United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely Field Office
HC 33 Box 33500 (702 No. Industrial Way)
Ely, Nevada 89301-9408
http://www.nv.blm.gov

TAKE PRIDE IN AMERICA

In Reply Refer To:
4720(NV-040)

Dear Interested Party:

The Bureau of Land Management (BLM) Ely Field Office is proposing integrated management of the wild horse population within Jakes Wash and Moriah Herd Management Areas (HMA). The wild horse herds are being managed as two separate populations. The gathers will be conducted as regularly scheduled maintenance gathers to help keep the wild horse populations at the Appropriate Management Level (AML). The action should prevent deterioration of the range, as well as maintain a thriving natural ecological balance and multiple use relationships with other users. The Gathers will start on August 5th and last approximately two weeks.

Enclosed is the Preliminary Environmental Assessments (EA) for the Moriah HMA and Jakes Wash HMA (E.A.) NV-040-07-044 and NV-040-07-045. Please review the gather plan and EA and provide written comment's by close of business on July 17, 2007.

Please address all comments to:

William E. Dunn
Assistant Field Manager
Renewable Resources
702 N. Industrial Way
HC 33 Box 33500
Ely, Nevada 89301.

If you have any questions, please contact Ben Noyes, Wild Horse and Burro Specialist, Ely Field Office at (775) 289-1836.

Sincerely,

William E. Dunn

William E. Dunn
Assistant Field Manager
Renewable Resources

BN/skp

1 Enclosure:
1. Moriah and Jakes Wash Wild Horse Gather Plan and Preliminary Environmental Assessment (E.A.) NV-040-07-002

CC:	RETURN RECEIPT NO
American Horse Protection Association	70060810000571425358
Nevada Division of Wildlife Curtis A. Baughman	70060810000571425365
Nevada Division of Wildlife Steve Foree	70060810000571425372
Brad Hardenbrook NDOW-Southern Region	70060810000571425389
Betsy Macfarlan ENLC	70060810000571425396
Nevada State Clearinghouse	70060810000571425402
Nevada Division of Wildlife Mike Scott	70060810000571425419
U.S. Fish and Wildlife Service Southern Nevada Field Office	70060810000571425426
Lincoln County Commissioners	70060810000571425433
John McLain Resource Concepts, Inc	70060810000571425440
Western Watersheds Project Katie Fite	70060810000571425457
Animal Welfare Institute ATTN: D.J. Schubert, Wildlife Biologist	70060810000571425464
Cindy MacDonald	70060810000571425471
Animal Protection Institute of America	70060810000571425488
American Mustang & Burro Assoc.	70060810000571425495
Animal Rights Law Center	70060810000571425501
Catherine Barcomb	70060810000571425518
Coalition for Nevada's Wildlife	70060810000571425525

Wild Horses Forever	70060810000571425532
Marydean Associates	70060810000571425549
U.S. Fish Wildlife Service Ruby Lake NWR	70060810000571425556
Western States Public Lands Coalition	70060810000571425563
USDA Forest Service	70060810000571425570
Wild Horses Forever	70060810000571425587
Bureau of Land Management	70060810000571425594
Lincoln County Public Lands Comm	70060810000571425600
Frank Reid	70060810000571425617
George Andrus	70060810000571425624
Gordon V. Foppiano	70060810000571425631
Bill Davidson	70060810000571425648
Lincoln County Extension Agent	70060810000571425655
Red Rock Audubon Society	70060810000571425679
Nevada Division of Wildlife	70060810000571425693
Nevada Farm Bureau Federation	70060810000571426935
Bald Mtn. Mine	70060810000571426928
Ranges West Consulting	70060810000571426911
NV Legis. Comm on Public Lands	70060810000571426904
National Mustang Association INC.	70060810000571426898
Nevada Cattle Association	70060810000571427048
Nevada Dept. of Agriculture	70060810000571427031
Nevada Division of Wildlife	70060810000571427024
Nevada Farm Bureau Federation	70060810000571427017
Nevada Woolgrowers Assoc.	70060810000571427000

Dave Free	70060810000571426997
David Buhlig	70060810000571426980
Ely Shoshone Tribe	7006081000571426973
Great Basin National Park	70060810000571426966
Great Basin National Park	70060810000571426959
INTL Soc. Protection of Mustang Burros	70060810000571426942
Kathleen Bertrand	70060810000571440139
Coalition for Nevada Wildlife	70060810000571440160
Laurel Marshall	70060810000571440153
Colorado Wild Horse and Burro	70060810000571440177
Barbara Warner	70060810000571440184
Comm. For Preservation of Wild Horses	70060810000571440191
Wild Horse Wilderness and Wildlife	70060810000571440207
NRCS	70060810000571440221
Dave and Jennifer Free	70060810000571439980
Eureka Producers Cooperative	70060810000571440009
US Humane Society	70060810000571415557
U.S. Forest Service Humboldt	70060810000571475540
U.S. Forest Service Humboldt National Forest	70060810000571415533
U.S. Fish and Wildlife Service	70060810000571415526
Shelly Hartmann	70060810000571415519
Dusty Youren	70060810000571415502
Pleasant Valley Enterprises	70060810000571415496
Need More Sheep Company	70060810000571415489
Thomas Rosevear	70060810000571415472

Blue Diamond Oil Company	70060810000571415465
Wild Horse Spirit	70060810000571415458
Wild Horse Sanctuary	70060810000571440108
Brent Eldridege	70060810000571415571
Betty Baker	70060810000571440146
White River Ranch, L.L.C.	70060810000571440115
Henry C. Vogler	70060810000571440122
A.D. Ranching L.L.C.	70060810000571440092
Wild Horse Preservation	70060810000571440078
Wild Horse Organized Assistance	70060810000571440085
USFWS, Southern Nevada Field Office	70060810000571440054
Wildlife Consultant	70060810000571415588
Jim Baumann	70060810000571415595
Gracian Uhalde	70060810000571415601

United States Department of the Interior
Bureau of Land Management

Ely Field Office **May 2007**

Jakes Wash Herd Management Area
Wild Horse Gather Plan and
Preliminary Environmental Assessment

NV–040-07-EA-045

Introduction

Background Information

The purpose of this environmental assessment (EA) is to analyze the impacts associated with the Bureau of Land Management's (BLMs) proposal to remove approximately 90-110 excess wild horses from the Jakes Wash Herd Management Area (HMA) beginning in about August 2007 in order to achieve and maintain the appropriate management level (AML) and prevent further range deterioration resulting from the current overpopulation of wild horses.

The Jakes Wash HMA is located approximately 20 miles west of Ely, Nevada, in White Pine County. The HMA is 153,662 acres in size, and lies primarily over the geographic figure of Jakes Valley (Figure 1). The appropriate management level (AML) of wild horses was established as a range of 1-21 wild horses in November 2003 (refer to EA #NV-040-03-036). The AML was established based on in-depth analysis of habitat suitability and monitoring data. As discussed in EA #NV-040-03-036, the AML is the number of wild horses which can graze without damage to the range. Also refer to the Affected Environment section of this EA for additional information.

The Jakes Wash HMA was last gathered in July 2004 when 49 horses were removed. Following the July 2004 gather, an estimated 41 wild horses remained on the range (within the HMA). The current wild horse population is estimated at approximately 127 based on aerial census conducted in May 2007. This number includes about 40 wild horses residing outside the HMA boundary on adjacent National Forest systems lands and is about 605% of the high range AML (or 21 wild horses). Based on population census, the estimated average annual population increase for the Jakes Wash HMA is more than 20 percent per year.

Monitoring data collected for the HMA during 2005 and 2006 highlights that utilization by wild horses is moderate to heavy in established key areas. Trampling damage by wild horses is also evident at most locations, including riparian areas. Excess utilization and trampling in key areas is currently impacting range conditions and preventing recovery of key sites. Monitoring also indicates wild horses are routinely moving outside the HMA.

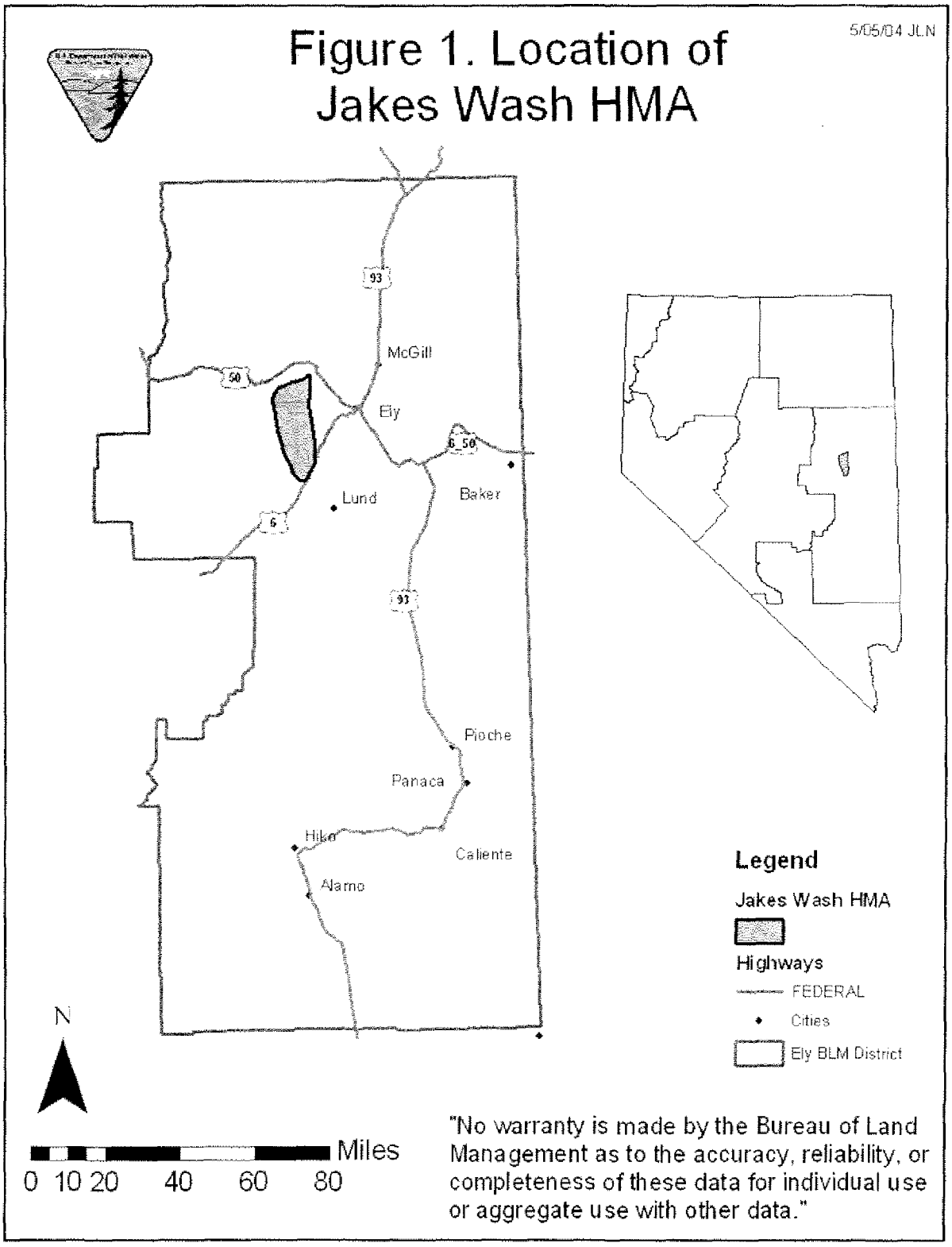
Analysis of the above information indicates the current AML of 1-21 wild horses is appropriate and that excess animals are present and require immediate removal.

Purpose and Need

Vegetation and population monitoring of the Jakes Wash HMA has determined that current wild horse population levels are exceeding the range's ability to sustain wild horse use over the long term. Resource damage is occurring and is likely to continue to occur without immediate action. The purpose of the Proposed Action is to remove the excess animals in order to prevent further deterioration of the range associated with the overpopulation of wild horses as authorized under Section 3(b) (2) of the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA) and Section 302(b) of the Federal Land Management and Policy Act of 1976.

Implementation of the Proposed Action is needed at this time to achieve and maintain established appropriate management levels, to improve watershed health, to make "significant progress towards achievement" of Northeastern Great Basin Resource Advisory Council (RAC) Standards for rangeland health, and to achieve a thriving natural ecological balance between wild horse populations, wildlife,

vegetation, water resources and domestic livestock.



Conformance with Existing Land Use Plans

The Proposed Action is subject to the Egan Resource Management Plan (RMP) and Final Environmental Impact Statement (FEIS) dated December 24, 1983, and resolution of protests received on the proposed RMP and FEIS documents dated September 21, 1984, and the Egan Resource Area Record of Decision (ROD) which was finalized February 3, 1987. The proposed wild horse gather is in conformance with the Egan RMP as required by regulation (43 CFR 1610.5-3(a)). The applicable decision(s) from this plan are (refer to Record of Decision, page 29):

- *When required, excess wild horses will be removed from public lands and put in custody of individuals, organizations, or other government agencies. Field destruction of wild horses or burros, including cases of sick or lame animals, will be made only with appropriate authorization.*
- *Environmental analyses, including categorical exclusions, will be conducted prior to implementing any HMAP's, gathering excess animals, or carrying out any specific projects (fences, spring developments, seedings, etc.).*
- *Wild horses will not be maintained outside of 1971 use areas. While it is recognized that some wild horses may drift outside these areas, management will be designed to minimize such drift.*

Conformance with Rangeland Health Standards and Guidelines

An assessment for conformance with Rangeland Health Standards is currently ongoing for the Jakes Wash HMA and the associated livestock grazing allotments. Portions of the HMA have been monitored intensely over the past several years due to problems with drought, vegetation condition and combined use by wild horses and domestic livestock. Results of a preliminary evaluation and Rangeland Health Assessment for the Jakes Wash HMA area completed in March 2002 indicated that livestock and wild horses were contributing factors in failing to achieve Habitat Standard in the Indian George and Giroux Wash Allotments.

The Proposed Action is also consistent with Northeast Great Basin Resource Advisory Council Wild Horse and Burro Guideline 5.1 which states: *"Implement the objectives outlined in the Wild Free-Roaming Horses and Burros Tactical Plan for Nevada (May 1999)."* The Tactical Plan outlines a strategy for achieving and maintaining AML.

Relationship to Statutes, Regulations or Other Plans

Under the Proposed Action in this EA, no federal, state, or local law, or requirement imposed for the protection of the environment will be threatened or violated. The Proposed Action is in conformance with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700 and policies, as well as the 1971 WFRHBA. More specifically, this action is designed to remove excess wild horses consistent with the following regulations:

- 43 CFR 4720.1: *"Upon examination of current information and a determination that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately..."*
- 43 CFR 4710.4: *"Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas."*

Issues

The BLM Ely Field Office has discussed the proposed removal with both the Forest Service and the Nevada Department of Wildlife. The following issues were identified as a result of internal scoping and agency consultation and will be used in the preliminary EA to analyze the alternatives:

1. Will the Proposed Action achieve and maintain the appropriate management level of wild horses and remove wild horses residing outside HMA boundaries?
2. What are the potential impacts to wild horses, as well as other elements of the human environment, from proposed capture, removal and handling procedures?
3. What are the current impacts to natural resources, domestic livestock and native wildlife resulting from the current overpopulation of wild horses? What effect will achieving and maintaining AML have on these resources?

Issues Not Addressed in this EA

The scope of this environmental analysis is limited to the need to remove excess horses from within and outside the Jakes Wash HMA in order to achieve and maintain the AML and prevent further range deterioration associated with the current overpopulation. Some comments received from the public in response to similar proposals by the BLM Ely Field Office over the past two years are outside the scope of this environmental analysis and were not considered by BLM in preparing this preliminary environmental assessment. They include:

- ❒ Concerns about BLM staffing or budgetary impacts are outside the scope of this analysis. These are administrative issues internal to BLM. When a determination is made that excess wild horses or burros exists, Section 3(b) (2) of the 1971 WFRHBA requires their immediate removal.

- ❒ Concerns that herd management area (HMA) boundaries be extended to the original herd area (HA) boundaries are also outside the scope of this analysis. The Jakes Wash HMA boundary was designated in the 1986 Egan RMP and ROD and an opportunity for administrative review of the designations was provided at that time. This decision remains in effect.

- ❒ Comments that BLM is violating the 1971 WFRHBA by not managing HMAs principally for wild horses and burros are also outside the scope of this analysis. While 43 CFR 4710.3-2 provides for the designation of HMAs as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse and burro herds, no HMAs were designated as wild horse or burro ranges in the 1986 Egan RMP and ROD.

Proposed Action and Alternatives

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

- ❒ Alternative A – Proposed Action (Remove Wild Horses in Excess of AML)
- ❒ Alternative B – No Action Alternative (Defer Population Control)

The Proposed Action alternative was developed to meet the purpose and need (i.e. achieve and maintain AML and prevent further deterioration of the range associated with the current overpopulation) and in response to the issues identified during internal scoping and agency consultation. Although the No Action alternative does not comply with the 1971 WFRHBA (as amended), nor meet the purpose and need for action, it is included as a basis for comparison with the Proposed Action.

Description of Alternatives Considered in Detail

Alternative A – Proposed Action

The Proposed Action is to capture about 80-90% of the current population of wild horses or about 100-115 wild horses. Of the animals gathered, approximately 90-110 wild horses, including all those living

outside the Jakes Wash HMA boundary, would be removed and shipped to BLM holding facilities where they will be prepared for adoption and/or sale to qualified individuals or long term holding. The estimated population remaining on the range following the gather would be about 17-37 wild horses.

All capture and handling activities (including capture site selections) would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix I. Multiple capture sites (traps) may be used to capture wild horses from the HMA. Whenever possible, capture sites would be located in previously disturbed areas. Capture techniques would be the helicopter-drive trapping method and/or helicopter-roping from horseback. Selection of animals for removal and/or release would be guided by BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2005-206). Under this policy, animals ages 5 and above would be prioritized for release post-gather. Refer to Appendix II for additional information.

Blood samples would be collected to determine whether or not BLMs management is maintaining acceptable genetic diversity (avoiding inbreeding depression). The samples would be collected from breeding age animals and the data collected would be compared to subsequent samples when the area is re-gathered over the next decade. A veterinarian or other trained personnel would draw blood. Other 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).

Alternative B – No Action Alternative

Under the No Action Alternative, a gather to remove excess wild horses would not take place beginning in about August 2007. There would be no active management to control the size of the wild horse population at this time. The current population of 127 wild horses would continue to increase at a rate of 20-25% annually and would be allowed to regulate their numbers naturally through predation, disease, and forage, water and space availability. Existing management, including monitoring, would continue.

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

Alternatives Considered But Eliminated From Detailed Analysis

One alternative considered was to gather to the low end of the AML range (1 wild horse). Implementation of this alternative would effectively reduce the population to "0" wild horses and would be inappropriate in the absence of a BLM final decision establishing the AML as "0". While EA# NV-040-03-036 recommended establishing the AML for Jakes Wash as "0" wild horses and returning the HMA to HA status due to insufficient forage and water to support a population size adequate to avoid inbreeding over the long-term (without supplementation of 1-2 additional horses from another HMA every 8-10 years), BLM has not yet issued a final decision. Rather, a final decision is pending completion of additional site specific environmental analysis as part of the ongoing resource management planning process (Ely RMP).

A second alternative considered was to water trap the excess wild horses. Water trapping would involve setting a trap around water sources in order to capture the wild horses. This alternative would be very time consuming and inefficient for removing excess horses from the Jakes Wash HMA. Water sources in this area would be difficult to access via vehicle. Additionally, the labor involved in placing the traps,

continually monitoring them, and promptly transporting captured animals would be intensive over a period of several weeks. Therefore, this alternative was eliminated from detailed study.

Also considered was implementing fertility control on all or a portion of the mares released post-gather. This alternative was eliminated because only about less than 20 animals would be expected to be released post-gather and most of those would be older studs or very old mares. Fertility control treatment on such a small number of breeding age mares would not be feasible or cost-effective.

Description of the Affected Environment and Environmental Consequences

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 (refer to Table 1 and 2 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 action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Table 1. Critical Elements Checklist

Critical Elements	Present	Affected	Rationale
Air Quality	**Yes**	**No**	The proposed gather area is not within an area of non-attainment or areas where total suspended particulates exceed Nevada air quality standards. Areas of disturbance would be small and temporary.
Areas of Critical Environmental Concern (ACECs)	**No**	**No**	No areas of critical environmental concern are within or affected by the proposed gather area.
Cultural Resources	**Yes**	**No**	A number of known cultural resources exist within the proposed gather area that would be avoided during capture operations. Trap sites and holding facilities located in areas that have not been previously surveyed would be surveyed before the gather begins to prevent any effects to cultural resources.
Environmental Justice	**No**	**No**	The Proposed Action would have either no effect or negligible effect on minority or low-income populations.
Floodplains	**No**	**No**	Resource not present.
Waste (Hazardous or Solid)	**No**	**No**	Not present.
Noxious Weeds	**Yes**	**No**	Any noxious weeds or non-native invasive weeds would be avoided when establishing trap sites and holding facilities and would not be driven through to prevent the spread of noxious weeds.
Native American Religious Concerns	**No**	**No**	There are no known Native American religious concerns.
Migratory Birds	**Yes**	**Yes**	Discussed below under Wildlife.
Prime or Unique	**No**	**No**	Resource not present.

Farmlands			
Riparian-Wetland Zones	**Yes**	**No**	Riparian-wetland zones would be avoided for trap site or holding facility locations. Under the Proposed Action, it is expected that the condition of riparian-wetland zones would improve over present as year-round grazing pressure by wild horses is decreased. See discussion under Vegetation, Soils and Riparian-Wetland Zones below.
Threatened or Endangered Species	**No**	**No**	No known threatened or endangered species are within the proposed gather area or would be affected by capture operations.
Water Quality, Drinking/Ground	**No**	**No**	Resource not present.
Wild and Scenic Rivers	**No**	**No**	Not present.
Wilderness and Wilderness Study Areas	**No**	**No**	No designated wilderness areas or wilderness study areas are located within the proposed gather area.

Table 2. Other Resources Checklist

Critical Elements	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	**Yes**	**Yes**	Discussed below under Livestock.
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**	Discussed below under Vegetation, Soils and Riparian-Wetland Zones.
Recreation	**Yes**	**No**	Resource is not affected by the Proposed Action or alternatives.
Socioeconomics	**Yes**	**No**	Resource is not affected by the Proposed Action or alternatives.
Soils	**Yes**	**Yes**	Soil disturbances would be less than 1 acre in size and trap sites would be located in previously disturbed areas. Except for temporary disturbance at the trap sites, the resource is not affected. Refer to discussion under Vegetation, Soils, and Riparian-Wetland Zones below.
Visual Resources	**Yes**	**No**	No visual impacts would occur because the Proposed Action is temporary.
Wild Horses and Burros	**Yes**	**Yes**	Discussed under Wild Horses below.
Wildlife	**Yes**	**Yes**	Discussed under Wildlife below.

General Description of the Affected Environment

The Jakes Wash HMA ranges in elevation from approximately 6200 feet above sea level (asl) to approximately 7500 feet asl. The annual precipitation varies from 6 inches in the valley bottoms to 12 inches in the higher elevations. The area lies about 20 air miles west of Ely, Nevada and is entirely within White Pine County. The HMA is 153,662 acres and is dominated by sagebrush and pinyon-juniper with topography ranging from wide open valley bottoms to surrounding gently sloping hills to steep escarpments. Wild horses routinely move outside the HMA to the west into the higher elevations of the White Pine Mountain Range during the summer. The range is part of the Humboldt-Toiyabe National Forest and is not managed for horse use.

Wild Horses

Affected Environment

In 1971 with the passage of the WFRHBA, the Secretary of Interior (or Agriculture) was required to protect and manage wild horses and burros on public lands administered by the Bureau of Land Management (or the Forest Service) within their known territorial limits. Following the passage of the 1971 WFRHBA, BLM delineated the Jakes Wash Herd Area (HA) of which 153,662 acres was BLM. Through land use planning (the 1986 Egan RMP), the entire HA (100%) was designated as a herd management area suitable for long-term management of wild horses. The 1986 Egan RMP also established the interim AML for the HMA as 20 wild horses.

Subsequent to the 1986 Egan RMP, the interim AML of 20 wild horses was adjusted based on in-depth analysis of habitat suitability and monitoring data. Through the Decision Record/Finding of No Significant Impact (FONSI) and accompanying EA# NV-040-03-036 (November 2003), AML was established as a range of 1-21 wild horses. As discussed in EA #NV-040-03-036, the AML is the number of wild horses which can graze without damage to the range. While EA# NV-040-03-036 recommended establishing the AML for Jakes Wash as "0" wild horses and returning the HMA to HA status due to insufficient forage and water to support a population size adequate to avoid inbreeding over the long-term, a final BLM decision has not been made and is pending completion of additional site specific environmental analysis for the Ely Resource Management Plan.

The Jakes Wash HMA was last gathered in July 2004 when 49 horses were removed. Following the July 2004 gather, an estimated 41 wild horses remained on the range (within the HMA). The current wild horse population is estimated at approximately 127 animals based on aerial census conducted in May 2007. Of this number, approximately 40 wild horses are located outside the HMA boundary on lands administered by the Humboldt-Toiyabe National Forest. The current population is about 6 times the high range AML (or 21 wild horses) or the number the rangeland can sustain and maintain a thriving natural ecological balance and multiple use relationship. Based on population census, the estimated annual population increase for the Jakes Wash HMA over the past three years is about 25 percent per year. Table 3 below summarizes the established AMLs for wild horses as well as the current estimated populations and proposed removal numbers.

Table 3. Jakes Wash HMA: AML vs. Estimated Population and Proposed Removal Number

HMA	AML	Current Estimated Population			Estimated Post-Gather Population	
		Within the HMA	Outside the HMA	Estimated Removal No.	Within the HMA	Outside the HMA
Jakes Wash HMA	1-21	87	40	90-110	17-37	0

By maintaining population levels at/near the established AML, BLM will maintain future opportunities for wild horse management pending completion of additional site-specific analysis in the Ely Resource Management Plan. Among the decisions to be made in the RMP is whether or not to return the Jakes Wash HMA to HA status and adjust AML "0" wild horses.

Environmental Consequences

Impacts Common to Both Alternatives

The WinEquus program, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist wild horse and burro specialists evaluate various management plans and possible outcomes for management of wild horses. Population modeling was completed to analyze possible differences that could occur to the wild horse populations between alternatives. Include for this analysis was assessing the Proposed Action or removal of excess wild horses without fertility control. The No Action Alternative (no removal) alternative was also modeled. One objective of the modeling was to determine if the Proposed Action would "crash" the population or cause extremely low population numbers or growth rates. Minimum population levels and growth rates were found to be within reasonable levels and adverse impacts to the population are not likely. Graphic and tabular results are displayed in detail in Appendix III.

Impacts of Alternative A -- Proposed Action

Under the Proposed Action, the post-gather population of wild horses would be about 17-37 animals, which is at/near the upper limit of the AML range and would maintain future opportunities for wild horse management pending completion of additional site-specific analysis in the Ely RMP as discussed above. Reducing population size would also ensure that the remaining wild horses are healthy and vigorous, and not at risk of death or suffering from starvation due to insufficient habitat coupled with the effects of drought in 4 of the past 5 years (lack of forage and water).

Impacts to the rangeland as a result of the current overpopulation of wild horses would be reduced; maintaining the population at/near AML would allow progress towards meeting Rangeland Health Standards of concern. Fighting among stud horses would decrease since they would protect their position at scarce water sources less frequently; injuries and death to all age classes of animals would also be expected to reduce as competition for limited forage and water resources is decreased. As populations are managed within capacity of the habitat, bands of horses would be less likely to leave the boundaries of the HMA seeking forage and water.

The impacts associated with gathering wild horses are well documented. Gathering wild horses causes direct impacts to individual animals such as stress, fear or confusion as a result of handling associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is infrequent but does occur in one half to one percent of wild horses captured in a given gather. Other impacts to individual wild horses include separation of members from individual bands of wild horses and removal of animals from the population.

Indirect impacts can occur to horses after the initial stress event, and may include increased social displacement, or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur, and typically involve biting and/or kicking bruises, which don't break the skin. The occurrence of spontaneous abortion events among mares following capture is very rare.

Population-wide impacts to individual bands of wild horses would be minimized with this action because

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

The post-gather population of about 17-37 wild horses may increase 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, 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.[1] 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." Baseline genetic diversity would be collected for the Jakes Wash HMA to establish genetic characteristics of the herd.

As discussed above, population modeling was completed for the Proposed Action in order to determine future herd demographics and population growth. In addition, the impacts associated with establishing an AML of 1 to 21 wild horses was analyzed in EA #NV-040-03-036. This modeling indicates the average wild horse population growth rate of the median of 100 trials should be 14.7% over four years. The average population size of the median of 100 trials would be 37 wild horses at the end of four years. Modeling also indicates that a post-gather population as low as 13 wild horses would not put the population at risk of catastrophic loss or "crash". Refer to Appendix III for additional information (Population modeling is for illustration use only and may not necessarily reflect actual growth rates or outcomes of management actions).

Impacts of Alternative B -- No Action Alternative

Under the No Action Alternative, wild horses would not be removed from the Jakes Wash HMA at this time. Individual horses as well as the herd would not be subject to any individual direct or indirect impacts which may result during a gather operation as described for the Proposed Action. However, the current population of 127 wild horses would continue to increase at rates of 20 to 25 percent per year and would be expected to reach 159 animals by February 2008 (7.6 times the high range of the AML).

Because wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes, predation and disease do not substantially regulate wild horse population levels. As a result, wild horse numbers would be expected to continue to increase, which in turn would continue to exceed the carrying capacity of the range. Over time, wild horse numbers in excess of AML would impact range condition to the extent that horse herd health is placed at risk. Individual horses would be at risk of death by starvation and lack of water. Competition among wild horses for the available forage and water would increase, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources. As populations continue to increase beyond the capacity of the habitat, more bands of horses would be expected to leave the boundaries of the HMA seeking forage and water. This would in turn impact range conditions and other range users (i.e. native wildlife) outside the HMA boundaries.

The results of population modeling specific to the No Action Alternative is provided in Appendix III.

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

Vegetation, Soils and Riparian/Wetland Areas

Affected Environment

The Jakes Wash HMA represents one of the most unique vegetation areas managed by the Ely Field Office. Dominant vegetation varies with elevation. One of the largest, continuous white sage sites within North America is located in the bottom of Jakes Valley. Surrounding white sage communities are sagebrush/bunchgrass plant communities, followed by pinyon-juniper woodlands. On the top of the Egan Range the pinyon-juniper forms closed-canopy woodlands with little to no understory herbaceous vegetation.

Water available for use by wild horses within the HMA is very limited. Three stock watering ponds provide the only available water in the northern and central portions of the HMA. These ponds are filled with winter/spring runoff as well as rancher-held livestock water rights from nearby Illipah reservoir. Two of the reservoirs regularly go dry in mid to late summer. Water is available for use by wild horses when livestock operators pump three stock-water wells in the southern end of the HMA, but that is only for a few months each year.

The only other water available for wild horse use is provided by two springs in the southern end of the HMA. Limited riparian habitat and their associated plant species occur in association with the two springs. At the present time, both riparian areas are experiencing trampling damage as a result of the current over-population of wild horses.

Monitoring data collected for the HMA in fiscal years 2005-2006 indicates utilization by wild horses is moderate to heavy in established key areas. Trampling damage by wild horses is evident at most locations. Excess utilization and trampling in key areas is currently impacting range conditions and preventing recovery of key sites.

The area outside the HMA in the White Pine Mountain Range is comprised of higher elevation sagebrush vegetation, with several small riparian areas. This area is experiencing increased grazing utilization and trampling by wild horses.

Environmental Consequences

Impacts of Alternative A -- Proposed Action

Implementation of the Proposed Action would reduce the wild horse population within the Jakes Wash HMA to at/near the established AML. Wild horses residing out the HMA would also be removed. Lower wild horse numbers would result in decreased grazing pressure on vegetation resources, including riparian areas. These areas would be expected to improve in the absence of over-utilization by wild horses, which would lead to healthier, more vigorous forage plants. Over the long-term as wild horse populations continue to be managed at/near the AML range, improving range conditions would be expected to result in increased vegetation density, reproduction and productivity and an increase in the amount of vegetation available for use as forage. Impacts of hoof action on the soil around unimproved springs would also be reduced, which should lead to increased bank stability and improved riparian habitat conditions. There would also be a reduction in hoof action on upland habitats and reduced competition among individual wild horses for available water sources.

Some temporary impacts to vegetation could result with implementation of the Proposed Action. Included would be disturbance of native vegetation immediately in and around temporary trap sites or holding

facilities. Direct impacts could result from vehicle traffic or the hoof action of penned horses, and could be locally severe in the immediate vicinity of the trap sites or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Since most trap sites or holding facilities would be re-used during future wild horse gather operations, any impacts would be expected to be localized 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 other flat spots that have been previously disturbed. By adhering to the SOPs, adverse impacts to soils as a result of capture operations would be minimized.

Impacts of Alternative B -- No Action Alternative

Under the No Action Alternative, a wild horse removal would not occur at this time. As a result, the potential for localized trampling or vegetation/soil disturbance associated with the trap sites and temporary holding facilities needed to conduct a gather operation would not occur. However, as wild horse populations continue to grow, continued heavy to excessive utilization would result in further decreases in vegetation cover and lead to increased soil erosion throughout the HMA as well as areas outside the HMA where wild horses are currently living.

Over the long term, increased use by wild horses on the shallow soils typical of this region would be expected to reduce plant vigor and abundance. Over time, decreasing soil and vegetation health has potential to subject the range to invasion by non-native plant species or noxious weeds. A shift in plant composition to weedy species would result in a less vegetation available for use as forage, loss of topsoil through increased erosion, and decreased productivity. These impacts would also be seen outside the HMA, and could affect even larger geographic areas as wild horses forage further from the HMA.

Wildlife, Special Status Species, and Migratory Birds

Affected Environment

Wildlife in the proposed gather area includes antelope, with occasional mule deer and Rocky Mountain Elk in higher elevations with tree cover. Other wildlife species common to the Great Basin environment include mountain lions, coyotes, bobcats, and jackrabbits. Migratory birds can be found in all habitat types located within the HMA. The migratory bird nesting season is from May 15 through July 31. No surface disturbing activity can be conducted during this time period without a nesting bird survey of the proposed project area.

Jakes Valley provides important sage grouse habitat; there are two known sage grouse leks (mating ground) located outside the HMA on the north, and south end. The leks are active with strutting males and hen attendance. The sage grouse is a State of Nevada and BLM sensitive species. Bald eagles, a threatened species, is a winter resident of this area of Nevada and can be observed form November thru May.

Environmental Consequences

Impacts of Alternative A -- Proposed Action

No trap sites would be located on sage grouse leks. Wildlife would be temporarily displaced during capture operations, a result of increased activity associated with trap setup, helicopters and vehicle traffic. Reducing numbers of wild horses to at/near the AML would result in decreased competition between wild horses and wildlife for available forage and water resources as soon as the gather is completed. Over the long-term, as wild horse numbers are maintained at/near the AML, both riparian and upland habitat conditions (forage quantity and quality) for wildlife would improve.

Impacts of Alternative B -- No Action Alternative
Under the No Action (no removal) alternative, wildlife would not be temporarily displaced or disturbed. However, as wild horse numbers continued to grow, competition between wild horses and wildlife for limited water and forage resources would increase. As competition increases, some wildlife species may not be able to compete successfully leading to increased stress and possible dislocation or death of native wildlife species over the long-term.

Livestock

Affected Environment
The 1986 Egan RMP initially authorized livestock use at 57% of the total active preference and designated management strategies for each livestock grazing allotment as follows: maintain (M), improve (I) and custodial (C). The management strategies prioritized allotments with the greatest potential for improvement in resource conditions and return on investment in structural and nonstructural range improvement projects. The Jakes Wash HMA includes portions of the Tom Plain (C), Indian Jake (I), Giroux Wash (I), and Badger Spring (I) livestock grazing allotments (Figure 2). Portions of the HMA have been monitored intensely over the past several years due to problems with drought, vegetation condition and combined use by wild horses and domestic livestock. Results of a preliminary evaluation and rangeland Health Assessment for the Jakes Wash HMA area completed in March 2002 indicated that livestock and wild horses were contributing factors in failing to achieve habitat standards in the Indian George and Giroux Wash allotments. To address these concerns, grazing management strategies which provide for periodic rest or deferment of all but the Tom Plain allotment have been implemented. Grazing permits have also been issued which establish limits on utilization and other management requirements in order to assure maintenance or improvement of rangeland health.

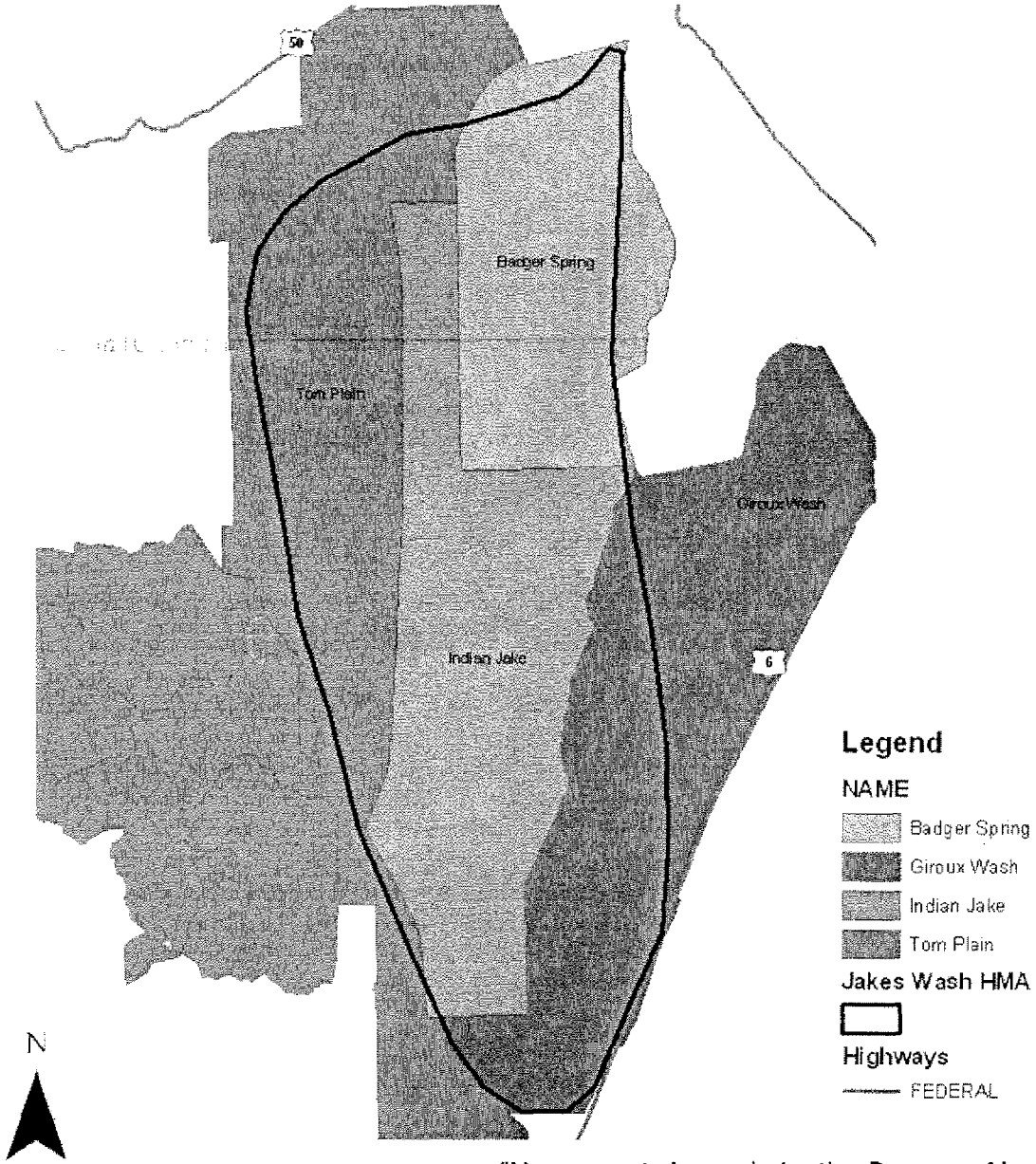
Environmental Consequences

Impacts of Alternative A -- Proposed Action
Helicopter use and increased vehicle traffic would result in temporary disturbance of livestock during the gather operation. Once gather operations cease, livestock would be expected to move back into the area. Over the short-term, wild horse numbers at/near AML would result in decreased competition between livestock and wild horses for the available forage and water. Over the long-term, managing wild horse numbers at/near the AML would be expected to lead to improvement in rangeland health and forage quantity and quality. No increases in permitted livestock use would occur as a result of the Proposed Action.

Impacts of Alternative B -- No Action Alternative
Under the No Action (no removal) alternative, no temporary disturbance or displacement of livestock would occur as a result of capture operations as described for the Proposed Action. However, competition between domestic livestock, native wildlife and wild horses for limited water and forage resources would continue. As wild horse numbers continued to increase at rates of 20-25% per year, authorized livestock grazing use within the HMA would need to be reduced in order to slow range deterioration. Authorized livestock grazing use outside the HMA would also continue to be impacted by wild horses leaving the HMA in search of forage, water and living space.

Figure 2. Allotments within Jakes Wash HMA

5/05/04 JLN



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

Cumulative Impacts

Cumulative impacts are impacts on the environment which 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 other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The area of cumulative impact analysis is the Jakes Wash HMA and areas immediately adjacent to it.

According to the 1994 BLM *Guidelines for Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance that are analyzed are maintaining rangeland health and proper management of wild horses within the established boundaries of an HMA.

Past Actions

Herd Areas (HAs) were identified in 1971 as areas occupied by wild horses. Herd Management Areas (HMAs) were established in the late 1980s through the land use planning process as areas where wild horse management was an approved multiple-use. These plans (which include the Caliente Grazing EIS, the Schell Grazing EIS and the Egan RMP/EIS) identified the long-term management direction for domestic livestock grazing, wildlife and wild horses and analyzed the associated environmental impacts. Through land use planning (1986 Egan RMP), AML was initially established as 20 wild horses for the Jakes Wash HMA.

In 2003, AML was adjusted to a population range of 1-21 wild horses for the Jakes Wash HMA based on in-depth analysis of monitoring data and evaluation of habitat suitability and issuance of a Wild Horse Decision and represents the number of wild horses which can graze without damage to the range. The 2003 Decision Record/FONSI and accompanying EA# NV-040-03-036 also recommended the Jakes Wash HMA be returned to HA status and AML be set as "0" wild horses. Further site-specific analysis relative to this recommendation is ongoing in the Ely RMP planning effort but a final decision has not yet been made.

Removal of excess wild horses from the Jakes Wash HMA has never occurred on a regular basis. However, the Jakes Wash HMA was gathered in 1988 and in 2001 to remove wild horses due to emergency drought conditions. In 1988, a total of 60 horses were removed while 98 were removed in 2001. In 2004, an additional 49 animals were removed.

Present Actions

Today the Jakes Wash HMA has an estimated population of 127 wild horses (which includes 40 wild horses residing outside the HMA on lands administered by the Humboldt-Toiyabe National Forest). Resource damage is occurring both within and outside the HMA due to this overpopulation of wild horses.

Current BLM policy is to selectively remove excess wild horses, prioritizing younger animals (5 years of age and less) for removal, while returning some animals to the range post-gather to maintain appropriate age and sex ratios. BLM is also working to conduct gathers in a manner which facilitates a four-year gather cycle (by managing wild horse numbers within a population range which allows the population to grow over a four year period without need for additional removals in the interim). This reduces disturbance to individual wild horses and the herd which occurs when gathers are needed more frequently. Current policy prohibits the destruction of healthy animals that are removed or deemed to be excess. Only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a

population control method. Nor does BLM sell excess animals for slaughter; rather BLM makes every effort to place excess animals with private citizens in the continental United States who can provide the animals with a good home. A lagging adoption market and a lack of facility space has sometimes led to gather intervals that are longer than the desired four years although at the present time, BLM Nevada has achieved appropriate management levels of wild horses and burros on the range on a statewide basis and 83 of the 102 HMAs Nevada manages are currently at or below the upper limit of the AML range. As a result, Nevada will need to remove only about 2,600 animals per year to maintain AML as compared to the 5,000-6,000 animals per year which needed to be removed in the past in order to attain AML.

Public interest in the welfare and management of wild horses continues to be very high. Many different values pertaining to wild horse management form the public's perceptions. Some view wild horses as nuisances, while others strongly advocate management of wild horses as living symbols of the pioneer spirit.

An assessment for conformance with Rangeland Health Standards is currently ongoing for the Jakes Wash HMA and the associated livestock grazing allotments. Portions of the HMA have been monitored intensely over the past several years due to problems with drought, vegetation condition and combined use by wild horses and domestic livestock. Upon completion of these evaluations, additional adjustments in livestock season of use, livestock numbers, and grazing systems may be made through the allotment evaluation/MUD process.

The Proposed Action analyzed in this environmental assessment would result in reducing the current wild horse population size to at/near the upper range of the established AML. By reducing numbers to at/near the AML, competition between wild horses and other users (i.e. native wildlife and domestic livestock) for limited forage and water resources would decrease over the current level. Direct improvements in vegetation, soils and riparian-wetland condition would be expected in the short term, which should benefit wildlife, wild horses and domestic livestock. Over the long-term, continuing to maintain wild horse populations within the AML range would further benefit all users and the resources they depend on for forage and water.

Under the No Action (no removal) alternative, the current overpopulation of wild horses would not be reduced to at/near the upper range of the AML because a gather would not occur at this time. Population numbers would continue to exceed AML and by February 2008 would reach a level about 7.6 times the high range of the AML. Competition between wild horses and native wildlife and domestic livestock for limited forage and water resources would increase, and vegetation and riparian-wetland conditions would continue to deteriorate. Over the longer-term, the health of wild horses and native wildlife would be expected to suffer as rangeland productivity further declines.

Reasonably Foreseeable Future Actions

The BLM Ely Field Office is in the process of writing a new Resource Management Plan that will analyze AMLs expressed as a population range. An alternative which would return HMAs with insufficient habitat to support viable wild horse herds to HA status is also being analyzed. Under this alternative, the BLM Ely Field Office would continue to manage wild horses within HMAs which provide habitat sufficient to support wild horse population sizes adequate to maintain genetic diversity, age structure, and sex ratios without need for implementation of intensive management practices. In HMAs with sufficient suitable habitat, wild horses would continue to be a component of the public lands, managed within a multiple use concept. No HMAs are currently being considered for designation as wild horse ranges, to be managed principally, but not exclusively, for wild horses.

No further amendments to the 1971 WFRHBA are currently anticipated which would result in changes in horse and burro management on the public lands. However, the WFRHBA has been amended three times since 1971 (i.e. the Act was amended in 1976, 1978, and again in 2004). Therefore, future changes to the WFRHBA are possible as a reasonably foreseeable future action.

As discussed above, one of the alternatives being considered in the ongoing Ely RMP planning effort would set the AML as "0" wild horses in the Jakes Wash HMA and return the HMA to HA status due to insufficient habitat to maintain a wild horse population of sufficient size to avoid inbreeding without need for implementing intensive management practices. Other reasonably foreseeable actions within the affected area may include wildfire, mining, recreational activities/use, range improvements, population census, and continued monitoring to assess progress toward meeting rangeland health standards.

Cumulative Impacts

Cumulative beneficial effects from the Proposed Action are expected, and would include continued improvement of vegetation and riparian-wetland conditions, which would in turn positively impact native wildlife, domestic livestock and wild horse populations as forage quantity and quality is improved over the current level. Moreover, the Proposed Action would maintain wild horse numbers at/near the upper range of the established AML thus maintaining future management flexibility in the event the decision is made in the ongoing Ely RMP planning effort to manage the Jakes Wash as an HMA (rather than return it to HA status).

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 watershed health. As a result, the No Action Alternative, in conjunction with many of the past, present and reasonably foreseeable future actions would result in non-attainment of RMP or allotment-specific objectives and Standards for Rangeland Health and Wild Horse and Burro Populations.

The 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 and adjacent to the Jakes Wash HMA within the short-term.

Mitigation Measures and Suggested Monitoring

Ongoing rangeland monitoring within the Jakes Wash HMA would continue. Periodic population census would be completed and areas outside the HMA would also be monitored to detect wild horses living outside the HMA boundary.

The Proposed Action incorporates proven standard operating procedures, which have been developed over time. These SOPs (Appendix I) represent the "best methods" for reducing impacts associated with gathering, handling, transporting and collecting herd data. Additional mitigation measures are not warranted.

Consultation and Coordination

Public hearings are held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses (or burros). The Nevada BLM State Office held a meeting on May 16, 2007; 2 oral comments, 8

written comments and approximately 120 e-mail comments were entered into the record for this hearing. Specific concerns included: (1) the use of helicopters and motorized vehicles is inhumane and results in injury or death to significant numbers of wild horses and burros; (2) bait and/or water trapping or removal by horseback are more humane methods of removal; (3) misconduct by gather contractors or others must be immediately corrected. One commenter commended BLM for the safe, effective, and humane use of helicopters and motorized vehicles to capture and transport wild horses and burros. Based on the number of concerns expressed with respect to the use of helicopters and motorized vehicles, BLM thoroughly reviewed the Standard Operating Procedures to assure that all necessary measures are in place to humanely capture, handle and transport Nevada's wild horses and burros during the upcoming gather season. No changes to the SOPs were indicated based on this review.

The use of helicopters and motorized vehicles has proven to be a safe, effective and practical means for the gather and removal of excess wild horses and burros from the range. Over the past three years, of the nearly 18,000 animals BLM has gathered, mortality has averaged only one-half of one percent which is very low when handling wild animals. BLM also avoids gathering wild horses prior to or during the peak foaling season and does not conduct helicopter removals of wild horses during March 1 through June 30.

The preliminary EA was mailed to the individuals, groups and agencies listed in Appendix IV for a 30-day review and comment period on (date). The public was specifically asked to identify any additional issues or alternatives (not already identified) or any data or information BLM should consider in finalizing the EA. Comments received in response to the 30-day review and comment period are summarized in Appendix V.

List of Preparers

Ben Noyes	Wild Horses
Susie Stokke	Wild Horses, Nevada State Office
Bonnie Waggoner	Invasive, Non-Native Species
Steve Leslie	Wilderness Values
Jake Rajala	Environmental Coordinator
Paul Podborny	Migratory Birds, Special Status Species
Chris Hanefeld	Public Affairs
Jake Rajala	Environmental Coordination
Elvis Wall	Native American Religious Concerns/Tribal Coordination
Mark Lowrie	Livestock
Lisa Gilbert	Archeological/ Historic/Paleontological

APPENDIX 1

STANDARD OPERATING PROCEDURES

Gathers would be conducted by contractors or agency personnel. The same procedures for gathering and handling wild horses and burros apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed to ensure the welfare, safety and humane treatment of the wild horses and burros (WH&B) in accordance with the provisions of 43 CFR 4700.

Gathers are normally conducted for one of the following reasons:

1. Regularly scheduled gathers to obtain or maintain the Appropriate Management Level (AML).

2. Drought conditions that could cause mortality to WH&B due to the absence of water or forage, and where continued grazing may result in a downward trend to the vegetative communities due to plant mortality and reduced vigor and productiveness.

3. Fires that remove forage to the extent that there is inadequate forage to sustain the population or to allow recovery of native vegetation.

4. Utilization levels that reach a point where a continued increase in utilization would cause a downward trend in the plant communities and impede meeting standards for rangeland health.

5. Monitoring indicates that WH&B use would begin to cause a downward trend in riparian function or not permit the recovery of riparian vegetation determined to be in undesirable condition.

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

1. Helicopter - Drive Trapping

   Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If this method is selected 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 BLM. Under no circumstances shall animals be tied down for more than one hour.

   b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

c. A domestic saddle horse(s) may be used as prada (or "Judas") horse to lead the wild horses into the trap site. Individual ground hazers may also be used to assist in the gather.

2. Helicopter - Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If this method is selected the following applies:

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

b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

B. BLM Conducted Gather - Non-Contract Operations

1. Gather operations will be conducted in conformance with the Wild Horse and Burro Aviation Management Handbook (March 2000).

2. Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

C. Safety and Communications

1. The Contractor shall have the means to communicate with the BLM 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 BLM 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 BLM.

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

c. All accidents occurring during the performance of any delivery order shall be immediately reported to the BLM.

2. Should the helicopter be employed, 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 the animals.

   c. At time of delivery order completion, the contractor shall provide the BLM with a completed copy of the Service Contract Flight Hour Report.

D. Trapping and Care

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

   a. All trap and holding facilities locations must be approved by the BLM prior to construction. The Contractor may also be required to change or move trap locations as determined by the BLM. All traps and holding facilities not located on public land must have prior written approval of the landowner.

   b. A cultural resources investigation by an archaeologist or an archaeological technician would be conducted prior to trap or holding facility construction. If cultural values are found, an alternative site would be selected.

   c. Prior to facility (temporary traps and holding corrals) construction, the proposed locations would be examined for the presence of noxious weeds. If it is determined that noxious weeds are present, the contractor would be instructed to locate the facilities elsewhere. The contractor and his personnel would also be instructed to avoid camping in or driving through noxious weed infestations.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the BLM who will consider terrain, physical barriers, weather, condition of the animals and others 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 with plywood (without holes) or like material.

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 restraining chute to restrain, age, or provide additional care for animals shall be placed in the runway in a manner as instructed by or in concurrence with the BLM.

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, 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. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.

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

4. No fence modifications will be made without authorization from the COR/PI. The Contractor/BLM shall be responsible for restoration of any fence modification.

5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor/BLM 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 or other similar practices. In these instances a portable restraining chute will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires the animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the Contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the BLM.

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.

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

9. The Contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses (or burros) is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Destruction of Wild Horses and Burros and Disposal of Remains, and is in accordance with BLM policy as expressed in Instructional Memorandum No. 98-141.

   Any captured horses that are found to have the following conditions may be humanely destroyed:

   a. The animal shows a hopeless prognosis for life.
   b. Suffers from a chronic disease.
   c. Requires continuous care for acute pain and suffering.
   d. Not capable of maintaining a body score of one.
   e. The animal is a danger to itself or others.

10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the BLM 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 BLM. 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 BLM. 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 BLM. 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 BLM.

11. The BLM will issue a Notice of Intent to Impound Unauthorized Livestock prior to all gathers. Branded or privately owned animals whose owners are known will be impounded by BLM, and if not redeemed by payment of trespass and capture fees, will be sold at public auction. If owners are not known, the private animals will be turned over to the State for Processing under Nevada estray laws.

E. 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 BLM 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 BLM.

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

6. Animals to be loaded and transported in any vehicle or trailer shall be as directed by the BLM 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 sq. ft. per adult horse (1.4 linear ft. in an 8ft. wide trailer);
   6 sq. ft. per horse foal (.75 linear ft. in an 8ft. wide trailer).

7. Prior to any gathering operations, the BLM will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine the level of activity likely to cause undue stress to the

animals, and whether such stress would necessitate a veterinarian be present. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed. The Contractor will be informed of all the conditions and will be given directions regarding the capture and handling of animals to ensure their health and welfare is protected.

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

9. Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the BLM, to relieve stress caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

F. 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.

G. Public Participation

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 BLM personnel, or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

H. Responsibility and Lines of Communication

Ely District

Contracting Officer's Representatives
Ben Noyes, Contracting Officer's Representative

Project Inspectors
Mike Perkins

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 Ely Assistant Field Manager for Renewable Resources and the Ely 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, and PVC 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 PVC 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 II

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. Age Criteria: 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 III

POPULATION MODELING

Population Model Overview

WinEquus is a program to simulate the population dynamics and management of wild horses created by Stephen H. Jenkins of the Department of Biology, University of Nevada at Reno. For further information about this model, you may contact Stephen H. Jenkins at the Department of Biology/314, University of Nevada, Reno, NV 89557.

The following data was summarized from the information provided within the WinEquus program, and will provide background about the use of the model, the management options that may be used, and the types of output that may be generated.

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

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

To run the program, one must supply an initial age distribution (or have the program calculate one), annual survival probabilities for each age-sex class of horses, foaling rates for each age class of females, and the sex ratio at birth. Sample data are available for all of these parameters. Basic management options must also be specified.

Population Data: Age-Sex Distribution

An important point about the initial age-sex distribution is that it is NOT necessarily the starting population for each of the trials in a simulation. This is because the program assumes that the initial age-sex distribution supplied on this form or calculated from a population size that the user enters is not an exact and complete count of the population. For example, if the user enters an initial population size of 100 based on an aerial survey, this is really an estimate of the population, not a census. Furthermore, it is likely to be an underestimate, because some horses will be missed in the survey. Therefore, the program uses an average sighting probability of approximately 90% (Garrott et al. 1991) to "scale-up" the initial population estimate to a starting population size for use in each trial. This is done by a random process, so the starting population sizes are different for all trials. An option does exist to consider the initial population size to be exact and bypass this scaling-up process.

Population Data: Survival Probabilities

A fundamental requirement for a population model such as this is data on annual survival probabilities of each age class. The program contains files of existing sets of survival, or it is possible to enter a new set of data in the table.

In most cases, Wild Horse and Burro Specialists don't have information on survival probabilities for their

populations, so the sample data files provided with WinEquus are used and assume that average survival probabilities in the populations are similar. These data are more difficult to get than is often assumed, because they require keeping track of known individuals over time. A "snapshot" of a population, providing information on the age distribution at a single gather, can NOT be used to estimate survival probabilities without assuming a particular growth rate for the population (Jenkins1989). More data from long-term studies of marked horses are needed to develop estimates of survival in various habitats.

Population Data: Foaling Rates

Foaling rates are the proportions of females in each age class that produce a foal at that age. Files are available within the program that contain existing sets of foaling rates, or the user may enter a new set of data in the table. The user may also enter the sex ratio at birth, another necessary parameter for population simulation.

Environmental Stochasticity

For any natural population, mortality and reproduction vary from year to year due to unpredictable variation in weather and other environmental factors. This model mimics such environmental stochasticity by using a random process to increase or decrease survival probabilities and foaling rates from average values for each year of a simulation trial. Each trial uses a different sequence of random values, to give different results for population growth. Looking at the range of final population sizes in many such trials will give the user an indication of the range of possible outcomes of population growth in an uncertain environment.

How variable are annual survival probabilities and foaling rates for wild horses? The longest study reporting such data was done at Pryor Mountain, Montana by Garrott and Taylor (1990). Based on 11 years of data at this site, survival probability of foals and adults combined was greater than 98% in 6 years, between 90 and 98% in 3 years, 87% in 1 year, and only 49% in 1 year of severe winter weather. These values clearly aren't normally distributed, but can be approximated by a logistic distribution. This pattern of low mortality in most years but markedly higher mortality in occasional years of bad weather, was also reported by Berger (1986) for a site in northwestern Nevada. Therefore, environmental stochasticity in this model is simulated by drawing random values from logistic distributions. If desired, different values can be entered to change the scaling factors for environmental stochasticity.

Because year-to-year variation in weather is likely to affect foals and adults similarly, this model makes foal and adult survival perfectly correlated. This means that when survival probability of foals is high, so is survival probability of adults, and vice versa. By contrast, the correlation between survival probabilities and foaling rates can be adjusted to any value between -1 and +1. The default correlation is 0 based on the Pryor Mountain data and the assumption that most mortality occurs in winter and winter weather is not highly correlated with foaling-season weather.

The model includes another form of random variation, called demographic stochasticity. This means that mortality and reproduction are random processes even in a constant environment; i.e., a foaling rate of 40% means that each female has a 40% chance of having a foal. Because of demographic stochasticity, even if scaling factors for both survival probabilities and foaling rates were set equal to 0, different runs of the simulation would produce different results. However, variation in population growth due to demographic stochasticity will be small except at low population sizes.

Gathering Schedule

There are three choices for the gather schedule: gather at a regular interval, gather at a minimum interval (the default), or gather in specific years. Gathering at a minimum interval means that gathers will be conducted no more frequently than a prescribed interval (e.g., 3 years), but will not be conducted if the time interval has passed unless the population is above a threshold size that triggers a gather.

Gather interval

This is the number of years between gathers.

Gather for fertility treatment regardless of population size?

If this option is selected (the default), then gathers occur according to the gathering schedule specified regardless of whether or not the population exceeds a threshold population size. One effect of this is that a minimum-interval schedule really functions as a regular interval.

Continue gather after reduction to treat females?

Continuing a gather after a reduction to treat females (with fertility control management options) means that, if a gather for a removal has been triggered because the population has exceeded a threshold population size, then horses will continue to be processed even after enough have been removed to reduce the population to the target population size. As additional horses are processed, females, to be released back, will be treated with an immunocontraceptive according to the information specified in the Contraceptive Parameters form.

Threshold for gather

The threshold population size for triggering a gather is the actual population size in a particular year estimated by the program. This is NOT the same as the number of horses counted in an aerial census, but closer to an estimate of population size taking into account the fact that an aerial census typically underestimates population size.

Target population size

This is the goal for the population size following a gather and removal. Horses will be removed until this target is reached, although it may not be possible to achieve this goal, depending on the removal parameters (percentages of each age-sex class to be removed) and gathering efficiency.

Are foals included in AML?

In most districts, foals are counted as part of the appropriate management level (AML).

Gathering efficiency

Typically, some horses will successfully resist being gathered, either by hiding in habitats where they can't be seen or moved by a helicopter, or following escape routes that make it dangerous or uneconomical for them to be herded from the air. These horses aren't available for removals or fertility treatment. The default gathering efficiency is 80%, meaning that the program assumes that 20% of the population will successfully resist being gathered. This value may be changed.

Note that the program assumes that horses of all age-sex classes are equally likely to be able to be gathered. This is an unrealistic assumption because bachelor males, for example, may be more likely to successfully avoid being gathered than females or foals or band stallions.

Sanctuary-bound horses

Age-selective removals typically target younger age classes such as 0 to 5-year-olds or 0 to 9-year-olds because these horses are more easily adopted. However, it may not be possible to reduce the population to a target size by restricting removals to these younger age classes, especially if age-selective removals have been conducted in the past. In this case, an option is available to remove older animals as well, who may be destined for permanent residence in a long term holding facility rather than for adoption. The minimum age of these long term holding facility horses is specified for this element. When older age classes as well as younger age classes are identified for removal on the Removal Parameters form, horses of these older age classes are selected along with younger age class horses as the population is reduced to the target value. If a minimum age for long term holding facility horses is specified, then older animals are only removed if the population can't be reduced to the target population size by removing the younger ones.

Percent Effectiveness of fertility control

These percentages represent the percentage of treated females that are in fact sterile for one year, two years, etc. (i.e., the efficacy or effectiveness of fertility treatment). The default values are 90% efficacy for one year. However, the user may specify the effectiveness year by year, for up to five years.

Removal Parameters

This allows the user to determine the percentages of horses in each sex and age class to be removed during a gather. The program uses these percentages to determine the probabilities of removing each horse that is processed during a gather. If the percentage for an age-sex class is 100%, then all horses of that age-sex class that are processed will be removed until the target population size is reached. If the percentage for an age-sex class is 0%, then all horses of that age-sex class will be released. If the percentage for an age-sex class is greater than 0% but less than 100%, then the proportion of horses of that age-sex class removed will be approximately equal to the specified percentage.

Contraception Parameters

This allows the user to specify the percentage of released females of each age class that will be treated with an immunocontraceptive. The default values are 100% of each age class, but any or all of these may be changed.

Most Typical Trial
This is the trial that is most similar to each of the other trials in a simulation

Population Size Table

The default is both sexes and all age classes, but summary results may also be chosen for a subset of the population. The table identifies some key numbers such as the lowest minimum in all trials, the median minimum, and the highest minimum. Thinking about the distribution of minima for example, half of the trials have a minimum less than the median of the minima and half have a minimum greater than the median of the minima. If the user was concerned about applying a management strategy that kept the population above some level, because the population might be at risk of losing genetic diversity if it were below this level, then one might look at the 10th percentile of the minima, and argue that there was only a 10% probability that the population would fall below this size in x years, given the assumptions about population data, environmental stochasticity, and management that were used in the simulation.

Gather Table

The default is both sexes and all age classes, but summary results may be for a subset of the population. The table shows key values from the distribution of the minimum total number of horses gathered, removed, and (if one elected to display data for both sexes or just for females) treated with a contraceptive across all trials. This output is probably the most important representation of the results of the program in terms of assessing the effects of your management strategy because it shows not only expected average results but also extreme results that might be possible. For example, only 10% of the trials would have entailed gathering fewer animals than shown in the row of the table labeled "10th percentile", while 10% of the trials would have entailed gathering more than shown in the row labeled "90th percentile". In other words, 80% of the time one could expect to gather a number of horses between these 2 values, given the assumptions about survival probabilities, foaling rates, initial age-sex distribution, and management options made for a particular simulation

Growth Rate

This table shows the distribution of the average population growth rate. The direct effects of removals are not counted in computing average annual growth rates, although a selective removal may change the average foaling rate or survival rate of individuals in the population (e.g., because the age structure of the population includes a higher percentage of older animals), which may indirectly affect the population growth rate. Fertility control clearly should be reflected in a reduction of population growth rate.

Full Modeling Summaries:

Proposed Action: Removal to AML, expect 85% capture

The parameters for the population modeling were:

1. gather when population exceeds 21 animals
2. foals are included in AML
3. percent to gather 85
4. four years between gathers
5. number of trials 100
6. number of years 4
7. initial calendar year 2004
8. initial population size 90
9. population size after gather 1 (or with only 85% caught, 13 would remain)
10. remove all wild horses caught
11. no fertility control

Population Sizes in 11 Years*			
	Minimum	Average	Maximum
Lowest Trial	12	29	127
10th Percentile	14	34	130
25th Percentile	16	36	133
Median Trial	18	38	139
75th Percentile	19	40	147
90th Percentile	20	44	160
Highest Trial	23	54	217

* 0 to 20+ year-old horses

Alternative I: No Action

The parameters for the population modeling were:

1. do not gather
2. foals are included in AML
3. percent to gather 0
4. four years between gathers
5. number of trials 100
6. number of years 4
7. initial calendar year 2004
8. initial population size 301
9. population size after gather 301 (no gather)
10. no removals
11. no fertility control

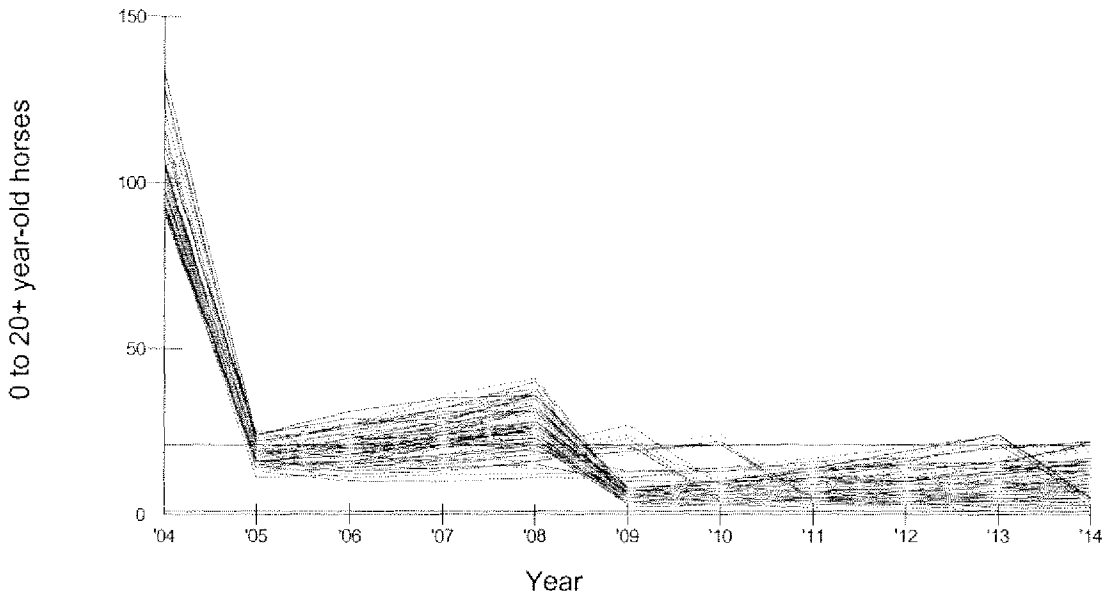
Population Size Modeling Table and Graph

	Population Sizes in 11 Years*		
	Minimum	Average	Maximum
Lowest Trial	105	238	411
10th Percentile	128	286	552
25th Percentile	134	312	634
Median Trial	139	353	722
75th Percentile	146	391	835
90th Percentile	156	432	946
Highest Trial	198	573	1304

* 0 to 20+ year-old horses

Population Modeling for 10 Years

When population modeling was completed using a 10 year time frame, with the same management actions as the proposed action, the model showed that it would take at least two gathers to get within AML (1-21), and achieving the low end of AML would occur at the earliest in one trial during 2009, or even later in most trials.



APPENDIX IV

List of Interested Individuals, Groups or Agencies

APPENDIX V

Detailed Summary of Public Comments Received in Response to Review of the Preliminary EA and How BLM Used Those Comments in Finalizing the EA

United States Department of the Interior
Bureau of Land Management

Ely Field Office **May 2007**

Moriah Herd Management Area
Wild Horse Gather Plan and
Preliminary Environmental Assessment

NV–040-07-EA-44

Introduction

Background Information

The purpose of this environmental assessment (EA) is to analyze the impacts associated with the Bureau of Land Management's (BLMs) proposal to remove approximately 36 excess wild horses from the Moriah Herd Management Area (HMA) beginning in about August 2007 in order to achieve and maintain the appropriate management level (AML) and prevent further range deterioration resulting from the current overpopulation of wild horses.

The Moriah HMA is located 48 miles northeast of Ely, within White Pine County, Nevada. The HMA is 55,071 acres in size, and the eastern boundary of the HMA is the Nevada/Utah state line (Figure 1). Utah does not manage for wild horses on its side of the state line, and has no HMAs in the area.

The AML of wild horses within the Moriah HMA was established in November 2003 at 1-29 wild horses (based on analysis in EA #NV-04-03-036). The AML was established based on in-depth analysis of habitat suitability and monitoring data. As discussed in EA #NV-040-03-036, the AML is the number of wild horses which can graze without damage to the range. Also refer to the Affected Environment section of this EA for additional information.

Monitoring data has been collected in 2006 and 2007 for the HMA. Use patterns show that utilization by wild horses is moderate in established key grazing areas. Utilization levels at and adjacent to riparian areas showed heavy use in 2007 by wild horses. Excess utilization and trampling in key areas is currently impacting range conditions and preventing recovery of key sites. Wild horses are routinely moving outside the HMA.

The Moriah HMA was last gathered in July 2004 when 210 wild horses were removed. The estimated post-gather population within the HMA was about 20 wild horses at that time. The current wild horse population is estimated at 52 head, with approximately one-fourth of the wild horses (about 13-15 animals) living outside the HMA. This data is based on population census completed in May 2007. The data indicates the annual population increase for the Moriah HMA has averaged about 25% per year over the past three year period.

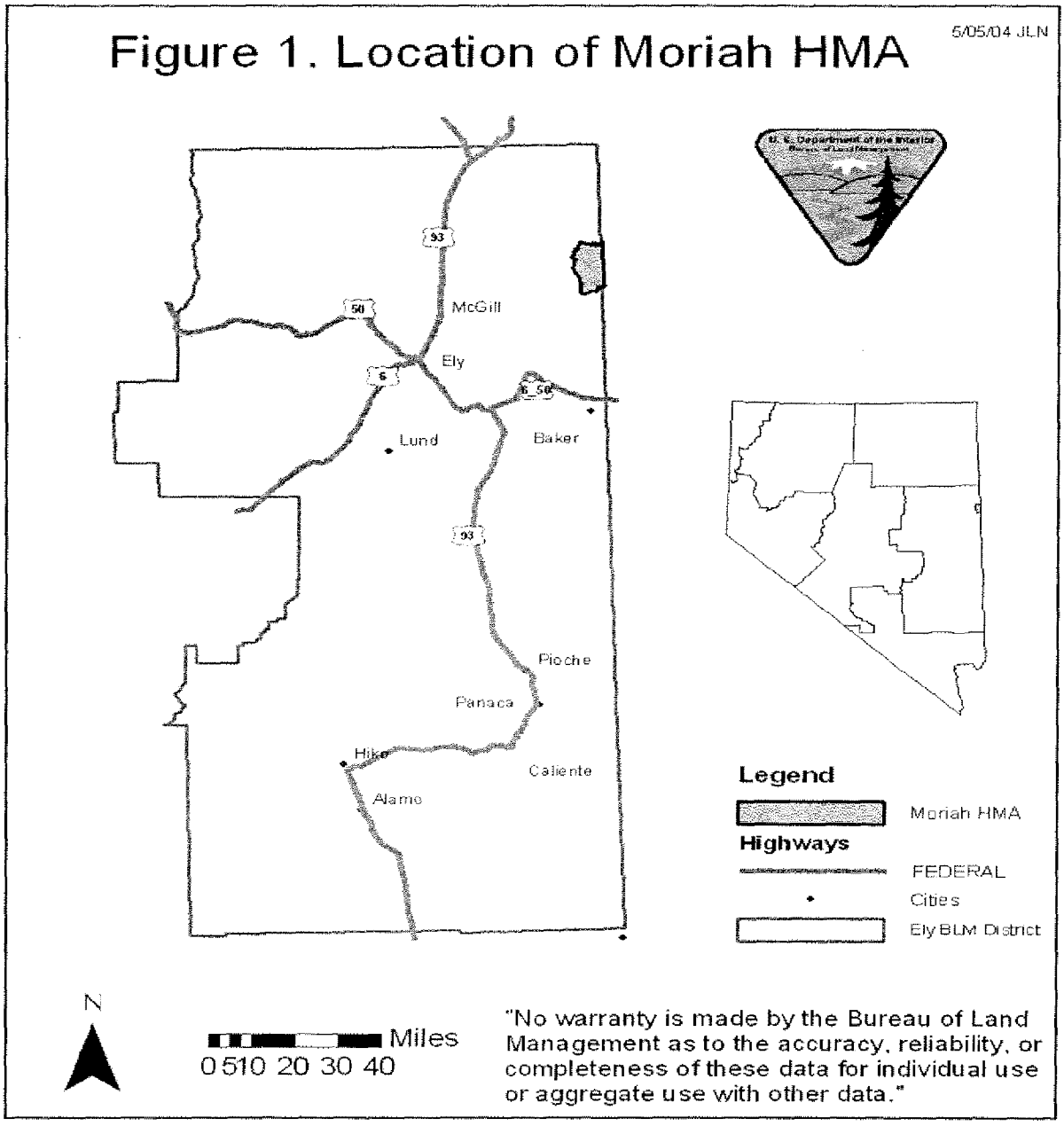
Analysis of the above information indicates the current AML of 1-29 wild horses is appropriate and that excess animals are present and require immediate removal.

Purpose and Need

Vegetation and population monitoring of the Moriah HMA has determined that the current wild horse population of about 52 animals is exceeding the range's ability to sustain wild horse use over the long term. Resource damage is occurring and is likely to continue to occur without immediate action. The area has experienced drought four out of the last five years and wild horses are moving outside the HMA and into Utah (which is not managed for wild horse use) for forage. The purpose of the Proposed Action is to remove the excess animals in August 2007 to prevent further deterioration of the range and associated with the current overpopulation of wild horses as authorized under section 3(b) (2) of the 1971 Wild Free-Roaming Horses and Burros Act (WFRHBA) and Section 302(b) of the Federal Land Management and Policy Act of 1976.

The proposed capture and removal is needed at this time in order to achieve and maintain established appropriate management levels, improve watershed health, make "significant progress towards

achievement" of Northeastern Great Basin Resource Advisory Council (RAC) Standards for rangeland health, and to achieve a thriving natural ecological balance between wild horse populations, wildlife, livestock, and vegetation.



Conformance with Existing Land Use Plans

The Proposed Action is subject to the Schell Management Framework Plan (MFP), Schell Grazing Environmental Impact Statement (EIS), and subsequent Record of Decision (ROD) dated 1983. The proposed wild horse gather is in conformance with the Schell MFP as required by regulation (43 CFR 1610.5-3(a)). The applicable decision(s) from this plan are:

- ❒ WH – 1.5: Furnish safe, sturdy, portable management facilities for the capture and containment of wild horses during gathering operations. Do not use permanent corrals.
- ❒ WH – 1.7: Restrict aerial roundups during foaling season and until foals have acquired enough strength to keep up with a band during roundups.

Conformance with Rangeland Health Standards and Guidelines

An assessment for conformance with Rangeland Health Standards is currently ongoing for the Moriah HMA and the associated livestock grazing allotments. Portions of the HMA have been monitored intensely over the past several years due to problems with drought, vegetation condition and combined use by wild horses and domestic livestock. In addition monitoring data is currently being collected to conduct Rangeland Health Assessments for the allotments within the Moriah HMA. The allotment assessments are scheduled to be completed in 2007 for Indian George and Mallory Springs Allotments. The Mill Spring and Tippett Allotments are scheduled for 2008 and Pleasant Valley for 2010.

The Proposed Action is also consistent with Northeast Great Basin Resource Advisory Council Wild Horse and Burro Guideline 5.1 which states: *"Implement the objectives outlined in the Wild Free-Roaming Horses and Burros Tactical Plan for Nevada (May 1999)."* The Tactical Plan outlines a strategy for achieving and maintaining AML.

Relationship to Statutes, Regulations or Other Plans

Under the Proposed Action in this EA, no federal, state, or local law, or requirement imposed for the protection of the environment will be threatened or violated. The Proposed Action is in conformance with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700 and policies, as well as the 1971 WFRHBA. More specifically, this action is designed to remove excess wild horses consistent with the following regulations:

- ❒ 43 CFR 4720.1: *"Upon examination of current information and a determination that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately..."*
- ❒ 43 CFR 4710.4: *"Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas."*

The Proposed Action is consistent with local plans to the maximum extent possible. The White Pine County Public Land Use Plan states: *"Wild horse herds should be managed at appropriate levels to be determined with public involvement and managed with consideration of the needs of wildlife species, livestock grazing and ecological conditions of the herd management area."*

Issues

The BLM Ely Field Office has discussed the proposed removal with the BLM Fillmore Field Office, Forest Service, and the Nevada Department of Wildlife. The following issues were identified as a result of internal scoping and agency consultation and will be used in the preliminary EA to analyze the alternatives:

1. Will the Proposed Action achieve and maintain the appropriate management level of wild horses and remove wild horses residing outside HMA boundaries?
2. What are the potential impacts to wild horses, as well as other elements of the human environment, from proposed capture, removal and handling procedures?
3. What are the current impacts to natural resources, domestic livestock and native wildlife resulting from the current overpopulation of wild horses? What effect will achieving and maintaining AML have on these resources?

Issues Not Addressed in this EA

The scope of this environmental analysis is limited to the need to remove excess horses from within and outside the Moriah HMA in order to achieve and maintain the AML and prevent further range deterioration associated with the current overpopulation. Some comments received from the public in response to similar proposals by the BLM Ely Field Office over the past two years are outside the scope of this environmental analysis and were not considered by BLM in preparing this preliminary environmental assessment. They include:

- ❒ Concerns about BLM staffing or budgetary impacts are outside the scope of this analysis. These are administrative issues internal to BLM. When a determination is made that excess wild horses or burros exists, Section 3(b) (2) of the 1971 WFRHBA requires their immediate removal.

- ❒ Concerns that herd management area (HMA) boundaries be extended to the original herd area (HA) boundaries are also outside the scope of this analysis. The Moriah HMA boundary was designated in the 1986 Egan RMP and ROD and an opportunity for administrative review of the designations was provided at that time. This decision remains in effect.

- ❒ Comments that BLM is violating the 1971 WFRHBA by not managing HMAs principally for wild horses and burros are also outside the scope of this analysis. While 43 CFR 4710.3-2 provides for the designation of HMAs as wild horse or burro ranges to be managed principally, but not necessarily exclusively, for wild horse and burro herds, no HMAs were designated as wild horse or burro ranges in the Schell MFP and ROD.

Proposed Action and Alternatives

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

- ❒ Alternative A – Proposed Action (Remove Wild Horses in Excess of AML)
- ❒ Alternative B – No Action Alternative (Defer Population Control)

The Proposed Action alternative was developed to meet the purpose and need (i.e. achieve and maintain AML and prevent further deterioration of the range associated with the current overpopulation) and in response to the issues identified during internal scoping and agency consultation. Although the No Action alternative does not comply with the 1971 WFRHBA (as amended), nor meet the purpose and need for action, it is included as a basis for comparison with the Proposed Action.

Description of Alternatives Considered in Detail

Alternative A – Proposed Action

The Proposed Action is to capture about 65-75% of the current population of wild horses or about 36 wild horses. The animals gathered would be removed and shipped to BLM holding facilities where they will be prepared for adoption and/or sale to qualified individuals or long term holding. The estimated population remaining on the range following the gather would be about 15-20 wild horses.

All capture and handling activities (including capture site selections) would be conducted in accordance with the Standard Operating Procedures (SOPs) described in Appendix I. Multiple capture sites (traps) may be used to capture wild horses from the HMA. Whenever possible, capture sites would be located in previously disturbed areas. Capture techniques would be the helicopter-drive trapping method and/or helicopter-roping from horseback. Selection of animals for removal and/or release would be guided by

BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2005-206). Under this policy, animals ages 5 and above would be prioritized for release post-gather. Refer to Appendix II for additional information.

Blood samples would be collected to determine whether or not BLMs management is maintaining acceptable genetic diversity (avoiding inbreeding depression). The samples would be collected from breeding age animals and the data collected would be compared to subsequent samples when the area is re-gathered over the next decade. A veterinarian or other trained personnel would draw blood. Other 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).

Alternative B – No Action Alternative

Under the No Action Alternative, a gather to remove excess wild horses would not take place beginning in about August 2007. There would be no active management to control the size of the wild horse population at this time. The current population of 52 wild horses would continue to increase at a rate of 20-25% annually and would be allowed to regulate their numbers naturally through predation, disease, and forage, water and space availability. Existing management, including monitoring, would continue.

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

Alternatives Considered But Eliminated From Detailed Analysis

One alternative considered was to gather to the low end of the AML range (1 wild horse). Implementation of this alternative would effectively reduce the population to "0" wild horses and would be inappropriate in the absence of a BLM final decision establishing the AML as "0". While EA# NV-040-03-036 recommended establishing the AML for Moriah as "0" wild horses and returning the HMA to HA status due to insufficient forage and water to support a population size adequate to avoid inbreeding over the long-term (without supplementation of 1-2 additional horses from another HMA every 8-10 years), BLM has not yet issued a final decision. Rather, a final decision is pending completion of additional site specific environmental analysis as part of the ongoing resource management planning process (Ely RMP).

A second alternative considered was to water trap excess wild horses. Water trapping would involve setting a trap around water sources in order to capture the wild horses. This alternative would be very time consuming and inefficient for removing excess horses from the Moriah HMA. Water sources in this area would be difficult to access by vehicle. Because there are many smaller water sources in this area it would multiple trap sites at the same time to the next water source without a trap. Additionally, the labor involved in placing the traps, continually monitoring them, and promptly transporting captured animals would be intensive over a period of several weeks. Therefore, this alternative was eliminated from detailed study.

Also considered was implementing fertility control on all or a portion of the mares released post-gather. This alternative was eliminated because less than 20 animals would be expected to be released post-gather and most of those would be older studs or very old mares. Fertility control treatment on such a small number of breeding age mares would not be feasible or cost-effective.

Description of the Affected Environment and Environmental Consequences

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 (refer to Table 1 and 2 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 action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Table 1. Critical Elements Checklist

Critical Elements	Present	Affected	Rationale
Air Quality	**Yes**	**No**	The proposed gather area is not within an area of non-attainment or areas where total suspended particulates exceed Nevada air quality standards. Areas of disturbance would be small and temporary.
Areas of Critical Environmental Concern (ACECs)	**No**	**No**	No areas of critical environmental concern are within or affected by the proposed gather area.
Cultural Resources	**Yes**	**No**	A number of known cultural resources exist within the proposed gather area that would be avoided during capture operations. Trap sites and holding facilities located in areas that have not been previously surveyed would be surveyed before the gather begins to prevent any effects to cultural resources.
Environmental Justice	**No**	**No**	The Proposed Action would have either no effect or negligible effect on minority or low-income populations.
Floodplains	**No**	**No**	Resource not present.
Waste (Hazardous or Solid)	**No**	**No**	Not present.
Noxious Weeds	**Yes**	**No**	Any noxious weeds or non-native invasive weeds would be avoided when establishing trap sites and holding facilities and would not be driven through to prevent the spread of noxious weeds.
Native American Religious Concerns	**No**	**No**	There are no known Native American religious concerns.
Migratory Birds	**Yes**	**Yes**	Discussed below under Wildlife.
Prime or Unique Farmlands	**No**	**No**	Resource not present.
Riparian-Wetland Zones	**Yes**	**No**	Riparian-wetland zones would be avoided for trap site or holding facility locations. Under the Proposed Action, it is expected that the condition of riparian-wetland zones would improve over present as year-round grazing pressure by wild horses is decreased. See discussion under Vegetation, Soils

			and Riparian-Wetland Zones below.
Threatened or Endangered Species	**No**	**No**	No known threatened or endangered species are within the proposed gather area or would be affected by capture operations.
Water Quality, Drinking/Ground	**No**	**No**	Resource not present.
Wild and Scenic Rivers	**No**	**No**	Not present.
Wilderness and Wilderness Study Areas	**Yes**	**No**	No designated wilderness areas or wilderness study areas are located within the proposed gather area.

Table 2. Other Resources Checklist

Critical Elements	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	**Yes**	**Yes**	Discussed below under Livestock.
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**	Discussed below under Vegetation, Soils and Riparian-Wetland Zones.
Recreation	**Yes**	**No**	Resource is not affected by the Proposed Action or alternatives.
Socioeconomics	**Yes**	**No**	Resource is not affected by the Proposed Action or alternatives.
Soils	**Yes**	**Yes**	Soil disturbances would be less than 1 acre in size and trap sites would be located in previously disturbed areas. Except for temporary disturbance at the trap sites, the resource is not affected. Refer to discussion under Vegetation, Soils, and Riparian-Wetland Zones below.
Visual Resources	**Yes**	**No**	No visual impacts would occur because the Proposed Action is temporary.
Wild Horses and Burros	**Yes**	**Yes**	Discussed under Wild Horses below.
Wildlife	**Yes**	**Yes**	Discussed under Wildlife below.

General Description of the Affected Environment

The Moriah HMA ranges in elevation from approximately 5400 feet above sea level (asl) to approximately 9500 feet asl. The annual precipitation varies from 5 inches in the valley bottoms to 19 inches in the higher elevations. The area lies about 50 air miles northeast of Ely, Nevada and is entirely within White Pine County. The HMA is 55,051 acres and is dominated by sagebrush, and pinyon-juniper with topography ranging from wide open valley bottoms to surrounding gently sloping hills to steep escarpments. Wild horses routinely move outside the HMA to the east into Snake Valley, Utah in the winter.

Wild Horses

Affected Environment

Following the passage of the 1971 WFRHBA, BLM delineated the Moriah Herd Area (HA) of which 43,375 acres was BLM. Through land use planning (the 1983 Schell MFP), the entire HA (100%) was designated as a herd management area suitable for long-term management of wild horses. The 1983 Schell MFP also established the interim AML for the HMA as 25 wild horses.

In November 2003, AML was set at 1-29 wild horses through issuance of a "Wild Horse Management Decision and Finding of No Significant Impact (FONSI) for the Establishment of Appropriate Management Levels for Twelve Wild Horse Herd Management Areas with the Ely District." The decision was based on in-depth analysis documented in Environmental Assessment (EA) NV-04-03-036. While EA#NV-040-03-036 recommended establishing the AML for the Moriah HMA as "0" wild horses an returning the HMA to HA status due to insufficient forage and water to support a population size adequate to avoid inbreeding over the long-term, a final BLM decision has not yet been made. Rather, further site-specific environmental analysis is ongoing as part of the Ely resource management planning process.

The Moriah HMA was last gathered in July 2004 when 210 wild horses were removed. The estimated post-gather population within the HMA was about 20 wild horses at that time. Based on population census completed in May 2007, the current wild horse population is estimated at 52 head. Approximately one-fourth of the wild horses (about 13-15 animals) are living outside the HMA. The current estimated population based on census completed May, 2007, is 52 wild horses. The current population is 1.8 times the high end of AML, which is the number of wild horses that the rangeland can sustain while maintaining a thriving natural ecological balance with multiple uses. Table 3 below summarizes the established AMLs for wild horses as well as the current estimated populations and proposed removal numbers.

Table 3. Moriah HMA: AML vs. Estimated Population and Proposed Removal Number

HMA	AML	Current Estimated Population			Estimated Post-Gather Population	
		Within the HMA	Outside the HMA	Estimated Removal No.	Within the HMA	Outside the HMA
Moriah HMA	1-29	39	13-15	32-38	15-20	0

By maintaining population levels at/near the established AML, BLM will maintain future opportunities for wild horse management pending completion of additional site-specific analysis in the Ely Resource Management Plan. Among the decisions to be made in the RMP is whether or not to return the Moriah HMA to HA status and adjust AML "0" wild horses.

Environmental Consequences

Impacts Common to Both Alternatives

The WinEquus program, developed by Dr. Steven Jenkins at the University of Nevada at Reno was designed to assist wild horse and burro specialists evaluate various management plans and possible outcomes for management of wild horses. Population modeling was completed to analyze possible differences that could occur to the wild horse populations between alternatives. Include for this analysis was assessing the Proposed Action or removal of excess wild horses without fertility control. The No

Action Alternative (no removal) alternative was also modeled. One objective of the modeling was to determine if the Proposed Action would "crash" the population or cause extremely low population numbers or growth rates. Minimum population levels and growth rates were found to be within reasonable levels and adverse impacts to the population are not likely. Graphic and tabular results are displayed in detail in Appendix III.

Impacts of Alternative A -- Proposed Action

Under the Proposed Action, the post-gather population of wild horses would be about 15-20 animals, which is the mid to upper range of the AML (1-29 wild horses) and would maintain future opportunities for wild horse management pending completion of additional site-specific analysis in the Ely RMP as discussed above. Reducing population size would also ensure that the remaining wild horses are healthy and vigorous, and not at risk of death or suffering from starvation due to insufficient habitat coupled with the effects of drought in 4 of the past 5 years (lack of forage and water).

Impacts to the rangeland as a result of the current overpopulation of wild horses would be reduced. Fighting among stud horses would decrease since they would protect their position at water sources less frequently; injuries and death to all age classes of animals would also be expected to reduce as competition for limited forage and water resources is decreased. As populations are managed within capacity of the habitat, bands of horses would be less likely to leave the boundaries of the HMA seeking forage and water.

The impacts associated with gathering wild horses are well documented. Gathering wild horses causes direct impacts to individual animals such as stress, fear or confusion as a result of handling associated with the gather, capture, processing, and transportation of animals. The intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality to individuals from this impact is infrequent but does occur in one half to one percent of wild horses captured in a given gather. Other impacts to individual wild horses include separation of members from individual bands of wild horses and removal of animals from the population.

Indirect impacts can occur to horses after the initial stress event, and may include increased social displacement, or increased conflict between studs. These impacts are known to occur intermittently during wild horse gather operations. Traumatic injuries may occur, and typically involve biting and/or kicking bruises, which don't break the skin. The occurrence of spontaneous abortion events among mares following capture is very rare.

Population-wide impacts to individual bands of wild horses would be minimized with this action because most of the horses caught would be removed. The remaining wild horses not captured would maintain their social structure and herd demographics (age and sex ratios). No observable effects to the remaining population associated with the gather impacts would be expected except a heightened shyness toward human contact.

The post-gather population of about 15-20 wild horses may increase 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, 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.[1] Moreover, Dr. Singer recommends introducing "only one to two breeding animals per generation...would maintain the genetic

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

resources in small populations...obviating the need for larger populations in all cases." Baseline genetic diversity would be collected for the Moriah HMA to establish genetic characteristics of the herd.

As discussed above, population modeling was completed for the Proposed Action in order to determine future herd demographics and population growth. Additionally, the impacts associated with establishing an AML of 1 to 29 wild horses was analyzed in EA #NV-040-03-036. This modeling indicates the average wild horse population growth rate of the median of 100 trials should be 21% over four years. The average population size of the median of 100 trials would be 46 wild horses at the end of four years. Refer to Appendix III for additional information. (Population modeling is for illustration use only and may not necessarily reflect actual growth rates or outcomes of management actions).

Impacts of Alternative B -- No Action Alternative

Under the No Action Alternative, wild horses would not be removed from the Moriah HMA at this time. Individual horses as well as the herd would not be subject to any individual direct or indirect impacts which may result during a gather operation as described for the Proposed Action. However, the current population of 52 wild horses would continue to increase at rates of 20 to 25 percent per year and would be expected to reach 65 animals by February 2008 (2.24 times the high range of the AML).

Because wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes, predation and disease do not substantially regulate wild horse population levels. As a result, wild horse numbers would be expected to continue to increase, which in turn would continue to exceed the carrying capacity of the range. Over time, wild horse numbers in excess of AML would impact range condition to the extent that horse herd health is placed at risk. Individual horses would be at risk of death by starvation and lack of water. Competition among wild horses for the available forage and water would increase, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources. As populations continue to increase beyond the capacity of the habitat, more bands of horses would be expected to leave the boundaries of the HMA seeking forage and water. This would in turn impact range conditions and other range users (i.e. native wildlife) outside the HMA boundaries.

Vegetation, Soils and Riparian/Wetland Areas

Affected Environment

Vegetation within the Moriah HMA varies with elevation, soil type, and precipitation. Soils within the HMA are typical of the Great Basin, and vary with elevation. Soils range in depth and type and are typically gravelly loams and sandy loams. Along the valley bottoms, salt desert shrub species can be found. However, the more common shrub specie is sagebrush. As elevation increases from valley bottom to foothills, sagebrush gives way to pinyon-juniper woodlands. At the highest elevations, mountain mahogany and mountain sagebrush dominate, with small pockets of aspen and fir trees.

Small riparian areas and their associated plant species occur throughout the HMA near seeps and springs. Riparian areas are currently experiencing trampling damage from the over-population of wild horses. Monitoring data collected for the HMA highlights that utilization by wild horses is moderate to heavy in established key areas. Trampling damage by wild horses is also evident at most key areas, including upland sites. The area outside the HMA in Utah is lower elevation sagebrush vegetation, with several small riparian areas. This area is also being impacted through increased grazing utilization by wild horses. Excess utilization and trampling in key areas is currently impacting range conditions and preventing recovery of key sites.

Environmental Consequences

Impacts of Alternative A -- Proposed Action

Implementation of the Proposed Action would reduce the wild horse population within the Moriah HMA to within AML, and eliminate wild horses (provided they can all be caught) from outside the HMA. Impacts to vegetation with implementation of the Proposed Action could include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts could be by vehicle traffic and the hoof action of penned 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, 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 other flat spots that were previously disturbed. By adhering to the SOPs, adverse impacts to soils would be minimized.

Removing excess wild horses would make progress towards achieving a "thriving natural ecological balance." It would reduce stress on vegetative communities, and be in compliance with the Wild Free Roaming Horse and Burro Act, Northeastern Great Basin RAC Standards and Guidelines, and land use plan management objectives. Vegetative resources, including riparian areas, would improve with the reduced population. Vegetative species would not experience over-utilization by wild horses, which would lead to healthier, more vigorous forage plants. This would result in an increase in forage availability, productivity, cover, and density. Plant communities would become more resilient to disturbances such as wildfire, drought, and grazing.

Impacts of hoof action on the soil around unimproved springs and stream banks would be lessened, which should lead to increased stream bank stability and improved riparian habitat conditions. There would also be a reduction in hoof action on upland habitats and reduced competition for available water sources.

Impacts of Alternative B -- No Action Alternative

Under the No Action Alternative, a wild horse removal would not occur at this time. As a result, the potential for localized trampling or vegetation/soil disturbance associated with the trap sites and temporary holding facilities needed to conduct a gather operation would not occur. However, as wild horse populations continue to grow, continued heavy to excessive utilization would result in further decreases in vegetation cover and lead to increased soil erosion throughout the HMA as well as areas outside the HMA where wild horses are currently living.

Over the long term, increased use by wild horses on the shallow soils typical of this region would be expected to reduce plant vigor and abundance. Over time, decreasing soil and vegetation health has potential to subject the range to invasion by non-native plant species or noxious weeds. A shift in plant composition to weedy species would result in a less vegetation available for use as forage, loss of topsoil through increased erosion, and decreased productivity. These impacts would also be seen outside the HMA, and could affect even larger geographic areas as wild horses forage further from the HMA.

Wildlife, Special Status Species, and Migratory Birds

Affected Environment

Wildlife in the area includes antelope, mule deer, Rocky Mountain Elk, and other wildlife species common to the Great Basin environment. Migratory birds can be found in all habitat types located within the HMA. The migratory bird nesting season is from May 15 through July 31. No surface disturbing activity can be conducted during this time period without a nesting bird survey of the proposed project area. The sage grouse is a State of Nevada and BLM sensitive species. There are no active known Sage Grouse leks within the HMA. Bald eagles, a threatened species, is a winter resident of this area of Nevada and can be observed from November thru May.

Environmental Consequences

Impacts of Alternative A -- Proposed Action

Trap sites would not be located on sage grouse leks. If a trap or camp site is to setup prior to July 31, a migratory bird breeding survey would be conducted prior to setup, and any areas with nesting migratory birds would be avoided. Wildlife adjacent to trap sites would be temporarily displaced during capture operations by increased activity of trap setup, helicopters and vehicle traffic. Reduction of wild horse numbers would result in reduced competition between wild horses and wildlife as soon as the gather is completed. This would result in improved habitat conditions by increasing forage availability, herbaceous cover, and quality. In addition, it would reduce competition between wild horses and wildlife for available forage and water resources. Disturbance associated with wild horses along stream bank riparian habitat and adjacent upland habitat would be reduced.

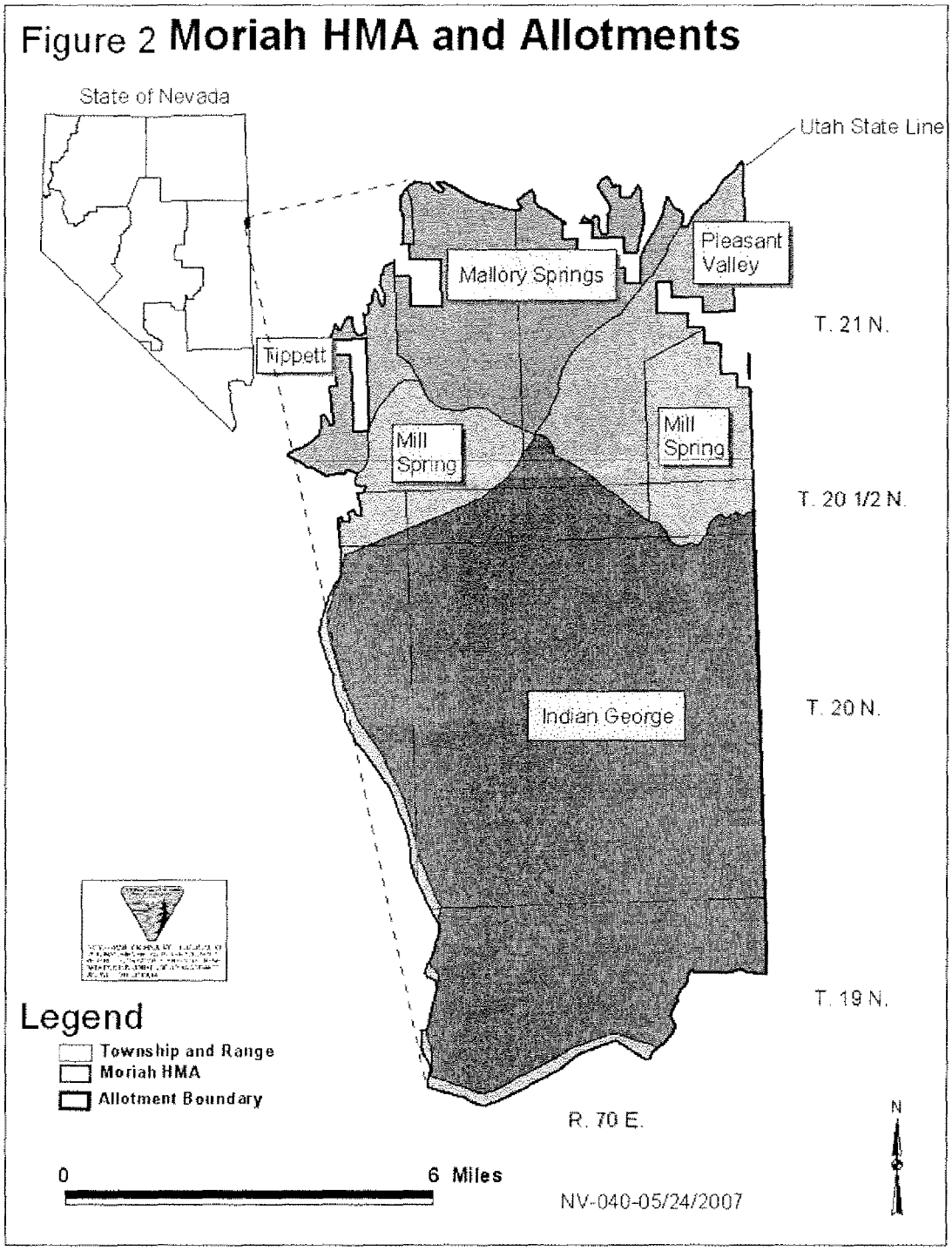
Impacts of Alternative B -- No Action Alternative

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

Livestock

Affected Environment

The Moriah HMA includes portions of the Indian George, Mallory Springs, Tippet, Mill Springs, and Pleasant Valley livestock grazing allotments. Permitted livestock grazing use in the Mallory Spring, Pleasant Valley, and Tippet allotment includes cattle summer grazing. The Indian George allotment has winter sheep use. The Mill Spring allotment has summer and fall permitted cattle use. Grazing also occurs in areas immediately adjacent to the HMA. Monitoring data is currently being collected to conduct Rangeland Health Assessments for the allotments within the Moriah HMA. The allotment assessments are scheduled to be completed in 2007 for Indian George and Mallory Springs Allotments. The Mill Spring and Tippett Allotments are scheduled for 2008 and Pleasant Valley for 2010. AML and livestock use agreements were established in June 2002 for the Indian George, Mill Spring, Pleasant Valley and Mallory Springs. The livestock grazing management agreements established livestock use management practices and quantified objectives and appropriate use levels.



Environmental Consequences

Impacts of Alternative A -- Proposed Action

Livestock located near gather activities would be disturbed by the helicopter and the increased vehicle traffic during the gather operation. This displacement would be temporary; and the livestock would move back into the area once gather operations moved. Past experience has shown that gather operations have little impacts to grazing cattle. A reduction of wild horses to AML would result in an increase in forage availability and quality, improved habitat condition, and reduced competition between livestock and wild horses for available forage and water resources. Areas outside the HMA would also show increased forage availability and quality. Wild horses living outside the HMA would be removed, eliminating the competition between livestock and wild horses for forage. No increases in permitted livestock use would occur as a result of the Proposed Action.

Impacts of Alternative B -- No Action Alternative

Livestock would not be displaced or disturbed due to gather operations under the No Action Alternative, however, there would be continued competition with wild horses for water and forage resources. As horse numbers increase, livestock grazing within the HMA may be reduced to prevent further deterioration of the range. Livestock grazing outside the HMA would continue to be impacted by wild horses that leave the HMA. This impact would spread even further as wild horses expand their range in search of forage and living space.

Cumulative Impacts

Cumulative impacts are impacts on the environment which 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 other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The area of cumulative impact analysis is the Moriah HMA and areas immediately adjacent to it.

According to the 1994 BLM *Guidelines For Assessing and Documenting Cumulative Impacts*, the cumulative analysis should be focused on those issues and resource values identified during scoping that are of major importance. Accordingly, the issues of major importance that are analyzed are maintaining rangeland health and proper management of wild horses within the established boundaries of an HMA.

Past Actions

Herd Areas (HAs) were identified in 1971 as areas occupied by wild horses. Herd Management Areas (HMAs) were established in the late 1980s through the land use planning process as areas where wild horse management was an approved multiple-use. These plans (which include the Caliente Grazing EIS, the Schell Grazing EIS and the Egan RMP/EIS) identified the long-term management direction for domestic livestock grazing, wildlife and wild horses and analyzed the associated environmental impacts. Through land use planning (1983 Schell MFP), AML was initially established as 25 wild horses for the Moriah HMA.

In 2003, AML was adjusted to a population range of 1-29 wild horses for the Moriah HMA based on in-depth analysis of monitoring data and evaluation of habitat suitability and issuance of a Wild Horse Decision and represents the number of wild horses which can graze without damage to the range. The 2003 Decision Record/FONSI and accompanying EA# NV-040-03-036 also recommended the Moriah HMA be returned to HA status and AML be set as "0" wild horses. Further site-specific analysis relative to this recommendation is ongoing in the Ely RMP planning effort but a final decision has not yet been made.

Removal of excess wild horses from the Moriah HMA has never occurred on a regular basis. However, the Moriah HMA was gathered in 2004 to remove about 210 excess wild horses. The Fillmore BLM Field

Office in Utah has also removed wild horses that have drifted outside the Moriah HMA into Utah: in 1988, 42 wild horses were removed from Utah BLM's Partoun Allotment, and in 1995, another 51 head were removed.

Present Actions

Today the Moriah HMA has an estimated population of 52 wild horses (which includes 13-15 wild horses residing outside the HMA in Utah). Resource damage is occurring both within and outside the HMA due to this overpopulation of wild horses.

Current BLM policy is to selectively remove excess wild horses, prioritizing younger animals (5 years of age and less) for removal, while returning some animals to the range post-gather to maintain appropriate age and sex ratios. BLM is also working to conduct gathers in a manner which facilitates a four-year gather cycle (by managing wild horse numbers within a population range which allows the population to grow over a four year period without need for additional removals in the interim). This reduces disturbance to individual wild horses and the herd which occurs when gathers are needed more frequently.

Current policy prohibits the destruction of healthy animals that are removed or deemed to be excess. Only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method. Nor does BLM sell excess animals for slaughter; rather BLM makes every effort to place excess animals with private citizens in the continental United States who can provide the animals with a good home. A lagging adoption market and a lack of facility space has sometimes led to gather intervals that are longer than the desired four years although at the present time, BLM Nevada has achieved appropriate management levels of wild horses and burros on the range on a statewide basis and 83 of the 102 HMAs Nevada manages are currently at or below the upper limit of the AML range. As a result, Nevada will need to remove only about 2,600 animals per year to maintain AML as compared to the 5,000-6,000 animals per year which needed to be removed in the past in order to attain AML.

Public interest in the welfare and management of wild horses continues to be very high. Many different values pertaining to wild horse management form the public's perceptions. Some view wild horses as nuisances, while others strongly advocate management of wild horses as living symbols of the pioneer spirit.

An assessment for conformance with Rangeland Health Standards is currently ongoing for the Moriah HMA and the associated livestock grazing allotments. Portions of the HMA have been monitored intensely over the past several years due to problems with drought, vegetation condition and combined use by wild horses and domestic livestock. Upon completion of these evaluations, additional adjustments in livestock season of use, livestock numbers, and grazing systems may be made through the allotment evaluation/MUD process.

The Proposed Action analyzed in this environmental assessment would result in reducing the current wild horse population size to the mid-upper range of the established AML. By reducing numbers to the AML, competition between wild horses and other users (i.e. native wildlife and domestic livestock) for limited forage and water resources would decrease over the current level. Direct improvements in vegetation, soils and riparian-wetland condition would be expected in the short term, which should benefit wildlife, wild horses and domestic livestock. Over the long-term, continuing to maintain wild horse populations within the AML range would further benefit all users and the resources they depend on for forage and water.

Under the No Action (no removal) alternative, the current overpopulation of wild horses would not be reduced to at/near the upper range of the AML because a gather would not occur at this time. Population numbers would continue to exceed AML and by February 2008 would reach a level about 2.24 times the high range of the AML. Competition between wild horses and native wildlife and domestic livestock for limited forage and water resources would increase, and vegetation and riparian-wetland conditions would continue to deteriorate. Over the longer-term, the health of wild horses and native wildlife would be expected to suffer as rangeland productivity further declines.

Reasonably Foreseeable Future Actions

The BLM Ely Field Office is in the process of writing a new Resource Management Plan that will analyze AMLs expressed as a population range. An alternative which would return HMAs with insufficient habitat to support viable wild horse herds to HA status is also being analyzed. Under this alternative, the BLM Ely Field Office would continue to manage wild horses within HMAs which provide habitat sufficient to support wild horse population sizes adequate to maintain genetic diversity, age structure, and sex ratios without need for implementation of intensive management practices. In HMAs with sufficient suitable habitat, wild horses would continue to be a component of the public lands, managed within a multiple use concept. No HMAs are currently being considered for designation as wild horse ranges, to be managed principally, but not exclusively, for wild horses.

No further amendments to the 1971 WFRHBA are currently anticipated which would result in changes in horse and burro management on the public lands. However, the WFRHBA has been amended three times since 1971 (i.e. the Act was amended in 1976, 1978, and again in 2004). Therefore, future changes to the WFRHBA are possible as a reasonably foreseeable future action.

Because Nevada has achieved AML, fewer numbers of horses or burros will need to be removed to maintain AML (only about 2,600 animals per year as compared to 5,000-6,000). As a result, the number of horses or burros available for adoption or sale is expected to more closely match demand. This should increase the likelihood that funding is available to gather HMAs every 4-5 years to maintain AML. In the absence of adequate funding to maintain AML, overpopulation of wild horses on more of Nevada's HMAs and range deterioration as a result of that overpopulation could result. This potential impact could be offset if fertility control with longer-term efficacy becomes available as a management tool, and could result in further extending the time between needed gathers or a need to remove fewer animals. Other management practices such as managing for a higher percentage of studs (60% studs to 40% mares) or managing a portion of the breeding population as geldings could also result in the need to remove fewer animals or extend the time needed between gathers.

As discussed above, one of the alternatives being considered in the ongoing Ely RMP planning effort would set the AML as "0" wild horses in the Moriah HMA and return the HMA to HA status due to insufficient habitat to maintain a wild horse population of sufficient size to avoid inbreeding without need for implementing intensive management practices. Other reasonably foreseeable actions within the affected area may include wildfire, mining, recreational activities/use, range improvements, population census, and continued monitoring to assess progress toward meeting rangeland health standards.

Cumulative beneficial effects from the Proposed Action are expected, and would include continued improvement of vegetation and riparian-wetland conditions, which would in turn positively impact native wildlife, domestic livestock and wild horse populations as forage quantity and quality is improved over the current level. Moreover, the Proposed Action would maintain wild horse numbers at/near the upper

range of the established AML thus maintaining future management flexibility in the event the decision is made in the ongoing Ely RMP planning effort to manage Moriah as an HMA (rather than return it to HA status).

Under the No Action (no removal) alternative, wild horse populations would continue to increase resulting in continuing impacts to native wildlife and vegetation and riparian-wetland areas. As populations continue to grow, increased competition between native wildlife, domestic livestock and wild horses for limited forage and water resources would occur, or alternatively domestic livestock use would need to be further reduced in order to slow the rate of range deterioration. 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 watershed health. As a result, the No Action Alternative, in conjunction with many of the past, present and reasonably foreseeable future actions would result in non-attainment of RMP or allotment-specific objectives and Standards for Rangeland Health and Wild Horse and Burro Populations.

Summary of Past, Present and Reasonably Foreseeable Future Actions

The area affected by the Proposed Action includes the Moriah HMA as well as the surrounding lands managed by the BLM Fillmore Field Office. Past actions regarding the management of wild horses has resulted in the current wild horse population within the Moriah HMA. Past wild horse management has contributed to existing resource conditions as well as wild horse herd age and sex structure within the proposed gather area.

The Proposed Action would achieve wild horse numbers near the mid-upper range of the AML and is expected to decrease competition among the users for limited forage and water resources and to result in improving vegetation and riparian-wetland conditions. Future gathers to maintain wild horse populations within the AML range should result in cumulative beneficial effects to vegetation and riparian-wetland conditions, and improvements in forage quantity and quality. Under the No Action (no removal) alternative, wild horse numbers would continue to grow, with increasing competition among the users for limited forage and water resources, and continued deterioration of vegetation and riparian-wetland conditions. Left unchecked, wild horse numbers could increase to the extent that individual animals, including native wildlife, could suffer or die from starvation.

One reasonably foreseeable future action is a proposal to return the Moriah HMA to HA status and set the AML as "0" due to insufficient habitat to maintain a wild horse population size adequate to avoid inbreeding without implementation of intensive management practices. Because additional site specific analysis is ongoing and a final decision has not been made, the Proposed Action would reduce wild horse numbers to at/near the high end of the AML range rather than to the lower limit. This would maintain management flexibility pending a BLM final decision regarding the Moriah HMA.

The 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 and adjacent to the Moriah HMA within the short-term.

Mitigation Measures and Suggested Monitoring

Ongoing rangeland monitoring within the Moriah HMA would continue. Periodic population census would be completed and areas outside the HMA would also be monitored to detect wild horses living outside the HMA boundary.

The Proposed Action incorporates proven standard operating procedures, which have been developed over time. These SOPs (Appendix I) represent the "best methods" for reducing impacts associated with gathering, handling, transporting and collecting herd data. Additional mitigation measures are not warranted.

Consultation and Coordination

Public hearings are held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses (or burros). The Nevada BLM State Office held a meeting on May 16, 2007; 2 oral comments, 8 written comments and approximately 120 e-mail comments were entered into the record for this hearing. Specific concerns included: (1) the use of helicopters and motorized vehicles is inhumane and results in injury or death to significant numbers of wild horses and burros; (2) bait and/or water trapping or removal by horseback are more humane methods of removal; (3) misconduct by gather contractors or others must be immediately corrected. One commenter commended BLM for the safe, effective, and humane use of helicopters and motorized vehicles to capture and transport wild horses and burros. Based on the number of concerns expressed with respect to the use of helicopters and motorized vehicles, BLM thoroughly reviewed the Standard Operating Procedures to assure that all necessary measures are in place to humanely capture, handle and transport Nevada's wild horses and burros during the upcoming gather season. No changes to the SOPs were indicated based on this review.

The use of helicopters and motorized vehicles has proven to be a safe, effective and practical means for the gather and removal of excess wild horses and burros from the range. Over the past three years, of the nearly 18,000 animals BLM has gathered, mortality has averaged only one-half of one percent which is very low when handling wild animals. BLM also avoids gathering wild horses prior to or during the peak foaling season and does not conduct helicopter removals of wild horses during March 1 through June 30.

The preliminary EA was mailed to the individuals, groups and agencies listed in Appendix V for a 30-day review and comment period on (date). The public was specifically asked to identify any additional issues or alternatives (not already identified) or any data or information BLM should consider in finalizing the EA. Comments received in response to the 30-day review and comment period are summarized in Appendix V.

List of Preparers

Ben Noyes	Wild Horses
Susie Stokke	Wild Horses, Nevada State Office
Bonnie Waggoner	Invasive, Non-Native Species
Steve Leslie	Wilderness Values
Jake Rajala	Environmental Coordinator
Paul Podborny	Migratory Birds, Special Status Species
Chris Hanefeld	Public Affairs
Jake Rajala	Environmental Coordination
Elvis Wall	Native American Religious Concerns/Tribal Coordination

Mark Lowrie	Livestock
Lisa Gilbert	Archeological/ Historic/Paleontological

APPENDIX I

STANDARD OPERATING PROCEDURES

Gathers would be conducted by contractors or agency personnel. The same procedures for gathering and handling wild horses and burros apply whether a contractor or BLM personnel are used. The following stipulations and procedures will be followed to ensure the welfare, safety and humane treatment of the wild horses and burros (WH&B) in accordance with the provisions of 43 CFR 4700.

Gathers are normally conducted for one of the following reasons:

1. Regularly scheduled gathers to obtain or maintain the Appropriate Management Level (AML).

2. Drought conditions that could cause mortality to WH&B due to the absence of water or forage, and where continued grazing may result in a downward trend to the vegetative communities due to plant mortality and reduced vigor and productiveness.

3. Fires that remove forage to the extent that there is inadequate forage to sustain the population or to allow recovery of native vegetation.

4. Utilization levels that reach a point where a continued increase in utilization would cause a downward trend in the plant communities and impede meeting standards for rangeland health.

5. Monitoring indicates that WH&B use would begin to cause a downward trend in riparian function or not permit the recovery of riparian vegetation determined to be in undesirable condition.

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

1. Helicopter - Drive Trapping

   Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If this method is selected 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 BLM. Under no circumstances shall animals be tied down for more than one hour.

   b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

c. A domestic saddle horse(s) may be used as prada (or "Judas") horse to lead the wild horses into the trap site. Individual ground hazers may also be used to assist in the gather.

2. Helicopter - Roping

Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If this method is selected the following applies:

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

b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

B. BLM Conducted Gather - Non-Contract Operations

1. Gather operations will be conducted in conformance with the Wild Horse and Burro Aviation Management Handbook (March 2000).

2. Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

C. Safety and Communications

1. The Contractor shall have the means to communicate with the BLM 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 BLM 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 BLM.

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

c. All accidents occurring during the performance of any delivery order shall be immediately reported to the BLM.

2. Should the helicopter be employed, 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 the animals.

   c. At time of delivery order completion, the contractor shall provide the BLM with a completed copy of the Service Contract Flight Hour Report.

D. Trapping and Care

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

   a. All trap and holding facilities locations must be approved by the BLM prior to construction. The Contractor may also be required to change or move trap locations as determined by the BLM. All traps and holding facilities not located on public land must have prior written approval of the landowner.

   b. A cultural resources investigation by an archaeologist or an archaeological technician would be conducted prior to trap or holding facility construction. If cultural values are found, an alternative site would be selected.

   c. Prior to facility (temporary traps and holding corrals) construction, the proposed locations would be examined for the presence of noxious weeds. If it is determined that noxious weeds are present, the contractor would be instructed to locate the facilities elsewhere. The contractor and his personnel would also be instructed to avoid camping in or driving through noxious weed infestations.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the BLM who will consider terrain, physical barriers, weather, condition of the animals and others 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 with plywood (without holes) or like material.

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 restraining chute to restrain, age, or provide additional care for animals shall be placed in the runway in a manner as instructed by or in concurrence with the BLM.

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, 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. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.

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

4. No fence modifications will be made without authorization from the COR/PI. The Contractor/BLM shall be responsible for restoration of any fence modification.

5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor/BLM 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 or other similar practices. In these instances a portable restraining chute will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires the animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the Contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the BLM.

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.

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

9. The Contractor/BLM shall restrain sick or injured animals if treatment is necessary. A veterinarian may be called to make a diagnosis and final determination. Destruction shall be done by the most humane method available. Authority for humane destruction of wild horses (or burros) is provided by the Wild Free-Roaming Horse and Burro Act of 1971, Section 3(b)(2)(A), 43 CFR 4730.1, BLM Manual 4730 - Destruction of Wild Horses and Burros and Disposal of Remains, and is in accordance with BLM policy as expressed in Instructional Memorandum No. 98-141.

   Any captured horses that are found to have the following conditions may be humanely destroyed:

   a. The animal shows a hopeless prognosis for life.
   b. Suffers from a chronic disease.
   c. Requires continuous care for acute pain and suffering.
   d. Not capable of maintaining a body score of one.
   e. The animal is a danger to itself or others.

10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the BLM 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 BLM. 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 BLM. 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 BLM. 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 BLM.

11. The BLM will issue a Notice of Intent to Impound Unauthorized Livestock prior to all gathers. Branded or privately owned animals whose owners are known will be impounded by BLM, and if not redeemed by payment of trespass and capture fees, will be sold at public auction. If owners are not known, the private animals will be turned over to the State for Processing under Nevada estray laws.

E. 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 BLM 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 BLM.

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

6. Animals to be loaded and transported in any vehicle or trailer shall be as directed by the BLM 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 sq. ft. per adult horse (1.4 linear ft. in an 8ft. wide trailer);
   6 sq. ft. per horse foal (.75 linear ft. in an 8ft. wide trailer).

7. Prior to any gathering operations, the BLM will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine the level of activity likely to cause undue stress to the

animals, and whether such stress would necessitate a veterinarian be present. If it is determined that capture efforts necessitate the services of a veterinarian, one would be obtained before capture would proceed. The Contractor will be informed of all the conditions and will be given directions regarding the capture and handling of animals to ensure their health and welfare is protected.

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

9. Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the BLM, to relieve stress caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

F. 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.

G. Public Participation

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 BLM personnel, or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

H. Responsibility and Lines of Communication

Ely District

Contracting Officer's Representatives
Ben Noyes

Project Inspectors
Paul Podborny

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 Ely Assistant Field Manager for Renewable Resources and the Ely 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, and PVC 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 PVC 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 II

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. Age Criteria: 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 III
POPULATION MODELING

Population Model Overview

WinEquus is a program to simulate the population dynamics and management of wild horses created by Stephen H. Jenkins of the Department of Biology, University of Nevada at Reno. For further information about this model, you may contact Stephen H. Jenkins at the Department of Biology/314, University of Nevada, Reno, NV 89557.

The following data was summarized from the information provided within the WinEquus program, and will provide background about the use of the model, the management options that may be used, and the types of output that may be generated.

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

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

To run the program, one must supply an initial age distribution (or have the program calculate one), annual survival probabilities for each age-sex class of horses, foaling rates for each age class of females, and the sex ratio at birth. Sample data are available for all of these parameters. Basic management options must also be specified.

Population Data: Age-Sex Distribution

An important point about the initial age-sex distribution is that it is NOT necessarily the starting population for each of the trials in a simulation. This is because the program assumes that the initial age-sex distribution supplied on this form or calculated from a population size that the user enters is not an exact and complete count of the population. For example, if the user enters an initial population size of 100 based on an aerial survey, this is really an estimate of the population, not a census. Furthermore, it is likely to be an underestimate, because some horses will be missed in the survey. Therefore, the program uses an average sighting probability of approximately 90% (Garrott et al. 1991) to "scale-up" the initial population estimate to a starting population size for use in each trial. This is done by a random process, so the starting population sizes are different for all trials. An option does exist to consider the initial population size to be exact and bypass this scaling-up process.

Population Data: Survival Probabilities

A fundamental requirement for a population model such as this is data on annual survival probabilities of each age class. The program contains files of existing sets of survival, or it is possible to enter a new set of data in the table.

In most cases, Wild Horse and Burro Specialists don't have information on survival probabilities for their populations, so the sample data files provided with WinEquus are used and assume that average survival probabilities in the populations are similar. These data are more difficult to get than is often assumed, because they require keeping track of known individuals over time. A "snapshot" of a population, providing information on the

age distribution at a single gather, can NOT be used to estimate survival probabilities without assuming a particular growth rate for the population (Jenkins1989). More data from long-term studies of marked horses are needed to develop estimates of survival in various habitats.

Population Data: Foaling Rates

Foaling rates are the proportions of females in each age class that produce a foal at that age. Files are available within the program that contain existing sets of foaling rates, or the user may enter a new set of data in the table. The user may also enter the sex ratio at birth, another necessary parameter for population simulation.

Environmental Stochasticity

For any natural population, mortality and reproduction vary from year to year due to unpredictable variation in weather and other environmental factors. This model mimics such environmental stochasticity by using a random process to increase or decrease survival probabilities and foaling rates from average values for each year of a simulation trial. Each trial uses a different sequence of random values, to give different results for population growth. Looking at the range of final population sizes in many such trials will give the user an indication of the range of possible outcomes of population growth in an uncertain environment.

How variable are annual survival probabilities and foaling rates for wild horses? The longest study reporting such data was done at Pryor Mountain, Montana by Garrott and Taylor (1990). Based on 11 years of data at this site, survival probability of foals and adults combined was greater than 98% in 6 years, between 90 and 98% in 3 years, 87% in 1 year, and only 49% in 1 year of severe winter weather. These values clearly aren't normally distributed, but can be approximated by a logistic distribution. This pattern of low mortality in most years but markedly higher mortality in occasional years of bad weather, was also reported by Berger (1986) for a site in northwestern Nevada. Therefore, environmental stochasticity in this model is simulated by drawing random values from logistic distributions. If desired, different values can be entered to change the scaling factors for environmental stochasticity.

Because year-to-year variation in weather is likely to affect foals and adults similarly, this model makes foal and adult survival perfectly correlated. This means that when survival probability of foals is high, so is survival probability of adults, and vice versa. By contrast, the correlation between survival probabilities and foaling rates can be adjusted to any value between -1 and +1. The default correlation is 0 based on the Pryor Mountain data and the assumption that most mortality occurs in winter and winter weather is not highly correlated with foaling-season weather.

The model includes another form of random variation, called demographic stochasticity. This means that mortality and reproduction are random processes even in a constant environment; i.e., a foaling rate of 40% means that each female has a 40% chance of having a foal. Because of demographic stochasticity, even if scaling factors for both survival probabilities and foaling rates were set equal to 0, different runs of the simulation would produce different results. However, variation in population growth due to demographic stochasticity will be small except at low population sizes.

Gathering Schedule

There are three choices for the gather schedule: gather at a regular interval, gather at a minimum interval (the default), or gather in specific years. Gathering at a minimum interval means that gathers will be conducted no more frequently than a prescribed interval (e.g., 3 years), but will not be conducted if the time interval has passed unless the population is above a threshold size that triggers a gather.

Gather interval

This is the number of years between gathers.

Gather for fertility treatment regardless of population size?

If this option is selected (the default), then gathers occur according to the gathering schedule specified regardless of whether or not the population exceeds a threshold population size. One effect of this is that a minimum-interval schedule really functions as a regular interval.

Continue gather after reduction to treat females?

Continuing a gather after a reduction to treat females (with fertility control management options) means that, if a gather for a removal has been triggered because the population has exceeded a threshold population size, then horses will continue to be processed even after enough have been removed to reduce the population to the target population size. As additional horses are processed, females, to be released back, will be treated with an immunocontraceptive according to the information specified in the Contraceptive Parameters form.

Threshold for gather

The threshold population size for triggering a gather is the actual population size in a particular year estimated by the program. This is NOT the same as the number of horses counted in an aerial census, but closer to an estimate of population size taking into account the fact that an aerial census typically underestimates population size.

Target population size

This is the goal for the population size following a gather and removal. Horses will be removed until this target is reached, although it may not be possible to achieve this goal, depending on the removal parameters (percentages of each age-sex class to be removed) and gathering efficiency.

Are foals included in AML?

In most districts, foals are counted as part of the appropriate management level (AML).

Gathering efficiency

Typically, some horses will successfully resist being gathered, either by hiding in habitats where they can't be seen or moved by a helicopter, or following escape routes that make it dangerous or uneconomical for them to be herded from the air. These horses aren't available for removals or fertility treatment. The default gathering efficiency is 80%, meaning that the program assumes that 20% of the population will successfully resist being gathered. This value may be changed.

Note that the program assumes that horses of all age-sex classes are equally likely to be able to be gathered. This is an unrealistic assumption because bachelor males, for example, may be more likely to successfully avoid being gathered than females or foals or band stallions.

Sanctuary-bound horses

Age-selective removals typically target younger age classes such as 0 to 5-year-olds or 0 to 9-year-olds because these horses are more easily adopted. However, it may not be possible to reduce the population to a target size by restricting removals to these younger age classes, especially if age-selective removals have been conducted in the past. In this case, an option is available to remove older animals as well, who may be destined for permanent residence in a long term holding facility rather than for adoption. The minimum age of these long term holding facility horses is specified for this element. When older age classes as well as younger age classes are identified for removal on the Removal Parameters form, horses of these older age classes are selected along with younger age class horses as the population is reduced to the target value. If a minimum age for long term holding facility horses is specified, then older animals are only removed if the population can't be reduced to the target population size by removing the younger ones.

Percent Effectiveness of fertility control

These percentages represent the percentage of treated females that are in fact sterile for one year, two years, etc. (i.e., the efficacy or effectiveness of fertility treatment). The default values are 90% efficacy for one year.

However, the user may specify the effectiveness year by year, for up to five years.

Removal Parameters

This allows the user to determine the percentages of horses in each sex and age class to be removed during a gather. The program uses these percentages to determine the probabilities of removing each horse that is processed during a gather. If the percentage for an age-sex class is 100%, then all horses of that age-sex class that are processed will be removed until the target population size is reached. If the percentage for an age-sex class is 0%, then all horses of that age-sex class will be released. If the percentage for an age-sex class is greater than 0% but less than 100%, then the proportion of horses of that age-sex class removed will be approximately equal to the specified percentage.

Contraception Parameters

This allows the user to specify the percentage of released females of each age class that will be treated with an immunocontraceptive. The default values are 100% of each age class, but any or all of these may be changed.

Most Typical Trial
This is the trial that is most similar to each of the other trials in a simulation

Population Size Table

The default is both sexes and all age classes, but summary results may also be chosen for a subset of the population. The table identifies some key numbers such as the lowest minimum in all trials, the median minimum, and the highest minimum. Thinking about the distribution of minima for example, half of the trials have a minimum less than the median of the minima and half have a minimum greater than the median of the minima. If the user was concerned about applying a management strategy that kept the population above some level, because the population might be at risk of losing genetic diversity if it were below this level, then one might look at the 10th percentile of the minima, and argue that there was only a 10% probability that the population would fall below this size in x years, given the assumptions about population data, environmental stochasticity, and management that were used in the simulation.

Gather Table

The default is both sexes and all age classes, but summary results may be for a subset of the population. The table shows key values from the distribution of the minimum total number of horses gathered, removed, and (if one elected to display data for both sexes or just for females) treated with a contraceptive across all trials. This output is probably the most important representation of the results of the program in terms of assessing the effects of your management strategy because it shows not only expected average results but also extreme results that might be possible. For example, only 10% of the trials would have entailed gathering fewer animals than shown in the row of the table labeled "10th percentile", while 10% of the trials would have entailed gathering more than shown in the row labeled "90th percentile". In other words, 80% of the time one could expect to gather a number of horses between these 2 values, given the assumptions about survival probabilities, foaling rates, initial age-sex distribution, and management options made for a particular simulation

Growth Rate

This table shows the distribution of the average population growth rate. The direct effects of removals are not counted in computing average annual growth rates, although a selective removal may change the average foaling rate or survival rate of individuals in the population (e.g., because the age structure of the population includes a higher percentage of older animals), which may indirectly affect the population growth rate. Fertility control clearly should be reflected in a reduction of population growth rate.

Population Modeling Comparison For the Alternatives

Full Modeling Summaries:

Proposed Action: Removal to AML

The parameters for the population modeling were:

1. gather when population exceeds 29 animals
2. foals are included in AML
3. percent to gather 85
4. four years between gathers
5. number of trials 100
6. number of years 4
7. initial calendar year 2007
8. initial population size 52
9. population size after gather 1 (or with only 85% caught, 16 would remain)
10. remove all wild horses caught
11. no fertility control

Population Size Modeling Table and Graph

	Minimum	Average	Maximum
Lowest Trial	5	12	52
10th Percentile	12	23	52
25th Percentile	15	26	54
Median Trial	17	28	57
75th Percentile	18	29	62
90th Percentile	19	30	67
Highest Trial	21	33	77

* 0 to 20+ year-old horses

Alternative I: No Action

The parameters for the population modeling were:

1. do not gather
2. foals are included in AML
3. percent to gather 0
4. four years between gathers
5. number of trials 100
6. number of years 4
7. initial calendar year 2004
8. initial population size 301
9. population size after gather 301 (no gather)
10. no removals
11. no fertility control

Population Sizes in 11 Years*			
	Minimum	Average	Maximum
Lowest Trial	109	179	271
10th Percentile	111	234	420
25th Percentile	114	271	543
Median Trial	117	295	596
75th Percentile	125	316	647
90th Percentile	134	362	780
Highest Trial	158	431	942

*** 0 to 20+ year-old horses**

Appendix V
Public Comment