

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

**Buck and Bald Complex
Wild Horse Gather Plan
and Environmental Assessment**

**Ely No. NV-040-05-017
Elko No. BLM/EK-2005-013**

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I. Background Information

The Bureau of Land Management (BLM) Ely and Elko Field Offices are proposing to remove excess wild horses from the Buck and Bald Wild Horse Complex, in coordination with the Humboldt-Toiyabe National Forest. The Buck and Bald Wild Horse Complex consists of the Buck and Bald, Butte, Cherry Creek, and Maverick-Medicine Wild Horse Herd Management Areas (HMA) as well as the Humboldt-Toiyabe National Forest Cherry Springs Wild Horse Territory. Past capture, census, and distribution data collected indicate movement among the horses between these HMAs/Territory. For this action, the five HMAs/Territory will be referred to as the Buck and Bald Complex (Figure 1). This wild horse herd is being managed in accordance with an Interagency Agreement between the Bureau of Land Management and the United States Forest Service. The gather would occur in summer 2005, to restore the range to a thriving natural ecological balance and prevent deterioration of the range.

This environmental assessment (EA) has been prepared to analyze the impacts associated with the BLM's proposal to remove excess wild horses and will also assess whether or not fertility control treatment should be applied to mares released back to the range following the gather. Information about the Cherry Springs Territory is included for informational purposes and cumulative impact analysis.

The Buck and Bald Complex is located 30 miles northwest of Ely, Nevada, and 70 miles southeast of Elko, Nevada (Figure 1). The Buck and Bald, Butte, and Cherry Creek HMAs are located within White Pine County and are administered by the Ely BLM Field Office. The Maverick-Medicine HMA is located in Elko County and is administered by the Elko BLM Field Office. The Cherry Springs Territory is located in White Pine County and is administered by the Humboldt-Toiyabe National Forest. Table 1 shows the acres and Appropriate Management Level (AML) within each HMA/Territory.

Table 1 Acres

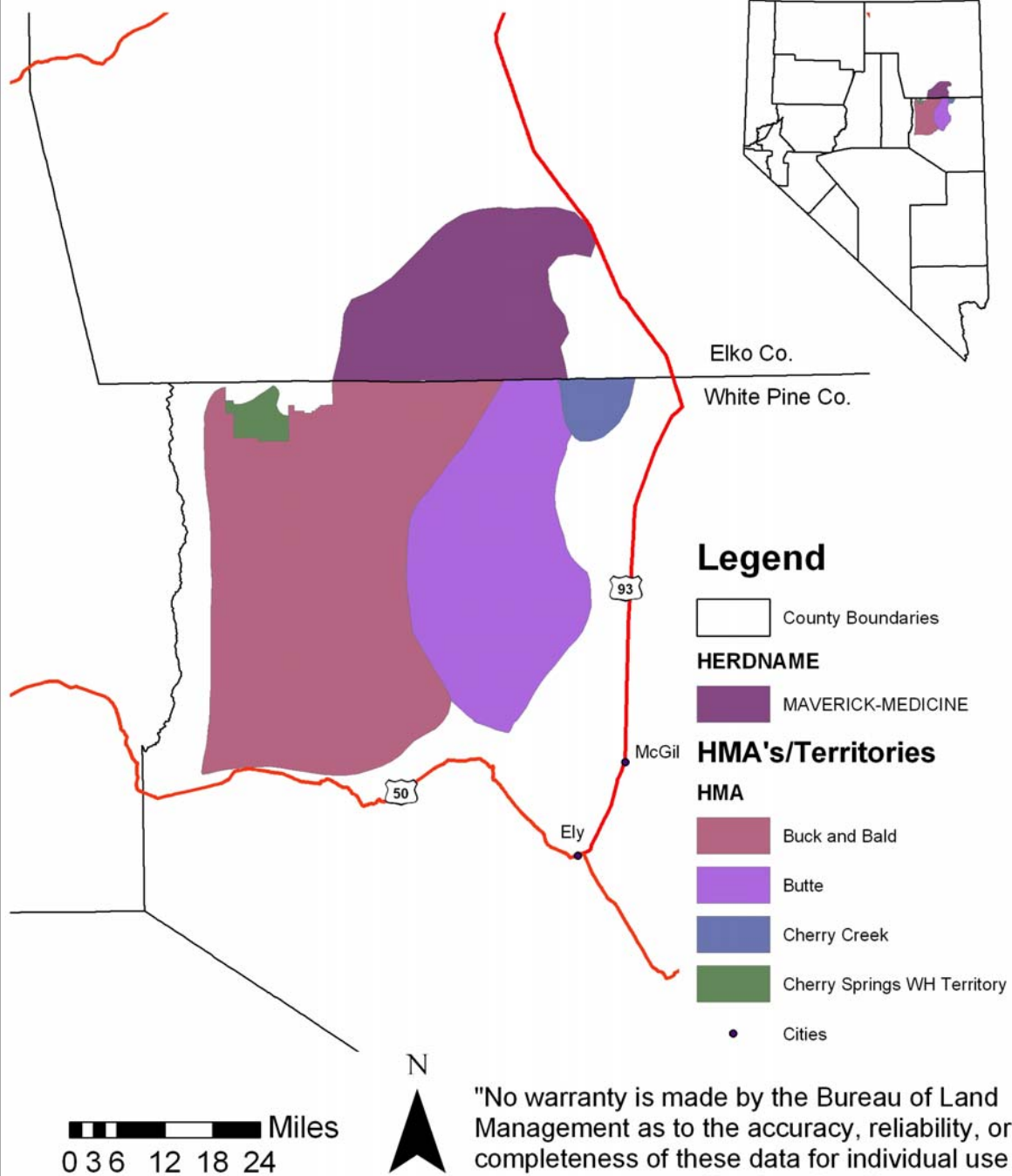
Herd	Total Acres	Appropriate Management Level
Buck and Bald HMA	838,702	423
Butte HMA	444,020	95
Cherry Creek HMA	37,492	0
Maverick-Medicine HMA	337,134	166-276
Cherry Springs Territory	23,794	48-68
Total	1,681,142	732-862

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) between 1990 and 2001, and the Forest Service Cherry Springs Territory Management Plan in 1993. The BLM allotment, AML, MUD or Management Plan, and date of decision are shown in Appendix I.



Figure 1. Buck and Bald Complex

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The Buck and Bald Complex was gathered in summer of 2001 to remove excess wild horses and achieve AML. After completion of that gather, the estimated population on the range was 517 wild horses, which is 345 wild horses below the high AML of 862. Aerial census of the Complex in 2001 and May 2002 combined with gather data, estimated the current population of the Complex at 1,286 head. Additional census is planned for June 2005, prior to the proposed gather. Based on past capture and census data, the average annual population increase is approximately 20% for the Complex. The current estimated wild horse population of 1,286 head is approximately 1.78 times higher than the low range of AML.

While wild horse numbers have increased an average of 20% since the HMA was last gathered, livestock use has remained within or below permitted use levels. Livestock use has also been in compliance with the grazing systems outlined in Final Multiple Use Decisions, Agreements, and Term Permits which provide periodic rest and deferment of key range sites. Pre-livestock utilization monitoring indicates that total utilization of key forage species has increased steadily since the HMA was last gathered; average utilization is now moderate to heavy within most key areas. Analysis of 2004 field monitoring data demonstrates an excess of wild horses in the Complex. Measurements of upland utilization on key grass species range from light to severe, including livestock rested areas and winter use areas. Winterfat (*Eurotia lanata*), a key browse species, exhibits moderate to heavy use by wild horses at some key areas. Heavy trailing by wild horses is evident at riparian areas and water developments. This data, together with a review of the analysis which established AML for the HMA, indicates that the current AML of 732-862 wild horses is appropriate and that excess wild horses are present and require immediate removal.

Due to continuing drought, limited water and forage is available to wild horses, livestock, and wildlife. In addition to the drought, the lightning-ignited Chrome Fire burned 5,164 acres of mostly pinyon-juniper habitat in July 2004, which further limits forage. The burned area was treated with aerial seeding and chaining during winter of 2004/2005 in an attempt to stabilize the site. The Chrome Fire was closed to livestock grazing through a Livestock Closure Agreement to protect soil and vegetation, and removing wild horses was proposed in the Emergency Stabilization Plan to minimize wild horse use to allow for the successful germination and establishment of the seeded species. Heavy use of forage near available water and competition between wild horses, livestock, and wildlife for limited forage and water has increased throughout the Complex. Due to the prolonged drought and current resource conditions the Proposed Action includes lowering the population for the Complex to 525 animals. Removal of excess wild horses to a level of 525 animals would ensure progress towards rangeland health standards and insure improved individual animal health over the next four years.

A. Need for the Proposed Action

BLM has determined that there are excess wild horses present and the Proposed Action is needed in summer of 2005 to remove excess wild horses and to restore wild horse herd numbers to levels consistent with the Appropriate Management Level (AML) for the Complex.

Vegetation monitoring in relation to use by wild horses in the HMA has determined that current wild horse population levels are exceeding the range's capacity to sustain wild horse use over the

long term. Resource damage is occurring and is likely to continue to occur without immediate action. The area has experienced five years of drought. Removing excess wild horses is needed to restore and maintain a thriving and natural ecological balance. Removing to a level below the maximum AML is needed to allow the population to gradually increase during the next four years to accommodate the gather cycle without causing range deterioration. Excess wild horses also need to be removed to help ensure the success of the Chrome Fire rehabilitation. The proposed capture and removal is needed at this time in order to achieve a thriving natural ecological balance between wild horse populations, wildlife, livestock, and vegetation, to improve watershed health, make “significant progress towards achievement” of Northeastern 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 alternatives for the Buck and Bald, Butte, and Cherry Creek HMA’s are subject to the Egan Resource Management Plan (RMP) and Final Environmental Impact Statement (FEIS) dated December 24, 1983, and resolution of protests received on the proposed RMP and FEIS documents dated September 21, 1984, and the Egan Resource Area Record of Decision (ROD) which was finalized February 3, 1987. The proposed wild horse gather is in conformance with the Egan RMP as required by regulation (43 CFR 1610.5-3(a)). The proposed action is in conformance because it is clearly consistent with the goals and objectives of the approved land use plan. It is further consistent with the White Pine County Policy Plan for Public Lands (PPPL) as adopted by the Board of County Commissioners of White Pine County, May 1, 1985 and amended June 12, 1985. This plan stated in part “...wild horse herds should be managed at reasonable levels to be determined with public involvement and managed with the consideration of the needs of other wildlife species and livestock.” The action is also consistent with the White Pine County Elk Management Plan (EMP), approved March 1999, and the Greater Sage-Grouse Conservation Plan for Nevada and Eastern California, First Edition June 2004.

For the Maverick-Medicine HMA, the proposed action and alternatives conform to the Wells Resource Management Plan (RMP) approved July 16, 1985, and the wild horse amendment to the Wells RMP, approved August 1993. The Wells RMP, Issue 7: Wild Horses, management decisions 1, 2, and 3 direct the management in the project area. The amendment further outlines the level of management for wild horses within the Maverick-Medicine HMA. The Amendment established wild horse pre-livestock allowable use levels at 10%, which the proposed gather of excess wild horses would help to achieve.

The proposed action is consistent with all applicable regulations at 43 CFR (Code of Federal Regulations) 4700 and policies. The proposed action is also consistent with the Wild Free Roaming Horse and Burro Act of 1971, which mandates the Bureau to “prevent the range from deterioration associated with overpopulation”, and “remove excess horses in order to preserve and maintain a thriving natural ecological balance and multiple use relationships in that area”. Additionally, Promulgated Federal Regulations at Title 43 CFR 4700.0-6 (a) state “Wild horses

shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat (emphasis added).” It is also consistent with the BLM Strategic Plan for Management of Wild Horses and Burros on Public Lands, dated June 1992, which states, “Provide for management of Wild Horse and Burro populations through a variety of techniques that may be used singly or in combination to ensure habitat is maintained and animals living on the land are in concert with the natural ecosystem and other users of the land.”

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

The Chrome Fire A7DM Emergency Stabilization Plan dated August 13, 2004 calls for the removal of wild horses in order to protect the burn. The proposed action is consistent with this plan and the Decision Record and Finding of No Significant Impact dated August 13, 2004.

C. Issues

The two primary issues identified are the proper management of wild horses and maintaining rangeland health. Other issues related to the proper management of wild horses include gather operations can potentially affect individual animals, herd health, genetic diversity/population viability, herd social structure, and age and sex structures. Other issues related to maintaining rangeland health include wild horses causing damage to rangeland vegetation because the current population exceeds the established AML, and excess wild horse use has the potential to prevent successful emergency stabilization efforts in the Chrome fire.

II. Description of the Proposed Action and Alternatives

A. Proposed Action

The Proposed Action is to gather 80 to 100 percent of the estimated population, or approximately 1,029 to 1,286 wild horses, and remove approximately 761 head. Depending on gather efficiency, approximately 269 (144 mares and 125 studs) to 525 wild horses (281 mares and 244 studs) would be released within the Buck and Bald Complex post-gather. Also as part of the proposed action, BLM would conduct immunocontraceptive research and monitor results as required by Wild Horse and Burro Program policy (IM-2004-138). The research would include using the immunocontraceptive drug, porcine zona pellucidae (PZP) vaccine on all of the mares released into the BLM-administered HMA's. The Forest Service would not treat mares with the fertility control drug. For detailed description of fertility control Standard Operating Procedures for the use of PZP vaccine, including post-treatment monitoring requirements, see Appendix II. Although gathering 100 percent of the population would be attempted, based on past gather experience it is expected that the actual capture rate may be closer to 80 or 90 percent. If less than 80 percent of the population is captured, fewer wild horses would be released (to account for those uncaptured) and fertility control would not be implemented due to the low number released. Gathering and removing all wild horses from areas outside of designated HMA and Territory boundaries would also occur. Current estimates indicate 40 wild horses are outside the

Complex boundaries. If movement of known Maverick-Medicine wild horses into the adjacent isolated portion of the Antelope Valley HMA west of Highway 93 is observed during the gather, gathering in that area would also occur. The gathers would be conducted in about July/August 2005. Table 2 shows the current estimated populations, AML, and estimated capture and removal numbers.

Table 2 Estimated Wild Horse Populations

Herd	Estimated Population	AML	Estimated Numbers to Remove	Estimated Numbers to Release with 100 % Capture Rate	Estimated Numbers to Release with 80 % Capture Rate
Buck and Bald HMA	662	423	408	254	122
Butte HMA	149	95	92	57	27
Cherry Creek HMA	4	0	4	0	0
Maverick-Medicine HMA	394	276-166	228	166	87
Cherry Springs Territory	77	68-48	29	48	33
Total	1,286	862-732	761	525	269

The post gather population of approximately 525 wild horses would represent the lower level of the AML for the Maverick-Medicine HMA and the Cherry Springs Territory. For the other HMA's, their populations would be reduced to the number shown through population modeling that would allow for a population increase during the four-year gather cycle without exceeding a *“thriving natural ecological balance.”*

During gather activities, BLM personnel would record data for the captured horses including sex, age and color; and assess herd health (pregnancy/parasite loading/physical condition/etc), and sort horses by age and sex. Selected animals would be returned to the HMAs based on desired characteristics for each herd, and consistent with the following selection criteria of the BLM's *Gather Policy and Selective Removal Criteria for Wild Horses* (Washington Office IM 2002-095):

- a) *Age Class Five Years and Younger:* Wild horses five years of age and younger may be removed and placed into the national adoption program.
- b) *Age Class Ten Years and Older:* Wild horses ten years of age and older may be removed and placed into long-term holding.
- c) *Age Class Six to Nine Years:* Wild horses aged six to nine years old should be removed last and only if the HMA cannot achieve AML without their removal.

Multiple capture sites (traps) would be used to capture wild horses from the HMAs/Territory. No trap sites would be set up in sage grouse leks, riparian areas, cultural resource sites, or Wilderness Study Areas (WSA's). Capture sites would be located in previously disturbed areas (not including the Chrome Fire). All trap sites, holding facilities, and camping areas on public lands would be recorded with Global Positioning System equipment, given to the weed coordinator, and then assigned for monitoring during the next several years for noxious weeds. All capture and handling activities (including capture site selections) will be conducted in accordance with Standard Operating Procedures (SOPs) Appendix III. Capture techniques would be the helicopter-drive trapping method and/or helicopter-roping from horseback.

B. Gather Without Fertility Treatment

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

C. No Action Alternative – Continuation of Existing Management

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

Under this alternative gathering and removing animals would be deferred. This alternative postpones direct management of the wild horse populations in the Buck and Bald Complex. No progress toward meeting rangeland health standards for upland and riparian sites, and habitat for wildlife and wild horses, would be made until such time as excess wild horses are removed. Wild horse populations would continue to increase at rates of 19-20% per year. A management action to reduce herd numbers may be evaluated and implemented at later time. The Elko and Ely BLM Field Offices and the Humboldt-Toiyabe National Forest would continue habitat and population monitoring on the wild horse populations within the Buck and Bald Complex.

D. Other Action Alternatives

No other alternatives are necessary to respond to unresolved conflicts concerning the alternative use of available resources.

E. Alternatives Considered But Eliminated From Detailed Analysis

An additional alternative considered was to gather to the upper limit of the population range without fertility control. This alternative was eliminated from detailed analysis because it would not achieve the need for the action. Although the upper limit of AML would be achieved right after the gather, during the following spring foals would be born and wild horse numbers would again exceed the carrying capacity of the range. Wild horse populations would continue to increase above AML, causing resource damage until another gather could be conducted. Having gathers more frequently causes additional stress and band displacement on wild horses, and additional resource disturbance and damage.

The alternative of gathering to the upper limit of the population range and applying fertility control was also eliminated from detailed analysis because implementation of this alternative would not achieve the need for the action. Wild horse numbers would exceed the AML during the first foaling season and begin causing damage to the range. Although reproduction would be slowed during years two and three, being above AML would not achieve a thriving natural ecological balance. This alternative would not provide adequate relief on stressed natural resources, especially given the severity and length of the current drought cycle and the loss of habitat in the Chrome Fire.

III. Affected Environment

General Setting

The Buck and Bald Complex is located in northwestern White Pine and southern Elko Counties approximately 30 air miles northwest of Ely, Nevada, and 70 miles southeast of Elko, Nevada. The area is within the Great Basin physiographic regions, characterized by a high, rolling plateau underlain by basalt flows covered with a thin loess and alluvial mantle. On many of the low hills and ridges that are scattered throughout the area, the soils are underlain by bedrock. Elevations within the Complex range from approximately 5,000 feet to 10,000 feet. Precipitation ranges from approximately 7 inches on the valley bottoms to 16 to 18 inches on the mountain peaks. Most of this precipitation comes during the winter months in the form of snow. Temperatures range from greater than 90 degrees Fahrenheit in the summer months to minus 15 degrees in the winter. The area is also utilized by domestic livestock and numerous wildlife species.

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

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

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

Critical Element	No Effect	May Affect	Not Present	Rationale
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 are introduced species within North America and have few natural predators. Few natural controls act upon wild horse herds making them very competitive with native wildlife and other living resources managed by the BLM. Census flights have been conducted in the Buck and Bald Complex regularly. These census flights have provided information pertaining to population numbers, foaling rates, distribution, and herd health. Wild horse population growth rates average 20% in Buck and Bald HMA, 20% in Butte HMA, 19% in Maverick-Medicine HMA, and 17% in the Cherry Springs Territory. Wild horses have only been censused in the Cherry Creek HMA during 1987 and 1989. The estimated population of 4 wild horses is based on a recent observation in the area, and it is unknown whether those wild horses will remain in the area or what their population growth rate is. The estimated herd population for the Buck and Bald Complex was determined from 2002/2001 census data. Wild horses within the Complex generally move between HMA's/Territories due to minimal fencing. The Complex is bordered to the northeast by the Antelope Valley HMA, which is managed by the Elko Field Office.

The 2001 capture data shows the animal colors and percent frequency for the largest HMA's in the Complex (Table 4).

Table 4. Color of Animals by HMA

Color	Buck and Bald	Butte	Maverick-Medicine
Bay	22%	40%	31%
Sorrel	22%	13%	22%
Black	8%	7%	18%
Brown	5%	16%	6%
Roan	6%	15%	3%
Buckskin	6%	2%	8%
Gray	4%	1%	2%
Grulla	2%	1%	2%
Palomino	9%	1%	3%
Dun	1%	2%	3%
White	2%	1%	%
Pinto	2%	1%	1%

Data from the 2001 gather showed the herd to be approximately 68 percent 0 to 9 years old, and 32 percent 10 years or older. Current age structure for the Complex should be similar. Sex ratios for wild horses within the Complex are representative of other HMAs managed by the Elko and Ely FO, and the West at large. At birth, sex ratios are roughly equal. This balance shifts to favor mares throughout the younger age classes. This pattern shifts again at around 15 years of age, favoring studs. During the 2001 gather the sex ratio was 53 percent studs and 47 percent mares. The selection of animals to be released back into the HMAs would follow these same age and sex ratios.

Blood samples were collected from 132 wild horses during the 2001 Buck and Bald Complex 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. The results showed enough genetic diversity to prevent inbreeding and negative genetic mutation. This genetic data would be incorporated into a Herd Management Area Plans in the future. Known movement between the HMA's/Territory helps to diversify these gene pools and contribute to herd heterozygosity.

Environmental Impacts

Assumptions for analysis: Impact analysis assumes that fertility control will slow wild horse reproduction rates. Previous research on winter application of the two-year drug has shown that mares that are already pregnant will foal normally, but the fertility control treatment will be 94% effective the first year, 82% the second year, and 68% the third year.

Proposed Action – The Proposed Action would remove excess wild horses within the Complex and would improve overall herd health. Less competition for forage and water resources would reduce stress and promote healthier animals. The proposed action would also allow for the continued collection of information on herd characteristics, determination of herd health, and the implementation of a fertility control research project. Applying fertility control measures as part of the proposed action would slow reproduction rates of mares returned to the HMA following the gather, allowing vegetation resources time to recover. It would also decrease gather frequency and disturbance to individual animals and the herd, and provide for a more stable wild

horse social structure.

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 don't break the skin. The occurrence of spontaneous abortion events among mares following capture is very rare.

Population modeling was completed to illustrate the differences in the alternatives and will be used for a comparison. Modeling was only done for the BLM portion of the wild horse population, and excludes the Cherry Springs Territory. Modeling helps to determine future herd demographics and population growth. The modeling for the proposed action indicates that the average wild horse population growth rate of the median of 100 trials should be 13.7% over four years. The average population size of the median of 100 trials would be 856 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).

Implementation of this action would reduce the wild horse population to within AML. This would ensure that the remaining wild horses are healthy and vigorous, and not at risk of death due to insufficient habitat. This would also be in compliance with the Wild Free Roaming Horse and Burro Act, Northeastern Great Basin RAC Standards, 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. 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, which in turn may put them at risk in new and unfamiliar country.

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 in the Proposed Action.

Population modeling indicates that the average wild horse population growth rate of the median of 100 trials should be 16.3% over four years. The average population size of the median of 100 trials would be 913 wild horses at the end of four years. Modeling also indicates that the population after the gather would not put the population at risk of catastrophic loss or "crash" (Appendix IV).

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

Wild horses are a long-lived species with documented survival rates exceeding 92% for all age classes. Predation and disease do not substantially regulate wild horse population levels. This

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

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

To facilitate easy comparison of alternatives, the no action alternative was also modeled for four years. The average of 100 population modeling trials indicates that if the current wild horse population continues to grow without a removal the median population size would be 1,817 wild horses at the end of four years. Modeling indicates the average growth rate is expected to be a 15% annual increase (Appendix IV).

B. Vegetation, Special Status Plants, and Soils

Affected Environment

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

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

The plant species dominating the lower elevations include Wyoming big sagebrush, low sagebrush, black sagebrush, winterfat, shadscale, budsage, sickle saltbush, black greasewood, rabbitbrush, Indian ricegrass, Sandburg bluegrass, bluebunch wheatgrass, bottlebrush squirreltail,

needlegrass and assorted forb species.

The plant species dominating the higher elevations include Wyoming big sagebrush, mountain sagebrush, black sagebrush, antelope bitterbrush, Utah serviceberry, snowberry, golden and squaw current, pinyon pine, Utah juniper, curlleaf mountain mahogany, limber pine, white fir, bluebunch wheatgrass, needlegrass and assorted forb species. There is one special status plant, the Nachlinger catchfly, that is located within the Butte and Cherry Creek HMA's is two isolated locations. There will be no impact to this plant, as trapsites will not be located on these high elevation, steep-sloped sites.

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 that are 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. An inventory of biological soil crusts was completed at the key areas on the Currie, North Butte Valley, and Maverick/Ruby #9 Allotments. Crust cover ranged from 0% to 22.2% at the key areas. Currie Gardens key area CU-09, and Ruby #9 KA-01, both had more than 20% biological soil crust cover. Biological soil crusts are typically found on calcareous pinyon juniper sites, although a complete inventory has not been done.

Monitoring data collected for the HMA highlights that combined utilization by wild horses and livestock has increased from 2002 through 2004. During this time, wild horse numbers have increased while livestock have remained fairly constant or decreased. Utilization is exceeding allowable use levels and is reaching moderate to heavy use in established key areas. Excess utilization in key areas and trampling in riparian areas is currently impacting range conditions and inhibiting recovery of those sites.

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 Buck and Bald Complex to within AML. It would reduce stress on vegetative communities, and be in compliance with the Wild Free Roaming Horse and Burro Act, Northeastern Great Basin RAC Standards, and land use plan management objectives. 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. With less wild horse use, vegetation and soil stabilization efforts in the Chrome Fire would have a greater chance of success.

Overall, soil conditions would improve after horse numbers are reduced. Less soil compaction would occur in riparian areas where the soils are most susceptible. Compressional 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 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 could include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts could be by vehicle traffic and the hoof action of penned horses, and could be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Soil compaction, localized wind erosion, and possible 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. 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 from 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. Major spring complexes within the Maverick-Medicine HMA include Odgers North Spring Complex and County Line Spring Complex. These complexes, along with the major perennial drainage of Odgers Creek contribute approximately 15 acres of riparian habitat. Springs within the Butte HMA include Butte Spring, Cabin Spring, Nine-mile Spring, and Hunter Spring, as well as numerous springs on Telegraph Peak. Major springs within the Buck and Bald HMA include Rock, Beck, Moore, Woodchuck, Deer, Indian, North, and Cracker Johnson Spring. Some riparian areas are currently experiencing trampling damage from the over-population of wild horses. Hoof action impacts have led to hummocking of terrain surrounding spring sources, drying of meadows, and headcuts along drainages. This type of disturbance combined with reduced vegetative cover is frequently associated with increased floodstage and sediment loading, which can degrade water quality.

Perennial streams within the Butte HMA include Paris and Snow Creek. Both of those creeks, along with Goshute Creek and Indian Creek, are also partially within the Cherry Creek HMA. One perennial stream, Huntington Creek, is within the Buck and Bald HMA. A few perennial streams also occur in the Maverick-Medicine HMA including Odgers Creek, McDermid Creek, Phalen Creek, Cottonwood Creek, and Taylor Creek. A Proper Functioning Condition (PFC) inventory was conducted in 1998-9 on the springs and streams in the Maverick-Medicine Allotment Complex. The condition of the riparian areas ranged from nonfunctional to properly functioning, although the majority of springs were functional at risk with a downward trend. One of the causal factors cited in the allotment evaluation was wild horse use on the Currie Allotment upper elevation sites, and on the Odgers allotment. PFC assessments have also been conducted within the other HMA's, with similar results.

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, without slowing reproduction, a steady increase in the number of wild horses through natural foaling rates would have a more steady impact on riparian areas. Riparian 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 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, Migratory Birds, and Special Status Animal Species (federally listed, proposed, or candidate threatened or endangered species; State listed species; and BLM sensitive species)

Affected Environment

There are approximately 350 species of vertebrate wildlife that potentially occur in northeastern Nevada (BLM Elko District 1992 Mammal, Bird, and Reptile and Amphibian Lists). The Buck and Bald Complex provides habitat for many of these species on a seasonal or yearlong basis. Examples of the highly visible wildlife species in the area include pronghorn antelope, mule deer, and Rocky Mountain elk. The Complex provides “crucial” summer, “crucial” winter, year-long and intermediate habitat for mule deer, year-long habitat for elk, and yearlong pronghorn antelope habitat.

Wildlife habitat types include the predominant vegetation types of sagebrush, cliffs and talus, mountain brush, pinyon-juniper, salt desert scrub, playa/lakes and riparian habitat types. Although riparian areas comprise a relatively small portion of the available habitat, they provide a disproportionately higher habitat value for wildlife. Present riparian conditions on many areas are poor. Upland sites where utilization by livestock and wild horses is light show a good mix of native shrub, forbs, and grass species, and are in good condition. Upland areas more heavily used by livestock and wild horses are in poor condition.

Special Status Animal Species Affected Environment

Special Status Species are those listed or proposed for listing as threatened or endangered under the Endangered Species Act (ESA), species that are candidates for listing under the ESA, species that are listed by the State of Nevada, and species that are on BLM’s list of Sensitive Species.

Based on the diversity of habitats present within the Complex, the area likely supports sensitive species of migratory birds (including raptors), and bats, as well as known populations of sage grouse, pygmy rabbits, burrowing owls, and Preble’s shrew. Appendix V provides a detailed summary of the definition of Special Status Species, outlines BLM policy regarding those species, and contains a list of Special Status Species known or likely to occur within the Complex.

The HMA provides habitat for bald eagles (*Haliaeetus leucocephalus*), a Federally listed threatened species, during the late fall and winter period. Upland and open water foraging areas are widely dispersed. This includes areas that provide roost sites, and intact habitat with shrub cover for prey species such as black-tailed jackrabbits, and adjoining areas with open water.

Sage grouse are a BLM and State of Nevada Sensitive Species. Sage grouse use the majority of the HMAs for all seasonal habitat needs. This includes breeding (lek areas/strutting grounds) and attendant (resting, foraging, and roosting areas) habitat, nesting, early (upland) brood-rearing, and winter habitat. There are approximately 40 known sage grouse leks within the Buck and Bald Complex.

Sage grouse are considered sagebrush “obligates” because they feed almost exclusively on sagebrush and continue to feed on sagebrush throughout the late fall and winter until forbs reappear the following spring. Sage grouse are also dependent on healthy and diverse age structures of sagebrush to provide habitat for successful nesting, brood-rearing and winter use areas. During the spring, sage grouse utilize forbs, which are high in calcium, phosphorous and protein, to prepare them nutritionally for breeding. Sage grouse chicks rely heavily on forbs and insects in their diets. Habitats that provide a diversity of plant species also support a wide diversity of insects, which are essential to chicks. Riparian areas are critical to sage grouse during late brood rearing; as habitats start to dry up hens usually move their chicks to moister sites where more succulent vegetation is available.

Habitat components that fulfill yearly life requirements for sage grouse are summarized below (Dynamac Corp. 2004):

1. Lek: strutting grounds found in open areas surrounded by sagebrush where males display in late February through early May to attract females for breeding. Leks and approximately a two-mile radius around the lek are the focal point of the breeding and nesting complex. Areas larger than the two-mile radius may be necessary where sagebrush communities are heavily fragmented.
2. Nesting and early brood rearing habitat: Used in late March through June. Suitable habitat requires nesting cover and food availability and sagebrush stands with a robust understory of grasses and forbs. Bluebunch wheatgrass is preferred because of its growth form. An ample variety, distribution and abundance of forbs, and insects such as ants and beetles, are needed as food for chicks.
3. Late brood-rearing habitat: late June through October. Preferred habitat includes healthy riparian areas, wet meadows, and upland plant communities with available food, primarily forbs such as Yarrow (*Achillea*), Buckwheat (*Eriogonum*), Dandelion (*Taraxicum*), Prickly lettuce (*Lactuca*), False Dandelion (*Agoseris*), Paintbrush (*Castilleja*), Salsify (*Tragopogon*), and Hawksbeard (*Crepis*). Forb abundance, diversity and availability are crucial. Close proximity to escape cover (sagebrush) is also important.
4. Winter habitat: November to early March. South-facing and/or wind-swept gentle slopes. Sagebrush (for cover and food) must be available during periods of deep snow.

The Buck and Bald Complex contains large portions of the Butte/Buck/White Pine and the Ruby Valley sage grouse population management units (PMUs), with minor portions of the South Fork and Diamond PMUs. Population estimates for the entire Ruby Valley PMU are 1,741 to 2,089; the general trend for this PMU has been downward for many years. In the near short-term, data indicates that sage grouse populations in White Pine County declined from 1999-2003. Prolonged drought may likely be the biggest factory in this decline. Trends in the other PMUs

are similar.

Pygmy rabbits are sagebrush obligates, most often associated with Basin big sagebrush. However, stands of Wyoming big sagebrush (often in proximity of riparian areas) also are used. Pygmy rabbits dig their own burrows and are usually found close to their burrow systems. Their primary food source is sagebrush, particularly in the winter. Grasses are more important in the summer. Pygmy rabbits have been documented within the Complex.

Burrowing owls are associated with areas of short grasses or shrubs, open sites and the availability of below-ground burrows for nesting. Primary prey for burrowing owls consists of vertebrates (mainly rodents) and invertebrates (mainly beetles) (Belthoff, et. al. 1995). No burrowing owls have been documented within the Complex; however, they have been documented in surrounding areas within vegetative types which are present.

Preble's shrews are found in Nevada primarily in streamside sagebrush, rabbitbrush, bitterbrush, bunchgrass and forbs; willow and greasewood meadows, and sagebrush, aspen and willow riparian habitat. They feed primarily on insects and other small invertebrates (Univ. of WY). No Preble's shrews have been documented within the Complex; however, they have been documented in surrounding areas within vegetative types which are present.

The Medicine/Maverick HMA provides aquatic and riparian habitat for two aquatic BLM Sensitive Species, the relict dace (*Relictus solitarius*) and North Steptoe springsnail (*Pyrgulopsis serrata*). The springsnail has been identified to inhabit a spring off of Phalen Creek, and the relict dace inhabit portions of Odgers Creek, both large spring complexes (North Odgers and County Line) and a scattering of small drainages in the eastern portion of the HMA. The relict dace is also found in springponds throughout the Complex in other HMAs. The Newark Valley Tui Chub also inhabits similar springponds located in the valleys on public and private land. Bonneville cutthroat trout, another BLM Sensitive Species, are found in Goshute Creek in the Cherry Creek HMA.

Twenty two sensitive species of migratory birds (including raptors) are thought or known to occur within the Complex on a seasonal basis. These species use a variety of habitats. Healthy upland and riparian habitats are essential to provide suitable nesting habitat, foraging areas and cover. Raptor species are dependent on these habitats to provide, habitat (cover and forage) for their prey base.

In general, bats use water between night-time foraging bouts. They utilize all of the habitat types for foraging and feed on a variety of nocturnal insects.

Migratory Birds Affected Environment

On January 11, 2001, President Clinton signed the Migratory Bird Executive Order. This executive order outlines the responsibilities of Federal agencies to protect migratory birds and directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. A list of the migratory birds affected by the President's executive order is contained in 50 CFR 10.13. References to "species of concern" pertain to those species

listed in the periodic report “Migratory Nongame Birds of Management Concern in the United States”, priority migratory bird species as documents by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 CFR 17.11.

Predominant habitat types within the HMA which may have migratory birds include: aspen, mountain riparian, mountain shrub, sagebrush, pinyon/juniper, salt desert scrub, playa and cliffs/talus habitat types. There are small inclusions of coniferous forest and mountain mahogany habitat types included in the upper elevations of the Cherry Creek Range. The Nevada Partners in Flight Bird Conservation Plan identifies the bird species associated with the predominant ecotypes, as listed in Appendix VI.

The migratory bird nesting season is from May 15 through July 31. No surface disturbing activity can be conducted during this time period without a nesting bird survey of the proposed project area.

Environmental Impacts

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

The proposed gathering of excess wild horses would not have immediate impacts to wetlands or riparian zones and their associated Sensitive Species, as no traps or holding facilities would be built in these areas. Overall, the proposed gather and reduction of wild horse numbers would improve habitat for a sustained period of time in riparian and spring areas.

Alternative I – Impacts would be the same as in the proposed action, however wild horse populations may increase more quickly and indirectly affect wildlife and Special Status Species sooner.

No Action Alternative – Wildlife would not be temporarily displaced or disturbed under the no action alternative. As wild horse numbers increased annually, there would be continued competition between wildlife and wild horses for water and forage resources. Wild horses are aggressive around water sources, and some wildlife species may not be able to compete. The competition for resources may lead to increased stress or dislocation of native wildlife species, or possible death of individual animals. Continued growth of wild horse numbers would result in heavy to severe utilization of wetland/riparian areas. As these important habitats degrade, it could affect Special Status Species that rely on wetland/riparian areas.

E. Livestock

Affected Environment

The Buck and Bald Complex includes portions of multiple livestock grazing allotments (Figure 2). Permitted livestock grazing use in the Buck and Bald Complex can include sheep and cattle grazing during the winter, spring, summer, and/or fall. Livestock grazing also occurs in areas immediately adjacent to the HMA. Permitted livestock grazing use has been decreased in a majority of the allotments with issuance of the applicable FMUDs. Since the last gather, permitted livestock use has not been exceeded, and in many areas, actual livestock use has been reduced.

Voluntary livestock reductions from 2002 through 2004 due to drought and competition with wild horses have occurred in the Medicine Butte and Thirty-Mile Spring Allotments. Allotments that have had no livestock grazing since the last gather include Maverick/Ruby #9, and North Butte. Additionally, in 2004 the Odgers and North Butte Valley Allotments were rested.

Environmental Impacts

Proposed Action – Past experience has shown that gather operations have little direct impacts to grazing cattle and sheep. A reduction of wild horses to AML would result in an increase in forage availability and quality, improved habitat condition, and reduced competition between livestock and wild horses for available forage and water resources. Livestock located near gather activities would be disturbed by the helicopter and the increased vehicle traffic during the gather operation. This displacement would be temporary; and the livestock would move back into the area once gather operations moved.

Alternative I – Impacts would be the same as in the proposed action, however, wild horse populations may increase more quickly and indirectly affect livestock sooner.

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.

F. Wilderness

Affected Environment

The Buck and Bald Complex contains a large portion of the Goshute Canyon Wilderness Study Area (WSA) and Instant Study Area (ISA) (Figure 3). The Goshute Canyon WSA/ISA lies in the Cherry Creek Range. The 13 mile long WSA is a rugged, uplifted range, with massive white limestone cliffs jutting from its slopes. The lower elevations are thickly forested by pinyon pine and juniper, while bristlecone and limber pine occur at the higher elevations. Aspens and cottonwoods in the moist drainages provide for a cool retreat. Large high elevation basins



Figure 2. Livestock Grazing Allotments

4/13/05 JLN
NV-040

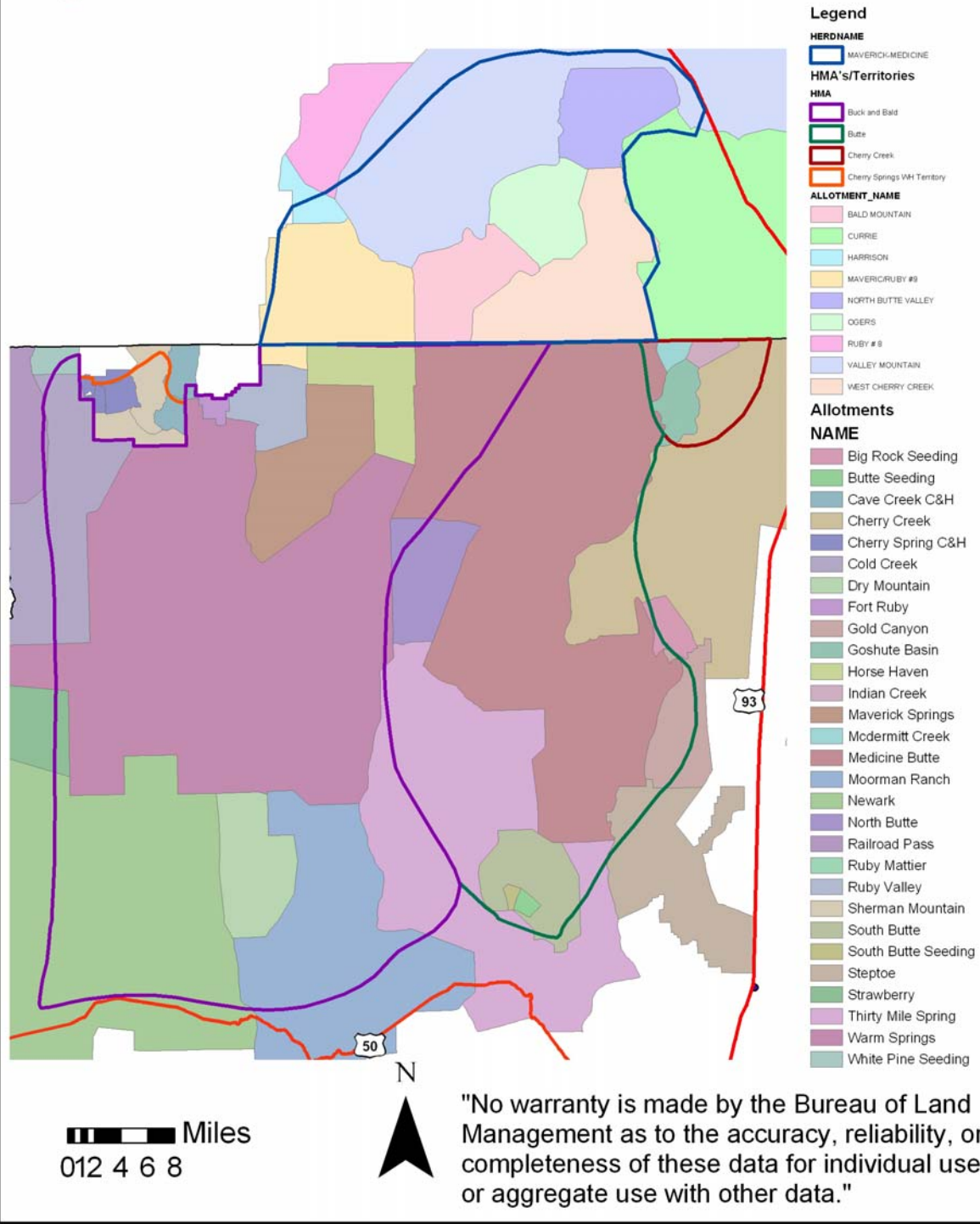
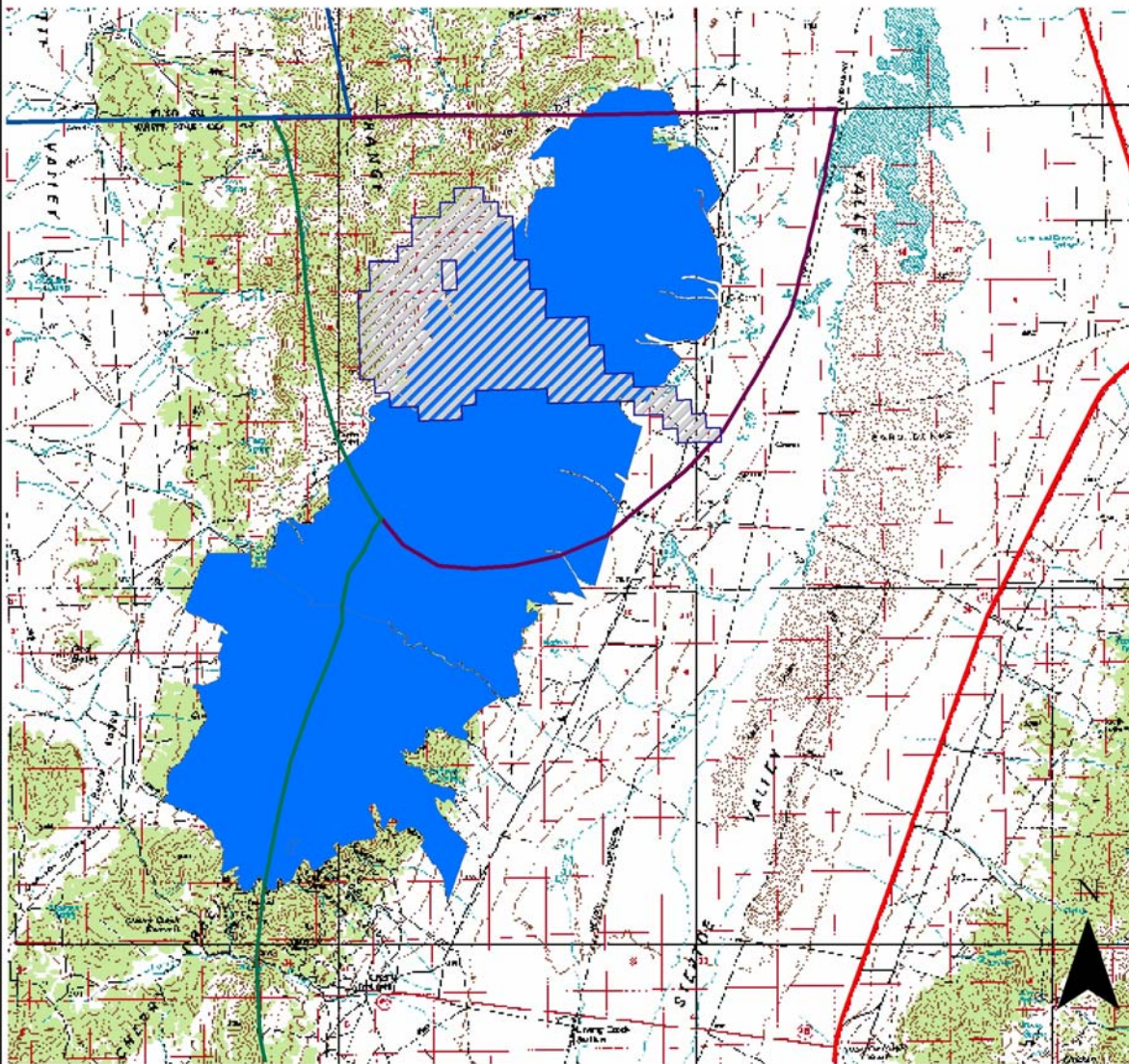









Figure 3. Wilderness/Instant Study Areas

4/13/05 JLN
NV-040



Legend

-  Maverick-Medicine HMA
-  Butte HMA
-  Cherry Creek HMA
-  Goshute Canyon WSA
-  Goshute Canyon ISA



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

rimmed by peaks contain pockets of aspen and white fir and are filled with wild flowers in the spring and summer. Snowmelt and numerous springs provide riparian settings and water sources for a great number of wildlife species including Bonneville cutthroat trout in Goshute Creek, mule deer, mountain lions, bobcats, and various birds of prey.

There are outstanding opportunities for primitive forms of recreation in the Goshute Canyon WSA. Goshute Cave is an extensive limestone solution cave that offers excellent opportunities for caving and geological study. The cave is rich in formations and relatively well preserved although nearly 100 years of visitation has led to some deterioration.

Environmental Impacts

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

Alternative I – Impacts would be the same as in the proposed action, however, wild horse populations may increase more quickly and affect WSA's sooner.

No Action Alternative – No impacts to wilderness due to gather operations would occur. Impacts to wilderness values of naturalness would continue to occur through the continued degradation of vegetative and soil resources by high numbers of wild horses. To some, the sight of heavy horse trails, trampled vegetation and areas of high erosion detract from the wilderness experience.

G. Noxious Weed 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 Elko and Ely FO. Noxious weeds are aggressive, typically nonnative, ecologically damaging, undesirable plants, which severely threaten biodiversity, habitat quality and ecosystems. Because of their aggressive nature, noxious weeds can eventually spread into established plant communities. The following noxious or invasive weed species are known to exist within the Buck and Bald Complex.

<u>Scientific Name</u>	<u>Common Name</u>
<i>Cirsium vulgare</i>	bull thistle
<i>Hyoscyamus niger</i>	Black Henbane
<i>Cardaria draba</i>	hoary cress/whitetop
<i>Onopordum acanthium</i>	Scotch thistle

<i>Cirsium arvense</i>	Canada thistle
<i>Acroptilon repens</i>	Russian knapweed
<i>Conium maculatum</i>	poison hemlock
<i>Carduus nutans</i>	musk thistle
<i>Centaurea maculosa</i>	spotted knapweed
<i>Lepidium latifolium</i>	perennial pepperweed/tall whitetop
<i>Centaurea virgata</i>	squarrose knapweed

These weeds occur in a variety of habitats including road side areas, rights-of-way, wetland meadows, as well as undisturbed upland rangelands.

Environmental Impacts

Proposed Action – The proposed gather may spread existing noxious 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 prior to construction. If noxious weeds were found, the location of the facilities would be moved. Any off-road equipment that has been exposed to weed infestations would be cleaned before moving into relatively weed free areas. All trap sites, holding facilities, and camping areas on public lands would be monitored during the next several years. Despite short-term risks, with the reduction in wild horse numbers, and the subsequent recovery of the native vegetation, fewer disturbed sites would be available 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.

H. Cultural Resources/Paleontological Resources

Affected Environment

Although a Class III cultural resources inventory of the entire Complex has not occurred, the Class I inventory for the Ely and Elko Districts 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 Elko and Ely 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. 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 can be found. 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

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 Buck and Bald 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 or Territories were established in the late 1980s through the land use planning process as areas where wild horse management was a designated land use. Since the mid-1980s, AMLs have been established on the Ely and Elko BLM District HMAs as well as the Forest Service Territories.

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 Buck and Bald Complex. Five gathers have been completed in the past on part or all of the HMAs/Territory, and future gathers would be scheduled on a 4-or 5- year gather cycle.

Approximately 4,950 wild horses have been removed from the Buck and Bald Complex in the last 25 years and populations are thriving and have not been negatively impacted. An Appropriate Management Level determination for the Buck and Bald Complex was established through BLM Multiple Use Decisions completed 1990 through 2001, and the Forest Service Cherry Springs Territory Management Plan in 1993.

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

The Northeastern Great Basin Resource Advisory Council (RAC) developed standards and guidelines for rangeland health that have been the basis for managing wild horse and livestock grazing within the Ely and Elko Districts. Adjustments in numbers, season of use, grazing season, and allowable use are based on evaluating progress toward reaching the standards.

Present Actions

Today the Buck and Bald Complex has an estimated population of 1,286 wild horses. Resource damage is occurring due to this excess of animals. Current BLM policy is to conduct removals targeting portions of the wild horse population based upon age, and allowing the correction of any sex ratio problems that may occur. Further, the BLM's policy is to conduct gathers in order to facilitate a four-year gather cycle. Program goals have expanded beyond establishing a "*thriving natural ecological balance*" (by setting appropriate management level (AML)) for individual herds, to include achieving and maintaining healthy, viable, vigorous, and stable populations. As part of the Buck and Bald Complex gather, the Humboldt-Toiyabe National Forest will also be conducting a wild horse gather on their Cherry Springs Territory concurrently with the BLM.

Current mandates prohibit the destruction of healthy animals that are removed or deemed to be excess. Currently only sick, lame, or dangerous animals can be euthanized, and destruction is no longer used as a population control method. This has led to gather intervals that are longer than the desired four years due to a lack of facility space and funding. 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 Ely and Elko BLM have also modified grazing permits and conducted vegetation treatments to improve watershed health. Currently within the Buck and Bald 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.

Reasonably Foreseeable Future Actions

In the future, the BLM would manage wild horses within HMAs that have suitable habitat for a population range of AML, 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 that 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 Ely and Elko Field Offices 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 that there would be 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 four times since 1971. Therefore, there is potential for an amendment as a reasonably foreseeable future action. With continued implementation of the sale authority, gathers and removals should become more predictable due to facility space. This should increase stability of gather schedules, which would result in the Buck and Bald Complex being gathered 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 Buck and Bald 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 Buck and Bald 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. Additional mitigation or monitoring measures are not warranted.

VII. Consultation and Coordination

Public hearings are held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses (or burros). The Nevada State BLM Office held a meeting on May 17th, 2005, and received input from various members of the public. The proposed action was presented at a Native American Consultation Meeting on May 12th. The Tribes asked to be given the trapsite/holding facility locations after the gather, but expressed no other concerns or issues concerning the proposed wild horse gather. 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 May 24, 2005:

Gary Bengochea, Nevada First Corporation	Gail Parker
7H Ranch LCC	Gale Dupree, NVWF
Andrea Lococo, The Fund for Animals Inc	Gary Back, SRK Consulting
Arthur Carhart, National Wilderness Training Center	Gary Kohnke
Barbara Agonia	George Lea, President Public Lands Foundation
Barbara Flores, Colorado Wild Horse and Burro Coalition	Glenn Clemmer, Nevada Natural Heritage
Barbara J Walker, Forest Service	Gretchen Burris
Barbara Warner	H&R Livestock
Betsy MacFarlan, ENLC	H. Bonnie Matton, Wild Horse Preservation League
Betty Kelly, Wild Horse Spirit	Hale Bailey
Bill Mull	Harlan Pete
Bob Maxwell, Union Pacific	Harold Votipka
Bobbi Royle, Wild Horse Spirit	Harvey Healey
Carl Hass, Hass and Associates	Hawkwatch International, Inc.
Carl Slagowski	Henry C. Vogler
Carl Wilson	Herbert Stathes
Carol Sherman, C/O Allen Sherman	Honorable Harry Reid
Cecil Bates	Honorable John Ensign, US Senate
Chairman, Ely Band of the Western Shoshone	Honorable Rupert Steel, Goshute Business Council
Charles Baun	Horace Smith, Cottonwood Ranch
Charles Gillepsie, CG Squared	Ira Renner, Harold Rother Farms Inc
Charles S Watson, Jr., Nevada Outdoor Recreation	Jack & Irene Walther
Charles Young	Jack and Terry Bowers
Cheri Madison	James A Gibbons
Chournos Inc	Jane Feldman, S. NV Group of the Sierra Club
CL Cattle Company, LLC, C/O Chris Collis	Jeff Jarvis, BLM WO Wilderness
Committee For Idaho's High Desert	Jeff Vanece
Congressman Jim Gibbons	Jeffrey Roche
Cowboy John Tours	Jim Andrae, Agri Beef
Craig C Downer	Jim Catlin, Wild Utah Project
Dan Frehner, Lincoln County Commission	Joe Cumming, Boss Tanks, Inc
Dave and Jennifer Free	Joe McGloin
Dave Pulliam, NV Dept of Wildlife	John Blethen
David Alberswerth, National Wildlife Federation	John Carpenter
David Buhlig, Nevada Land and Resource Co	John J Davis Jr.

Dawn Lappin, Wild Horse Organized Assistance
Dean Baker, Baker Ranches
Deputy Forest Supervisor, USFS Humboldt-Toiyabe NF
Diane Nelson, Wild Horse Sanctuary
Double U Livestock LLC, C/O Jim West
Dr. Bonnie Bobb, Yomba Shoshone
Dr. Donald A Molde
Dr. Glenn Miller
Ellison Ranching Company
Environmental Specialists, Ely Shoshone Tribe
Erica Pollard, Nevada Wilderness Project
Esmeralda County Commissioners
Eureka County Dept of Natural Resources
Executive Director, Animal Protection Institute of America
Ferris & Marlene Brough
Friends of Nevada Wilderness
Friends of Nevada Wildlife, Attn: Tom Myers
Les McKenzie
Leta Collord
Lincoln County Commissioners
Lois Sagel
Lois Snedden, Sierra Club Toiyabe Chapter
LW Peterson
Lynn Zonge, RCI
Marge Prunty
Maria M Ryan, UNR Coop Ext
Martha Hoots
Michael Stafford, State of Nevada Clearing House
Mike Griswold, Horseshoe Ranch
Milton Hooper, Goshute Business Council
Mori Ranches, Peter Mori
Mr and Mrs Brent Espil
Mr Don L Zerga
Mr Grant Gerber, Wilderness Impact Research Foundation
Mr Richard W McKay
Mr Robert McGinty
Mr. Ben Roberts, Great Basin National Park
Mr. Bob Hallock, US Fish and Wildlife Service
Mr. Brent Eldridge, George Eldridge and Sons
Mr. Curtis A Baughman, NDOW
Mr. Curtis A Baughman, NDOW
Mr. Dan C Heinz, American Wildlands
Mr. David Odonnell
Mr. George Lee
Mr. George Nickas, Wilderness Watch
Mr. Howard Booth
Mr. John E. Hiatt
Mr. Michael J. Podborny, NDOW
Mr. Michael S. Wickersham, NDOW

John McLain, Principal, Resource Concepts, Inc
John Neff
Joshua Abbey
Karen Klitz
Karl Lind
Karla Jones, Nevada Ranch Service
Kathleen Bertrand
Kathryn M. Cushman
Katie Fite, Western Watersheds Project
Kenneth Jones
Kenny Merkle
Kitt Lear
Kristen Brengel, The Wilderness Society
Kyle W. Bateman
Laurel Marshall, NV Woolgrowers Assoc
Lear, Kay & Mary K
Leona Rawley
Ms. Joan Dance, Marydean Associates
Ms. Karen A Sussman
Ms. Laurel Marshall, Eureka Producers Cooperative
Ms. Patricia Irwin, USFS Humboldt Toiyabe
Ms. Sharon Crook
Ms. Shelley Hartman, Lincoln Co. Public Lands Commission
Ms. Susan Asher
Naomi Pratt, Holland and Hart, LLP
National Wild Horse Assoc
Natural Resources Defense Council, Attn: Johanna Wald
NDOW, Brad Hardenbrook
Need More Sheep Company
Nevada Cattlemen's Association, Joe Guild
Nevada Dept of Agriculture
Nevada Farm Bureau Federation
Nevada Farm Federation
Nevada Outdoor Recreation Assn., Attn: Charles Watson
Norma Enberg
Nye County Commissioners
Nye County Planning Department
Parasol Ranching LLC, c/o Larry Schutte
Patience O'Dowd, Wild Horse Observers Assoc
Patricia and Lana Paul
Paul Bottari, Nevada High Country Tours
Pelter Ranch, c/o Robert Pelter
Phil Briggs
Pine Valley Sheep Ranch
Public Lands Foundation
RC McClymonds
Red Rock Audubon Society, Attn: John E. Hiatt
Rex Cleary, Resource Concepts Inc
Rex Steniger

Mr. Mike Scott, NDOW
Mr. Paul C. Clifford Jr
Mr. Randall Spoerlein, Save the Mustangs
Mr. S B Anpu
Mr. Steven Carter, Carter Cattle Co.
Mr. Wayne Howle
Mrs Dawn Lappin, WHOA
Mrs. June Sewing, National Mustand Association Inc
Ms Anna Charlton, Animal Rights Law Center
Ms Christine Stones, Ely Shoshone Tribe
Ms Cindy Marques, Ely Shoshone Tribe
Ms Debbie O'Neil
Ms Laurel Marshall, Eureka Producers Cooperative
Ms Patricia Irwin, US Forest Service
Ms Wendy Paris, Bertrand Paris and Sons
Ms. Bobbi Royle, Wild Horse Spirit
Ms. Candice Grayman, Moapa Tribal Business Council
Ms. Carol A Corbett
Ms. Catherine Barcomb, Comm for Preservation of wild horses
Ms. Christine Stones, Ely Shoshone Tribe
Teri Slatauski, NDOW
Terry Bolander
The Wilderness Society, Attn: Sara Barth
Theresa Monoletti
Thousand Peaks Ranch
Tina Nappe
Tina Nappe, Sierra Club
Tom Bath, Westen Marble Inc
Tonia Harvey, Baker Area Citizens Advisory Borad
Tribal Chairman, Shoshone-Paiute Tribes of Duck Valley
Turner & Irlbeck Ranch, C/O Kathy Bertrand
US Forest Service Humboldt Toiyabe Natl
US Wild Horse Burro Foundation
USFWS, Reno
USFWS, Southern Nevada Field Office
Vaugh Higbee
Vernon Glade
Von Sorenson
Wade Robinson, White Pine Co. Wildlife Advisory Borad
Wade West
Walter Barbuck
Wesley Bowlen
White Pine Co Commissioners
Wild Horse Commission, Cathy Barcomb
Wild Horse Preservation League, Chuck Matton
Wilde Brough, Humboldt Outfitters, Inc
Wilderness Impact Research Foundation, Attn: Grant Gerber

Richard Hankins
Richard Sewing, National Mustang Assoc Inc
Rob Stokes, Elko County
Robert Taylor
Robert Williams, US Fish and Wildlife Service
Roberta L. Moore, Great Basin National Park
Robin C Lahnes, American Horse Protection Assoc
Roger Scholl
Ron Kezar
Ronald P. McRobbie, Air Force Regional Environmental Office
Sandra Barela
Scott Egbert, Egbert Livestock LLC
Scott Merrill
Senator Dean Rhoads
Shaaron Netherton, Friends of Nevada Wilderness
Sherie Goring
Sierra Club - Toiyabe Chapter, Attn: Marjorie Sill
Sierra Club - Toiyabe Chapter, Attn: Rose Strickland
Simplot Land & Cattle
Soroptimist International
State of Nevada Department of Minerals
Sterling Wines
Steve Foree, NDOW
Steven Fulstone
Stuart Taylor
Susan Potts, Friends of Nevada Wilderness

During the 30-day comment period, written comments were received from the following person, organizations and agency, and are available upon request from the Ely Field Office.

Western Watersheds Project, Boise, Idaho

John C. Carpenter, Assemblyman, District 33, Nevada

Barbara Warner, AHDF KY SC, Marion County Humane Society, Lebanon, Kentucky

Robert Stokes, Elko County Board of Commissioners, Elko, Nevada

Kimberley Perondi, Nevada State Clearinghouse Coordinator/SPOC, Carson City, NV submitted a letter stating that the State Clearinghouse has processed the proposal and had no comment.

The input received that is addressed in this EA is summarized as follows:

I. Background Information

- What utilization measurements and other monitoring has been conducted?
- Please provide all collected counts or census data for all areas.
- When was the last gather and how many animals were removed?
- Do any of these horses interact with other horses?
- Have any other fires occurred to decrease wild horse forage? How much forage used by wild horses was lost due to the Chrome fire?
- This gather is unlawful as it goes against the 1971 WHBA requiring BLM protection of wild horses.
- BLM is mandated to manage the range primary for wild horses.
- Wild horses do not reproduce at a rate of 20% but only at 10%.
- There is no excess of wild horses.
- Wild horses limit their own populations according to forage and range conditions.
- Please provide data and evidence that shows if drought conditions have caused a downward trend in vegetation communities.
- Monitoring that clearly show wild horses are causing riparian impacts.
- Horse herds are living on a range that does not support their numbers.

II. Description of the Proposed Action and Alternatives

- This gather will reduce the horses to levels where the resources may start to improve.
- What is the data on which you are basing the proposal to gather 80 to 100 percent of the estimated horse population?
- Please describe how you will choose “previously disturbed sites” for your facilities.
- With older horses dying and other mortality factors there is no reason to remove any wild horses or give mares PZP.
- The No Action Alternative is the ethical choice and I urge that it be chosen.
- Elko County Board of Commissioners supports the proposed action of gathering wild horses.

IV. Environmental Consequences

- This area has been impacted very much by wild horse overgrazing.
- Widespread weed invasion is resulting from continued overstocking of these lands with domestic livestock.
- What are the risks associated with the immunocontraceptive research, and how

effective has it been?

- What is the expected mortality or injury level for wild horses?
- What utilization measurements and other monitoring has been conducted?
- We have noticed excessive grazing by domestic livestock on winterfat, and far less horse sign in winterfat communities.
- How has BLM monitored livestock and horse impacts to the WSA?
- The gather is planned for months when temperatures will be high, causing horses to die due to heat and stress.
- Family groups will be separated causing stress which could result in colic or other harm, and transportation could cause injuries and deaths. This is cruel and inhumane.
- The herds need to number at least 150 to be genetically viable.
- At the same time Elko BLM is authorizing TNR grazing, drought is occurring.
- Are ranchers running even more livestock than their permits allow, or their actual use reports show?
- Without immediate action, wild horse herds will continue to grow with negative impacts to the environment and health of the herds.
- Local ranchers are punished for practicing good grazing practices only to have the wild horse herds ruin the range.

VIII. Appendices

- Describe “population modeling” and provide detailed information on the model.

The following comments that were received are answered by the Evaluations and the FMUDs, which are available on request:

- What was the authorized domestic livestock grazing period on the lands? Please provide information based on annual operating plans or grazing schedules for each pasture in each allotment.
- Please provide all ecological information that show the carrying capacity of the affected lands.
- BLM must ensure that livestock stocking rates are currently in balance with the land resources.
- What are the numbers of livestock being turned out and how do these numbers compare to the permitted number of AUMs?
- More AUMs across the allotments are grazed by livestock than horses, and studies must be conducted to determine ecological setting.
- The EA does not contain the number of AMU’s for cattle and sheep so it is not a complete analysis. What is the ratio of livestock to wild horses?
- The Cherry Creek HMA has been zeroed out of wild horses. How many cattle and/or sheep have been allowed in this HMA.
- How many AUMs are allocated by pasture and allotment, for domestic livestock and wildlife?

Issues which will be addressed when a Herd Management Area Plan is developed include:

- Provide a map showing water sources for wildlife, wild horses, and domestic livestock.
- Provide a map showing winter use, foaling and other areas of wild horse use and the condition of these areas.

- How have you differentiated horse, cattle, sheep, and elk impacts?
- What geographic barriers to horses exist across these lands?
- What fences, water projects, or other livestock facilities have been constructed in the HMA since establishment?

Other issues raised that were determined to be outside the scope of this EA include:

- Domestic livestock are causing damage to the rangeland while wild horses and wildlife are getting short shrift.
- BLM has conducted no studies about the current condition of the land and resources.
- Domestic cattle grazing is causing extreme degradation of the proposed gather area.
- Ely BLM has avoided NEPA analysis of public lands grazing permits.
- Domestic livestock are degrading wild horse HMAs by causing weed invasion.
- Please present range deterioration evidence in an EIS.
- Please provide a cost for this action and compare it to fees paid for livestock grazing AUMs.
- Please describe impacts of domestic livestock and livestock facilities on special status species and migratory birds.
- Cattle and sheep are overpopulating the land and causing damage. Permittees may be grazing above the cow-calf pair of an AUM.
- Public lands ranchers have neglected to repair livestock facilities and blame all problems on horses.
- The BLM is spending dollars on wasteful hazardous fuels projects within the Cherry Creek HMA in order to promote livestock grazing.
- You must prepare an EIS for this very significant action to analyze all direct, indirect, and cumulative impacts.
- Are any new fences constructed or planned in the affected lands?
- BLM has failed to consider reducing domestic livestock, requiring herding of domestic livestock, and installing electric fence around the Chrome fire.
- BLM must prepare a current grazing suitability, carrying capacity, productivity, and grazing analysis.
- Please provide detailed information on compliance and any trespass problems with livestock permittees.
- Do any of the affected animals use lands within the area where Elko BLM is conducting a Special Status Species EIS?
- Will new OHV trails impact the affected horses or lands?
- Please provide evidence that cattle or sheep grazing is being altered or adjusted due to drought.
- Where did cattle displaced from the Chrome fire go?
- Cattle have been found to cause range degradation according to the GAO and National Academy of Sciences while wild horses cause little to no damage. Cattle especially harm water and riparian areas.
- Please provide all field data with verification that no livestock trespass has occurred.
- Please provide geographic location of all field monitoring sites.

Any questions regarding long term holding, horse sale authority, adoption, and BLM management of wild horses as a whole should be directed to BLM's National Program Office,

1340 Financial Blvd., Reno, NV 89502.

Any questions regarding wildlife numbers should be directed to Nevada Division of Wildlife, 1100 Valley Road, Reno, NV 89512.

The comments received were considered in relationship to completion of the EA and Decision Record/FONSI.

Internal District Review

Ely Field Office

Jody Nartz	Wild Horses/Author
Jared Bybee	Wild Horses
Karen Prentice	Invasive, Non-Native Species
Steve Leslie	Wilderness Values, Visual Resource Management, Recreation
Nathan Thomas	Archaeological/Historic/Paleontological
Paul Podborny	Migratory Birds, Special Status Species, Riparians/Wetlands
Kerry Flood	Air Quality, Water Quality, Floodplains
Chris Hanefeld	Public Affairs
Larry Martin	Operations
Jake Rajala	Environmental Coordination
Elvis Wall	Native American Religious Concerns/Tribal Coordination
John Longinetti	Livestock Grazing
Ryan Pitts	Livestock Grazing

Elko Field Office

Bryan Fuell	Wild Horses
Nycole Burton	Wildlife Biologist
Wendy Fuell	Wildlife Biologist
Bruce Thompson	Rangeland Management Specialist
Carol Marchio	Soil, Water, and Air

Appendix I: Appropriate Management Level

Herd	Allotment	MUD & Date	AML # Animals
Buck and Bald HMA	Cold Creek	FMUD 1992	48
	Dry Mountain	FMUD 1990	30
	Fort Ruby	FMUD 1991	0
	Horse Haven	FMUD 1992	36
	Maverick Springs	FMUD 2001	34
	Medicine Butte	FMUD 1992	11
	Moorman Ranch	FMUD 1997	20
	Newark	FMUD 1992	51
	Ruby Valley	FMUD 2001	0
	Thirty Mile Spring	FMUD 2001	49
	North Pancake (part of Newark)	FMUD 1991	AML shown with Newark
	Warm Springs	FMUD 1994	144
	North Butte	FMUD 2001	0
	Total		423
Butte HMA	Cherry Creek	FMUD 2001	6
	Medicine Butte	FMUD 1992	69
	North Butte	FMUD 2001	3
	South Butte	FMUD 1992	5
	Steptoe	FMUD 1992	0
	30 Mile Spring	FMUD 2001	12
Total		95	
Cherry Creek HMA	Cherry Creek	FMUD 2001	0
	Goshute Basin	FMUD 2001	0
	Indian Creek	FMUD 2001	0
	McDermitt Creek	FMUD 2001	0
	Medicine Butte	FMUD 1992	0
Total		0	
Maverick-Medicine HMA	Valley Mountain	FMUD 1998	62-104
	Bald Mountain	FMUD 2001	33-55
	Odgers	FMUD 2001	10-16
	North Butte Valley	FMUD 2001	11-18
	Maverick/Ruby #9	FMUD 2001	31-51
	West Cherry Creek	FMUD 1994	19-32
Total		166-276	
Cherry Springs Territory	Cherry Springs Territory Management Plan	Decision 1993	40-68

APPENDIX II

Standard Operating Procedures for Fertility Control Treatment

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

- PZP vaccine would be administered by trained BLM personnel.
- A liquid dose of PZP would be administered concurrently with a time released portion of the drug (pelleted formulation) to breeding mares returned to the range (the pellets are injected with the liquid and are designed to release PZP at several points in time much the way time-release cold pills work).
- Delivery of the vaccine would be as an intramuscular injection by jab stick syringe or dart with a 12 gauge needle or 1.5" barbless needle, respectively while mares are restrained in the working chute; 0.5 cubic centimeters (cc) of the PZP vaccine would be emulsified with 0.5 cc of adjuvant (a compound that stimulates antibody production) and loaded into the delivery system. The pellets would be placed in the barrel of the syringe or dart needle and would be injected with the liquid. Upon impact, the liquid in the chamber would be propelled into the muscle along the pellets¹.
- All treated mares would be freeze-marked on the hip to enable researchers to positively identify the animals during the research project as part of the data collection phase.
- At a minimum, monitoring of reproductive rates using helicopter flyovers will be conducted in years 2 through 4 by locating treated mares and checking for presence/absence of foals. The flight scheduled for year 4 will also assist in determining the percentage of mares that have returned to fertility. In addition, field monitoring will be routinely conducted as part of other regular ground-based monitoring activities.
- A field data sheet will be forwarded to the field from BLMs 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.

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

APPENDIX III

STANDARD OPERATING PROCEDURES

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

Gathers are normally conducted for one of the following reasons:

1. Regularly scheduled gathers to obtain or maintain the Appropriate Management Level (AML).
2. Drought conditions that could cause mortality to WH&B due to the absence of water or forage, and where continued grazing may result in a downward trend to the vegetative communities due to plant mortality and reduced vigor and productiveness.
3. Fires that remove forage to the extent that there is inadequate forage to sustain the population or to allow recovery of native vegetation.
4. Utilization levels that reach a point where a continued increase in utilization would cause a downward trend in the plant communities and impede meeting standards for rangeland health.
5. Monitoring indicates that WH&B use would begin to cause a downward trend in riparian function or not permit the recovery of riparian vegetation determined to be in undesirable condition.

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

1. Helicopter - Drive Trapping

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

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

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

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

- a. Under no circumstances shall animals be tied down for more than one hour.
- b. The contractor shall assure that bands remain together, and that foals shall not be left behind.

B. BLM Conducted Gather - Non-Contract Operations

1. Gather operations will be conducted in conformance with the Wild Horse and Burro Aviation Management Handbook (March 2000).
2. Two-way radio communication between the helicopter and the ground crew will be maintained at all times during the operation.

C. Safety and Communications

1. The Contractor shall have the means to communicate with the BLM and all contractor personnel engaged in the capture of wild horses and burros utilizing a VHF/FM Transceiver or VHF/FM portable Two-Way radio. If communications are ineffective the government will take steps necessary to protect the welfare of the animals.
 - a. The proper operation, service and maintenance of all contractor furnished property is the responsibility of the Contractor. The BLM reserves the right to remove from service any contractor personnel or contractor furnished equipment which, in the opinion of the BLM violate contract rules, are unsafe or otherwise unsatisfactory. In this event, the Contractor will be notified in writing to furnish replacement personnel or equipment within 48 hours of notification. All such replacements must be approved in advance of operation by the BLM.
 - b. The Contractor shall obtain the necessary FCC licenses for the radio system.
 - c. All accidents occurring during the performance of any delivery order shall be immediately reported to the BLM.

2. Should the helicopter be employed, the following will apply:
 - a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.
 - b. Fueling operations shall not take place within 1,000 feet of the animals.
 - c. At time of delivery order completion, the contractor shall provide the BLM with a completed copy of the Service Contract Flight Hour Report.

D. Trapping and Care

1. The primary concern of the contractor is the safe and humane handling of all animals captured. All capture attempts shall incorporate the following:
 - a. All trap and holding facilities locations must be approved by the BLM prior to construction. The Contractor may also be required to change or move trap locations as determined by the BLM. All traps and holding facilities not located on public land must have prior written approval of the landowner.
 - b. A cultural resources investigation by an archaeologist or an archaeological technician would be conducted prior to trap or holding facility construction. If cultural values are found, an alternative site would be selected.
 - c. Prior to facility (temporary traps and holding corrals) construction, the proposed locations would be examined for the presence of noxious weeds. If it is determined that noxious weeds are present, the contractor would be instructed to locate the facilities elsewhere. The contractor and his personnel would also be instructed to avoid camping in or driving through noxious weed infestations.
2. The rate of movement and distance the animals travel shall not exceed limitations set by the BLM who will consider terrain, physical barriers, weather, condition of the animals and others factors.
3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
 - a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding facilities shall be oval or round in design.

- b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered with plywood (without holes) or like material.
 - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable restraining chute to restrain, age, or provide additional care for animals shall be placed in the runway in a manner as instructed by or in concurrence with the BLM.
 - d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.
 - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.
4. No fence modifications will be made without authorization from the COR/PI. The Contractor/BLM shall be responsible for restoration of any fence modification.
 5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor/BLM shall be required to wet down the ground with water.
 6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age or other similar practices. In these instances a portable restraining chute will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires the animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the Contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the BLM.
 7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding

facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day.

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

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

- a. The animal shows a hopeless prognosis for life.
 - b. Suffers from a chronic disease.
 - c. Requires continuous care for acute pain and suffering.
 - d. Not capable of maintaining a body score of one.
 - e. The animal is a danger to itself or others.
10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the BLM for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the BLM. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the BLM. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the BLM. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the BLM.
 11. The BLM will issue a Notice of Intent to Impound Unauthorized Livestock prior to all gathers. Branded or privately owned animals whose owners are known will be impounded by BLM, and if not redeemed by payment of trespass and capture fees, will be sold at public auction. If owners are not known, the private animals will be turned over to the State for Processing under Nevada estray laws.

E. Motorized Equipment

1. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations

applicable to the humane transportation of animals. The Contractor shall provide the BLM with a current safety inspection (less than one year old) for all motorized equipment and tractor-trailers used to transport animals to final destination.

2. All motorized equipment, tractor-trailers, and stock trailers shall be in good repair, of adequate rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.
3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.
4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the BLM.
5. Floors of tractor-trailers, stock trailers, and the loading chute shall be covered and maintained with wood shavings to prevent the animals from slipping.
6. Animals to be loaded and transported in any vehicle or trailer shall be as directed by the BLM and may include limitations on numbers according to age, size, sex, temperament, and animal condition. The following minimum square feet per animal shall be allowed in all trailers:

11 sq. ft. per adult horse (1.4 linear ft. in an 8ft. wide trailer);
6 sq. ft. per horse foal (.75 linear ft. in an 8ft. wide trailer).
7. Prior to any gathering operations, the BLM will provide for a pre-capture evaluation of existing conditions in the gather areas. The evaluation will include animal condition, prevailing temperatures, drought conditions, soil conditions, road conditions, and a topographic map with location of fences, other physical barriers, and acceptable trap locations in relation to animal distribution. The evaluation will determine the level of activity likely to cause undue stress to the

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

8. If the BLM determines that dust conditions are such that animals could be endangered during transportation, the Contractor will be instructed to adjust speed.
9. Trap sites will be located to cause as little injury and stress to the animals, and as little damage to the natural resources of the area, as possible. Sites will be located on or near existing roads. Additional trap sites may be required, as determined by the BLM, to relieve stress caused by specific conditions at the time of the gather (i.e. dust, rocky terrain, temperatures, etc.).

F. Animal Characteristics and Behavior

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

G. Public Participation

It is BLM policy that the public will not be allowed to come into direct contact with wild horses or burros being held in BLM facilities. Only BLM personnel, or contractors may enter the corrals or directly handle the animals. The general public may not enter the corrals or directly handle the animals at anytime or for any reason during BLM operations.

H. Responsibility and Lines of Communication

Ely District

Contracting Officer's Representatives

Ely Field Office

Jody Nartz

Elko Field Office

Bryan Fuell

Project Inspectors

Ely Field Office

Ryan Pitts

Paul Podborny

Jared Bybee

Elko Field Office

Bruce Thompson

Donna Nyrehn

Kathy McKinstry

Kristine Dedolph

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 Elko Assistant Field Manager for Renewable Resources and the Ely and Elko 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 PVC Corrals to ensure animals are being transported from the capture site in a safe and humane manner and are arriving in good condition.

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

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

APPENDIX IV POPULATION MODELING

Population modeling was completed for the proposed action and the alternatives for the BLM-managed herds. Estimated or projected population numbers do not reflect the estimated population on the Cherry Springs Territory (77 wild horses). One hundred trials were ran, 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 1209 wild horses for the Buck and Bald, Butte, Cherry Creek, and Maverick-Medicine HMA's was used in the population modeling. 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 2005. 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 2009. This is reflected in the Population Size Modeling Table by "Population sizes in 5 years" and in the Growth Rate Modeling Table by "Average growth rate in 4 years". Growth rate is averaged over four years in time, while the population is predicted out the same four years to the end point of year five. 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: 2005
- Initial gather year: 2005
- Gather interval: regular interval of four years
- Sex ratio at birth: 50% female-50% male
- Percent of the population that can be gathered: 80%
- Minimum age for long term holding facility horses: no restrictions
- Foals are not included in the AML
- Simulations were run for four years with 100 trials each
- Fertility control is estimated to be 94% effective in year 1 and 82% effective in year 2

Population Modeling Comparison For the Alternatives

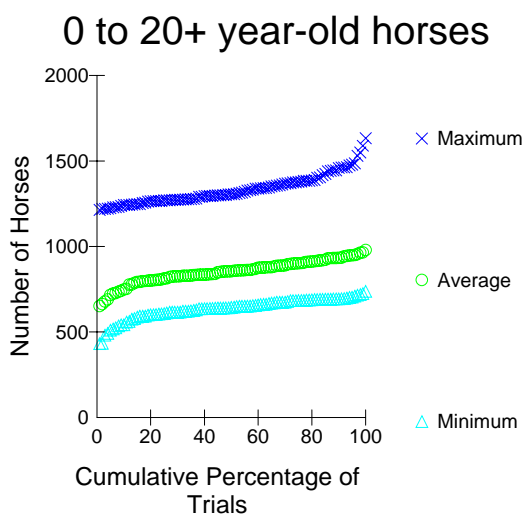
This table compares the projected population growth for the proposed action and the alternative at the end of the four-year simulation. The population averages are across all trials.

Modeling Statistic	Proposed Action	Alternative I	No Action Alternative
Population in Year One	466	466	1209
Median Growth Rate	13.7	16.3	15.0
Average Population	856	913	1817
Lowest Average Population	652	643	1215
Highest Average Population	979	992	2461

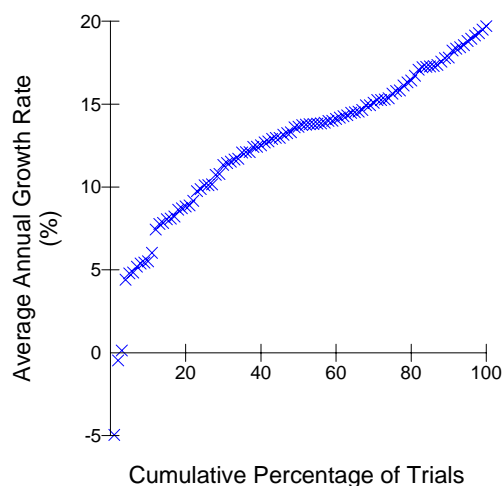
Full Modeling Summaries:

Proposed Action: Gather with Fertility Control

Population Size Graph



Growth Rate Graph



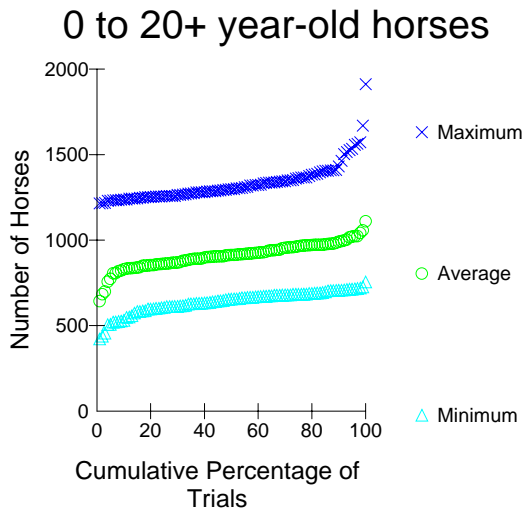
Population Sizes in 5 Years*			
	Minimum	Average	Maximum
Lowest Trial	432	652	1213
10th Percentile	550	750	1242
25th Percentile	610	814	1270
Median Trial	644	856	1306
75th Percentile	685	902	1378
90th Percentile	694	934	1460
Highest Trial	738	979	1633

* 0 to 20+ year-old horses

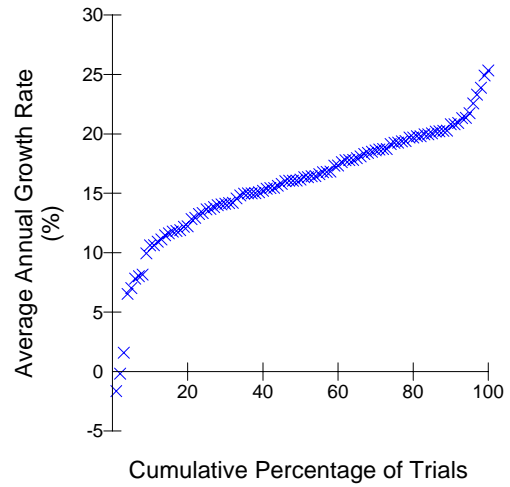
Average Growth Rate in 4 Years	
Lowest Trial	-5.0
10th Percentile	5.8
25th Percentile	10.1
Median Trial	13.7
75th Percentile	15.7
90th Percentile	18.0
Highest Trial	19.7

Alternative I: Gather without Fertility Control

Population Size Graph



Growth Rate Graph



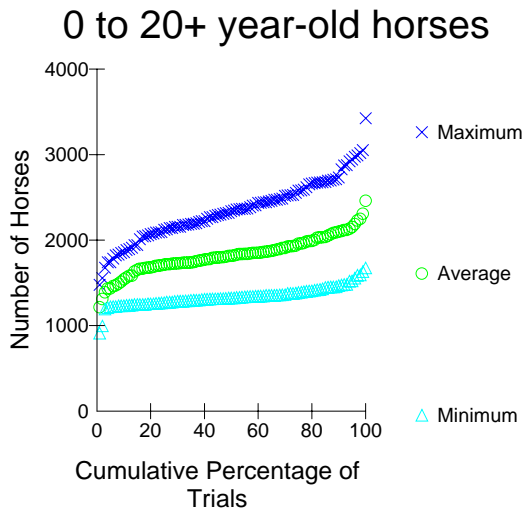
	Population Sizes in 5 Years*		
	Minimum	Average	Maximum
Lowest Trial	422	643	1215
10th Percentile	540	831	1238
25th Percentile	609	863	1258
Median Trial	656	913	1298
75th Percentile	684	966	1364
90th Percentile	708	992	1447
Highest Trial	755	1111	1912

* 0 to 20+ year-old horses

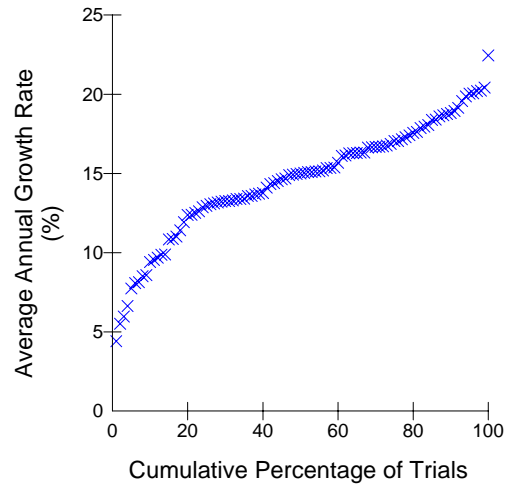
Average Growth Rate in 4 Years	
Lowest Trial	-1.7
10th Percentile	10.6
25th Percentile	13.7
Median Trial	16.3
75th Percentile	19.3
90th Percentile	20.8
Highest Trial	25.3

No Action Alternative: Delay Management

Population Size Graph



Growth Rate Graph



	Population Sizes in 5 Years*		
	Minimum	Average	Maximum
Lowest Trial	913	1215	1479
10th Percentile	1236	1551	1872
25th Percentile	1272	1715	2124
Median Trial	1325	1817	2343
75th Percentile	1390	1959	2580
90th Percentile	1472	2103	2780
Highest Trial	1674	2461	3423

* 0 to 20+ year-old horses

Average Growth Rate in 4 Years	
Lowest Trial	4.4
10th Percentile	9.5
25th Percentile	13.0
Median Trial	15.0
75th Percentile	17.0
90th Percentile	18.9
Highest Trial	22.5

Appendix V: Special Status Species

Definitions of Special Status Species and BLM Policy

Federally Threatened or Endangered Species: Any species that the U.S. Fish and Wildlife Service has listed as an endangered or threatened species under the Endangered Species Act throughout all or a significant portion of its range.

Proposed Threatened or Endangered Species: Any species that the Fish and Wildlife Service has proposed for listing as a Federally endangered or threatened species under the Endangered Species Act.

Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.

BLM Sensitive Species: Species 1) that are currently under status review by the U.S. Fish and Wildlife Service, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.

State of Nevada Listed Species: State-protected animals that have been determined to meet BLM’s Manual 6840 policy definition.

Nevada BLM policy is to provide State of Nevada Listed Species and Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species in BLM Manual 6840.06C. Per wording for Table IIa. in BLM Instruction Memorandum No. NV-98-013, Nevada protected animals that meet BLM’s 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: (1) ‘protected’ under authority of Nevada Administrative Codes 501.100 - 503.104; (2) have been determined to meet BLM’s policy definition of “listing by a State in a category implying potential endangerment or extinction,” and (3) are not already included as a federally listed, proposed, or candidate species.

Special Status Species known or likely to occur within the Buck and Bald Complex								
COMMON NAME	SCIENTIFIC NAME	Habitat Types						
		Sagebrush ¹ / grass	Mountain ² / Shrub	Riparian ³	Cliffs/ Talus ⁴	Pinyon/ Juniper ⁵	Salt Desert Scrub ⁶	Playas/ Lakes ⁷
(USFWS) Federally Listed Threatened Species								
bald eagle (winter resident)	<i>Haliaeetus leucocephalus</i>	X	X	X	X			
BLM Sensitive Species								
golden eagle	<i>Aquila chrysaetos</i>	X	X		X			
Western burrowing owl	<i>Athene cunicularia</i>	X					X	
ferruginous hawk	<i>Buteo regalis</i>	X			X	X		
Swainson’s hawk	<i>Buteo swainsonii</i>	X	X	X				
northern goshawk	<i>Accipiter gentilis</i>			X				
peregrine falcon	<i>Falco peregrinus</i>	X	X	X	X			
prairie falcon	<i>Falco mexicanus</i>	X	X	X	X,O			
loggerhead shrike	<i>Lanius ludovicianus</i>	X	X				X	

COMMON NAME	SCIENTIFIC NAME	Habitat Types						
		Sagebrush ¹ / grass	Mountain ² / Shrub	Riparian ³	Cliffs/ Talus ⁴	Pinyon/ Juniper ⁵	Salt Desert Scrub ⁶	Playas/ Lakes ⁷
BLM Sensitive Species, continued								
loggerhead shrike	<i>Lanius ludovicianus</i>	X	X				X	
vesper sparrow	<i>Poocetes gramineus</i>	X	X					
juniper titmouse	<i>Baeolophus griseus</i>					X		
pinyon jay	<i>Gymnorhinus cyanocephalus</i>					X,O		
gray vireo	<i>Vireo vicinor</i>					X,O		
short-eared owl	<i>Asio flammeus</i>	X	X	X				X
flammulated owl	<i>Otus flammeolus</i>			X				
Northern long-eared owl	<i>Asio otus</i>	X	X	X				
sage grouse	<i>Centrocercus urophasianus</i>	X,O	X	X				
black rosy finch	<i>Leucosticte atrata</i>	X	X		X,O			
long-billed curlew	<i>Numenius americanus</i>							X
snowy plover	<i>Charadrius alexandrinus</i>							X,O
sandhill crane	<i>Grus canadensis</i>							X
black tern	<i>Chlidonias niger</i>							X,O
Preble's shrew	<i>Sorex preblei</i>			X,O				
silver haired bat	<i>Lasiorycteris noctivagans</i>			X				
western pipistrelle	<i>Pipistrellus hesperus</i>			X				X
long-eared myotis	<i>Myotis evotis</i>			X	X	X		
long-legged myotis	<i>Myotis volans</i>				X	X		
Yuma myotis	<i>Myotis yumanensis</i>			X	X			
spotted bat	<i>Euderma maculatum</i>			X	X			
little brown bat	<i>Myotis Lucifugus</i>			X	X	X		
small-footed myotis	<i>Myotis ciliolabrum</i>			X	X	X		
fringed myotis	<i>Myotis thysanodes</i>		X	X	X	X		
Pacific Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>			X	X,O	X		
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>		X	X				X
pallid bat	<i>Antrozous pallidus</i>	X		X	X,O	X	X	
hoary bat	<i>Lasiurus cinereus</i>			X		X,O		
pygmy rabbit	<i>Brachylagus idahoensis</i>	X,O	X	X				
big brown bat	<i>Eptesicus fuscus</i>	X	X	X		X	X	
short-horned lizard	<i>Phrynosoma douglassii</i>	X			X			
State of Nevada Sensitive Species								
white faced ibis	<i>plegadis chihi</i>	X,O						X,O

O Obligate Species – Obligate species are species which are dependent on a specific habitat type to complete their

life cycles. They may, however, use other habitats as well.

¹The Sagebrush/grass habitat type is dominated by big sagebrush, low sagebrush, shadscale, bud sage, and rabbit brush, respectively. Associated grass species include: bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, needlegrass, and bottlebrush squirreltail. Forbs include arrowleaf balsamroot, lupine, phlox, and aster

²The Mountain shrub habitat type can be found in the mid-upper elevations within the Complex. Representative sagebrush species include: mountain big sagebrush, low sagebrush, and basin big sagebrush. The pre-dominant browse species are bitterbrush, snowberry and serviceberry. Associated grass species are bluebunch wheatgrass and Idaho fescue.

³Riparian habitats are primarily lentic (standing water) within the Complex. Lentic riparian areas include springs, seeps, wet and mesic meadows. Vegetation in lentic areas generally include: sedges, rushes, aspen, willow species, alder, Complex species.

⁴Cliffs and Talus habitat types occur as a result of uplift and erosion within erosion resistant rock types such as silica and carbonate-rich materials. Talus occurs as result of fallen rock which collects at the base of the cliffs. In general, plants are absent from the rock faces.

⁵Pinyon/Juniper habitat is dominated by stands of either singleleaf pinyon (*Pinus monopylla*) or any of four species of juniper including Utah (*Juniperus osteosperma*), Western (*J. occidentalis*), Rocky Mountain (*J. scopulorum*) or California (*J. californica*).

⁶Salt desert scrub habitat is characterized by the presence of a variety of salt-tolerant shrubs of the family Chenopodiaceae, predominantly shadscale and greasewood.

⁷Playa and wetland habitat within the complex is primarily characterized by seasonal wetlands of varying character, quality and periodic longevity.

Appendix VI: Migratory Birds by Ecotype

Aspen	Mountain Riparian	Mountain Shrub	Sagebrush	Pinyon/Juniper
<p><u>Obligates*:</u> see Monatane Riparian</p> <p><u>Other**:</u> Northern Goshawk Calliope Hummingbird Flammulated Owl Lewis's Woodpecker Red-naped Sapsucker Mountain Bluebird Orange-crowned Warbler MacGillivray's Warbler Wilson's Warbler</p>	<p><u>Obligates:</u> Wilson's Warbler MacGillivray's Warbler</p> <p><u>Other:</u> Cooper's Hawk Northern Goshawk Calliope Hummingbird Lewis's Woodpecker Red-Naped Sapsucker Orange-crowned Warbler Virginia's Warbler Yellow-breasted Chat</p>	<p><u>Obligates:</u> None</p> <p><u>Other:</u> Black Rosy Finch Black-throated Gray Warbler Calliope Hummingbird Cooper's Hawk Loggerhead Shrike Blue Grosbeak Vesper Sparrow MacGillivray's Warbler Orange-crowned Warbler Swainson's Hawk Western Bluebird</p>	<p><u>Obligates:</u> Sage Grouse</p> <p><u>Other:</u> Black Rosy Finch Ferruginous Hawk Gray Flycatcher Loggerhead Shrike Vesper Sparrow Prairie Falcon Sage Sparrow Sage Thrasher Swainson's Hawk Burrowing Owl Calliope Hummingbird</p> <p><u>Other associated species:</u> Brewer's Sparrow Western Meadowlark Black-throated Sparrow Lark Sparrow Green-tailed Towhee Brewer's Blackbird Horned Lark Lark Sparrow</p>	<p><u>Obligates:</u> Pinyon Jay Gray Vieo</p> <p><u>Other:</u> Ferruginous Hawk Gray Flycatcher Juniper Titmouse Mountain Bluebird Western Bluebird Virginia's Warbler Black-throated Gray Warbler Scott's Oriole</p> <p><u>Other Associated Species:</u> Mountain Quail Scrub Jay Black-billed Magpie Clark's Nutcracker Mountain Chickadee</p>

Salt Desert Scrub	Lakes (Playas)***	Cliffs and Talus
<p><u>Obligates:</u> None</p> <p><u>Other:</u> Loggerhead shrike Burrowing owl Sage thrasher Sage sparrow</p> <p><u>Other Associated Species:</u> Horned lark Brewer's sparrow Black-throated sparrow Lark sparrow Rock wren</p>	<p><u>Obligates (PIF-listed as Wetlands/Lakes):</u> White-faced Ibis Snowy Plover American Avocet Black Tern</p> <p><u>Other (PIF-listed as Wetlands/Lakes):</u> Sandhill Crane Long-billed Curlew Short-eared Owl</p> <p><u>Other Associated Species: (Wetlands/Lakes)</u> American bittern Great Egret Snowy Egret Cattle Egret Black-crowned Night Heron Marsh Wren Common Yellowthroat Yellow-headed Blackbird</p>	<p><u>Obligates:</u> Prairie Falcon Black Rosy Finch</p> <p><u>Other:</u> Ferruginous Hawk</p> <p><u>Other Associated Species:</u> Golden Eagle White-throated Swift Say's Phoebe Common Raven Cliff Swallow Violet-green Swallow Canyon Wren Rock Wren</p>

* "Obligates" are species that are found only in the habitat type described in the section. [Habitat needed during life cycle even though a significant portion of their life cycle is supported by other habitat types]

** "Other" are species that can be found in the habitat type described the Nevada Partners in Flight Bird Conservation Plan.

*** Other Associated (Wetlands/Lakes) Species are predominately associated with wetlands where emergent aquatic vegetation provides cover and foraging areas. Otherwise, snow pond/playas/manmade reservoirs could provide some seasonal habitat for some of the species shown.

Source: Nevada Partners in Flight Bird Conservation Plan