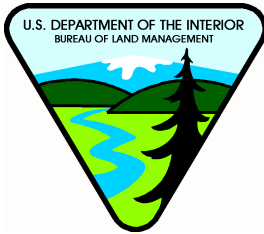




**United States Department of the Interior
Bureau of Land Management**

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Environmental Assessment CA-370-CA-370-05-28

**Capture Plan for the
Wall Canyon East, Nut Mountain and
the Bitner Wild Horse Herd Management Areas**

:

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1.0 Purpose and Need for the Proposed Action

This environmental assessment (EA) will analyze the impacts of the potential methods that may be used to maintain established wild horse appropriate management levels on the resources within the Wild Horse Herd Management Areas (HMA). An Appropriate Management Level (AML) has been established at 25 horses for Wall Canyon East, 55 horses for the Nut Mountain, and 25 horses for the Bitner Wild Horse Herd Management Areas. This EA does not address the establishment of the AMLs for the herd management areas. The AML was established through an environmental assessment # CA-028-93-03 which analyzed monitoring data collected on these herd areas and the impacts of wild horses on the resources. The Interior Board of Land Appeals in case number IBLA 94 94-163 affirmed the establishment of the AMLs and the subsequent removals of excess animals from Wall Canyon East, Nut Mountain, and Bitner Wild Horse Herd Management Areas.

The primary goal for managing wild horses within Appropriate Management Levels is to achieve a thriving natural ecological balance of resources, while maintaining a healthy and viable population of wild horses. No additional information has been found that would indicate a need to adjust the established appropriate management levels for the Wall Canyon East, Nut Mountain, and Bitner Wild Horse Herd Management Areas (HMAs). However, the key limiting factors for wild horses within each HMA continues to be use of public and private riparian areas by wild horses, and the limited amount of public water available for wild horse use.

The BLM has determined that there are excess wild horses present in the Wall Canyon East, Nut Mountain, and Bitner Wild Horse Herd Management Areas and the removal of 255 horses or about 90% of the horses from the three HMAs is needed to restore wild horse herd numbers to levels consistent with the Appropriate Management Level (AML) for each HMA. This proposed capture and removal is needed at this time in order to achieve a thriving natural ecological balance between wild horse populations, wildlife, livestock, and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses.

The proposed action also includes gathering 8 feral horses outside of a herd management area in the Mosquito Valley Allotment, approximately 55 northeast of Cedarville. The ownership of these horses is unknown.

The Proposed Action objectives include the collecting information on herd characteristics, and determining herd health. All activities would be conducted according to a specified set of Standardized Operating Procedures (SOP's) (Appendix B).

1.1 Conformance with Existing Land Use Plans

Governing land use plans are the CowHead Massacre Management Framework Plan (MFP)/Final Grazing Environmental Impact Statement (EIS) and Record of Decision, as amended by the

Rangeland (Land) Health Standards and Guidelines for California and Northwestern Nevada; and the Black Rock Desert-High Rock Canyon Emigrant Trails National Conservation Area (NCA). The Proposed Action is in conformance with these plans and consistent with federal, state, and local laws, regulations, and plans to the maximum extent possible.

The MFP Objectives common to all HMAs include:

Maintain a healthy, viable wild and free-roaming horse herds.

Strive to achieve 100% adoptability of all horses that are removed from the herds through the regular adoption program.

Prevent inbred problems from occurring in the HMAs.

1.2 Conformance with Rangeland Health Standards

The allotments within the HMAs were assessed for conformance with Rangeland Health Standards. Monitoring information collected on the HMAs since 1998 indicates that while not all Rangeland Health Standards are being met, resource conditions are progressing toward meeting the standards. Excessive utilization levels by wild horse and cattle grazing contributed to not meeting Stream Health, Riparian/Wetland standards.

1.3 Relationship to Statutes, Regulations, Policies, Plans, or Other Environmental Analysis

The Proposed Action is authorized under Section 3(b)(2) of the 1971 Free-Roaming Wild Horses and Burros Act and Section 302(b) of the Federal Land Policy and Management Act of 1976. The Herd Management Area Plans (HMAP) for the three herds affected by the Proposed Action was signed in 1989. The Management Framework Plan provides general management direction, the 1993 decision established the AML, and the HMAP provides management parameters. The HMAs also overlap with various allotment management plans that guide annual rangeland management activities.

The Cowhead-Massacre MFP, Wild Horse Herd Management Area plans and EA #CA-028-93-03 are available at the Surprise Field Office for public review.

2.0 Alternatives, Including the Proposed Action

2.1 Actions Common to All Alternatives

Common to all alternatives, except the No Action Alternative, is the collection of genetic information from animals captured. This data would be used to determine if any measures are needed to increase genetic variability in the herd. Measures may include the periodic introduction of new animals into the population to expand the genetic base of the herd.

The wild horse population model “Win Equus version 1.4” was used to predict populations under each alternative considered in this document for the Wall Canyon East HMA. This herd has the best available data for prediction population model purposes. The sex and age structure data was incomplete for Nut Mountain and Bitner HMA.

2.2 Alternatives to be considered in detail

2.2.1 Alternative 1 (Proposed Action)

The Proposed Action is conformance with BLM's 2001 Wild Horse Strategy, which is to implement population management for each HMA and to manage within the Appropriate Management Levels (AML) ranges. The HMAs would be gathered on a four - five year cycle, based on annual reproduces at a rate of 15% to 20%. Therefore, the Proposed Action is to reduce the herd to the low range AML.

The removal of excess wild horses would be accomplished by the use of a helicopter herding the horses into traps constructed of portable panels. This operation would be accomplished either by BLM employees, contract, or a combination of both. Multiple capture sites (traps) may be used to capture wild horses from this HMA. Whenever possible, capture sites would be located in previously disturbed areas, and outside of Wilderness, or Wilderness Study Areas. All capture and handling activities would be conducted in accordance with the Standard Operating Procedures (SOP's) described in Appendix B. Selection of capture techniques would be based on several factors such as the season of removal, condition of animals, herd health, and environmental considerations.

The actual gathering process is estimated to be completed in about 10 days. It is expected that the Proposed Action would be initiated during November, 2005 or late summer of 2006.

Part of the Proposed Action for each HMA would be to capture approximately 90% of the wild horses. All animals would be examined to determine sex, age, and color; acquire blood samples for genetic analysis; and assess herd health (pregnancy, parasite loading, physical condition, etc.). Determination of which horses would be returned to the range would be based on an analysis of existing population characteristics and post gather data for age, sex ratio, and colors. The representation of age classes returned to the range would include several horses under 5 years old, and a balanced representation of horses over 6 years old. The sex ratio of horses returned would be 50% studs, and 50% mares. This overall age structure would assure genetic viability, and healthy sustainable population.

Wild horses under 5 years are more adoptable, and consequently would be prepared for BLM's adoption program. To meet the AML goal, there will be horses over 6 years old not returned to the herds. These horses would be prepared for long term holding facilities. For example, if the 90% of the horses are captured, then 230 horses would be permanently removed from the HMA

and 25 horses would be selected to be returned to the HMA, along with the un-gathered horses to maintain AMLs. The age, sex, temperament, and physical condition of the 25 horses returned would be recorded to track future population trends.

The following Table 1 shows the current population projection based on estimated foal crops since the last gather or census of May 2001. This data was used to determine the estimated number of wild horses to be gathered and removed from the HMA.

Table 1 –HMA Population Information

HMA	Appropriate Management Levels	Year Last Gathered	Estimated 2005 Population	Estimated Number to Remove
Bitner	15-25	1993	69	54
Nut Mountain	30-55	2000	145	115
Wall Canyon East	15-25	2000	67	52
Totals			281	221

Although, there is some degree of mixing between the Bitner herd and Nut Mountain herds; and between the Wall Canyon East herd and Winnemucca’s Warm Springs herd, it is not known if there is a need to augment the genetic pool by the introduction of animals from other herds. Under the Proposed Action and the Alternative 2, the general condition and appearance of the wild horses, as well as data from blood drawn for genetic analysis would be used to determine actions necessary to keep the populations viable and self-sustaining. Any wild horses introduced into the HMAs would be consistent with HMAP objectives and would meet the general characteristics (color, size, type, etc.) for each population.

The BLM would not conduct immuno-contraceptive research as part of the Proposed Action. None of the captured and released mares would be treated to inhibit reproduction. This alternative reflects current management procedures for herds with relatively low (less than 50 head) appropriate management levels.

2.2.2 Alternative 2 (Proposed Action with the use of Immuno-contraceptives)

In addition to the Proposed Action, the BLM would conduct immuno-contraceptive research and monitor results as appropriate. Any mares selected for return to the HMA, an estimated 15 head total for the three HMAs would be treated with a revised immuno-contraceptive vaccine, Porcine Zona Pellucida (PZP). It is anticipated that this vaccine would inhibit reproduction of captured,

treated, and released mares for two to three breeding seasons. All treated mares would be freeze marked on the right hip with two letters assigned by NPO for tracking purposes to enable researchers to positively identify animals in the research project during the data collection phase. Monitoring would include, as a minimum, helicopter flights to be conducted in years 2 through 4 to locate treated mares and determine efficacy. The flight to be scheduled in year 4 has an objective of determining the percentage of mares that have returned to fertility. In addition, field monitoring would be routinely conducted as part of other regular monitoring activities.

Treated mares (as identified by the hip freeze marking) would not enter the adoption market for a minimum of three years following treatment. A field data sheet will be forwarded to the field from the National Program Office (NPO) prior to treatment. This form will be used to record all pertinent data relating to identification of each mare (including a photograph when possible), date of treatment, type of treatment (1yr, 2yr- and Adjuvant used) Herd Management Area (HMA), etc. The form and any photos will be maintained at the field office and a copy of the completed form will be sent to the NPO.

A tracking system will be maintained by NPO detailing the quantity of PZP issued, the quantity used, the disposition of any unused PZP, and the number of treated mares by HMA, FO and State along with the freeze-mark applied, by HMA. In the vast majority of cases, the released mares will never be gathered sooner than the mandatory three-year holding period. In those rare instances when, due to unforeseen circumstances, treated mare(s) are removed from an HMA they will be maintained either in a BLM facility or a contracted Long Term Holding Facility until the expiration of the three-year holding period. In the event that it is necessary to remove treated mares, their removal and disposition will be coordinated through NPO. After expiration of the three-year holding period, treated animals may be placed in the adoption system. In addition, applying fertility control measures as part of the Proposed Action would slow the reproduction rate of mares returned to the HMA following the gather. This would reduce disturbance to the herd by decreasing the gather frequency and it would provide for a more stable wild horse social structure.

2.2.3 Alternative 3 (No Action)

This alternative consists of no direct management of wild horse numbers. Wild horses would be allowed to regulate their numbers naturally through forage, predation, disease, water, space availability, and affects of severe winters. It is estimated, based on population modeling, Wall Canyon East Herd wild horse numbers would increase to 161 head in 10 years, and may be as high as 247 head in 15 years, or potentially as high as 1124 head under this alternative.

This alternative is not in compliance with the CowHead-Massacre Land Use Plan, Land Health Standards, NCA decisions and the requirements of the 1971 Free-Roaming Wild Horses and Burros Act which mandates the Bureau to protect the range from the deterioration associated with overpopulation, and to preserve and maintain a thriving natural ecological balance and

multiple-use relationship in that area. However, for comparative purposes, the No Action Alternative will be included in this analysis.

Affected Environment

The HMAs is located in the remote areas of northern Washoe County, Nevada about 50 miles east of Cedarville. The combined acreage for the HMAs is approximately 124,800 acres of public lands. The Sheldon Antelope Range borders all three HMAs on the north side. The Winnemucca Field Office -Warm Springs HMA is east of the Wall Canyon East HMA, and the High Rock herd is on the south side. The elevations vary from 5,500 to 6,500 feet throughout the three HMAs. (See attached HMA Maps).

The affected environment is described in environmental assessment EA No. CA-028-93-03, and incorporated into this EA by reference.

3.0 Environmental Consequences (Proposed Action & Alternatives)

Critical Elements	Affected	Critical Elements	Affected
Air Quality	No	Soil	Yes
Areas of Critical Environmental Concern (ACEC)	No	Waste, Hazardous or Solid	No
Cultural Resources	Yes	Water Quality, Surface and Ground	Yes
Environmental Justice	No	Wetlands/Riparian Zones	Yes
Farmlands, Prime or Unique	No	Wild and Scenic Rivers	No
Flood plains	No	Wilderness/WSA	Yes
Noxious Weeds and Invasive, Non-native Spp	Yes	Wildlife	Yes

Native American Concerns	No	Wild Horses and Burros	Yes
Recreation	Yes	Vegetation	Yes
Social and Economic	Yes	Threatened and Endangered Species	No

3.1 Air Quality

Affected Environment

The area designation for northern Washoe County National Ambient Air Quality Standards has been classified as attainment or not classified. Federal actions are not subject to conformity determinations under 40 CFR 93. Air quality is normally very good. Travel on the roads, especially along the relatively high-speed gravel road 8A passes through the Bitner and Nut Mountain HMAs, causes dust seasonally (May through November). Dust is also common from the dry lakebeds scattered throughout the region during wind events. Occasionally from July through September there maybe smoke from wildfires.

Environmental Consequences

Direct impacts associated with the Proposed Action and Alternatives #2, would be a temporary and slight increase in dust as wild horses are herded to temporary gather site(s) and transported by stock trailer(s) to a temporary holding facility. To keep dust to a minimum in temporary holding facility would be controlled by watering the areas as needed. These impacts, and should not result in a significant cumulative impact or change the air quality classification for the project area. Under the No Action alternative the direct or indirect impacts are associated with wild horse population sizes and growth rates. As wild horse numbers increase, utilization of vegetation and trampling/compaction of soils would increase, resulting in a loss vegetation cover to hold the soil in place. This would cause accelerated soil erosion from wind and water, and an increase in dust.

3.2 Cultural Resources

Affected Environment

There are numerous cultural resource sites throughout HMAs. These range from prehistoric temporary and permanent loci to historic ranching, homesteading and trail sites.

Environmental Consequences

Direct impacts to cultural resources are not anticipated to occur due to implementation of Proposed Action and Alternative #2 (action alternatives) because gather sites and temporary holding facilities would be inventoried for cultural resources prior to construction. The Surprise Field Office archeologist would review all proposed and previously used gather sites and

temporary holding facility locations to determine if these have had a cultural resources inventory and/or if a new inventory is required. If cultural resources were encountered at proposed gather sites or temporary holding facilities, these locations would not be utilized unless they could be modified to avoid impacts. No direct impacts are associated with Alternative #3.

The No Action Alternative #3 would have the most negative impacts on culture resources from severely overgrazed grasses and forbs would result in high erosion rates. Adverse impacts to cultural resource sites from overgrazing and trampling include modification and displacement of artifacts and features as well as erosion of organic middens containing valuable information. 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 concentrate in these areas, these areas are most likely to be impacted by trampling and erosion. Indirect impacts associated with each of the Alternatives would be related to wild horse population size. Impacts would be the least with implementation of Alternative #2.

3.3 Noxious Weeds and Invasive, Non-native Species

Affected Environment

Noxious weed and invasive non-native species introduction and proliferation are a growing concern among local and regional interests. Noxious weed surveys, including invasive and non-native species, have been conducted in the HMA. To date, few noxious weeds have been found within the HMAs. All the known populations of noxious weeds along roads and on public lands, and most known populations are on unfenced intermingled private lands have been treated and monitored.

Vehicles and OHV traveling on variously routes, and crossing the associated drainages along these routes, increase the likelihood that several other species of noxious weeds, including bull thistle, and scotch thistle, will become established in the HMA in the near future.

Environmental Consequences

Direct, short-term impacts associated with the Proposed Action and alternative #2 includes the potential to import or transport non-native species (noxious weeds) and/or spread existing noxious weed seeds and plant parts to new areas in the HMA. Only weed free hay would be fed to domestic horses used for the gather operations and weed free hay would be fed to wild horses held at the portable corrals. There are no direct impacts associated with the Proposed Action or the Alternatives #2.

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. Disturbed areas and areas in poor ecological condition are much more susceptible to having noxious weeds and invasive non-native species populations establish and expand in size. Implementation of the Proposed Action and Alternative #2 would result in the lowest wild horse population growth rates, and the greatest period of time when wild horse numbers are at or below maximum AML's. As a result, Alternative #2 would be the least

likely to result in increased populations of noxious weeds and invasive non-native species. Implementation of Alternative #3, the No Action Alternative, would result in the most rapid increase in wild horse numbers. As wild horse numbers increase, utilization of vegetation and trampling/compaction of soils would increase. When vegetation is used continuously, heavily, and annually, and soils are trampled and compacted, plant vigor, production, and diversity are reduced and overall ecological site conditions are reduced. Population modeling shows there would likely be an increase to over 161 horses in the Wall Canyon East HMA within 10 years (see Appendix A). As a result, Alternative #3 would have the greatest negative impact on soils and vegetation, and would be the most likely to result in increased populations of noxious weeds and invasive non-native species. However, because of the small herd sizes, (only 15-20 mares total would be treated with an immuno-contraceptive vaccine) of the Proposed Action or Alternative # 2 should have about the same the impacts to soils and vegetation, or the spread of noxious weeds and invasive non-native species.

3.4 Recreation

Affected Environment

The HMAs is a popular destination for pronghorn antelope, mule deer, and upland game bird (chukar, quail, dove, and sage-grouse) for Nevada resident hunters and non-resident hunters. Whenever possible the gathers are scheduled not to conflict with big game hunting seasons.

The main access road through the Bitner and Nut Mountain HMAs is NV Highway 8A. The HMAs are also popular for off-highway driving, camping, and wildlife/wild horse viewing. There are numerous roads accessible to four-wheel drive vehicles throughout the HMAs. These roads reach the some of the higher elevation areas and, as a result, they afford recreational users the opportunity to view wildlife, wild horses, or to enjoy the solitude.

Environmental Consequences

Direct, short-term impacts to recreation with implementation of the Proposed Action and Alternative #2 would consist primarily of disturbance from low-flying helicopter, particularly if the gather occurred during the big game hunting seasons. These big game hunts are highly sought after, and in most cases hunters wait up to 5 or more years to draw a tag for a mule deer hunt. A low-flying helicopter could be considered intrusive to hunting activities.

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of cover, space, forage, and water increases. As the amount and quality of habitat is reduced, wildlife populations are also reduced, and opportunities for hunting and wildlife viewing are reduced. Conversely, as wild horse numbers increase, the likelihood of recreational users seeing wild horses from the main roads and trails increases.

The actual gather activities are expected to be completed in 10 days, which would reduce the likelihood of conflicting with outdoor activities. Implementation of Alternative #2, the Proposed

Action, would result in slightly lower wild horse population growth rates, and the greatest period of time when wild horse numbers are at or below maximum AML's. As a result, Alternative #2 would have the slightly less impact on recreation involving hunting, camping, and wildlife viewing. However, wild horse viewing opportunities would be decreased. Implementation of Alternative #3, the No Action Alternative, would result in the most rapid increase in wild horse numbers and the greatest negative impact on recreation involving hunting, camping, and wildlife viewing and the greatest positive impact on recreation involving wildhorse viewing.

3.5 Social and Economic

Affected Environment

The HMAs is located within three different livestock grazing allotments. Only the Nut Mountain allotment is divided into pastures, the other allotments are managed without internal fences. Cattle are rotated through unfenced use areas and are distributed to stay within the carrying capacity of each allotment. The livestock grazing season is for six –months or from about April 15 to October 15.

Environmental Consequences

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of forage and water increases.

Implementation of Alternative #2 would result in the slowest wild horse population growth rates, and the greatest period of time when wild horse numbers are at or below maximum AML's. As a result, Alternative #2 is expected to have a slightly less negative impact on livestock operations, and on the social and economic values associated with livestock grazing. Implementation of Alternative #3, the No Action Alternative, would result in the most rapid increase in wild horse numbers, and the greatest negative impact on livestock operations, and on the social and economic values associated with livestock grazing. Compared with the Proposed Action, implementation of Alternative #2 would have slightly less wild horse impacts to unfenced private lands in the HMAs and to competition with livestock grazing operations, and on the social and economic values associated with livestock grazing.

3.6 Soils/Watershed

Affected Environment

Watersheds within the Wall Canyon East and Nut Mountain HMA are dissected by a number of intermittent and ephemeral creek systems, including Wall Canyon creek and Cottonwood creek which drain into NCA and High Rock Canyon. The Watersheds within Bitner HMA drains into Massacre Lake and several other smaller ephemeral lakebeds.

The soils within the HMAs are included in the area described in the Soil Survey of Washoe County Nevada, North part, issued in 1999. The primary soils that grow low sagebrush include Devada, Tinpan, and Ninemile. Common soils that grow big sagebrush include Bitner, and Ashcamp; Wyoming sagebrush sites are often located on the HangRock, Saraph and Tuffo soils.

Environmental Consequences

Indirect, long-term impacts on soils are related to the wild horse population size and the growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of vegetation and trampling/compaction of soils increase. When vegetation is heavily used and soils are trampled and compacted, soil erosion increases.

Implementation of the Proposed Action would result in a slightly higher population growth rate over the Alternative #2 and the greatest period of time when wild horse numbers are at or below maximum AML. As a result, wild horse use under Alternative #2 would have the least negative impact on soils and watershed health. Implementation of Alternative #3, the No Action Alternative, would result in the most rapid increase in wild horse numbers.

3.7 Water Sources and Water Quality (Surface and Ground)

Affected Environment

The vast majority of the water and riparian habitat associated with creeks and springs in the HMA are on private lands. Important riparian habitats on public lands include Wall Canyon and Cottonwood Creeks. In addition to natural water sources, there are many wells and reservoirs in the HMA. Most provide water until mid summer during normal years. However, in late summer and during dry years, many of the reservoirs are dry, and large portions of the HMA are poorly watered or only have water on private land. However, water quality within on the HMAs meets the needs of beneficial uses for livestock, wildlife and wild horses.

Availability of public water sources has been determined to be one of the key limiting factors for wild horses in the HMAs. Except for the Wall Canyon East HMA public water sources almost exclusively consist of man made reservoirs and wells. There are also a few seasonal lakes and streams that provide water during the early season. During the late season, when the reservoirs have the potential for becoming dry, almost all of the water available to wild horses is from private springs and streams.

Environmental Consequences

Under the Proposed Action and Alternative #2, riparian habitats conditions on private and public lands are expected to be maintained as utilization and trampling by wild horses would be reduced. As a result, it would be expected that water quality would continue to meet the needs of beneficial uses for livestock, wild horses and wildlife.

Under the No Action Alternative, wild horse populations would continue to grow, resulting in increased use of private and public waters by wild horses. This would increase trampling

damage to springs and utilization of riparian areas. The increased numbers of wild horses would cause more disturbances to soils, increasing silt load. Pollutants such as animal feces would also be increased.

3.7 Wetlands/Riparian Zones

Affected Environment

The majority of the drainages and springs support herbaceous plant communities, including grasses, forbs, sedges, and rushes. Most of the higher elevation drainages and a few of the most perennial lower elevation drainages, particularly Cottonwood Creek, and Wall Canyon Creek also contain some woody riparian vegetation, including willow, rose, and aspen.

Environmental Consequences

Under the Proposed Action and Alternative #2, it is expected that current conditions on private and public riparian habitats would be maintained as utilization and trampling by wild horses would be reduced.

The No Action Alternative #3 would allow wild horses populations to continue to grow, resulting in increased use of private and public waters by wild horses. As the wild horse population continues to grow, an increased number of wild horses would utilize private water sources, increasing trampling damage to springs and utilization of riparian areas.

3.8 Wilderness

Affected Environment

Approximately 14,125 acres or 18% of the East Fork High Rock Canyon Wilderness Area (WA) occurs within the Wall Canyon East and Nut Mountain HMAs. Additional 8,000 acres of the Nut Mountain HMA occurs within in the Black Rock Desert/High Rock Canyon National Conservation Area (NCA). Approximately 89% or 42,290 acres of the Bitner HMA overlaps with the Massacre Rim Wilderness Study Area (WSA).

Environmental Consequences

Direct, short-term impacts to the wilderness values within the East Fork High Rock WA, and WSA with implementation of the Proposed Action and Alternative #2 would consist of the sight and noise of the helicopter used to herd wild horses to gather sites located outside of wilderness area. During the time frame of the proposed gather which is expected to be completed in about 10 days, solitude and primitive recreation may be negatively impacted for recreationists who would be subjected to the sight and sound of the helicopter. This impact would be temporary and relatively short term in nature. Gathering facilities would not be located in the WA or WSA boundaries.

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of

vegetation and trampling/compaction of soils would increase. In the long term this overgrazing of vegetation would result in a loss of plant vigor, production, and diversity and an overall ecological site conditions are reduced. Ecological sites in degraded condition detract from the natural character of wilderness areas. As a result, Alternative #3 would have the greatest negative impact on wilderness values in the East Fork High Rock Canyon WA and the WSA.

3.9 Wildlife, including Threatened and Endangered Species

Affected Environment

The wide range of elevation and habitat types in the HMAs results in a wide variety of wildlife habitat types. The mosaics of low sagebrush and big sagebrush communities provide spring, summer, and fall habitat for pronghorn antelope and Greater sage-grouse. The big sagebrush, mountain sagebrush, on Nut Mountain provides spring, summer, and fall habitat for mule deer and for non-game bird species. The canyons support several species of raptors, as well as chukar and quail. The riparian systems are important for all species of wildlife, with the perennial, low elevation systems being particularly important due to their scarcity. There are several shallow lakes or basins that waterfowl habitat during wet periods. However, there are no warm-water or cold-water fish habitat in the HMAs.

There are no known federally listed Endangered, Threatened, Proposed, or Candidate wildlife species using the areas in the HMA. However, Greater sage-grouse, a sensitive species is found throughout HMAs, use the low sagebrush, riparian, and mountain big sagebrush communities for year-round habitat.

Environmental Consequences

Direct, short-term impacts to wildlife with implementation of the Proposed Action or Alternative #2 would consist primarily of disturbance and displacement to wildlife by the low-flying helicopter. Typically, the natural survival instinct response of wild animals to this type of disturbance results in fleeing from the perceived danger.

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of cover, space, forage, and water increases. The largest horse numbers would occur under the No Action Alternative, which would result in heavy to severe grazing on vegetation, annually. Soils are trampled and compacted would increase, while plant vigor, production, and diversity, and the value of plant communities for wildlife habitat are reduced. Excessive wild horse numbers also have impacts on Greater sage-grouse by consuming herbaceous cover needed in nesting sites, and by reducing the diversity and quantity of forbs available on uplands in the early spring and on riparian areas season-long.

Alternative #3 would have the greatest negative impact on wildlife habitat, including sensitive animal species populations. Implementation of Alternative #2 would have a slightly higher negative impact on wildlife habitat, including sensitive animal species populations, than implementation of the Proposed Action.

3.10 Wild Horses

Affected Environment

The current populations are estimated to be approximately 281 wild horses, based on a helicopter census conducted in May 2001, adjusted for the 2002 - 2005 foaling seasons. Past gathers and census information indicates that the HMAs increases at a fairly consistent rate of about 16-20% per year (See Appendix A, Table 8)

The HMAs have undergone several removals since passage of the Act. These removals have incorporated all of the removal strategies identified in the Proposed Action.

The last full gather of the Wall Canyon East and Nut Mountain was conducted in 2000. At that time, a total of 204 horses were removed from the HMA. The last gather in the Bitner HMA was in 1993.

Environmental Consequences

Long-term, the impacts of maintaining an AML designed to achieve a thriving, natural ecological balance would be a benefit to the wild horses in the HMAs. At this population level, wild horses would be assured adequate forage and water during even the hottest and driest periods of the year. This would lead to wild horses in better physical condition, and better able to endure severe winters and drought. Direct impacts to wild horses under the Proposed Action and Alternative #2 (action alternatives) may occur to individual animals. These impacts include:

- 1) Handling stress associated with the herding, capture, processing, and transportation of animals from temporary trap sites to temporary holding facilities (if used), and from the trap sites or temporary holding facilities to an adoption preparation facility. Under the two action alternatives, wild horses gathered in the HMA would be transported, by truck, approximately 100 miles to the Litchfield wild horse corrals. Animals selected for return to the HMA would be transported by truck back to the HMA. The advantages of transporting all of the animals to Litchfield include access to better veterinary care for immunizations, genetic work, and treatment of injuries; access to better sorting facilities (chutes, pens, etc.) that allow for safer and more humane handling of horses; and access to larger and safer pens, water, and forage facilities for horses to be kept in while gather and processing operations are conducted.

- 2) Exposure of wild horses to domestic horse diseases, such as strangles. Domestic horses used during gather operations would be present at the capture sites. The trucks, chutes, and panels used at the capture sites have been used to handle horses in the past

and may harbor disease agents. Domestic and wild horses from other areas are also present at the Litchfield holding facility and may transmit diseases to the HMA wild horses, even though horses from the herd would not be kept in the same corrals as the other horses.

The effect of removing wild horses from the population would not be expected to have a significant impact on herd dynamics or population variables; as long as the selection criteria for removal ensured a typical population structure was maintained. Obvious potential impacts on horse herds and populations from exercising poor selection criteria not based on herd dynamics include modification of age or sex ratios to favor a particular class of animal.

Under the Proposed Action and Alternative #2, blood would be drawn for genetic analysis. This data would be used to determine actions necessary to keep the populations viable. The Alternative #2, including the use of immuno-contraception would limit the numbers of mares that would conceive and deliver foals. This would reduce the genetic variability entering the population for the two years after treatment, and after each subsequent treatment. Animals from other HMA's in Nor-Cal East, or adjacent states could be used to add to the breeding population if necessary to ensure genetic viability. Animals selected for population augmentation would be selected to adhere to the type and colors characteristic of the herd.

The Proposed Action would mitigate the potential adverse impacts on wild horse populations by establishing a procedure for determining what selective removal criteria is warranted for the herd. The flexible procedures (Appendix B SOP's) would allow for correction of any existing discrepancies in herd demographics that could predispose a population to increased chances for catastrophic impacts. The Proposed Action would also establish a standard for selection that would minimize the possibility for developing negative age or sex based selection effects to the population in the future.

Population-wide indirect impacts would not appear immediately as a tangible effect and are more difficult to quantify. Population wide indirect impacts would be associated primarily with the use of fertility control drugs and involve reductions in short term fecundity of initially a large percentage of mares in a population, increasing herd health as AML is achieved, and potential genetic issues regarding the control of contributions of mares to the gene pool, especially in small populations

Implementation of the Proposed Action or Alternative 2 would allow immediate achievement of AML. Population-wide impacts include the temporary displacement of bands during capture and the associated re-dispersal, modification of herd demographics (age and sex ratios), temporary separation of members of individual bands of horses, re-establishment of bands following releases, and the removal of animals from the population. With the exception of changes to herd demographics, direct population-wide impacts over the last 20 years have proven to be temporary in nature with most, if not all, impacts disappearing within hours to several days of release. No observable effects associated with these impacts would be expected within one month of release

except a heightened shyness toward human contact. Observations of animals following release have shown horses relocate themselves back to their home ranges within 12 to 24 hours of release.

Following administration of the immuno-contraceptive fertility control vaccines, as called for in the Alternative #2, minor swelling may occur at the injection site and/or an injection site injury may occur, however this is rare. The intensity of these impacts varies by individual, and is indicated by behaviors ranging from nervous agitation to physical distress. Mortality of wild horses captured during a gather does occur, however it is infrequent and typically is no more than one half to one percent of the animals captured.

Impacts that can occur after the initial stress may include spontaneous abortion in mares, and increased social displacement and conflict in studs. Spontaneous abortion following capture is very rare. 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 frequency of occurrence of these impacts among a population varies with the individual.

If forage and available water was unlimited, it is projected that the No Action alternative would allow the populations to increase dramatically during the next 10 years (projected to over 161 head in the Wall Canyon East HMA). However, water and forage would limit this growth, and could possibly lead to large-scale die-offs, especially during drought or severe winters.

In an attempt to predict population dynamics, a computer simulation was run using the wild horse population model developed by Dr. Stephen Jenkins of the University of Nevada, Reno (Jenkins 1996). For each alternative, populations were predicted for the next 4, 10, and 15 years (see Appendix A).

3.11 Vegetation,

Affected Environment

The lowest elevations occur at Massacre Lake (5600') in the Bitner HMA. The soils in these areas are Loamy 8-10" ecological sites capable of supporting primarily Wyoming big sagebrush/Thurber's needlegrass dominated communities.

The mid elevations (about 6000') occupy the largest portion of the HMA. The Loamy 10-12" ecological sites which support communities dominated by big sagebrush, bluebunch wheatgrass, and Thurber's needlegrass. The Scabland 10-14" ecological sites that support low sagebrush and Sandberg's bluegrass dominated communities. The Home Camp and Newlands soils are Loamy 14-16" ecological sites which support mountain big sagebrush, Idaho fescue, and bluebunch wheatgrass dominated communities. The Shallow Loam 14+ ecological sites that support low sagebrush and Idaho fescue dominated communities.

The majority of the drainages and springs at the mid and lower elevations support herbaceous plant communities, including grasses, forbs, sedges, and rushes. Most of the higher elevation drainages and a few of the most perennial lower elevation drainages, especially Cottonwood Creek, also contain some woody riparian vegetation, including willow, rose, and aspen.

Environmental Consequences

Direct impacts to vegetation with implementation of the Proposed Action or Alternative #2 could include disturbance of native vegetation immediately in and around temporary trap sites, and holding and processing facilities. Impacts are created by vehicle traffic, and hoof action of penned horses, and can be locally severe in the immediate vicinity of the corrals or holding facilities. Generally, these activity sites would be small (less than one half acre) in size. Since most trap sites are re-used during recurring wild horse gather operations, any impacts would remain site specific and isolated in nature. In addition, most trap sites are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore generally be adjacent to or on roads, pullouts, water haul sites, or other flat spots that were previously disturbed. There would be no direct impacts of trapping or transportation activities on soils or vegetation under the No Action Alternative.

Indirect, long-term impacts on vegetation are related to the wild horse population size and the growth rates associated with each of the Alternatives. Wild horses are large ungulates with few natural predators. They are present in native plant communities within the HMA year-round, and they congregate around water sources and trail along drainages. They utilize primarily herbaceous vegetation and trample and compact soils, especially when soils are wet. As wild horse numbers increase, utilization of vegetation and trampling/compaction of soils increase. These impacts are greatest where wild horses tend to congregate; however, when wild horse numbers become excessive, the impacts become noticeable on the slopes and tables at greater distances from water and trail corridors. When vegetation is heavily used and soils are trampled and compacted, plant vigor, production, and diversity are reduced.

The No Action Alternative #3 would allow wild horses to increase to the highest populations. This number of wild horses, and the fact that they are on the range 12 months out of the year, would have negative impacts to the vegetative resources. The Proposed Action and Alternative #2 would maintain wild horse numbers at a level that would limit the majority of the negative effects of wild horse grazing to areas where wild horses congregate, around water sources, and along drainages.

3.12 Livestock Grazing,

Affected Environment

There are three Allotments within all or parts of this HMAs: Bitner Allotment, Nut Mountain Allotment, and Wall Canyon East Allotment. All Three allotments operate under Allotment management Plans. These management plans were written in the early 1980's under the guidance of the Technical Review Teams (TNT). The teams were a combination of Modoc

Washoe Stewardship, which represented a variety of interests and the Surprise Field Office BLM personnel. Allotment management is outlined as follows:

Bitner Allotment

The Bitner Allotment consists of approximately 28,670 acres of public land. The allotment includes the Bitner HMA. This area is dominated by low sage sites on rolling hill slopes or plateau country. There is a large meadow complex of approximately 2,500 acres in the north eastern quarter of the allotment. The allotment elevation is between 6000 and 6700 feet. This allotment is permitted for 283 pairs from April 16 to October 15, or an active preference for 1703 AUMs. On the HMA boundary there is a meadow complex along Badger creek that is fenced as five pasture units. The balance of the allotment has no pasture fencing. Spring turn out areas are rotated on a two year cycle between Espil Gulch and Evan's Camp. The seasonal use areas divide the allotment in half along a northeast southwest line, because there or no pasture fences livestock drift a cross the entire allotment. Special grazing requirements on the meadow complex require that use ends on the meadow when it has a patchy grazed appearance. This requirement is to improve sage grouse habitat. The Bitner Area Critical Environmental Concern (ACEC) is being proposed for culture resources and historical and values within the allotment.

Nut Mountain

The Nut Mountain Allotment consists of approximately 74,721 acres of public lands, and 6,195 acres of private land. The allotment includes portions of the Bitner and Nut Mountain HMAs. The allotment is a mix of big sagebrush and low sagebrush over flood plains, lake margins, and rolling hills. Higher elevations have areas of bitterbrush and mountain mahogany. The allotment also contains the Cavalry Camp crested wheatgrass seeding on approximately 3,853 acres. The seeding is in a 7000 acre pasture. There are no other pasture division fences within the allotment. Some areas of private lands have been fenced for the livestock operations. Many of the water sources on both private and public land have been improved.

This is one livestock operator which is permitted for 815 pairs from April 16 to October 15. This reflects 4,893 active AUMs. There is one pasture that support 150 head located north of Evan's Camp. Livestock management and rotation are based on the location of available forage; and the livestock are actively herded throughout the grazing season. The Cavalry Seeding is rested one year out of two or grazing is deferred until the last month during the fall gather. A segment of the Lassen Applegate Trail is present through the southwestern area of the allotment. This area is included in the Black Rock High Rock National Conservation Area.

Wall Canyon East Allotment

The Wall Canyon East Allotment consists of approximately 47,877 of public ground, and 1,400 acres of private. The allotment is a combination of big sage, low sage, and intermittent stream flood plain, with some meadow stringers in the northern end. Under the TRT plan the allotment was used in conjunction with the Sheldon Wildlife Refuge. This allowed the allotment to be used in the early spring and late fall during the grazing rotation. This system ended in 1989 when the Sheldon was closed to cattle grazing. Current management is a grazing season from

May 01 to Sept. 30 for 600 head, or about 940 AUMs. The Annual Operating Plan shows a four use area deferred rest-rotation grazing system; resting one of the southern pastures each year; and deferring use in one of the northern pastures. This system is based on a 2 year cycle. This grazing system relies on herding, as there is no interior fencing in the allotment. The only fencing in the Allotment/HMA is one enclosure and private fencing.

Utilization criterion is 40% maximum on key species: Needlegrasses, bluebunch wheatgrass, bitterbrush, and Idaho Fescue. There is a 4 inch stubble height requirement in the riparian areas. Herding is required to prevent over utilization of the Wall Canyon Creek and Cottonwood Creek riparian areas. Actual grazing patterns are based on the location of waters, available forage, and amount of intensive herding.

The southwestern 1/3rd of the allotment is within the wilderness area associated with the Black Rock High Rock NCA and the East Fork High Rock Canyon Wilderness Area.

Environmental Consequences

Indirect, long-term impacts are related to the wild horse population sizes and growth rates associated with each of the Alternatives. As wild horse numbers increase, utilization of forage and water increases and there would be greater competition between cattle and livestock. The action alternative would have least impacts to livestock operations, and on the social and economic values associated with livestock grazing. Implementation of Alternative #3, the No Action Alternative, would result in the most rapid increase in wild horse numbers, and simply would not be consistent with livestock operations on public lands. Since horses are on the ranges year-round there would be severe grazing and tramping damage to riparian areas, which often are on unfenced private lands in the HMAs.

Cumulative Impacts (Proposed Action & Alternatives)

Cumulative impacts are impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Implementation of the Proposed Action or Alternative #2 would reduce the wild horse population to AML in the HMAs which would help promote a thriving natural ecological balance. The achievement and maintenance of AML would result in an increase in vegetation density, vigor, reproduction, productivity, diversity, and forage availability. Subsequent removals would maintain animal populations in a thriving natural ecological balance and would contribute to maintaining ecological sites in good condition.

Adverse impacts to vegetation with implementation of Alternatives #1 or #2 would include disturbance of small quantities of native vegetation and soils immediately in and around temporary trap sites, holding, and processing facilities. Impacts created by vehicle traffic, and

hoof action of penned horses, can be locally severe in the immediate vicinity of these facilities, and the impacts would re-occur each time horses were gathered. Since most trap sites and holding facilities are re-used during recurring wild horse gather operations, any impacts would remain site specific and isolated in nature. In addition, most trap sites or holding facilities are selected to enable easy access by transportation vehicles and logistical support equipment and would therefore generally be adjacent to or on roads, pullouts, water haul sites, or other flat spots that were previously disturbed. These common practices would minimize the cumulative effects of these impacts.

The removal of animals to and the subsequent maintenance of AML would allow reduced utilization of riparian and upland habitats on a year- long basis. This management coupled with a livestock grazing program which is based on the physiological needs of the vegetation would result in improved rangeland health.

Under the No Action Alternative #3, the cumulative impacts of large numbers of wild horses would increase each year that horses are not gathered. These impacts would affect all of the resources that depend on stable soils and intact vegetative communities, including wildlife, wildlife viewing, and hunting, wilderness, cultural resources, water quality, and the social and economic values associated with livestock grazing. The LUP objectives, HMAP objectives, NCA decisions, and Land Health Standard can not met under the No action alternatives.

The Surprise Field Office would continue to identify any adverse impacts as they occur, and mitigate them as needed on a project specific basis to maintain habitat and herd quality. The Proposed Action would contribute to the cumulative impacts of future actions by maintaining the herd at AML, and establishing a process whereby biological and/or genetic issues associated with herd or habitat fragmentation would become apparent sooner and mitigating measures implemented more quickly.

Mitigation Measures

The Proposed Action and Alternatives incorporate proven standard operating procedures that have been developed over time. These SOP's (Appendix B) represent the "best methods" for reducing impacts associated with gathering, handling, and transporting wild horses, and collecting herd data. Additional mitigation measures have been incorporated into the alternatives.

Consultation and Coordination

List of Preparers

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Persons, Groups, and Agencies Consulted

Copies of this environmental assessment will be sent to the following groups and individuals for review and comment:

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