

Preliminary Environmental Assessment

NV-020-08-EA-04

Fox & Lake Range Herd Management Area

Wild Horse Capture Plan



Wild horse herd in the Fox & Lake Range HMA, January 2008.

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1.0 INTRODUCTION

The purpose of this environmental assessment (EA) is to analyze the impacts associated with the Bureau of Land Management's (BLM's) proposal to capture about 315, release about 40, and remove about 270-275 excess wild horses from the Fox & Lake Range Herd Management Area (HMA). The gather would begin in about July 2008. The proposed gather is needed to achieve and maintain the established appropriate management level (AML) and prevent further range deterioration resulting from the current overpopulation of wild horses within the affected HMA.

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

1.1 Background Information

The Fox & Lake Range HMA is located 80 miles north of Reno and 100 miles west of Winnemucca, within Washoe County, Nevada. This HMA is approximately 177,724 acres in size and lies between the Pyramid Lake Paiute Reservation to the south and the small town of Gerlach, NV to the north (Map 1). Elevations range from 3,897 feet along the Smoke Creek Desert to 7,608 at Pah Rum Peak. Climate is characterized by warm to hot dry days and cool to cold nights. Normal precipitation amounts (annually) range from 4 to 6 inches at lower elevations to about 12 inches at higher elevations.

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. AML was established as a range of 153-204 wild horses within the Rodeo Creek Allotment in 1997 (Final Multiple Use Decision, 12/97) and as "0" wild horses for the Pole Canyon Allotment in 2000 (Final Multiple Use Decision, 4/00). The current AML range of 122-204 wild horses is based on a revision in 2000 which set the lower AML range at a number which allows the population to grow at about 15% per year to the high range of the AML over a 4 year period without the need for removals of excess animals in the interim (EA #NV020-00-50, 11/00).

The last gather occurred in January 2005 when 370 horses were removed to reduce excess wild horse impacts to rangeland resources. Following the 2005 gather, an estimated 137 wild horses remained on the range. However, a helicopter aerial census completed in December 2008 revealed a direct count of 331 head. This number exceeds the established AML range and is expected to increase by 19% to a population size of about 400 head with the addition of the 2008 foal crop.

This HMA, located in northwest Nevada, is experiencing moderate drought conditions¹ and NOAA forecasts “below normal” precipitation for the remainder of the 2008 growing season. Observed water flows in Rodeo Creek, Willow Creek, Cottonwood Creek, and Little Rattlesnake Creek have decreased dramatically just in the past three weeks (late April to mid May). Annual (2008) vegetative production and vigor is low this year due to below average moisture last winter/spring and unusually hot temperatures. Sandberg’s blue grass and cheatgrass (brome) plants are seeded out as of mid May with about 1-2” leaf growth and 2-3’ leaf growth respectively. Seeds are present but not fully mature on bottlebrush squirreltail and Indian rice grass plants. Grass plants seem to be about a month ahead of normal maturation schedules and annual growth production is expected to be complete by the end of May. Vegetation monitoring during 2007 and 2008 indicates utilization on key forage species greater than 50%. Riparian areas show high trampling, compaction, and bank shearing impacts from wild horses and insufficient stubble heights (< 3 inches) to adequately protect riparian systems and provide wildlife habitat. Trailing impacts of compaction and erosion are evident throughout the area as animals move between foraging areas and watering sites.

Analysis of the above information indicates the current AML of “0” wild horses in the Pole Canyon Allotment and “122-204” wild horses in the Rodeo Creek Allotment portions of the Fox & Lake Range HMA is appropriate and that excess wild horses are present and require immediate removal.

1.2 Purpose and Need

Vegetation and population monitoring of the Fox & Lake Range HMA has determined that current wild horse populations are exceeding the rangeland’s ability to sustain wild horse use over the long-term. Resource damage is occurring and is likely to continue to occur, especially with current moderate drought conditions, low forage production and a forecast for continued below normal precipitation throughout the remainder of the 2008 growing season. The purpose of the Proposed Action is to capture about 315, release about 40, and remove approximately 270-275 excess wild horses from the Fox & Lake Range HMA to achieve a remaining population within the AML range and to protect rangeland resources from the deterioration associated with the current overpopulation of wild horses as authorized under Section 3(b) (2) of the *Wild Free-Roaming Horses and Burros Act of 1971* (1971 WFRHBA) and Section 302(b) of the Federal Land Management and Policy Act of 1976.

Implementation of the Proposed Action is needed at this time to achieve and maintain established appropriate management levels, to make significant progress toward achievement of Sierra Front-Northwest Great Basin Standards for Rangeland Health; to achieve a thriving natural ecological balance between wild horse populations, wildlife, vegetation, riparian-wetland resources, water resources, and domestic livestock; and, to protect wild horse health and sustainability.

1.3 Land Use Plan Conformance

¹ Refer to May 9, 2007 @ <http://drought.unl.edu/dm/monitor.html> and http://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead01/off01_prpc.gif

The Proposed Action is in conformance with the Sonoma-Gerlach Resource Area Management Framework Plan (MFP) Record of Decision (ROD), approved on July 9th, 1982. Applicable decisions and goals are: to manage sustainable populations of wild horses, maintain a thriving ecological balance, and to maintain free-roaming behavior.

1.4 Relationship to Laws, Regulations, and Other Plans

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

- ☐ 43 CFR 4720.1: *“Upon examination of current information and a determination that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately...”*

Environmental analyses conducted in previous years which analyzed the impacts of various gather methods on wild horses and other critical elements of the human environment in this area include the following document available for public review at the Winnemucca Field Office:

- *Buffalo Hills Complex Wild Horse Capture Plan, EA No. NV-020-05-05, Nov. 2004.*
- *Buffalo Hills Complex Wild Horse Capture Plan, EA No. NV-020-00-50, Nov. 2000.*
- *Fox & Lake Emergency Gather EA, EA No. NV-020-03-14, Jan. 1993.*

1.5 Conformance with Rangeland Health Standards

The Fox & Lake Range HMA has not been assessed for conformance with Standards for Rangeland Health as developed in consultation with the Sierra Front-Northwestern Great Basin Resource Advisory Council (RAC). However, water inventory and riparian functionality data as well as utilization monitoring and trend data indicates excess wild horse use may be contributing to the Riparian/Wetland and Plant and Animal Habitat Standards not being met. The Proposed Action is consistent with making significant progress towards or meeting Rangeland Health Standards and conforms to the recommendations presented in the March 2007 *Standards and Guidelines for Management of Wild Horses and Burros of the Sierra Front-Northwest Great Basin Area* (Appendix A).

1.6 Identification of Issues

The following issues were identified as a result of internal scoping and consultation with affected livestock operators and will be used in the preliminary EA to analyze the alternatives:

1. Impacts to individual wild horses and the herd from proposed capture, removal and handling procedures. Measurement indicators for this issue include:

- Projected population size and annual growth rate (WinEquus population modeling)
 - Expected impacts to individual wild horses from handling stress
 - Expected impacts to herd social structure
 - Potential effects to genetic diversity
 - Potential impacts to animal health and condition
2. Impacts to potentially affected critical and other elements of the human environment (**Vegetation; Wildlife, Migratory Birds, and Special Status Species**) from the proposed wild horse capture and removal. Measurement indicators for this issue include:
- Potential for temporary displacement, trampling or disturbance
 - Potential competition for forage and water over time (expected change in actual forage utilization by wild horses)
 - Expected impacts to range condition over time

2.0 PROPOSED ACTION AND ALTERNATIVES

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

- Alternative A. The Proposed Action: Remove Excess Wild Horses
- Alternative B. No Action: Defer Gather & Removal

The Proposed Action alternative was developed to meet the purpose and need (i.e. to achieve and maintain established appropriate management levels, to make significant progress toward achievement of Sierrafront-Northwest Great Basin Standards for Rangeland Health; to achieve a thriving natural ecological balance between wild horse populations, wildlife, vegetation, riparian-wetland resources, water resources, and domestic livestock; to protect wild horse health and sustainability; and, to prevent further deterioration of the range associated with the current overpopulation) and in response to the issues identified during internal scoping and consultation. Although the No Action alternative does not comply with the 1971 WFRHBA (as amended), nor does it meet the purpose and need for action, it is included as a basis for comparison with the Proposed Action.

2.1 Description of Alternatives Considered in Detail

2.1.1 Alternative A. The Proposed Action: Remove Excess Wild Horses

The Proposed Action would involve the capture of about 315, the release of about 40, and the removal of about 270-275 excess wild horses from the Fox & Lake Range HMA. The capture would occur as early as July 2008. The estimated number of wild horses remaining within HMA following the gather would be a minimum of about 122 animals.

- The capture would be completed in about eight to ten days. All gathering and handling activities would be conducted in accordance with the Standard Operating Procedures

(SOP's) described in Appendix B. Several factors such as animal condition, herd health, weather conditions, or other considerations may result in adjustments to the gather schedule.

- The helicopter drive method would be used and would include multiple trap sites. BLM would be responsible for contractor compliance to national contract specifications, including SOPs.
- Trap sites and holding facilities would be located in previously used trap sites (N Empire Field [T30NR22ESEC01], Fox Lake 1 [T30NR22ESEC36], Fox Lake 3 [T32NR22ESEC25], and Falcon Hill [T28NR23ESEC01]) and other disturbed areas. Undisturbed areas would be inventoried for cultural resources. If cultural resources are encountered, these locations would not be utilized unless they could be modified to avoid impacts to cultural resources. Trap sites and holding facilities would not be placed in known areas of Native American concern.
- Information such as: age, sex, color, body condition, or other characteristics would be recorded on captured animals.
- Hair samples for genetic testing would be taken on about 30-40 wild horses.
- Excess animals would be sent to Bureau facilities for adoption, sale, or long-term holding.
- Noxious weed monitoring at trap sites and temporary holding facilities would be conducted in the spring and summer of 2009 by BLM. Treatment would be provided, if necessary, following guidance from the Noxious Weed Control EA# NV-020-02-19.

2.1.2 Alternative B. No Action: Defer Gather & Removal

Under the No Action Alternative, the capture and removal of approximately 270-275 excess wild horses would not occur within the next year. There would be no active management to control the size of the wild horse populations at this time and populations would continue to grow at a historic rate of 19%.

The No Action Alternative would not comply with the 1971 WFRHBA or with applicable regulations and Bureau policy, nor would it comply with the *Standards and Guidelines for Management of Wild Horses and Burros of the Sierra Front-Northwest Great Basin Area*. However, it is included as a baseline for comparison with the Proposed Action as required under the 1969 National Environmental Policy Act (NEPA).

2.2 Alternatives Considered but Dismissed from Detailed Analysis

One alternative considered was to gather the Fox & Lake Range HMA as part of the Buffalo Hills Complex (including the Buffalo Hills and Granite Range HMAs). This alternative was dismissed from detailed study as the Proposed Action is needed now to reduce current wild horse numbers and resource impacts in the HMA before additional rangeland damage occurs and wild horse health declines.

Another alternative considered but dismissed from detailed analysis was to water trap excess wild horses. While water quantity is limited in the project area, many sites are within the designated Wilderness Study Area or in steep, inaccessible locations, making them impossible to access. Thus, this alternative was dismissed due to inoperable logistics.

3.0 THE AFFECTED ENVIRONMENT

This section of the EA briefly discusses the relevant components of the human environment which would be either affected or potentially affected by the Proposed Action and/or No Action alternatives (refer to Tables 1 and 2 below). Direct impacts are those that result from the management actions while indirect impacts are those that exist once the management action has occurred.

3.1 General Description of the Affected Environment

The Fox & Lake Range HMA is designated as about 97% public and 3% private lands. Approximately 25 miles of the southern fenced HMA boundary is coincident with the Pyramid Lake Paiute Indian Reservation. The terrain consists of two north-south trending mountains (Fox Range, Lake Range) separated by a broad valley (San Emidio Desert). Geothermal and farming activities occur in the valley as well as the small community of Empire.

3.2 Critical Environmental Elements

To comply with the National Environmental Policy Act, the following elements of the human environment (Table 1) are subject to requirements specified in statute, regulation or executive order and must be considered.

Table 1: Critical Elements Checklist

CRITICAL ELEMENTS	Present	Affected	Rationale
Air Quality	YES	NO	The proposed gather area is not within an area of non-attainment or areas where total suspended particulates exceed Nevada air quality standards. Areas of disturbance would be small and temporary.
Areas of Critical Environmental Concern (ACEC's)	NO	NO	Resource not present.
Cultural Resources	YES	YES	Trap sites and/or holding corrals would be placed in disturbed areas or inventoried prior to use. Locations would avoid cultural resource sites. However, other potential impacts are discussed below.
Environmental Justice	NO	NO	Not present.
Floodplains	NO	NO	Resource not present.
Invasive, Nonnative Species	YES	NO	Any noxious weeds or non-native invasive weeds would be avoided when establishing trap and/or holding facilities, and would not be driven through. Noxious weed monitoring at trap/holding sites would be conducted and applicable treatment of weeds would occur per Noxious Weed Control EA#NV-020-02-19 as needed.

Migratory Birds	YES	YES	Discussed below.
Native American Religious Concerns	YES	NO	Discussed below.
Prime or Unique Farmlands	NO	NO	Resource not present.
Threatened & Endangered Species	NO	NO	The U.S. Fish and Wildlife Service (2007) lists the yellow-billed cuckoo as a candidate species for this HMA. Yellow-billed cuckoos require extensive multi-story galleries of cottonwoods. No such habitat occurs in the project area and no local occupation by this species is known. For this reason, the proposed action is judged to have no impact on this species or its habitat and will be dismissed from further analysis.
Wastes, Hazardous or Solid	NO	NO	Not present.
Water Quality (Surface/Ground)	YES	YES	Discussed below with Wetlands and Riparian Zones.
Wetlands and Riparian Zones	YES	YES	Discussed below.
Wild and Scenic Rivers	NO	NO	Resource not present.
Wilderness	NO	NO	Resource not present.

Critical elements identified in Table 1 as present and potentially affected by the Proposed Action and/or No Action alternatives include: Cultural Resources, Migratory Birds, Native American Religious Concerns, Water Quality, and Wetlands and Riparian Zones. These critical elements are discussed further in the following sections.

3.2.1 Cultural Resources

A complete inventory of archeological sites in the Fox & Lake Range HMA has not been completed. Previous inventories have identified pre-historic sites (rock art sites, camp sites, lithic sources, lithic scatters, quarry sites, caves and rock shelters, rock alignments, isolated projectile points, etc.) in the area. The John C. Fremont 1843 to 1844 Exploration Route crosses through the HMA and the 1852 Nobles Route passes nearby. Historic sites associated with ranching, mining and transportation are known to occur in this area as well. The highest concentration of prehistoric sites is in association with permanent and intermittent water sources. Lake Lahontan lakeshores are also sensitive for prehistoric resources. The HMA includes the Lake Range Quarry National Register eligible district as well as Falcon Hill Rock Shelter, the Coleman Locality and other National Register eligible sites.

3.2.2 Migratory Birds

Neo-tropical migrant bird species are those species that breed in the temperate portions of North America and winter in the tropics in either North or South America. They are protected by international treaty and additional emphasis on maintaining or improving their habitats is

provided by Executive Order #13186. Within the Great Basin and the project area, quality riparian habitats and healthy sagebrush communities with inclusions of trees and shrubs are required for healthy neo-tropical migrants' populations.

A migratory bird inventory has not been completed for the Fox and Lake Range HMA. However, a point count transect has been set up on the west side of the Selenite range in close proximity to the Fox and Lake Range HMA and in similar habitat. Most of the vegetation communities in the Fox and Lake Range HMA are characterized by sagebrush and/or shadscale community species. Migratory birds observed on the nearby point count transect include: Black-throated sparrow, Rock wren, Sage sparrow, Western meadowlark, Horned lark, Say's phoebe, Lark sparrow, Violet-green swallow, Tree swallow, Bullock's oriole, and Black-billed magpie. Other possible inhabitants of this habitat include Brewer's blackbird, Brewer's sparrow, Burrowing owl, Canyon wren, Gray flycatcher, Green-tailed towhee, Loggerhead shrike, Sage thrasher, and Vesper sparrow (Great Basin Bird Observatory, 2003).

The burrowing owl, loggerhead shrike, and vesper sparrow are BLM designated sensitive species and are discussed in section 3.3.2.

3.2.3 Native American Religious Concerns

The Pyramid Lake Paiute Tribe has been contacted by letter regarding the proposed horse gather. There are no known traditional cultural properties or sacred sites in the HMA. Hot springs and other water sources are also considered sacred by Native American tribes. Riparian zones, in particular, are rich sources of plants for medicinal and other uses.

3.2.4 Water Quality, Wetlands and Riparian Zones

There are several narrow perennial/intermittent streams and small springs distributed throughout the two mountain ranges in the Fox & Lake Range HMA. However, water is hauled or pumped to sites at lower elevations and valley locations by the permittee. Riparian sites have been recently assessed for riparian functionality. The majority of sites are classified as "functioning at risk." Wild horses contribute to riparian degradation through the removal of riparian vegetation and by trailing/trampling/loafing which denudes the area, compacts the soil, and alters stream banks. Riparian sites are heavily impacted (photo 1 and 2) as most sites are small and flows are minimal, especially during the summer or in dry years. Water quality can become contaminated with fecal material and urine especially during periods of low flows when available watering sites are limited and demand by animals are highest.



Photo 1. Juniper Flat spring, wild horse use only, 4/08.



Photo 2. Mud spring, wild horse use only, 4/08.

3.3 Additional Affected Resources

In addition to the critical elements, the following resources may be affected by the Proposed Action and/or No Action alternative: livestock management, sensitive and/or special status species, soils, vegetation, wild horses, wildlife, and wilderness study areas.

Table 2: Other Resources Checklist

OTHER RESOURCES	Present	Affected	Rationale
Livestock Management	YES	YES	Discussed below.
Sensitive Species/Special Status Species	YES	YES	Discussed below.
Soils	YES	YES	Soil disturbances would be less than 1 acre in size and trap sites would be located in previously disturbed areas. Discussed further under vegetation.
Vegetation	YES	YES	Discussed below.
Wild Horse	YES	YES	Discussed below.
Wildlife	YES	YES	Discussed below.
Wilderness Study Area	YES	YES	Discussed below.

3.3.1 Livestock Management

The Pole Canyon and Rodeo Creek Allotments are within the Fox & Lake Range HMA. In the Rodeo Creek Allotment, cattle use is managed on a summer-winter rotation system with grazing occurring on in the valley and on the Lake Range from November through April and on the Fox

Range from May through October. However, no pasture fences separate livestock summer-winter use areas. The Pole Canyon Allotment has been in non-use status since 1986. According to the Final Multiple Use Decision dated April 5, 2000, grazing would not be authorized in the allotment until a boundary fence between the Pole Canyon Allotment and the Pyramid Lake Indian Reservation was completed. The fence was completed last summer, therefore it is foreseeable that livestock grazing may resume in the future.

Grazing Permits for the Pole Canyon and Rodeo Creek Allotments are as follows:

Table 3: Grazing Permit Status

ALLOTMENT	LIVESTOCK #/KIND	GRAZING PERIOD
Pole Canyon	135 CATTLE	JUNE 1 – SEP 30
Rodeo Creek	438 CATTLE	NOV 1 – FEB 28
	438 CATTLE	MAR 1 – APR 30
	485 CATTLE	MAY 1 – OCT 31

For the 2007 grazing season: The Pole Canyon permit was not activated, therefore, no livestock were grazed. The Rodeo Creek permittee is authorized to graze cattle per Table 3 above. However, 117 cattle were voluntarily removed in late August, another 35 head at the end of September, and an additional 43 head in early October 2007 due to lack of forage and water concerns given the unseasonably dry conditions. This past winter, a reduced herd of 290 cattle were grazed and currently (May), the actual use is 100 head less than the permitted number as unseasonably dry conditions persist.

3.3.2 Special Status Species, Sensitive Species, Wildlife and Fisheries

Both Threatened and Endangered Species (addressed in Table 1) and Sensitive Species (addressed below) are considered Special Status Species. No on-the-ground field investigation was conducted for sensitive/protected plant, or animal species including birds. However, the Nevada Natural Heritage Program (NNHP) database (March, 2008) and the Nevada Department of Wildlife (NDOW) Diversity database (August, 2007) were consulted for the possible presence of endangered, threatened, candidate and/or sensitive plants or animal species. NDOW data show observances of Golden eagle, Prairie falcon, Northern goshawk, and Burrowing owl within the Fox & Lake Range HMA. The NNHP database showed no observances of Special Status Species within the HMA.

Sensitive Species

The following designated Bureau of Land Management (BLM) sensitive animal species are described as they have either been seen in the HMA or the HMA contains habitat characteristics conducive to these species.

Bats

Several species of bats may occur in this HMA. Most bats in Nevada are year-round residents. In general terms, bats eat insects and arthropods during the warmer seasons and hibernate in

underground structures during the cooler seasons. Bats commonly roost in caves, mines, outcrops, buildings, trees and under bridges. Bats may eat flies, moths, beetles, ants, scorpions, centipedes, grasshoppers, and crickets. Bats thrive where the plant communities are healthy enough to support a large population of prey (Bradley et al 2006).

Burrowing Owl

Burrowing owls are known to occur within this HMA. Burrowing owls prefer open, arid, treeless landscapes with low vegetation. They are dependent upon burrowing mammal populations for maintenance of nest habitat and choose nesting areas based on burrow availability (Floyd et al 2007). These birds are highly adaptable and readily nest in open disturbed areas such as golf courses, runways, and industrial areas that border suitable habitat (Neel, 1999). Dense stands of grasses and forbs within owl home ranges support populations of rodent and insect prey. Urbanization is the biggest threat to this species as suitable habitat is converted to non-habitat for human use (Floyd et al 2007).

Loggerhead Shrike

Loggerhead shrikes may be found in sagebrush/bunchgrass and salt desert scrub vegetative communities, so it is possible that they occur in this HMA. Loggerhead shrikes tend to favor arid, open country with just a few perches or lookouts. They nest in isolated trees and large shrubs and feed mainly on small vertebrates and insects. The species is relatively common and well-distributed across the state (Neel 1999). Despite this fact, species numbers have declined over the last half century (Floyd et al 2007). Pesticide use is a current concern but direct human disturbance is presently not (Neel 1999). These birds would benefit from habitat with a diverse structure and species composition. Healthy sagebrush communities would provide these habitat characteristics. According to Paige and Ritter (1999), “Long-term heavy grazing may ultimately reduce prey habitat and degrade the vegetation structure for nesting and roosting. Light to moderate grazing may provide open foraging habitat.”

Pygmy Rabbit

In the Great Basin, the pygmy rabbit is typically restricted to the sagebrush-grass complex. A dietary study of pygmy rabbits showed dependence on sagebrush year round. Sagebrush was eaten throughout the year at 51% of the diet in summer and 99% in the winter. They also showed a preference for grasses and to lesser extent forbs, in the summer (Green and Flinders 1980). These data seem to indicate that pygmy rabbits require sagebrush stands with an understory of perennial grasses to meet their seasonal dietary requirements. There has been no inventory for pygmy rabbits in this HMA so their presence is speculative. High quality habitat for the pygmy rabbit is rare in this area. The identified potential habitat is primarily big sagebrush communities. However, most of the vegetation communities in this HMA are characterized by shadscale/greasewood and/or pinyon/juniper community species.

Raptors

Golden eagle, Prairie falcon, and Northern goshawk have been observed in the HMA. Golden eagles are primarily cliff nesters and would utilize the area to forage for prey species such as jackrabbits and other small mammals. Golden eagles are protected under the Bald and Golden Eagle Protection Act. Nevada’s Golden eagle population is thought to be stable to increasing. They are widespread and frequently encountered (Floyd et al 2007).

The Prairie falcon may be found foraging in sagebrush habitats that have cliffs in close proximity for nesting. They prey on small mammals and birds, especially horned lark. Populations experienced declines in the 60's and 70's but appear to be stable now in the West (Paige and Ritter 1999).

The Northern goshawk is a forest hawk inhabiting coniferous and aspen forests. One sighting was reported in this HMA in the month of October. This individual would have been migrating to a winter area and not occupying the area for any length of time. No nesting, breeding, or foraging habitat exists within the HMA. Therefore, the proposed gather is judged to have no effect on this species and it will be dismissed from further analysis.

Vesper Sparrow

The vesper sparrow may be found in this HMA since it typically inhabits sagebrush-grass vegetative communities at the higher elevations. However, most of the vegetation communities in the HMA are characterized by shadscale/greasewood and/or pinyon/juniper community species. The vesper sparrow forages on the ground and eats mostly seeds from grasses and forbs and will also eat insects when they are available. The vesper sparrow responds negatively to heavy grazing in sagebrush/grasslands. In these habitats, it benefits from open areas with scattered shrubs and a cover of good bunchgrasses for nest concealment, since it is a ground nester (Paige and Ritter 1999).

Wildlife and Fisheries

Terrestrial wildlife resources in the Fox & Lake Range HMA are typical of the Northern Great Basin. A wide variety of wildlife species common to the Great Basin ecosystem can be found within the HMA. The vegetation in the HMA could be categorized into the two broad vegetative types – pinyon/juniper and sagebrush/salt desert scrub. Common wildlife species occurring in the HMA include coyote, blacktail jackrabbit, desert cottontail, bobcat, and numerous raptors, reptiles, and other small mammal species. Mule deer and pronghorn antelope occur in the HMA.

Mule Deer

Mule deer habitat is rare in this HMA. Minimal deer use occurs in the Fox Range with most of the use occurring during the summer months at the highest elevations near Pah-Rum Peak. Deer are rarely seen at all the Lake Range. Deer are generally classified as browsers, with shrubs and forbs making up the bulk of their annual diet. The diet of mule deer is quite varied; however, the importance of various classes of forage plants varies by season. In winter, especially when grasses and forbs are covered with snow, their entire diet may consist of shrubby species.

In this HMA, sagebrush and bitterbrush are probably the most important browse species. Perennial grasses such as bluegrass, bottlebrush squirreltail, and Thurber's needlegrass are important when they are green in spring and early summer and in the winter when they are not covered by snow. These perennial grasses provide diversity in the mule deer's diet. Forbs such as globemallow would also provide needed diversity in the deer's diet.

Pronghorn Antelope

Most of the HMA is occupied by low numbers of antelope year-round. Crucial winter habitat occurs south of Empire on the west side of the Selenite Range, and in Poito Valley between the Selenite and the Lake Ranges. Most pronghorn antelope occur within the shadscale/greasewood plant communities where the average shrub height is less than 25 inches.

Fisheries

There are no fisheries habitats within this HMA. For this reason, proposed activities are judged to have no effect on fish or their habitat and it will be dismissed from further analysis.

3.3.3 Vegetation and Soils

Vegetation varies from salt desert shrub communities at lower elevations to big sagebrush/bunch grass communities at higher elevations. Typical species at lower elevations include Indian ricegrass, bottlebrush squirreltail, winterfat, shadscale, bud sage, rabbit brush, horse brush, and black greasewood. Species typical in higher elevations include little sage, Wyoming sagebrush, mountain big sagebrush, bitterbrush, squaw apple, rabbitbrush, Utah juniper, bluegrass, needlegrass, basin wildrye, bottlebrush squirreltail, Indian paintbrush, lupine, and phlox.

The typical growing season is March through May in the lower elevations and April through July in higher elevations. Dry grasses provide little nutritional value from mid-summer through winter. Fall and winter green-up on grasses improves nutritional value, but shrubs provide the majority of protein during those months. Annual (yearly) forage production is complete in July with minor regrowth on shrubs and grasses in winter months. When grass production is limited from drought or overutilization, horses will consume more shrubs and forbs. While some of these plants such as bud sage (photo 3) are palatable, others are toxic, of poor nutritional value, and/or could disrupt their digestive system. Other contributing factors to a reduction in forage include wildfires, cheatgrass invasion, and insect infestation.

Long-term, continuous heavy grazing (greater than 60% utilization annually) results in loss of highly desired forage species such as Indian ricegrass (photo 4), bottlebrush squirreltail, needle grass, and winterfat from the native plant communities. Wild horses graze riparian areas heavily in summer and early fall as the vegetation tends to stay green due to the water source when upland grasses mature.



Photo 3. Bud sage, palatable shrub, 1/08.



Photo 4. Indian rice grass, highly desired forage, 1/08.

The short-term vegetation management objective for this HMA (FMUD, 1997) states: “Upland utilization not to exceed 50% on bottlebrush squirreltail, Indian ricegrass, Sandberg bluegrass, and winterfat by 2/28.” Mature grasses (light yellow seedheads) are present in the Fox study plot

(photo 5) but are utilized outside the study plot (photo 6). Winterfat is grazed during the winter months when wild horses leave the higher elevations due to snow and cold conditions (photo 7). However, horses move to the mountain ranges as soon as the bluegrass begins to green up in the early spring (March). Some re-growth on winterfat is evident (photo 8), but little growth will occur between now and next winter when plants will be grazed again as horses move to lower elevations. Currently, short-term vegetation management objectives are not being met as utilization levels exceed 50% upland utilization.



Photo 5. Inside Fox study, upland forage production, 4/08.



Photo 6. Outside Fox study, upland forage utilization, 4/08.



Photo 7. Winterfat utilization, 1/08.



Photo 8. Spring regrowth on winterfat, 4/08.

Three wildland fires have occurred in recent years within the Fox & Lake Range HMA. The Poito (photo 9) and Empire fires burned 1,959 acres and 2,762 acres in 2006 and the Bull Basin fire burned 1,900 acres in 2001. Continued drought conditions in the HMA have made the area vulnerable to potential wildfire. The BLM implemented fire rehabilitation treatments on a portion of these fires. The Poito and Empire rehab included both aerial and drill seeding with some early seedling success in 2007 (photo 10).



Photo 9. Poito 2006 wild fire, 6/06.



Photo 10. Poito drill seeding plot, early success, 6/07.

However, new forage growth associated with burned areas and especially with rehab seedings often draws wild horses to the area which can severely limit the successful establishment of the desired/seeded plant community. Aerial seeding was conducted with limited success due to continued dry conditions and wild horse grazing (photos 11-12) on the Bull Basin fire.



Photo 11. Bull Basin 2001 wild fire, poor rehab success, 4/08.



Photo 12. Bull Basin 2001 wild fire, utilization, 4/08.

The majority of soils were developed under low precipitation. The potential water erosion hazard for trap sites is slight and the potential wind erosion hazard is moderate. Soil surfaces would be disturbed at the trap sites by hoof action and vehicles. Density of trails (photo 13) and upper watershed condition are important to keep soils from moving off-site through wind or water events (photo 14).



Photo 13. Trailing increases the erosion potential, 4/08.



Photo 14. Erosion and deposition, Little Rattlesnake Canyon, 6/05.

3.3.4 Wild Horses

In 1971 with the passage of the WFRHBA, the Secretary of Interior (or Agriculture) was required to protect and manage wild horses and burros on public lands administered by the Bureau of Land Management (or the Forest Service) within their known territorial limits. Following the passage of the 1971 WFRHBA, BLM delineated the Fox & Lake Range Herd Use Area (HUA or sometimes referred to as a Herd Area [HA]). In the early 1980s, through the BLM land use planning and decision process, 100% of the HUA was designated as a herd management area (HMA) suitable for the long-term management of wild horses. Since then, the AML has been adjusted based on in-depth analysis of habitat suitability and monitoring data through Decision Records/Finding of No Significant Impacts (FONSI) and accompanying EAs. The current AML for the Fox & Lake Range HMA is established as a range of 122-204 wild horses.

A helicopter aerial census completed in December 2008 revealed a direct count of 331 wild horses, including foals. Wild horses were found at all elevations and dispersed throughout the HMA, even in areas of snow. However, as water flows diminish during drier months, horses will concentrate on habitat closer to watering sites or trail long distances to water. Last year's upland utilization levels are moderate to heavy and riparian use is heavy to severe throughout the HMA. Perennial water is usually available at numerous small seeps and in Wild Horse Canyon, Little Rattlesnake Canyon, Rodeo Creek, Coyote Creek, and Cottonwood Creek, but flows can become limited or dry during summer months or throughout drought periods.

In the late 1800s, 500 head of Spanish horses from California were released into Wild Horse Canyon (in the southwest portion of the HMA). Horses have mixed with Pyramid Lake Indian Reservation herds. Ranch horses were actively bred and managed in this area by the Ceresola family prior to 1971. Recently, wild horses of Paso type and steel dust colored horses have been observed in this HMA. Genetic sampling of this herd in 1993 indicated high genetic diversity with some indicators of Spanish origin.

The last gather occurred in January 2005 (photos 15-16) when 370 horses were removed to reduce excess wild horse impacts to rangeland resources (drought conditions). Following the 2005 gather, an estimated 137 wild horses remained on the range.



Photo 15. Fox & Lake Range wild horse gather, 1/05.



Photo 16. Fox & Lake Range wild horse gather, 1/05.

Individual animal data from the 2005 gather identified common coat colors as bay (34%), brown (15%), sorrel (13%), and dun (10%). Observed phenotypes varied from extremely small slight-built horses to smaller ranch-type horses. Genetics are influenced by smaller Reservation horses and nutrition for young horses is likely limited by habitat potential and current forage conditions. The last capture sex ratio was 54% mares and 46% studs. Approximately 58% of the herd was 0-5 years old, 22% were 6-9 years old, and 20% were 10 years and older. Internal parasite loads were high as evidenced in manure and many foals and younger horses were in poor body condition (Henneke 2-3) and unthrifty (photos 17-18).



Photo 17. Unthrifty foals, 1/05.



Photo 18. Unthrifty foals, 1/05.

Numerous studies identify dietary overlap of preferred forage species and habitat preference between horses, cattle, and wildlife species in the Great Basin ecosystems for all seasons (Ganskopp 1983; Ganskopp et al 1986, 1987; McInnis 1984; McInnis et al 1987; Smith 1986a, 1986b; Smith et al 1982; Vavra et al 1978). A strong potential exists for exploitative competition between horses and cattle under conditions of limited forage (water, and space) availability (McInnis et al 1987). Wild horses compete with other wild horses and with wildlife species for various habitat components, especially when populations exceed AML and/or habitat resources become limited (i.e., reduced water flows, low forage production, dry conditions, etc.).

3.3.5 Wilderness Study Areas

Two wilderness study areas (WSA's) exist within the project area - Pole Creek (NV-020-14A) and Fox Range (NV-020-14). Section 603 (c) of FLPMA directs how the BLM is to manage "lands under wilderness review," which includes WSAs. These lands are to be managed in a manner so as not to impair the suitability of such areas for preservation as wilderness. Consequently, actions proposed within WSAs are to be evaluated on the basis of their possible direct and indirect impacts on wilderness values of naturalness, solitude and primitive or unconfined recreation, and special features. Temporary trap sites and/or holding corrals fall outside these WSA boundaries. Any additional trap sites would be located outside WSA boundaries or on identified roads (ways) within WSAs.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Alternative A (The Proposed Action) and Alternative B (No Action)

Direct impacts and indirect impacts regarding both Alternative A (The Proposed Action) and Alternative B (No Action) are discussed in each resource section below.

4.1.1 Cultural Resources

Alternative A. The Proposed Action: Remove Excess Wild Horses

Direct impacts to cultural resources are not anticipated to occur because gather sites and temporary holding facilities would be placed in previously disturbed areas or inventoried for cultural resources prior to construction. If cultural resources are encountered, these locations would not be utilized unless they could be modified to avoid impacts to cultural resources.

Areas in the vicinity of permanent and intermittent water sources (i.e., riparian areas) have the highest potential for cultural resource sites. Since wild horses and burros concentrate in these areas, these areas are most likely to be impacted by trampling and erosion. Indirect impacts to cultural resources would be reduced in riparian zones where concentrations of horses can lead to modification and displacement of artifacts and features as well as erosion of organic middens containing valuable information.

Alternative B. No Action: Defer Gather & Removal

There would be no direct impacts under this alternative. However indirect impacts described above may increase as wild horse populations continue to increase and concentrate.

4.1.2 Migratory Birds

Alternative A. The Proposed Action: Remove Excess Wild Horses

The project area contains riparian and sagebrush habitats, therefore potential impacts to neotropical migrants may be expected. Neither alternative would directly impact migratory bird populations with the exception of possible displacement from small areas of their habitat near the trap sites. This impact would be minimal (generally less than 0.5 acre/trap site), temporary, and

short-term (less than two weeks) in nature. Indirect impacts would be related to wild horse densities and patterns of use. Reduction of current wild horse populations would provide opportunity for vegetative communities to progress toward achieving a thriving natural ecological balance. Either alternative would result in an impact to migratory bird habitat by slowly creating a diverse vegetative structure through improvement and maintenance of healthy populations of native perennial plants.

Alternative B. No Action: Defer Gather & Removal

No direct impacts. Indirect impacts would be the increasing inability of rangelands to support healthy populations of native perennial plants. Indirect impacts to vegetative communities would increase each year that a gather is postponed which would impact migratory bird species and their habitats.

4.1.3 Native American Religious Concerns

Alternative A. The Proposed Action: Remove Excess Wild Horses

No direct impacts to areas of Native American concern would occur because trap sites and holding areas would be placed in previously disturbed areas and/or in areas where there are no known Native American concerns. Indirect impacts to plants in riparian zones used by Native Americans for medicinal and other purposes would be reduced.

Alternative B. No Action: Defer Gather & Removal

There would be no direct impacts under this alternative. There would be indirect impacts to areas of Native American concern in riparian zones where concentrations of horses could impact plants utilized by Native Americans for medicinal and other purposes.

4.1.4 Water Quality, Wetlands and Riparian Zones

Alternative A. The Proposed Action: Remove Excess Wild Horses

Direct impacts to water quality, wetlands or riparian zones occur when wild horses cross streams or springs as they are herded to temporary gather sites. This impact would be temporary and relatively short-term in nature. Indirect impacts would be related to wild horse population size. Reduction of wild horse populations from current levels would decrease competition for available water sources which should lead to a reduction in hoof action around unimproved springs, improvement in stream bank stability, and improved riparian habitat condition.

Alternative B. No Action: Defer Gather & Removal

No direct impacts. Indirect impacts would be increasing degradation to riparian habitats and water quality as horse populations increase each year that a gather is postponed.

4.1.5 Livestock Management

Alternative A. The Proposed Action: Remove Excess Wild Horses

Direct impact in the Fox-Lake Range HMA would be the minor short-term displacement of cattle from the gathering activities and increased vehicle traffic. The indirect impacts would be an increase in the forage availability and quality, reduced competition for water and forage, and improved vegetative resources that will lead to a thriving ecological condition.

Alternative B. No Action: Defer Gather & Removal

There would be no direct impacts of this alternative to the livestock operators or livestock operation. The indirect impacts would be continued resource deterioration resulting from competition between wild horses and cattle for water and forage, reduced quantity and quality forage, and undue hardship on the livestock operators through a lack of livestock forage on public lands.

4.1.6 Special Status Species, Sensitive Species, Wildlife and Fisheries

Alternative A. The Proposed Action: Remove Excess Wild Horses

Direct impacts would consist primarily of disturbance and displacement to wildlife by the low-flying helicopter and construction of temporary trap/holding facilities. Typically, the natural survival instinct to this type of disturbance is to flee from the perceived danger. These impacts would be minimal, temporary, and of short duration. There is a slight possibility that non-mobile or site-specific animals would be trampled. Indirect impacts would be related to wild horse densities. A reduction in the number of wild horses from current levels would decrease competition for available cover, space, forage, inter-specific stress and competition, and water. Wild horses often display dominant behavior over wildlife species and livestock at water sites forcing animals to wait or go elsewhere for water. A reduction in forage utilization levels and hoof action would improve stream bank stability and riparian habitat condition. Reduced utilization levels should produce increased plant vigor, seed production, seedling establishment, and ecological health of the habitat. Migratory bird populations would benefit from an increase in forage availability, vegetation density and structure.

The Proposed Action would result in reduced competition with wildlife which would increase the quantity and quality of available forage. There would be less disturbance associated with wild horses along stream and riparian habitats and adjacent upland habitats.

Alternative B. No Action: Defer Gather & Removal

Maintaining the status quo of the wild horse population would negatively impact migratory birds, sensitive species, and other wildlife species and their habitats and would be of greater impact than the Proposed Action. Repeated utilization of key grass, forb, and shrub species; during the peak growing season, may not allow proper plant health. Over time, this may result in diminished habitat quality.

No direct impacts are expected under this alternative. Indirect impacts include increased competition between wild horse and wildlife species and also diminished habitat conditions. Wild horse populations would increase (about 20%) each year that the gather is postponed, which would impact ecological conditions, wildlife populations, and other resource values.

4.1.7 Vegetation and Soils

Alternative A. The Proposed Action: Remove Excess Wild Horses

Direct impacts associated with the Proposed Action would consist of disturbance to vegetation and soil surfaces immediately in and around the temporary gather site(s) and holding facilities. Impacts would be created by vehicle traffic; hoof action as a result of concentrating horses, and could be locally high in the immediate vicinity of the gather site(s) and holding facilities. Generally, these sites would be small (less than one half acre) in size. Any impacts would

remain site specific and isolated in nature. Herding horses to trap sites may impact wild fire emergency stabilization and rehabilitation treatment areas. These impacts would include trampling of vegetation. Impacts would be minimal as herding would have a short term duration. In addition, most gather sites and holding facilities would be selected to enable easy access by transportation vehicles and logistical support equipment. Normally, they are located near or on roads, pullouts, water haul sites or other flat areas, which have been previously disturbed. These common practices would minimize the long-term effects of these impacts.

Implementation of the Proposed Action would reduce the current wild horse population and provide the opportunity for the vegetative communities to progress toward achieving a thriving natural ecological balance. Reduced concentrations of wild horses would contribute to the recovery of the vegetative resource and reduce soil erosion. Utilization levels by wild horses would be reduced, which would result in improved forage availability, vegetation density, increased vegetation cover, increased plant vigor, seed production, seedling establishment, and forage production over current conditions. Higher quality forage species (grasses) would be available. Individual wild horse condition and health would improve due to less competition for available resources.

Alternative B. No Action: Defer Gather & Removal

No direct impacts are expected under this alternative. Indirect impacts include increased competition for forage among multiple-uses as wild horse populations continue to increase. Forage utilization would exceed the capacity of the range resulting in a loss of desired forage species from plant communities as plant health and watershed conditions deteriorate. Soil loss from wind and water erosion, and invasion of undesired plant species would occur. Abundance and long-term production potential of desired plant communities may be compromised.

Indirect impacts would be increasing degradation to riparian habitats as horse populations increase each year that a gather is postponed.

4.1.8 Wild Horses

Alternative A. The Proposed Action: Remove Excess Wild Horses

The direct impacts of the Proposed Action would involve the capture of about 315, the release of about 40, and the removal of about 270-275 excess wild horses from the project area. The release of about 40 horses would help to maintain a herd with historical characteristics, genetic diversity, appropriate sex ratios, and a diverse age structure. A post gather wild horse population of approximately 120-130 head would remain in the HMA. The average annual recruitment rate would be expected to remain around 20%. Modeling results indicate that this action would likely not crash the population, but that additional management actions (e.g., 3-4 year gather cycle) would be necessary to maintain the population within the AML range of 122-204 head in this area (Appendix C).

Direct individual impacts include handling stress associated with the gather, capture, sorting, animal handling and preparation, and transportation of the animals. Traumatic injuries that may occur typically involve biting and/or kicking that may result in bruises and minor swelling which normally does not break the skin. These impacts are known to occur intermittently during wild horse gather operations. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality of individuals from

these impacts is infrequent but may occur in one half to one percent of horses gathered in a given removal operation (national BLM statistics). Implementation of SOPs would help minimize direct impacts to animals.

Removing 270-275 head of excess wild horses before range conditions deteriorate further would decrease competition for water and forage for the remaining animals. Decreased competition would result in improved wild horse health and condition, especially mares and immature animals, and in healthier forage plants and other habitat resources.

Alternative B. No Action: Defer Gather & Removal

The direct impacts of not removing approximately 270-275 excess wild horses would affect current and future herd population numbers. The current population estimate is 394 head. Populations would continue to grow annually by about 20 percent (Appendix C). Without a gather and removal now, the wild horse population in this portion of the HMA would exceed 1,000 head within four years based on population modeling (Appendix C).

Wild horses often graze the same area repeatedly throughout the year. Forage plants in those areas receive little rest from grazing pressure. Continuous grazing does not allow plants sufficient time to recover from grazing impacts, resulting in reduced plant health, vigor, reproduction, and ultimately to a loss of native perennial forage species from natural plant communities. Few resources would be available for wildlife and livestock. Horses may move outside the established HMA in search of habitat as demands on resources within the HMA increases.

Indirect impacts may include high horse mortality rates, thin body conditions, and poor health as habitat resources are diminished by increasing horse populations. Older and younger age classes and lactating mares would be most affected by nutritional deficiencies and stress. Skewed sex ratios, undesirable age distributions, and social disruption may result as herd members compete for available resources. Nutritional deficiencies would negatively affect growing animals and may limit their potential growth. Parasites and disease would increase as population densities continue to increase.

4.1.9 Wilderness Study Areas

Alternative A. The Proposed Action: Remove Excess Wild Horses

The wild horse gather would not directly affect wilderness study area values within the project area, with the exception of the sight and noise of the helicopter used to herd wild horses to gather sites located outside of wilderness study area. During the time frame of the proposed gather, solitude and primitive recreation may be negatively impacted for recreationists who may be subjected to the sight and sound of the helicopter. This impact would be temporary and relatively short term in nature. Indirect impacts would be related to wild horse population size. Fewer wild horses would decrease trampling, trailing, hedging, and forage utilization of native grasses thus increasing the naturalness value. A decrease in wild horse populations would lessen trampling of areas immediately adjacent to springs which would improve the “naturalness” component of wilderness.

Alternative B. No Action: Defer Gather & Removal

If wild horses are not removed, populations would continue to increase about 20% per year. Increased impacts to water and forage resources by wild horses would negatively affect wilderness study area values.

5.0 CUMULATIVE IMPACTS

The National Environmental Policy Act (NEPA) regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The analysis area for the purposes of evaluating cumulative impacts is the 177,724 acre Fox & Lake Range HMA (Map 1).

Of the affected resources analyzed in Chapter 4, Wild Horses and **Vegetation** will be the focus of the cumulative analysis. Other affected resources are not specifically analyzed in this Chapter because the potential cumulative impacts are directly related to wild horse populations and their cumulative impacts on vegetation quantity and quality.

5.1 Wild Horses

5.1.1 Past

In 1971, Congress introduced and passed *The Wild Free-Roaming Horses and Burros Act*. President Richard M. Nixon signed the new Act into law (Public Law 92-195) on December 15, 1971. *The Wild Free-Roaming Horses and Burros Act* required the protection, management and control of wild free-roaming horses and burros. Local livestock operators now had to claim and permit their private horses and burros grazing on public lands or lose ownership of them. After a specified time period following passage of the Act, any remaining unbranded and unclaimed herds inhabiting BLM or Forest Service lands were declared “wild free-roaming horses and burros” and became the property of the federal government.

The Fox & Lake Range Herd Use Area was designated in 1982 by the Sonoma-Gerlach Resource Area Management Framework Plan (MFP) Record of Decision (ROD), approved on July 9th, 1982 as a herd management area (HMA) suitable for the long-term management of wild horses.

Six gathers have occurred in the last twenty-eight years with a total of 2,138 wild horses captured. The earliest BLM gather took place in 1980, while the last gather occurred in 2005. A number of removals have also occurred in order to prevent the death of individual animals from thirst or starvation and to prevent deterioration of the rangeland resources. Past gathers and movement of wild horses from nearby HMAs have led to the representation of age and sex classes and the degree of genetic diversity evident in the herd today.

5.1.2 Present

Currently, management of the Fox & Lake Range HMA and wild horse population is guided by the July 1982 Sonoma-Gerlach Resource Area Management Framework Plan (MFP) Record of Decision (ROD), the 1997 Rodeo Creek FMUD, and the April 2000 Pole Canyon FMUD. AML was established in the FMUDs as a result of detailed analyses of available water and forage resources within a multiple-use context. AML was adjusted to a four year gather cycle instead of a three year in 2000 based on a 15% annual herd increase. This decision changed the range from 153-204 to a range of 122-204 wild horses. At present, the HMA has an estimated population of 394 wild horses. The current sex ratio of males/females is within the expected range (40-60% in favor of either males or females) with young, middle and older age class animals well represented.

Under the law, BLM is required to remove excess animals immediately once a determination has been made that excess animals are present. Program goals have expanded beyond establishing a “*thriving natural ecological balance*” (i.e. establishing AML for individual herds), to achieving/maintaining population size within the established AML as well as managing for healthy, self sustaining wild horse (or burro) populations. The destruction of healthy excess animals is prohibited; adoptions or sales² or placement of excess wild horses and burros in long term holding are the primary means for caring for the animals removed from the range. The focus of wild horse and burro management has also expanded to place emphasis on achieving rangeland health as measured through the standards and guidelines for rangeland health and healthy wild horse and burro populations developed by the Sierrafront-Northwest Great Basin Resource Advisory Council (RAC).

5.1.3 Reasonable Foreseeable Future Actions

Future wild horse gathers would be conducted about every 3-4 years over the next 10-15 year period in order to continue to manage the HMA within the established AML. Under the Proposed Action (Alternative A), the population would reach the high limit of AML in about 2011 or 2012 (Appendix C), while under Alternative B the high limit of AML is already exceeded by about double. Additional gathers would be needed to remove excess wild horses on a three to four year gather cycle in order to maintain populations within the AML range. Fertility control may also be applied in future gathers in an effort to slow population growth. Cumulatively over the next 5-15 years, these actions should result in fewer gathers and less frequent disturbance to individual wild horses and the herd’s social structure. Individual and herd health would be maintained.

Under the No Action alternative, wild horse population size would exceed 3,000 head within ten years (Appendix C) A number of emergency removals could be expected in order to prevent individual animals from suffering or death due to lack of forage and water. Increased stress and disturbance to the herd’s social structure would be expected, habitat resources would be over-utilized, and progress toward rangeland health standards would not be met.

² Under authority provided by the Congress of the United States in December 2003, sales of excess animals to individuals who can provide the animals with a good home are limited to animals over age 10 or that have been offered unsuccessfully for adoption three times.

Any future proposed projects within the Fox & Lake Range HMA would be analyzed in an appropriate environmental document following site specific planning. Future project planning would also include public involvement.

5.2 Vegetation

5.2.1 Past

Forage utilization during the 1900's was high when thousands of cattle, sheep, and horses grazed lands in northern Nevada. In the 1930s when overgrazing threatened to reduce Western rangelands to a dust bowl, Congress approved the Taylor Grazing Act (TGA) of 1934, which for the first time regulated grazing on public lands. The TGA required ranchers who grazed horses or livestock on public lands to have a permit and to pay a grazing fee, but by that time, thousands of horses roamed the Nevada desert unbranded and unclaimed.

Prior to the Taylor Grazing Act grazing practices contributed to significantly impacting the soil resource. The soil tolerance was exceeded and the soil medium for plant growth was not maintained. Prior to the Taylor Grazing Act livestock grazing activities had significant impacts to the vegetation resources within the impact assessment area by eliminating or greatly reducing the primary understory plants. Cheatgrass was introduced into the area in the early 1900s.

Prior to the Taylor Grazing Act grazing practices significantly impacted wetland and riparian zones. Wetland and riparian zones declined, riparian vegetation was insufficient to dissipate energy and filter sediment increasing erosion and destabilizing stream banks and meadows. Destabilization of streams and meadows resulted in incised channels and gullies resulting in lowered water table. In order to support and distribute livestock, a variety of range improvement projects have been implemented through the years dating back to the 1930s.

Past livestock grazing decisions have resulted in adjustments of livestock numbers and seasons of use for the livestock grazing allotments in the HMA.

5.2.2 Present

The present livestock grazing system and management of wild horse at AML has reduced past soil impacts and improved current soil resource conditions. The present actions have reduced past impacts and improved vegetation understory conditions. The primary successional understory plants species are slowly returning and vegetation conditions are improving, but may never be able to return to their potential.

Throughout the HMA numerous springs have been developed and troughs installed to provide livestock (and wild horse) water. Fences and corrals have also been built to assist in proper livestock management. Present livestock grazing and wild horse gather decisions have improved rangeland conditions, habitat for sensitive or threatened species and balanced livestock and wild horse use. However, year-round water availability, poor ecological conditions, and changes in climatic conditions (hotter and drier) continue to be limiting factors.

5.2.3 Reasonable Foreseeable Future Actions

Livestock grazing is expected to continue at similar stocking rates. Cumulatively over the next 5-15 year period, continuing to manage wild horses within the established AML range would result in improved vegetation condition (i.e. forage availability and quantity), which in turn would positively impact vegetation and other habitat resources.

Under the No Action alternative, the wild horse population would be expected to increase to about 3,000 horses within the next ten years (Graph 2, Appendix C) if the population did not crash before then due to insufficient habitat resources and decreased health. Utilization levels on forage would be severe and water quantity would not be sufficient. Wild horses, wildlife and livestock would not have available forage or water. All animals would experience suffering and possible death. Ecological communities and habitat resources would not be sustainable. Rangeland health would degrade, possibly below biological thresholds, making recovery unlikely if not impossible.

5.3 Cumulative Impacts

Alternative A. The Proposed Action: Remove Excess Wild Horses

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

Cumulative effects from the Proposed Action would include continued improvement of upland and riparian vegetation conditions, which would in turn positively impact permitted livestock, native wildlife, and wild horses populations as forage (habitat) quantity and quality is improved over the current level. Benefits from reduced wild horse populations would include fewer animals competing for limited water quantity and at limited sites.

Alternative B. No Action: Defer Gather & Removal

Cumulative impacts of the No Action alternative coupled with impacts from past, present, and reasonably foreseeable future actions would result in foregoing an opportunity to improve rangeland health and to properly manage wild horses in balance with the available water and forage. Over-utilization of vegetation and other habitat resources would occur as wild horse populations continued to increase. Wild horse populations would be expected to crash at some ecological threshold, however wild horse, livestock, and wildlife would all experience suffering and possible death as rangeland resources continued to degrade. Attainment of RMP/FMUD objectives and Standards for Rangeland Health and Wild Horse and Burro Populations would not be achieved.

6.0 MONITORING and MITIGATION MEASURES

Monitoring

The BLM Contracting Officer Representative (COR) and Project Inspectors (PIs) assigned to the gather would be responsible for insuring contract personnel abide by contract specifications and SOPs. Ongoing rangeland, riparian, and wild horse monitoring within the Fox & Lake Range HMA would continue, including periodic aerial population census counts.

Mitigation

The gather would occur in July during times of high temperatures and dry fuel conditions. Care should be taken to avoid human caused fire starts during the gather. The gather may occur during a time when fire restrictions are in effect within the Winnemucca District boundary. Proposed mitigation measures to reduce the potential of wildfire would include:

- a. All vehicles should carry fire extinguishers.
- b. Adequate fire fighting equipment i.e. shovel, pulaski, extinguisher(s), and/or an ample water supply should be kept at the project site(s).
- c. Vehicle catalytic converters should be inspected often and cleaned of all brush and grass debris.

7.0 LIST of PREPARERS (Assigned ID Team)

Glenna Eckel	Wild Horse & Burro Specialist (Lead)
Susie Stokke	Wild Horse & Burro, NV State BLM Office
Lynn Ricci	Environmental Coordinator
Peggy Mc Guckian	Cultural, Paleontological, and Historical Resources Native American Religious Concerns
Gerald Gulley	Recreation Specialist
Cameron Mc Quivey	Wildlife Biologist
Jeff Johnson	Fire Management Specialist
Dave Hodgson	Rangeland Management Specialist
Derek Messmer	Noxious Weeds/Invasive Specialist
Mike Zielinski	Vegetation, Soils, Water Quality, Wetland-Riparian Zones

8.0 CONSULTATION and COORDINATION

Public hearings are held annually on a state-wide basis regarding the use of helicopters and motorized vehicles to capture wild horses (or burros). During these meetings, the public is given the opportunity to present new information and to voice any concerns regarding the use of these methods to capture wild horses (or burros). The Nevada BLM State Office held a meeting on May 15, 2008; a total of 116 individuals commented. Of these, 1 was an oral comment, 4 were written comments, and the balance were emails. Specific concerns included: (1) the use of helicopters and motorized vehicles is inhumane and results in injury or death to significant numbers of wild horses and burros; (2) bait and/or water trapping or removal by horseback are more humane methods of removal; (3) misconduct by gather contractors or others must be immediately corrected; and (4) fertility control, including sterilization of stallions should be considered rather than removing excess animals. Some expressed the desire that nature be allowed to take its course and that animals be left to die of thirst or starvation in lieu of gathers. Based on the number of concerns expressed with respect to the use of helicopters and motorized vehicles, BLM thoroughly reviewed the Standard Operating Procedures to assure that all necessary measures are in place to humanely capture, handle and transport Nevada's wild horses and burros during the upcoming gather season. No changes to the SOPs were indicated based on this review. This decision is based on the facts: over the past four years, BLM Nevada has gathered nearly 23,000 excess animals. Of these, mortality has averaged only one-half of one percent which is very low when handling wild animals. Another 7/10 of one percent of the

animals captured were humanely euthanized due to pre-existing conditions and in accordance with BLM policy. This data affirms that the use of helicopters and motorized vehicles has proven to be a safe, effective and practical means for the gather and removal of excess wild horses and burros from the range. BLM also avoids gathering wild horses prior to or during the peak foaling season and does not conduct helicopter removals of wild horses during March 1 through June 30.

This preliminary environmental assessment (EA) would be posted to the WFO Internet website for a 30-day public review and comment period. In addition, notice of the availability of the preliminary EA would be mailed to individuals, groups, and agencies (Appendix D) on the WFO wild horse and burro mailing list.

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10.0 APPENDICES

Appendix A – Standards and Guidelines for Management of Wild Horses and Burros of the Sierra Front-Northwest Great Basin Area (3/07)

-Excerpt-

Background

Wild horse and burro management practices based on the following Standards and Guidelines will consider both the economic and physical environment and will be consistent with other multiple uses including but not limited to: recreation, minerals, cultural values, wildlife, domestic livestock, areas of critical environmental concern (ACEC's), designated wilderness and wilderness study areas (WSA's), and land acquisition and disposition activities.

With approval of these Standards for wild horses and burros maintaining animal health and population viability will focus primarily on controlling population size and herd composition within the Appropriate Management Level (AML) of the Herd Management Areas (HMA) as established in Sierra Front-Northwestern Great Basin planning decisions. The Guidelines outlined below are designed to achieve the existing Rangeland Health Standards for the Sierra Front-Northwestern Great Basin as well as the proposed Wild horse and Burro Standards.

Existing Rangeland Health Standards for Wild Horse and Burro Management:

The five (5) Standards outlined below are included in the approved **Standards and Guidelines for Rangeland Health in the Nevada's Sierra Front-Northwestern Great Basin Area** and are adopted as Standards for wild horses and burros.

STANDARD 1. SOILS:

Soil processes will be appropriate to soil types, climate and land form. As indicated by:

- Surface litter is appropriate to the potential for the site;
- Soil crusting formations in shrub interspaces, and soil compaction are minimal or not in evidence allowing for appropriate infiltration of water;
- Hydrologic cycle, nutrient cycle, and energy flow are adequate for the vegetative communities;
- Plant communities are diverse and vigorous, and there is evidence of recruitment; and
- Basal and canopy cover (vegetative) is appropriate for the site's potential.

STANDARD 2. RIPARIAN/WETLANDS:

Riparian/Wetlands systems are in properly functioning condition. As indicated by:

- Sinuosity, width/depth ration, and gradient are adequate to dissipate stream flow without excessive erosion or deposition;
- Riparian vegetation is adequate to dissipate high flow energy and protect banks from excessive erosion; and
- Plant species diversity is appropriate for riparian-wetland systems.

STANDARD 3. WATER QUALITY:

Water quality criteria in Nevada or California State Law shall be achieved or maintained. As indicated by:

- Chemical constituents do not exceed the water quality Standards;

- Physical constituents do not exceed the water quality Standards;
- Biological constituents do not exceed the water quality Standards; and
- The water quality of all water bodies, including ground water located on or influenced by BLM lands will meet or exceed the applicable Nevada or California water quality Standards. Water quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law, and as found in the Section 303(c) of the Clean Water Act.

STANDARD 4. PLANT AND ANIMAL HABITAT:

Populations and communities of native plant species and habitats for native animals species are healthy, productive and diverse. As indicated by:

- Good representation of life forms and numbers of species;
- Good diversity of height, size, and distribution of plants;
- Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

STANDARD 5. SPECIAL STATUS SPECIES HABITAT:

Habitat conditions meet the life cycle requirement of special status species. As indicated by:

- Habitat areas are large enough to support viable populations of special status species;
- Special status plant and animal numbers and ages appear to ensure stable populations;
- Good diversity of height, size, and distribution of plants;
- Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

STANDARD 6. SELF-SUSTAINING POPULATIONS OF HEALTHY WILD HORSES AND BURROS:

Wild horse and burro populations are healthy and self-sustaining (reproductively viable). As indicated by:

- Herd size, age structure, and sex ratios appropriate for maintaining reproductively viable herds.
- Herds display no significant deleterious genetic conditions.
- Herd Management Areas provide adequate food, water, and living space for long term maintenance of healthy wild horses and burros.
- Adult animals have sufficient Henneke body condition class to withstand short term (3-4 months) forage loss due to adverse winter conditions or other habitat destruction.

Appendix B – Wild Horse and/or Burro Gathers Standard Operating Procedures

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

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

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

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

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

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

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

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

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

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.
3. All traps, wings, and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:
 - a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high for horses and 60 inches for burros, and the bottom rail of which shall not be more than 12 inches from ground level. All traps and holding

facilities shall be oval or round in design.

- b. All loading chute sides shall be a minimum of 6 feet high and shall be fully covered, plywood, metal without holes.
 - c. All runways shall be a minimum of 30 feet long and a minimum of 6 feet high for horses, and 5 feet high for burros, and shall be covered with plywood, burlap, plastic snow fence or like material a minimum of 1 foot to 5 feet above ground level for burros and 1 foot to 6 feet for horses. The location of the government furnished portable fly chute to restrain, age, or provide additional care for the animals shall be placed in the runway in a manner as instructed by or in concurrence with the COR/PI.
 - d. All crowding pens including the gates leading to the runways shall be covered with a material which prevents the animals from seeing out (plywood, burlap, plastic snow fence, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level for burros and 2 feet to 6 feet for horses
 - e. All pens and runways used for the movement and handling of animals shall be connected with hinged self-locking gates.
4. No modification of existing fences will be made without authorization from the COR/PI. The Contractor shall be responsible for restoration of any fence modification which he has made.
 5. When dust conditions occur within or adjacent to the trap or holding facility, the Contractor shall be required to wet down the ground with water.
 6. Alternate pens, within the holding facility shall be furnished by the Contractor to separate mares or jennies with small foals, sick and injured animals, and estrays from the other animals. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize, to the extent possible, injury due to fighting and trampling. Under normal conditions, the government will require that animals be restrained for the purpose of determining an animal's age, sex, or other necessary procedures. In these instances, a portable restraining chute may be necessary and will be provided by the government. Alternate pens shall be furnished by the Contractor to hold animals if the specific gathering requires that animals be released back into the capture area(s). In areas requiring one or more satellite traps, and where a centralized holding facility is utilized, the contractor may be required to provide additional holding pens to segregate animals transported from remote locations so they may be returned to their traditional ranges. Either segregation or temporary marking and later segregation will be at the discretion of the COR.
 7. The Contractor shall provide animals held in the traps and/or holding facilities with a continuous supply of fresh clean water at a minimum rate of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than two pounds of hay per 100 pounds of estimated body weight per day. An animal that is held at a temporary holding facility after 5:00 p.m. and on through the night, is defined as a horse/burro feed day. An animal that is held for only a portion of a day and is shipped or released does not constitute a feed day.
 8. It is the responsibility of the Contractor to provide security to prevent loss, injury or death of captured animals until delivery to final destination.
 9. The Contractor shall restrain sick or injured animals if treatment is necessary. The COR/PI will determine if injured animals must be destroyed and provide for destruction of such animals. The Contractor may be required to humanely euthanize animals in the field and to dispose of the carcasses as directed by the COR/PI.

10. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals to be released back into the HMA following gather operations may be held up to 21 days or as directed by the COR/PI. Animals shall not be held in traps and/or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The Contractor shall schedule shipments of animals to arrive at final destination between 7:00 a.m. and 4:00 p.m. No shipments shall be scheduled to arrive at final destination on Sunday and Federal holidays, unless prior approval has been obtained by the COR. Animals shall not be allowed to remain standing on trucks while not in transport for a combined period of greater than three (3) hours. Animals that are to be released back into the capture area may need to be transported back to the original trap site. This determination will be at the discretion of the COR.

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

1. Capture attempts may be accomplished by utilizing bait (feed or water) to lure animals into a temporary trap. If the contractor selects this method the following applies:
 - a. Finger gates shall not be constructed of materials such as "T" posts, sharpened willows, etc., that may be injurious to animals.
 - b. All trigger and/or trip gate devices must be approved by the COR/PI prior to capture of animals.
 - c. Traps shall be checked a minimum of once every 10 hours.
2. Capture attempts may be accomplished by utilizing a helicopter to drive animals into a temporary trap. If the contractor selects this method the following applies:
 - a. A minimum of two saddle-horses shall be immediately available at the trap site to accomplish roping if necessary. Roping shall be done as determined by the COR/PI. Under no circumstances shall animals be tied down for more than one hour.
 - b. The contractor shall assure that foals shall not be left behind, and orphaned.
3. Capture attempts may be accomplished by utilizing a helicopter to drive animals to ropers. If the contractor with the approval of the COR/PI selects this method the following applies:
 - a. Under no circumstances shall animals be tied down for more than one hour.
 - b. The contractor shall assure that foals shall not be left behind, or orphaned.
 - c. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who will consider terrain, physical barriers, weather, condition of the animals and other factors.

C. USE OF MOTORIZED EQUIPMENT

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

rated capacity, and operated so as to ensure that captured animals are transported without undue risk or injury.

3. Only tractor-trailers or stock trailers with a covered top shall be allowed for transporting animals from trap site(s) to temporary holding facilities, and from temporary holding facilities to final destination(s). Sides or stock racks of all trailers used for transporting animals shall be a minimum height of 6 feet 6 inches from the floor. Single deck tractor-trailers 40 feet or longer shall have two (2) partition gates providing three (3) compartments within the trailer to separate animals. Tractor-trailers less than 40 feet shall have at least one partition gate providing two (2) compartments within the trailer to separate the animals. Compartments in all tractor-trailers shall be of equal size plus or minus 10 percent. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 foot wide swinging gate. The use of double deck tractor-trailers is unacceptable and shall not be allowed.
4. All tractor-trailers used to transport animals to final destination(s) shall be equipped with at least one (1) door at the rear end of the trailer which is capable of sliding either horizontally or vertically. The rear door(s) of tractor-trailers and stock trailers must be capable of opening the full width of the trailer. Panels facing the inside of all trailers must be free of sharp edges or holes that could cause injury to the animals. The material facing the inside of all trailers must be strong enough so that the animals cannot push their hooves through the side. Final approval of tractor-trailers and stock trailers used to transport animals shall be held by the COR/PI.
5. Floors of tractor-trailers, stock trailers and loading chutes shall be covered and maintained with wood shavings to prevent the animals from slipping.
6. Animals to be loaded and transported in any trailer shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. The following minimum square feet per animal shall be allowed in all trailers:
 - 11 square feet per adult horse (1.4 linear foot in an 8 foot wide trailer);
 - 8 square feet per adult burro (1.0 linear foot in an 8 foot wide trailer);
 - 6 square feet per horse foal (.75 linear foot in an 8 foot wide trailer);
 - 4 square feet per burro foal (.50 linear feet in an 8 foot wide trailer).
7. The COR/PI shall consider the condition and size of the animals, weather conditions, distance to be transported, or other factors when planning for the movement of captured animals. The COR/PI shall provide for any brand and/or inspection services required for the captured animals.
8. If the COR/PI determines that dust conditions are such that the animals could be endangered during transportation, the Contractor will be instructed to adjust speed.

D. SAFETY AND COMMUNICATIONS

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

his/her representative.

- b. The Contractor shall obtain the necessary FCC licenses for the radio system
 - c. All accidents occurring during the performance of any task order shall be immediately reported to the COR/PI.
2. Should the contractor choose to utilize a helicopter the following will apply:
- a. The Contractor must operate in compliance with Federal Aviation Regulations, Part 91. Pilots provided by the Contractor shall comply with the Contractor's Federal Aviation Certificates, applicable regulations of the State in which the gather is located.
 - b. Fueling operations shall not take place within 1,000 feet of animals.

E. PUBLIC PARTICIPATION

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

F. RESPONSIBILITY AND LINES OF COMMUNICATION

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. All employees involved in the gathering operations will keep the best interests of the animals at the forefront at all times.

The Winnemucca Assistant Field Manager for Renewable Resources and the Winnemucca Field Manager will take an active role to ensure the appropriate lines of communication are established between the field, Field Office, State Office, National Program Office, and Palomino Valley Corral. All publicity, formal public contact and inquiries will be handled through the Assistant Field Manager for Renewable Resources.

G. SITE CLEARANCES

Personnel working at gather sites will be advised of the illegality of collecting artifacts.

Prior to implementation of gather operations, trap sites and temporary holding facilities would be evaluated for cultural resources. Gather sites and temporary holding facilities would not be constructed on wetlands or riparian zones.

Appendix C – Fox & Lake Range HMA Wild Horse Population Modeling Results

Objectives of Population Modeling

Some of the questions this modeling helps to answer:

- Does either alternative “crash” the wild horse population in this HMA?
- What effects do the different alternatives have on the average population size in this area over a time period of ten years?

Population Data, Criteria, and Parameters utilized for Population Modeling

Age-sex distribution data was compiled from the 2005 Fox & Lake Range HMA capture data records (361 animals) and rescaled to the current population estimate of 394 head. The rescaled age-sex distribution was then used to represent the post-foaling 2008 age-sex structure. Actual survival probabilities and foaling rates for the Fox & Lake Range HMA are unknown, thus the Garfield data set supplied with the WinEquus population model were used. These data were collected by M. Ashley and S. Jenkins at Garfield Flat, Nevada between 1993 and 1999. Marked individuals were followed for a total of 708 animal-years to generate these probabilities.

- ✓ The Proposed Action simulation models the effects of a 270 head removal in 2008 (and additional removals every 4 years³ where the low AML = 122 and the high AML = 204) over a ten year period (2008-2018) on the current population estimate of 394 head.
- ✓ The No Action simulation models the effects of no removals or management actions now or in the next ten years (2008-2018) on the current population estimate of 394 head.

Population Modeling Results

Population size in year 11 (after a 10 year simulation)

Out of 100 trials (or samples) in each Alternative simulation, the model tabulated minimum, average, and maximum population sizes. The model was run for ten years to determine what the potential effects would be on the population size for both the Proposed Action and the No Action alternative. The data displayed within the tables below are broken down into different levels. Several percentile trials are displayed for each simulation completed. The growth rates are similar between alternatives as expected as no fertility control application is proposed or modeled at this time.

Trial	Alternative A Proposed Action			Alternative B No Action		
	min	med	max	min	med	max
	10%	130	211	404	404	1129
25%	136	216	404	412	1239	2536
Median	142	223	429	424	1356	2874
75%	146	230	447	442	1484	3233
90%	152	237	476	470	1638	3676
Gather years	2008, 2012, 2016			None		

Table 1. Population size results.

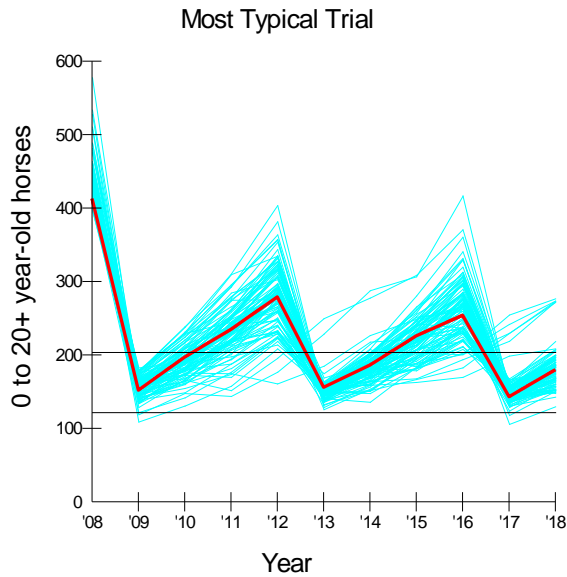
Trial	Ave. Growth Rate	
	Alt. A Proposed Action	Alt. B No Action
10%	17.9	18.3
25%	19.6	19.6
Median	21.3	20.8
75%	22.9	22.3
90%	25.1	23.8

Table 2. Average growth rate (%) over 10 years.

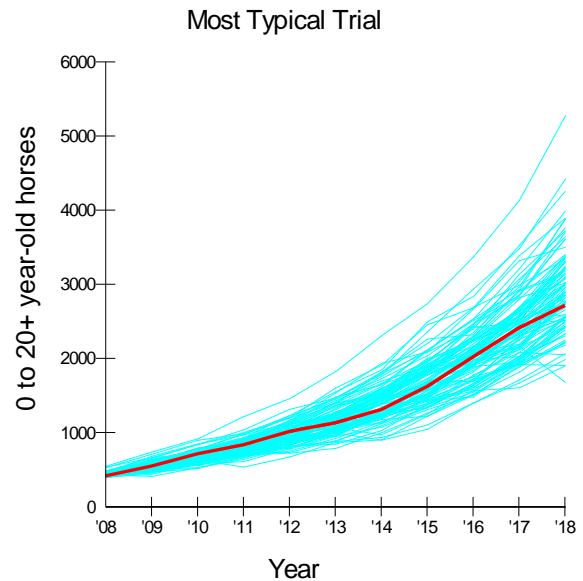
³ typical gather cycle

Displayed in the graphs below are results of the 100 trials and the “most typical trial” (dark line) for each alternative. Graph 1 displays results of the Proposed Action alternative simulation. Results indicate wild horse populations would generally exceed the high (204) AML range by about 100 head (about 300 head) when gathered on a four year cycle to the low (122) AML range (black horizontal lines). Therefore, other management options would need to be considered in the future such as fertility control, sex ratio adjustments, or a three year gather cycle to maintain the wild horse population within the established AML range.

Graph 2 displays results of the No Action alternative simulation. Results indicate wild horse populations would continue to grow well beyond the high AML without additional management actions.



Graph 1. Proposed Action, trial results, most typical highlighted.



Graph 2. No Action, trial results, most typical highlighted.

Population Modeling Summary

To summarize the modeling results, the original questions can be addressed.

- Does either alternative “crash” the horse population residing in this portion of the HMA?

Neither alternative indicates that a crash is likely to occur to the population. A crash would be represented by a drop in population numbers below a self-sustainable level, currently estimated at a herd size of 150 animals. A crash would be visualized in the graphs above by a drop in population numbers below 150 animals with no recovery or growth in the population over time. Minimum population levels and growth rates are all within reasonable levels, and adverse impacts to the population are not likely.

- What effects do the different alternatives have on the average population size?

The Proposed Action alternative maintains an average population size of about 223 horses while the No Action alternative suggests populations would continue to increase well over 1,000 head in about four years time. However, the model does not account for limits of habitat capacities and at some period of time wild horses would exceed habitat thresholds (run out of forage, water, and space) and a population crash would then be expected, probably during a drought or cold winter. However, severe damage to habitats would have already occurred.

Appendix D – Coordination and Consultation Notification List

American Humane Association
Animal Protection Institute of America
Center for Biological Diversity; Rob Mrowka, Paul J. Spitler
Committee For High Desert, Katie Fite
HERDS
Int. Soc. Protection of Mustangs & Burros, Karen Sussman
Jackrabbit Properties, LLC, Todd Jaksick
Marion Co. Humane Society, Inc., Barbara Warner
National Mustang Association, Richard Sewing
National Wild Horse Association
Natural Resource Defense Council
Nevada Department of Wildlife; Chris Hampson, Roy Leach
NV Land & Resource Company, David Buhlig
Nevada State Clearinghouse, Krista Coulter
Nevada Wild Horse Commission, Cathy Barcomb
Pyramid Lake Paiute Tribe; Mervin Wright Jr., John Mosley
Resource Concepts, Inc., C. Rex Cleary
U.S. Fish & Wildlife Service, Robert Williams
Washoe County Commissioners
Western Watersheds Project, Barbara Hakala
Wild Horse Organized Assistance, Dawn Lappin
Wild Horse Preservation League, Chuck & Bonnie Matton
Wild Horse Sanctuary, Diane Nelson
Wild Horse Spirit, Betty Kelly
Wild Horses Forever, Jerry Reynoldson

Stan Ceresola
Craig Downer
James Jurard
Cindy Mac Donald
Mandy Mc Nitt
Bertrand & Jill Paris