetics sampling indicates greater than 10% loss in H_o over the next 1-20 years, 3-4 mares from genetically similar HMAs would be introduced every other gather.			No mitigation to correct potential future genetic loss would be implemented under this alternative.
Rangeland Health	Utilization by all herbivores is limited to 50% of current year's production for key grasses and 45% for key shrubs and forbs. Rangeland health evaluation to be completed not later than 2010.			
	Locate key areas within the NWHR HMA core area. Assess rangeland health and establish frequency studies to monitor changes in range condition.	Construct up to seven exclosures to help assess resource condition.	Same as Alternative 2.	
Riparian Health/ Disperse Wild Horse Use	Reconstruct/install/add water storage at Cedar Well, Cactus Springs, Silverbow, Corral Spring, Tunnel Spring and Lower Rose within the next 5 years.	In addition to reconstructing existing water developments, develop a minimum of 2 and up to 4 new wells within the NWHR HMA core area over the next 10 years.	Same as Alternative 2.	Maintain existing water developments until they outlive their useful life then remove them and re-adjust AML based on available water within the NWHR HMA core area.
Vegetation, Wildlife, Migratory Birds and Special Status Species Habitat	Short-term displacement due to future gather activities from about 1 to 20 days. Reduced competition for forage and water leading to healthier rangeland vegetation.			
	Short-term displacement during reconstruction of existing water developments. Over long-term, would maintain existing pattern of use by wild horses over the next 10-20 years.	Short-term displacement during reconstruction of existing water developments and construction of 2-4 new developments. Over long-term, disperses wild horse use more broadly across the NWHR HMA core area following construction of 2-4 new water developments.	In addition to Alternative 2 grazing pressure would be reduced after the initial gather.	As existing water developments exceed their useful life and become nonfunctional, use by wild horses would concentrate at the remaining water sources. AML would be further adjusted based on the remaining available water.

Alternatives Considered But Eliminated From Further Analysis

Provide Supplemental Feed and Water

Providing supplemental feed (hay) or hauling water (other than during a short-term emergency situation) does not meet the definition of minimum feasible management and is inconsistent with current law, regulation and policy. Refer to 43 CFR 4710.4.

Change the Current Established AMLs

The current AML was established in the July 2004 ROD for the approved NTTR RMP/FEIS (page 14) this establishes an upper limit of 500 animals. A gather to remove excess wild horses has not occurred since that time; therefore, BLM has not had an opportunity to implement the AML and monitor its effectiveness. By removing wild horse numbers in excess of the upper limit of AML during future gathers, the BLM will have an opportunity to complete additional monitoring and to make adjustments in AML, if needed, based on resource monitoring results.[1] Changing the upper limit of the AML prior to completing the necessary monitoring, in-depth analysis, and compliance with NEPA would be premature, and contrary to law, regulation and policy. Therefore, this alternative was not considered in detail.

Manage the Entire Population as a Non-Breeding Population of Geldings

One possible management alternative which has been suggested is to manage the NWHR HMA in its entirety as a non-breeding population of geldings. This alternative could require a land use plan amendment or other possible regulatory changes. Therefore, it was not analyzed in detail.

Return the HMA to Herd Area Status with Zero AML

Another alternative which has been suggested is to return the NWHR HMA to Herd Area status and establish the AML as "0" animals. This suggestion is made because the naturally occurring (undeveloped) water available to the NWHR HMA wild horse population is not adequate to maintain the population in a thriving natural ecological balance and multiple use relationship without the need for continued supplementation during drought. With reconstruction of the existing water developments the available water is expected to be adequate to support a population of 300-500 animals. Therefore this alternative was not considered in detail.

Description of the Affected Environment and Environmental Impacts

This section of the environmental assessment briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the Proposed Action and alternatives (refer to Table 7 and 8 below). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred. By contrast, cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

General Description of the Affected Environment

As discussed in the Background Information (EA-Page 1), the NWHR HMA encompasses 1.3 million acres of public land, within Nye County, Nevada (see Map 1).

The NTTR military withdrawal area (formerly known as the Nellis Air Force Range) comprises approximately 3 million acres (for more information, refer to the July 2004 ROD and approved NTTR Resource Management Plan (RMP) and Final Environmental Impact Statement (FEIS) which are incorporated by reference. The NTTR is divided into a North Range and a South Range component. The North Range contains the NWHR HMA. Public lands within the North Range have been withdrawn from multiple-use under BLM management by P.L. 106-65.

The NTTR is located within the southern part of the Great Basin, the northernmost sub-province of the Basin and Range physiographic province. The physiography of the NTTR is typical of the Basin and Range Province,

---

[1] This approach is consistent with the Interior Board of Land Appeals ruling (109 IBLA 120) which states: *"We note that the Secretary, in his June 1981 letter, indicates that an appropriate determination of the number of wild horses to be permitted on the public range, consistent with Section 3(b) of the Act, requires relying on an intensive monitoring program involving studies of grazing utilization, trend in range condition, actual use and climatic factors…"*

with north-south trending mountain ranges separated by broad valleys. Elevation within the North Range varies from 4,500 feet in the valley bottoms to 7,000-9,000 feet on the mountain tops. The amount of annual precipitation is strongly influenced by the elevation, with valley bottoms receiving about 6 inches to 12-16 inches at the highest elevations. Temperatures also vary, from -20 degrees Fahrenheit in winter to between 100-105 degrees Fahrenheit in summer.

The NWHR pre-dates the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA). The NWHR was created in June 1962 through a cooperative agreement between BLM Nevada and the Commander of Nellis Air Force Base. The original NWHR was reduced to 399,000 acres in June 1965.

A wild horse management plan was prepared in 1985; this plan proposed managing horses where they were found in 1971; it also proposed an AML of 2,000 wild horses, but did not formally establish the NWHR as a herd management area (HMA). The 1992 approved Nellis Air Force Range Resource Plan (NAFRRP) did designate an HMA boundary. The 1992 NAFRRP also revised AML to 1,000 wild horses based on in-depth analysis of perennial water sources and forage availability. AML was further adjusted in 1996 to a range of 600-1,000 wild horses to allow the herd to grow from the low-range of the AML to the high-range over a four to five year period without need for additional gathers to remove excess wild horses in the interim.

The NWHR was formally designated as a herd management area (HMA) through the July 2004 ROD for the approved NTTR RMP. The decision to designate 1.3 million acres of the NTTR as a HMA was based on the best available historical information that indicated wild horses probably used much of the northern portion of the range in 1971. Under the 2004 ROD, the 484,000 acre NWHR HMA core area was used as a "core area" in establishing the AML as a range of 300-500 wild horses[2]. Based on this in-depth analysis, 500 animals is the upper limit of the population range for the NWHR HMA. Removing excess wild horses before reaching the upper limit of the population range (500 animals) is expected to maintain a thriving ecological balance and multiple-use relationship between wild horses, wildlife, vegetation and water resources and provide for safe and efficient military operations over the long-term.

The horse herd originated primarily from introductions by Europeans in Nevada beginning in about the mid-1800's. Approximately 69-195 burros were also present in the early 1980's; removals decreased the burro population to 10-12 burros by 1997. All but 10-12 burros and all horses were removed from the Stonewall Mountain area in the southwest corner of the HMA to reduce competition with bighorn sheep.

Historically, three groups of horses utilized the range, with horses moving mainly in a north-south direction within the confines of their respective valleys: Kawich Valley, Cactus Flat, and Stonewall Flat/Mud Lake. This pattern continues today with the exception that all horses and all but 10-12 burros have been removed from the Stonewall Mountain area as discussed above. Herds typically summer in the northern portion of the valleys around perennial springs and move south when ephemeral water sources from rain or snow are available. Some interaction between the three distinct herd groups does occur, most commonly during wet winters.

Wild horses within the NWHR HMA continue to concentrate their use around water sources. The NTTR Wetlands Survey Report (Dames and Moore, 1996) describes wild horses as the source of degradation at springs and seeps on the NTTR. To address this concern, the Air Force constructed exclosures around approximately 20 seeps and springs during the 1990's within the North Range to eliminate grazing by wild horses within the riparian area. No off-site water was provided to wild horses at these locations. Six of these springs are located within the NWHR HMA core area (refer to Appendix F, in the approved NTTR RMP and EIS). The fenced springs all produced less than 1 gallon per minute (gpm).

[2] A key management area is an area of land that influences or limits the use of the land surrounding it. Management actions are based on the key management area.

Recurring and extended periods of drought have resulted in a number of emergency removals from the NWHR HMA. The most recent emergency removal occurred in the Kawich Range in July 2007. Aerial census data for the NWHR HMA has been collected periodically. This data is summarized in Table 6.

The last scheduled removal of excess wild horses from the NWHR HMA was completed in December 2003 when 1,651 horses were gathered and 1,097 were removed.[3] Following the gather, a reported 358 mares and 192 stallions (a total of 550 animals) were released. The un-gathered population was estimated at fifty (50) animals (estimated to be 80% male and 20% female) for a total estimated post-gather population of 600 animals (232 males and 368 females or a 39/61 male/female sex ratio). Review of the gather data indicates a total of 571 animals were actually released (36% stallions and 64% mares) for a total estimated post-gather population of 621 animals. Of these, 57% were ages 0-5, 27% were age 6-14, and 16% were over age 15. All release mares were given a fertility control vaccine (PZP, or Porcine Zona Pellucida) prior to their release.

In July 2007, continuing drought and extreme high temperatures led to a lack of water available for use by wild horses on the eastern side of the NWHR HMA in Kawich Valley. A total of 178 wild horses were gathered and removed as a result of the drought emergency. An additional 71 wild horses died during late July 2007; the probable cause of death was a point source exposure to high levels of nitrates at a pond in the northwest corner of the NWHR HMA. The source of the nitrates is unknown, but may be the result of a series of environmental conditions. Additional testing is ongoing in an effort to better determine the source and extent of the nitrates. No further deaths have occurred since the pond was fenced on July 26, 2007.

Table 6. NWHR HMA – Gather/Removal and Population Census History

Gather/Removal History		Population Census History	
Year	**Number Removed**	**Year**	**Population Estimate**
June 1985	1,498	1977	1,300
July/August 1987	1,210	1980	3,122
June 1988	1,043	1985	4,000-5,000
December 1989	683	Early 1990's	10,000
May/August 1991	2,269	1997	526
January/February 1992	820	1998	802
May/June 1992	730	2005	855
January 1993	563	2006	987
September 1993	872[4]	2007	926
December 1994	743		
July 1995	1,075		
July 1996	556		
January 1997	543		
August 2000	150		
December 2003	1,097		
July 2007	178		

[3] At the time of the December 2003 gather, BLM's decision to re-establish the AML for the NWHR as a range of 300-500 animals was under protest by the Nevada Department of Wildlife. As a result, the population was reduced to the low point of the 1997 AML range, or 600 animals. The BLM Director dismissed the protest in full and the proposed AML of 300-500 wild horses became final in July 2004.

[4] The 1993 removal included 126 burros and mules.

Supplemental Authorities for the Human Environment

Table 7: Supplemental Authorities for the Human Environment

Supplemental Authorities	Present	Affected	Rationale
ACECs	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Air Quality	**YES**	**NO**	The planning area is outside the Clark County non-attainment area. Areas of disturbance resulting from implementation of the Proposed HMAP would be small and temporary.
Cultural Resources	**YES**	**NO**	A number of known cultural resources exist within the NWHR HMA. To prevent any impacts to cultural resources, future gathers would locate trap sites and holding facilities in areas where previous disturbance has occurred. Additionally, reconstruction of existing water developments would occur only within the area of existing disturbance. Construction of any new water developments or reconstruction of existing water developments outside the existing area of disturbance would be subject to cultural resource inventory and clearance prior to any earth disturbance. If cultural resources would potentially be impacted following this site-specific inventory, the development would be relocated to an area which would result in no negative impact or foregone.
Environmental Justice	**NO**	**NO**	The proposed action or alternatives would have no effect on minority or low-income populations.
Fish Habitat	**NO**	**NO**	Resource not present.
Floodplains	**NO**	**NO**	Resource not present.
Forest and Rangelands	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Migratory Birds	**YES**	**YES**	Discussed below under wildlife.
Native American Religious Concerns	**YES**	**NO**	There are no known Native American concerns.
Noxious Weeds	**YES**	**NO**	To prevent the risk for spread of noxious weed, any noxious weeds or non-native invasive weeds would be avoided when establishing and accessing trap sites and holding facilities. These areas would also be avoided when reconstructing and/or maintaining existing water developments or any new developments.
Prime or Unique Farmlands	**NO**	**NO**	Resource not present.
Riparian-Wetland Zones	**YES**	**YES**	Included in analysis.
T&E Species	**NO**	**YES**	No known threatened and endangered species occur within the boundaries of the NWHR HMA within the NTTR. However, special status species, including Burrowing Owl and Desert bighorn sheep are present and would be potentially affected by the Proposed Action. Refer to discussion under wildlife below.
Water Quality	**YES**	**NO**	No impacts to water quality are expected as a result of the Proposed HMAP. Future gathers would locate trap sites and holding facilities away from any riparian areas.
Waste (Hazardous or Solid)	**NO**	**NO**	Resource not present.
Wild and Scenic Rivers	**NO**	**NO**	Resource not present.

Wilderness and Wilderness Study Area	**NO**	**NO**	Resource not present. The planning area does not contain any land that meets BLMs minimum criteria for consideration as a wilderness study area.

Table 8: Other Resources Checklist

OTHER RESOURCES	Present	Affected	Rationale
Fire Management	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Forestry and Woodland	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Land Use Authorizations	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Livestock Management	**NO**	**NO**	Resource not present. The Air Force discontinued authorized livestock grazing use on the NTTR in 1956 by purchasing the permits. Unauthorized grazing by as many as 8,000 cattle per year occurred on the North Range until the mid to late 1970s when a north boundary fence was completed. The Stonewall/Mud Lake fence was constructed in the mid-1980s and no livestock use has occurred since that time.
Minerals	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Paleontology	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Rangeland Vegetation Resources	**YES**	**YES**	Included in analysis.
Recreation	**NO**	**NO**	Resource not present.
Socioeconomics	**YES**	**NO**	Resource is not affected by the proposed action or alternatives.
Soils	**YES**	**YES**	Included in analysis.
Water Resources	**YES**	**YES**	Included in analysis.
Visual Resources	**YES**	**NO**	No visual impacts would occur. The Proposed HMAP would limit activities to areas of previous disturbance or require additional site-specific environmental analysis prior to implementation.
Wild Horses	**YES**	**YES**	Included in analysis.
Wildlife	**YES**	**YES**	Included in analysis.

The following supplemental authorities or other elements of the human environment are present and may have potential to be affected by the Proposed Action or the alternatives: ***Wild Horses, Vegetation, Riparian Areas, Soils and Water Resources, Wildlife, Migratory Birds, and Special Status Species***. The existing situation (affected environment) and direct and indirect impacts to these resources which would result with implementation of the Proposed Action and the other alternatives are discussed in detail below.

The numbers, age and sex of animals proposed for removal are derived from The Wild Horse Population Model Version 3.2 (WinEquus) developed by Dr. Steve Jenkins, Associate Professor, University of Nevada, Reno. Appendix H establishes the parameters used for the HMAPs modeling runs and displays detailed results.

Wild Horses

Affected Environment

The current population of wild horses in the NWHR HMA is estimated at about 1,100-1,120 animals, but is expected to grow to approximately 1,360 to 1,390 animals following the 2008 foaling season, 4.6 times the low-range of the AML. This data suggests the annual population growth has averaged about 22% over the past four years.

Prior to the December 2003 gather and associated fertility control treatments, data suggested an annual population growth of up to 24% per year.

Based on population modeling completed in February 2008, the current projected sex ratio is 36/64 males/females. The current projected age distribution is 41% age 0-5, 28% age 6-14 and 31% age 15+.

Genetic analysis of the NWHR HMA herd was completed in June 2004[5]. This data indicates that while individual variability in the herd is low, population diversity is very high (genetic variability, H_o = .344). Genetic similarity (S) is highest within the Heavy Draft horse breeds, with strong evidence of some Spanish horse background. The NWHR HMA herd has its greatest similarity with the Stone Cabin wild horse herd and the Antelope Valley and Dolly Varden herds. There is a high incidence of club-footed horses within the population; this condition may be attributed to a recessive gene within the breeding population.

During the summer months, the majority of the NWHR HMA herd waters at three primary water sources within the NWHR HMA core area; they are Cactus Springs, Rose Spring, and Silverbow. Some horses water at other springs and troughs to a lesser extent; these include Cedar Well, Corral, and Tunnel Springs. Many of the existing developments are old and are not functioning properly. These older/less functional water developments have reduced the amount of water available to wild horses; the forage available in a 1-3 mile radius around Cactus Springs, Rose, and Silverbow has also been depleted. As a result, the Air Force has provided supplemental water during the hot, dry summer months at several locations since July 2005 to sustain the excess wild horses on the NWHR HMA. This shortage of water has led to wild horses concentrating around the few remaining water sources, many of which are located adjacent to roads critical to military operations.

Due to the heavy utilization of available forage within a 1-3 mile radius of the available water, horses are often traveling long distances (roughly 3-8 miles) to obtain adequate forage and social space. At the present time, wild horses are mostly in good physical condition; however, the health of the current wild horse population cannot be sustained based on the current available water without continued supplementation by the Air Force.

Environmental Consequences

Impacts Common to Alternatives 1-4

All the alternatives would result in periodic gathers to remove excess wild horses from the NWHR HMA. Future gather operations would be conducted in accordance with the SOPs in the National Gather Contract. During regularly scheduled gathers, a selective removal strategy would be implemented. This strategy would result in capturing 80-100% of the breeding population; the first priority for removal would be horses under age 5 or any animals with club feet. The primary methods used to gather excess wild horses would be helicopter drive trapping or helicopter assisted roping from horseback. Bait and/or water trapping could also be used given a summer (as compared to a winter) gather window provided the operations timeframe does not conflict with the military's operations mission and is consistent with current animal and resource conditions. Bait and/or water

[5] Genetic Analysis of the Feral Horse Herd from the Nevada Test and Training Range (Nellis), E. Gus Cothran, June 23, 2004, Department of Veterinary Science, University of Kentucky, Lexington, KY 40546-0076 (copy on file in the Las Vegas Field Office).

trapping may also be selected in other special circumstances as appropriate. Any future emergency removals (due to drought, fire or other unexpected impacts) would be based on a gate cut strategy (all the animals gathered would be removed) to minimize impacts to animals which may already be stressed due to drought, fire or other unexpected/unforeseen events.

Direct impacts to individual wild horses as a result of future gather and removal operations include the handling stress associated with these activities. Traumatic injuries that may occur typically involve biting and/or kicking that may result in bruises and minor swelling which normally does not break the skin. These impacts are known to occur intermittently during wild horse gather operations. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality of individuals from these impacts is infrequent but may occur in one-half to one percent of horses gathered in any given removal operation (Nevada BLM statistics). Implementation of the SOPs would help minimize direct impacts to animals.

Direct impacts to the wild horse herd's social structure as a result of future gather, handling and removal operation include the temporary separation of foals from their mothers, and mixing and separation of individual bands. These impacts would be short-term (from a few hours to a few weeks) and would disappear within a few weeks following the gather as bands reform.

The indirect effect of removing excess wild horses before range conditions deteriorate would be decreased competition among the remaining horses for the available water and forage. This should result in improved wild horse health and body condition, especially for mares and foals. Prioritizing removal of club-footed horses (which may be related to a recessive gene in these animals) would be expected to limit the spread of this condition.

Population modeling using the WinEquus program, developed by Dr. Steven Jenkins at the University of Nevada at Reno, was completed to analyze possible differences that could occur to the wild horse populations between the No Action Alternative (Continue Existing Management) and the action alternatives (Alternatives 2-4). One objective of the modeling is to identify if any of the alternatives would "crash" the population or cause extremely low population numbers or growth rates. Modeling indicates minimum population levels and growth rates would be expected to be within reasonable levels and adverse impacts to the population would be unlikely. Table 9 summarizes the average population size, average growth rate, projected years for future gathers and estimated removal number of the median trials for each alternative (refer to Appendix H for additional information).

Table 9. Average Population Size, Growth Rates, Projected Gather Years

Alternative	Average Population Size	Average Growth Rate	Next Projected Gather (Years)	Estimated Number to Remove after AML is Achieved (11 year period)
Alternative 1 – No Action/Existing Mgt.	511-634	22	2008, 2011, 2014	1563
Alternative 2 – Proposed Action/ Proposed HMAP	318-492	8	2008, 2014/2015, 2020/2021	217
Alternative 3	396-542	13	2008, 2013, 2018	403
Alternative 4	279-403	18	2008, 2014, 2020	331

Direct and indirect impacts specific to the NWHR HMA herd as a result of these actions are discussed below.

Alternative 1: No Action (Continue Existing Management)

Under Alternative 1, the HMA would be gathered about every 3 years over the next 10-20 year period to remove excess wild horses to the low to mid-range of the AML using a selective removal strategy. Following future gathers the population would be expected to continue to grow at a rate of about 22% per year because fertility control would not be applied. As a result, the population would be expected to grow from about 300-400 animals to about 545-726 animals within a three year period. Of the animals released following future gathers, about 36% would be stallions and 64% would be mares, with the majority (40-80%) of those in the middle age class. The projected cost of this alternative over 20 years would be about $6.25 million.

Under this alternative, existing water developments would be maintained until they outlive their useful life. At that time, the developments would be removed and AML would be adjusted downward based on the remaining available water. Based on the current condition of existing water developments, AML would probably be adjusted downward in the next 5-10 years. Since the wild horse population would exceed the upper limit of the AML by Year 2 or 3 following future gathers (depending on the actual number of animals remaining following prior gathers), the BLM or Air Force would need to continue to supplement water available for wild horses until AML could be adjusted. Supplementing water on a continuing basis over the long-term would be inconsistent with the 1971 WFRHBA, which requires BLM to manage wild horses with the minimum feasible level of management.

Utilization in a 1-3 mile radius around existing water sources would continue to be heavy, especially as the population exceeds the higher limit of the AML. To minimize this potential impact, the NWHR HMA would need to be gathered approximately every three years. Gathering every three years would increase social stress for individual wild horses and the herd and would likely result in greater cumulative mortality over the next 20 years as a result of gather operations than under Alternatives 2-4.

The next proposed gather to remove excess wild horses is tentatively scheduled for December 2008. In the absence of fertility control or other population control measures, gathers would be expected to occur approximately every three years thereafter, i.e. 2011, 2014, 2017, etc.

Alternative 2: Proposed Action (Proposed HMAP)

Under the Proposed Action, a breeding population of about 240-400 animals within any given 6-7 year period. The sex ratio of the breeding population would be adjusted slightly in favor of males (60/40 male/female sex ratio) following future gathers. Due to the relative proportion of stallions to mares, this alternative would have greater potential than Alternative 1 for a possible increase in aggressive behavior among stallions; however, this potential would be less than for Alternative 3. Over time, this ratio would move to a more even distribution of males/females; however, in the interim, more harems would be expected to form, resulting in greater genetic interchange (diversity) within the herd than with Alternatives 1 or 3.

Mares released back to the range following future gathers would be treated with the two-year immunocontraceptive (PZP) vaccine to help slow the population growth so that AML is not exceeded before Year 6. This vaccine has shown effectiveness of 94% in Year 1, 82% in Year 2 and 68% in Year 3. Refer to Table 9 above for projected results based on population modeling (effect on population size and annual growth rates). As compared to Alternative 1, Alternative 2 would reduce reproduction rates thereby extending the time interval between future gathers. This would reduce stress to individual animals as well as herd social structure over the next 10-20 year period. Anecdotal information (field observations) suggests one potential indirect impact of applying fertility control may be compensatory reproduction in Year 2 or 3 following treatment which could offset the benefits of fertility control application in Year 1; as a result, population monitoring would be completed to provide additional data as part of BLM's ongoing fertility control research program.

Allowing the population to grow at a slower rate should result in decreased grazing pressure around the existing water developments; actual utilization within a 1-3 mile radius of these areas should decrease from heavy to moderate.

Existing water developments would be reconstructed within the next 1-5 years and maintained annually, ensuring that the wild horses would have adequate water without the need for continued supplementation over the long-term. Reconstruction at the existing water sources would include the installation of water storage tanks along the existing water line, and the installation of cement water troughs that will allow for both wild horse and wildlife use. A new pipeline would be installed at the Cactus Spring development to allow for the gate to be closed to protect the riparian vegetation, and allow for the wild horses to water outside the exclosure. However, under extreme drought conditions, some potential for limited water hauling could result.

The Proposed Action would also manage a non-breeding population of geldings, about 60-100 stallions selected for gelding as described in Table 2. Surgery would be performed by a Nevada licensed veterinarian using appropriate anesthetic agents and surgical techniques. Mortality during and following surgery of this type is rare and would be expected to be less than one percent of the animals treated. Once released, anecdotal information indicates geldings would be expected to form bachelor bands; post-treatment monitoring would be designed to determine whether or not geldings form bachelor bands as expected or intermix with the breeding population. Observations of individual animal behavior would also be made. Periodic population census and future gather statistics would assist BLM to determine if managing a portion of the herd as a non-breeding population of geldings is effective in slowing the annual population growth and extending the gather cycle. Managing for a non-breeding population of 60-100 geldings within any given 6-7 year period would reduce the number of animals in short or long-term holding facilities and an expected savings of an estimated total of about $5.3 million over the No Action Alternative over the next 20 year period. It would also allow the animals to live out their natural lives on the range.

The post-gather breeding population of about 240-400 wild horses would be expected to be large enough to avoid the risk of inbreeding over the long-term (i.e. research in domestic horse populations indicates inbreeding potential may increase at very low population levels). However, even in small wild horse populations, Dr. Francis J. Singer indicates there is little imminent risk of inbreeding (loss of genetic diversity) since most wild horse herds which have been evaluated to date are genetically diverse and genetic resources are lost slowly over periods of many generations.[6] Moreover, Dr. Singer recommends introducing "only one to two breeding animals per generation…would maintain the genetic resources in small populations…obviating the need for larger populations in all cases." Should future genetics testing indicate a loss of genetic diversity of more than 10% from the baseline (H_o) of .344, 3-4 mares from genetically similar herds could be introduced every other gather to enhance genetic diversity.

Alternative 3:

Alternative 3 is similar to Alternative 2, with the exception that about half the herd (75-125 animals within any given 4-5 year period) would be managed as a non-breeding population of geldings. This would create the potential for more bachelor bands than under Alternative 2, and could have the indirect effect of either concentrating the animals around the available water (which could lead to heavy utilization annually) or conversely the animals could range further for forage (decreasing the level of utilization in/around available water). Post-treatment monitoring would be conducted as described for Alternative 2 to determine the actual effect. Projected savings over current management for this alternative would be estimated at about $4.6 million.

The balance of the herd (or about 225-375 animals) would be managed as a breeding population. Mares released back to the range would be subject to immunocontraceptive research as described in Alternative 2. As discussed in Alternative 2, the size of the breeding population should be adequate to maintain genetic diversity;

[6] Resource Note 29 at http://www.blm/gov/nstc/resourcenotes/resnotes.html

however, should future genetic testing indicate a loss of genetic diversity of more than 10% from the baseline (H_o) of .344, 3-4 mares from genetically similar herds could be introduced every other gather to enhance genetic diversity.

Assuming the necessary water rights and funding could be obtained, the potential exists to develop 2-4 additional water sources for wild horses within the NWHR HMA core area. While additional water would help to better disperse wild horse use through the NWHR HMA core area and would reduce impacts around existing water developments, developments of additional water would not be expected to result in increasing the upper limit of the AML above 500 animals. This is because wild horse numbers above the upper limit of the AML would negatively impact the military's operations mission. Additional water would especially benefit mares and foals, and would reduce the potential for lameness associated with trailing to/from water during the hot, dry summer months.

While development of additional water would avoid the need to supplement water even during extreme drought periods, relying on developed water sources requires constant monitoring to assure that developments remain functional and that horses do not die of thirst due to damaged or nonfunctioning developments. This level of monitoring would be intensive and would require the military to conduct the monitoring on behalf of BLM or continuous daily access to all the newly developed waters on the range by BLM personnel. Given current and expected future funding, staffing and the military's mission that can limit access to the range by BLM personnel, this level of monitoring would probably not be feasible.

Alternative 4:

Under Alternative 4, the low-range of the AML would be adjusted from 300 wild horses currently to 210 animals to allow the herd to grow at a rate of about 18% per year over a four to six year period to the upper limit of the AML (500 animals). During future gathers, the sex ratio of the breeding population would be adjusted slightly in favor of males to females (60/40 male/female sex ratio). Similar to Alternative 1, immunocontraceptive research would not be conducted under Alternative 4. Another difference between Alternatives 1 and 4 is under Alternative 4, existing water developments would be reconstructed over the next 1-10 year period and maintained annually thereafter as described in Alternative 2. This alternative would result in a potential savings over current management of about $4.9 million over a 20-year period.

Vegetation, Riparian Areas, Soil and Water Resources

Affected Environment

Vegetation varies from salt desert shrub communities at lower elevations, to low and big sagebrush/grass communities at higher elevations. The lower elevations are comprised of salt tolerant plants such as bud sagebrush (*Picrothamnus desertorum*), shadscale (*Atriplex confertifolia*) and baileys and black greasewood (*Sarcobatus spp*.). Mid-elevations and alluvial fans consist of Wyoming big sagebrush (*Artemisia tridentate wyomingensis*) or black sagebrush (*Atremisia nova*), with an understory of Indian ricegrass (*Achnatherum hymenoides*), Sandberg's bluegrass (*Poa secunda*), and bottlebrush squirreltail (*Elymus elmiodes*). Within the mid and higher elevations, there is an occurrence of Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*). The higher elevation sites are comprised of mountain big sagebrush (*Artemisia tridentate vaseyana*) and bluebunch wheatgrass (*Pseudoroegneria spicata*). More detailed vegetation information is not currently available as vegetation has not been adequately mapped or classified using standard BLM techniques (i.e. range or ecologic site or other classification schemes). Similarly, key areas to assist in monitoring utilization by wild horses and other ungulates and in determining vegetation trends over time have not yet been established.

The only noxious weed known to occur on the NTTR is salt cedar (*Tamarix ramosissima*). Invasive species include cheatgrass, red brome, halogeton, and Russian thistle. Other noxious and invasive weeds may occur, but have not been identified to date.

Existing monitoring data indicates that during the late spring, summer and fall, forage utilization by wild horses is mostly heavy within a 1-3 mile radius of the available water. Trailing to/from water (vegetation trampling/disturbance) increases as wild horses travel greater distances from water to find forage. During the winter months the majority of the wild horses move out of the NWHR HMA core area and south to the winter range where they rely mainly on winter precipitation. This helps to decrease grazing pressure within the NWHR HMA core area during the dormant non-growing season.

Soils in the planning area have not been mapped in detail, but can be extrapolated from soils data collected outside the NTTR where the geology, topography, geomorphology, climate and vegetation are similar. Soils at lower elevations on the North Range are typically entisols and aridisols. Entisols are most common where sand sheets have deposited above playa landforms. Mollisols are common in the mountains at higher elevations.

Ephemeral water resources dominate the landscape due to the arid/semi-arid climate of the area. Springs on Pahute Mesa near Tolicha Peak are not known to have been affected by wild horses. However, springs on the Belted, Kawich, and Cactus Ranges and Stonewall Mountain have been impacted by wild horse use in the past 30 years. Excessive grazing by wild horses has degraded many of the riparian areas in these mountain ranges (Dames and Moore, 1996). While none of these springs support large riparian areas, they are important to wildlife for forage and water.

Within the Cactus Range, a total of six riparian areas within the wild horse NWHR HMA core area have been fenced to exclude use by wild horses; off-site water for use by wild horses has not been provided at these locations. Riparian condition data (using the proper functioning condition or PFC method) was collected for these springs during 1997-2001. At the time that the PFC data was collected, these springs were recommended for fencing to exclude wild horse use. The excluded springs all produce flows of less than 1 gallon per minute (gpm).

At the present time, the Cactus Springs water development and the associated riparian area receives heavy use by wild horses. This spring provides an important source of water for wild horses on the west side of the NWHR HMA core area, providing nearly 1.4 gallons of water per minute. Fourteen additional springs remain unfenced and are available for use by wild horses within the NWHR HMA core area (refer to Appendix F in the July 2004 approved NTTR RMP and EIS).

Table 10 summarizes the results of PFC assessments for nine key riparian areas and the Breen Creek in the North Range. Of these, eight are within the NWHR HMA core area for wild horses. All data is on file at the LVFO.

Table 10. Summary of Riparian Condition Data (PFC Method)

Spring Name	Flow Rate (GPM)	Year Collected	PFC Assessment	Trend	Fenced
Cactus Spring (Lower)	.63	1997	Nonfunctional		Yes Exclosure remains open for use by wild horses until off-site water can be developed.
Cactus Spring (Upper)	.75	1997	Functional-At Risk	Not Apparent	As above.

Antelope Spring (1) Antelope Spring (2) Antelope Spring (3)	.21	1997 2000 2000	Nonfunctional Nonfunctional Nonfunctional		Yes
Sleeping Column Spring	.95	1997	Functional-At Risk	Not Apparent	Yes
Stealth Spring	.53	1997	Functional-At Risk	Downward	Yes
Urinia Mine Seep	.01	1997	Nonfunctional		Yes
Wild Horse Spring (Outside NWHR HMA core area)		1999	Functional-At Risk	Upward	No
Breen Creek		2001	Proper Functioning Condition		No

Environmental Consequences

Impacts Common to Alternatives 1-4

All the alternatives would include identifying key areas to facilitate future utilization and vegetation condition and trend monitoring. A rangeland health assessment would be completed by 2010 under all the alternatives; based on the results of this assessment additional site-specific resource management objectives for the key areas could potentially be established. During this assessment, current data will be collected on noxious and invasive weeds.

All the alternatives would result in periodic gathers to remove excess wild horses from the NWHR HMA. The direct impacts to vegetation would include short-term (1 to 20 days) disturbance of native vegetation immediately in and around temporary trap sites, and holding and handling facilities. Impacts could be by vehicle traffic and the hoof action of penned wild horses, and could be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Since most trap sites and holding facilities would be re-used during recurring wild horse gather operations (every 4-6 years), any impacts would remain site-specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would generally be adjacent to or on roads, pullouts, water haul sites, or previously disturbed flat spots.

Indirect impacts from gathering to the low-range of the AML include reduced trailing by wild horses (less vegetation trampling/disturbance) as they travel to/from water and forage. Actual forage utilization by wild horses would also be reduced from heavy (61+% of annual year's growth) at the present time to moderate or less (<40-60%) within a 1-3 mile radius of the available water. Over the next 10-20 years, reduced forage utilization would promote vegetation re-growth and provide for natural recovery of overgrazed plants. Decreased competition between wild horses and wildlife for the available forage and water would also be expected. Over the longer term (10-20 years), managing the wild horse population within the upper limit of AML (500 animals), would result in healthier rangeland vegetation better able to withstand grazing pressure from wild horses and wildlife, especially during periods of drought.

Impacts Common to Alternatives 2-4

Alternatives 2-4 would reconstruct existing water developments over the next 1-5 years and maintain them annually thereafter. Reconstruction and maintenance activities would be confined to the existing area of disturbance; short-term disturbance of soil, vegetation, riparian and water resources within the affected area would result. Modifications requiring disturbance outside the existing area of disturbance would require a site-specific cultural resource clearance and additional environmental analysis, as appropriate. If cultural resources

are found within the area of potential effect, the proposed project would be relocated or redesigned so there are no negative impacts to those resources.

Alternative 1: No Action (Continue Existing Management)

Under this alternative, fertility control would not be applied and the population would be expected to grow to the upper limit of the AML within three years. This would result in more frequent gathers (every three years) of the NWHR HMA than under Alternatives 2-4 and in greater short-term disturbance of vegetation and soils in and around temporary trap sites and holding and handling facilities.

Over the longer term, existing water developments would be phased out as they outlive their useful life; riparian areas would be fenced to exclude wild horses if needed to maintain or improve riparian condition. This could have short-term direct impacts to soils, vegetation and riparian resources by concentrating wild horse use around remaining water until such time as AML could be adjusted downward. It could also result in continued supplementation of water (increased disturbance from water hauling to soils and vegetation resources) to wild horses during this timeframe.

Alternative 2: Proposed Action

Under Alternative 2, a breeding population (240-400 animals) and a non-breeding population of (60-100 geldings) would be managed. The gelding population would be expected to form bachelor bands; this could result in concentrating use around available water, with the potential for increased utilization and trampling of soil, vegetation and riparian resources or alternatively, could result in geldings roaming further to/from water, resulting in decreased utilization of soil, vegetation and riparian resources. Post-treatment monitoring would be conducted to determine actual impacts.

Under Alternative 2, existing water developments would be reconstructed over the next 1-5 year period and maintained annually thereafter. This should provide adequate water for a total population of 300-500 animals and reduce utilization from heavy to moderate within a 1-3 mile radius of key water areas. It should also reduce the need to haul water in all but the driest years.

Alternative 3:

Alternative 3 is similar to Alternative 2, with the exception that about half the herd (150-250 animals within any given 4-5 year period) would be managed as a non-breeding population of geldings. This could result in the formation of more bachelor bands than in Alternative 2, and could have the indirect effect of either concentrating the animals around the available water (which could lead to heavy utilization annually) or alternatively, the animals could range further for forage (decreasing the level of utilization in/around available water). Post-treatment monitoring would be conducted as described for Alternative 2 to determine the actual impact.

Assuming the necessary water rights and funding could be acquired, the potential exists to develop 2-4 additional water sources for wild horses within the NWHR HMA core area. Implementation of new water would also be subject to additional site-specific environmental analysis, as appropriate. While additional water would help to better disperse wild horse use through the NWHR HMA core area and would reduce impacts to soil, vegetation and riparian resources around existing water developments, development of additional water not result in increasing the upper limit of the AML above 500 animals.

Under Alternative 3, up to 7 exclosures could be constructed within dominant range sites to facilitate long-term trend monitoring. Prior to construction, additional environmental analysis would be needed, as appropriate. This would result in additional maintenance annually and may not be feasible given current and expected future funding and staffing. It could also result in additional conflicts with the military's operations mission.

Alternative 4:

Under Alternative 4, the low-range of the AML would be adjusted from 300 wild horses currently to 210 to allow the herd to grow at a rate of about 18% per year over a four to six year period to the upper limit of the AML (500 animals). Compared to Alternative 1, Alternative 4 would reduce the short-term impacts associated with wild horse gather operations because the NWHR HMA would not need to be gathered as frequently (gather frequency for Alternative 4 would be about every four years as compared to every three years under Alternative 1). Also, unlike Alternative 1, Alternative 4 would reconstruct the existing water developments over the next 1-5 year period and maintain them annually thereafter. This would have the effect of dispersing wild horse use and reduce utilization from heavy to moderate in a 1-3 mile radius around water sources. It would also reduce the need for water hauling and the associated disturbance to soils and vegetations in all but the driest years.

Wildlife, Migratory Birds and Special Status Species

Affected Environment

The mosaic of plant communities and topographic features found on the NWHR HMA supports a wide variety of wildlife species that use the habitat within the NWHR HMA for resting, courtship, foraging, travel, supplies of food and water, thermal protection, escape cover and reproduction. For a detailed list of species found within the NWHR HMA, please refer to the Proposed NTTR RMP/FEIS dated May 2003. Numerous avian, mammalian, reptilian, amphibian, invertebrates and other wildlife species are present within the NWHR HMA.

There are no known Threatened and Endangered Species within the NWHR HMA. However, special status species (BLM sensitive wildlife species) are present. These include: western burrowing owl (*Athene cunicularia*), and Desert bighorn sheep (*Ovis candensis nelsoni*). The burrowing owl is a migrant and resident species in open, dry, grassland and Mojave desert-scrub, sagebrush/perennial grassland, and open scrub stages of pinyon-juniper and mixed conifer habitats. Desert bighorn sheep are found year-round and occupy Stonewall Mountain, the Cactus Range, Mount Helen and the rim county (Clivet Cat and Packrat Canyon) areas between Stonewall Mountain and the Cactus Range, as well as the western rim of Pahute Mesa between Stonewall Mountain and Tolicha Peak and the area bounded by Tolicha Peak, Black Mountain, and Thirsty Canyon. They use a variety of habitat types, including; Wyoming big sagebrush, black sagebrush, low desert shrubs, open pinyon-juniper woodlands and blackbrush communities.

Most birds are protected by the Migratory Bird Treaty Act of 1918 and subsequent amendments (16 U.S.C. 703-711), that makes it unlawful to take, kill, or possess migratory birds or their remains. A list of those protected birds can be found in 50 CFR 10.13. Raptors including: vultures, hawks, kites, eagles, ospreys, falcons, and owls occur and breed throughout the area and are protected under the Migratory Bird Treaty Act and by the State of Nevada. These birds occupy high trophic levels of the food chain and are regarded as sensitive indicators of ecosystem stability and health.

Environmental Consequences

Impacts Common to Alternatives 1-4

All the alternatives would result in periodic gathers to remove excess wild horses from the NWHR HMA. The direct impacts to wildlife would include short-term (1 to 20 days) disturbances immediately in and around temporary trap sites, and holding and handling facilities.

Indirect impacts from gathering to the low-range of the AML include reduced trailing by wild horses and less disturbance to wildlife. Reduced competition between wild horses and wildlife for water and forage would also be expected. Over the next 10-20 years, reduced forage utilization would promote vegetation re-growth and provide for natural recovery of overgrazed plants. This would benefit wildlife by improving the diversity and productivity of key species and the overall quality of the habitat. Over the longer term (10-20 years), managing

the wild horse population within the AML range would result in healthier rangeland vegetation better able to withstand grazing pressure from wild horses and wildlife, especially during periods of drought.

Impacts Common to Alternatives 2-4

Alternatives 2-4 would reconstruct existing water developments over the next 1-5 years and maintain them annually thereafter. Reconstruction and maintenance activities would be confined to the existing area of disturbance; short-term disturbance to wildlife within the affected area would result. Modifications requiring disturbance outside the existing area of disturbance would require a site-specific cultural resource clearance and additional environmental analysis, as appropriate.

Alternative 1: No Action (Continue Existing Management)

Under this alternative, fertility control would not be applied and the population would be expected to grow to the upper limit of the AML within three years. This would result in more frequent gathers (every three years) of the NWHR HMA than under Alternatives 2-4 and an increased potential for short-term disturbance of wildlife in and around temporary trap sites and holding and handling facilities.

Over the long-term, existing water developments would be phased out as they outlive their useful life; riparian areas would be fenced to exclude wild horses if needed to maintain or improve riparian condition. This could directly benefit wildlife by improving the quality of forage and habitat within riparian exclosures and reduced disturbance as a result of fewer wild horses on the range.

Over the short-term (until AML can be adjusted downward), increased impacts to wildlife could result by concentrating wild horse use around remaining water. The need for increased water hauling during this period could also result in increased disturbance to wildlife as compared to Alternatives 2-4.

Alternative 2: Proposed Action

Under Alternative 2, a portion of the herd would be managed as a breeding population (240-400 animals) and a portion of the herd (60-100 animals) would be managed as a non-breeding population of geldings. The gelding population would be expected to form bachelor bands. This could result in some increased disturbance to wildlife as gelding bands range to/from water or alternatively concentrate their use around available water. Post-treatment monitoring would be conducted to determine actual impacts.

Under Alternative 2, existing water developments would be reconstructed over the next 1-5 year period and maintained annually thereafter. This should provide adequate water for a total population of 300-500 animals and reduce utilization from heavy to moderate within a 1-3 mile radius of key water areas. It should also reduce the need to haul water in all but the driest years. Over the longer-term (10-20 years), vegetation diversity and productivity should improve, resulting in higher quality forage and habitat for wildlife.

Alternative 3:

Alternative 3 is similar to Alternative 2, with the exception that about 75-125 animals would be managed as a non-breeding population of geldings. Alternative 3 would have potential to result in greater disturbance to wildlife than Alternative 2 as a larger number of bachelor bands would be expected to form. Post-treatment monitoring would be conducted as described for Alternative 2 to determine the actual effect.

Assuming acquisition of the necessary water rights and funding, potential exists to develop 2-4 additional water sources for wild horses within the NWHR HMA core area. Implementation of new water developments would be dependent on funding, water rights, and additional site-specific environmental analysis as appropriate. Additional water would help to better disperse wild horse use, which would improve wildlife habitat around existing water developments. However, this alternative could result in greater disturbance to wildlife than for Alternatives 1, 2 and 4 because it would have the effect of moving wild horses to graze areas moderately rather

than lightly as they are now. Consistent with the military's operations mission, development of additional water would not be expected to result in increasing the upper limit of the AML above 500 animals.

Alternative 4:

Under Alternative 4, the low-range of the AML would be adjusted from 300 wild horses currently to 210 to allow the herd to grow at a rate of about 18% per year over a four to six year period to the upper limit of the AML (500 animals). Compared to Alternative 1, Alternative 4 would reduce the short-term disturbance to wildlife associated with wild horse gather operations because the NWHR HMA would not need to be gathered as frequently (gather frequency for Alternative 4 would be about every four to six years as compared to every three years under Alternative 1). Also, unlike Alternative 1, Alternative 4 would reconstruct the existing water developments over the next 1-5 year period and maintain them annually thereafter. This would have the effect of dispersing wild horse use and reduce utilization from heavy to moderate within a 1-3 mile radius around water sources and would also reduce the need for water hauling and the associated disturbance to soils and vegetations in all but the driest years.

Cumulative Impacts

The National Environmental Policy Act (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 potential effect** for the purposes of evaluating cumulative impacts is the 1.3 million acre Nevada Wild Horse Range Herd Management Area(Refer to Map 1).

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 to be analyzed are: **Wild Horses** and **Vegetation**. Impacts to soils, water and riparian resources and wildlife will not be analyzed as issues because potential cumulative impacts to these resources are a function of the wild horse population size and their direct, indirect and cumulative impact on vegetation quantity and quality.

Wild Horses

Past

The NWHR was established in 1962 by a Cooperative Agreement with the Commander of Nellis Air Force Base and the State Director of Nevada Bureau of Land Management. Through land use planning, the entire 1.3 million acre NWHR was designated as a herd management area (HMA) suitable for the long-term management of wild horses (July 2004). In 1991, the appropriate management level of wild horses was established as 1,000 wild horses through BLM decision; this decision was later modified in 1996 to provide for a population range of 600-1,000 wild horses.

Thousands of wild horses grazed the NWHR HMA over the past two decades, refer to Table 6. Supplementing water for wild horses has been common in the past in order to support numbers of wild horses in excess of AML. A number of emergency removals (due to lack of forage and water) have also occurred in order to prevent the death of individual animals from thirst or starvation. Past gathers have led to the representation of age and sex classes and the degree of genetic diversity evident in the NWHR HMA herd today.

Present

Today, management of the NWHR HMA is guided by the July 2004 approved NTTR RMP/EIS and ROD. AML was adjusted through this decision to a population range of 300-500 wild horses based on detailed analysis of available water, the military's operations mission, and other uses of the water resources. At present, the

NWHR HMA has an estimated population of 1,100-1,120 wild horses, but is expected to grow to an estimated 1,360 to 1,390 wild horses following the 2008 foaling season. The current sex ratio of males/females is approximately 36% males and 64% females with young, middle and older age class animals well represented.

Under the law, BLM is required to remove excess animals immediately once a determination has been made that excess animals are present. Program goals have expanded beyond establishing a "*thriving natural ecological balance*" (i.e. establishing AML for individual herds), to achieving/maintaining population size within the established AML as well as managing for a healthy, self-sustaining wild horse population. The destruction of healthy excess animals is prohibited; adoptions or sales[7] or placement of excess wild horses in long-term holding are the primary means for caring for the animals removed from the range. The focus of wild horse management has also expanded to place emphasis on achieving rangeland health as measured through the standards and guidelines for rangeland health and healthy wild horse populations developed by the Mojave Southern Great Basin Resource Advisory Council (RAC).

All the alternatives would result in managing for an upper limit of 500 wild horses. Periodic gathers to remove excess wild horses would be conducted as needed with short-term impacts to social behavior of individual horses and the herd. Helicopter drive trapping and helicopter assisted roping from horseback would be the primary gather methods although bait and/or water trapping could be utilized in special circumstances or given a summer gather window. Mortality of one-half to one-percent of the gathered animals could result during any given gather.

Under Alternative 1, the existing water developments would be phased out once they have outlived their useful life (next 1-5 years). Areas would be fenced as needed to protect riparian habitat. This would have the net result of reducing the amount of water available for use by wild horses and would lead to a downward adjustment of AML based on the remaining water. Alternatives 2-4 would reconstruct the existing water developments over the next 1-5 year period and maintain them annually thereafter, resulting in dispersing wild horse use within the NWHR HMA core area and reducing utilization from heavy to moderate within a 1-3 mile radius of these developments. Alternative 3 would potentially develop 2-4 additional water sources (given acquisition of the necessary funding and water rights), and would disperse use more widely through the NWHR HMA core area than the other alternatives, however, AML would not be adjusted upward as wild horse numbers above 500 animals would be in direct conflict with the military's operations mission.

Alternatives 2 and 3 would manage for a population range of 300-500 animals, while Alternative 4 would adjust the low-range of the AML to 210 animals to allow the population to grow at 18% per year over four to six years to the upper limit of the AML (500 animals) without need for more frequent removals of excess wild horses.

The Proposed Action (Alternative 2) and Alternative 3 would be expected to slow wild horse population growth by managing a portion of the herd as a non-breeding population of geldings and through the application of fertility control and slight adjustments in the sex ratio in favor of males immediately following future gathers. This would have the effect of extending the gather cycle until another wild horse gather would be needed as compared to Alternatives 1 and 4 which would require more frequent gathers to maintain AML.

Alternatives 2-4 would encourage greater genetic diversity than Alternative 1 by managing for a sex ratio of 60/40 males/females. However, due to the relative proportion of stallions to mares, the potential for aggressive behavior by stallions is greater than Alternative 1. The three action alternatives would manage toward a relatively even distribution of age classes in any given 4-5 year gather period over the next 10-20 years.

[7] Under authority provided by the Congress of the United States in December 2003, sales of excess animals to individuals who can provide the animals with a good home are limited to animals over age 10 or that have been offered unsuccessfully for adoption three times.

Genetic diversity would be monitored during every future gather; genetic diversity would be expected to be maintained over the next 10-20 years given a breeding population not less than 150 animals under any alternative. Should genetics monitoring indicate a reduction in genetic diversity of greater than 10% over the baseline (H_o) of .344, 3-4 mares from genetically similar HMAs would be introduced every other gather.

Environmental testing is ongoing to determine the source and extent of nitrates which were the probable cause of death of 71 wild horses at a pond in the northwest corner of the NWHR HMA in late July 2007.

Reasonably Foreseeable Future Actions

A reasonably foreseeable future action is the need to continue to haul water to wild horses until existing water developments can be reconstructed (Alternatives 2-4) or additional water could be developed (Alternative 3). Other reasonably foreseeable future actions include continued water hauling to provide off-site water to wild horses near the pond which resulted in the deaths of 71 wild horses in July 2007, removal of the temporary fencing currently installed around the pond and possible replacement with permanent fencing, or other mitigation measures, as indicated by the results of the further testing.

The next gather of the NWHR HMA is tentatively scheduled for December 2012. Under Alternative 1, the NWHR HMA would be gathered about every three years thereafter to maintain the population within 300-500 animals. Under Alternatives 2-4, gathers would be conducted approximately every 4-6 years. Fertility control would be applied during future gathers under Alternatives 2-3 in an effort to slow population growth. Cumulatively, these actions should result in fewer gathers and beneficial effects to individual wild horses and the herd's social structure due to less frequent disturbance.

Any future proposed projects within the NWHR HMA would be analyzed in an appropriate environmental document following site-specific planning and all future project planning will include public involvement.

Vegetation

Past

Forage utilization during the 1980's and 1990's when thousands of wild horses grazed the NWHR HMA was severe (80+% of current year's growth); as a result of severe forage utilization, upland habitats exhibited large areas of bare ground; key forage species were absent or so heavily utilized they were unnoticeable; riparian habitats were denuded.

Present

As a result of reduced wild horse numbers over the past decade, upland vegetation and riparian conditions have improved to the extent that areas of bare ground are mostly absent and areas of heavy forage utilization are limited to a 1-3 mile radius around the available water. Water continues to be a limiting factor on the NWHR HMA; of the key water sources used by wild horses, Cedar Well is dry; the remaining sources have water at this point, but will continue to rely on spring production and rainfall. Since 2004, the BLM and Air Force has been supplementing water at several locations during the hot, dry summer months due to limited water availability.

All alternatives would conduct future gathers to reduce wild horse population size to within the established AML range; as a result, actual forage utilization by wild horses should decrease from heavy (61+%) presently to moderate (<60%). Competition between wild horses and wildlife for vegetation and water resources would be reduced over the current level. Alternatives 2-4 would reconstruct the existing water developments over the next 1-5 years; as a result, the need to provide supplemental water (water hauling) for wild horses should be eliminated in all but the driest years as the wild horse population would be in balance with the available water. Alternative 3 would potentially develop 2-4 additional water sources, dispersing wild horse use into areas that currently receive only light use; due to the military's operations mission, the upper limit of the AML would not be increased above 500 animals. This should result in additional improvements to vegetation within a 1-3 mile

radius of the existing water sources. Under the No Action Alternative (Alternative 1), water developments would be phased out as they outlive their useful life and associated riparian habitats would be fenced to exclude use by wild horses as needed; this should results in improved riparian habitat quality and quantity.

Alternative 2 and 3 would manage a portion of the herd as a non-breeding population of geldings. Geldings would be expected to form bachelor bands which could concentrate their use around the existing water or range further to forage. Impacts would be greater under Alternative 3 as this alternative manages for a larger number of geldings than Alternative 2 (half the herd in Alternative 3 as compared to 20% of the herd in Alternative 2). Post-treatment monitoring would be conducted to determine the actual impact of the gelded populations. Under Alternative 4, the lower limit of the AML would be adjusted from 300 wild horses to 210 animals, allowing the population to grow over a four year period to the upper limit of the AML as compared to three years under Alternative 1.

Reasonably Foreseeable Future Actions

Cumulatively, continuing to manage wild horses within the established AML range would result in improved vegetation condition (i.e. forage availability and quantity), which in turn would positively impact wildlife and the wild horse population.

Summary of Past, Present, and Reasonably Foreseeable Future Actions (Cumulative Impacts)

Cumulative beneficial effects from the Proposed Action are expected and would include continued improvement of vegetation condition, which would in turn positively impact native wildlife and wild horses populations as forage quantity and quality is improved over the current level.

Direct cumulative impacts of the No Action alternative coupled with impacts from past, present, and reasonably foreseeable future actions would result in foregoing an opportunity to improve rangeland health and over the long term would be expected to reduce the number of wild horses which could be properly managed in balance with the available water and forage. As a result, the No Action Alternative, in conjunction with many of the past, present and reasonably foreseeable future actions would result in only partial attainment of RMP objectives and Standards for Rangeland Health.

This combination of the past, present and reasonably foreseeable future actions, along with implementation of the Proposed Action, should result in more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple use conflicts within the NWHR HMA over the short and long-term.

Mitigation Measures and Suggested Monitoring

Proven mitigation and monitoring are incorporated into the Proposed Action through SOPs which have been developed over time. These SOPs (current SOPs are summarized in Appendix D and E) represent the "best methods" for reducing impacts associated with gathering, handling, transportation, herd data collection, and application and monitoring of fertility control.

The NWHR HMA will be monitored annually. Management may be adjusted when monitoring data and other information indicates a need. In addition to monitoring, long-term evaluations will be completed at roughly ten-year intervals, or as needed, based on the results of annual evaluations. Monitoring objectives are outlined in the Monitoring Plan. Monitoring is designed to answer two primary questions:

"Did we do what we said we were going to do?"
"Was what we did effective in meeting/moving toward our objectives?"

The objective for the long-term evaluation is to determine:

"Are our objective(s) still current…or do they need to be modified?"
"Is our management on track…or do we need to make some changes?"

Significant changes needed as a result of annual or long-term evaluations may require appropriate NEPA analysis and documentation prior to implementation.

Consultation and Coordination

The consultation and coordination conducted in preparing this preliminary environmental assessment is summarized in the EA, Page 2. For a detailed list of those consulted as well as a summary of the comments received, refer to Appendices I and J.

List of Preparers

Jayson Barangan	Wildlife Biologist (Wildlife/T&E/Special Status Species), LVFO
Everett Bartz	Noxious Weeds Specialist, LVFO
Jerrie Bertola	Wild Horse & Burro Specialist, LVFO
Krystal Johnson	Wild Horse & Burro Specialist, LVFO
Christina Lund	Botanist (Vegetation), LVFO
Sarah Peterson	Hydrologist (Soils, Water and Riparian), LVFO
Patrick Putnam	Assistant Field Manager, Recreation and Renewable Resources, LVFO
Susanne Rowe	Archaeologist (Archaeology and Cultural Resources), LVFO
Mark Slaughter	Wildlife Biologist (Wildlife/T&E/Special Status Species), LVFO
Jeff Steinmetz	Planning and Environmental Coordinator, LVFO
Susie Stokke	Wild Horse & Burro Program Lead, NSO
Ruth Thompson	Wild Horse & Burro Specialist, LVFO

APPENDIX

Appendix A – Nevada Test and Training Range Management Objectives and Direction

Appendix B – Mojave-Southern Great Basin Rangeland Health Standards and Guidelines

Appendix C – Current Security and Safety Requirements for Access to NTTR

Appendix D -- Current Standard Operating Procedures (Gather Operation)

Appendix E – Current Standard Operating Procedures (Fertility Control Treatment)

Appendix F – Current Euthanasia Policy

Appendix G – Current Selective Removal Criteria

Appendix H - Population Modeling

Appendix I - List of Interested Individuals, Groups and Agencies Contacted

Appendix J - Detailed Summary of Public Scoping

Appendix K – Detailed Summary of Public Scoping Used in Preparing the Final Environmental Assessment

APPENDIX A

Nevada Test and Training Range Resource Management Plan

Management Objectives and Direction

Wild Horse Management

Objective:
Manage for healthy, genetically viable herds of wild horses in a natural, thriving ecological balance with other rangeland resources.

Management Direction:

- Restrict the active management of wild horses to the Herd Management Area (HMA) Core Area (refer to Map 1 in this document) and adjust the existing Appropriate Management Level (AML) based on military's operations mission, data in Appendix F, and other uses of the water resources to 300-500 horses within the HMA.

- In the future, adjust the AML when monitoring data determine that management objectives for wild horses, vegetation, forage production, water, riparian and other resources are not being met, including the military's mission and safety considerations.

- Limit forage utilization by all herbivores to 50% of the current year's above-ground primary production for key grasses, and 45% for key shrubs and forbs. Construct up to seven exclosures to help assess resource conditions.

- Maintain dependable water sources to allow better distribution of wild horses throughout the core area. Develop three to four water wells in the area identified for determining AML (core area).

Objective:
Maintain the wild, free-roaming character of the wild horses on the withdrawn public lands.

Management Direction:
Wild horses will be removed when animals permanently reside on lands outside the AML core area (i.e. use is more than seasonal drift), or if the total horse population exceeds the AML for the HMA.

Air Resource Management

Objective:
Ensure that actions in the planning area do not violate local, state, tribal and Federal air quality laws, regulations and standards.

Management Direction:
Ensure that the planning process addresses air quality considerations by incorporating objectives and actions into resource activity plans, such as Habitat Management Plans. Where applicable, include "conformity" demonstrate in site-specific activity plans and/or National Environmental Policy Act documentation.

Soil Resource Management

Objective:

Assess erosion conditions and reduce erosion and sedimentation while maintaining or where possible enhancing soil productivity through the maintenance and improvement of watershed conditions.

Management Direction:

On watersheds that exhibit good potential for recovery, implement protective and or restoration measures.

Water Resource Management

Objective:

Maintain the quality of waters presently in compliance with state and/or federal water quality standards.

Management Direction:

Determine water needs to meet management objectives. File for appropriative water rights on public lands in accordance with the State of Nevada water laws. By terms of the land withdrawal (PL 106-65) there are no federally reserved water rights on the NTTR.

Riparian Resource Management

Objective:

Maintain a desired plant community that provides vegetation and habitat for wildlife, fish, and watershed protection; ensure that all riparian areas are in proper functioning condition by achieving an advanced ecological status, except where resource management objectives require an earlier successional stage. Manage vegetation consistent with vegetation management objectives.

Management Direction:

Complete a PFC assessment on all riparian areas, and include a description of the actions necessary to achieve PFC on all areas identified as functioning at risk or non-functioning.

Improve riparian areas, giving priority to areas functioning at risk with a downward trend. Implement measures to protect riparian areas such as fencing and/or alternate water sources away from the riparian area.

Vegetation Resource Management

Objective:

Maintain or improve the condition of vegetation on withdrawn public lands to a Desired Plant Community or a Potential Natural Community.

Management Direction:

Remove noxious and invasive weeds from public lands consistent with the integrated weed management techniques for removal.

Fish and Wildlife Management

Objective:

Support viable and diverse wildlife populations by providing and maintaining sufficient quality and quantity of food, water, cover and space to satisfy needs of wildlife species using habitats on withdrawn public land.

Management Direction:

- ✶ Maintain and improve bighorn sheep habitat by maintaining existing water developments, judicious use of prescribed fire, constructing additional water developments, and protecting/improving springs, seeps and riparian habitat, consistent with BLM policy. Evaluate discretionary activities proposed in bighorn sheep habitat on a case-by-case basis. Grant authorization if proposed actions are consistent with goals

and objectives of the Range Wide Plan for Managing Desert Bighorn Sheep on Public Lands (U.S. Department of the Interior, BLM 1988) and other applicable policies.

- Maintain and improve mule deer and antelope habitat based on the forage and water needs of each species.
- Protect sage grouse habitat from ground disturbing activities and coordinate with appropriate state and federal agencies prior to habitat disturbance.
- Protect water sources that may benefit or harm wildlife by providing a minimum buffer for permitted activities, consistent with the military's mission of the withdrawal.
- Protect and improve key nesting areas, migration routes, important prey base areas, and concentration areas for birds of prey.
- Protect and improve important non-game resting/nesting habitat in riparian areas and other important habitat types. Discourage projects that may adversely impact the water table supporting these plan communities.

Objective:
Evaluate wildlife habitat quality and quantity on the NTTR and where appropriate re-establish appropriate native fauna (including naturalized species) to historic use areas, and/or increase population numbers in current use areas.

Management Direction:
Cooperate with state and federal wildlife agencies in implementing introductions, reintroductions and augmentation releases of native and/or naturalized species (such as desert bighorn sheep and chukar), and as appropriate, capture of these species for relocation and stocking purposes. Design water developments for wild horses and livestock to reduce potential conflicts with bighorn sheep and/or other wildlife. Animal damage control activities may be allowed to meet management directives for wildlife species.

Special Status Species
Objective:
Manage habitat for special status species at the potential natural community or the desired plan community, according to the need of the species. Manage habitat to maintain and/or increase the total number of populations of federally listed species and/or the number of individuals in existing populations, so the requirements for de-listing or down-listing species under the Endangered Species Act will be achieved. Manage habitats for non-listed special status species to support viable populations so that future listing would not be necessary.

Management Direction:
Enter into conservation agreements with the USFWS and the State of Nevada in consultation with Air Force to reduce the necessity of future listings of species of concern. Conservation agreements may include, but not be limited to, the following: Merriam bear poppy and white-margined penstemon.

Objective:
Manage desert tortoise habitat to achieve the recovery criteria defined in the Tortoise Recover Plan (USFWS, 1994) and ultimately to achieve delisting of the desert tortoise. When the population in a recovery unit meets the criterion as outlined in the Tortoise Recover Plan, it may be considered recovered and eligible for delisting.

Management Direction:
Ensure desert tortoise habitat conditions are consistent with the direction identified in the vegetation objectives and management directions.

Appendix B

Mojave-Southern Great Basin Resource Advisory Council

Rangeland Health Standards and Guidelines

Preamble

Standard 1. Soils:

Watershed soils and streambanks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.

Soil Indicators:

- Ground cover (vegetation, litter, rock, bare ground);
- Surfaces (eg. biological crusts, pavement); and,
- Compaction/infiltration.

Riparian soil indicators:

- Streambank stability.

All of the above indicators are appropriate to the potential of the ecological site.

Guidelines:

1.1 Upland management practices should maintain or promote adequate vegetative ground cover to achieve the standards.
1.2 Riparian-wetland management practices should maintain or promote sufficient residual vegetation to maintain, improve, or restore functions such as stream flow energy dissipation, sediment capture, groundwater recharge, and streambank stability.
1.3 When wild horse and burro herd management practices alone are not likely to restore areas, land management practices may be designed and implemented where appropriate.
1.4 Wild horse and burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

Standard 2. Ecosystem Components:

Watersheds should possess the necessary ecological components to achieve State water quality criteria, maintain ecological processes, and sustain appropriate uses.

Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function).

Upland Indicators:

- Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
- Ecological processes are adequate for the vegetative communities.

Riparian Indicators:

- Streamside riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.
- Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
    - Width/depth ratio.
    - Channel roughness.
    - Sinuosity of stream channel.
    - Bank stability.
    - Vegetative cover (amount, spacing, life form); and
    - Other cover (large woody debris, rock).

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Water Quality Indicators:

- Chemical, physical, and biological constituents do not exceed State water quality standards.

Guidelines:

2.1 Management practices should maintain or promote appropriate stream channel morphology and structure consistent with the watershed.
2.2 Watershed management practices should maintain, restore or enhance water quality and flow rate to support desired ecological conditions.
2.3 Management practices should maintain or promote the physical and biological conditions necessary for achieving surface characteristics and desired natural plant community.
2.4 Wild horse and burro herd management practices will consider both economic and physical environment and will address all multiple uses including but not limited to: recreation, minerals, cultural resources, wildlife, domestic livestock, community economics, Areas of Critical Environmental Concern, and designated wilderness and wilderness study areas.
2.5 New facilities should be located away from riparian and wetland areas if existing facilities conflict with achieving or maintaining riparian and wetland functions. Existing facilities will be used in a way that does not conflict with achieving or maintaining riparian and wetland functions or they will be relocated or modified when necessary to mitigate adverse impacts on riparian and wetland functions.
2.6 Subject to all valid existing rights, the design of spring and seep developments shall include provisions to maintain or promote ecological functions and processes.
2.7 When proper wild horse and burro herd management is not likely to restore areas of low infiltration or permeability, land management practices may be designed and implemented where appropriate. When setting herd management levels on ephemeral rangeland watersheds, reliable estimates of production of drought conditions should be used to avoid adverse effects on perennial species and ecosystem processes and retain a desired minimum level of annual growth or residue remaining.
2.8 Wild horse and burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

Standard 3. Habitat and Biota:

Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species.

Habitat Indicators:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age classes);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Wildlife Indicators:

- Escape terrain;
- Relative abundance;
- Composition;
- Distribution;
- Nutritional value; and
- Edge-patch snags.

The above Indicators shall be applies to the potential of the ecological site.

Guidelines:

3.1 Mosaics of plant and animal communities that foster diverse and productive ecosystems should be maintained or achieved.

3.2 Management practices should emphasize native species except when others would serve better for attaining desired plant communities.

3.3 Wild horse and burro herd management practices should provide for growth, reproduction, and seedling establishment of those plant species needed to reach long-term land use plan objectives. Measurements of ecological conditions, trend and utilization will be in accordance with techniques identified in the Nevada Rangeland Monitoring Handbook.

3.4 Wild horse and burro herd management practices should be planned and implemented to provide for integrated use by domestic livestock and wildlife.

3.5 Wild horse and burro herd management practices will promote the conservation, restoration and maintenance of habitat for special status species.

3.6 Wild horse and burro herd management practices will be designed to protect fragile ecosystems of limited distribution and size that support unique sensitive/endemic species or communities. Where these practices are not successful, herd levels will be reduced or eliminated from these areas.

3.7 When wild horse and burro herd management practices alone are not likely to restore areas, land management practices may be designed and implemented where appropriate.

3.8 Vegetation manipulation treatments may be implemented to improve native plant communities, consistent with appropriate land use plans, in areas where identified standards cannot be achieved through wild horse and burro herd management practices alone. Fire is the preferred vegetation manipulation practice on areas historically adapted to fire; treatment of native vegetation with herbicides or through mechanical means will be used only when other management techniques are not effective.

3.9 Wild horse and burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

Standard 4. Wild Horse and Burro Standard:

Wild horses and burros within Herd Management Areas should be managed for herd viability and sustainability. Herd Management Areas should be managed to maintain a healthy ecological balance among wild horse and/or burro populations, wildlife, livestock and vegetation.

Herd health indicators:

- General horse and/or burro appearance: problems are often apparent and can be easily identified by just looking at the herd.
- Crippled or injured horses and/or burros: excessive injuries can indicate problems.

Herd demographics indicators:

- Size of bands: a band with one stallion or jack, one mare or jenny, and one foal indicates a problem. An oversized band also indicates there is a problem. Band sizes of 5-10 animals with one dominant stallion per band is a good indicator.
- Size of Bachelor Bands: Large bachelor bands in the immediate vicinity of other bands could indicate potential problems.

Herd viability indicators:

- Heavy trailing into water sources may indicate a significant problem with forage availability or water distribution. Animals may be traveling considerable distances to obtain water or forage.
- Waiting for water. When available water becomes so scarce that a waiting line develops, horses and burros are in trouble.
- Availability of water. Address legal and/or climatic considerations. Situations exist where WH&B are present only because they currently have access to water which they could be legally deprived of under Nevada water laws. Situations exist where existing WH&B populations are dependent upon water hauling. If water hauling were to cease, these animals would die within a matter of days.
- Depleted forage near all available water sources. Adequate water, and forage adjacent to water sources, are essential.

Guidelines:

4.1 Wild horse and burro populations in HMAs should not exceed AML.

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

4.3 Interaction with herds should be minimized. Intrusive gathers should remove sufficient numbers of animals to ensure a period between gathers that reflects national wild horse and burro management strategies. Non-intrusive gathers such as water trapping can be done on an “as needed” basis.

4.4 Herd Management Plans should be made with the best predictive information available. When emergency actions occur, the Herd Management Plan should be re-evaluated.

4.5 Viable sex and age distribution should be a long term goal of any wild horse and burro herd management plan. Sex and age distribution of the herd should be addressed when (after) AML is reached.

4.6 When wild horse and burro herd management alone are not likely to restore areas, land management practices may be designed and implemented where appropriate.

4.7 Wild horse and burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

Appendix C

Current Security and Safety Requirements for Access to NTTR

The Nevada Test and Training Range (NTTR) and associated assets and facilities have been designated a controlled area as defined IAW AFI 31-101, *The Air Force Installation Security Program*. Entry and exit onto the NTTR will be through the authorized entry control points designated for each individual range. All vehicle and personnel traffic will enter and exit through these locations. The Northern Range Support Squadron Commander (98 NRSS/CC/CD) and Southern Range Support Squadron Commander (98 SRSS/CC/CD) may approve one-time entry into specific areas through unmanned gates to meet mission requirements; all other badging and access requirements will remain the same.

All ground parties entering the NTTR to perform duties are required to attend a Range Safety/Security/EOD briefing, IAW AFI 13-212, Volume 1, *Range Planning and Operations*.

Ground parties entering the NTTR must comply with the training provisions outlined in AFI 13-212V1/NAFB ADM A, para 2.2.1.10.

For visiting personnel, the Project Officer/POC will coordinate this training with the Program Security Office and the Northern or Southern Range Squadron commanders prior to authorizing range access.

Nellis AFB Range Complex Temporary Access Badges are issued through the 98 RANW Program Security Office (XPS) only and require picture identification to accompany the badge. The temporary access badges are issued for periods not to exceed one calendar year (365 days) from visit start date.

Visitor Access. Entry onto the NTTR must be limited to mission related personnel only, due to the sensitive nature of on-going activities and safety considerations. All visitors (military, civilian, contractor and vendor) who require access to the NTTR must submit a Nellis AFB (NAFB) Form 0-74, Nevada Test and Training Range Visit Request/Authorization (Attachments 2 and 2A) at least 5 duty days prior to visit start date and at least 10 working days prior for groups of 15 personnel or more.

For unescorted access to NTTR, visitors must at a minimum hold a valid SECRET security clearance. Visitors who are granted unescorted access will be issued a WHITE Temporary Nellis Range Badge for the duration of the visit, not to exceed one calendar year.

Visitors, requesting access for periods longer than 24 hours and whom do not hold a valid security clearance will be issued a PINK Nellis Range Badge for the duration of their visit, not to exceed one calendar year.

Security clearance verification for visitors must be received in writing with a security official's signature.

All uncleared visitors will remain under **continuous escort** while inside the facility.

Appendix D

Current Standard Operating Procedures (Gather Operation)

Gathers would be conducted by utilizing contractors from the Wild Horse and Burro Gathers-Western States Contract, or BLM personnel. The following procedures for gathering and handling wild horses and burros would apply whether a contractor or BLM personnel conduct a gather. For helicopter gathers conducted by BLM personnel, gather operations will be conducted in conformance with the *Wild Horse and Burro Aviation Management Handbook* (March 2000).

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

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

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

1. Helicopter Drive Trapping. This gather method involves utilizing a helicopter to herd wild horses and burros into a temporary trap.
2. Helicopter Assisted Roping. This gather method involves utilizing a helicopter to herd wild horses or burros to ropers.
3. Bait Trapping. This gather method involves utilizing bait (water or feed) to lure wild horses and burros into a temporary trap.

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

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

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

   All trap and holding facilities locations must be approved by the Contracting Officer's Representative (COR) and/or the Project Inspector (PI) prior to construction. The Contractor may also be required to change or move trap locations as determined by the COR/PI. All traps and holding facilities not located on public land must have prior written approval of the landowner.
2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.
3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

   a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be

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

b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes.
c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.
d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses.
e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.

4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.
5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.
6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the gather area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.
7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.
8. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of gathered animals until delivery to final destination.
9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if injured animals must be destroyed and provide for destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.
10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled

to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

B. CAPTURE METHODS THAT MAY BE USED IN THE PERFORMANCE OF A GATHER

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

    a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
    b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.
    c. Traps shall be checked a minimum of once every 10 hours.

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

    a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one hour.
    b. The contractor shall assure that foals shall not be left behind, and orphaned.

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

    a. Under no circumstances shall animals be tied down for more than one hour.
    b. The contractor shall assure that foals shall not be left behind, or orphaned.
    c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. USE OF MOTORIZED EQUIPMENT

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

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

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

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

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

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

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

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

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

D. SAFETY AND COMMUNICATIONS

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

   a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the contracting officer or COR/PI violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the Contracting Officer or his/her representative.
   b. The Contractor shall obtain the necessary FCC licenses for the radio system
   c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.

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

   a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.
   b. Fueling operations shall not take place within 1,000 feet of animals.

G. SITE CLEARANCES

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

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

H. ANIMAL CHARACTERISTICS AND BEHAVIOR

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

I. PUBLIC PARTICIPATION

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

J. RESPONSIBILITY AND LINES OF COMMUNICATION

Las Vegas Field Office - Contracting Officer's Representative/Project Inspector: FO WH&B Specialist

The Contracting Officer’s Representatives (CORs) and the project inspectors (PIs) have the direct responsibility to ensure the Contractor’s compliance with the contract stipulations. The Las Vegas Assistant Field Manager for Recreation and Renewable and the Las Vegas Field Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, PVC Corral and Ridgecrest Corral offices. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

All publicity, formal public contact and inquiries will be handled through the Assistant Field Manager for Renewable Resources. This individual will be the primary contact and will coordinate the contract with the BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

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

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

Appendix E

Current Standard Operating Procedures (Fertility Control Treatment)

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

- PZP vaccine would be administered by trained BLM personnel.
- The fertility control drug is administered with two separate injections: (1) a liquid dose of PZP is administered using an 18 gauge needle primarily by hand injection; (2) the pellets are preloaded into a 14 gauge needle. These are loaded on the end of a trocar (dry syringe with a metal rod) which is loaded into the jabstick which then pushes the pellets into the breeding mares being returned to the range. The pellets and liquid are designed to release the PZP over time similar to a time release cold capsule.
- Delivery of the vaccine would be as an intramuscular injection while the mares are restrained in a working chute. 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be loaded into the jabstick for the second injection. With each injection, the liquid and pellets would be propelled into the left hind quarters of the mare, just below the imaginary line that connects the point of the hip and the point of the buttocks.
- All treated mares would be freeze-marked on the hip to enable researchers to positively identify the animals during the research project as part of the data collection phase.
- At a minimum, monitoring of reproductive rates using helicopter flyovers will be conducted in years 2 through 4 by checking for presence/absence of foals. The flight scheduled for year 4 will also assist in determining the percentage of mares that have returned to fertility. In addition, field monitoring will be routinely conducted as part of other regular ground-based monitoring activities.
- A field data sheet will be used by the field applicators to record all the pertinent data relating to identification of the mare (including a photograph when possible), date of treatment, type of treatment (1 or 2 year vaccine, adjuvant used) and HMA, etc. The original form with the data sheets will be forwarded to the authorized officer at NPO (Reno, Nevada). A copy of the form and data sheets and any photos taken will be maintained at the field office.
- A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark applied by HMA.
- The field office will assure that treated mares do not enter the adoption market for three years following treatment. In the rare instance, due to unforeseen circumstance, treated mare(s) are removed from an HMA before three years has lapsed, they will be maintained in either a BLM facility or a BLM-contracted long term holding facility until expiration of the three year holding period. In the event it is necessary to remove treated mares, their removal and disposition will be coordinated through NPO. After expiration of the three year holding period, the animal may be placed in the adoption program or sent to a long-term holding facility.

Appendix F

Current Euthanasia Policy

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 20, 2005

In Reply Refer To:
4730/4700 (WO-260) P

EMS TRANSMISSION 11/03/2005
Instruction Memorandum No. 2006-023
Expires: 09/30/2007

To: All Field Officials (except Alaska)

From: Assistant Director, Renewable Resources and Planning

Subject: Euthanasia of Wild Horses and Burros

Program Area: Wild Horses and Burros

Purpose: This policy identifies requirements for euthanasia of wild horses and burros.

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

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

Euthanasia in field situations (includes on-the-range and during gathers):

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

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

performed during routine monitoring, the Field Manager will be notified of the incident as soon as practical after returning from the field.

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

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

If, for humane or other reasons, the need for euthanasia of an unusually large number of animals during a gather operation is anticipated, the euthanasia procedures should be identified in the pre-gather planning process. When pre-gather planning identifies an increased likelihood that animals may need to be euthanized, plans should be made for an APHIS veterinarian to visit the gather site and consult with the authorized officer on euthanasia decisions.

In all cases, the final responsibility and decision regarding euthanasia of a wild horse or burro rests solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4730 manual.

Euthanasia at short-term holding facilities:
Under ideal circumstances horses would not arrive at preparation or other facilities that hold horses for any length of time with conditions that require euthanasia. However, problems can develop during or be exacerbated by handling, transportation or captivity. In these situations the authority for euthanasia would be applied:

(A) If an animal suffers from a traumatic injury or other condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal. A veterinarian should be consulted if possible.

(B) If in the opinion of the authorized officer and a veterinarian, older wild horses and burros in short-term holding facilities cannot tolerate the stress of transportation, adoption preparation, or long-term holding they should be euthanized. However, if the authorized officer has inspected the animal and feels the animal's quality of life will not suffer, and the animal could live a healthy life in long-term holding, the animal should be shipped to a long-term holding facility.

(C) It is recommended that consultation with a veterinarian is obtained prior to euthanasia. If an animal suffers from any of the conditions listed in 1-6 above, but is not in acute pain, the authorized officer has the authority to euthanize the animal in a humane manner. Situations where acute suffering of the animal is not involved could include a physical defect or deformity that would adversely impact the quality of life of the animal if placed in the adoption program or on long-term holding. The authorized officer will ensure that there is a report from a veterinarian describing the condition of the animal that was euthanized. These records will be maintained by the holding facility.

If, for humane reasons, the need for the euthanasia of a large number of animals is anticipated, the euthanasia procedures should be identified to the WH&B State Lead or the National Program Office (NPO) when appropriate. A report that summarizes the condition, circumstances and number of animals involved must be obtained from a veterinarian who has examined the animals and sent to the WH&B State Lead and the NPO.

In all cases, final decisions regarding euthanasia of a wild horse or burro rest solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4750-1 Handbook.

Euthanasia at long-term holding facilities:

This portion of the policy covers additional euthanasia conditions that are related to long-term holding facilities and includes existing facilities and any that may be added in the future.

At long-term holding facilities the authority for euthanasia would be applied:

(A) If an animal suffers from a traumatic injury or other condition as described in 1-6 above that causes acute pain or suffering and immediate euthanasia would be an act of mercy, the authorized officer has the authority and the obligation to promptly euthanize the animal.

(B) If an animal suffers from any of the conditions listed in 1-6 above, but is not in acute pain, the authorized officer has the authority and obligation to euthanize the animal in a humane and timely manner. In situations where acute suffering of the animal is not involved, it is recommended that a consultation with a veterinarian is obtained prior to euthanasia. The authorized officer will ensure that there is a report from a veterinarian describing the condition of the animal that was euthanized. These records will be maintained by the authorized officer.

The following action plan will be followed for animals at long-term holding facilities:

The WH&B Specialist who is the Project Inspector and the contractor will evaluate all horses and their body condition throughout the year. Once a year a formal evaluation as well as a formal count of all horses at long-term holding facilities will be conducted. The action plan for the formal evaluation is as follows:

1. All animals will be inspected by field observation to evaluate body condition and identify animals that may need to be euthanized to prevent a slow death due to deterioration of condition as a result of aging. This evaluation will be based on the Henneke body condition scoring system. The evaluation team will consist of a BLM WH&B Specialist and a veterinarian not involved with regular clinical work or contract work at the long-term holding facilities. The evaluations will be conducted in the fall (September through November) to identify horses with body condition scores of 3 or less. Each member of the team will complete an individual rating sheet for animals that rate a category 3 or less. In the event that there is not agreement between the ratings, an average of the 2 scores will be used and final decisions will be up to the BLM authorized officer.

2. Animals that are rated less than a body condition score of 3 will be euthanized in the field soon after the evaluation by the authorized officer or their designated representative. The horses that rate a score 3 will remain in the field and should be re-evaluated by the contractor and WH&B Specialist that is the Project Inspector, for that contract, in 60 days to see if their condition is improving, staying the same or declining. Those that are declining in condition should be euthanized soon after the second evaluation.

3. The euthanasia process that will be used is a firearm. The authorized officer or their designated representative will carry out the process. Field euthanasia does not require the gathering of the animals which would result in increased stress and may cause unnecessary injury to other horses on the facility.

4. Documentation for each animal euthanized will include sex, color, and freeze/hip brand (if readable). Copies of all documentation will be given to the contractor and retained by BLM.

5. Arrangements for carcass disposal for euthanized animal(s) will be in accordance with applicable state and county regulations.

In all cases, the final decisions regarding euthanasia of a wild horse or burro for humane reasons rests solely with the authorized officer (43 CFR 4730). Euthanasia will be carried out following the procedures described in the 4750-1 Handbook.

Timeframe: This action is effective from the date of approval through September 30, 2007.

Budget Impact: Implementation of these actions would not result in additional expenditures over present policies.

Manual/Handbook Sections Affected: No manual or handbook sections are affected.

Background: The authority for euthanasia of wild horses or burros is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A) 43 CFR4730.l and BLM Manual 4730-Destruction of Wild Horses and Burros and Disposal of their Remains.

Decisions to euthanize require an evaluation of individual horses that suffer due to injury, physical defect, chronic or incurable disease, severe tooth loss or old age. The animal's ability to survive the stress of removal and/or their probability of surviving on the range if released, transportation to a BLM facility and to adoption or long-term holding should be determined. The long term care of these animals requires periodic evaluation of their condition to prevent long term suffering. These evaluations will, at times, result in decisions that will require the euthanasia of horses or burros if this is the most humane course of action.

Coordination: This document was coordinated with the Wild Horse and Burro Specialists in each affected state, the National Program Office and Wild Horse and Burro Advisory Board.

Contact: Questions regarding this memorandum should be directed to Lili Thomas, Wild Horse and Burro Specialist, Wild Horse and Burro National Program Office, at (775) 861-6457.

Signed by:
Thomas H. Dyer
Deputy Assistant Director

Authenticated by:
Robert M. Williams
Policy and Records Group, WO-560

Appendix G

Current Selective Removal Criteria Policy

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

August 10, 2005

In Reply Refer To:
4710 (WO 260) P
Ref: IM 2004-138
IM 2004-151

EMS TRANSMISSION 08/16/2005
Instruction Memorandum No. 2005-206
Expires: 09/30/2006

To: All Field Officials (except Alaska)

From: Assistant Director, Renewable Resources and Planning

Subject: Gather Policy & Selective Removal Criteria

Program Area: Wild Horse and Burro Program

Purpose: This Instruction Memorandum (IM) establishes gather policy and selective removal criteria for wild horses and burros.

A. Gather Requirements

1. Appropriate Management Level Achievement (AML)
   Periodic removals will be planned and conducted to achieve and maintain AML and be consistent with AML establishment and removal decisions. Removals below AML may be warranted when a gather is being conducted as an "emergency gather" as defined in I.M. 2004-151 or where significant rationale is presented to justify a reduction below AML

2. National Environmental Policy Act (NEPA) Analysis and Decision
   A current NEPA analysis and gather plan is required. This NEPA analysis and determination to remove excess animals must include and be supported by the following elements required by case law and the Public Rangelands Improvement Act (1978): vegetative utilization and trend, actual use, climatic data and current census. Along with standard components, the NEPA analysis must also contain the following:

   a. Results of population modeling that forecast impacts to the Herd Management Area's (HMA's) population resulting from removals and fertility control treatments.
   b. The desired post-gather on-the-range population number, age structure and sex ratio for the managed population.
   c. Fertility control will be considered in all Gather Plan/NEPA documents (IM No. 2004-138) and will be addressed in the population model analysis. A "do not apply" decision will be justified in the rationale.
   d. The collection of blood samples for development of genetic baseline data.

3. Where removals are necessary to achieve or maintain thriving natural ecological balance, all decisions shall be issued full force and effect under the authority of 43 CFR § 4770.3(c).

4. All gathers that have been approved by Washington Office (WO) through the annual work plan process and that are listed on the National Gather Schedule may proceed without further approval. Changes to the gather schedule involving increased removal numbers for listed gathers, adding new gathers, or substituting gathers require approval by WO-260. Requests for such gathers will be submitted using Attachment 1 to WO-260, Reno National Program Office (NPO), for review and approval by the WO-260 Group Manager.

   No WO approval is required for the removal of up to 10 nuisance animals per instance unless a national contractor conducts the removal.

5. A gather and removal report (Attachment 2) is required for each wild horse and burro gather. Partial completion reports shall be filed periodically (every 2 to 5 days) during large lengthy gathers. A final report for all gathers will be submitted to the State WH&B Lead and WO-260, NPO, within ten days of gather completion.

B. Selective Removal Requirements

The selective removal criteria described below applies to all excess wild horses removed from the range. These criteria are not applicable to wild burros.

When gathers are conducted emphasis will be placed on the removal of younger more adoptable animals. However, the long term welfare of wild horse herds is critical and it is imperative that close attention be given to the post-gather on-the-range herd sex ratio and age structure to assure a healthy sustainable population.

Animals with conditions that may prevent adoption should be released to the range if herd health will not be compromised or harmed. Example conditions are disease, congenital or genetic defects, physical defect due to previous injury, and recent but not life threatening injury.

1. <u>Age Criteria:</u> Wild Horses will be removed in the following priority order:

   a). Age Class - Five Years and Younger

   Wild horses five years of age and younger should be the first priority for removal and placement into the national adoption program.

   b). Age Class - Six to Fifteen Years Old

   Wild horses six to fifteen years of age should be removed last and only if management goals and objectives for the herd can't be achieved through the removal of younger animals.

   Animals encountered during gather operations should be released if, in the opinion of the Authorized Officer, they may not tolerate the stress of transportation, preparation and holding but would survive if released. Older animals in acceptable body condition with significant tooth loss and/or excessive tooth wear should also be released. Some situations, such as removals from private land, total removals, or emergency situations require exceptions to this.

c). Age Class Sixteen Years and Older

Wild horses aged sixteen years and older should not be removed from the range unless specific exceptions prevent them from being turned back and left on the range.

C. Potential Exceptions to Selective Removal Requirements

1. Nuisance animals
2. Animals outside of an HMA
3. Land use plan or activity plan identifies certain characteristics that are to be selectively managed for in a particular HMA (Examples: Spanish characteristics, Bashkir "Curly" or others).
4. Total removals required by law or land use plan decisions
5. Court ordered gathers
6. Emergency gathers (see IM 2004-151)
7. Removal of wild horses treated with fertility control PZP. Specific instructions are outlined in IM 2004-138 in regards to removal of these animals.

Timeframe: The wild horse and burro gather and selective removal requirements identified in this IM are effective immediately and will expire on September 30, 2006.

Budget Impact: Once AML is attained, it will cost approximately $1.7 million in additional gather costs annually to implement the selective removal policy. This action, on an annual basis, will avoid removal of about 1,500 unadoptable animals (older than five years) that would cost about $10 million to maintain in captivity over their lifetime.

This policy will achieve significant cost savings by minimizing the numbers of less adoptable animals removed prior to the achievement of AML and making the removal of older animals negligible in future years.

Background: The 1992 Strategic plan for the WH&B program defined criteria for limiting the age classes of animals removed so that only the most adoptable animals were removed. The selective removal criteria from Fiscal Years 1992 through 1995 allowed the removal of animals five years of age and younger. In 1996, because of drought conditions in many western states, the selective removal policy was changed to allow for the removal of animals nine years of age and younger. In 2002, the removal policy was modified to allow for prioritized age specific removals: 1st priority remove five years of age and younger animals, 2nd priority 10 years and older and last priority animals aged six to nine years if AML could not be achieved.

This selective removal policy provides for the long term welfare of on the range populations, emphasizes the removal of the most adoptable younger animals to maintain and achieve AML and directs that older horses less able to stand the rigors of capture, preparation, and transportation stay on the range.

Manual/Handbook Sections Affected: The gather and selective removal requirements do not change or affect any section of any manual or handbook.

Coordination: Varying policies on selective removal have been in place and coordinated with field staffs since the early 1990's. The revised policy was developed by the WO, circulated to field offices for review and comment, and presented to the National Wild Horse and Burro Advisory Board. In addition, the concept of selective removal was part of the FY 2001 Strategy to Achieve Healthy Lands and Viable Herds; The Restoration of Threatened Watersheds Initiative that was widely communicated to Congress and the general public.

Contact: Questions concerning this policy should be directed to Dean Bolstad in the Wild Horse and Burro National Program Office, at (775) 861-6611.

Signed by:
Laura Ceperley
Acting Assistant Director
Renewable Resources and Planning

Authenticated by:
Barbara J. Brown
Policy & Records Group, WO-560

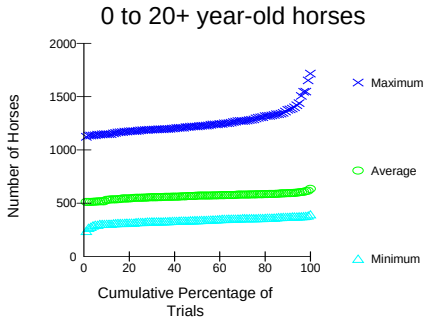
2 Attachments
1 - Request to Gather Memo (1 p)
2 - Gather and Removal Report (1 p)

Appendix H

Population Modeling

No Action Alternative

Population Sizes

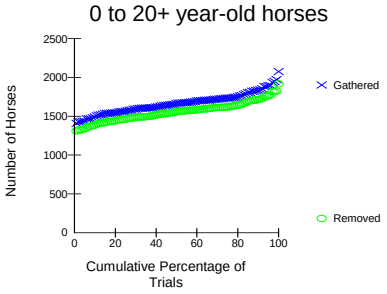


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	239	511	1123
10th Percentile	307	532	1148
25th Percentile	323	551	1185
Median Trial	342	570	1222
75th Percentile	360	582	1291
90th Percentile	372	594	1379
Highest Trial	395	634	1717

* 0 to 20+ year-old horses

Explanation:
In 11 years and 100 trials the lowest number of 0 to 20 year-old horses ever obtained was 239 and the highest was 1,717. In one-half of the trials the minimum population size in 11 years was less than 342 and the maximum was 1,222. The average population size across 11 years ranged from 511 to 634.

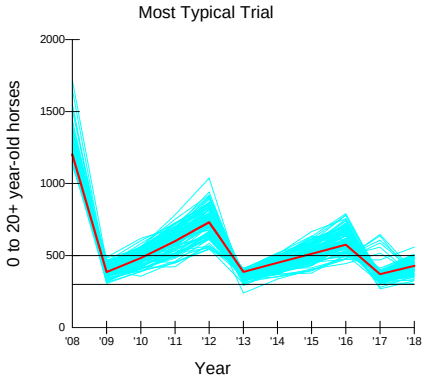
Gather Numbers



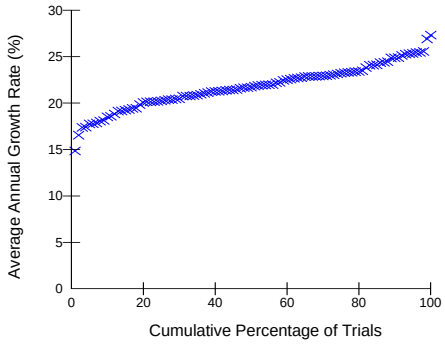
	Totals in 11 Years*	
	Gathered	Removed
Lowest Trial	1409	1312
10th Percentile	1497	1392
25th Percentile	1569	1464
Median Trial	1667	1563
75th Percentile	1733	1620
90th Percentile	1838	1717
Highest Trial	2076	1918

* 0 to 20+ year-old horses

Most Typical Trial



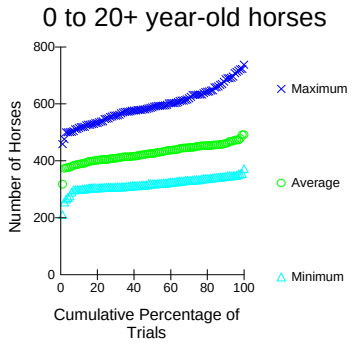
Growth Rates



Average Growth Rate in 10 Years	
Lowest Trial	14.9
10th Percentile	18.5
25th Percentile	20.3
Median Trial	21.8
75th Percentile	23.2
90th Percentile	24.9
Highest Trial	27.3

Alternative 2. Proposed Action

Population Size

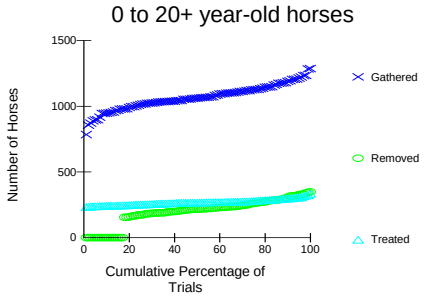


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	211	318	459
10th Percentile	299	389	517
25th Percentile	307	405	548
Median Trial	319	426	590
75th Percentile	334	451	633
90th Percentile	346	462	688
Highest Trial	372	492	738

* 0 to 20+ year-old horses

Explanation:
In 11 years and 100 trials the lowest number of 0 to 20 year-old horses ever obtained was 211 and the highest was 738. In one-half of the trials the minimum population size in 11 years was less than 319 and the maximum was 590. The average population size across 11 years ranged from 318 to 492.

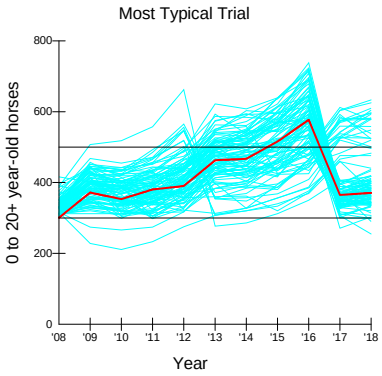
Gather Numbers



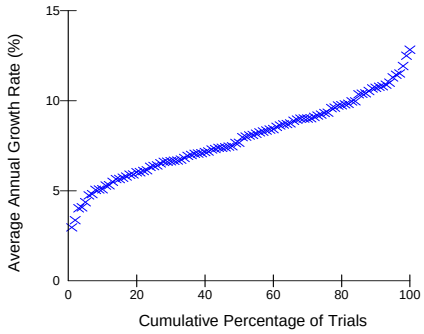
	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	785	0	234
10th Percentile	950	0	243
25th Percentile	1016	174	253
Median Trial	1063	217	267
75th Percentile	1128	262	280
90th Percentile	1192	308	299
Highest Trial	1287	349	335

* 0 to 20+ year-old horses

Most Typical Trial



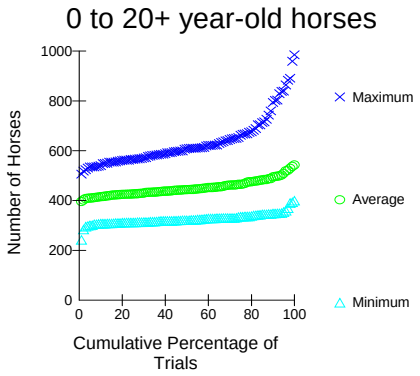
Growth Rates



Average Growth Rate in 10 Years	
Lowest Trial	3.0
10th Percentile	5.2
25th Percentile	6.4
Median Trial	7.8
75th Percentile	9.3
90th Percentile	10.8
Highest Trial	12.8

Alternative 3

Population Size

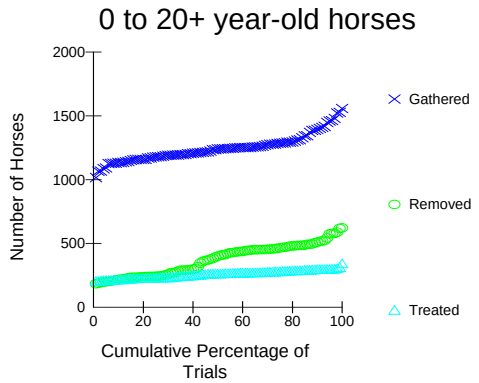


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	242	396	506
10th Percentile	307	416	544
25th Percentile	312	427	566
Median Trial	321	444	608
75th Percentile	335	465	664
90th Percentile	348	496	798
Highest Trial	399	542	985

* 0 to 20+ year-old horses

Explanation:
In 11 years and 100 trials the lowest number of 0 to 20 year-old horses ever obtained was 242 and the highest was 985. In one-half of the trials the minimum population size in 11 years was less than 321 and the maximum was 608. The average population size across 11 years ranged from 396 to 542.

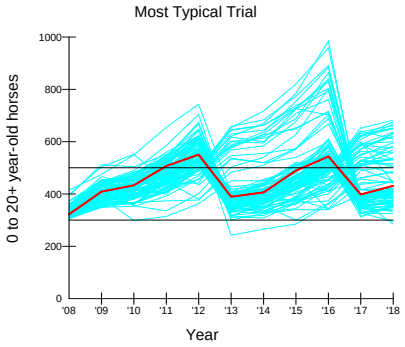
Gather Numbers



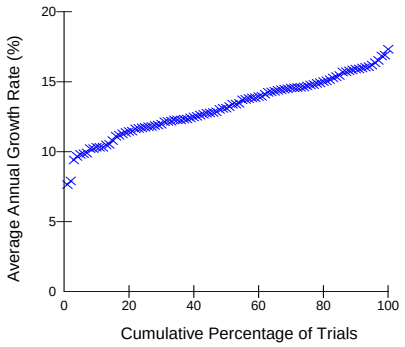
	Totals in 11 Years*		
	Gathered	Removed	Treated
Lowest Trial	1017	183	205
10th Percentile	1135	218	218
25th Percentile	1180	242	232
Median Trial	1241	403	265
75th Percentile	1286	466	282
90th Percentile	1398	512	298
Highest Trial	1558	622	344

* 0 to 20+ year-old horses

Most Typical Trial



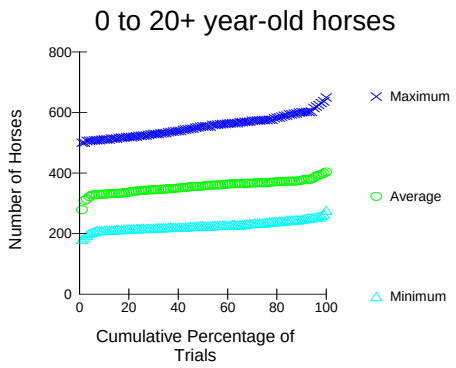
Growth Rates



Average Growth Rate in 10 Years	
Lowest Trial	7.7
10th Percentile	10.3
25th Percentile	11.8
Median Trial	13.2
75th Percentile	14.7
90th Percentile	15.9
Highest Trial	17.3

Alternative 4

Population Size

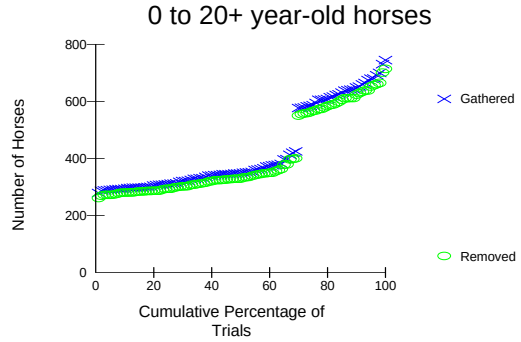


	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	181	279	500
10th Percentile	211	330	511
25th Percentile	217	343	524
Median Trial	225	358	554
75th Percentile	236	368	575
90th Percentile	248	377	601
Highest Trial	277	403	650

* 0 to 20+ year-old horses

Explanation:
In 11 years and 100 trails the lowest number of 0 to 20 year-old horses ever obtained was 181 and the highest was 650. In one-half of the trials the minimum population size in 11 years was less than 225 and the maximum was 554. The average population size across 11 years ranged from 279 to 403.

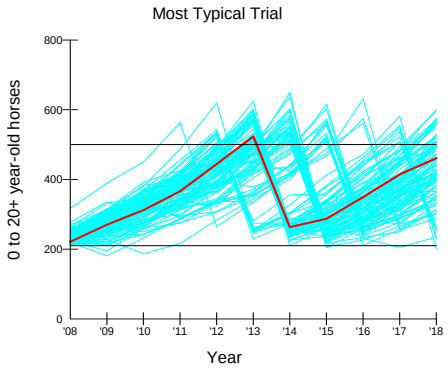
Gather Numbers



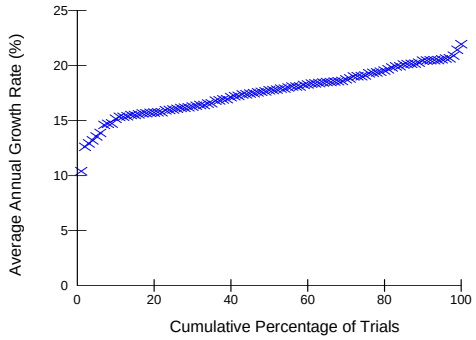
	Totals in 11 Years*	
	Gathered	Removed
Lowest Trial	279	261
10th Percentile	295	280
25th Percentile	311	294
Median Trial	349	331
75th Percentile	591	568
90th Percentile	650	626
Highest Trial	745	714

* 0 to 20+ year-old horses

Most Typical Trial



Growth Rates




```
Average Growth Rate in 10 Years
Lowest Trial        10.4
10th Percentile     15.3
25th Percentile     16.0
Median Trial        17.8
75th Percentile     19.2
90th Percentile     20.5
Highest Trial       21.9
```

Appendix I

List of Interested Individuals, Groups and Agencies Contacted

Those Contacted During Public Scoping

Conni Canaday
Robert Wiemer
Trudy Lawrence
Phyllis Laferriere
Cindy MacDonald
Billie Young
Shari Warren
Flora Woratschek
Ted Oom
Red Rock Country Club
Kimberly Burton
Mark Waite
Tara Kilpatrick
Jim Petell
Ben Lynch
Anna & Steve Wholey
Torey Rudd
Larryne Lologo
Ryan Ross
Polly McClendon
George Knapp
Chris Rose
Shelby Little
Paula Eddy
Bob & Janet Byer
Marty Teller
John Morgan
Robert Fleck
Paula Callahan
Connie Brady
Martin Lapid
John Hiatt
Santa Gaghiardo
Trevor Dolby
Ned & Edna Clem
Mary Floyd
Bhavani Johnson
Jewel Glavey
Laurie Howard
Roberta Jones
Wendy Kalinowski
Kim McCradle
MaryBeth McCradle
Terry B. Myers
Mindy Vannucci
Kathy Valente
Karen Deckert
Ellis Greene II
Tedi Gable
Keith Rogers
Debbie Hines
Lori Owens
Barbara Warner
Elnoma Reeves
Christine Brehm
Mikki J. Bailey
Joy Smith
Cindy Bell
A.J. Dodd
Linda Mickelson
Alice Rossing & Ron Beebe
Mary Anderson
Rick Ruud
Patricia Little
Tamra Vannucci
Hal & Suzanne Gray
Shanna Little
Tracy Epsicope Nelson
Craig Downer
Frank Jaffe
Claire Toomey
National Wild Horse Association
Wild Horse Organized Assistance
Fraternity of the Desert Bighorn
Nevada Department of Wildlife
United States Air Force
State of Nevada Commission for the Preservation of Wild Horses
State of Nevada Department of Administration
America's Wild Horse Advocates

Appendix J

Summary of Comments Received During Public Scoping and How BLM Used These Comments in Preparing this Preliminary Environmental Assessment

No.	Commenter Name	Comment	BLM Response
1	Lori Owens	The size of the area and its resources are more than adequate to support the number of wild horses currently on the land.	This issue is previously decided and is therefore outside the scope of this environmental analysis. Refer to the EA (page 1).
2	Lori Owens	BLM spends about $200-250,000 for helicopter gathering – wouldn't it make more sense to spend the money on installing water tanks and monitoring natural sources of water instead?	This comment is incorporated in Issue 4. Also refer to EA, page 3-12, Alternatives 2-4.
3	Cindy MacDonald	How many mares were treated with fertility control during the last gather, if any? Also, please explain BLM's population estimates over the past four year period, which indicate reproduction rates of over 40%.	The requested data is summarized in the EA, page 15.
4	Craig Downer	I am requesting a breakdown of the total legal acreage of the NWHR and surrounding legal herd areas. I am also requesting a breakdown and description of: (1) the water sources to which the wild horses are entitled and how this compares with all existing water sources in and around the NWHR, (2) the fences presently existing within the refuge and how these might disrupt the seasonal wild horse migratory patterns and impede their access to water, and (3) other grazers and browsers present in the NWHR, including livestock and big game animals that would allow a fair appraisal of the relative proportions of resources which the wild horses are actually receiving vis-a-vis livestock, big game, and other uses going on within this our nation's greatest wild horse sanctuary!	Refer to BLM's response to Comment 1 above. Additional information about the NWHR is also available in the May 2003 Proposed Nevada Test and Training Range RMP/EIS and July 2004 Record of Decision. These documents are on file in the Las Vegas Field Office as well as the Nevada State Office in Reno.
5	Craig Downer	Applying fertility control to the mares released back to the range would adversely affect the herd's vitality.	This comment is incorporated in Issue 3, EA (page 3).
6	Craig Downer	I am a strong advocate of alternative approaches to wild horse management that respect the wild horse-containing ecosystem and allow the natural cycles to operate, including that most natural cycle involving birth and death and the contribution that the wild horse makes as a prey or scavenged species. What more fitting end than to contribute one's mortal remains to the ecosystem that has supported one since birth?! Once they have spaced out their available habitat, then they stabilize their population numbers as a member of the climax ecological sere.	Managing wild horses in the manner suggested is contrary to law and regulation. Refer to EA (page 2).

7	Kathy Valente	Proper procedures and humane treatment of all wild horses and burros must be implemented. No horse or burro should ever be slaughtered or sent to other countries for that purpose.	The Standard Operating Procedures (SOPs) outlined in the EA, Appendix D and E provide for the proper and humane capture, handling and transportation of wild horses. Also refer to the EA, page 18-19.
8	Craig Downer	You should take measures to assure clean and healthy water for these animals. Why aren't other water sources being safeguarded?	Refer to BLM's response to Comment 2 above.
9	Craig Downer	The current AML of 300-500 is grossly unfair and does not constitute a long-term viable population. I urge you to revise the AML upward.	Refer to BLM's response to Comment 1 above.
10	Lorri Shaver Joan Roya Kathy Valente	My fear is animals removed from the NWHR will end up on a killer buyer's truck to Mexico or Canada.	This comment is outside the scope of this environmental analysis. However, BLM does not sell wild horses for slaughter and actively works with law enforcement to prosecute those who do.
11	Lorri Shaver	Too much of the open range is set aside for cattle and the wild horses just keep getting squeezed out.	This comment is outside the scope of this environmental analysis. Domestic livestock grazing is not authorized within the NWHR. Refer to the EA (page 17).
12	Lorri Shaver	Nevada would be well served to see wild horses as an economic driver instead of an environmental problem.	This comment is outside the scope of this environmental analysis. The NWHR is located within the Nevada Test and Training Range which is withdrawn for use by the Air Force. The Range's primary mission is military operations, with use by wild horses secondary to that mission. No public access is allowed within the range.
13	Ellis Greene II	The proposed breeding population of 40:60 female/male ratio should be adjusted to 50:50.	A 50:50 female/male sex ratio compared to a 40:60 ratio is addressed in detail in Alternative 3.
14	Ellis Greene II	The planned fertility control treatment needs to be adjusted within the above changes.	Planned fertility control treatment is based on the female/male sex ratios described in detail in Alternatives 2 and 3 (EA – page 3-12).
15	Ellis Greene II	BLM is again encouraged to consider developing a wild horse handling and education facility and some of the Nellis horses could be housed there.	This comment is outside the scope of this environmental analysis.
16	Christine Brehm	I am worried that skewing the population ratio 60/40 in favor of males would result in increased social stress for both studs and mares.	Refer to BLM's response to Comment 13 above.
17	Christine Brehm	The Proposed Plan calls for post-treatment monitoring but that has not been done in the past.	Post-treatment monitoring has been completed in the past as described in the EA (Appendix E, i.e. helicopter flyovers in Years 2-4 to check for presence or absence of foals) in July 2005, September 2006, and July 2007. Similar monitoring would be conducted under the action alternatives (EA – page 3-12).
18	Christine Brehm	There is no research to support managing a portion of the male population as geldings. Also, the potential for problems post-surgery as well as introducing domestic horses illness onto the range is a concern.	This comment is incorporated in Issue 3. Also refer to the EA, page 3-12.
19	Christine Brehm	There is no evidence to suggest the club footed issue associated with these horses is tied to genetics.	Relative to the incidence of club footed horses within the NWHR, Dr. Gus Cothran suggests this condition may be attributable to a recessive gene within the breeding population (EA – page 18).

20	Christine Brehm	My recommendation would be to follow the proposed plan with the exception that the sex ratio be modified to provide for a 50/50 split. I also urge BLM to finish the HMA plan for the Nellis Range and to repair the water sources.	Thank you for the recommendation.
21	NDOW	We continue to oppose selective removals of wild horses and feel managing a portion of the population as geldings is contrary to the minimum feasible management requirement established in law.	The 1971 provides the Secretary with the authority to make determinations as to whether and where overpopulation exists and how AML should be achieved, whether by removal of excess animals, or other options such as sterilization.
22	NDOW	High population growth rates are occurring even with the use of PZP. As a result, actual populations will exceed AML in slightly more than two years, not the 4-6 years indicated through population modeling.	This comment is incorporated in Issue 3. Also refer to Alternative 4.
23	NDOW	Supplementing water (EA-page 19) is an emergency action that must not become a planned action. If the amount of water available is less than the amount stated in the 2004 RMP, the AML should be adjusted accordingly.	Annual monitoring is ongoing and will continue. This data will be used to adjust the AML, as indicated pending in-depth analysis of data collected over the next 5-20 year period. Refer to the EA (page 3-12).
24	Barbara Warner	First, an EIS needs to be done.	This comment is outside the scope of this environmental analysis. An EIS was done in July 2004 which analyzed the long term impacts of managing wild horses on the NWHR (EA, page 1).
25	Barbara Warner	1.3 million acres is large enough to support 1,000 wild horses even in the Nevada desert.	Refer to BLMs response to Comment 1 above.
26	Barbara Warner	Hauling water is cheaper than paying for helicopter roundups.	Refer to BLM's response to Comment 2 above.
27	Barbara Warner	If wild horses reproduce at the rate you claim, PZP could also be administered to the mares at a fraction of the cost of annual roundups.	The Proposed Action proposes to administer fertility control (PZP) to mares released back to the range following the gather. Refer to the EA (page 3-12).
28	Kathy Valente	Money should be spent to upgrade the water for these animals. Birth control doesn't appear effective yet, but would be a good way to maintain a healthy herd.	Refer to BLM's response to Comment 2 and 27 above.
29	Cindy MacDonald	Why would BLM consider using PZP again when it had negligible effect in slowing population growth following the 12/03 gather? An alternative which would implement actions as an alternative to PZP is needed.	This comment is incorporated in Issue (EA, page 3). Also refer to EA, page 4-12.
30	Cindy MacDonald	Please cite and provide references where gelding has already been implemented as a population control measure. What monitoring has BLM done to assure this alternative is completely safe? Why does BLM think the NTTR is a good place to implement geldings when monitoring opportunities may be limited?	Refer to BLM's response to Comment 29.

31	Cindy MacDonald	What monitoring data does BLM have to show whether the incidence of club footed horses is being reduced by prioritizing the removal of these animals in 2003 and under the proposed plan? What evidence does BLM have that club footed horses may be attributable to a recessive gene?	Please refer to BLMs response to Comment 19 above. The incidence of club footed horses will be monitored as part of the gather statistics and compared to data from the December 2003 gather. Refer to EA, page 3-12.
32	Cindy MacDonald	Why does population modeling project lower annual growth rates with application of PZP than have actually occurred over the past 4 years? Please review and further explain population modeling results.	Population modeling incorporates a series of stochastic events to determine if any of the alternatives would "crash" the population. Refer to the EA, Appendix H.
33	Cindy MacDonald	Additional information regarding migratory dynamics between the NWHR and Stone Cabin herd would be helpful.	Refer to EA, page 13-15.
34	Cindy MacDonald	The population statistics for this herd between 2007 and 2007 are reported inconsistently in various documents.	We have made every effort to be as consistent as possible in preparing this document.
35	Cindy MacDonald	The genetic tests conducted for the NWHR indicate strong Spanish mustang ancestry. This herd does not meet scientifically established criteria for minimum population levels and genetically viable standards, thus has BLM considered the impact to this herd and its ancestry? Please provide the ruling that would allow BLM to introduce wild horses from the genetically similar Stone Cabin herd into the NWHR, if needed, to maintain genetic diversity.	As discussed in the EA, page 18 genetic data indicates strong evidence of **some** (emphasis added) Spanish horse background and further indicates the Nellis herd has its greatest similarity with the Stone Cabin herd. Potential impacts to genetic diversity are discussed in the EA, page 18-22. Should future genetics testing indicate decreased genetic variability, a possible management option would be to introduce 1-4 mares from the Stone Cabin herd every generation (EA, page 3-12).
36	Cindy MacDonald	BLM must recognize that some traditional watering areas have been excluded from wild horse use, therefore, less water is available for these animals. Why hasn't BLM followed up on the plan to develop additional water (wells) for wild horses in the NWHR?	Please refer to BLM's response to Comment 2 above. Also see EA, Alternative 3.
37	Cindy MacDonald	Isn't water hauling for two years inconsistent with hauling water on a short term emergency basis? Has BLM repaired the existing water developments? Has BLM moved forward with establishing additional water sources to replace those which were excluded in the 2004 RMP?	Please refer to BLM's response to Comment 23 above.
38	Cindy MacDonald	Increasing wildlife populations are competing with wild horses for the available water. Why isn't this issue being addressed?	This issue is outside the scope of this environmental analysis. AML for the Nellis herd was previously decided (July 2004).
39	Cindy MacDonald	How is the proposed use of the helicopter drive method consistent with the presence of lame foals? Why isn't bait and/or water trapping more humane in this circumstance?	The use of bait and/or water trapping is discussed in the EA, page 3-12.

40	Cindy MacDonald	Include an alternative that does not apply fertility control. Reconsider the use of lure trapping in lieu of a helicopter as it is more humane. Use savings from not hiring a helicopter to reconstruct the existing water developments or to develop additional water (particularly the 9 livestock wells that are not currently in use for livestock). Under this alternative, a larger wild horse population could be managed on the range with fewer wild horses removed and kept in BLM holding facilities.	Not applying fertility control is an alternative considered (EA, Alternatives 1 and 4). Relative to reconstruction of existing or construction of new water developments, refer to BLM's response to Comment 2 above. Relative to managing for a larger wild horse population, this issue was previously decided (EA, page 1).

Appendix K

Summary of Comments Received During Review of the Preliminary Environmental Assessment and How BLM Used These Comments in Preparing the Final Environmental Assessment

No.	Name	Comment	BLM Response
1	Christine Brehm	I am strongly opposed to the gelding of stallions and their return to the range. BLM needs to develop a protocol and study this alternative in depth.	This comment is included in Issues 3 and 4 (EA, page 5). The EA considers a range of four possible management alternatives. Gelding is considered in only two of the four (the Proposed Action and Alternative 3). The management of a non-breeding population of geldings would be implemented as a pilot project, refer to the Nevada Wild Horse Range Approved Herd Management Area Plan, page 1.
2	Christine Brehm	I also have concerns with the artificial sex ratio proposal. At the last gather, mares were released approximately 2:1 to the stallions.	This comment is included in Issue 3 (EA, page 5). The release of mares to stallions at 2:1 during the December 2003 gather is one of the factors which has led to an average annual growth rate of 23-24% over the past five years and is part of the purpose and need for the Proposed Action.
3	Christine Brehm	I am a strong proponent of immunocontraceptives…would suggest that it be used in conjunction with summer water trapping as opposed to a winter gather.	This comment is also incorporated in Issue 3 (EA, page 5). Research has shown fertility control is 90% effective when applied between November and February, but less than 70% effective when applied during the summer months. Also, refer to Appendix E, BLM's current standard operating procedures for fertility control treatments.
4	Christine Brehm	New water source development is not an option…the BLM must repair and maintain existing waters.	This comment is included in Issues 1 and 4 (EA, page 5). Three of the four alternatives considered in detail propose reconstruction of the existing water developments and annual maintenance thereafter.
5	Christine Brehm	It is not known whether the club-footed horses can be attributed to a genetic or environmental problem.	This comment is one of many incorporated in Issue 3 (EA, page 5). Dr. Gus Cothran suggests the club-footed condition may be attributable to a recessive gene within the breeding population on the Nevada Wild Horse Range (EA, page 20). However, it should be noted BLM considers the incidence of lame horses as a key factor when making a determination that excess horses are present.
6	Christine Brehm	Flying over the range in a helicopter is not monitoring. One cannot see forage species, utilization, body condition and accurate counts without being on the range on foot.	This comment is outside the scope of this analysis. However, in addition to census flights, BLM has and is continuing to conduct on the ground monitoring including vegetation composition, spring flow measurements, utilization, horses' body condition, and lameness observations. Also refer to the HMAP-specific monitoring which is proposed (EA, pages 7-14 and pages 33-34).
7	Julie Von Tobel Gleason	Water is the limiting condition within the HMA, lack of regular maintenance and the long-term drought has led to the existing water problems.	This comment is incorporated in Issue 3 and 4 (EA, page 5). Also see BLM's response to Comment No. 4 above. The approved herd management plan includes regular maintenance of the water developments and the associated water storage tanks and troughs.
8	Julie Von Tobel Gleason	Improving water conditions on the range may lessen the incident of club-footed horses.	This comment is incorporated in Issue 3 (EA, page 5). Also refer to BLM's response to Comment No. 5 above.
9	Julie Von Tobel Gleason	Has the BLM evaluated the horses and their diverse bloodlines in order to prevent inbreeding? Is there a clear	This comment is incorporated in Issue 3 (EA, page 5). Also refer to EA, pages 7-14 and page 20. BLM has established baseline genetic information based

		understanding within the BLM that there are three distinct bloodlines…all three lines must be looked at and analyzed?	on random genetic samples that were collected from released animals. The wild horses within the NWHR HMA intermingle throughout the year especially in the winter months. BLM will continue to collect samples during regularly scheduled future gathers to assure genetic diversity is being maintained in the NWHR HMA.
10	Julie Von Tobel Gleason	I support the proposed action regarding the breeding population and number of stallions gelded and released.	This comment is incorporated in Issue 3. Also refer to BLM's response to Comment 1 above. Thank you.
11	Julie Von Tobel Gleason	Why does the plan call for gelding only stallions over the age of 5?	This comment is one of many incorporated in Issue 3. The Proposed Action limited gelding to stallions aged between age 5-15 years for three primary reasons: (1) an adoption demand remains for wild horses under age 5 (i.e. the Extreme Mustang Makeover and Challenges which feature 3 and 4 year old geldings); (2) experience has shown geldings between ages 5-15 years typically recover quickly from the surgery; and (3) this allows these animals to live out their lives on their home range as compared to transporting them to long-term holding facilities in other states at significant cost to the taxpayers.
12	Julie Von Tobel Gleason	I support the idea of gelding the horses in the field…versus transporting them to a facility.	This comment is also incorporated in Issue 3 (EA, page 5). This is a pilot project, BLM has included both options to provide maximum flexibility as the study is implemented. As a result, both options are included in the Proposed Action and Alternative 3.
13	Julie Von Tobel Gleason	Why is there not a lower male to female population?	Refer to BLM's response to Comment 2 above.
14	Cindy MacDonald	The BLM has no precedent or policy to support the introduction of an additional third boundary in wild horse and burro management.	This comment is outside the scope of this analysis. The NWHR HMA core area referenced in the EA was established in the July 2004 ROD. The Final Environmental Assessment for the NWHR HMAP includes a more clearly labeled map.
15	Cindy MacDonald	The arbitrary creation of a Core Management Area within a Herd Management Area indicates the BLM has attempted to circumvent appropriate NEPA review.	Please refer to BLM's response to Comment 14 above.
16	Cindy MacDonald	The BLM knowingly and with intent, proposed the elimination of historical wild equid populations occurring within the Nevada Wild Horse Range.	This comment is outside the scope of this analysis. These issues are previously decided and remain in effect. The NWHR HMA is managed to maintain the wild horse herd as a self-sustaining population of healthy animals in balance with other uses and the productive capacity of their habitat and attain the objectives outlined in the NTTR RMP.
17	Cindy MacDonald	BLM has provided historical evidence that wild burro populations occurred within the NWHR through the 1974 agreement…BLM has not provided any reason or evidence why an AML was not established for wild burros or under what authority they continue to remove them.	This comment is outside the scope of this analysis. This issue is previously decided. Those decisions remain in effect.
18	Cindy MacDonald	Serious concerns have developed regarding BLMs use of the WinnEquus Population Model…research indicates that BLM personnel are inaccurately applying the trial runs in relation to the actual proposals. BLM has also failed to provide evidence that the modeling programs are accurate in relation to	This comment is outside the scope of this site-specific environmental analysis. However, it should be noted the primary purpose of the WinEquus program is to analyze and compare possible differences to wild horse populations between management alternatives. Another objective of the modeling is to identify if any of the alternatives would "crash" the population based on a number of

		"real world" results.	stochastic factors. To date, no wild horse populations have "crashed" as a result of gather/removal.
19	Cindy MacDonald	Since the RMP fails to comply with federal regulations governing the management, protection, control and preservation of the wild horses and burros on public land…future proposals that seed to build upon the approved plans of the RMP also fail to comply with those laws by default.	This comment is outside the scope of this analysis. The RMP was approved in July 2004; those decisions remain in effect.
20	State of Nevada Commission for the Preservation of Wild Horses	The data suggests that about a third of the present herd area supports water, forage, and cover suitable for the herd. This matter needs better definition in the document and justification to support the AML.	This issue is incorporated in Issues 1-4 (EA, page 5). Also refer to BLM's response to Comments 14-17 above.
21	State of Nevada Commission for the Preservation of Wild Horses	Social behavior of wild horse bands may be significantly altered with management actions that increase male ratios to mares or geldings.	Refer to BLM's response to Comment 2 above.
22	State of Nevada Commission for the Preservation of Wild Horses	The Commissioners would like to see this (gelding) investigated much more intensely than just to implement on a range.	Refer to BLM's response to Comments 1 and 10-12 above. The final environmental assessment includes the specific management and monitoring requirements associated with the proposed gelding pilot project (refer to EA, page 9-10).
23	State of Nevada Commission for the Preservation of Wild Horses	The Commission recommends BLM investigate the feasibility of making Nellis a non-breeding population (i.e. 100% geldings).	This comment was an alternative BLM considered but eliminated from detailed analysis. Refer to EA, page 15.
24	State of Nevada Historic Preservation Office	Proposal supported as written.	Thank you.
25	State of Nevada Department of Wildlife	The 1996 AML determination was based on 100% of the water allotted to wild horse use, leaving no water for riparian maintenance or wildlife.	This comment is outside the scope of this analysis. The 1996 AML of 600-1,000 wild horses was adjusted to 300-500 wild horses in the July 2004 ROD for the approved NTTR RMP. The basis for this decision was the water available to wild horses within the NWHR HMA core area, the military's operations mission, wildlife, and other uses of the available water (refer to EA, page 1 and page 15-17).
26	State of Nevada Department of Wildlife	The draft NAFRRP showed only the NWHR as the HMA. Wild horse advocates asserted that the distribution of wild horses at the time of the act was more extensive. Several maps have been used to show horse numbers and distribution.	This comment is outside the scope of this analysis. Based on the July 2004 ROD for the NTTR RMP, the NWHR HMA boundary comprises approximately 1.3 million acres, the NWHR HMA core area comprises 484,164 acres and the original NWHR boundary comprises 399,390 acres. Refer to EA, page 15-17, and Map 1.
27	State of Nevada Department of Wildlife	The Department remains firm in its stance on developing natural waters for wild horses and does not agree with the management direction proposed.	This comment is outside the scope of this analysis. Consistent with policy in 43 CFR 4710.4, the proposed management is at the minimum feasible level necessary to attain the objectives identified in the approved land use plan and proposed herd management area plan.
28	State of Nevada Department of Wildlife	Hauling water is not an appropriate objective…it is disturbing that the Bureau has been managing for emergency conditions for so long that the practice of providing extra water for wild horses and burros has become a standard practice.	This comment is incorporated in Issue 4 and is also part of the purpose and need for BLM's Proposed Action (EA, page 5). Water reconstruction and maintenance is one of the management actions needed to achieve the goals and objectives outlined in the land use plan and the proposed herd management area plan.

29	State of Nevada Department of Wildlife	By developing waters, the Bureau is manipulating this natural resource for attaining an artificially set, administratively determined AML of 300 to 500 wild horses.	This comment is also incorporated in Issue 4 (EA, page 5). Also refer to EA, pages 20-24. Future adjustments in AML will be made pending implementation, monitoring, and evaluation of the available spring sources, not based on the storage capacity of the storage tanks.
30	State of Nevada Department of Wildlife	Wells can be a practical solution to a water shortage. While wells are an accepted practice for domestic livestock management, any proposal to develop wells for federal wild horse and burro management is an extreme and unacceptable measure.	This comment is also incorporated in Issue 4 (EA, page 5). The development of new wells is considered in Alternative 3, one of a range of four possible management strategies for the NWHR HMA.
31	Wild Horse Organized Assistance	Don't you think it would be wiser to get the appropriate management levels established, monitor the vegetative resources, and do water developments BEFORE you put the herd at risk again? WHOA will not support gelding at the present, but would consider it after all the above has been accomplished.	This comment is incorporated in Issues 1, 3 and 4 (EA, page 5). The approved herd management area plan also includes additional monitoring objectives. Please refer to comment 1 above.