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-042)

Dear Interested Party:

The Bureau of Land Management (BLM) Ely Field Office is proposing integrated management of the wild horse population within the Wilson Creek Herd Management Areas Complex. The Wilson Creek Complex consists of the Wilson Creek and Deer Lodge Canyon Herd Management Areas (HMA). This wild horse herd is being managed as a single population due to the HMAs proximity to one another and past capture, census, field observations and distribution data collected indicate movement among wild horses between these HMAs. For this action, HMAs will be referred to as the Wilson Creek Complex. The gather would occur in February 2007, and last approximately three weeks. The action should prevent deterioration of the range, as well as maintain a thriving natural ecological balance and multiple use relationships with other users.

Enclosed is the Wilson Creek Complex Wild Horse Gather Plan and Preliminary Environmental Assessment (E.A.) NV-040-06-047. A copy of the gather plan and preliminary environmental assessment is available for a 30 calendar day public scoping/notification period. **If any member of the interested public would like to provide any information, data, or analysis** please send written comments to William E. Dunn, Assistant Field Manager, Renewable Resources, at Ely Field Office, Bureau of Land Management, HC 33 BOX 33500, Ely, Nevada 89301.

If you have any questions, please contact Jared Bybee, Lead Wild Horse and Burro Specialist, Ely Field Office at (775) 289-1843 or Ben Noyes, Wild Horse and Burro Specialist, at (775) 289-1836.

Sincerely,

William E. Dunn
Assistant Field Manager
Renewable Resources

1 Enclosure:
1. Wilson Creek Complex Wild Horse Gather Plan and Preliminary Environmental Assessment (E.A.) NV-040-06-047

CC:	RETURN RECEIPT
Wild Horses Forever	70060810000571442508
George Andrus	70060810000571444021
Betty Baker	70060810000571444038
Nevada Division of Wildlife	70060810000571444045
Dept of Natural Resources Eureka County	70060810000571442539
Nevada Division of Wildlife	70060810000571442553
NDOW-Southern Region	70060810000571442577
Lincoln County Commissioners	70060810000571442607
Ken Lytle	70060810000571442614
ENLC	70060810000571442621
Eureka Producers Cooperative	70060810000571442638
Resource Concepts, Inc	70060810000571442645
Nevada State Clearinghouse Dept of Administration Budget & Planning Div., Grants	70060810000571442669
NDOW	70060810000571442713
U.S. Fish & Wildlife Ruby Lake National Wildlife Refuge	70060810000571442737
U.S. Fish and Wildlife Service Southern Nevada Field Office	70060810000571442744
Jule Wadsworth	70060810000571442751
Western Watersheds Project	70060810000571442768
Jay and Marjorie Wright	70060810000571442775
Cindy MacDonald	70060810000571442782
Animal Welfare Institute	70060810000571442799
Nevada Farm Bureau Federation	70060810000571442805
Nevada Cattle Association	70060810000571442815
Nevada Dept. Of Agriculture	70060810000571442829
Animal Protection Institute of America	70060810000571442836
Nevada Woolgrowers Assoc	70060810000571442843
U.S. Fish & Wildlife Service Reno	70060810000571442850
U.S. Forest Service Humboldt Toiyabe NATL Forest	70060810000571442867
Nevada Humane Society	70060810000571442874
Comm for Preservation of Wild Horses	70060810000571442898
John Blethen	70060810000571442904
Hal & Chris Ann Bybee	70060810000571442911
Animal Rights Law Center	70060810000571442935
Ms. Sharon Crook	70060810000571442928
Wild Horse Wildness & Wildlife	70060810000571442942
Dave Free	70060810000571442959
Dave & Jennifer Free	70060810000571442966
Steven Fulstone	70060810000571442973
U.S. Forest Service Humboldt National Forest	70060810000571442980
Wild Horse Spirit	70060810000571442997
Wild Horse Organized Assistance	70060810000571443000
Public Lands Foundation	70060810000571443017

Wildlife Consultant Animal Welfare Institute	70060810000571443024
Andy Mangum	70060810000571443031
Wild Horse Preservation League	70060810000571443048
Dr. Donald A. Molde	70060810000571443055
Great Basin National Park	70060810000571443062
Wild Horse Sanctuary	70060810000571443079
Nevada Division of Wildlife	70060810000571443086
Public Land Solutions	70060810000571443109
National Mustang Association INC	70060810000571443093
Ely Shoshone Tribe	70060810000571443116
INTL Soc. Protection of Mustang Burros	70060810000571443123
Barbara Warner	70060810000571443130
Nevada Outdoor Recreation	70060810000571443147
Eureka County Natural Resources Dept	70060810000571443154
Colorado Wild Horse and Burro Coalition	70060810000571443161
Friends of Nevada Wilderness	700608/10000571443178
Laurel Marshall	70060810000571443185
American Mustang & Burro Assoc.	70060810000571443215
Western Watersheds Project	70060810000571443208
Public Lands Comm., Toiyabe Chapter – Sierra Club	70060810000571443192
US Humane Society	70060810000571443222
USFWS, Nevada Fish and Wildlife Office	70060810000571443239
Department of Agriculture	70060810000571443246
Chairman James Birchum	70060810000571443253
Great Basin National Park	70060810000571442683
Timbisha Shoshone Tribe	70060810000571442881
NV Legis. Comm on Public Lands	70030810000571442706
Nevada Farm Bureau Federation	70030810000571442690
Mr. Bill Davison	70030810000571442676
Western Shoshone Histric Pres.	70060810000571442652
Nevada Dept of Agriculture	70060810000571442614
Nevada Division of Wildlife	70060810000571442591
USFWS, Southern Nevada Field Office	70060810000571442584
Janica D. Nowak	70060810000571442560
Ms. Joneille Anderson	70060810000571442546
American Horse Protection Association	70060810000571442515
Lincoln County Public Lands Comm	70060810000571442522
Jim Baumann	70060810000571443277
Nevada High Country Sales Service	70060810000571443260
Kathleen Bertrand	70060810000571443284
Bald Mountain Mine	70060810000571443291
Ranges West Consulting	70060810000571443307
NRCS	70060810000571443314
Mr. Paul Clifford	70060810000571443321
Yomba Shoshone Tribe	70060810000571443338
Great Basin National Park	70060810000571443345
Nevada Land & Resource Co	70060810000571443352
Washoe County Library	70060810000571443369
NV Legis. Comm on Public Lands	70060810000571443383

Randy Buffington	70060810000571443376
Nevada Farm Bureau Federation	70060810000571443390
Lake Valley Cattle LLC	70060810000571443406
Paul Lewis	70060810000571443420
Orren J. Nash	70060810000571443413
Frank & Rose Delmue	70060810000571443444
William & Geniel Connor	70060810000571443437
John & Lee Mathews	70060810000571443451
L & B Farm and Cattle	70060810000571443468
Huntsman Ranch LLC	70060810000571443482
Ken & Donna Lytle	70060810000571443475
Pearson Brothers	70060810000571443499
Ray Okelberry	70060810000571443503
El Tejon Cattle Co	70060810000571443512
Blue Diamond Oil Corp.	70060810000571443529

U.S. Department of the Interior
Bureau of Land Management
Ely Field Office

Wilson Creek Complex
Wild Horse Gather Plan
and Preliminary Environmental Assessment

Ely No. NV-040-06-047

Authors

Jared Bybee, Lead Wild Horse & Burro Specialist
Ben Noyes, Wild Horse & Burro Specialist

2006

I. Background Information

The Bureau of Land Management (BLM) Ely Field Office is proposing integrated management of the wild horse population within the Wilson Creek Wild Horse Herd Management Areas Complex. A wild horse gather would be conducted in coordination but not necessarily in conjunction with the Cedar City Utah Field Office. The Wilson Creek Complex consists of the Wilson Creek and Deer Lodge Canyon Herd Management Areas (HMA). This wild horse herd area is being managed as a single population due to the HMAs proximity to one another and past capture, census, field observations and distribution data collected indicate movement among wild horses between these HMAs. For this action, HMAs will be referred to as the Wilson Creek Complex. The gather would occur in February 2007, and last approximately three weeks. The action should prevent deterioration of the range, as well as maintain a thriving natural ecological balance and multiple use relationships with other users.

This environmental assessment (EA) has been prepared to analyze the impacts associated with the BLM's proposal to remove excess wild horses, as well as fertility control treatment that could be applied to mares returned to the complex post removal operations.

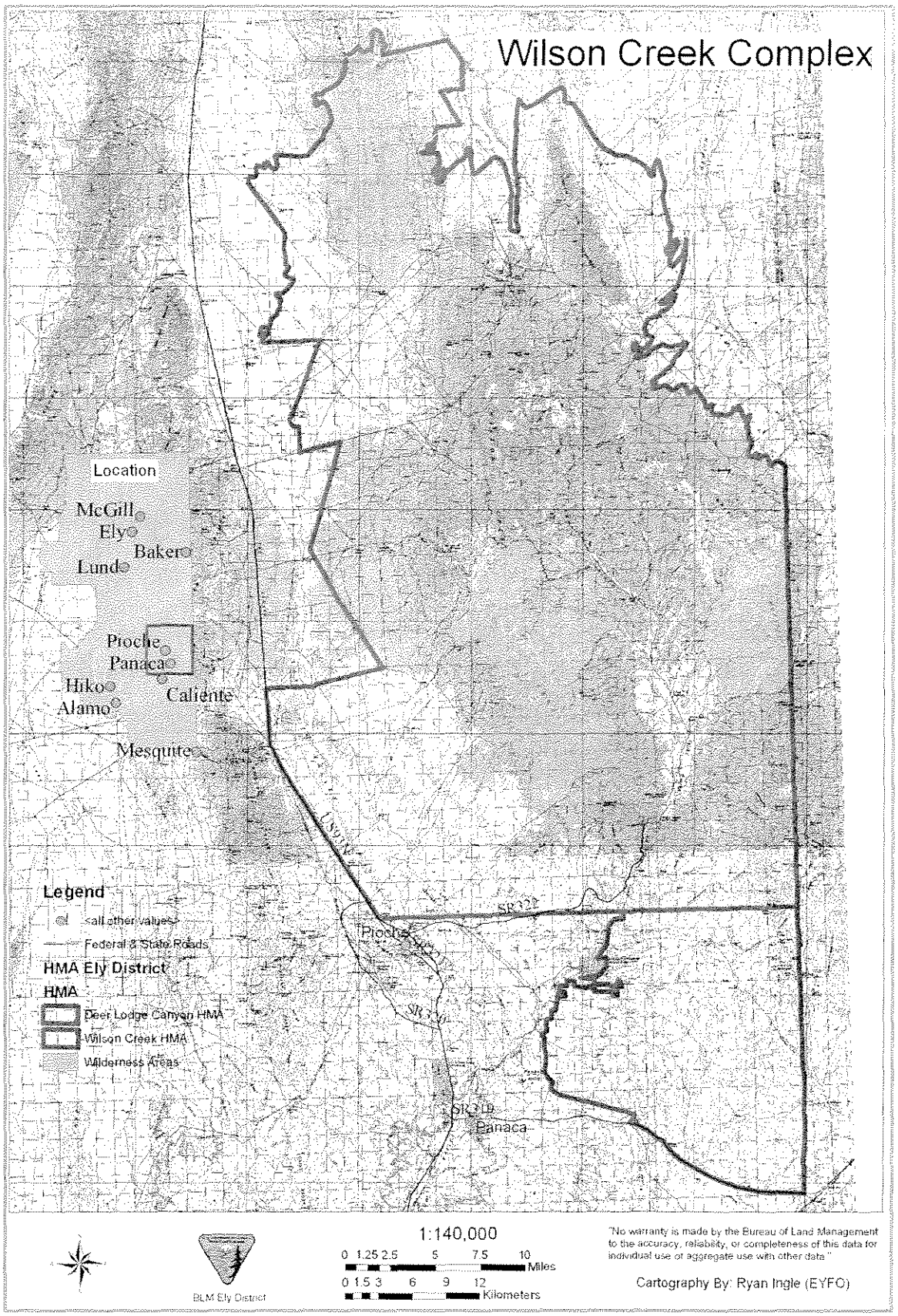
The Wilson Creek Complex is located approximately 50 miles south east of Ely, Nevada, and 20 miles northeast of Caliente, Nevada (Figure 1). The Wilson Creek Complex is located within Lincoln County, Nevada. Table 1 shows the acres and Appropriate Management Level (AML) within each HMA/Territory.

Table 1 Acres

Herd	Total Acres	Appropriate Management Level
Wilson Creek HMA	687,215	Not to exceed 160
Deer Lodge Canyon HMA	109,717	30-50
Total	**796,932**	**210**

Appropriate Management Level (AML) is defined as the number of wild horses that can be sustained within a designated HMA which achieves and maintains a thriving natural ecological balance keeping with the multiple-use management concept for the area. The AML for each HMA is based on in-depth analysis and monitoring data and established through the issuance of BLM Multiple Use Decisions (MUDs) or Wild Horse Decisions between 1990 and 2003. The BLM allotment, AML, MUD or Management Plan, and date of decision are identified in Appendix I.

Wilson Creek was last gathered in the winter of 2002 to remove excess wild horses. At the time achievement of AML did not occur. Deer Lodge Canyon was partially gathered in August of 2002 due to a drought emergency. Aerial census of the Wilson Creek Complex in March of 2005 observed 650 adult wild horses. Based on past capture and census data, the average annual population increase is approximately 20% for the Wilson Creek Complex. The current estimated population within the complex is 900 wild horses based upon two additional foal crops. The current estimated wild horse population of 900 wild horses is approximately 430% over the capacity of the complex.


Wilson Creek Complex
Location
McGill
Ely
Baker
Lund
Pioche
Panaca
Hiko
Alamo
Caliente
Mesquite
Legend
all other values
Federal & State Roads
HMA Ely District
HMA
Deer Lodge Canyon HMA
Wilson Creek HMA
Wilderness Areas
SR 322
SR 319
SR 319
Pioche
Panaca
1:140,000
0 1.25 2.5 5 7.5 10
Miles
0 1.5 3 6 9 12
Kilometers
BLM Ely District
"No warranty is made by the Bureau of Land Management to the accuracy, reliability, or completeness of this data for individual use or aggregate use with other data."
Cartography By: Ryan Ingle (EYFO)

While wild horse numbers have increased an average of 20% annually since the HMAs were last gathered, livestock use has remained within or below permitted use levels. Livestock use has also been in compliance with the grazing systems outlined in Final Multiple Use Decisions, Agreements, and Term Permits which provide periodic rest and deferment of key range sites.

Monitoring data collected over the last four years has indicated moderate and heavy utilization by wild horses. Most recently heavy wild horse use has been documented in September of 2006 along the Fortification Range, South Spring Valley, Lake Valley, White Rock Mountains, Eagle Fire, Reed Cabin, Chokecherry and Deer Lodge. Moderate use by wild horses has been documented throughout the Complex.

A. Need for the Proposed Action

BLM has determined there are excess wild horses present and the Proposed Action is needed in the winter of 2007 to restore wild horse herd numbers to levels consistent with the Appropriate Management Level (AML) for the Complex, which would achieve a thriving natural ecological balance while maintaining multiple use relationships.

This determination was made by comparison of a census data with vegetation monitoring to determine the level of wild horse use. It has been determined that current wild horse population is exceeding the ranges' capacity to sustain wild horse use over the long term. Further this information affirms the existing AML is appropriate and should not be exceeded. Resource damage is occurring in some areas of the Complex and is likely to continue to occur as well as increase without immediate action. The area has experienced five years of drought with one above normal precipitation year in winter and spring of 2004/2005. Removing excess wild horses is needed to restore and maintain a thriving and natural ecological balance, prevent the range from deterioration as well as maintain multiple use relationships. Removing excess wild horses to a level below the maximum AML is needed to allow the population to gradually increase without exceeding the capacity of the Complex over the next several years. The proposed capture and removal is needed at this time in order to achieve a thriving natural ecological balance between wild horse populations, wildlife, livestock, and vegetation, to improve watershed health, make "significant progress towards achievement" of Mojave-Southern Great Basin Resource Advisory Council (RAC) Standards for rangeland health, and to protect the range from the deterioration associated with overpopulation of wild horses as authorized under Section 3(b) (2) of the 1971 Free-Roaming Wild Horses and Burros Act and Section 302(b) of the Federal Land Policy and Management Act of 1976.

B. Relationship to Planning

The Proposed Action for the portion of the complex within the Wilson Creek HMA 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 proposed action is in conformance because it is clearly consistent with the goals and objectives of the approved land use plan. The Proposed Action for the portion of the complex within the Deer Lodge Canyon HMA is in conformance with the Caliente Management

Framework Plan (MFP), Caliente Grazing Environmental Statement (ES), and subsequent Record of Decision (ROD) dated 1982. Additionally, the proposed action is consistent with the Lincoln County Public Land and Natural Resource Management Plan as adopted by the Board of County Commissioners of Lincoln County, December 5, 1997 and the "Lincoln County Elk Management Plan" dated July 1999. The proposed action is also in conformance with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700 and policies and with the Wild Free Roaming Horses and Burros Act of 1971. It is consistent with federal, state, and local laws, regulations, and plans.

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

In addition, it is consistent with the Mojave Southern Great Basin RAC Standards for Rangeland Health. The proposed action is consistent with federal, state, and local laws; federal regulations, and Bureau policy.

C. Issues

The two issues identified are the proper management of wild horses and making significant progress towards rangeland health standards.

II. Description of the Proposed Action and Alternatives

A. Proposed Action

The BLM Ely Field Office proposes a maintenance gather of the Wilson Creek Complex. The management of the wild horse herd within the Wilson Creek Complex would be managed at a level of 125 to 190 wild horses following the gather and not to exceed 210 wild horses prior to the next scheduled maintenance gather. The proposed action would consist of capturing approximately 85% of the population or approximately 775 wild horses not capturing 125 wild horses, selectively removing 710 to 775 wild horses. The selective removal would consist of removing wild horses in the following priority; age class 5 and younger would be removed first, animals age 6-15 would only be removed if needed and held for release, and animals 16 and older would not be removed unless needed to achieve AML and would be released. Of the release wild horses approximately one half are anticipated to be mares. These release mares would be subject to fertility control experimentation research or Porca Zona Pellucide (PZP) treatment. If at least 38 mares are captured above the removal numbers that are healthy PZP would be administered. Additional selective removal could occur with animals displaying characteristics of the Spanish Bard descent. These animals regardless of age would be selected for release unless needed for achievement of gather removal objectives. Herd health, and characteristics data would be collected as part of continued monitoring of the wild horse herd.

Blood samples for establishment of genetic marker or allele phenotyping were previously collected in 2002. The gather would be conducted in February 2007.

The post gather population of approximately 125 to 190 wild horses would represent the level of wild horses after the proposed gather. The populations would be reduced to the number shown through population modeling that would allow for a population increase without exceeding a *"thriving natural ecological balance"* over the one to four years.

During gather activities, BLM personnel would record data for the captured horses including sex, age and color; and assess herd health (pregnancy/parasite loading/physical condition/etc), and sort horses by age and sex. Selected animals would be returned to the HMAs based on desired characteristics for each herd, and consistent with the following selection criteria of the BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2005-206):

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 Years to Fifteen Years: Wild horses six to fifteen years of age should be removed last and only if management goals and objectives for the herd cannot be achieved through the removal of younger animals.

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.

Multiple capture sites (traps) would be used to capture wild horses from the HMAs or outside HMA. No trap sites would be set up in sage grouse leks, riparian areas, cultural resource sites, or Congressionally Designated Wilderness Areas. Capture sites would be located in previously disturbed areas. All trap sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System equipment, given to the weed coordinator, and then assigned for monitoring during the next several years for noxious weeds. All capture and handling activities (including capture site selections) will be conducted in accordance with Standard Operating Procedures (SOPs) Appendix III. Capture techniques would consist of the helicopter-drive trapping method and/or roping from horseback.

B. Gather Without Fertility Treatment

This alternative is the same as the Proposed Action, except that the BLM would not conduct immunocontraception research with the drug, PZP. No fertility control would be applied to mares, no matter what the capture rate is.

C. No Action Alternative – Continuation of Existing Management

The No Action Alternative is required by National Environmental Policy Act (NEPA) analysis to provide a baseline for impact analysis.

Under this alternative gathering and removing animals would be deferred. This alternative postpones direct management of the wild horse populations in the Wilson Creek Complex. No significant progress toward meeting rangeland health standards would be made at this time. Wild horse populations would continue to increase at rates of 20% per year. A management action to reduce herd numbers may be evaluated and implemented at later time. The BLM would continue vegetation and population monitoring.

E. Alternatives Considered But Eliminated From Detailed Analysis

A straight gate cut gather was considered but eliminated from detailed analysis due to not meeting the purpose and need. A gate cut gather would consist of removing the first 710 to 775 wild horses captured regardless of age, sex, or exhibiting Spanish Barb characteristics. A gate cut is a sound tool for gathers that are grossly above the AML.

III. Affected Environment

General Setting

The Wilson Creek Complex is located in northeastern Lincoln County approximately 30 air miles south east Ely, Nevada, and 20 miles northeast of Caliente Nevada. The area is within the Great Basin physiographic regions, characterized by a high, rolling plateau underlain by basalt flows covered with a thin loess and alluvial mantle. On many of the low hills and ridges that are scattered throughout the area, the soils are underlain by bedrock. Elevations within the Complex range from approximately 5,000 feet to 9,500 feet. Annual precipitation ranges from approximately 7 inches on some of the valley bottoms to 20 inches on the mountain peaks. Most of this precipitation comes during the winter and spring months in the form of snow, supplemented by localized thunderstorms during the summer months. Temperatures range from greater than 90 degrees Fahrenheit in the summer months to minus 20 degrees in the winter. The area is also utilized by domestic livestock and numerous wildlife species.

Table 3 summarizes which of the critical elements of the human environment and other resources of concern within the project area are present, not present or not affected by the proposed action.

Table 3. Summary of Critical and Other Elements of the Human Environment

Critical Element	No Effect	May Affect	Not Present	Rationale
Air Quality	X			Vehicle and helicopter emissions and project related surface disturbance would be inconsequential.
Areas of Critical Environmental Concern			X	Resource is not present
Cultural Resources		X		Cultural sites would be avoided. Cultural resources around springs would be better protected with wild horse removal
Environmental Justice			X	No minority or low-income groups would be disproportionately affected.
Floodplains			X	Resource is not present.
Hazardous Wastes			X	Hazardous wastes would not be generated.

Invasive, Non-native Species		X		Surface disturbance may spread invasives.
Migratory Birds		X		Gathers would not be conducted during the migratory bird nesting period. Removal of wild horses would improve sagebrush nesting habitat.
Native American Religious Concerns			X	No conflicts were identified during coordination.
Prime or Unique Farmlands			X	Resource is not present.
Riparian Areas		X		Gathering horses would improve riparian areas.
Soils		X		Localized trampling would occur during the gather. Removing wild horses reduces hoof action on soil.
Solid Wastes	X			Solid wastes are not present and would be disposed of properly.
Special Status Species		X		Gathering horses would improve habitat.
Vegetation		X		Localized trampling of vegetation would occur due to trap sites. Removing wild horses would improve vegetation conditions.
Visual Resource Management	X			Gather operations are temporary and would meet the Class III VRM Objective of retaining the existing character of the landscape.
Water Quality (drinking or ground)	X			No affects to water quality are expected.
Wetlands			X	Resource is not present.
Wild and Scenic Rivers			X	Resource is not present.
Wild Horses		X		Individual wild horses would be impacted by the gather, but reducing populations would lead to increased herd health.
Wildlife		X		Wildlife may be temporarily displaced, but habitat would improve.
Wilderness		X		Wilderness values of naturalness may improve after the gather.

IV. Environmental Consequences

The following critical or other elements of the human environment are present and may be affected by the proposed action or the alternatives. The affected environment is described for the reader to be able to understand the impact analysis.

A. Wild Horses

Affected Environment

Wild horses are introduced species within North America and have few natural predators. Few natural controls act upon wild horse herds making them very competitive with native wildlife and other living resources managed by the BLM. Census flights have been conducted in the Wilson Creek Complex every three to four years. These census flights have provided information pertaining to population numbers, foaling rates, distribution, and herd health. Wild

horse population growth rates average approximately 20% in the Wilson Creek Complex. The estimated herd population for the Wilson Creek Complex was determined from March 2005 census data with the addition of two foal crops. Wild horses within the Complex generally move between HMA's.

Blood samples were collected from 25 wild horses during the 2002 Wilson Creek gather to develop genetic baseline data (e.g. genetic diversity, historical origins of the herd, unique markers). The samples were analyzed by a geneticist to determine the degree of heterozygosity for the herd. This genetic data would be incorporated into future population planning and monitoring for wild horses within the complex.

Environmental Impacts

Assumptions for analysis: Impact analysis assumes that an 85% capture rate would be attained. An 85% capture rate with fertility control would slow reproduction rates. Previous research on winter application of the two-year drug has shown that mares already pregnant will foal normally, but the fertility control treatment can be 94% effective the first year, 82% the second year, and 68% the third year. The population model (Appendix IV) is for illustration and alternative comparison purposes only and may not necessarily reflect actual growth rates or outcomes of management actions.

Proposed Action – The Proposed Action would remove excess wild horses within the Complex and adjacent to the complex outside an HMA. This would improve herd health. Less competition for forage and water resources would reduce stress and promote healthier animals. The proposed action would also allow for the continued collection of information on herd characteristics, determination of herd health, establish genetic baseline data for Wilson Creek, and Deer Lodge HMA's. Further, the proposed action would allow for the implementation of a fertility control research project. Applying fertility control measures as part of the proposed action could slow reproduction rates of mares returned to the HMA following the gather if enough mares are treated. This could allow vegetation resources time to recover. It would also decrease gather frequency and disturbance to individual animals and the herd, and provide for a more stable wild horse social structure. At least 38 mares from the complex would need to be treated in order to be effective for population control measures.

Population modeling illustrates that the average wild horse population growth rate of the median of 100 trials could be 4.1% over ten years. The average population size of the median of 100 trials would be 158 wild horses at the end of four years. Modeling also indicates that the population after the gather would not put the population at risk of catastrophic loss or "crash". (Appendix IV).

Population-wide impacts can occur during or immediately following implementation of the Proposed Action. These include the displacement of bands during capture and the associated re-dispersal, modification of herd demographics (age and sex ratios), temporary separation of members of individual bands of horses, reestablishment of bands following release, and the removal of animals from the population. With the exception of changes to herd demographics, direct population wide impacts over the last 20 years have proven to be temporary in nature with

most if not all impacts disappearing within hours to several days of release.

The Proposed Action includes using established procedures for determining what selective removal criteria is warranted for the herd. This flexible procedure allows for correction of any discrepancies in herd demographics observed during the gather that may predispose a population to increased chances for catastrophic impacts. The standard for selection also minimizes the possibility for development of future negative age or sex based effects to the population. The effect of removing wild horses from the population is not expected to have a negative impact on herd dynamics or population variables, as long as the selection criteria for removal ensures a healthy population structure is maintained.

Population-wide indirect impacts that would not appear immediately are difficult to quantify. Concerns related to the proposed participation in research for PZP are associated primarily with the use of fertility control drugs, and involve reductions in short term fecundity of initially a large percentage of mares in a population and potential genetic issues regarding the control of contributions of mares to the gene pool. All mares would have a chance to cycle at least once before the Complex is gathered again because fertility control is only effective for 2-3 years. As AML's are achieved with increasing herd health, the potential for these impacts would be expected to lessen as the need to gather excess horses and impose fertility control treatments on a high proportion of the mare population would be less frequent and all mares would be expected to successfully recruit some percentage of their offspring into the population. Decreased competition coupled with reduced reproduction as a result of fertility control should result in improved health and condition of mares and foals and in maintaining healthy range conditions over the longer-term. Additionally, reduced reproduction rates would be expected to extend the time interval between gathers and reduce disturbance to individual animals as well as herd social structure over the foreseeable future.

Impacts to individual animals may occur as a result of handling stress 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 of 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 do not break the skin.

Implementation of this action would reduce the wild horse population to within AML. This would ensure that the remaining wild horses are healthy and vigorous, and not at risk of death due to insufficient habitat. This would also be in compliance with the Wild Free Roaming Horse and Burro Act, Mojave- Southern Great Basin RAC Standards for Rangeland Health, and land use plan management objectives. Risks to the health of the rangelands by exceeding the carrying capacity of the range, and risks to the health of the horse herds would be minimized. Wild

horses would not be at risk of death by starvation and lack of water due to unpredictable weather patterns. Stud horses would fight less frequently as they protect their position at scarce water sources. In addition to less stud fights, injuries and death to all age classes of animals would decrease. 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

Alternative I– Impacts from this alternative would be the same as in the Proposed Action, except that fertility control would not be applied. Individual mares would not receive the fertility control shot, and would undergo less stress due to decreased handling. Mares would continue to foal normally. Past gather experience has shown that the wild horse population will be at the high end of AML four years after the gather. Without slowing reproduction, a gather to maintain AML may be needed sooner than stated in the Proposed Action.

Population modeling illustrates that the average wild horse population growth rate of the median of 100 trials could be 14.3% over ten years. The average population size of the median of 100 trials could be 190 wild horses at the end of four years. Modeling also indicates that the population after the gather would not put the population at risk of catastrophic loss or "crash". (Appendix IV).

No Action Alternative – If No Action is taken, excess wild horses would not be removed from the Wilson Creek Complex at this time. The animals would not be subject to the individual direct or indirect impacts as a result of a gather operation this summer. However, individuals in the herd would be subject to more stress and possible death as a result of increased competition for water and forage as the herd population grows.

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. This would lead to a steady increase in wild horse numbers, which would continue to exceed the carrying capacity of the range. Consequences of exceeding the established AML and the carrying capacity of the range would be increased risk to the health of the rangelands, and risk to horse herd health. Individual horses would be at risk of death by starvation and lack of water. The population of wild horses would compete for the available water and forage resources, affecting mares and foals most severely. Social stress would increase. Fighting among stud horses would increase as they protect their position at scarce water sources, as well as injuries and death to all age classes of animals. The areas closest to the water would experience severe utilization and degradation. Over time, the animals would deteriorate in condition as a result of declining forage availability and the increasing distance traveled to forage. Many horses, especially foals and mares, would likely die through the winter if average snowfall levels are received.

As populations increase beyond the capacity of the habitat, more bands of horses would leave the boundaries of the HMA seeking forage and water, which in turn may put them at risk in new and unfamiliar country. The health of the wild horse herd population would be reduced, the condition of the range would deteriorate, and other range users would be impacted. This alternative would not achieve the stated objectives for wild horse herd management areas, to "prevent the range from deterioration associated with overpopulation", and "preserve and maintain a thriving natural ecological balance and multiple use relationship in that area".

To facilitate comparison of alternatives, the no action alternative was also modeled for ten years. The average of 100 population modeling trials indicates that if the current wild horse population continues to grow without a removal at this time the median population size would be 258 wild horses. Modeling indicates the average growth rate is expected to be an annual increase of 14.3% (Appendix IV).

B. Vegetation, and Soils

Affected Environment

The Wilson Creek Complex occurs within Major Land Resource Area (MLRA) 028B, the Central Nevada Basin and Range Area, MLRA 029, Southern Nevada Basin and Range, and a small portion of MLRA 28A Great Salt Lake Area, first described by the U. S. Department of Agriculture in the early 1960's. The Natural Resource Conservation Service (NRCS) has extensively described the topography, geology, soils, climate, and range sites of each MLRA. The NRCS periodically updates information concerning each MLRA as new data becomes available. NRCS data summarized below will be used in this analysis.

The vegetative plant communities within the Complex have developed on many different soil types with several kinds of parent materials. The vegetation is diverse with desert shrub/sagebrush/grass plant communities dominating the lower elevations while sagebrush/mountain shrub/grass/pinyon-juniper/mountain mahogany plant communities dominate the benches and higher elevation sites.

The plant species dominating the lower elevations include Wyoming big sagebrush, black sagebrush, winterfat, shadscale, budsage, sickle saltbush, black greasewood, rabbitbrush, Indian ricegrass, Sandburg bluegrass, bottlebrush squirreltail, needlegrass, and assorted forb species.

The plant species dominating the higher elevations include Wyoming big sagebrush, mountain sagebrush, black sagebrush, low sagebrush, antelope bitterbrush, Utah serviceberry, snowberry, golden and squaw currant, pinyon pine, Utah juniper, curlleaf mountain mahogany, limber pine, white fir, bluebunch wheatgrass, needlegrass, and assorted forb species.

Soils within the HMA are typical of the Great Basin and vary with elevation. Soils range in depth from very shallow (below 20 inches to bedrock) to deep (greater than 60 inches to bedrock) and are typically gravelly, sandy and/or silty loams. Soils located on low hill slopes, upland terraces, and fan piedmont remnants are typically shallow to deep over bedrock or indurated lime hardpan. They are highly calcareous and medium textured with gravel. Soils on mountain slopes are also calcareous and range from shallow to deep over limestone. Some of the mountain soils have high rock fragment content, and support pinyon and juniper trees. Mountain soils typically have gravelly to very gravelly silt loam textures. Soils on floodplains and fan skirts are deep, have silty textures, and are highly calcareous.

Rangeland or wild horse monitoring data collected for the HMA Complex shows that utilization by wild horses has increased from 2002 through 2006 in portions of the Complex. During this time, wild horse numbers have increased while livestock and wildlife numbers have remained

fairly constant or decreased. Forage utilization is exceeding allowable use levels and is reaching moderate to heavy use in established key grazing areas in portions of the Complex. Excess utilization in key grazing areas and trampling in riparian areas is currently impacting rangeland health and inhibiting recovery of both uplands and riparian areas.

Environmental Impacts

Proposed Action – Removing excess wild horses would make progress towards achieving a "thriving natural ecological balance." Implementation of the proposed action would reduce the wild horse population within the Wilson Creek Complex within AML. It would reduce stress on vegetative communities, and be in compliance with the Wild Free Roaming Horse and Burro Act, Mojave-Southern Great basin RAC Standards, and land use plan management objectives. Rangeland health and vegetative resources 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 and plant communities. This would result in an increase in forage availability, vegetation density, vigor, productivity, cover, and plant reproduction. Plant communities would become more resilient to disturbances such as wildfire, drought, and grazing.

Overall, soil conditions would improve after wild horse numbers are reduced. Less soil compaction would occur in riparian areas where the soils are most susceptible. Compress ional impacts to biological soil crusts from horses would be lessened over the area with horse removal, and crust cover on the highly calcareous soils would increase. Following wild horse removal, increased vegetative and biological soil crust cover would reduce wind and water erosion.

Impacts to vegetation and soils with implementation of the Proposed Action would include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts would be by vehicle traffic and the hoof action of penned horses, and would 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. Soil compaction, localized wind erosion, and destruction of biological soil crusts where present, would occur at the trap sites. 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. Vehicles used in the horse gather would also cause soil compaction and increased erosion in a small area. By adhering to the SOPs, adverse impacts to soils would be minimized.

Alternative I – Impacts would be the same as in the proposed action at the time of the gather and one year post gather. However, without slowing reproduction, a steady increase in the number of wild horses through natural foaling rates would have a more steady impact on vegetation and soils. Vegetative resources may not get as much recovery as in the proposed action, but a thriving natural ecological balance would still be achieved.

No Action Alternative – With the no action alternative, wild horse populations continue to grow. Increased horse use throughout the HMA would adversely impact soils and vegetation health,

especially around riparian resources. As native plant health deteriorates and plants are lost, soil erosion would increase. Continued heavy wild horse use, especially around water sources, would cause further compaction, reduced infiltration, increased runoff and erosion, and loss of biological soil crusts. Compaction caused impacts would be greatest on moist soils and soils with few surface coarse fragments. The greatest disturbance impacts to crusts would occur when the soils are dry and on highly calcareous sites. The shallow soils typical of this region cannot tolerate much loss without losing productivity and thus the ability to be re-vegetated with native plants. Invasive, non-native plant species would increase and invade new areas following increased soil disturbance and reduced native plant vigor and abundance. Wild horses likely transport weed propagules, and this transport would increase as horse numbers increase. This would lead to both a shift in plant composition towards weedy species and an irreplaceable loss of topsoil and productivity due to erosion. With the no action alternative, the severe localized trampling associated with trap sites would not occur, but this alternative would not make progress towards achieving and maintaining a thriving natural ecological balance.

C. Riparian/Wetland Areas and Surface Water Quality

Affected Environment

Riparian areas at high elevations support cottonwood and aspen woodlands. Small riparian areas and their associated plant species occur throughout the Complex near seeps, springs, and along sections of perennial drainages. Hoof action impacts have lead to a loss of riparian habitat surrounding spring sources. This type of disturbance combined with reduced vegetative cover is frequently associated with increased flood stage and sediment loading, which can degrade water quality.

Environmental Impacts

Proposed Action – Temporary trap sites and holding/processing facilities would not be located within riparian areas. Riparian areas would improve with the reduced population, which would lead to healthier, more vigorous vegetative communities. Hoof action on the soil around unimproved springs and stream banks would be lessened which should lead to increased stream bank stability. Improved vegetation around riparian areas would dissipate stream energy associated with high flows, and filter sediment that would result in some associated improvements in water quality. The proposed action would make progress towards achieving and maintaining proper functioning condition at riparian areas. There would also be reduced competition for available water sources.

Alternative I – Impacts would be the same as in the proposed action. However, normal reproduction rates could have increase impacts on riparian areas over the next several years. Riparian resources may not get as much recovery as in the proposed action.

No Action Alternative – Wild horse populations would continue to grow. Increased wild horse use throughout the complex would adversely impact riparian resources and their associated surface waters. As native plant health deteriorates and plants are lost, soil erosion would

increase. With the no action alternative, the severe localized trampling associated with trap sites would not occur, but this alternative would not make progress towards achieving and maintaining a thriving natural ecological balance and proper functioning condition at riparian areas.

D. Wildlife, including Migratory Birds

Affected Environment

The Wilson Creek Complex provides habitat for many species of wildlife, including large mammals like mule deer, pronghorn antelope, and Rocky Mountain elk. Yearlong habitat for mule deer occurs throughout the complex. A large area of crucial summer range occurs in the upper elevations of the Wilson Creek HMA, and small areas of crucial winter range occur in the Deer Lodge Canyon HMAs. The majority of the complex outside of the Wilson Creek Range, Fortification Range, and White Rock range is yearlong pronghorn antelope habitat. The White Rock Range and Wilson Creek Range is Rocky Mountain elk yearlong habitat.

Sage grouse use the majority of the Wilson Creek Complex throughout the year for all of their seasonal habitat needs. These habitat needs include breeding (i.e., strutting grounds or leks), nesting and early brood-rearing, late brood-rearing or summer, and winter. The Wilson Creek Complex is located within the Lincoln population management unit (PMU) identified in the local sage grouse conservation plan. There are about 16 known sage grouse leks within the Wilson Creek Complex. At least 6 of the leks have been active within the past 5 years.

The Wilson Creek Complex provides habitat for small mammals, birds (including migratory birds), reptiles, amphibians, and insects common to the Great Basin.

Environmental Impacts

Proposed Action – Individual animals of all species may be disturbed or displaced during gather operations. Large mammals and some birds may run or fly when the helicopter flies over looking for horses, but once the helicopter is gone the animals should return to normal activities. Small mammals, birds, and reptiles would be displaced at trap sites, but this would only be for a few days at each trap site. There would be no impact to animal populations as a result of gather operations.

Because the Wilson Creek Complex gather would be done during the winter, there would be no impact to breeding and nesting sage grouse, and migratory birds.

Removing excess wild horses from the Wilson Creek Complex would result in reduced competition between wild horses and wildlife, especially large mammals, for available forage and water resources. Managing wild horses at or below AML would result in improved habitat conditions for all species of wildlife by increasing herbaceous vegetative cover in the uplands and improving riparian vegetation and water quality at springs and seeps.

Alternative I – Impacts would be the same as in the proposed action; however, improved wildlife

habitat conditions would not last as long because wild horse populations would build back up and exceed AML sooner.

No Action Alternative – Individual animals would not be disturbed or displaced under the no action alternative. Competition between wildlife and wild horses for forage and water resources would continue, and may even get worse as wild horse numbers continue to increase above AML. Wild horses are aggressive around water sources, and some animals may not be able to compete which could led to the death of individual animals. Wildlife habitat conditions would deteriorate as wild horse numbers above AML reduce herbaceous vegetative cover. This could result in lower nesting success for sage grouse and migratory birds.

E. Special Status Plant and Animal Species (federally listed, proposed, or candidate threatened or endangered species; State listed species; and BLM sensitive species)

Affected Environment

The bald eagle is the only known federally listed, proposed, or candidate species that may be found in the Wilson Creek Complex. Several BLM sensitive animal species are found within the Complex including several species of bats, raptors, and other birds.

There are several BLM sensitive plant species that have been found within the Wilson Creek Complex. These include the scarlet buckwheat, Pioche blazingstar, long calyx eggvetch, and Tunnel Springs beardtongue.

Environmental Impacts

Proposed Action – Individual raptors and birds may be disturbed during gather operations when the helicopter flies over looking for horses. Once the helicopter is gone these birds should return to normal activities. Because trap sites and holding corrals would not be located where sensitive animal and plant species are known to occur, there would be no impact from these activities. There would be no impact to populations of special status species as a result of gather operations.

Removing excess wild horses from the Wilson Creek Complex and managing wild horses at or below AML would result in improved habitat conditions for all special status animal species by increasing herbaceous vegetative cover in the uplands and improving riparian vegetation and water quality springs and seeps. Sensitive plant species would be less likely to be grazed or trampled after removing excess wild horses.

Alternative I – Impacts would be the same as in the proposed action; however, improved habitat conditions for all special status animal species would not last as long because wild horse populations would build back up and exceed AML sooner.

No Action Alternative – Individual animals would not be disturbed or displaced because gather operations would not occur under the no action alternative. Habitat conditions for all special status animal species would continue to deteriorate as wild horse numbers above AML reduce herbaceous vegetative cover. Sensitive plant species would be more likely to be grazed and

trampled under the no action alternative because there would be more wild horses in the HMAs.

F. Livestock

Affected Environment

The Wilson Creek Complex includes portions of several livestock grazing allotments. Permitted livestock grazing use in the Complex includes both cattle and sheep grazing during all seasons of the year. Livestock grazing also occurs in areas immediately adjacent to the HMAs. Permitted livestock grazing use has generally been reduced in recent years in a majority of the allotments, with the issuance of grazing decisions (multiple use decisions, or MUDs) that have reduced livestock stocking levels, established deferred seasons of grazing, rotated grazing areas, and established water hauling areas that result in distributed livestock grazing. Since the last gather, licensed livestock use, or actual use, has generally been less than permitted use for each of the grazing allotments, in part due to persistent drought.

Environmental Impacts

Proposed Action – Past experience has shown that gather operations have little direct impacts to grazing cattle and sheep. Trapping sites would not be located in livestock concentration areas. Livestock located near gather activities would be temporarily disturbed or displaced by the helicopter and the increased vehicle traffic during the gather operation. Typically livestock would move back into the area once gather operations cease. Removal of excess wild horses would result in an increase in forage availability and quality, reducing competition between livestock and wild horses for available forage and water resources.

Alternative I – Impacts would be the same as in the proposed action, however, wild horse populations may increase at a normal rate.

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.

G. Wilderness

Affected Environment

The Wilson Creek Complex contains the White Rock, Parsnip, and Fortification Wilderness' areas. The wilderness areas are rugged, uplifted ranges, with isolated riparian areas. The lower elevations are thickly forested by pinyon pine and juniper. The wilderness receives extremely large amount of wild horse use during certain times of the year.

Environmental Impacts

Proposed Action – Impacts to opportunities for solitude could occur during gather operations

due to the possible noise of the helicopter and increased vehicle traffic around the wilderness. Those impacts would cease when the gather was completed. No surface impacts within wilderness are anticipated to occur during the gather since all trap sites and holding facilities would be placed outside wilderness. Wilderness values of naturalness after the gather would be enhanced by a reduction in wild horse numbers as a result of an improved ecological condition of the plant communities and other natural resources.

Alternative I – Impacts would be the same as in the proposed action.

No Action Alternative – No impacts to wilderness due to gather operations would occur. Impacts to wilderness values of naturalness could be threatened through the continued population growth of wild horses. Although the area has very little wild horse use degradation of vegetative and soil resources by would be expected if high numbers of wild horses are present in the Wilson Creek Complex. To some, the sight of heavy horse trails, trampled vegetation and areas of high erosion detract from the wilderness experience.

H. Noxious Weeds and Invasive Non-Native Species

Affected Environment

Noxious weed and invasive non-native species introduction and proliferation are a growing concern among local and regional interests. Noxious weeds are known to exist on public lands within the administrative boundaries of the Ely Field Office. Noxious weeds (typically non-native) are aggressive, and ecologically damaging. These plants threaten biodiversity, habitat quality, and ecosystem health. Because of their aggressive nature, noxious weeds can eventually spread into established plant communities. The following noxious weed species are known to exist within the Wilson Creek Complex.

Scientific Name	Common Name
Cardaria draba	hoary cress/whitetop
Onopordum acanthium	Scotch thistle
Acroptilon repens	Russian knapweed
Carduus nutans	musk thistle
Centaurea maculosa	spotted knapweed
Lepidium latifolium	perennial pepperweed/tall whitetop
Tamarix ramosissima	Saltcedar/Tamarisk

These weeds occur in a variety of habitats including road side areas, rights-of-way, wetland meadows, as well as undisturbed upland rangelands. Invasive non-native species such as cheatgrass, halogeton, Russian thistle, and annual mustards are also known to exist within the Wilson Creek complex in a variety of habitats.

Environmental Impacts

Proposed Action – The proposed gather may spread existing noxious or invasive weed species. This could occur if vehicles drive through infestations and spread seed into previously weed-free

areas. The contractor together with the contracting officer's representative or project inspector (COR/PI) would examine proposed trap sites and holding corrals for noxious weeds prior to construction. If noxious weeds are found, the location of the facilities would be moved. Any off-road equipment exposed to weed infestations would be cleaned before moving into weed free areas. All trap sites, holding facilities, and camping areas on public lands would be monitored for weeds during the next several years. Despite short-term risks, over the long term the reduction in wild horse numbers and the subsequent recovery of the native vegetation would result in fewer disturbed sites that would be susceptible for non-native plant species to invade.

Alternative I – Impacts would be the same as in the proposed action.

No Action Alternative – Under this alternative, the wild horse gather would not take place at this time. The likelihood of noxious weeds being spread by gather operations would not exist. However, continued overgrazing of the present plant communities could lead to an expansion of noxious weeds and invasive non-native species due to increased wild horse numbers.

I. Cultural Resources/Paleontological Resources

Affected Environment

Although a Class III cultural resources inventory of the entire Complex has not occurred, the Class I overview for the Ely District mentions a variety of cultural resources throughout the Complex. This discussion is found in the *Prehistory, Ethnohistory, and History of Eastern Nevada: A Cultural Resources Summary of the Ely and Elko Districts by James et.al. 1981*

Environmental Impacts

Proposed Action – No impacts to cultural resources/paleontological resources are anticipated to occur from gather operations since all trap sites and holding facilities would be inventoried to Class III intensive inventory standards for cultural resources prior to set-up. Trap sites and holding facilities would be located on previously disturbed areas. If cultural resources are encountered at proposed trap sites or holding facilities, those locations would not be utilized unless it could be modified to avoid impacts to cultural resources. A District Archaeological Technician (DAT) would be on-site during the gather to perform any needed cultural resources inventories and monitoring. Once the gather is completed, with reduced horse numbers, there would be less hoof action around riparian spring areas where cultural resources tend to occur in higher frequency. This could lead to decreased damage to cultural resources by wild horses.

Alternative I – Impacts would be the same as in the proposed action.

No Action Alternative – Under this alternative, the wild horse gather would not take place and therefore, no trap sites or holding facilities would be constructed. There would be no possibility that cultural resources would be damaged as a result of horse gather operations, however, high numbers of wild horses could cause damage to cultural resources due to trampling, especially around water sources, where the occurrence of cultural resources can often be high.

V. Cumulative Impacts

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

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 Wilson Creek Complex.

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 horse.

Past, Present, and Reasonably Foreseeable Actions

The Past, Present, and Reasonably Foreseeable Future Actions applicable to the assessment area are identified as the following:

Project – Name or Description	Status (x)		
	Past	Present	Future
Issuance of multiple use decisions and grazing permits for ranching operations through the allotment evaluation process and the reassessment of the associated allotments.	x		x
Livestock grazing	x	x	x
Wild Horse and Burro Gathers	x	x	x
Mineral Exploration / Geothermal Exploration/Abandoned mine land reclamation	x	x	x
Recreation	x	x	x
Spring development (fencing water sources)	x	x	x
Wildlife guzzler construction	x	x	x
Invasive weed inventory/treatments	x	x	x
Wild Horse and Burro issues, issuance of Multiple use decisions AML adjustments and planning	x	x	x

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

Past Actions

Herd Areas were identified in 1971 as areas occupied by wild horses. The HMAs were established in the 1980s through the land use planning process as areas where wild horse management was a designated multiple use. The BLM also moved to long range planning with the development of Resource Management Plans and Grazing Environmental Impact Statements. These EISs analyzed impacts of the Land Use Plan's management direction for grazing and wild horses, as updated through Bureau policies, Rangeland Program direction, and Wild Horse Program direction. Forage was allocated within the allotments for livestock use and range monitoring studies were initiated to determine if allotment objectives were being achieved, or that progress toward the allotment objectives was being made.

Due to these laws and subsequent court decisions, integrated wild horse management has occurred in the Wilson Creek Complex. Four gathers have been completed in the past on portions of the Complex. Future gathers would be scheduled on a 4-or 5- year gather cycle. Approximately 500 wild horses have been removed from the Wilson Creek Complex in the last 20 years; populations are thriving and have not been negatively impacted. An Appropriate Management Level determination for the Wilson Creek Complex was established through BLM Multiple Use Decisions or Wild Horse Decisions completed 1990 through 2003.

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

Present Actions

Today the Wilson Creek Complex has an estimated population of 900 wild horses. Resource damage is occurring in portions of the Complex due to excess animals. Current BLM policy is to conduct removals targeting portions of the wild horse population based upon age, and allowing the correction of any sex ratio problems that may occur. Further, the BLM's policy is to conduct gathers in order to facilitate a four-year gather cycle. Program goals have expanded beyond establishing a "*thriving natural ecological balance*" (by setting appropriate management level (AML)) for individual herds, to include achieving and maintaining healthy, viable, vigorous, and stable populations.

Current mandates prohibit the destruction of healthy animals that are removed or deemed to be excess. Only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method.). A recent amendment to the Wild Free-Roaming Horses and Burro Act allows the sale of excess wild horses that are over 10 years in age or have been offered unsuccessfully for adoption three times. As this sale authority is implemented, facility space and funding for gathers should become more available as less unadoptable wild horses are maintained in facilities.

Today public interest in the welfare and management of wild horses is currently higher than it has ever been. Many different values pertaining to wild horse management form current wild horse perceptions. Wild horses are viewed as nuisances, as well as living symbols of the pioneer

spirit.

The BLM has modified grazing permits and conducted vegetation treatments to improve watershed health. Currently within the Wilson Creek Complex sheep and cattle grazing occurs on a yearly basis.

The focus of wild horse management has also expanded to place more emphasis on achieving rangeland health as measured through the RAC Standards. Mojave-Southern Great Basin Resource Advisory Councils (RAC) developed standards and guidelines for rangeland health that have been the current basis for managing wild horse and livestock grazing within the Ely District. Adjustments in numbers, season of use, grazing season, and allowable use are based on evaluating progress toward reaching the standards.

Reasonably Foreseeable Future Actions

In the future, the BLM would manage wild horses within HMAs that have suitable habitat for a population range, while maintaining genetic diversity, age structure, and sex ratios. Current policy is to express all future wild horse AMLs as a range, to allow for regular population growth, as well as better management of populations rather than individual HMAs. The Ely BLM District is in the process of writing a new Resource Management Plan which would analyze AMLs expressed as a range and addressing wild horse management on a programmatic basis. Future wild horse management would focus on an integrated ecosystem approach with the basic unit of analysis being the watershed. The BLM would continue to conduct monitoring to assess progress toward meeting rangeland health standards. Wild horses would continue to be a component of the public lands, managed within a multiple use concept.

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

As the BLM achieves AML on a Bureau wide basis gathers should become more predictable due to facility space. This should increase stability of gather schedules, which would result in the Wilson Creek Complex being gathered at least every four years. Fertility control should also become more readily available as a management tool, with treatments that last between gather cycles, reducing the need to remove as many wild horses, and possibly extending the time between gathers.

Impacts

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

The combination of the past, present, and reasonably foreseeable future actions, along with the proposed action, should result in more stable wild horse populations, healthier rangelands, healthier wild horses, and fewer multiple-use conflicts within the Wilson Creek Complex.

VI. Mitigation Measures and Suggested Monitoring

Proven mitigation and monitoring are incorporated into the proposed action through standard operating procedures, which have been developed over time. These SOPs (Appendix II and III) represent the "best methods" for reducing impacts associated with gathering, handling, transporting and collecting herd data.

VII. 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 State BLM Office held a meeting on May 17th, 2005, and received input from various members of the public. The EA was also sent to the Humane Society of the United States for consultation on the use of the experimental drug, PZP. The Preliminary EA was mailed to the following list of people on September, 2006:

Internal District Review

Ely Field Office

Jared Bybee	Wild Horses/Author
Ben Noyes	Wild Horses/Author
Shirley Johnson	Range, Noxious and Invasive, Non-Native Species
Steve Leslie	Wilderness Values,
Bruce Winslow	Visual Resource Management, Recreation
Lisa Gilbert	Archaeological/Historic/Paleontological
Paul Podborny	Migratory Birds, Special Status Species, Wildlife Riparian/Wetlands
Chris Hanefeld	Public Affairs
Fred Fisher	Operations
Jake Rajala	Environmental Coordination
Elvis Wall	Tribal Coordination

Nevada State Office

Susie Stokke	Wild Horses/Editor

Washington Office

Bea Wade	Porca Zona Pellucide Coordinator

APPENDIX I:
Appropriate Management Level

Herd	Allotment	Decision& Date	AML # Animals
Wilson Creek HMA	Wilson Creek Geysor Cottonwood Hamblin Valley **Total**	FMUD 1993 FMUD 1990 FMUD 1997 FMUD 2001	108 48 4 0 **160**
Deer Lodge Canyon HMA	Condor Canyon Deer Lodge Mahogany Peak McGuffy NV04/NV05 Rabbit Spring	Wild Horse Decision for all Allotments 2003	30-50

APPENDIX II

Standard Operating Procedures for Fertility Control Treatment

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

- PZP vaccine would be administered by trained BLM personnel.
- A liquid dose of PZP would be administered concurrently with a time released portion of the drug (pelleted formulation) to breeding mares returned to the range (the pellets are injected with the liquid and are designed to release PZP at several points in time much the way time-release cold pills work).
- Delivery of the vaccine would be as an intramuscular injection by jab stick syringe or dart with a 12 gauge needle or 1.5" barbless needle, respectively while mares are restrained in the working chute; 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be placed in the barrel of the syringe or dart needle and would be injected with the liquid. Upon impact, the liquid in the chamber would be propelled into the muscle along the pellets1.
- All treated mares would be freeze-marked on the hip to enable researchers to positively identify the animals during the research project as part of the data collection phase.
- At a minimum, monitoring of reproductive rates using helicopter flyovers will be conducted in years 2 through 4 by locating treated mares and checking for presence/absence of foals. The flight scheduled for year 4 will also assist in determining the percentage of mares that have returned to fertility. In addition, field monitoring will be routinely conducted as part of other regular ground-based monitoring activities.
- A field data sheet will be forwarded to the field from BLM's National Program Office (NPO) prior to treatment. This form will be used to record all pertinent data relating to identification of the mare (including a photograph when possible), date of treatment, type of treatment (1 or 2 year vaccine, adjuvant used) and HMA, etc. The form and any photos will be maintained at the field office and a copy of the completed form will be sent to the authorized officer at NPO (Reno, Nevada).
- A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, disposition of any unused PZP, the number of treated mares by HMA, field office, and state along with the freeze-mark applied by HMA.
- The field office will assure that treated mares do not enter the adoption market for three years following treatment. In the rare instance, due to unforeseen circumstance, treated mare(s) are removed from an HMA before three years has lapsed, they will be maintained in either a BLM facility or a BLM-contracted long term holding facility until expiration of the three year holding period. In the event it is necessary to remove treated mares, their removal and disposition will be coordinated through NPO. After expiration of the three year holding period, the animal may be placed in the adoption system.

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1 This delivery method has been used previously to deliver immunocontraceptive vaccine with acceptable results. Administration of this two year vaccine to mares would be expected to be 94% effective the first year, 82% effective the second year, and 68% effective the third year. To date, one herd area has been studied using the 2-year PZP vaccine. The Clan Alpine study in Nevada was started in January 2000 with the treatment of 96 mares. The test resulted in fertility rates in treated mares of 6% in year one, 18% in year two and 32% in year three. Average fertility rates in untreated mares range between 50-60% in most populations. The Clan Alpine fertility rate in untreated mares, obtained from direct observation in September of each year, average 51% over the course of the study.

APPENDIX III
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.

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

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

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

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

c. 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:

(1) 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.

(2) All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes.

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

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

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

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

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

f. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the 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 COR.

g. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.

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

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

j. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive

at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

C.6 CAPTURE METHODS THAT MAY BE USED IN THE PERFORMANCE OF A GATHER

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

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

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

(3) Traps shall be checked a minimum of once every 10 hours.

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

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

(2) The contractor shall assure that foals shall not be left behind, and orphaned.

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

(1) Under no circumstances shall animals be tied down for more than one hour.

(2) The contractor shall assure that foals shall not be left behind, or orphaned.

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

C.7 MOTORIZED EQUIPMENT

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

b. 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.

c. 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.

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

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

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

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

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

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

C.8 SAFETY AND COMMUNICATIONS

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

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

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

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

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

1. 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.

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

C.9 CONTRACTOR-FURNISHED PROPERTY

a. As specified herein, it is the contractor's responsibility to provide all necessary support equipment and vehicles, hay and water for the animals and any other needed items, personnel, vehicles, horses, etc. to support the capture, care and transport of horses/burros. Other equipment includes but is not limited to, a minimum 2,500 linear feet of 72-inch high (minimum height) panels for horses or 60-inch high (minimum height) for burros for traps and holding facilities. Separate water troughs shall be provided at each pen where animals are being held. Water troughs shall be constructed of such material (e.g., rubber, galvanized metal with rolled edges, rubber over metal) so as to avoid injury to the animals.

b. The Contractor shall provide a radio transceiver to insure communications are maintained with the BLM project PI when
driving or transporting the wild horses/burros. The contractor needs to insure communications can be made with the BLM and be capable of operating in the 150 MHz to 174 MHz frequency band, frequency synthesized, CTCSS 32 sub-audible tone capable, operator programmable, 5kHz channel increment, minimum 5 watts carrier power.

C.10 GOVERNMENT FURNISHED EQUIPMENT/SUPPLIES/MATERIALS

The government will provide a portable restraining chute for each contractor to be used for the purpose of restraining animals to determine the age of specific individuals or other similar procedures. The contractor will be responsible for the maintenance of the portable restraining chute during the gather season. The government may also provide VHF/FM portable 2-way radios, if needed. The government will provide all inoculate syringes, freezmarking equipment, and all related equipment for fertility control treatments. When required a boat will be furnished to transport burros. The Contractor shall be responsible for the security of all Government Furnished Property (GFP).

C.11 SITE CLEARANCES

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

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

H. Responsibility and Lines of Communication

Ely District

Contracting Officer's Representatives

Ely Field Office
Jared Bybee
Ben Noyes

Project Inspectors

Ely Field Office
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 and Tonopah Assistant Field Manager for Renewable Resources or Field Station and the Ely and Battle Mountain Field Managers 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 BLM Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

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

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

APPENDIX IV

POPULATION MODELING

Population modeling was completed for the proposed action and the alternatives for the BLM-managed herds. One hundred trials were run, simulating population growth and herd demographics to determine the projected herd structure for the next four years, or prior to the next gather. The computer program used simulates the population dynamics of wild horses. It was written by Dr. Stephen H. Jenkins, Department of Biology, University of Nevada, Reno, under a contract from the National Wild Horse and Burro Program of the Bureau of Land Management and is designed for use in comparing various management strategies for wild horses.

Interpretation of the Model

The estimated population of 900 wild horses is for the Wilson Creek Complex. Year one is the baseline starting point for the model, and reflects wild horse numbers immediately after a gather action, or the lack of action in the case of the No Action Alternative. In this population modeling, year one would be 2006. Year two would be exactly one year in time from the original action, and so forth for years three, four, and five. Consequently, at year five in the model, exactly four years in time would have passed. In this model, year five is 2011. This is reflected in the Population Size Modeling Table by "average population sizes over 10 years" and in the Growth Rate Modeling Table by "average growth rates over 10 years". Growth rate is averaged over ten years in time, while the population is predicted out the same ten years to the end point. The Full Modeling Summaries contain tables and graphs directly from the modeling program.

Population Modeling Criteria

The following summarizes the population modeling criteria that are common for the Proposed Action, Alternative, and No Action:

- Starting Year: 2006
- Initial gather year: 2006
- Gather interval: regular interval of four years
- Sex ratio at birth: 50% female-50% male
- Percent of the population that can be gathered: 85%
- Minimum age for long term holding facility horses: no restrictions
- Foals are not included in the AML
- Simulations were run for ten years with 100 trials each
- Fertility control is estimated to be 94% effective in year 1 and 82% effective in year 2 68% effective in year three.

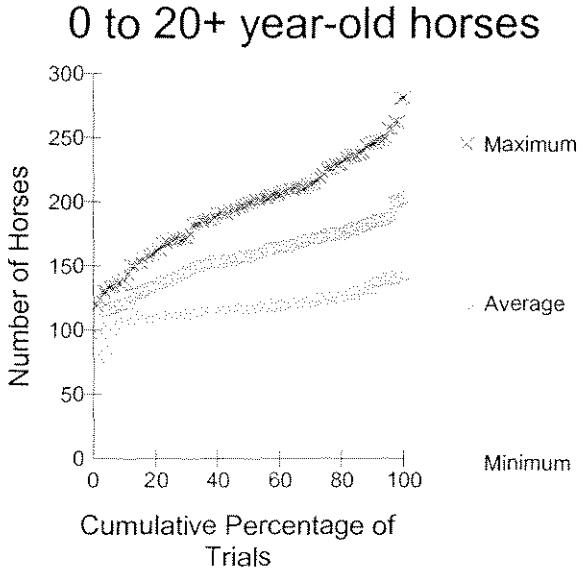
Population Modeling Comparison for the Alternatives

This table compares the projected population growth and average population for the proposed action and the alternative at the end of the ten-year simulation. The population averages are across all trials.

Modeling Statistic	Proposed Action	Alternative I	No Action Alternative
Population in Year One	125	125	900
Median Growth Rate	4.1	14.3	14.3
Average Population	158	190	258

Proposed Action: Gather with Fertility Control

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	80	98	119
10th Percentile	106	120	142
25th Percentile	112	139	170
Median Trial	118	158	200
75th Percentile	125	174	226
90th Percentile	138	185	246
Highest Trial	145	203	281

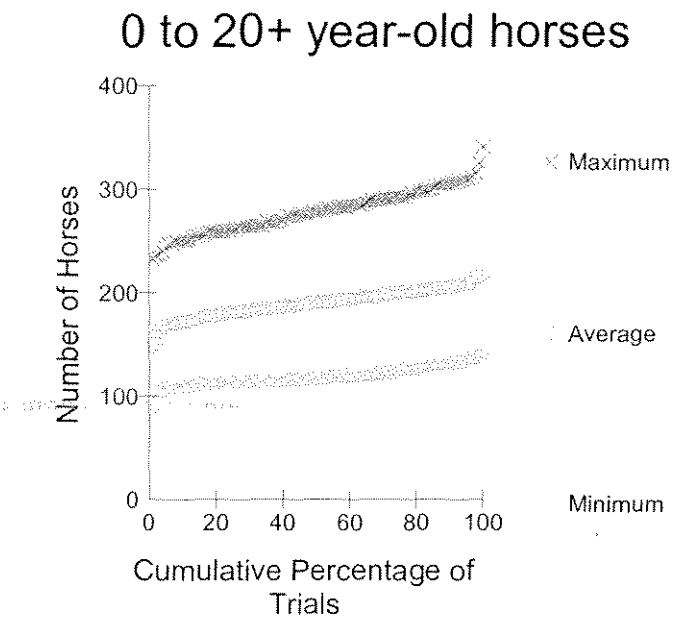
* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Average Growth Rate in 10 Years	
Lowest Trial	-2.4
10th Percentile	0.3
25th Percentile	2.3
Median Trial	4.1
75th Percentile	6.0
90th Percentile	7.8
Highest Trial	10.1

Alternative I: Gather without Fertility Control

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	83	148	233
10th Percentile	110	172	251
25th Percentile	114	181	262
Median Trial	118	190	278
75th Percentile	127	200	293
90th Percentile	133	206	306
Highest Trial	144	218	341

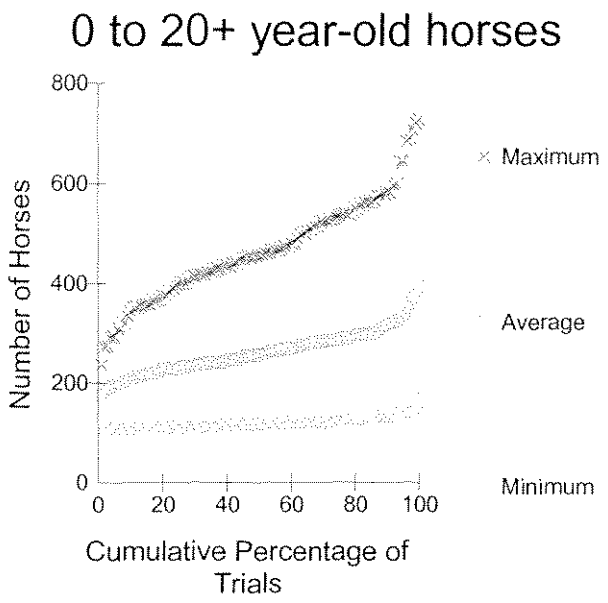
* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Lowest Trial	1.2
10th Percentile	10.5
25th Percentile	12.4
Median Trial	14.3
75th Percentile	16.4
90th Percentile	18.0
Highest Trial	21.4

No Action Alternative: Delay Management

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	96	175	237
10th Percentile	110	208	346
25th Percentile	113	232	400
Median Trial	118	258	456
75th Percentile	127	287	536
90th Percentile	136	320	581
Highest Trial	168	393	726

* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Average Growth Rate in 10 Years	
Lowest Trial	5.5
10th Percentile	9.9
25th Percentile	11.9
Median Trial	14.3
75th Percentile	16.1
90th Percentile	17.7
Highest Trial	20.0