

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

**Dry Lake Complex
Wild Horse Gather Plan
and Preliminary Environmental Assessment**

Ely No. NV-040-07-02

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I. Background Information

This Environmental Assessment (EA) has been prepared to analyze the environmental effects of potential population control methods (including fertility control treatment) in order to achieve and maintain the established Appropriate Management Levels (AMLs) and provide for rehabilitation of areas impacted by wildfire for the Dry Lake Herd Management Complex (DLC). Of the forty-six (46) fires occurring from May 6 to September 18, 2006 on lands managed by the Ely BLM Field Office, six fires burned within the Dry Lake HMA totaling 5,721 acres.

This EA contains the site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA ensures compliance with the National Environmental Policy Act (NEPA); it analyzes information to determine whether to prepare an Environmental Impact Statement (EIS) or issue a “Finding of No Significant Impact” (FONSI). A FONSI documents why implementation of the selected action will not result in environmental impacts that significantly affect the quality of the human environment.

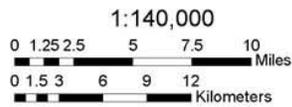
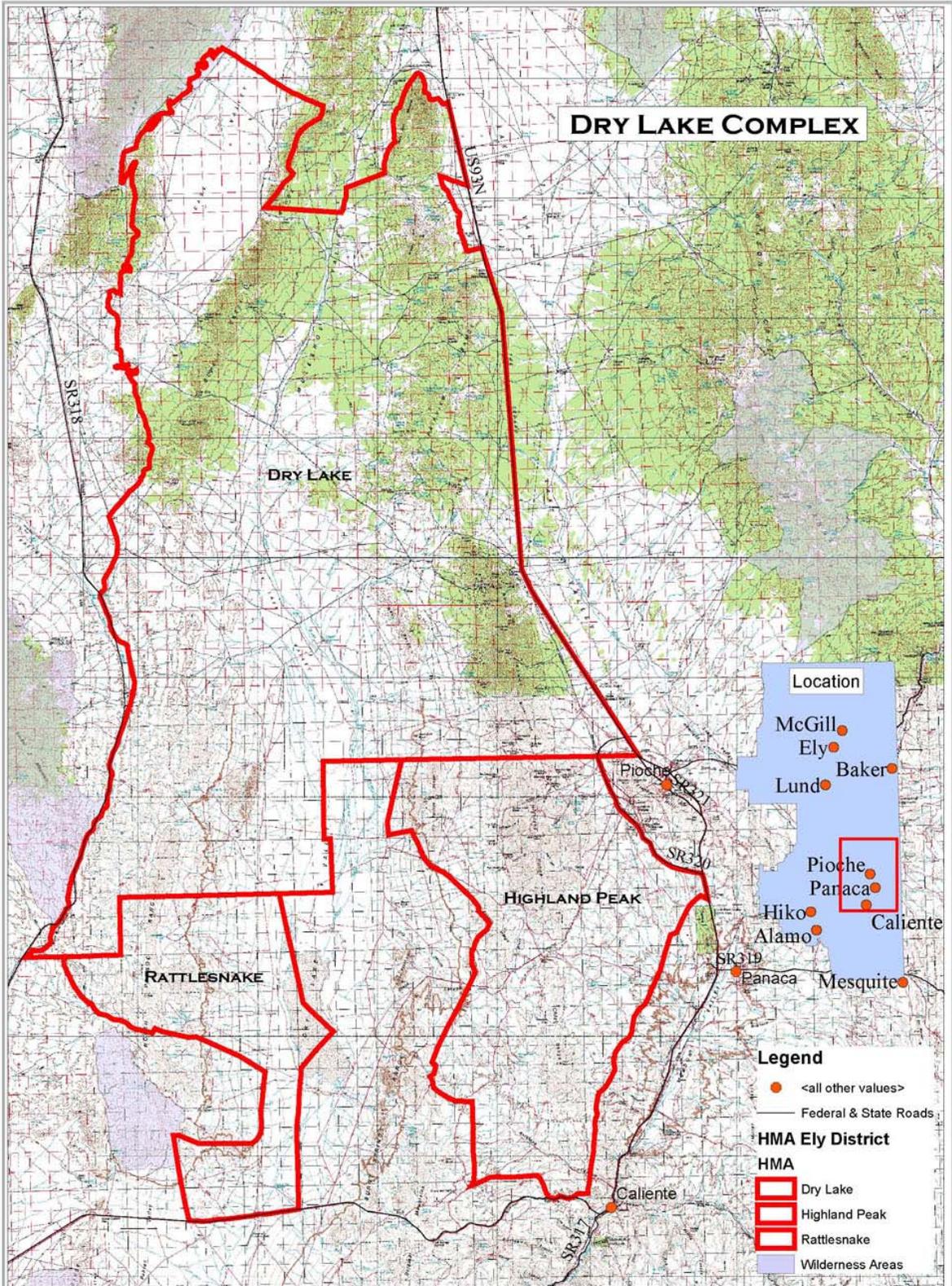
The DLC is located approximately 60 miles south of Ely, and 10 miles northwest of Caliente, within Lincoln County, Nevada (Figure 1). The Complex consists of the Dry Lake, Rattlesnake and Highland Peak Herd Management Areas (HMAs). This wild horse herd is being managed as a single population due to the HMAs proximity to one another and past capture, census, field observations and distribution data collected indicate movement among wild horses between these HMAs. Table 1 shows the acres and Appropriate Management Level (AML) within each HMA/Territory.

Table 1. Acres

Herd	Total Acres	Appropriate Management Level
Dry Lake HMA	487,941	Not to exceed 94
Highland Peak HMA	136,071	20-33
Rattlesnake	71,433	1
Total	695,445	Not to exceed 128

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.

The Dry Lake HMA was last gathered in the summer of 2003 to remove excess wild horses. At the time, AML was achieved. The Highland Peak HMA had an emergency gather in the fall of 2002, due to drought. Based on past capture and census data, the average annual population increase is approximately 20% for the Dry Lake Complex. The current estimated population



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Cartography By: Ryan Ingle (EYFO)

within the complex is 220 wild horses. The current estimated wild horse population of 220 wild horses is approximately 50% over the capacity of the Complex.

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.

The area has experienced five years of drought with one above normal precipitation year in winter and spring of 2004/2005. 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 2006 along Highland Peak and Muleshoe. Moderate use by wild horses has been documented throughout the remainder of the Complex.

Analysis of the above information indicates the existing AMLs are appropriate and that excess wild horses and burros are present and require immediate removal. As a result, any decision of the authorized officer will be implemented effective upon issuance under authority provided in 43 Code of Federal Regulations (CFR) 4770.3 (a) and (c).

A. Need for the Proposed Action

Census data together with vegetation monitoring to determine the level of wild horse use in the DLC indicates the current wild horse population is exceeding the range's capacity to sustain wild horse use over the long term. Resource damage is occurring in some areas of the Complex and is likely to continue to occur without immediate action. 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; to make "significant progress towards achievement" of the 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 and other action alternatives are in compliance with applicable portions of the Schell Management Framework Plan (MFP), Schell Grazing Environmental Impact Statement (EIS), and subsequent Record of Decision (ROD) dated 1983 (Dry Lake HMA) and the Caliente Management Framework Plan (MFP), Caliente Grazing Environmental Statement (ES), and subsequent Record of Decision (ROD) dated 1982 (Highland Peak and Rattlesnake HMAs). Additionally, the proposed action and other action alternatives are 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 and action alternatives are consistent with all applicable regulations at 43 CFR 4700 as well as all Bureau policies, and 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).” The action alternatives are also consistent with the Mojave Southern Great Basin RAC Standards for Rangeland Health.

C. Issues

The issues identified are the proper management of wild horses and making progress towards rangeland health standards, and fire rehabilitation.

II. Description of the Proposed Action and Alternatives

A. Proposed Action

The Proposed Action is to gather about 85% of the wild horse population within the DLC, or approximately 190 wild horses, in December 2006. Of the animals gathered, approximately 140 wild horses would be removed and transported to BLM holding facilities where they will be prepared for adoption and/or sale to qualified individuals or long-term holding. The estimated population remaining on the range following the gather would be about 80 wild horses¹. Of the 50 wild horses returned to the range post-gather, about half (25 head) would be mares which would be subject to fertility control research or Porca Zona Pellucida (PZP) treatment. PZP would not be administered if less than 25 mares are released post-gather.

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. Selection of animals for return to the HMA post-gather would be 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

¹ Population modeling indicates the post-gather number of wild horses would allow for a population increase without exceeding a “*thriving natural ecological balance*” over the next four years or so until the next maintenance gather of excess wild horses would be needed.

not be removed from the range unless specific exceptions prevent them from being turned back and left on the range.

Capture techniques would consist of the helicopter-drive trapping method and/or helicopter-roping from horseback. 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) in Appendix III.

B. Gather Without Fertility Control Treatment

This alternative is the same as the Proposed Action, except that the BLM would not conduct fertility control 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 Dry lake Complex. No significant progress toward meeting rangeland health standards would be made at this time. Wild horse populations would continue to increase. A management action to reduce herd numbers may be evaluated and implemented at a later time. The BLM would continue vegetation and population monitoring.

D. Alternatives Considered But Eliminated From Detailed Analysis

A gate cut gather was considered for the DLC, but was eliminated from detailed analysis because it would not meet the entire purpose and need, allowing for selective removal and PZP treatment. A gate cut gather would remove the first 140 wild horses captured regardless of age, and sex. This tool is best used when wild horse populations significantly exceed AML because it can result in much lower capture costs.

III. Affected Environment

General Setting

The DLC is located in northeastern Lincoln County, Nevada approximately 60 air miles south of Ely, and 10 miles northwest of Caliente. 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 under strict terms and conditions outlined in grazing permits and numerous wildlife species.

Table 2 summarizes the critical elements of the human environment and other resources of concern within the project area which are either present, not present or not affected by the proposed action.

Table 2. 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 trapsites. 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 were re-introduced species within North America in the 16th century; natural predators are not present in sufficient numbers to effectively control the wild horse population. Few other natural controls act upon wild horse herds making them very competitive with native wildlife and other living resources. Census flights have been conducted in the 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 Complex. The estimated herd population for the Dry lake Complex was determined from June 2003 census data with the addition of two foal crops. Wild horses within the Complex generally move between HMA's; therefore, the area is managed as a single population of wild horses.

Blood samples were collected from 25 wild horses during the 2003 Dry Lake 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 both within and outside the Complex. 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, and would allow for the implementation of fertility control research. Applying fertility control measures as part of the proposed action would be expected to slow reproduction rates of mares returned to the HMA following the gather, provided that a minimum of 25 mares are treated. This could allow vegetation resources additional time to recover. It would also be expected to decrease gather frequency and disturbance to individual animals and the herd, and provide for a more stable wild horse social structure.

With fertility control treatment of a minimum of 25 mares, population modeling illustrates that the average wild horse population growth rate of the median of 100 trials could be reduced from 20% currently to 8.5% over ten years. The average population size of the median of 100 trials would be 140 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 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 17.3% over ten years. The average population size of the median of 100 trials could be 142 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 (Defer Population Control) is taken, excess wild horses would not be removed from the 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 winter. However, individuals in the herd would be subject to more stress 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. In the short term, we would be likely to see increasing range damage and competition for forage and 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 287 wild horses. Modeling indicates the average growth rate is expected to be an annual increase of 16.9% (Appendix IV).

B. Vegetation, and Soils

Affected Environment

The Complex occurs within Major Land Resource Area (MLRA) 028B, the Central Nevada Basin and Range Area, and MLRA 029, Southern Nevada Basin and Range 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, curleaf 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. 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 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. Compression 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 led to a loss of riparian habitat surrounding spring sources. This type of disturbance combined with reduced vegetative cover is frequently associated with increased floodstage 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 and improved riparian habitat conditions. Improved riparian areas would dissipate stream energy associated with high flows and filter sediment that would result in some associated improvements in water quality. There would also be a reduction in hoof action on upland habitats and 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.

D. Wildlife, including Migratory Birds

Affected Environment

The 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 Dry Lake HMA. The majority of the complex outside of the Dry Lake Range is Rocky Mountain elk yearlong habitat.

Sage grouse use the northern portions of the 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 Complex contains portions of four sage grouse population management units (PMUs) identified in the local sage grouse conservation plans. There are about 4 known sage grouse leks within the. At least 3 of the leks have been active within the past 5 years.

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

Removing excess wild horses from the 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 lead 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

There are two BLM sensitive plant species that have been found within or adjacent to the Complex. These are the Basin waxflower, and Schlessers pincushion.

Environmental Impacts

Proposed Action – Trap sites and holding corrals would not be located where sensitive 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 Complex and managing wild horses at or below AML would result in improved habitat conditions for all special status species.

Alternative I – Impacts would be the same as in the proposed action; however, improved habitat conditions for all special status 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 species would continue to deteriorate as wild horse numbers above AML reduce herbaceous vegetative cover.

F. Livestock

Affected Environment

The 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

There are no wilderness areas within the complex. The Big Rocks Wilderness area is directly south, and the Weepah Springs Wilderness area is west of the Complex

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 adjacent to Wilderness areas.

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 Clover Creek, Seaman HMA's. 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 Dry Lake Complex.

Scientific Name

Cardaria draba
Onopordum acanthium
Acroptilon repens

Common Name

hoary cress/whitetop
Scotch thistle
Russian knapweed

<i>Carduus nutans</i>	musk thistle
<i>Centaurea maculosa</i>	spotted knapweed
<i>Lepidium latifolium</i>	perennial pepperweed/tall whitetop
<i>Tamarix ramosissima</i>	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 Dry Lake 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. Without herd reduction in fire area's the noxious weeds and other undesirable plants would sustain a great opportunity to invade treated areas.

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

Please see the example from the Silver Peak/Paymaster gather plan for the cumulative impacts analysis portion which follows: (see the end of this document).

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 Dry Lake 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 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 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 Complex in the last 20 years; populations are thriving and have not been negatively impacted. An Appropriate Management Level determination for the 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 Complex has an estimated population of 220 wild horses. Resource damage is occurring in portions of the Complex due to excess animals as well as damage from fire.. 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 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 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 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 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 18, 2006; only one comment was received during this hearing from the National Mustang Association (NMA) supporting the use of motorized vehicles in the management of wild horses and burros. NMA commended the BLM in Utah and Nevada for the professional manner in which helicopters are used. 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 October 2007.

Internal District Review

Ely Field Office

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
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Washington Office

Bea Wade	Porca Zona Pellucide
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**APPENDIX I:
Appropriate Management Level**

Herd	Allotment	Decision & Date	AML # Animals
Rattlesnake (HMA-20)	Rattlesnake Oak Spring	Wild Horse Decision 2003 Entire HMA FY2004	Rattlesnake (HMA-20) Total AML = 1
Dry Lake (HMA-12)	Geyser Ranch Sunnyside Wilson Creek Fox Mountain	FMUD 1990 FMUD 2001 FMUD 1993 FMUD 2001 FY2001	Dry Lake (HMA-12) AML=16 AML = 78 Total AML = 94
Highland Peak (HMA-13)	Bennett Spring Black Canyon Ely Spring Sheep Highland Peak Klondike Pioche Rocky Hills	Wild Horse Decision 2003 Entire HMA FY2004	Highland Peak Total AML (Range) = 20- 33
	Total		128

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 pellets².
- 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.

² 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, freezemarking 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

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 220 wild horses is for the Dry Lake 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.

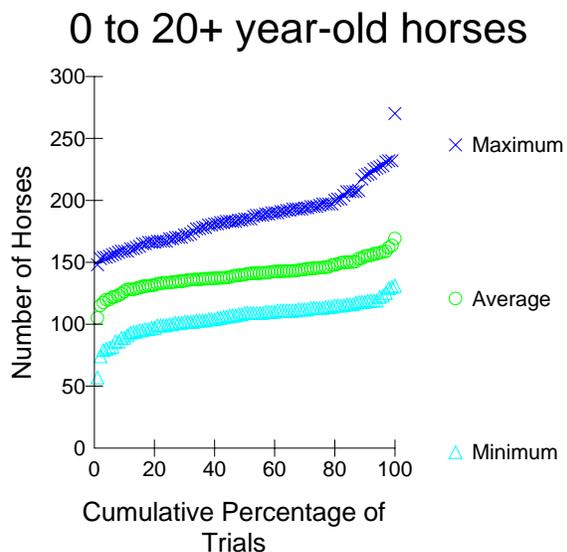
Population Modeling Comparison for the Alternatives

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	80	80	220
Median Growth Rate	8.5	17.3	16.9
Average Population	140	142	287

Proposed Action: Gather with Fertility Control

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	57	105	148
10th Percentile	90	127	159
25th Percentile	100	134	169
Median Trial	109	140	185
75th Percentile	113	146	196
90th Percentile	118	155	220
Highest Trial	131	169	270

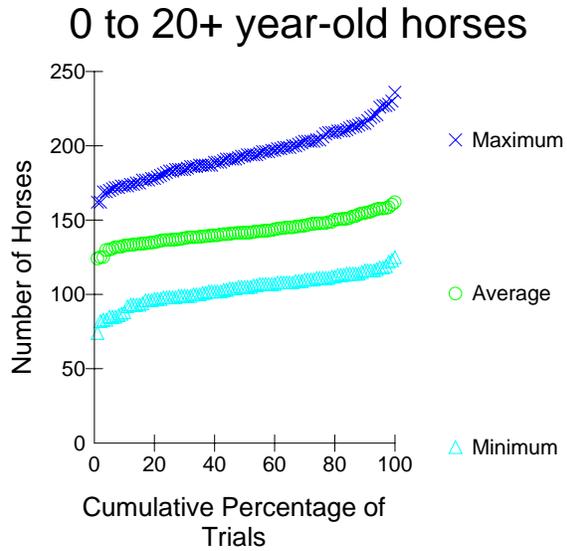
* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Average Growth Rate in 10 Years	
Lowest Trial	3.0
10th Percentile	5.1
25th Percentile	7.1
Median Trial	8.5
75th Percentile	9.8
90th Percentile	11.7
Highest Trial	14.6

Alternative I: Gather without Fertility Control

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	74	124	162
10th Percentile	90	133	173
25th Percentile	98	137	183
Median Trial	105	142	194
75th Percentile	111	148	205
90th Percentile	116	155	216
Highest Trial	125	162	236

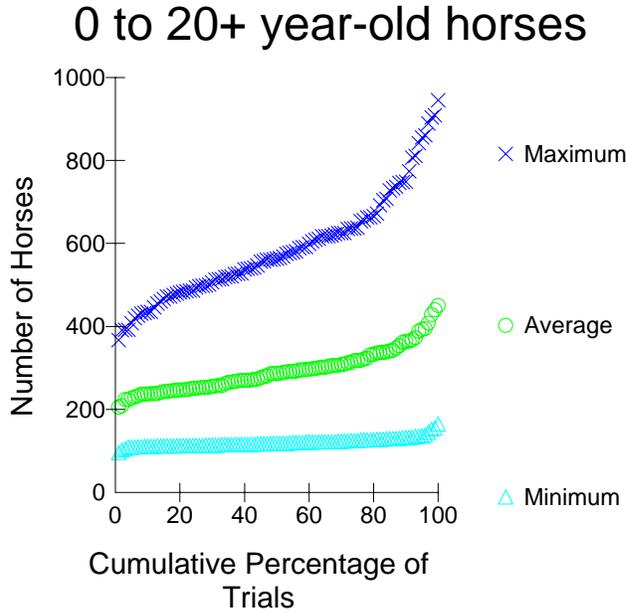
* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Average Growth Rate in 10 Years	
Lowest Trial	10.3
10th Percentile	13.8
25th Percentile	15.0
Median Trial	17.3
75th Percentile	18.9
90th Percentile	20.4
Highest Trial	22.2

No Action Alternative: Delay Management

Average Population Size Graph



Average Population Size Table

	Population Sizes in 10 Years*		
	Minimum	Average	Maximum
Lowest Trial	96	205	367
10th Percentile	111	238	435
25th Percentile	113	251	496
Median Trial	118	287	564
75th Percentile	126	318	646
90th Percentile	132	364	761
Highest Trial	165	450	945

* 0 to 20+ year-old horses

Average Growth Rate in 10 Years

Average Growth Rate in 10 Years	
Lowest Trial	12.2
10th Percentile	14.3
25th Percentile	15.5
Median Trial	16.9
75th Percentile	18.1
90th Percentile	19.6
Highest Trial	21.5

PLEASE SEE FOLLOWING EXAMPLE FOR REVISED CUMULATIVE IMPACTS ANALYSIS APPROACH AS MENTIONED EARLIER IN THE EA

CUMULATIVE ENVIRONMENTAL 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.

4.1. 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
shua tree and other desert plant harvesting	x	x	x
Wildlife guzzler construction	x	x	x
Invasive weed inventory/treatments	x	x	x
Wild Horse and Burro issues, AML adjustments and planning	x	x	x

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

4.2. Effect of Past, Present, and Reasonably Foreseeable Future Actions

All resource values listed in Tables 2 and 3 have been evaluated for cumulative impacts. If there are no direct or indirect impacts to said resources, there are likewise no expected cumulative impacts.

The following critical elements or other resources that were discussed in Section 3.0 are evaluated in this section for cumulative effects. The Cumulative Effects Study Area (CESA) is another name for the gather area, which includes the Silver Peak HMA, the Paymaster HMA and the surrounding areas outside the HMAs. See Map 1, pg. 2, "Gather Areas of the Paymaster and Silver Peak Herd Management Areas."

4.2.1. Cultural/ Historical

Mineral exploration, recreation, and other activities such as woodcutting and water or vegetation projects have likely impacted some cultural resources within the project area since the Tonopah and Silver Peak areas were settled over 100 years ago. Livestock grazing and wild horse use have also historically occurred in the project area and may have impacted cultural resources especially near water locations. Since the mid 1970's, BLM has conducted cultural resource inventories throughout the project area.

Neither the Proposed Action, Alternative 1, nor the No Action Alternative would impact cultural or paleontological resources. Cultural inventories will continue to be conducted to evaluate any cultural properties that could be affected by future proposed projects and related activities. During the implementation of any project, if any significant materials are encountered they would not be collected, removed, or modified until a qualified cultural resource specialist provides a determination of historical significance or effect.

Changes in grazing management, spring development, and habitat management in conjunction with the implementation of the Proposed Action or Alternative 1 would result in indirect cumulative impacts that make little impact on cultural resources. When combined with past, present, and reasonably foreseeable future actions, and incorporating mitigation measures, the potential for significant cultural resource cumulative impacts from the Proposed Action and Alternative 1 would be negligible.

4.2.2. Grazing Management

The gather area (CESA) has been utilized by domestic livestock since the Tonopah and Silver Peak area was settled over 100 years ago. However, the BLM has only administered the domestic livestock use of the public lands since the 1960's. Since that time, BLM has conducted analysis and evaluations followed by decisions to adjust or reduce permitted livestock numbers, and will continue to do so in the future. In addition, the BLM has also implemented grazing management systems, modified seasons of use or implemented range improvement projects such as fences or water development projects or reduced preference to meet the RAC Standards for Rangeland Health.

The rangeland within the Silver Peak area, including the HMA, is considered very arid and produces sparse and low quality forage for domestic livestock in addition to supporting little water. Wild horse and domestic livestock use and overuse have contributed to non-attainment of RAC Standards for Rangeland Health at riparian areas within the Silver Peak area. Over the past 20 years, cumulative impacts from the resident bands of horses outside the Paymaster HMA have caused deterioration of a formerly healthy rangeland. Recreation, mineral exploration, vegetation harvesting and invasive weed treatment have had, and are expected to continue to have negligible impacts to grazing management within the project area.

The Proposed Action and Alternative 1 are expected to result in indirect impacts that would contribute to improved rangeland health at the area outside the Paymaster HMA. As future wild horse decisions are implemented and future gathers conducted to achieve the AML, these impacts are expected to continue and result in overall improvements to the forage availability and therefore grazing management as well.

In the long term, the Proposed Action would result in greater improvements to rangeland health and grazing management as AML would be maintained in Paymaster HMA. Improvement would be less significant under Alternative 1 as the maximum AML would be exceeded between gathers, allowing for increased or excessive utilization levels. The No Action Alternative would not result in any long-term cumulative benefits to grazing management. Continued range deterioration and degradation of riparian habitat in conjunction with any reasonably foreseeable projects or other management actions would not improve forage utilized by permitted livestock. In the long term, the No Action Alternative could result in further reductions of livestock numbers or elimination of domestic livestock grazing within the gather area (CESA).

Other activities, such as mining and recreation, may temporarily impact grazing management. However, due to the small size or short duration of the disturbance (less than 1 week), cumulative impacts associated with the Proposed Action or Alternative 1, when compared to the overall CESA are expected to be negligible especially when identified mitigation measures are implemented.

4.2.3. Vegetation

The vegetation within the gather area (CESA) has been utilized by domestic livestock and wild horses and burros

since the Tonopah and Silver Peak area was settled over 100 years ago. Some of the range has a history of over-utilization. However, due to poor soils and limited precipitation in the Silver Peak area, vegetation adequate to sustain large ungulates has likely never been available. Further, lack of adequate waters in the Paymaster HMA have prevented wide-spread utilization by cattle or horses. The BLM has implemented range improvement projects such as fences or water development projects to protect some vital vegetation near riparian areas and to meet the RAC Standards for Rangeland Health.

The Proposed Action and Alternative 1 would contribute to isolated areas of disturbed vegetation through the gather activities. In the long term, however, the achievement of AML in conjunction with past grazing management changes and other foreseeable actions such as recreation, mineral exploration, vegetation harvesting and invasive weed treatment, would contribute to improved vegetative resources.

The Proposed Action and Alternative 1 would promote improvements to ecological condition. Excessive use by wild horses would not occur at riparian areas or outside the HMA when the AML is maintained. Key forage species would improve in health, abundance and robustness, and would be more likely to set seed and reproduce, which in turn would contribute to improvements in rangeland health. This would occur outside the Paymaster HMA and at riparian areas in Silver Peak HMA.

The proposed gather and other foreseeable actions would begin to offset past negative trends in habitat modification by allowing for attainment of rangeland health standards and allotment specific objectives. This would be most apparent under the Proposed Action, which would maintain wild horse populations below the established AML. Alternative 1 would allow the AML to be exceeded only in the Paymaster HMA between gathers, contributing to utilization levels which exceed objectives and slowed progress towards achievement of RAC Standards outside this HMA.

The No Action Alternative would allow continued degradation of vegetation by wild horses, which in the long term would cause native vegetation to be replaced by less palatable native plants. Past impacts would not be offset, and downward trends would occur.

4.2.4. Water Quality/ Wetlands and Riparian Zones

Water quality and riparian health have historically been impacted by livestock, wild horse and wild burro use. Some riparian areas may have also been impacted by recreational users, and historical exploration activities. Currently, many of the riparian areas within the Silver Peak area are degraded, and past and current wild horse use identified as a causal factor. In the future, livestock grazing and wild horse and wild burro use would likewise be the primary impacts to water quality and riparian health.

Past use of springs and riparian areas by wild horses has caused the degradation and impacts to water quality and vegetation of riparian areas. Removing all the wild horses from the Silver Peak HMA would lead to improvement in water quality and lead to proper functioning condition on those springs rated less than PFC because of horse use. Springs currently rated at PFC would continue to function properly, barring a natural disturbance. On Paymaster HMA a reduction of the population from current levels would decrease competition for water among wild horse herds and between wild horses and other wildlife in the future. Therefore, the direct cumulative impacts of the Proposed Action when analyzed with past, present, and reasonably foreseeable actions, including recreation, mineral exploration, spring source fencing, vegetation harvesting, and invasive weed treatment, are improved water quality and further the attainment of RMP objectives and Standards for Rangeland Health.

4.2.5. Wild Horses and Burros

The last wild horse gather conducted in the Paymaster HMA was in 1992. At this time, age selective removal criteria resulted in wild horses older than 10 years of age being released to the range. The sex ratio of the 100 wild horses released was considered near normal. No other gathers have been conducted in this HMA since 1992. Fertility control has not been implemented in the past, and genetics testing has not been completed.

The Silver Peak HMA has a history of emergency wild horse gathers during periods of drought. As a result of this and other factors, it was determined that wild horses would not be managed within this HMA in the future. During the most recent emergency gather in 2003, blood samples were analyzed for genetic variability, and found to indicate signs of inbreeding within the population.

Past activities, which may have affected wild horses within these HMAs primarily includes livestock grazing through the impacts on vegetation condition and availability, as well as water quality and quantity. Mineral and geothermal activities and other small projects would have had temporary and isolated impacts to the wild horses.

Future activities, which could occur, include adjustments to livestock grazing levels or season of use, water developments and spring enclosures, recreation and mineral exploration activities. The future may also involve further adjustments to the Paymaster HMA AML (increases or decreases), consideration for management of burros within the Silver Peak and/or Paymaster HMAs, fertility control research within the Paymaster HMA, management of wild horses within the Silver Peak HMA, and future gathers to achieve AML within both HMAs. Should the genetic analysis of the Paymaster HMA indicate issues with genetic variability, specific removal or treatment protocols could be developed to address them.

If census data and other pertinent information that becomes available indicate that the Paymaster HMA is unable to sustain a healthy wild horse population within the boundaries of the HMA, the BLM could propose to reduce the AML to 0 wild horses and/or allow for the management of burros within the HMA.

All other foreseeable activities such as invasive weed treatment, vegetation harvesting etc. would likely result in negligible impacts to wild horses in the long term because the areas of disturbance would be small compared to the overall size of the gather area. An overall lower population and density of wild horses across the landscape would allow increased recovery of native vegetation that is currently degraded, as well as reduce or eliminated further degradation. Moreover, improved range and maintaining AML would make forage more available to horses on Paymaster HMA and burros on Silver Peak HMA, which in turn would lead to improved equid body condition, healthier foals, and ensure herd sustainability through drought years.

Removing all the horses from the Silver Peak HMA would eliminate several issues that have compromised the herd and herd area in the past: 1) horses would no longer face starvation during drought years when there is inadequate vegetation to sustain them; 2) lack of water, especially in years of drought, would no longer cause health problems or death of horses; 3) the number of burros across the entire Silver Peak HMA could be increased as wild horses are removed; 4) further risk of inbreeding within the Silver Peak herd would be curtailed. During future gathers of the Silver Peak burros, blood samples would need to be collected to ascertain genetic diversity and health of the herd.

For both the Proposed Action and Alternative 1, wild horses would benefit in the long term because there would be improved quality and quantity of adequate resources (forage, water, cover, and space). Future offspring to mares that benefit from these improved resources would, in turn, be larger, healthier, and able to better achieve their genetic potential.

Additionally, in the year 2010, the Paymaster HMA would need to be reassessed to determine whether horse herds were healthy and self-sustaining, and were remaining on the HMA. If all the horses remained outside the HMA, an evaluation would be completed to determine the suitability for future management within the HMA.

If the horses released back onto the Paymaster HMA remain there, they would be able to utilize clean, fresh water rather than the sewer ponds previously used. This would have an overall positive impact on herd and individual horse health. If, however, the horses move back down out of the HMA and into the valley and again start utilizing the Tonopah sewer ponds, overall horse health would continue to be jeopardized. The herd's distribution, movement, genetic variability and overall health would be monitored in the future and assessed in a Herd Management Area Plan. Fertility control efforts could be addressed in the future within the HMAP and following comment from the interested public.

The No Action Alternative would not result in any long-term cumulative benefits to any rangeland user. Continued range deterioration and loss of water sources and riparian habitat would not improve habitat for future generations of wild horses and burros. Based upon current population rate increases, the numbers of horses in 5 years designated to Paymaster HMA could exceed 600 horses in an area in which resources can only sustain about 45. If the populations were to increase unchecked, eventually emergency removal would be necessary to prevent catastrophic death of the herds. Irreparable damage to the arid habitat could result in the need to permanently remove all wild horses and burros from both of these HMAs.

4.2.6. Wildlife (Including Threatened & Endangered Species, Special Status Species, and Migratory Birds)

Livestock, wild horse and burro grazing, recreation, mineral exploration, mining and vegetation harvesting have likely impacted wildlife, special status species, and migratory bird habitat within the gather area since the Tonopah and Silver Peak areas were settled over 100 years ago. Livestock grazing and wild horse and burro use have also historically occurred in the Silver Peak and Paymaster HMAs and may have impacted wildlife habitat especially near water locations. These activities result in loss of habitat and disruption of movement patterns. The Proposed Action would not contribute to cumulative impacts associated with impediments to movement. Cumulative impacts associated with the Proposed Action and other human activities, such as construction of other water projects and invasive weed treatments are beneficial for wildlife and wildlife habitat. These projects/activities are implemented to enhance rangeland condition which benefit wildlife species and associated habitat.

There are no Threatened or Endangered plants found within the proposed gather area. The bald eagle is the only animal species identified to be possibly found within the gather area. No impacts to the bald eagle are expected because there is no critical T&E habitat found in the proposed gather area. Therefore, no cumulative impacts to bald eagles would occur under the Proposed Action, Alternative 1 or the No Action alternative.

Cumulative impacts of the Proposed Action would lead to overall improvement of rangeland resources, and wildlife habitat if wild horse and burro AML is regulated. Impacts would differ slightly between the Proposed Action and Alternative 1 in that there would be nearly twice the number of horses in Paymaster HMA in the Proposed Action as Alternative 1 utilizing the same natural resources (food, water, cover, and space) as wildlife. However, both alternatives would improve the quality and quantity of these resources because the wild horse population would be reduced. When combined with past, present, and reasonably foreseeable future actions, and incorporating mitigation measures, the potential for significant resource cumulative impacts to wildlife habitat from the Proposed Action and Alternative 1 would be negligible.

The No Action Alternative would not result in any long-term cumulative benefits to any rangeland user. Continued range deterioration and loss of water sources and riparian habitat in conjunction with any reasonably foreseeable projects or other management actions would not improve habitat for wildlife, sensitive species, or other values.

4.3. Summary of Past, Present, and Reasonably Foreseeable Future Actions

The area affected by the Proposed Action and Alternative 1 is the area in and around the Silver Peak HMA and the Paymaster HMA. Please refer to Map 1 which displays the HMA boundaries gather area, and Cumulative Effects Study Area. Past, proposed and reasonably foreseeable actions that may impact the Silver Peak and Paymaster wild horse and burro herds could include past and future wild horse gathers, management for burros within Silver Peak, and removal of all horses from Paymaster, if deemed unsuitable.. Over time, as wild horse and burro population levels attain and maintain an acceptable range of AML, thriving natural ecological balance would also be maintained.

Other reasonably foreseeable actions within the affected area may include permitted livestock grazing, mining, recreational activities, range improvements, and vegetation monitoring. The BLM would continue to conduct the necessary monitoring to periodically evaluate the effects of livestock grazing and use by wild horses and wildlife, and determine if progress is being made in the attainment of multiple use objectives and Standards for Rangeland Health. Monitoring would be in accordance with BLM policy as outline in the *Nevada Rangeland Monitoring Handbook* and other BLM technical references. However, cumulative beneficial effects from the Proposed Action and Alternative 1 are expected, and would include continued improvement of the range condition and riparian-wetland condition, which in turn positively impact wildlife, wild horse and burro populations, and livestock as forage availability and quality is maintained and improved. Water quality and riparian habitat would also continually improve.

Under the No Action Alternative, wild horse populations would continue to increase and cause impacts to the wildlife habitat from the periodic excessive use by wild horses at riparian areas and in rangeland vegetation, and potentially additive future effects of livestock grazing.

Direct cumulative impacts of the No Action Alternative, coupled with the impacts from past, present, and reasonably foreseeable actions, would preclude any improvement to the health of vegetative communities and the ecological condition of range as a whole. As a result, the No Action Alternative coupled with many of the past, present, and reasonably foreseeable actions would hinder success in attaining RMP objectives and Standards for Rangeland Health.