United States Department of the Interior

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In Reply Refer To:
4700
(NV-032)

JUN 23 2004

Dear Interested Public:

Attached is a Draft Garfield Flat Herd Management Area Plan/Capture Plan/Environmental Assessment for your review and comment. Should you wish your comments to be considered in the final analysis a hard copy of your comments must be received by this office no later than August 1, 2004.

Sincerely,

Daniel L. Jacquet
Assistant Manager, Renewable resources
Carson City Field Office

GARFIELD FLAT HERD MANAGEMENT AREA PLAN/CAPTURE PLAN and ENVIRONMENTAL ASSESSMENT (EA) No. NV-030-04-014

(Draft)
4700

I. Introduction/Purpose and Need

Introduction

With passage of the Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195), Congress found that: "Wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West". The Act states that wild free-roaming horses are to be considered in the area where presently found, as an integral part of the natural ecosystem of the public lands. The Secretary was ordered to "manage wild free- roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands".

The BLM National Wild Horse and Burro Strategy includes: establishing and achieving Appropriate Management Levels (AML) on all Herd Management Areas (HMA's) managed by the BLM, and to achieve and maintain AML on all HMA's implementing a 4-year gather cycle. The numbers of animals projected to be removed were estimated using a wild horse population model developed by Dr. Stephen Jenkins of the University of Nevada Reno, based on a four-year gather cycle.

The Garfield Flat Herd Management Area (HMA) lies within the administrative jurisdiction of Carson City Field Office (CCFO). In 1996, a Multiple Use Decision was issued for the HMA. That document provided management direction for managing the horse population. The AML range is 83 to 125, with an estimated current population of 213. The AML was based on available forage, however, all of the permanent water (two springs) within the HMA is located on private property. In 1996, the Sweetwater Ranch, which controlled the private property on which the two springs are located entered into an agreement where they would allow wild horses, access to their private waters as long as the horse population was maintained at or below 125 animals.

This plan presents management direction for the Garfield Flat HMA. The terms horse and wild horse, both (*Equus caballus*) are used synonymously throughout this document.

The Garfield Flat HMA is located approximately ten miles south of Hawthorne, Nevada. The topography varies from flat to steep mountainous terrain. Elevatidons range from 5,600 feet to 8,600 feet (map 1).

It is generally accepted that wild horses within the HMA originated from ranch stock that were released.

The HMA includes the entire herd area (144,502 acres), that area delineated as the wild horse habitat soon after passage of P.L. 92-195 (map 1).

Purpose and Need

The purpose and need for these actions are to achieve and maintain the HMA in a state of thriving natural ecological balance and multiple use relationship between the wild horse population, wildlife, livestock and the plant communities. In addition horse specific information would be collected to assess the overall health of the horse population. Specific objectives include managing the population to preserve and enhance the historic physical and biological characteristics of the herd and preserving and maintaining a healthy viable wild horse population within the HMA.

Land Use Plan Conformance Statement

The proposed actions and alternatives described below are tiered to and in conformance with the Carson City Field Office Consolidated Resource Management Plan of 2001 (CRMP), pages WHB –1-5. This analysis was conducted under an intensive monitoring program addressing the impacts of wild horses and livestock. This EA is a project specific refinement of the Walker EIS (1985) focused on the management of wild horses in the Garfield Flat HMA. The Appropriate Management Level (AML for the Garfield Flat HMA was established through the allotment evaluation and FMUD process. The AML was set as a range. As previously stated all permanent water is located on private lands and Sweet Water Ranch agreed to allow horses access to their waters located on private lands as long as the population does not exceed 125 animals.

The following decisions from the CRMP affect the Garfield Flat HMA:

1. Page WHB-2, decision 2- Maintain sound thriving populations of wild horses within HMAs.

2. WHB-3, decision 1 - Develop and implement an HMAP for the Garfield Flat HMA.

3. WDL-2, decision 4 – Maintain and improve wildlife habitat, and reduce habitat conflicts while providing for other appropriate resource uses.

4. WDL-2, decision 6 – Maintain or improve the condition of the public rangelands so as to enhance productivity for all rangeland values (including wildlife).

Relationship to Other Environmental Documents, Statutes and Regulations

The proposed action and alternatives are in conformance with the Wild Free-Roaming Horse and Burro Act of 1971 (PL 92-195 as amended); all applicable regulations at 43 CFR 4700 and policies; the Strategic Plan for the Management of Wild Horses and Burros

on the Public Lands; and the Nevada BLM Revised Tactical Plan – Wild Free-Roaming Horses and Burros, Ensuring the Legend Lives Free. These documents are available for public review at the Carson City Field Office.

In June of 1992 the Director of the BLM signed the Strategic Plan for Management of Wild Horses and Burros on Public Lands. This document provides goals and objectives for the management of wild horses and burros including:

a. Target specific age groups for removal.

b. Target a specific sex for removal.

c. Utilize fertility control techniques.

d. Nevada and Wyoming will use a selective removal strategy with fertility control that will assure that AML's are reached within a six-year time frame.

The authority for the proposed actions within this plan is contained in 43 CFR 4710.2, 4710.4, 4720.1, 4740.1, 4740.2 and the Wild Horse and Burro Act of 1971 (Public Law 92-195). In 43 CFR 4710.3-1 the authorized officer is directed to prepare Herd Management Area Plan (HMAP) for the management of HMA's.

Other Activity Plans, Issues and Constraints

Existing Activity Plans have stated objectives and constraints relating to the HMA, and are summarized below.

1. Multiple Use Decisions 1996:

In 1996, a Multiple Use Decision (MUD) was issued for the Garfield Flat grazing allotment, 85% of the HMA is situated within the Garfield Flat grazing allotment the remaining 15% is located in the former Candelaria Allotment, however, horses have never used this portion of the HMA. This decision divided the available forage between wildlife, wild horses and livestock. A specific Appropriate Management Level (AML) was set for the HMA, 83 - 125 horses (1,500) AUM's. Livestock were allocated 3,516 AUM's for the Garfield Allotment. This number was based on vegetation monitoring with the goal of achieving a thriving ecological balance between wildlife, wild horses, livestock and the vegetative community. This MUD allocated 552 AUM's for mule deer within the Garfield Allotment.

2. Range Program Summary 1989 (now incorporated into the CRMP):

a. Maintain an acceptable allowable use level for key species on key areas (Range

Program Summary 1989; RPS).

b. Increase by a statistically significant amount frequency of species on key management areas. (RPS, 1989).

f. Maintain or improve wild horse habitat by in insuring all waters remain open to wild horses (RPS, 1989).

g. Maintain or improve wild horse habitat consistent with wildlife and livestock objectives (RPS, 1989).

h. Maintain or improve free roaming behavior of wild horses by protecting or enhancing wild horse home ranges (RPS, 1989).

i. Maintain habitat condition to support a population of 420 mule deer from 15 Jan through 15 March and a year round population of 44.

4. Allotment Management Plans:

The Garfield Flat Allotment Plan was approved in 1990.

II. PROPOSED ACTION

The Proposed Action and two alternatives, one of which is the No Action Alternative, are analyzed within this document and impacts identified. The description of all the alternatives is given below.

The Proposed Action is to achieve and maintain the HMA in a state of thriving natural ecological balance and multiple use relationship between the wild horse population, wildlife, livestock and the plant communities. The following are specific objectives of the proposed action.

A. Animal Objectives

Objective 1

Maintain the wild horses in good or excellent physical condition.

Management Method

Provide an adequate amount of forage for the individual horses in the population by adjusting the population of wild horses to a level in balance with the forage productivity of the habitat within the HMA (Habitat Objective 1 and requirements of wildlife and livestock).

Based on the analysis of monitoring data under Habitat Objective 1, providing a proper amount of forage per animal would allow the animals to maintain themselves in a healthy condition, better able to withstand environmental fluctuations.

Since the waters are privately controlled and made available to the horses only through an agreement with Sweet Water Ranch increasing the AML should additional forage become available is not an option. Should monitoring information indicate that the AML is too large a lower AML can be set through the analysis of monitoring data.

Objective 2

Maintain the free-roaming nature of the wild horses.

Management Method

All projects proposed on BLM administered land within the HMA would be carefully evaluated through an environmental assessment process as to their effect on free-roaming behavior and movement of wild horses.

Objective 3

Maintain the wild horses within the HMA.

Management Method

Improve the habitat within the HMA and identify key habitat areas within the HMA through monitoring efforts.

During periodic population reductions, horses gathered outside of the HMA would not be released back into the HMA (to the extent possible) because they would likely return to the area from which they were removed (Waring 1979, Tyler 1972 and observations of released horses within the CCFO). Any wild horses located outside of the HMA would receive priority for removal.

Objective 4

Minimize the adverse effects of gathers to both the individual wild horses and the population.

Management Method

Maintain an interval between removals of at least 3 to 4 years. Managing the horse population within the range set through the MUD process would increase the time interval

between captures, thereby reducing stress, injuries and deaths associated with capture operations.

Wild horse populations have an average rate of increase of between 14% and 24% annually (Garrott, 1990). From monitoring data, an annual growth rate of at least 19% can be expected under reasonable population levels in this HMA. By reducing the population of wild horses within the HMA to a point below the maximum number of wild horses that the habitat can support and allowing the population to build back up to the maximum level the next removal could be delayed for 3 to 4 years. The number of wild horses would not exceed 125 and would help achieve Habitat Objective 1.

Various forms of contraceptives (Strategic Plan) may be used to slow the rate of increase. Approximately 30 to 40 mares (all mares that would be released) would be treated with two-year porcine zona pellucida (PZP) vaccine in order to continue investigating the efficacy rate under field conditions. Freud's complete adjuvant would be utilized in conjunction with the PZP vaccine. The treated mares would be freeze marked on the left hip and monitored during years two through four post treatment to determine the efficacy of this protocol. Census flights would occur in late spring or early summer to determine the status of treated mares.

All treated mares would be removed from the adoption program for at least three years post treatment to insure that human consumption would not take place.

If wild horses were reduced to 125 individuals (the high end of the AML), gathers would need to be conducted yearly which would lead to frequent band disturbances and other forms of stress. Furthermore, yearly gathers would not be physically or fiscally feasible. Removal procedures are contained in Appendix 1.

Utilize a helicopter to herd horses into corrals constructed out of portable steel panels. Other motorized equipment would also be used in the transport of captured horses.

Nursing mares or foals, which have become separated from each other, may need to be roped. However, based on past removals it is anticipated that less than 1 percent of the animals would require roping.

The Bureau of Land Management may contract with a private party for the removal operation. If a contractor is used he/she would be supervised at all times by Bureau employee(s).

Objective 5: Place only adoptable horses into the adoption program.

Management Action: To the extent possible only animals less than 5 years of age would be

placed into the adoption program, other excess unadoptable horses would either be released into another HMA, placed into a sanctuary or released back into the HMA. During the next gather and possible subsequent gathers horses 5 and under would be placed into the adoption program, horses 6 through 10 would be released back into the HMA and older animals placed into a sanctuary, although some of the animals 6 through 10 may be removed if needed to reach AML.

Once the Bureau attains AML on a national basis, and gathers occur on a 3 to 4 year cycle AML's would be maintained by only removing younger more adoptable and adaptable animals.

Place horses removed from areas outside of the HMA into the adoption program, sanctuaries or other HMA's regardless of age.

Objective 6: Maintain and improve riparian areas.

Management Action: Maintain the horse population at a level compatible with riparian objectives, in certain cases constructing enclosures around springs, seeps and creeks may be necessary.

Objective 7: Identify individual animals for population studies and to facilitate identification of animals illegally removed from the HMA.

Management Action: Using freeze- marking techniques, a unique number may be placed on the left hip of the animals that are to be returned to the HMA. These horses are restrained in a squeeze chute for ageing and blood drawing, by applying a freeze mark the animals would be restrained for an additional 90 to 120 seconds.

Objective 8: Track loss of heterozygosity and alleles.

Management Action: During periodic removals blood samples would be drawn from some of the captured animals for analysis. As with applying a freeze mark this action would only add 90 to 120 seconds of additional squeeze chute time for the horses identified to be sampled, and would result in negligible additional increases of stress.

Objective 9:

Maintain genetic diversity.

Management Method

Animals from other HMA's within this Field Office may be released into the HMA to allow

for gene flow, thereby avoiding any deleterious affects of inbreeding resulting from small population size.

B. Habitat Objectives

Objective 1

Allow no more than 55% utilization on key grass species (Indian ricegrass, Idaho fescue, needle grass) and 40% on interim grass species (bottlebrush squirreltail and bluegrass) yearlong on previous years growth by March.

Management Method

Plant utilization studies would assure that this objective is met, however, the limiting factor within this HMA is water, as stated previously all perennial water is located on private property and the owner has agreed to provide water for a maximum of 125 horses.

Objective 2

Avoid excessive use of springs and riparian vegetation.

Management Method

Horse numbers need to be maintained at levels, which do not adversely impact the hydrology, soils or vegetation in riparian zones which are all located on private property. Maintaining the populations at proper levels would be an important action, however, some areas may require fencing to maintain vegetation and function.

ALTERNATIVES

Alternative 1

Alternative 1 is identical to the proposed action with the exception that contraceptives would not be used.

No Action Alternative

The no action alternative would not include any of the objectives and management actions which would likely result in the exclusion of horses from private property and thus access to water.

Alternatives considered but not analyzed

Herding from horseback and water trapping were considered, however, they are not feasible for this HMA. The only possible exception would be if a small number of horses became a nuisance on private property, such as alfalfa fields where a small strategically placed trap may be practicable.

III AFFECTED ENVIRONMENT

PROPOSED ACTION

General Setting

The HMA is located south of Hawthorn NV, and elevations range from 5,600 to 8,600 feet. The dominant vegetation consists of Utah juniper (*Juniperus ostosperma*), bottlebrush squirreltail (*Sitanion hystrix*), big sagebrush (*Artemisia tridentata*), Nevada ephedra (*Ephedra nevadensis*), Indian ricegrass (*Oryzopsis hymenoides*), Sandberg bluegrass (*Poa secunda*), Needle-and-thread (*Stipa comata*), desert needlegrass (*S. specieosa*), bluebunch wheatgrass (*Agropyron spicatum).*

Critical Elements of the Human Environment

The following critical elements of the human environment are not present or are not affected by the proposed action or alternatives in this EA:

Air Quality
Areas of Critical Environmental Concern
Cultural Resources (trap site locations would be surveyed prior to construction, trap sites would be placed in areas devoid of significant cultural resources)
Environmental Justice
Farm Lands
Flood Plains
Hazardous Materials
Native American Religious Concerns
Paleontology (trap sites would be cleared prior to construction)
Wild and Scenic Rivers
Threatened or Endangered Plant Species (none known to exist within the HMA)
Threatened or Endangered Animal Species (none known to exist with the HMA)
Wilderness

Resources Present:

III A. Wildlife

The HMA includes habitat for mule deer, mountain lion (*Felis concolor*), prairie falcons (*Falco mexicanus*), golden eagles (*Aquila chrysaetos*), chukar partridge (*Alectoris chukar*), and many other species.

Most bird species found within the HMA are protected under the Migratory Bird Treaty Act, in addition golden eagles are protected under the Bald Eagle Protection Act.

III B. Threatened or Endangered Animal species

There are no known threatened or endangered species found within the HMA. A category 2 candidate species, the loggerhead shrike may nest in the area.

III C. Water Quality (Surface/Ground)

There are no perennial water sources found on public land within this HMA.

III D. Wetlands/Riparian

There are no wetlands or riparian areas found on public lands within this HMA.

III E. Migratory Birds

Many species of migratory birds inhabit the HMA, including blue birds, shrikes, night hawks, swallows, swifts, fly catchers, kingbirds, raptors, owls, hummingbirds, warblers, finches, juncos, wrens, sparrows, requiring diverse habitat types.

III F. Wild Horses and Burros

The HMA contains approximately 144,502 acres of public and private land. The AML range for the HMA is 83 to 125.

III G. Invasive, Nonnative Species

No known noxious weeds occur within the HMA, however, this area has not been surveyed for noxious weeds, though a survey is planned for the summer of 2004.

Other Resources Present:

III H. Livestock Use

The HMA lies within the Garfield Flat grazing allotment.

III I. Recreation

Traditional forms of recreation such as sightseeing, driving for pleasure on roads and ways, camping, hunting, hiking, photography and nature study are common activities within this HMA.

III J. Visual Resources

The proposed plan would take place on lands managed under Class III Visual Resources management (VRM) objectives. In a Class III area the objective is to partially retain the existing character of the landscape. The level of change should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

IV. ENVIRONMENTAL CONSEQUENCES

Proposed Action

IV A. Wildlife

Managing horses within a range of 83 to 125 (total utilization <= 55%) would have positive impacts on wildlife by insuring adequate forage and space for wildlife species. This horse level would help in providing habitat requirements for wildlife.

During capture operations, the helicopter would be operated in a manner to avoid any golden eagle aeries.

IV B. Threatened or Endangered Animal Species

There are no known threatened or endangered animal species within the HMA.

IV C. Water Quality (Surface/Ground)

By managing the horse population within the AML range water quality would be improved and the need to construct protective exclosures would be lessened but not eliminated.

IV D. Wetlands/Riparian

As horses obtain water the resultant mechanical action of their hoofs compact the soil stressing and sometimes killing native vegetation, creating sites conducive for establishment by nonnative invasive species. Also, as the number of horses increases sites around water sources including riparian vegetation sustain greater use. The more palatable riparian species sustain greater use while the less palatable species benefit from reduced competition and tend to dominate riparian areas, reducing the value to wildlife.

Managing horses between 83 to 125, a level which can be maintained by the would result in the vegetative community being maintained or improved. By reducing and limiting the horse population some riparian areas would recover naturally, however, some riparian areas may require protection in the form of enclosures to recover and maintain the vegetative diversity associated with them and required by a plethora of animal species. During years of lower population levels the vegetation may incur benefits associated with less grazing pressure and disturbance to horses associated with removal operations would be minimized.

Riparian areas would be improved under the Proposed Action or Alternative one, though the No Action Alternative would lead to degradation of riparian areas. By maintaining the horse population at a level compatible with the ability of riparian vegetation to resist the deleterious effects of grazing riparian vegetation would improve, decreasing erosion. Establishment of noxious plant species would be inhibited by achieving and maintaining a healthy riparian plant community.

As previously stated all perennial water sources and riparian areas are on private property, therefore any structures or riparian improvement projects would be subject to approval of the property owner.

IV E. Migratory Birds

By managing the herbivores (horses and livestock) so that the vegetation is maintained at levels stated in the CRMP, Sierra Front Northwestern Great Basin Area Standards and Guidelines, habitat requirements for most species of migratory birds would be expected to be improved. Riparian areas, including wet meadows and other areas providing herbaceous vegetation, such as aspen groves, rose and willow thickets are crucial to many migratory birds because these areas provide nesting and foraging sites. Many species of migratory birds rely on the insects and other invertebrates associated with riparian vegetation.

Sagebrush, grasslands, mountain mahogany, pinyon pine and juniper communities also provide important nesting and foraging areas for migratory birds. Some migratory birds are sagebrush obligates including sage grouse (*Centrocercus urophasianus*), sage sparrow

(*Amphispiza belli*) sage thrasher (*Oreuscoptus montanus*) and vesper sparrow (*Pooecetes gramineus*). These various species of birds (and others) require sagebrush for all or part of their life history. However, sage thrasher, require thick relatively tall (1 m) sagebrush for nest concealment. Therefore, to manage for all sagebrush obligates (including reptiles and amphibians) various types of sagebrush communities need to be managed for throughout the landscape on large scales.

All actions as a result of this plan would be done in compliance with Executive Order 13186, Responsibilities of Federal Agencies to protect migratory Birds.

IV F. Wild Horses and Burros

The main issue with this HMA involves the propensity of the horse population to increase at relatively high rates (15 - 20% annually). Few adult horses or foals within this HMA succumb to predation the only "natural" population regulating mechanism would be the availability of forage. However, before the horse population would be limited many native species of wildlife would have been eliminated from the HMA and surrounding area. Also, many native plants would have disappeared facilitating the establishment and expansion of non-native noxious weeds. When unchecked a population of horses can have devastating effects on native vegetation, wildlife and the livestock industry. However, in the case of the Garfield Flat HMA the private land owner would likely exclude horses from the private waters prior to the collapse of the vegetative community.

By managing the population of horses within the AML range a healthy population would result, insuring the persistence for generations to come.

From analysis of monitoring data it was determined that 125 horses are the maximum that the HMA can support while maintaining a thriving natural ecological balance between vegetation, horses, wildlife and livestock and as previously stated this is the maximum number of horses that the private land owner agreed to allow on to private property to obtain water. In order to minimize the stresses and disruption of band structures the population of wild horses would be reduced below 125 and allowed to increase back to 125. Based on recent rates of increase (19% annually) the population would need to be reduced to 83 animals in order to maintain acceptable utilization levels during gather intervals.

Managing horses between 83 – 125 a level, which can be maintained by the vegetative community with other uses would minimize the stresses to the individual horses associated with limited food and space resources. Minimizing the stresses would be especially important to the young animals. Managing the population in a way that maximizes the intervals between removals minimizes the stresses associated with removals. Managing horses in harmony with their habitat and maximizing intervals between removals would result in only positive benefits (i.e. reduced stresses to the animals and a healthy vegetative

community). Furthermore, it is not physically or fiscally possible to capture horses in the same HMA every year. If horses were allowed to increase above the AML, resource damage would occur adversely affecting the vegetative community, wildlife community, horse population, livestock producers and recreationalists who would be disappointed in seeing degraded communities lacking species diversity.

Managing the wild horses within a range (i.e. 83 - 125) would require that the population be reduced below the maximum allowable population level (125). A healthy viable population would be maintained.

Reducing horses below the maximum number (AML) that the habitat can support in concert with the other uses (i.e. wildlife and livestock grazing) would reduce the stress of gathers by allowing an interval of approximately 3 to 4 years between gathers.

The release of unadoptable horses from other HMA's would tend to increase allelic diversity and would be expected to compensate for alleles lost by stochastic events thus maintaining heterozygosity. Furthermore, introduction of new genetic material would aid in maintaining and increasing the natural variability of the population. All impacts would be positive.

Prior to the extirpation or near extirpation of the ancestral horses (Asia) from which the domestic breeds were derived and consequential feral horse populations, the progenitor wild horses were likely distributed in large out breeding populations. However, for a variety of reasons present day feral horses cannot be managed in large populations due to land use practices, and vegetative constraints on population size. In addition the Wild Horse and Burro Act limited management of "wild" (feral) horses to the geographic area which they inhabited in 1971. However by moving animals between HMA's we can in a genetic sense link the HMA's creating a large outbreed population.

During periodic removals, animals captured from areas outside of the HMA would either be placed into the adoption program, sanctuaries or released into other HMA's (as a last resort they would be released back into the HMA as far from the capture site as practical) . Since horses are likely to return to their home ranges after release (Tyler 1972, Waring 1979 and post release census flights), releasing animals back into the HMA would only be done when other alternatives are not practical or available.

Discussion has occurred regarding the appropriate sex ratio for free ranging populations of horses. It is intuitively obvious that fewer excess animals would result from biasing a population to favor male animals, however, some individuals have asserted (without any data to substantiate their claims) that if the percent of males surpasses some threshold civil unrest would occur resulting in increased aggression between males as they now must divide up fewer females between them. Based on 70 years of collective experience managing free roaming horses in this field office we doubt the before mentioned scenario, once horses have

established a hierarchy few subsequent bouts of aggression occur. In any "natural" population of feral horses the majority of males will not control harem bands, they will be found either singularly or in small loosely knit bands. We believe that biasing a population to favor males would result in smaller harem bands and more and or larger bachelor bands, which would not adversely impact the social structure of the population with the only effects being positive, fewer animals, would need to be removed and placed into the adoption program and the duration between gathers may be increased.

Within the Carson City Field Office 3,665 (49.5%) female wild horses have been removed and 3,732 (50.5%) male horses have been removed (wild horse and burro data base). Thus, the gather data suggests a slight bias, favoring males; in addition, during gathers a disproportionate percentage of females are collected due to the inherent biases of the gather techniques. Male horses are found in smaller bands or singularly, decreasing their rate of delectability also bachelor bands do not herd as effectively as harem bands. Because pilots contracted to gather horses are paid per horse captured they focus on harem bands thus, to a certain extant ignoring bachelor bands, resulting in a biased sex ratio at the trap site. Data specific for this HMA reveals a bias favoring males (58%), therefore, released animals would reflect this ratio.

Unfortunately we do not have any data on the magnitude of the trap site bias. However, intuitively one would suspect a greater percentage of male horses than female horses in a "natural" setting. This bias would result from greater number of females dieing after birth due to the increased stresses of reproduction and lactation including parturitions gone terribly bad, resulting in the death of the mare. A mare must divert a substantial amount of energy to produce a foal and ensuing lactation for the next year or more, increasing her susceptibility to adverse environmental conditions and predation by mountain lions.

Male horses while they control a band also undergo increased stresses compared to their bachelor cohorts. However, due to the keen competition for females, harem-controlling males will generally loose control of harems long before their physical condition is compromised to a dangerous level. Thus, the sex ratio is not at parity and males tend to accumulate in the population. Therefore, we contend that biasing the sex ratio to favor males would not be "unnatural" and have only positive effects for the population and the taxpayer.

Removing young animals would result in removing only readily adoptable animals (young animals) and slow the rate of increase. However, for the next 1 or 2 removals it is expected that some older animals would need to be removed in order to attain AML these horses would be placed into sanctuaries. Once AML is reached and removals occur approximately every 4 years a minimal number of animals would need to be placed into the adoption program and the interval between gathers could be maximized. Leaving the older horses (10 years and older) in the population would preserve the genotypes that have proved most adapted to the free roaming existence.

A program developed by Stephen Jenkins (WinEquus, version 1.40, April 2002) was used to compare possible outcomes of various management scenarios designed to provide individuals interested in population dynamics an understanding of possible population responses to various management strategies was run for the targeted population levels of this HMA using several scenarios, namely: removals only, contraceptives only, removal and one year contraceptive and removal and two year contraceptive and no management. Dr. Jenkens does make the disclaimer that this model should not be used to make management decisions, the intended use is to convey a range of possible population responses to certain perturbations. These different scenarios provide a forecast regarding the number of expected excess horses in the future, which would be considered when selecting the preferred alternative and described in appendix 3.

Under a removal and contraceptive scenario where a 2 year contraceptive which was 90% effective during the first year and 80% effective during the second year was employed the median average population size was 119, the median number of mares treated was 181, the median number of horses removed was 208 and the average rate of increase was 10.7%.

Under the removal only scenario the median population size over 21 years was 120 and the median number of animals removed was 381 exclusive of the number required during the first removal. Under the no management scenario the median population size was 878 with an ending median population of 3,072 and a highest trial population of 6,465. Obviously the HMA could not sustain a population of 3,072 horses much less a population of 6,465. Before the population reached these levels the HMA would have been converted to a veritable desert with noxious weeds and juniper trees the only remaining vegetation, most species of native wildlife would have disappeared and the allotments involved would no longer be capable of supporting livestock. However, in the case of the Garfield HMA the private property owners would in all likelihood exclude the horses from water long before such devastation occurs.

Under a contraceptive only scenario where a 2 year contraceptive which was 90% effective during the first year and 80% effective during the second year was employed the median average population size was 304, the median number of mares treated was 616 and the average rate of increase was 10.5%.

Clearly maintaining the population within the AML range results in fewer total animals removed over the 20 year time frame.

Results from Dr. Jenkens's model:

Table 1. Rate of Increase and Median number of horses removed under the different alternatives.

Alternative	**Median Pop. Size**	**Rate of Increase**	**Median # Removed 20 yr.**
Proposed Action, Removals and two year contraceptive	119	10.7%	208
Alternative 1. Removal Only	120	19.1%	381
Contraceptive only (two year)	304	10.5%	0
No Action[1]	878	19.4%	

[1]At the end of 20 years the median population was 878, however, the median maximum was 3,072 and the highest trial was 6,465 animals.

See appendix 3 for population parameters and more detailed results.

IV G. Invasive, Nonnative Species

The establishment and spread of invasive nonnative species would be discouraged by maintaining a healthy native vegetative community which would only be possible by maintaining the horse population within the AML range, and responsibly manage livestock numbers and season of use.

Other Resources Present:

IV H. Livestock Use

By managing horses at the identified levels forage would be available for grazing by livestock which would help meet RMP objectives and would allow a thriving ecological balance to be obtained and maintained between the vegetative community, wildlife, horses and livestock. This would result in positive impacts. The vegetative community, horse populations and wildlife populations would be stabilized. It is anticipated that after the reduction the utilization would decrease to 55% on key species. Horses that are removed would be placed into private maintenance through the Bureau's Adopt a Horse Program, sanctuaries or other HMAs.

IV I. Recreation

As the habitat improves, the esthetics would improve as would most wildlife populations, increasing the overall recreational experience.

IV J. Soils

By maintaining a healthy plant community soil infiltration, runoff, and erosion would remain within site parameters.

IV K. Visual Resources

As the habitat improves as a result of plan implementation there may be minor improvement to the visual resources of the HMA. In general however, there would be no significant impacts to visual resources. The proposed action would not substantially alter the existing visual character of the landscape and would meet Class III VRM objectives.

ALTERNATIVES

Alternative 1

Alternative 1 is identical to the proposed action with the exception that contraceptives would not be employed which would result in additional horses being removed over the long term though the AML range would remain unchanged.

No Action Alternative

The No Action Alternative would not include any of the objectives and management actions. The wild horses would not be maintained at a level compatible with their environment, and would continue to increase. Eventually all or most riparian areas would be destroyed resulting in the loss of many native species of animals and plants, the upland grasses would also be removed resulting in the loss of many other species of animals. As the grasses become over grazed sagebrush and other woody plants become dominant, also as the native vegetation, both riparian and upland grasses become stressed by over grazing invasion by non-native weeds is facilitated, both the encroachment of woody plant species and establishment of invasive weeds may be irreparable, potentially changing the range site for many decades, certainly longer than any of our planning horizons.

The vegetation (quantity, quality and species evenness) would eventually decrease to a point, which could no longer support the horse population. At this point a large proportion of the horse population would die along with wildlife and livestock. However, prior to the population crash the habitat would have deteriorated, and undesirable exotic invader species

such as halogeton (*Halogeton glomeratus*), cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola kali*) would have established themselves over large areas. Thus, the HMA's capacity to support horses would now be only a small fraction of its current potential capacity and it would take many decades of low or no grazing pressure and tremendous vegetative manipulation at a huge cost for the HMA to recover to its former potential carrying capacity. The no action alternative would also preclude attainment of wildlife, soil, water and livestock objectives in the RMP.

Habitat improvement would not be realized with this alternative. The frequency of key species would decline. The animals would continue to search for food and further degrade their habitat, thereby reducing the carrying capacity of the area, which would eventually lead to unacceptable adverse physiological stress to the horses and degraded vegetation condition.
Over utilization within and outside of the HMA would continue to occur and as the range becomes further deteriorated the carrying capacity of the HMA and allotments would be reduced. The objective of limiting utilization to 55 percent or less would never be met. Downward trend would occur, and ecological condition would decline. In the long-term, the excessive utilization would eliminate nearly all the forage plant species. Attainment of RMP objectives would not be met.

Further deterioration of the range would occur and the area would not be in a state of thriving ecological balance between wild horses, wildlife, vegetation and livestock. Also, potential watershed impacts could have adverse effects on Lahontan cutthroat trout.

Resources would be adversely affected compared to the Proposed Action or Alternatives 1 as the vegetative community would sustain substantial over use.

However, long before this scenario unfolds the private land owner would likely exclude the horses from water forcing the Bureau to remove all horses from this HMA.

Mitigating Measures

Under the Proposed Action or the Alternative 1, no mitigation is necessary. Under the No Action Alternative, no mitigating measures are practical.

Cumulative Impacts

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

Past, proposed and reasonably foreseeable actions that may have similar effects to the Garfield Flat HMA horse population would include past removals and future removals. Four, (one minor, 12 head) removals have been completed in the past, and future gathers and removals would be scheduled pursuant to a 3-4 year gather cycle. Should the Proposed Action or Alternative 1 be implemented the horse population would be maintained at a level compatible with the vegetative community and other uses, a thriving natural ecological balance would be achieved. Cumulative effects of both the Proposed Action and Alternative 1 would include continued improvement of the range condition, and riparian-wetland condition. Additional cumulative beneficial effects from implementation of the Proposed Actions or Alternatives 1 to wildlife, the horse population and domestic livestock would occur as forage availability and quality is maintained and improved. Water quality and riparian habitat would also continually improve. .

Adverse cumulative impacts would occur if the No Action Alternative is implemented, these effects would include continual over utilization of vegetative resources, which would result in decreased vegetative density, plant vigour, seed production, seedling establishment, and forage production. This would ultimately result in decreases of the ecological status of plant communities.

Wild horses would continue to expand onto private lands and other areas outside of the HMA negatively impacting private property.

Based upon these considerations, the effects of other existing and reasonably foreseeable future activities including the Proposed Action and Alternative 1 would not cause a major affect to the environment. The No Action Alternative would continue to cause negative impact to the environment.

There would be no known adverse cumulative impacts to any of the resources analysed in this document as a result of the Proposed Action or Alternative 1.

Monitoring

A. Animal Studies

The studies described below are designed to monitor the attainment of the specific management objectives developed for this HMA.

1. Actual Use

Need: It is necessary to continue collecting data on the number and kinds (wild horses, wildlife and livestock) of animals, which are utilizing the forage within the HMA in order to make quantifiable decisions with regard to wild horse, cattle and wildlife numbers by season

of use.

Method: Helicopter censuses would be the method used to estimate the wild horse population in conjunction with on the ground identification of individual animals. These censuses would occur at 3-year intervals or less. Actual use by wild horses would be derived from population estimates.

2. Demography

Need: Data are needed on the foaling rate of mares and the survival rate of foals and adults to determine the rate of population increase. Also data on the sex and age structure of the herd is needed.

Method: Capture data, ground and aerial observations would provide baseline data. This would aid in determining the efficacy of different management strategies. Data would be analyzed using baseline parameters specific to this HMA where applicable. Age structure and annual rates of increase have been obtained from past gathers and aerial census. Also, age specific mortality and fecundity rates may be obtained from published data (Feist 1975; Wolfe 1980, 1989; Eberhardt 1982; Seal 1983; Siniff 1986; Garrott 1990a, 1990b, 1991a, 1991b, 1991c, 1991d; Eagle 1992).

3. Genetic Diversity

Need: Data are needed to monitor the genetic diversity of the herd.

Method: As the animals are aged blood samples would be drawn and later analyzed by a private contractor in order to monitor changes in allelic frequencies in accordance with the Gather Policy and Selective Removal Criteria for Wild Horses, Washington Office IM 2002-095. Minimum sample size is 25% of the upper end of the management range or a minimum of 25 samples, though no more than 100 samples would be needed from any one HMA. A veterinarian or other trained personnel would collect the blood samples.

4. Characteristics

Need: Data are needed regarding the historical physical characteristics of the herd.

Method: During the sorting of captured animals color and size would be recorded. The general characteristics would also be noted. Also, incidence of undesirable genetically determined traits, such as albinism, and club foot etc., would be documented.

5. Condition Class

Need: The physical condition of the animals is needed to assess overall herd health.

Method: The condition class would be recorded using the Henneke System for those animals that are exceptions to the average, such as noticeably thin, or fat.

B. Habitat Studies

1. Utilization

Implementation of Habitat Objective 1 would require maintaining utilization levels at or below 55% on key grass species (Indian rice grass, needlegrass and Idaho fescue; level recommended in the Nevada Rangeland Monitoring Handbook), and to 40% on bottlebrush squirreltail and Poa.

Need: To determine the amount of use (degree of utilization) attributable to wild horses, Livestock, and wildlife.

Method: Utilization studies would be conducted prior to cattle turnout in dual use portions of the HMA. In addition to this, utilization data would be collected on the entire HMA at the end of each livestock- grazing season. All utilization studies would be done using the Key Forage Plant Method. Each point where a utilization transect is run would be considered a study area and the location would be shown on the appropriate topographic map. (Outlined in BLM Handbook TR4/ 400-3 p. 11). Use pattern maps would then be constructed from these studies, showing relative areas and intensity of utilization.

2. Trend

Need: Trend refers to the direction of ecological change or forage condition. It indicates whether the rangeland is moving toward or away from its potential or specific management objectives.

Method: Frequency transects at key areas are read every 5 years.

3. Ecological Status

Need: Ecological status is determined by the present state of the vegetation and soil production of an ecological site in relation to the potential natural community for that site. Ecological range condition would be measured for each key area following MH 4400-1 guidelines (Natural Resource Conservation Service Range Handbook) to assure progress towards desired seral stages.

Method: Once key species are identified a key area condition transect would be done. Key area condition transects would be re-evaluated upon measurement of a statistically significant change in frequency data. These results would be evaluated to determine change in frequency data (trend). Furthermore, results would also be evaluated to determine if the appropriate objectives have been realized. (Refer to Nevada Rangeland Monitoring Handbook p. 13).

Evaluation

All adjustments in livestock and wild horse use in the Garfield Flat HMA would be based on rangeland monitoring. Monitoring information would be collected and evaluated on a yearly basis in accordance with the Nevada Rangeland and Monitoring Task Force recommendations.

Utilization results and use pattern maps would be analyzed to determine if Habitat Objective one is being achieved. Actual use would be used in conjunction with utilization data in revision of the numbers in the plan. Horse and cattle numbers may be adjusted as utilization results indicate. Cattle adjustments would be based upon monitoring as described in the AMP's specific for each allotment. Future Multiple Use Decisions may amend the numbers specified in this plan.

The ultimate aim for horse management is the attainment and maintenance of a thriving "natural" ecological balance between the vegetative community (uplands and riparian) and the herbivorous including wildlife and livestock. To these ends herbivore management is constrained by the ability of the vegetative communities to resist the adverse effects of grazing.

Depending on specific situations the limiting components could be upland vegetation or riparian vegetation. Livestock and to a lesser degree horses tend to seek out riparian areas in the hot months, often compacting the soil and removing excessive amounts of vegetation.

Adjustments in wild horse numbers would be based on the results of utilization studies (III. B. 1.) with the objective of limiting total vegetation use within the HMA to 55 percent or less on key species and 40 percent on interim species in upland areas

By maintaining the vegetative communities in a healthy state availability of ample forage resources would be assured for all of the herbivores thus the horse population would be maintained in a healthy state in balance with the vegetative, wildlife (including migratory birds) and livestock communities.

The formula for calculating proper use:

Actual use (AUMs) Average/Weighted Average Utilization	=	Potential Actual Use (AUMs) Desired Average Utilization

When total utilization increases above 55 percent on key species and 40 percent on interim species a gather would be conducted to bring the wild horse population to a level consistent with management objectives (see also II., A., objective 4.) also as previously discussed the private land owner has agreed to allow no more than 125 horses access to private water, therefore, if the population increases above 125 a gather would need to be conducted..

Horses that have established home ranges outside of the HMA would be removed as soon as is practical.

Results of the soil monitoring studies would also be used as an indication of attainment of Habitat Objective 1 and 2.

Helicopter censuses would be the method used in identifying the need for removals in accordance with Animal Objective 1.

Young/adult ratios may indicate that removals need not be as frequent as estimated or they may indicate that more animals need to be removed or contraceptives employed.

Animal distribution and use pattern mapping would be used to reevaluate important water sources.

Modification

This plan may be modified if data from studies and experience indicate that changes are desirable. Also, animal numbers and ranges may be modified through Multiple Use Decisions, which would result from ongoing monitoring.

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V. CONSULTATION AND COORDINATION

List of Prepares:

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James M. Gianola, WH&B Program Lead
Peggy Waski, Cultural Resources
Terry Knight, Recreation, Visual Resources
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Pete Raffetto, Range Resources
James DeLaureal, Soils/Invasive Non-Native Species
Jim Schroeder, Water Resources
Dean Tonenna, T&E Species, Plants
Desna Young, Environmental Coordinator

Persons, Groups or Agencies Consulted:

This draft HMAP / Capture Plan and EA update has been sent to the following persons, groups and government agencies in order to solicit comments.

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Nevada Department of Wildlife, Region I
Nevada Humane Society
Nevada State Division of Agriculture
Nevada State Clearinghouse
Nevada State Grazing Board
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VI. APPENDICES

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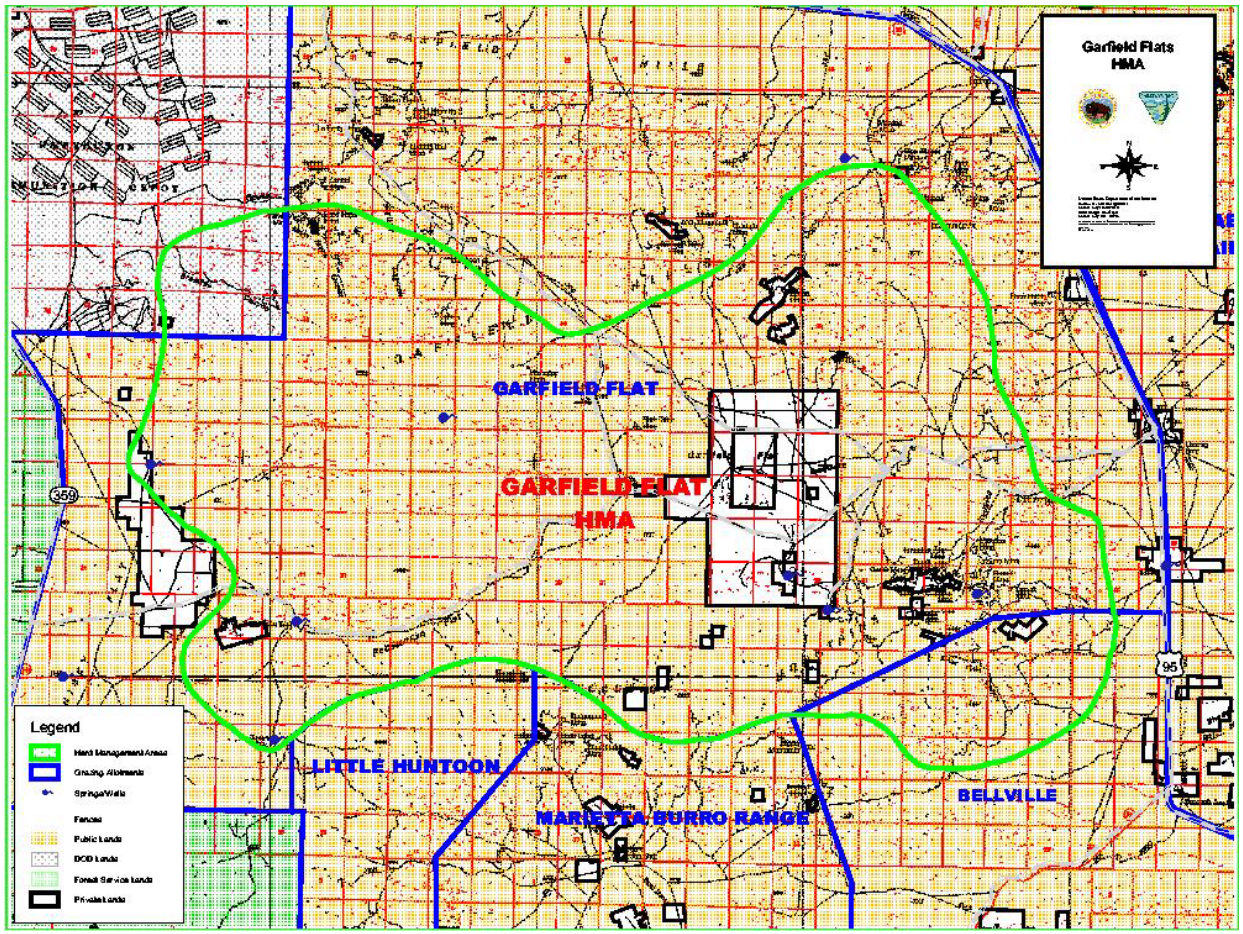
Map 1



Appendix 1, Minimum Viable Populations

Many species of vertebrates suffer from the deleterious effects of inbreeding depression if the population size is small and isolated. Inbreeding depression is manifested as decreased individual fitness and population growth rate (Ralls and Ballou 1983; Falconer and Mackay 1996). "Based on estimates of mutability in quantitative characters (Lande 1976; Lynch 1988), Franklin (1980) and Soule (1980) recommended a minimum Ne of 500 to maintain typical levels of heritable variance. Recent experiments indicate that a large fraction of the mutational variance in quantitative characters is associated with recessive lethal and semi-lethal side effects such that the quasi-neutral, potentially adaptive fraction of mutational variance is about one-tenth as large as previously thought (Mackay et al. 1992; Lopez and lopez-Fanjul 1993a,b). Lande (1995) suggested that the Franklin-Soule number should be increased by a factor of ten." (Lande 2002).

"Recent considerations of this problem have led to the recommendation that an effective population size (Ne) of approximately 1,000 individuals is needed to allow continued adaptive evolution and to avoid the accumulation of new harmful mutations. This recommendation would correspond to more than 5,000 individuals in many species. Such large populations will not be possible in many species except by increasing the connectivity among geographically separated populations over a wide area." (Allendorf and Ryman, 2002).

In harem breeding animals such as horses, an effective population will be much smaller than the census population, since matings are not random, a relatively few dominant males are responsible for the majority of matings. However, free roaming horses generally exhibit greater genetic diversity than most domestic breeds. Through the domestication process many deleterious alleles may have been purged thus allowing for greater inbreeding without the resulting deleterious effects of inbreeding depression. However, Allendorf and Ryman, (2002) assert that inbreeding depression is caused by many recessive alleles with minor deleterious effects therefore purging these numerous alleles is unlikely. Thus, a prudent manager would attempt to maintain as much genetic diversity as is practical.

"Inbreeding depression due to fixation of deleterious partially recessive mutations can be reversed, at least temporarily, by introduction of genes from unrelated individuals into an inbred population, which allows natural selection to eliminate the deleterious mutations. It can be permanently prevented by continued immigration every one or two generations of a single unrelated individual into each local breeding population regardless of its size (Lande and Barrowclough 1987). Such a plan was recently implemented for the endangered Florida panther, motivated by strong circumstantial evidence of inbreeding depression and its low genetic divergence from other conspecific populations. Such genetic augmentation may be sufficient to reverse inbreeding effects and not too high to swamp possible local adoptions (Hedrick 1995)." (Lande, 2002)

Appendix 2, Population Data

Table 3. Population data**.**

Census Date	Number of Horses Counted Inside the HMA	No. Removed
1969	59	
1973	184	
1975	253	
1977		183
1979	245	
1985		380
1985	132	
1988	99	
1989	86	
1990	81	
1991	116	
1993	183	
1994	216	
1995	253	
1996	264	
1997		174
1997	120	
1998	148	
1999		12
2000	141	
2002	142	

All censuses conducted after 1975 were with rotary wing aircraft.

The following parameters were used:

Table 4. Initial age distribution post-gather

Age Class	**Females**	**Males**
0	6	12
1	1	2
2	0	0
3	2	0
4	8	2
5	3	3
6	1	2
7	1	1
8	2	1
9	2	2
10-14	6	12
15-19	2	7
20+	1	4

Based on past gathers at least 10% of the horses are likely to remain undetected, thus evading capture attempts.

Table 5. Foaling Rates. Proportion of males is 0.58%

Age Class	Foaling Rate
Foal	0
1	0
2	0.52
3	0.67
4	0.76
5	0.89

6	0.76
7	0.90
8	0.88
9	0.91
10-14	0.81
15-19	0.82
20^{+}	0.75

These data were collected by M. Ashley and S. Jenkins at Garfield Flat, Nevada between 1993 and 1999. Marked females were followed for a total of 351 animal-years to generate these data on foaling rates.

Table 6. Age specific survival rates.

Age Class	**Females**	**Males**
Foal	0.919	0.877
1	0.996	0.950
2	0.994	0.949
3	0.993	0.947
4	0.990	0.945
5	0.988	0.942
6	0.985	0.939
7	0.981	0.936
8	0.976	0.931
9	0.971	0.926
10-14	0.947	0.903
15-19	0.870	0.830
20^{+}	0.591	0.564

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 survival probabilities. All scenarios were run 100 times.

Proposed Action, would utilize removals and contraceptives with an anticipated median growth rate of 10.7 percent and a median average size at the end of 160 with the highest trail having an ending population of 193 horses. Over the 20 year period only 208 horses were removed.

Table 7. Average growth rate in 20 years, removals and contraceptives.

Lowest Trial	5.9%
10th Percentile	8.0%
25th Percentile	9.3%
Median Trial	10.7%
75th Percentile	12.3%
90th Percentile	13.2%
Highest Trial	15.7%

Table 8. Totals in 21 years, removals:

	Gathered	Removed	Treated
Lowest Trial	578	111	139
10th Percentile	604	148	162
25th Percentile	622	180	168
Median Trial	649	208	181
75th Percentile	673	240	190
90th Percentile	706	261	206
Highest Trial	756	318	223

Alternative 1 would utilize removals techniques to control the population. This resulted in a median growth rate of 19.1% percent and a median average size at the end of 165 with the highest trail having an ending population of 201 horses. Over the 20 year period 381 horses were removed (median trial).

Table 10. Average growth rate in 20 years, removals. However, the population was only reduced to the upper AML.

Lowest Trial	13.1%
10th Percentile	17.1%
25th Percentile	18.0%
Median Trial	19.1%
75th Percentile	20.6%
90th Percentile	21.5%
Highest Trial	25.4%

Table 11. Totals in 21 years, removals only.

	Gathered	Removed
Lowest Trial	335	253
10th Percentile	429	324
25th Percentile	455	350
Median Trial	498	381
75th Percentile	526	405
90th Percentile	564	436
Highest Trial	647	501

Table 12. Population size in 21 years, removals only.

	Minimum	Average	Maximum
Lowest Trial	57	108	140
10th Percentile	80	115	151
25th Percentile	84	117	156
Median Trial	86	120	165
75th Percentile	90	123	172
90th Percentile	93	125	182
Highest Trial	99	133	201

The No Action Alternative would leave the population to its own device (no management) and resulted in a median growth rate of 19.4 percent and a median size at the end of 21 years of 878 with the highest trail having an ending population of 6,465 horses. Of course well before the population reaches these magnitudes the habitat would be destroyed, most wildlife and native plats would have been extirpated, noxious non-native weeds would dominate, livestock could no longer be produced and the horses themselves would likely also be extirpated. However, we have provided the results below for academic interest.

Table 22. Average growth rate in 20 years, no management, No Action Alternative.

Lowest Trial	16.4%
10th Percentile	17.5%
25th Percentile	18.1%
Median Trial	19.4%
75th Percentile	20.3%
90th Percentile	21.5%
Highest Trial	23.6%

Table 23. Population sizes in 21 years, no management**,** No Action Alternative.

	Minimum	Average	Maximum
Lowest Trial	81	521	1,739
10th Percentile	84	675	2,335
25th Percentile	86	751	2,493
Median Trial	90	878	3,072
75th Percentile	94	1,033	3,636
90th Percentile	100	1,256	4,710
Highest Trial	109	1,613	6,465

Unavoidable impacts in the form of injuries to the horses may occur during the removal process. Based on past gathers death loss is not expected to exceed 1% of the horses captured at the trap site. Potential injuries and fatalities can be limited through strict enforcement of contract specifications (Appendix 4) for safety and humane treatment of animals. BLM representatives would be monitoring the contractor's activities at all times during removal to ensure compliance with specifications and humane treatment of animals.

Some stress to the horses would be associated with the helicopter herding operations. However, after adoption the horses become accustomed to captivity.

Appendix 4, Removal Procedures

I. Methods for Removal and Safety

The methods employed during this capture operation would be either herding horses with a helicopter to a trap built with portable panels or capturing the horses using portable panels around water troughs. The Bureau of Land Management may contract with a private party for part or all of this operation. If a private party is used for this operation Bureau employee(s) would be supervising the contractor at all times during the gathering operation. The following stipulations and procedures would be followed during the contract to ensure the welfare, safety and humane treatment of wild horses and that wild horses are removed from proper areas. If capture operations are performed by Bureau personnel, the Bureau would follow the same stipulations that we require of a private contractor.

A. Roundup Procedures within Contract Area:

The Contracting Officer's Representative (COR) or Project Inspectors (PI) would determine specific roundup areas and numbers of animals within general contract areas as animal concentration, terrain, physical barriers and weather conditions dictate. Upon determination of the specific roundup areas, the COR/PI would select the general location of trap sites in which to herd the animals. Animal concentration, terrain, physical barriers and weather conditions would all be considered when selecting trap sites.

B. Motorized Equipment

l. 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.

2. Vehicles shall be in good repair, of adequate rated capacity, and operated so as to insure that captured animals are transported without undue risk of injury.

3. Only stock trailers shall be allowed for transporting animals from traps to temporary holding facilities. Only Bobtail trucks, stock trailers, or single deck trucks shall be used to transport animals from temporary holding facilities to final destination. Sides of stock racks of transporting vehicles shall be a minimum height of 6 feet 6 inches from vehicle floor. Single deck trucks with trailers 40 feet or longer shall have 2 partition gates to separate animals. Trailers less than 40 feet shall have at least 1 partition gate to separate the animals. 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 trailers is unacceptable and shall not be allowed.

4. All vehicles used to transport animals to final destination shall be equipped with at least 1 door at the rear end of the vehicle which is capable of sliding either horizontally or vertically.

5. Floors of vehicles and loading chute shall be covered and maintained with a non-skid surface such as sand, mineral soil or wood shavings, to prevent the animals from slipping. This would be confirmed by a BLM employee prior to loading (every load).

6. Animals to be loaded and transported in any vehicle shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. A minimum of 1.4 linear foot per adult animal and .75 linear foot per foal shall be allowed per standard 8 foot wide stock trailer/truck.

The BLM employee supervising the loading of the wild horses to be transported from the trap to the temporary holding corral would require separation of small foals and weak horses from the rest, if they could be injured during the trip. Distance and condition of the road and animals would be considered in making this determination. Horses shipped from the temporary holding corral to the BLM facility would normally be separated by studs, mares and foals (including small yearlings). However, if the numbers of these classes of animals are too few in one compartment and too many in another, animals may be shifted between compartments to properly distribute the animals in the trailer. This may include placing a younger, lighter stud with the mares or a weak mare with the foals. Further separation may be required should condition of the animals warrant.

The BLM employee supervising the loading would exercise authority to off-load animals should there be too many horses on the trailer or truck.

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

It is currently planned to ship all horses to the Palomino Valley facility. Communication lines have been established with the Palomino Valley personnel involved in off-loading the horses, to receive feedback on the condition of shipped horses. Should problems arise, shipping methods or separation of the horses would be changed in an attempt to alleviate the problems.

8. If the COR/PI determines that dust conditions are such that the animals could be

endangered during transportation, the contractor would be instructed to adjust speed. The maximum distance over which animals may have to be transported on dirt road is approximately 5 miles.

Periodic checks by BLM employees would be made as the horses are transported along dirt roads. If speed restrictions are placed in effect, then BLM employees would, at times, follow or time trips to ensure compliance.

C. Trapping and Care

1. The helicopter shall be used in such a manner that bands of horses would remain together. Foals shall not be left behind.

To avoid adverse impacts to golden eagles the helicopter would be operated in a manner to avoid flying near aeries.

To avoid adverse impacts to water quality and riparian areas trap sites would be located in upland situations, along exiting roads. Since trap sites are located along existing roads threatened, endangered, sensitive or special states plant species are not likely to be impacted, however, these sites would be surveyed and if threatened, endangered, sensitive or special status plant species are present another location would be selected for a trap site.

The CCFO may use an observation helicopter to supervise the use of the project helicopter. In the absence of an observation helicopter a saddle horses may be used to place a BLM observer on a point overlooking the area of the helicopter herding operations. Mares would be checked soon after capture to determine if they are nursing. If nursing mares are captured without foals intensive monitoring would be conducted to identify the reason(s) foals are being abandoned and a solution would be developed. The health and well being of the captured animals are paramount and foals would not be left behind.

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

BLM would not allow horses to be herded more than 12 miles. The COR/PI may decrease the distance moved should the route to the trap site be steep or rocky enough to pose a danger or cause avoidable stress. Animal condition would also be considered in making distance and speed restrictions.

Special attention would be given to avoiding physical hazards such as fences. Map 1 shows

locations of fences and any other potential hazards.

3. It is estimated that 2 trap locations would be required to accomplish the work. All trap locations and holding facilities must be approved by the COR/PI prior to construction. Proposed trap sites and holding facilities would be inventoried prior to construction in order to avoid those areas where cultural resources exist. 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.

If tentative trap sites (Map 1) are not located near enough to the concentrations of horses, then the trap site would not be approved. The COR/PI would move the general location of the trap closer to the horses. Trap sites would be located outside of the WSA. Trap sites would not be approved where barbed wire fences are used as wings, wing extensions, or to turn the horses, during herding, toward the trap.

4. 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, the bottom rail of which shall not be more than 12 inches from the ground level. All traps and holding facilities shall be oval or round in design.

b. The loading chute shall also be a minimum of 6 feet high.

c. All runways shall be a minimum of 20 feet long and a minimum of 6 feet high.

d. Wings shall not be constructed out of barbed-wire or other materials injurious to animals and must be approved by the COR/PI.

e. All crowding pens including the gates leading to the runways shall be covered with material which prevents the animals from seeing out (plywood, burlap, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.

5. No fence modification would be made without authorization from the COR/PI. The contractor shall be responsible for restoration of any fence modification which he has made.

If the route the contractor wishes to herd horses passes through a fence, the contractor would be required to roll up the fencing material and pull up the posts to provide at least

one-eighth mile gap. The standing fence on each side of the gap would be well-flagged for a distance of 300 yards from the gap on each side.

6. 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.

7. Alternate pens, within the holding facility shall be furnished by the contractor to separate mares with small foals, sick and injured animals, and estray animals from the other horses. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize injury due to fighting and trampling.

As a minimum, studs would be separated from the mares and foals when the animals are held overnight.

8. 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 shall not be held in traps 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 6:00 a.m. and 4:00 p.m.

9. The contractor shall provide animals held for 5 hours or more in the traps or holding facilities with a continuous supply of fresh clean water at a minimum 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 2 pounds of hay per 100 pounds of estimated body weight per day.

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

11. The contractor shall restrain sick or injured animals if treatment by the government is necessary. The COR/PI would determine if injured animals must be destroyed and provide for destruction of such animals. The contractor may be required to dispose of the carcasses as directed by the COR/PI.

12. When refueling, the helicopter shall remain a distance of at least l,000 feet or more from animals, vehicles (other than fuel truck), and personnel not involved in refueling.

13. Mares and foals would be paired up soon after capture and separated from other adult horses. Mares that are within the target age group for removal would be shipped to PVC

with their foal. Foals of older mares (mares older than the ones selected for removal) that are old enough to wean, would be weaned and shipped to PVC. While holding animals at temporary corrals every effort would be made to pair up mares with foals. Any foals that do not pair up with a mare would be shipped to PVC.

14. Foals of older mares which are too young to wean would be released back into the HMA with their mare. In order to minimize stress to the foals, older mares and their foals would be released separately from other mares and stallions. Depending upon the situation they may be released prior to the other animals or after the other animals have been released. Also, we may transport the mares with very young foals in a stock trailer to areas close to their core areas when feasible. The objective would be to maximize the period of time between releasing small foals and other animals. Also, mares with foals would be released in small groups to minimize the likelihood of the adult horses running off too quickly for the foals to keep up.

15. Following the release of animals from corrals or trailers, the area surrounding the release site would be monitored to determine the success of the release prior to the contractor moving to another area or the termination of the task order.

II. Disposition of Removed Animals

The wild horses and burros would be sent to Palomino Valley Wild Horse and Burro Placement Center to be processed for adoption.

Impounded, privately owned animals would be processed as outlined in the Bureau of Land Management, Nevada State Office Instruction Memoranda NV-84-116 and NV-85-416.

III. Responsibility

The Field Office Managers are responsible for maintaining and protecting the health and welfare of the wild horses. To ensure the contractor's compliance with the contract stipulations, the COR and PIs all from the CCFO and/or BMFO , would be on site. Also, the Assistant Field Managers and Field Managers are very involved with guidance and input into this removal plan and with contract monitoring. The health and welfare of the animals is the overriding concern of the Field Office Managers, Assistant Field Office Managers, COR and PIs.

The COR and/or PI would constantly, through observation, evaluate the contractor's ability to perform the required work in accordance with the contract stipulations. Compliance with the contract stipulations would be through issuance of written instructions to the contractor, stop

work orders and default procedures should the contractor not perform work according to the stipulations.

Prior to issuance of the "Notice to Proceed" to the contractor, the COR and PIs would inspect the equipment to be used during the contract, to insure the equipment meets or exceeds the standards contained in the contract stipulations. Prior (less than 20 days) to the start of the contract and constantly during the course of the contract the COR and/or PIs would evaluate the conditions which may cause undue stress to the animals. The factors considered would include animal condition, prevailing temperatures, drought conditions, soil conditions, topography, animal distribution, distance animals travel to water, quantity of available water and condition of roads that animals are to be transported over. These factors would be evaluated to determine if additional constraints other than those already discussed above, need be initiated in order to safely capture and transport the animals (i.e. veterinarian present, or delay of capture operations). This is of special concern during this year of drought which may intensify the impact of removal operations on the animals and the roads.