

NEVADA COMMISSION FOR THE PRESERVATION OF
WILD HORSES

A PLAN OF GOALS, STRATEGIES AND RECOMMENDATIONS
FOR THE PRESERVATION AND PROTECTION OF WILD HORSES
ON FEDERAL LANDS IN THE STATE OF NEVADA

1999

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Table of Acronyms

A number of acronyms are used throughout the text of this document which are delineated below to aid the reader.

AUM	-----	Animal Unit Month
ACT	-----	Wild Horse and Burro Act 1971
AML	-----	Appropriate Management Level
BLM	-----	Bureau of Land Management
CRMP	-----	Coordinate Resource Management Process
DOI	-----	U.S. Department of the Interior
FS	-----	United States Forest Service
FLPMA	-----	Federal Land Policy and Management Act 1971
HA	-----	Herd Area
HMA	-----	Herd Management Area
HUA	-----	Herd Use Area
IBLA	-----	Interior Board of Land Appeals
LUP	-----	Land Use Plan
MUD	-----	Multiple Use Decision
NDA	-----	Nevada Division of Agriculture
NDOT	-----	Nevada Department of Transportation
NDCNR	-----	Nevada Department of Conservation and Natural Resources
NDEP	-----	Nevada Division of Environmental Protection
NDOW	-----	Nevada Division of Wildlife
NDWR	-----	Nevada Division of Water Resources
NDSL	-----	Nevada Division of State Lands
NPO	-----	National Program Office
NRS	-----	Nevada Revised Statutes
NEPA	-----	National Environmental Policy Act 1969
WHBP	-----	Wild Horse and Burro Program

1.0 COMMISSION BACKGROUND

1.1 Nevada Legislative Authority

The 1997 session of the Nevada Legislature enacted Senate Bill No. 211, which in Section 9 (1), directs the Nevada Commission for the Preservation of Wild Horses (Commission) to prepare a statewide plan to carry out the provisions of NRS 504.430 to 504.490, inclusive, for the preservation of wild horses on public lands in Nevada for federally designated wild horse management areas. The plan must also explain the manner in which the money in the Heil trust fund for wild horses will be expended to carry out its statutory provisions and in preparing the plan the Commission is required to conduct public meetings to receive comments from members of the general public. The Commission's authority in carrying out the provisions of its statutes is of an advisory capacity only, since the Secretaries of the Interior and Agriculture through their respective agencies, Bureau of Land Management and Forest Service, have the exclusive authority and responsibility for the management of wild horses and burros on public lands as specified by federal law 16 U.S.C.1331-1340 as amended. Although wild burros are excluded from language of the NRS, actions proposed by the Commission for wild horses in most cases would be appropriate for wild burros.

The Commission's primary duties as specified by NRS 504.470 in fulfilling its responsibilities in the preparation of the statewide plan includes:

- Promote the management and protection of wild horses;
- Act as liaison between the state, the general public and interested organizations on the issue of the preservation of wild horses;
- Advise the governor on the status of wild horses in Nevada and the activities of the Commission;
- Solicit and accept contributions for the Heil trust fund for wild horses;
- Recommend to the legislature legislation which is consistent with federal law;
- Develop, identify, initiate, manage and coordinate projects to study, preserve and manage wild horses and their habitat;
- Monitor the activities of state and federal agencies, including the military, which effect wild horses;
- Participate in programs designed to encourage the protection and management of wild horses;
- Develop and manage a plan to educate and inform the public of the activities of the Commission for the preservation of wild horses;
- Report biennially to the legislature concerning its programs, objectives and achievements;
- Take any action necessary to fulfill the intent of the Heil trust;
- Grant an award in an amount it considers appropriate for information leading to the conviction of a person who violates federal or state laws concerning wild horses; and
- Adopt regulations necessary to carry out the purposes of NRS 504.430 to 505.590, inclusive.

1.2 Commission Mission Statement

Nevada Revised Statute (NRS) 505.470(1) states the Commission's mission as: "To preserve viable herds of wild horses on public lands designated by the Secretary of the Interior as sanctuaries¹ for the protection of wild horses pursuant to 16 U.S.C. §1333 (a) , at levels known to achieve a thriving natural ecological balance within the limitations of the natural resources of those lands and the use of those lands for multiple purposes, and to identify programs for the maintenance of those herds."

This Statute also clearly identifies that the Commission's advisory authority is limited to preserving viable herds of wild horses on public lands . The federal government has the ultimate authority and responsibility for management of wild, free-roaming horses and burros on public lands and for those animals that stray onto private lands in the State of Nevada in accordance with federal law 16 U.S.C. 1331 et seq.

1.3 Commission's Role Under Federal Laws

The ACT places the responsibility and authority to administer the National Wild Horse and Burro Program with the Secretaries of Interior and Agriculture on public lands administered through their respective agencies, the BLM and FS. A 1992 interagency cooperative agreement between BLM and the FS in Nevada, provides for either BLM or the FS to be assigned through site specific agreements the responsibilities for wild horse and burro habitat areas overlapping agency boundaries. Public Law 94-576, Federal Land Policy and Management Act (FLPMA) of 1976, sets the multiple use and sustained yield mandates for BLM. Consistent with FLPMA, the federal government has an obligation to recognize and pursue state land use plans that are consistent with this Act. As stated in Title II, Section 202, Part C: "Land use plans of the Secretary under this section shall be consistent with state and local plans to the maximum extent he finds consistent with federal law and the purposes of this Act."

It is the advisory role of the Commission to prepare a statewide plan to carry out the provisions of NRS 504.430 to 504.490, inclusive (PLAN). This plan will present the goals, strategies, and objectives of the Commission, as a compatible plan with proposed advisory actions to assist the federal government in achieving its mandates, while meeting the expectations and desires of the citizens of Nevada.

1.4 Public Participation

To determine public issues to address in the Plan, scoping letters were mailed to public interests including individuals, government entities and organizations in an effort to establish a mailing list of interested participants and to identify initial scoping issues pertinent to the development of the Plan. These groups responded with a total of 65 individual issues. The participants/ mailing list is depicted by Appendix A.

¹. Although there are no official sanctuaries in Nevada, the intent of NRS 505.470 has been interpreted by the Nevada Attorney General's Office under Opinion No. 98-16 as: "to mean the Commission should focus on the preservation of wild horses on federally designated wild horse management areas."

A public meeting, scoping plan and schedule was developed to secure further statewide public input for issue identification. Information obtained from the initial written public scoping effort provided for the development of a draft outline plan which was mailed to all mailing list participants and to local community groups and individuals for their review prior to conducting seven statewide public-scoping meetings. Issues gathered from these public scoping meetings were then compiled and provided to those participants on the mailing list prior to conducting two public-forum meetings in an effort to reach issue consensus. The list of issues identified as a result of the seven public-Scoping meetings and synopsis of the final public-forum meeting is depicted in Appendix B and C, respectively. The public scoping process for issue identification and consensus resolution is shown by Table 1.

Table 1 Public Scoping Process-Issue Identification and Consensus Resolution

Location	Process	Date
Statewide	Scoping Issues Mailed	August 12, 1997
Eureka, NV	Public Scoping Meeting	October 10, 1997
Winnemucca, NV	Public Scoping Meeting	November 21,1997
Carson City, NV	Public Scoping Meeting	December 9, 1997
Tonopah, NV	Public Scoping Meeting	January 30, 1998
Las Vegas, NV	Public Scoping Meeting	March 5, 1998
Caliente, NV	Public Scoping Meeting	March 6, 1998
Elko, NV	Public Scoping Meeting	March 31, 1998
Carson City, NV	Public Forum Meeting	April 22, 1998
Las Vegas, NV	Public Scoping Meeting	September 3, 1998
Ely, NV	Public Scoping Meeting	September 18, 1998
Fallon, NV	Commission Workshop	November 6, 1998
Carson City, NV	Commission Workshop	January 19, 1999

2.0 LIFE HISTORY

2.1 Genetic Status

Taxonomists identify six existing native species of horses in the Equidae family (equid), comprised of three species of African zebras (Common, Mountain and Grevy's), an African ass, an Asiatic half-ass and the Przewalski's horse of Asia. The ancestry of today's common domestic horse is linked to the Przewalski's horse, *Equus ferus przewalskii*. Although the Przewalski's horse is now thought extinct in its native habitats of Southern Mongolia, Russia, and Northern China, there are up to 500 animals surviving in zoos (Berger 1986). Recently the Mongolian government has initiated successful programs to re-introduce the Przewalski's horse back into the wild.

Wild horses of the eleven western states are direct descendants of domestic horses escaped or released by explorers, emigrants, miners, ranchers or American Indians (Berger 1986). They are classified to genus and species as *Equus caballus*, members, which are either domesticated or feral. The original domestic stock quickly adapted to the western ranges and became feral in nature (feral in scientific terminology refers to a wild state of existence for domesticated animals) and did not receive their official sanctioned "wild horse" status until passage of the Wild Free Roaming Horse and Burro Act (ACT) in 1971. The ancestry of wild horses in the western states is from many domestic breeds of European, Asian, African and American breed horses. Specific breeds includes, Percherons, Hambletonians, Shires, Morgans, Bashkir Curly, Irish stallions and mares, Arabians, Thoroughbreds, Appaloosa, Palominos, Pintos and Quarter horses.

2.2 Morphology

Wild horses of the western states range in size from just larger than ponies at less than 14 hands (one hand equals 4 inches), to draft-horse size of 16 to 17 hands with weights normally between 550 to 1200 pounds. Adult pelage varies greatly in color, pattern and texture, including, palomino, pinto, roan, dun, sorrel, bay, and buckskin, dependent upon geographic location and breeding ancestry. Horses' skulls are elongated and well suited for chewing and grinding with 40 teeth, comprised of 12 incisors for cropping grasses, 4 canines used for grooming, threat displays, and biting, and 24 large cheek teeth (6 premolars and 6 molars on each cheek side) for grinding up food (Getty 1975). The neck and mane is long and well suited for grazing while the muscular body has long legs with strong hooves adapted for running on hard or rocky ground. A long and coarse tail is normal in most animals which proves very useful in swatting pesky insects. Equids have monosacculated stomachs with the cecum acting as the primary site of fermentation, rather than ruminants which possess four-chambered stomachs and the primary sites of fermentation. The cecum system of digestion and energy absorption is less efficient than ruminants and therefore requires greater forage consumption by body weight than ruminants. However, the advantage of the cecum system is that these animal can subsist on lower quality diets than ruminants and can even consume their own dung piles for survival during periods of scarce forage. (Holchek, et al. 1995)

Wild horse-capture data from BLM's National Program Office (NPO) during fiscal years 1988 through

1991, for 33,929 horses, documents some animals living to 30 years of age; however, these old-age animals made up only 0.1 percent of the total. Ages of horses 0 through 2 years represented 47.5% of all captures, 0 through 4 years of age 64.7% and 0 through 10 years 91.3%. Animals aged 11 through 20 years represented only 9.1% of the total and those from 21 through 30 years of age only 0.7 % of the total. Berger, (1986) in his study of wild horses in the Granite Range of Washoe County, define old age wild horses as 14 to 19 years of age, and those exceeding 20 years as very old.

This same capture information delineated the age ratio of all captured animals as 47.8 % males and 52.2% females. Table 2 delineates Wild Horse Capture Data for FY's 1988 through 1991.

2.3 Reproduction

Females may reach sexual maturity after one year of age (mare) with the fecundity period lasting as long as twenty-two years. However, BLM capture data has not documented yearlings with foals only with mares two years of age and older. Mares are seasonally polyestrous, experiencing four to six days of receptivity followed by about 15 days of nonreceptivity before returning to estrus (Warning 1983). Stallions may be sexually mature at the same age, however, are normally in bachelor groups and do not breed until attainment of their own harem (mares, foals and yearlings) at approximately four to six years of age. May and June are the peak breeding periods in the Great Basin. The gestation period averages 340 days (11.5 mos.) with peak foal drop during April and May. One foal is the normal and is generally weaned in nine to eleven months by the mare. Sex ratios of foals at birth have been reported as 1.30 males per 1.0 females by Berger (1986).

2.4 Behavior

Wild horses are social animals surviving in small family groups termed "bands" or "harems," consisting of two or more individuals. The band normally consists of mares, foals, and yearlings protected by a harem stallion. Young males when reaching approximately two years of age are normally driven out of the band by the harem stallion, after which the young male joins with other males of the same age forming bachelor bands. These bachelor bands remain together until each male finds an unattached wandering mare or wins a band of mares by successful combat with a harem stallion. The young male is normally three to six years of age at this time. Aggression amongst males is common in their attempts to secure mares or in guarding their harems. One band encountering another band typically results in aggressive behavior amongst the harem stallions and remaining young males of each band. A hierarchy exists amongst the mares in a band with one being dominant over the others and acting as the band co-leader with the stallion. The stallion actually protects the band from predators and other stallion intruders, while the dominant mare leads the harem in its quest for food, water and shelter. Members of the band communicate with one another mainly through body language using gestures and posturing of head, ears, eyes, body and feet in addition to scenting, neighing and squealing. Habitation of bands within one geographic area (HA) during all seasons of the year are considered to be members of the same herd.

Table 2 BLM Nationwide Wild Horse Capture Ratios for FY's 1988 through 1991

Age	No. of Male	No. of Females	No. of Animals	Percent by Age
0	3,286	3,468	6,754	19.9
1	2,359	2,666	5,024	14.8
2	1,966	2,358	4,324	12.7
3	1,440	1,805	3,245	9.6
4	1,158	1,433	2,591	7.6
5	782	964	1,746	5.1
6	995	1,313	2,308	6.8
7	957	942	1,899	5.6
8	612	646	1,258	3.7
9	334	371	705	2.1
10	374	351	725	2.1
11	235	165	400	1.2
12	466	371	837	2.5
13	102	81	183	0.5
14	149	80	229	0.7
15	306	238	544	1.6
16	40	36	76	0.2
17	33	23	56	0.2
18	79	62	141	0.4
19	28	9	37	0.1
20	342	243	585	1.7
21	8	7	15	0.0
22	16	10	26	0.1
23	15	5	20	0.1
24	29	12	41	0.1
25	72	33	105	0.3
26	10	5	15	0.1
27	11	3	14	0.1
28	2	0	2	0.0
29	1	0	1	0.0
30	16	7	23	0.1
Tls	16,223	17,707	33,929	100

2.5 Food Habits

Wild horses will feed primarily upon grasses as their preferred food source if available. Species of grass utilized depends upon availability by local area and season of use, which in Nevada can be composed of Nevada bluegrass (*Poa nevadaensis*), bearded bluebunch wheatgrass (*Agropyron spicatum*), indian ricegrass (*Oryzopsis hymenoides*) and bluestem wheatgrass (*Agropyron smithii*) to mention a few. As

grasses become less available in late summer and early fall and as early snows arrive, horses begin utilizing shrubs in greater percentages which can include such species as four winged saltbush (*Atriplex canescens*), winterfat (*Ceratoides lanata*) and rubber rabbitbush (*Chrysothamnus nauseosus*). Shrub species are used heavily during the winter as snows cover any available understory. During severe winter periods when snows cover shrubs, horses will feed upon juniper trees (*Juniperus sp.*) and bark from quaking aspen trees (*Populus tremuloides*) and from old horse dung piles.

2.6 Migration

Wild horse bands typically exhibit elevational migrations from summer range on high mountainous areas to fall/winter ranges located in the valley floors. These seasonal migrations are triggered by snow cover of remaining grasses in the high country in conjunction with cold temperatures, windy days, and shortening of the photo period. In early spring, reverse seasonal migrations occur with longer days and temperature rises, initiating band movement up the mountain following grass green-up as the snow melts. Other factors such as insect abundance, abrupt temperature rises and need for shelter may cause bands to exhibit seasonal elevational moves to afford themselves protection from these elements. Most researchers believe that snow cover is the most important factor which triggers the seasonal elevational migrations.

2.7 Forage Allocation

BLM in Nevada administers its grazing program on public lands by means of its LUP's and MUD's in establishing rangeland carrying capacity and allocating forage for livestock, wild horses and burros, and wildlife. These processes adjust forage allocations amongst grazing ungulates by utilizing forage monitoring techniques guided by the Nevada Rangeland Monitoring Handbook specific to Nevada (a process that measures rangeland health and determines what methods and practices are needed to achieve healthy rangelands through acceptable best management practices) and the "Standards and Guidelines for Rangeland Health" as established by the BLM Resource Advisory Councils (RAC's). Carrying capacity may vary from year to year on a given area due to a number of variables including climatic conditions, which in turn determines forage production, changes in number of grazing animals on the area, and the grazing management practices applied. However, the process if applied properly, is geared to adjust forage allocations amongst grazing species to preserve currently healthy rangelands and restore healthy conditions to those areas that are not functioning properly, while providing for viable populations of livestock, wild horses and burros and wildlife.

BLM allocates available forage to each class of grazing animal based on Animal Unit Months (AUM), which is defined as the amount of forage required to sustain for one month, five weaned or adult sheep or goats, or one cow with calf up to six months of age, or one cow, bull, steer, heifer, horse or mule. Wildlife species forage use is based on population levels and AUM conversion rates, which vary in the number of animals it takes to equal one cow AUM. The AUM conversion rates for wildlife species agreed to by Nevada BLM and the Nevada Division of Wildlife (NDOW) for which forage usage is calculated includes; mule deer 4:1, pronghorn antelope 5:1, bighorn sheep 5:1, and elk 1.25:1. Table 3 shows the number of AUMs utilized in Nevada for 1997 by ungulate grazing, and percent use by class of animal.. This data also reflects that total animal grazing use by group of animals equaled 63.2 percent by domestic

livestock, 13.3 percent by wild horses and burros, and 23.5 percent by wildlife.

**Table 3 Nevada 1997 Animal Grazing Use & Percent
Use by Class of Animal**

Species	AUM's Used	% of Use
Cattle*	1,314,514	58.2
Domestic horses & burros	5,010	0.2
Sheep & goats	107,567	4.8
Wild horses**	293,148	13.0
Wild burros**	6,888	0.3
Mule Deer	406,590	18.0
Pronghorn Antelope	35,256	1.6
Bighorn sheep	16,006	0.7
Elk	72,180	3.2
Totals	2,257,159	100

***AUM's do not reflect calves under 6 months of age.**

****AUM's include foals under 6 months of age.**

The above table shows no appreciable impact from wild horses.

Notes:

1. Domestic livestock licensed AUMs billed by BLM in 1997 as reported by DOI-BLM Public Land Statistics, 1997.
2. Wild horse forage utilization based on Table 2 population for 1997 times 1.0 AUM value times 12 months use.
3. Wild burro forage utilization for 1997 as reported by DOI-BLM Public Land Statistics, 1997.
4. Wildlife forage utilization based on 1997 wildlife populations as reported by NDOW Big Game Status and Quota Recommendations (1998), and the AUM conversion factors for mule deer, pronghorn antelope, bighorn sheep and Elk as agreed to by NDOW and Nevada BLM State Office, by BLM Memorandum No. NSO 76-290.
5. Foals under 6 months of age are calculated by BLM as a full AUM in calculations, calves under 6 months of age are not considered in any of the above calculations, a mare/foal pair is considered 2 AUM's, whereas a cow/calf pair is considered 1 AUM.

3.0 WILD HORSES IN NEVADA

3.1 History of Horses in Nevada

Some 11,000 years ago during the Pleistocene Period the flora and fauna of Nevada was much different from what we know it today. Lake Lahontan covered a large part of Northern and Central Nevada, and pine trees grew to the valley floor in the vicinity of Las Vegas. Major animal species of the time included ground sloths, mammoths, camels, three-toed horses, and saber-toothed tigers. As the climate evolved to much drier conditions, all of these animals, including the prehistoric horse, became extinct (Martin and Guilday 1967). Horses did not appear again in Nevada until after the Euro-American movement west in the 1800s (Berger 1986).

Much of the information pertinent to the history of horses in what is now known as Nevada was generously provided by Robert P. McQuivey (1998) from his unpublished historical notes retrieved and recorded from the diaries and journals of early Nevada explorers and historic newspapers.

When Jedediah Smith traveled from the vicinity of the Great Salt Lake to Southern Nevada in 1826, he reported trading some of his worn and tired horses with the Indians along the Old Spanish Trail. Two years later, Peter Skeen Ogden traded horses with the Snake Indians in Northern Nevada and recaptured a few of his own horses that had been stolen by the Indians in Utah the previous year. Ogden also reported observing the tracks of some 400 head of horses that were being driven south by the Indians in the vicinity of the Humboldt River. During this time period there were no wild or free roaming horses in Nevada, nor did the resident Paiute or Western Shoshone Tribes of Indians utilize horses as part of their culture.

The diaries and journals of Jedediah Smith, Peter Skeen Ogden, John Work, Joe Meek, Joseph Walker, Zenas Leonard and several other early explorers between 1826 and 1841 document the lack of any free roaming horses in Nevada, but also reference the need for their parties to kill and eat some of their domestic horses to survive. John Work, for example, when in the vicinity of the Quinn River drainage of Northern Nevada, reported in his diary on June 25, 1831 as follows:

...The best hunters were out but as usual did not see a single animal of any sort. One of the men, P. Bernie, was under the necessity of killing one of his horses to eat. Thus are the people in this miserably poor country obliged to kill and feed upon these useful animals, the companions of their labors...

The first report of a free-roaming or wild horse in the area, which would later comprise the State of Nevada, may be found in the diary of John Bidwell, one of the leaders of the emigrant group that first attempted to bring wagons from the mid-west to California in 1831. After traveling down the Humboldt and approaching the sink of the river, during October of that year, Bidwell reported as follows:

...we saw a solitary horse, an indication that trappers had sometime been in that vicinity. We

tried to catch him but failed; he had been there long enough to become very wild...

The discovery of gold near Sutter's Fort in the Sacramento Valley during 1848 initiated a mass movement of people through the vicinity of Nevada that is commonly referred to as the 1849 California Gold Rush. Between 1849 and 1852, it has been estimated that in excess of 100,000 people traveled along the Humboldt River corridor, with others venturing into other sections of the State. With these emigrants came large numbers of horses, oxen, mules and other domestic livestock.

By this time in history, some of the resident Indian tribes of Nevada had acquired horses for domestic use, whereas others were interested in the animals as a food resource. There were still, however, no wild or free roaming horses in the area because of the demand for these animals by both the Indians and emigrants. One of the major documented problems facing the emigrants between 1849 and as late as 1859, was related to the Indians driving off or wounding horses, and then waiting for the emigrants to move on before capturing the animals. Eliza Ann McAuley, when in the vicinity of Battle Mountain on August 22, 1852, described this situation in her diary as follows:

...They had been out hunting some horses that were stolen by the Indians, and had eaten nothing since yesterday. They found one horse alive and the Indians eating another. The rest were scattered through the mountains so that they could not be found...

The Humboldt River portion of the movement west was one of the most dreaded stretches of the Emigrant Trail, and because of the emigrants need to reach the Sierras before winter, many horses, abandoned or strayed, were left along the trail. Lorenzo Sawyer in his diary relates the experience of a trip in the vicinity of the Lower Humboldt Sink and Forty Mile Desert on July 6, 1850 as follows:

...One of our company left a horse yesterday; this morning another was left to starve on the desert; another one was killed in mercy to the animal. We saw many dead by the wayside, and many more abandoned to shift for themselves...

Because of the continued focus and demand for horses by the Indians of Nevada between 1849 and about 1860, it is doubtful that any of the horses from the emigrant's movement west resulted in the initial establishment of a single wild horse herd anywhere in the state. Wild or free roaming horse herds would become established later, as a result of the settlement of Nevada, and based almost entirely on social, political and economic conditions.

The discovery of ore on the Comstock in Western Nevada during 1859 resulted in a reverse migration of prospectors from the west, and a renewed emigration from the east. By the early 1860s, as more ore deposits were discovered, numerous cities and towns were established throughout the Territory. With the mining towns, came a need for food, and as a result agricultural lands were developed to supply the demand.

The first range ranchers were the Spanish, who arrived in the 1500's via Mexico. Immediately after the Revolutionary War, thousands of pioneers moved westward and settled on public lands with no

authorization to do so. After the buffalo herds were decimated by hide hunters, the grasslands of the plains and mountains became ideal livestock country. Herds of cattle were driven north from Texas and eventually most of the “open range” was used for stockraising. As westward expansion continued, more of the public domain was put into crops. Farmers and stockmen clashed because the latter depended upon the open range, that the farmer was plowing, fencing and claiming as his own. The 1841 Pre-Emption Act legitimized the farmer-trespasser on the public domain. In 1849 the Department of the Interior was created and the General Land Office, which supervised land sales and homestead claims became its major unit. (Thomas 1999)

Out of necessity, the rancher pastured his stock on public domain adjacent to his private holding, a local custom, developing a “range right.” But there were no fences, no laws to spell out ownership of a specific range and no legal way to keep newcomers from crowding in and overstocking the land. Experienced ranchers could not keep newcomers from moving in and by 1885, they were thoroughly alarmed. They knew the arid grasslands couldn’t support ever-growing numbers of cattle and sheep, especially in drought years. Most of the federal lands were historically used by livestock, yet the government failed to make provisions for stock raising. This resulted in too many people trying to use the same lands. Local stockmen’s organizations were created to try to bring order, but only partially worked because they had no force of law behind them. Competition for the forage forced abuses that would never have happened. Destruction of the range was a tremendous loss, not only to stockmen of that day, but to those who followed. By 1936, 25 million acres of range had been plowed and abandoned; 50 million more acres of good range became marginal cropland, hastening erosion. Because all activities required the use of horses, the demand for these domestic animals increased accordingly. While most of these animals were imported during the early years, they were also being raised in large numbers in most areas of the state.(Thomas 1999)

By the mid-1870s there were sufficient horses in the State of Nevada to meet all the local needs, and in addition, a surplus, which was used to meet the demand in other states. At this point in time, export of Nevada horses became an important economic consideration for ranchers. A majority of these animals were raised on the open range, and therefore commonly referred to as “range horses”. While they may have been free roaming because of the lack of fences, they were neither wild nor unowned.

The business of raising range horses in Nevada, most of which were exported, was extremely prosperous during the 1880s. The price for these animals generally ranged between \$30 and \$100 each, depending on the size, age and quality. Large numbers of the animals were shipped to the mid-west and east by railroad, or driven in large bands to neighboring states. Because of the large number of horses living on the open range, little thought was given to those that escaped capture, particularly those considered of inferior quality. These “wild” bands of domestic horses increased significantly during this time period, largely because of the lack of natural predators, and noticeable lack of interest by most residents of the state.

Adding to the depleted rangelands, the winter of 1889-90 was one of the most devastating ever recorded in the State of Nevada, particularly for domestic livestock. It is estimated that over 75 percent of all the cattle and sheep in many areas of the state perished. Although range horses were also seriously affected,

they appear to have survived the harsh conditions and deep snow better than other domestic animals. The significance of this event relates to the fact that competition for forage on the open range during the next several years would be largely nonexistent, and the numbers of range horses would expand.

The increase in distribution and abundance of range horses throughout the Western United States during the 1890s was compounded by a significant decrease in demand for these animals. By 1894, most of the cities in the U.S. had established cable cars or trolleys as major modes of transportation, and many other types of modern mechanized equipment were being invented. By the mid-1890s, the price for most range horses had dropped to an average of less than \$5 per head. As the surplus of horses continued to increase, the price continued to decrease.

Due to the decrease in price and increase in abundance of rangeland horses, new markets were found for these animals in the mid-1890s. A rendering plant, for example, was established near Portland, Oregon, which resulted in the use of several thousand head of horses to make fertilizer, glue and other products. The source of these horses which were mainly from Oregon and Washington, but also from Nevada, Idaho and other states. Numerous horses were also killed for their hides and hair, which in 1895, hides sold for \$3.50, tallow for \$1.50 a pound and hair (tails and manes) for 15 cents a pound. Ranchers and farmers throughout the west were also slaughtering excess horses to be used for food for hogs. A large number of horses were also used to supply the European market for horse flesh, which was considered at the time to be a delicacy in many of the European countries.

Largely because of the indiscriminate killing of rangeland horses by many parties throughout Nevada during the mid-1890s, the ranchers in the state became very concerned. Not only were unbranded range horses being killed in large numbers, but also branded and unbranded domestic stock as well. In an effort to resolve this issue, and protect the interests of the ranchers, the state legislature passed a statute in 1897 authorizing the killing of range horses, which required approval and a permit from the county commissioners as a prerequisite.

Partly as a result of the 1897 statute, and also because of the large numbers of range horses found throughout Northeastern Nevada, a rendering plant was established near Elko in 1898. Approximately 5,000 head of horses were purchased for the operation, with prices ranging between \$1.50 to \$3 for each horse captured and sold. The plant was only in operation for about one month, however, before it was permanently closed, with the remaining horses being branded and turned back on the public lands.

By the turn of the century, there was a slight increase in the demand for range horses because of several worldwide events. The United States, for example, was involved in the war effort of the Philippines, which resulted in the demand and sale of horses to the U.S. Cavalry. Of even greater significance, however, was the Boer War of the British Government in South Africa, an effort which eventually resulted in the demand for 350,000 head of horses, most of which came from the Western United States. It was reported that the British Government needed such a large number of horses because those that were shipped to South Africa would normally contract a disease and died within six weeks. Whatever the reason, the price of horses in Nevada jumped from about \$3 a head to over \$10 a head in a short time.

Partly because of the increase in value for range horses, but mostly because of the concern expressed by ranchers, the statute which allowed the indiscriminate killing of range horses on public lands was repealed by the Nevada State Legislature in 1901. The resultant protection that the horses would receive during the next few years, because of this initiative, would again result in increases in population numbers in many areas of the state, and rekindle concerns of the public relative to range conditions, and need for the forage to raise livestock that was considered more valuable than free roaming range horses.

The United States Forest Service Reserves were established in Nevada between 1905 and 1911, not for the purpose of protecting or planting trees, but largely to provide needed protection for rangeland resources. Rangeland horse populations were once again on the increase, and there were few controls in place for cattle and sheep operations. Local ranchers were largely supportive of the Reserves, since nomadic sheep operators, many of whom were not citizens of the United States, operated on a first come first served basis. It was recognized that if grazing was to continue on the Nevada ranges, there needed to be some protective measures established. While domestic livestock grazing practices were improved during the first few years, little was done to control the range horse populations.

Because of the continued increase of range horses throughout much of the state, the Nevada Legislature again passed a statute in 1913 which allowed the killing of horses on public lands. As in 1897, any person pursuing such activity was required to obtain a permit from the county commission which had jurisdiction. At this point in time, however, the county commissioners were not so generous with the permits, and for the most part, issued permits only to ranchers in the area or to other individuals that were able to obtain support from the local ranchers.

By 1926 the United States Forest Service (FS) in cooperation with the livestock industry, and with the support of the general public, had established reasonable control over the use of domestic cattle and sheep on the National Forests (name changed in 1907), but remained concerned about the numbers of rangeland horses. In order to address this issue, an order was issued by the Secretary of Agriculture on April 16, 1926 closing the National Forests to all domestic horse use from July 1 through September 30 of the same year. Because it was known that the horse populations were intermixed with domestic horses allowed to run free, it was determined that after allowing the ranchers enough time to remove their branded horses, the remaining animals would also be removed by whatever means was most feasible.

The roundup on the Toiyabe Mountain range began during July of 1926, and after several days of pursuing horses in the rugged terrain, only 142 animals were captured alive. Because of the time and cost involved, and recognizing there was no market for the animals, the agency employed government hunters, who then completed the task by shooting an additional 1,128 horses and five or six burros. The following year an additional 1,046 horses were killed in Ione Valley, lowland area immediately west of the Forest Reserve. At the time, it was estimated that approximately 20,000 additional free roaming range horses continued to inhabit the public lands of the Nevada, most of which were not on the Forest Reserves.

Largely because the horses in Nevada were not a native or wild animal species that evolved over a long period of time, there were no predators in the state that could control population numbers with any degree of success. What predators remained were hunted and killed by "Animal Damage Control" (ADC),

agents and ranchers to protect their livestock. ADC is a branch of government under the agriculture department formed to target threatening animals to the livestock industry. Those animals that could threaten the lives of cattle and sheep by grazing on public lands are eliminated thus also eliminating the predatory animal to the wild horses. That effort for wild horses had to be accomplished by humans, and then only within socially, economically and politically established bounds. It was soon learned that the general public of the United State did not approve of the indiscriminate killing of what were now known as “wild horses” by government agents.

The control of horse numbers on the public rangelands in Nevada continued under the authority of state law, and via county commission jurisdiction for about the next 50 years. Additional provisions were added to the statutes as public demand dictated, but for the most part, the focus of keeping populations in check remained the same.

During the 1950s, the methods to gather and dispose of wild horses by mustangers, ranchers and hunters were publicly exposed throughout the nation as being ruthless, indiscriminate and wholly inhumane. As a result of the public outcry which followed, major support for reform and the humane treatment of wild horses throughout the United States began and continues today. Nevada’s own Velma B. Johnston, later to be known as “Wild Horse Annie”, led the charge by mounting a fierce letter writing campaign for wild horse reform, that has only been exceeded by the written correspondence received by Congress over the Vietnam War. State and federal laws were enacted thereafter, which first prohibited use of aircraft and mechanized vehicles to gather and capture wild horses, and later provided for the establishment of three wild horse ranges in separate states, including the Nevada Wild Horse Range (1962) located within the Nellis Air Force Range in the southwest part of the state. Additional efforts towards federal legislation to protect, manage and control wild horses on public lands resulted in a bill being signed into law on December 15, 1971, by President Richard M. Nixon, as Public Law 92-195, now commonly known as, “The Wild Free-Roaming Horse and Burro Act of 1971”.

Rangeland horses of the Western United States were officially designated as “wild horses” with enactment of the Wild Free Roaming Horse and Burro Act in 1971 (ACT) and are therefore, so termed in the text of this plan. Prior to this date, the rangeland horse was considered a “feral horse”, meaning a wild state of existence for a domesticated animal. According to Berger (1986) the process of feralization is straightforward, it merely involves an animal’s fending for itself and given sufficient time, individuals that survive and reproduce with other survivors creates a gene pool for the population. The only true existing native horse in the world, whose ancestry is linked directly to present day domestic horses and wild horses, are the Przewalski’s horses which were endemic to ranges in China, Russia, and Mongolia prior to the turn of the century (Klimov and Orlov 1982). Przewalski’s horses today are presumed extinct from their native habitats and are found only in zoos, which number approximately 500 animals.

3.2 Current Wild Horse Management

Federal Legislation known as, The Wild Free-Roaming Horse and Burro Act (ACT) was passed by the U.S. Congress in 1971 (Appendix D). This ACT replaced the authority of state and local government with federal government jurisdiction. The ACT places the authority to manage wild horses and burros with the Secretaries of the Interior and Agriculture who in turn have delegated those authorities to the Director of the BLM and Chief of the FS. The ACT requires the BLM and FS to protect, manage and control wild free-roaming horses and burros on public lands at population levels that assure a “thriving natural ecological balance” under the multiple use concept. Congress has defined “thriving ecological balance”, as the balance on a long term sustained yield basis between wild horses and burro populations, wildlife, livestock and rangeland vegetation. The ACT applies only to wild free-roaming horses and burros on public lands administered by the BLM and FS, however, the ACT does have provisions for animals that stray from public lands to private lands.

The BLM in 1992 developed the “Strategic Plan for Management of Wild Horses and Burros on Public Lands”, that established long-term goals and objectives for the program recognizing these animals as part of the natural ecosystem and the biological, social and cultural attributes that they possess. The federal agencies manage wild horses and burros at the minimum feasible level to treat the animals as a wildland species and not as livestock. Management focuses on monitoring, removal of excess animals, preparing the animals for adoption through the Adopt-A-Horse Program, actual adoption process, compliance after adoption and finally titling after one year.

An Interagency Cooperative Agreement (1992) between the BLM and the FS in Nevada, provides for either BLM or the FS to be assigned through site specific agreements the responsibilities for wild horse and burro habitat areas overlapping the two agencies common boundaries. Generally, BLM conducts the contract helicopter gathers, adoption preparation and adoptions on these common boundaries and bills the FS for their cost share of the operation.

Present management responsibilities of the Wild Horse and Burro Program (WHBP) is under the authority of BLM’s Washington DC Office (WO), assigned by BLM’s Director to the Assistant Director, for Renewable Resources and Planning (ADRRP). The ADRRP has formed a steering committee made up of Associate State Directors from five states and a representative from the FS to provide input to the internal direction, guidance and oversight of the WHBP. The committee meets at least three times annually and is co-chaired by the WO and Nevada Associate Director representative (BLM/FS’s 10th & 11th Report to Congress, 1995).

A WHBP National Program Office (NPO) is in place with responsibility for National program administration, logistics, gathers, adoptions, and public information and education. NPO also reviews all practices, regulations, policies, and handbooks for consistency and elimination of conflicting guidance.

NPO is organizationally placed under the direction of the ADRRP, however, is physically located in Reno, Nevada. The NPO has established a liaison position in the WO to coordinate communication with all BLM customers including, Congress, The Administration, BLM State Offices, National advocacy groups, and the recently re-established National Wild Horse and Burro Advisory Board (Board).

The Board was re-established upon recommendations of the Pierson Report (1997) to advise the BLM director and FS chief on issues relating to the WHBP. The Board is authorized by Section 7 of the ACT and has been chartered four times (1972, 1986, 1990 and 1998, all two year terms) to advise the BLM and FS on possible solutions to major problems identified with the WHBP.

The Nevada BLM State Director and other Western State BLM Directors, who are administratively responsible for the WHBP within their respective states, report directly to the WO ADRRP for program direction, budget requests and final budget authorization. BLM State Offices build their budget submittals based upon the funding requests of their District Offices for costs of administration and management of the program within their respective districts. Approved State funding for the WHBP are normally appropriated to their Districts based on the percentages of the original funding requests.

The National budget for the WHBP, as reported by the DOI's 10th and 11th Report to Congress (1995) for fiscal years 1992-1995, has averaged between 16.2-17.7 million dollars. Of this total the BLM in Nevada received approximately 20% (3.2-3.4 million) for management of the wild horse program in Nevada. While it is estimated that Nevada has approximately 60-64% of all the wild horse populations in the Western United States and appears to only receive a small portion of the budget, this is very misleading. The Eastern States office that conduct adoptions in the eastern states is funded entirely from the total wild horse budget, not the Nevada budget. Eastern States do not contain wild horses, the funds they receive are necessary to hold, promote, and service the adoption of mostly Nevada wild horses. In addition, positions on the Washington office level that devote their time to Nevada's horse program are not attributed to Nevada's budget. It is therefore impossible to determine the exact percentage amount of funds allocated to Nevada's wild horse program. (Woosley, pers. comm.,1998).

3.3 Wild Horse Distribution

The ACT of 1971, authorized the identification of wild horse herd areas (HA), sanctuaries and ranges by BLM, and in the case of the FS, herd "Territories", from 1971-80 to recognize the approximate location of horses eligible for protection and management under the ACT by utilizing the best information available at that time for establishing boundaries. During the period 1980-88, BLM under the ACT's enabling regulations of Title 43-Code of Federal Regulations (CFR's) Part 4700, developed and identified horse habitat areas for the long-term management basis and termed them "herd management area" (HMA). Establishment of HMAs as well as "interim numbers" of wild horses and burros for HMAs was accomplished through either the public Land Use Planning process (LUP), the Coordinated Resource Management Process (CRMP) which was composed of various public interest groups, or by court decisions..

A HA or Territory is defined as the geographic area identified as having been used by a herd as its habitat at the time the ACT was passed of which boundaries are not subject to change, compared to an HMA which reflect where the animals are located and managed for today and who's boundaries can be increased, decreased or eliminated through the land use planning process as long as they do not exceed the original boundary of the HA. Since passage of the ACT the BLM has been evaluating HMAs to ensure that a herd's complete yearly use area is contained within the designated HMA, and if not, to achieve by

combining one or more HMAs into one HMA complex within the HA boundary.

The Nevada BLM Office as of September 30, 1997, reports a total of 116 HAs within their state jurisdiction, of which 97 have been designated as HMAs while 19 HAs have been zeroed out as non viable herd areas. In addition, the California BLM Office has jurisdiction within Nevada for 10 Ha's, all of which are termed viable HMAs in the northwestern corner of the State. The FS reports jurisdiction of 17 horse Territories within Nevada of which 13 are actively managed as viable horse areas and 4 are zeroed out as non viable herd areas. The total number of HMAs in Nevada under BLM's management jurisdiction amounts to 107, while the FS has state jurisdiction for 13 Territories. The combined horse management areas under federal agency control totals 120 as reported by the DOI's 10th and 11th report to Congress (1995) for fiscal years 1992-1995. Figures 1 and 2 depict the BLM's statewide HMAs and FS Territories boundaries, respectively (pages 18 & 19).

The Nevada Wild Horse Range established in 1962 and mostly within the Nellis Air Force Bombing Range in southern Nevada, is the only wild horse range so designated in the State. BLM has a agreement in place with the United States Air Force which allows them limited access to the Range for wild horse management purposes. There are no wild horse or burro sanctuaries designated within the State of Nevada. However, there is a dedicated range for burro use, the "Mariette Burro Range."

3.4 Wild Horse Population Trends

The BLM and FS is required by the ACT to maintain a current inventory of wild horses on given areas of the public lands in making their determinations as to whether and where an overpopulation exists and whether action should be taken to remove excess animals; determine appropriate management levels on these areas and to determine whether appropriate management levels should be achieved by the removal of excess animals. BLM and FS regulations to achieve these mandates of the ACT are codified by 43 CFR Part 4700.01 through 4770.5, and 36 CFR 222 Subpart B 222.20 through 222.36, respectively.

Methods to determine wild horse and burro populations since the early 1970s, have employed various techniques over time to census populations. Use of vehicles in ground counts and marking and recounting of marked animals (Lincoln Index) provided limited success in estimating annual animal numbers and establishment of population trends. Use of contract helicopters for census by BLM in 1973, to survey known HMAs and Territories during specific periods of the year, provided for the establishment of the most accurate and reliable method to date of population estimation. This census method was recommended by the National Academy of Sciences, which had been field tested and employed by the Nevada Division of Wildlife as their standard big game census method. BLM's goal in the census is to survey at least a third of all HMAs every year and during the off-years to utilize the average recruitment rate of a particular herd to extrapolate an estimated herd population for those HMAs not flown. Nevada's estimated biennial wild horse populations for the years 1974-1996 as reported by BLM and FS are shown in Table 4. These reported figures are broken out by Nevada and California BLM and FS Districts which have administrative responsibilities for wild horses within Nevada.

Table 4 Estimated Biennial Wild Horse Populations in Nevada 1974-1996

Year	Including Foals			FS	All Totals
	BLM-NV	BLM-CA	BLM-Totals		
1974	20,000	2,497	22,497	1,174	23,671
1976	22,258	3,521	25,779	1,305	27,084
1978	31,800	3,080	34,880	1,042	35,922
1980	31,260	2,412	33,672	951	34,623
1982	26,050	2,764	28,814	1,139	29,953
1984	29,642	3,418	33,060	490	33,550
1986	29,853	1,960	31,813	571	32,384
1988	27,015	1,461	28,476	560	29,036
1990	30,798	1,453	32,251	1,152	33,403
1992	31,650	1,674	33,324	1,240	34,564
1994	25,170	1,877	27,047	746	27,793
1996	22,173	1,754	23,927	746	24,673

Notes:

1. Data as reported from DOI BLM 8th, 10th, and 11th Reports to Congress on Administration of the Wild Free-Roaming Horse and Burro Act.
2. All population estimate totals by biennial year includes foals under six months of age.

Since passage of the ACT in 1971, the issue of how many wild horses and burros to manage for on the public rangelands has been and continues to be extremely controversial, with the argument of equitable forage allocations among livestock, wild horses and burros, and wildlife of paramount concern. Public law was, and is, currently absent to address how to establish forage allocations among these grazing species. The ACT established "appropriate management level" (AML) as the term for numbers of wild horses or burros in HMA's or Territories, designated as in balance, with other users under the multiple use concept. Shortly after passage of the ACT, the BLM and FS conducted some form of census to establish baseline numbers of wild horses in HAs, HMAs or Territories. In most cases BLM districts used baseline numbers synonymously with AMLs. During the late 1970s and 1980s in Nevada, interim numbers of wild horses and burros were established for the HMAs through the LUPs and CRMPs or court order and by the early 1980s interim numbers represented approximately 22,000 animals statewide. In 1984, a district court ruling (*Dahl v. Clark supra* at 592) found that BLM was not required to manage wild horse and burro population numbers at 1971 levels. But rather they were to manage population numbers at AML, which was meant to be the "optimum number" of wild horses which resulted in a thriving natural ecological balance and avoided a deterioration of the range. This was to be determined through an intensive rangeland monitoring process involving studies of grazing utilization, trend in range condition,

actual use, and climatic factors, then run through a public review process, which at that time was being developed by a group of BLM Nevada staff personnel and wild horse advocates. The group finished their task of developing the public rangeland monitoring process which is known today as the Allotment Evaluation/Multiple Use Decision (MUD). This particular process was designed and is consistent with the objective of achieving and maintaining a thriving natural ecological balance and multiple-use relationship in a particular herd area.

The Interior Board of Land Appeals (IBLA) on June 7, 1989 (decision document 109 IBLA 112) ruled in accordance with section 3(b) of the ACT, “ that BLM could not authorize the removal of wild horses in order to achieve an AML which had been established for administrative reasons, rather than in terms of the optimum number which results in a thriving natural ecological balance and avoids a deterioration of the range”, and that “BLM must establish that removal is warranted in order to restore the range to a thriving ecological balance and prevent a deterioration of the range threatened by an overpopulation of wild horses”. As a result of this ruling, the BLM in Nevada chose to adopt the MUD process with public input to set AML for wild horse and burros and grazing management levels for livestock and wildlife.

The BLM Resource Advisory Councils (RAC), of which there are three established for the State of Nevada, including the Mojave-Southern Great Basin Area, Sierra Front-Northwestern Great Basin Area and the Northeastern Great Basin Area, makes recommendations to the BLM for the standards and guidelines pertinent to monitoring of rangeland health.

The FS uses the Forest Planning process or environmental analysis to determine standards and guides of setting wild horse numbers on their established Territories which is separate from what BLM uses.

Since 1990, the percentage of AMLs fully established in Nevada for identified HMAs or Territories using the MUD process amounts to approximately 48% for BLM and even less for the FS. Approximately 52% of BLM’s Nevada AMLs are yet to be set by the MUD process, however, BLM’s goal is to have all AMLs established by the end of fiscal year 2003.

The reported AMLs for BLM’s HMAs may be misinterpreted since their totals do not clarify the number that have been established by the required MUD process versus those established by other processes. This is particularly so for the 1997 Nevada data, since only 48% (approximately 8,060) of state wide AMLs are shown to have been established through the MUD process adopted by BLM for Nevada or by court order. The remaining 52% of referenced AMLs are either the interim numbers used from the LUPs, CRMP or are only partly allocated for a few allotments through the MUDs.

The BLM’s 1998 Nevada herd area statistics, from which HMA and AML data are reported, is shown in Appendix E entitled, Nevada Herd Area Statistics 1998.

The annual wild horse recruitment rate in Nevada, as reported by BLM during the last 25-year period, has ranged between 15 to 25 percent dependent upon environmental conditions and herd numbers. Low recruitment rates in general are experienced during below average precipitation periods while high rates are reported after several years of above normal precipitation rates. As an example, the recruitment rate

in Nevada for 1997, as reported by BLM, was approximately 24 percent after three years of above normal precipitation rates. High recruitment rates have also been recorded for HMAs and Territories the year immediately after gathers.

3.5 Adoption Trends

The BLM implemented its Adopt-a-Horse-Burro Program in the early 1970's to place "excess animals" removed from public lands into the hands of qualified private citizens. This adoption process allows the BLM and FS to place (adopt) excess animals in meeting their legal mandates to set, reach and maintain AMLs for HMAs and Territories, while providing for a thriving natural ecological balance under the multiple-use concept for the public lands.

Prospective adopters are screened for suitability to adopt a wild horse or burro by making advance application, and, if approved, qualified adopters pay a \$125 adoption fee for each animal. At many adoptions, more qualified adopters have been present to adopt animals than were available for adoptions, i.e.: approximately 600 adopters for 200 horses (Lexington, KY, 1996), approximately 500 adopters for 162 horses (Boise, Idaho, 1997), and approximately 200 adopters for 75 horses (Washington State, 1996). Under this scenario BLM used a lottery system and only the first people to draw low numbers at that adoption would be allowed to adopt. In addition, if they were lucky enough to obtain a low number, they were only allowed to adopt one animal as there weren't enough to go around. This created a hard situation as many adopters attended multiple adoption events and never drew a low enough number to obtain a horse and even if they did...the horse of their choice may be gone by the time their number was called. To help alleviate this and under the same adoption criteria, BLM has initiated an "auction" system wherein adopters may bid on the same horses to better their chances to obtain the horse of their choice. In this way, the price rose for the horses, the adopter was able to bid high enough to obtain their horse of choice, and the wild horse program realized more income to the adoption program. The adopter, at the time of adoption, is required to sign a Private Maintenance and Care Agreement which commits the adopter to provide humane care of the animal; and after one year of humane treatment, the adopter may receive title. Upon titling, the animal becomes private property and loses its protected status under the ACT. A total of four animals may be adopted per year by a qualified adopter.

The BLM and FS utilizes contract helicopter services in Nevada from July 1 through March 1, each year. This is the prime gathering periods to remove excess wild horse numbers from HMAs and Territories. In some cases, where environmental conditions warrant, water trapping may be used as the preferred gather method. When gathers are in progress, on site BLM and /or FS wild horse specialists monitor the operation to ensure safe and humane treatment of the animals, while a Nevada Brand Inspector provides the brand inspection services. Captured animals are aged and sexed at the trap site then transported in most cases to the National Wild Horse and Burro Center, located in Palomino Valley 20 miles north of Sparks, Nevada, for adoption preparation and shipping. While at this facility they are freeze branded, immunized for major horse diseases, wormed, Coggins tested for Equine Infectious Anemia, and are segregated by age and sex. Adoptable animals are held at the Palomino Valley facility for up to six weeks then are transported by truck (within a 24-hour period) to the Elm Creek, Nebraska holding and adoption center. Animals may be adopted from this facility or after two to four weeks transported to BLM's

Eastern States Holding Facility in Cross Plains, Tennessee for adoption. BLM also conducts “satellite adoptions” at some 40 temporary sites located mainly in the eastern states, of which animals may be shipped to from the Cross Plains Holding facility or from other preparation, holding or distribution centers across the country (Culp Report, 1997). The prime time for adoptions as experienced by BLM has proven to be mid-March to July. The average time period from gather to actual adoption averages 150 days, with the best being 75 days.

During the past five year period, Nevada has gathered between 5,100 to 6,700 animals per year. During fiscal year ‘98, sufficient funds are budgeted to gather another 5,000 animals. As reported by BLM’s Culp Report (1997), the average total costs for gather, preparation, transportation to Eastern States, feeding and adopting out a wild horse is \$1,100 per animal. The current average cost alone to gather each animal is approximately \$300. Humane treatment of the animals is a prime consideration throughout the gather, preparation and adoption process.

Nevada’s Palomino Valley facility has a maximum storage capability of 1,500 wild horses or burros. The facility itself adopts out an average of 200 wild horses annually. However, approximately 95% of all animals gathered from Nevada are transported from Palomino Valley and placed with adopters in mid and eastern states.

Being that adopters generally prefer younger animals for adoption, BLM in Nevada since 1992, implemented a “selective-removal policy” which limited the removal of animals within HMAs to 5 years of age or younger and to nine years of age and under for animals outside HMAs; with the older aged animals returned to the HMA. This selective-removal policy, however in many instances, resulted in limited success of removing enough animals to achieve and maintain AMLs. As a result, BLM, in 1996, relaxed its selective removal policy to remove all animals 9 years of age and under from both within and outside HMAs, to better provide for achieving AMLs. Animals over 9 years of age are still returned to the HMA where captured or released to an adjacent HMA which is below AML.

While the ACT allows for the humane destruction of unadoptable animals, the BLM Director and FS Chief, by policy in 1982, placed a voluntary moratorium on the destruction of any healthy wild horse or burro and Congress, since 1988, in its annual Appropriation Bill to the Department of the Interior, specifically prohibited the destruction of any healthy horse. This is the main reason why animals over nine years of age are still returned to HMAs by BLM.

Research, by BLM since 1992, in Nevada has supported and implemented an experimental birth control method known as “immunocontraception” in an effort to reduce annual wild horse herd recruitment rates. This process involves inoculating mares at trap sites with a contraceptive vaccine that is effective for 1 to 3 years, dependent upon the number of shots given within a 30 day period. Initial results after one year have shown that 95.5 percent of the vaccinated mares from the same herd did not get pregnant. This research project is continuing today to develop a one shot birth control vaccine that will be effective up to three years, reducing program cost and the necessity of annual gathers for inoculations.

The Nevada BLM state office in 1993, implemented a Memorandum of Understanding (MOU) with FS

Region 4, which states the FS is responsible for all legal documentation to remove wild horses within their jurisdiction and that FS will reimburse BLM for all costs of capture, preparation and adoption of animals from FS lands. A similar MOU exists between BLM and the National Park Service to cover management of wild horse and burros in the Lake Mead National Recreation Area located in Nevada and Arizona.

Table 5 depicts the number of wild horses gathered in Nevada by BLM and FS and adopted through BLM's Adopt-A-Horse program. Nevada wild horse compliance inspections and titles issuance, for the period 1974-1997, are reported in the table from DOI BLM Nevada Land Statistics, DOI BLM reports to Congress on the Administration WHBA, and from NPO's Aspen/2 data base.

Table 5 BLM and FS Nevada Wild Horse Removals, Adoptions, Compliance Inspections, and Titles Issued by Fiscal Year for the period 1973-1997

Year	<u>Removals</u>			<u>Adoption In</u>		<u>Compliance</u>		<u>Titles</u>
	NV-BLM	CA-BLM	FS	NV	Other states	Insp. NV	NV	
1973	0	0	0	0	0	0	0	0
1974	7,412	0	0	0	0	0	0	0
1975	5,588	0	0	0	0	0	0	0
1976	1,893	0	0	0	0	0	0	0
1977	4,461	0	0	0	0	0	0	0
1978	5,522	0	0	0	0	0	0	0
1979	1,705	0	0		1,705	0	0	0
1980	4,276	0	0	1,296	2,253	0	0	0
1981	3,672	1	0	1,713	2,111	0	0	0
1982	2,909	3	0	949	1,265	0	0	0
1983	2,533	3	94	355	796	54	98	
1984	1,410	1	0	345	1,264	19	197	
1985	10,441	1	122	3,320	4,072	21	259	

1986	8,189	320	0	254	6,978	9	32
1987	6,600	396	0	95	6,151	17	64
1988	2,796	103	0	213	2,395	78	77
1989	1,258	527	0	93	1,050	38	106
1990	2,930	282	0	89	2,138	138	110
1991	3,060	212	62	754	2,306	405	49
1992	3,603	203	0	286	3,317	455	249
1993	4,632	282	57	152	4,480	228	453
1994	4,881	199	0	209	4,672	142	174
1995	5,637	257	18	172	5,465	149	248
1996	4,497	333	0	104	4,393	147	153
1997	5,957	1	0	179	5,778	131	123
Ttl.	105,862	3,124	353	10,578	62,589	2,031	2,392

Notes:

1. Data for 1973-1991 is from DOI BLM's Nevada Public Land Statistics.
2. Data from 1992-on is from DOI BLM 10th & 11th Report to Congress on Administration of the Wild Free-Roaming Horses and Burros Act and NPO's Aspen/2 data base.
3. The 1973-77 fiscal year was July 1 through June 30th; for 1978 and beyond Oct. 1 through Sept. 30th.
4. Removals reported for 1974 through 1977 were claimed by private persons.
5. The 1973-97 figures reported as adoptions in other states, excludes totals for animals brand claimed, turned back, sick, lame and destroyed animals, and animals carried over/forward at PalominoValley facilities after close/start of the fiscal year.

4.0 IDENTIFYING ISSUES IN THE WILD HORSE PROGRAM

4.1 Federal Reports-Issues And Recommendations.

A number of the DOI's internal written reports over time have documented management problems with the WHBP since inception of the program in 1971, of which various recommendations have been made to resolve these problems. These reports are listed by name as follows:

- 1) *Rangeland Management, Improvements Needed in Federal Wild Horse Program.* Report to the Secretary of the Interior. U.S. General Accounting Office (GAO/RCED-90-110) August 1990.
- 2) *Strategic Plan for Management of Wild Horses and Burros on Public Lands.* BLM June 1992.
- 3) *White Paper for the Wild Horse and Burro Program.* BLM August 1996.
- 4) *Wild Horse and Burro Evaluation.* BLM (Pierson Report) January 1997.
- 5) *Audit Report, Expenditures Charged to the Wild Horse And Burro Program.* DOI-OIG

(Report No. 97-I-375) February 1997.

6) *Wild Horse and Burro Adoption Program - Policy Analysis Team Report*. BLM (Culp Report) April 1997.

7) *Audit Report, Management of Herd Levels, Wild Horse and Burro Program*. DOI-OIG (Report No. 97-I-1104) August 1997.

In addition to those reports as listed above, The National Wild Horse and Burro Advisory Board has been convened a total of four times (1972, 1986, 1990 and 1998) at the request of the Director of the BLM to solicit the Board's input and recommendations for resolution of those management issues of national concern within the WHBP. The Advisory Board has issued two Reports, December 1986 and January, 1992.

A considerable number of recommendations were made in these reports to resolve identified issues, some of which the BLM and FS have implemented, some that are on going, and some that are in various stages of implementation.

4.2. Commission Sponsored Public Forums In Nevada

The Commission traveled throughout the State of Nevada for the purposes of conducting public hearings on the issues surrounding the management of wild horses and how the citizens of Nevada were affected. The Commission then conducted two workshop sessions on consensus building. The results of these sessions are set out in complete detail in Appendix C.

Public Forum consensus by the various user groups concerning issues and problems identified with the present wild horse program were expressed as common user themes as follows:

- *Rangeland Health must be considered the most important goal in management of the public rangelands;
- *HMAs must be clearly delineated to encompass the entire yearly use areas of wild horses;
- *Emphasize the evaluation of horse habitat areas by quality rather than quantity;
- *Set, reach and maintain AML and HMA objectives for the short and long term periods;
- *Wild horse program must be habitat/resource driven recognizing multiple use concepts;
- *Healthy wild horse bands must be the result of the implemented management program;
- *Expansion of the adoption program outlet and elimination of the pipe-line blockage needs to

be addressed and rectified for the program to be efficient;

*Other alternatives for placement of unadoptable horses must be found;

*Humane methods of handling and placement of wild horses is of paramount concern;

*The wild horse program must emphasize strong public involvement and public education by use of designated sites, liaison and cooperation amongst all pertinent state/federal/local agencies and concerned public;

*A strong marketing/promotion program for Nevada wild horses needs to be developed;

*Tourism promotion and coordination amongst state/federal agencies is needed for the wild horse program;

*Progress and the success of the wild horse program must be tracked by a strong monitoring program; and

*Adequate funding and manpower at both Federal and State levels must be secured and put in place to effectively manage wild horse herds in Nevada as required by law.

A summary of those major issues identified above which are of major concern to the citizens of Nevada are as follows:

4.2.1 Rangeland Health

Public participation in the preparation of this Plan revealed unanimous consensus amongst user groups in Nevada, that the base resources of land, water and vegetation are of the upmost importance for consideration in the planning and management of the public lands. The Rangeland Health statement, prepared by the Public Forum Group was stated as, "Shared vision and implementation of balanced management that meets the needs of all multiple uses and is focused on maintaining or improving rangeland conditions to meet or exceed the needs of today and into the future". This same group emphasized that quality of rangelands identified as equid habitat was equal or more important than the quantity of the area delineated. All users realize that the future of their interests on the public lands is dependent upon maintenance and improvement of rangeland conditions and that the quality and quantity of these rangelands are the ultimate factors that will determine the number of grazing animals that can be accommodated by the land. Plan success indicators of rangeland health will determine if short and long term objectives are being met, and if not, what adjustments are required.

Approximately 87 percent of the land acreage in Nevada is comprised of public lands administered by the Secretary of the Interior through the BLM or by the Secretary of the Agriculture through the FS. Wild horses and burros receive protection under the ACT only on public lands administered by the BLM and the FS. If wild horses or burros stray from public lands onto privately owned lands, the owners of such land may inform the Secretary or his agent, who shall make arrangement to have the animals removed. Coordination and collaboration with the BLM and FS by the Commission in their advisory role, is essential in meeting their duties as specified by NRS 504.470 which is to preserve and maintain viable herds of wild horses on public lands within the State of Nevada.

4.2.2 Herd Management

Wild horse HMAs or Territories and AMLs within HAs are objectives of driving force pertinent to all subsequent management actions of the wild horse program. These objectives and their consideration must be viewed as the first step building blocks for the proper management of the wild horse resource. BLM and FS, being the responsible federal agencies for management of wild horses on public lands, are required and guided in establishing these objectives as delineated by the ACT, FLPMA, NEPA, MUD, allotment evaluation processes and Forest Planning. Adherence to these various federal acts and their planning processes will assure that the evaluation of HMA or Territory and AML objectives within HAs have been developed under the multiple use concept which will perpetuate and protect viable wild horse populations on public lands. The user public expects the federal government with input from state and local governments and the public, to attain AMLs on consolidated, more effectively managed HMAs and Territories within HAs with greater program efficiency and less conflict, while improving resource conditions and better involving and educating the public. The Commission in its advisory role is expected to participate, coordinate and provide recommendations to the land management agencies and state legislature in all program actions to preserve and efficiently manage wild horse populations in Nevada.

4.2.3 Animal Removal and Placement

Since inception of the ACT in 1971, BLM through experience and legal constraints found that gathering and offering for adoption to the general public certain age classes of wild horses, was the most effective humane removal method for HMAs in excess of the established AML. Gathering and adoptions of excess numbers of young age animals (9 years of age and under, BLM's current selective-removal policy) is geared to maintain conducive herd population levels in harmony with good rangeland health under the multiple use concept. Conceptually this method seems acceptable, however, in reality this method does not address the problem of placement of excess numbers of the older-age animals where populations still exceed AMLs. The gather and adoption program at the present time appears to be the driving force of funding expenditure and direction of the wild horse program, rather than wild horse management to achieve and maintain AMLs in the designated HMAs and Territories.

BLM's other alternatives for placement of excess unadoptable numbers have run into problems at the present time. These alternatives included humane destruction, placement in wild horse sanctuaries and utilization of fertility controls. Humane destruction of excess animals, although, allowed by the ACT, has been prohibited by Congressional Appropriations Act language since 1988, because of public outcry. Federal sanctuaries have been tried in various states but have proven cost prohibitive and not a solution for placement of large numbers of animals. Fertility control studies to date have not resulted in measures that are successful beyond one breeding season with a one time contraceptive inoculation at capture sites. These present constraints, leave BLM with adoption as the only legal option available to place excess animals without changes in Congressional Appropriation Act language or changes in the Act itself. It is appropriate that the affected states develop goals, strategies and action recommendations to federal entities and state legislatures to overcome these constraints to allow BLM removal of excess unadoptable wild horses for attainment and maintenance of AMLs within designated HMAs and Territories. A strong public education and outreach program will be essential to meet these objectives.

4.2.4 Funding

Stability of Federal funding and associated manpower shortages have both been identified by the Nevada public scoping process, internal federal audits, and interviews with federal program employees as significant reasons for not fulfilling the goals and objectives of the wild horse management program nationwide. Fluctuating funding levels in Nevada has caused problems in accomplishing planned gathers to remove excess animals in an effort to reach AML. Funding fluctuation has also impacted the federal agencies monitoring program which are necessary to monitor range carrying capacity and forage utilization by class of grazing animal to determine adjustments needed in forage allocation by offending animals in attainment and maintenance of healthy rangelands. With Nevada's 1997 wild horse population reportedly exceeding AMLs, it is imperative sufficient funds for the short term and long term goals of population census, gathers and adoptions, be provided annually to achieve proper herd and rangeland health. While proper fiscal year funding procurement for wild horse management in Nevada, is primarily the responsibility of BLM and FS, it is in the best interests of the citizens of Nevada that the Nevada Legislature support federal funding requests by all manners possible. Scrutiny and accountability of the how these funds are applied in the wild horse program is also important to determine short and long term funding needs by program activity.

Senate Bill No. 211 approved by the Nevada State Legislature on July 16, 1997 , requires in Sec.9.1, that the Commission "shall prepare a statewide plan to carry out the provisions of NRS 504.430 to 504.490:, inclusive. The plan must also include an explanation of the manner in which the money in the Heil trust earmarked for wild horse management in Nevada, will be expended to carry out the Commission plan. Currently, as stipulated by NRS 504.450 this trust fund is a continuing fund without reversion and all money in the fund is invested in the same manner as other money of the state is invested. All principal and interest earned on the deposit of fund money is credited to this fund and may be used only for the preservation of wild horses in Nevada. The Director of the NDCNR, has the authority by statute to administer the interest and principal of the fund with the restriction that the principal not be reduced to less than \$900,000, unless the money is needed for an emergency and the expenditure is approved by the

legislature, if in session, or the interim finance committee, when not in session. The normal operating expense of the Commission is authorized to be paid from the interest earned on the fund balance, which includes the Commission's administrator's salary, per diem and operating costs to run the office in Carson City and printing of various informational items pertinent to the wild horse program in Nevada. The annual interest generated from this fund is approximately \$72,000 subject to current interest rates and principal balance. It is readily apparent that interest alone from this fund is inadequate to fulfill the Commission's duties for the management of Nevada's wild horse resources as required by provisions of NRS 504.430 to 504.490, inclusive.

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GLOSSARY

Activity Plan: A detailed and specific plan for managing a single resource program or plan element undertaken as needed to implement the more general resource management plan decisions.

Active Preference: The difference between grazing preference and suspended preference.

Active Use: Authorized livestock use for the current billing year.

Adjudication: The apportionment of grazing use on public rangelands among eligible applicants.

Allotment Management Plan (AMP): A livestock grazing management plan dealing with a specific unit of rangeland and based on multiple use resource management objectives.

Animal Unit: A unit of measure for rangeland livestock equivalent to one AUM based on the average daily forage consumption of 25 pounds of dry forage matter per day.

Animal Unit Month (AUM): The amount of forage needed to sustain one cow (with calf less than 6 months of age), one cow, bull, steer, heifer, horse, mule or five adult domestic sheep, goats, or four reindeer, all over 6 months of age for one month.

Appropriate Management Level (AML): Numbers of wild horses or burros designated as in balance with the herd management are under the multiple use concept.

Bachelor: A young male wild horse that has left the harem, or a old stallion without a harem.

Band: A small family group of wild horses made up of mares, foals, yearlings, and a guard stallion; synonymous to the term harem.

Biotic: The living components of an ecosystem including all plants and animals.

Carrying Capacity: The maximum stocking rate of grazing animals that a specific Rangeland area will support without damage to the vegetation or related resources.

Class of Livestock: Description of age or sex group for a particular kind of livestock, (e.g. cow, bull, calf, yearling, ewe, ram, lamb or horse).

Desired Plant Community (DPC): The plant community that has been determined through a land use or management plan to best meet the plan's objectives for a range site.

Ecological Site: A distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community.

Ephemeral Range: Rangelands composed mainly of annual growth plants and which does not consistently produce enough forage to sustain a yearly livestock operation.

Euthanasia: Humane method of killing or permitting the death of sick, injured, old, or unadoptable wild horses and burros.

Foal: An offspring of a stallion and mare up to one year of age.

Forage Allocation: AUM's of forage proportioned to grazing ungulates.

Genetic Uniqueness: Genetic differences in wild horse and burro herds that are readily distinguishable by visual inspection.

Habitat: The natural living space of plants and animals.

Harem: A band or family group made up of mares, foals, yearlings and normally guarded by a stallion.

Herd Area: The geographic area identified as having been used by a herd as its habitat in 1971.

Herd: All the bands of wild horses utilizing and expressing the same egress and ingress for the same particular living space.

Herd Management Area (HMA): Bureau of Land Management designated habitat boundaries of specific wild horse and burro herds which exhibits all their seasonal use areas.

Indicators: Observation or measurements of physical, chemical, or biological factors used to evaluate site conditions or trends, appropriate to the potential of the site.

Land Use Plan (LUP): A resource management plan developed through public participation under provision of FLPMA to establish management direction for resources on public lands.

Mare: A female horse that is old enough to mate.

Meta-population: All naturally occurring age classes and sexes of wild horses and burros in bands considered as one herd in any given HMA.

Monitoring: The orderly collection, analysis, and interpretation of resource data to evaluate progress towards achievement of management objectives.

Morphology: The form and structure of an organism with special emphasis on external features.

Multiple Use Decision: The Decision document combining monitoring and the evaluation and analysis of range data to determine the carrying capacity of the habitat.

Perennial Range: Rangelands composed mainly of plants which persist for several years or more and consistently produces enough forage yearly to sustain a livestock operation.

Rangeland Trend: The direction of change in ecological status or resource value rating observed over time for a given rangeland site or area.

Special Status Species: Plant or animal species listed as threatened, endangered, candidate, or sensitive by federal or state governments.

Stallion: A male horse that is old enough to mate.

Standards and Guidelines: Goals to be strived for in livestock management practices designed to achieve healthy public rangelands with success portrayed by specified indicators.

Territories: Forest Service designated habitat boundaries of specific wild horse and burro herds that exhibits all their seasonal use areas.

Utilization: The proportion of current year's forage production that is consumed or destroyed by grazing animals.

Yearling: A young horse between one and two years of age.