

Antelope Wild Horse Herd  
Management Area Plan

Schell Resource Area

Ely District



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Ely District Office  
Star Route 5, Box 1  
Ely, Nevada 89301



IN REPLY REFER TO:

4700  
(NV-043)

DEC 24 1987

Dear Reader:

Enclosed is your copy of the Final Antelope Wild Horse Herd Management Area Plan. Thank you for your interest and any comments you may have provided us in the development of this HMAP.

The final environmental assessment (EA-NV-040-4-40) for this HMAP is on file at the Ely District Office. If you would like a copy, we will be happy to send one to you upon your request. Contact Bob Brown, Ely District Wild Horse Specialist, at our office or call (702) 289-4865.

Sincerely,

Gerald M. Smith, Manager  
Schell Resource Area

1 Enclosure

1. Antelope Wild Horse HMAP (76 pp)

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## Antelope Herd Management Area Plan

### I. Introduction

Preparation of a wild horse herd management area plan designed to specifically manage the wild horses populating the Antelope herd area with multiple use taken into consideration was recommended by the Schell Management Framework Plan (Ely Bureau of Land Management, U.S. Department of Interior, 1983).

The Antelope Herd Management Area Plan (HMAP) is designed to effectively manage the wild horse population inhabiting the Antelope Herd Management Area (HMA) in accordance with Washington Office Instruction Memorandum 83-289, Title 43 Code of Federal Regulations, Part 4700, and Nevada State Office Manual Supplement 4730.6. The wild horse population will be managed as a component of the public lands in a manner that maintains or improves the rangeland ecosystem. The HMAP adheres to the multiple-use policy specified in the Wild Free-Roaming Horse and Burro Act of 1971 (P.L. 92-195) and the Federal Land Policy and Management Act of 1976 (P.L. 94-579), while maintaining the free-roaming behavior of the wild horses within the HMA.

This HMAP was developed in coordination with other resource users in the Antelope Area and coordinates the objectives of the other resources in the area.

In 1982, the Schell Grazing EIS outlined five objectives for the resource area. The Antelope HMA is subject to those objectives which are as follows:

1. Manage the vegetation resource and its uses to attain utilization rates not to exceed those recommended by the Nevada Rangeland Monitoring Task Force for sustained yield (45 percent for shrubs, 55 percent for grasses and forbs).
2. Attain and maintain habitat for reasonable numbers of wildlife, reestablish bighorn, pronghorn antelope, and elk on historic ranges, and protect crucial wildlife habitat.
3. Upgrade and maintain all riparian and wetland areas in good or better condition.
4. Maximize livestock based on sustained yield of the forage resource.
5. Maximize wild horse numbers based on sustained yield of the forage resource.

The Schell Resource Area Decision Summary and Record of Decision (BLM, 1983) outlined three objectives for wild horse management in the resource area:

1. Develop wild horse management plans for the six Herd Management Areas within the Schell Resource Area in the following priority order: Antelope Herd, Wilson Creek Herd, Dry Lake Herd, Seaman Herd, White River Herd, and the Moriah Herd.

2. Increase the availability of water and forage for wild horses. Wherever possible, year long water will be made available at all water sources within Herd Use Areas. Further, reservoirs that are fenced will be improved so wild horses may obtain water.

3. The initial stocking level for wild horses will be the number present in each herd area as determined by the 1983 inventory (303 for the Antelope Herd). In addition, the Record of Decision (ROD) accepted the proposed action, as modified, to establish the initial stocking rate for wild horses at the number present in each herd area as determined by the 1983 inventory, and to base future adjustments of the initial levels on adequate monitoring data or through agreement. The ROD also states that "Wild horse numbers to be managed for will be determined through consultation and coordination during preparation of the activity plans."

## II. Background Information

### A. Location and Setting

The HMA is located approximately 50 miles northeast of Ely, Nevada. A location map and a map of the HMA can be found in Appendix I (Map no. 1 and Map no. 2). The herd area is bounded on the east by the Nevada-Utah State line and on the north by the White Pine-Elko County line, which is also the Ely-Elko BLM District boundary. U.S. Highway 93 runs along the west side of the HMA and the Schellbourne Pass-Tippett Pass road forms the south boundary. The HMA encompasses 368,962 acres (359,180 Federal acres and 9,782 acres of private land) within the Ely District, Schell Resource Area. Private (patented) land is interspersed throughout the area. A land status map (Map no. 3) can be found in Appendix I.

The Antelope HMA lies just south of and adjacent to the Antelope Valley HMA (Elko District, Wells Resource Area). Each resource area is responsible for administration of its own herd. Because of this, the Antelope HMAP will address only those resource issues and management objectives as they pertain to wild horses within the Ely District. It will not address management

within the Elko District, even though there is considerable movement of horses between the two herds. A separate HMAP will be needed, to address management of the horses in the Elko District. This is in compliance with the Wells RMP/EIS Record of Decision. In the meantime, this plan identifies issues and objectives for herd management in the Ely District. All management of the Antelope wild horse herd will be coordinated with the Elko District prior to implementing any management actions affecting the wild horses in the Antelope Valley HMA.

## B. Resource Information

A complete discussion of the existing environment can be found in the Schell Resource Area Unit Resource Analysis.

### 1. Topography

Major valleys in the plan area are Steptoe, North Spring and Antelope Valleys. Major mountain ranges are the northern Schell Creek and Antelope ranges. The southern Boone Springs Hills and Black Hills are also familiar geographic features. No major streams flow in the plan area. Five small creeks (North, Chin, Middle, Sampson and Sharp) are located in the Antelope and Schell Creek Ranges.

Elevation ranges from 5,700 feet in the valleys to the 10,008 foot Becky Peak in the Schell Creek Range.

### 2. Climate

The climate of the Management Plan area is semi-arid. Temperatures range from  $-28^{\circ}$  to  $102^{\circ}$  F. The growing season is between 90 and 120 days. Prevailing winds are from the south-southwest in the summer, from the north in the winter. Average humidity is from 40-50%. Precipitation averages 8 inches in the valley floors and increases with rises in elevation to 16+ inches in the higher mountains with an overall average of 8-9 inches. (See Schell URA-2 for a detailed description of precipitation patterns in the area.) Some localized storms are quite intense and have caused flash flooding in Spring and Antelope Valleys. Desert shrubs which tap deep moisture reserves are dependent on the winter moisture whereas grasses and forbs are dependent on spring moisture available at shallow soil depths. Benefits from the precipitation are limited by a rapid evaporation rate. Annual free water evaporation rates range from 46-48 inches.

### 3. Soils

The soils of the Antelope Plan area reflect the extremes of elevation and topography. These vary from very shallow, extremely stony soils of the higher elevations, to very deep, gravelly soils, to nearly gravel free silty soils and playas of the lower valley floors. (See Schell URA-3 for a complete description of the geology and soils of the area.)

### 4. Minerals

Mining activity began in portions of the plan area as early as 1859. Four mining districts have been established within the area with numerous isolated prospect pits scattered throughout the area. Little activity is presently occurring but could pick up as demand and technology change. (See Schell URA-3 and 4 for a detailed description of mining districts, ore bodies and production potential.)

### 5. Recreation

Recreation in the area is limited, with hunting and trapping being the major recreational activities. Very little sightseeing or recreational horse viewing has been noted. This is probably due to the remoteness of the area. Some post and woodcutting takes place, particularly in the Antelope Range. An area on the north end of the Antelope Range has been set up as a commercial woodcut area. However, recreation and woodcutting presently cause no major disturbance to wild horses.

### 6. Water

The Antelope HMA is well watered in the upper elevations of the Schell Creek Range and North Antelope Range. In other parts of the plan area water is not well distributed or is lacking. Available water is provided via streams, springs, seeps, reservoirs, and wells. Map no. 4 showing existing waters can be found in Appendix I.

Where water currently exists, there appears to be little conflict in consumption needs between foraging animals. Problems center around poor water distribution in Spring Valley, the Black Hills, and South Antelope Valley, competition for space near isolated waters, seasonal availability of well water and vegetation associated with the water.

Water is available throughout most of the HMA, but poor water distribution is a problem which results in uneven use of available forage. The availability of water needs to be increased, and yearlong water should be made available at all water sources for horse use, wherever possible.

## 7. Vegetation

### a. Ecosystems/Plant Communities

Major ecosystems in the plan area are the pinyon-juniper woodland and the cold desert ecosystem. At higher elevations small, isolated communities of coniferous forest occur. The cold desert ecosystem is composed of two major vegetative zones - the shadscale zone and the sagebrush zone.

The pinyon-juniper zone, scattered throughout the area generally occurs at 6,000-8,000 feet elevation, between the shrub zone in the valleys and the conifer zone at higher elevations of the Schell Creek and Antelope Ranges. Stands of these trees vary in density from scattered to closed (solid) stands.

The shadscale zone is found mostly in the bottoms of the Antelope and North Spring Valleys. Plants in this zone must have a higher salinity tolerance than in other zones. Important plants in this zone are shadscale, winterfat, black sagebrush and black greasewood. This zone serves as important winter range for both wild horses and livestock, and year-round pronghorn antelope range. Despite the low productivity, the protein content of species within this zone is high. Continuous heavy utilization of the forage has occurred in the valley bottoms and around waters, particularly in Spring Valley. This can be readily seen by the heavy utilization on the winterfat (Ceratoides lanata) flats and riparian areas.

The sagebrush zone, which is scattered throughout the plan area, occurs between 5,500 feet and 7,000 feet elevation. Big sagebrush along with desirable perennial grasses and forbs occur in this zone. This zone is important to livestock as spring-fall range. Wild horses use this area for year-round forage. Mule deer use this zone year-round and it is especially important for winter forage. Sage grouse are dependent on this zone for nearly all aspects of the life cycle. Some stands of big sage can and have become very dense and closed.

The coniferous zone is generally located at 9,000 feet or higher. Large fir and pines characterize this zone; understory vegetation is sparse. Mule deer and wild horses use these areas in summer for forage and shading. Eagles, hawks, and blue grouse need this zone for nesting, wintering and roosting.



Throughout each of these zones, small riparian areas occur with seeps, springs and creeks. Vegetation found in these areas need wetter conditions than surrounding plants. Rushes, sedges, forbs and deciduous trees that rarely occur elsewhere are found on these sites. All large ungulates, small wildlife, wild horses and livestock, use these areas for water, shade, succulent forage and to pick up trace minerals from the different vegetation. Sage grouse chicks are especially dependent on these areas for insects and forbs until these are able to survive on a sagebrush diet. Some hawks, such as the Cooper's and Goshawk are dependent on these areas for nesting. Riparian areas are used by and are depended on by up to 97% of the non-game wildlife species that occur in the HMA. (See Schell URA-2 for a complete list of species associated with each vegetation zone.)

Trend studies are located on key areas throughout the HMA, but they have not been in place long enough to evaluate changes in range condition. Use pattern mapping has been completed annually in the HMA since 1985. Utilization is generally heavy to severe around water sources and in some locations in the valley. Utilization generally gets lighter with increases in elevation. Ecological site condition studies have been completed by management area throughout the HMA. Although some management areas are currently at the desired seral stage, most areas are not at the desired stage (see Appendix II).

#### b. Threatened and Endangered Plants

There are no threatened or endangered plant species known from within the Antelope HMA.

However, a plant, Thelypodium sagittatum var. ovalifolium has been located southeast of Becky Springs and south of Henriod Ranch. This species is on the State of Nevada's threatened and endangered plant species "watch" list. Species under this heading have no special status but are being monitored.

#### c. Poisonous Plants

Poisonous or noxious plants other than halogeton and larkspur are quite limited in the plan area.

### 8. Animals

#### a. Wildlife

About 363 species of wildlife occur in the Antelope HMA. This includes 75 species of mammals, 247 species of birds, 11 amphibians, 28 reptiles and 1 species of fish (Steptoe Dace). (A complete listing of species can be found in Schell URA-2.)

Several species of wildlife occurring in the area are quite important. Mule deer, pronghorn antelope, mountain lions, coyotes, bobcats and kit foxes provide the main game and furbearer species. Blue grouse, sage grouse and chukar (gray) partridge and cottontail rabbits constitute the major upland game species.

b. Threatened and Endangered Animals

Two species of wildlife within this plan area are on the Federal Threatened and Endangered Species Listing. Bald eagles, endangered, commonly winter in North Spring and Antelope Valleys.

Peregrine falcons, endangered, have been known to migrate through this area. No nests are known to occur.

Three species in the area are on the Federal list of species which may be proposed for threatened and endangered status.

Spotted bats, category 2, may occur in the plan area which is well within its range of occurrence.

Steptoe Dace, category 2, which occur in Lookout Spring (T. 26 N., R. 67 E., sec. 30, SESE) are on the State of Nevada's and the federal sensitive list.

Ferruginous hawks which are now on a Federal special concern list, category 2, nest within the plan area.

c. Livestock

Livestock grazing is an important resource use within the herd area. The herd area encompasses parts of seven allotments in the Schell Resource Area - Becky Springs, Chin Creek, Deep Creek, Goshute Mountain, Sampson Creek, Tippet and Tippet Pass. The extent of livestock use and grazing management on the first six allotments has the greatest impact on the Antelope Wild Horse Herd since the majority of the horses can be found there. Tippet Pass has very little use by the Antelope Herd wild horses. In addition, the HMA also falls within the boundaries of five allotments in the Egan Resource Area - Cherry Creek, Becky Creek, North Steptoe, Lovell Peak, and Schellbourne. Wild horse use is minimal on these allotments. Table 1 shows the livestock AUM's, season of use, and class of livestock for each allotment within the HMA.

Table 1. Livestock Operations in the Antelope Herd Management Area, Ely District.

<u>Allotment</u>	<u>AUM's Active Preference</u>	<u>Season of Use</u>	<u>Class of Livestock</u>
Becky Springs*	3,842	11/1 - 5/30	Cattle/Sheep
Goshute Mountain*	465	1/1 - 4/7	Sheep
Deep Creek*	2,083	Yearlong	Cattle
Chin Creek*	13,115	Yearlong	Cattle/Sheep
Sampson Creek*	1,592	3/1 - 6/30	Sheep
Tippett	13,615	Yearlong	Cattle/Sheep
Tippett Pass	8,177	Yearlong	Cattle/Sheep
Cherry Creek	7,040	Yearlong	Cattle
Becky Creek	671	6/1 - 8/3	Sheep
North Steptoe	700	3/1 - 3/31	Sheep
Lovell Peak	105	7/10 - 1/25	Sheep
Schellbourne	799	5/1 - 3/1	Cattle/Sheep

\* The entire allotment lies within the Antelope HMA.

The major external influence on this herd unit is livestock grazing. Competition for existing forage in the past was extreme, but in recent years voluntary reductions in numbers by livestock permittees has helped to reduce this competition between horses and domestic livestock. In 1980, only 25 percent of livestock grazing preference was activated with five permittees taking total nonuse. Active use has remained below preference since then.

#### d. Wild Horses

##### 1) Wild Horse Use History

Although it is not known exactly when horses first inhabited the Antelope HMA or what their early numbers were, it is evident that they have occupied the area for quite some time.

History of wild horses in the area before 1971 is sketchy and not very well documented. Approximately 100 horses resided in the Becky Peak area. Others were known to exist in the Chin Creek area, Antelope Valley, Dolly Varden, and Ferber Flat. It is known that some animals were trapped near Becky Spring in Horse Canyon prior to 1971.



Horses have always been a part of the range scene, at least since contemporary livestock use began. In several cases, homesteaders, ranchers, and miners would turn horses out on the range during the winter when weather prevented them from using horses for their occupational needs. In the spring, they would roundup, sort out, and keep those that were fit for work. Remaining horses would be turned out or sent to processing plants. Due to the natural tendency of domestic animals to go wild, many horses escaped and were never retrieved. There were always some horses left on the range.

There is some evidence that the Army Remount Service was active in at least part of the area. When they were in operation during the early 1900's through 1940, remount stallions of various breeds were released on the range to upgrade the existing herd. These stallions were mainly thoroughbreds or Morgans, but a few draft blood lines were introduced to develop a hardier strain for pulling supply wagons and heavy artillery. Native stallions were often shot to allow breeding dominance by the remount stallions.

## 2) Present Situation

The horses in the area of the Schell Creek Range primarily graze in Spring Valley (the area with the greatest concentration of horses in the HMA) during the winter and early spring; some also graze in Steptoe Valley on the west side of the Schell Creek Range and in Antelope Valley on the east side of the Antelope Range. Horses in this area will stay in the pinyon-juniper zone on the lower benches during the day and graze in the valley bottoms in the evening. During open winter when there is little snow on the Schell Creek Range and the Antelope Range, the horses will stay high on the open slopes and will not move down into the valleys. It is possible to see a few horses in this area at all different elevations during any time of the year, but the majority of the bands will follow a migrational pattern based on climatic and seasonal conditions. There is also movement of horses from the north end of Becky Peak and the north end of the Antelope Range into the Elko District. This movement is based on seasonal and climatic conditions when snow levels on these mountains force horses down into the lower elevations in the Elko District.

The horses in the area of the Goshute Mountains generally graze in the low, rolling mountains on a yearlong basis, and horses on the west and southwest sides of the Goshute Mountains move into Antelope Valley and graze there. During the summer months, horses in the Ferber Flat area in the Elko District move down into the Ely District closer to water. During the winter, when snow is available, they will move back into the Ferber Flat area. Horses occupying the Goshute Mountains move freely back and forth between the Ely and Elko Districts, and into Utah.

Even though general seasonal use areas are known, additional information is needed to accurately determine migrations and seasonal movement patterns, particularly between the Antelope HMA and the Antelope Valley HMA (Elko District). Map no. 5 showing general seasonal use areas can be found in Appendix I.

No census had been conducted on the HMA prior to 1971. The first aerial census was completed on the area in 1975. Subsequent censuses were conducted but were during a period when claiming operations were also being conducted. The results of these censuses are as follows in Table 2. The HMA is presently managed at 303 horses, the AML established by the Schell MFP and ROD, through periodic removals. A range needs to be established around the AML to minimize stress to the horses from too frequent of removal efforts. This would allow the herd to increase to the upper limit before removing animals down to the lower limit, resulting in fewer gathers over a greater time period.

The overall condition of the horses in the HMA is good. Occasionally a poor condition horse is found, its condition a result of lameness, old age, injury, parasites, disease, and/or nutritional deficiencies. Mares sometimes exhibit poor health after birthing and while nursing a foal. In extreme cases, a horse may become so debilitated that it is unable to reach areas offering the necessary forage, water, and cover required for survival. But the majority of horses in the HMA are sound, relatively healthy, and adapted to the type of environment they live in.

Wild horses in the Antelope HMA possess a variety of colors with variations from white to black and all shades in between. The herd contains a preponderance of sorrels and bays.

A large percentage of the bay and brown horses have lighter tones around the eyes, on the muzzle, and in the gaskin region. Table 3 depicts the color variations from the horses gathered in 1980.

Table 2. Antelope Wild Horse Herd Census Results

1975	Ely	275	Elko	127	Total	402
1978*	Ely	149	Elko	449	Total	598
1979	Ely	547	(includes 122 horses counted by Ely on the Elko District; but a complete census was not conducted on the Elko District)			
1980**	(Post gather census)					
	Ely	167	Elko	191	Total	358
1981	Ely	288	Elko	164	Total	452
1983	Ely	303	Elko	249	Total	552
1985	Ely	451	Elko	267	Total	718
1987***	(Post gather census)					
	Ely	782	Elko	366	Total	1,148

\* In 1978 an emergency postcensus removal of 41 wild horses was conducted at Ayarbe Spring because of severe drought conditions.

\*\* In January of 1980 a total of 711 horses were gathered off the Antelope Area by the Ely and Elko Districts to reduce combined overutilization of the vegetation resource by domestic livestock and wild horses. These gathers have helped to reduce the competition between horses and livestock for existing forage in the heavily used areas.

\*\*\* In September of 1986, 107 horses were removed from the Ely Antelope herd. There were 58 more horses removed from Ely's Antelope herd and 340 from Elko's Antelope Valley herd in February 1987. This census was completed after the horses were gathered and shows the number of horses remaining after the gather completion.

Table 3. Antelope Wild Horse Color Variations \*

<u>Color</u>	<u>Percentage</u>
Sorrel	45%
Bay	26%
Brown	8%
Buckskin	5%
Black	4%
Red Roan	3%
Red Dun	2%
Dun	2%
Strawberry Roan	1%
Blue Roan	1%
Gray	<1%
Grulla	<1%
Palomino	<1%
Chestnut	<1%

\* Percentage of color is based on averages from all horses gathered in 1980.

Based on the 1980 capture data the Antelope HMA population exhibited a sex ratio of 58 females to 42 males, with variations in any given age class. This appears to be a healthy sex ratio and does not present a management problem for the herd at this time.

Age distribution is an important population characteristic which influences both natality and mortality (Odum, 1971). Odum states further that the ratio of the various age groups in a population determines the current reproductive status of the population and the future of the population can be determined from the age structure. Populations can be divided into three separate ecological periods: prereproductive, reproductive, and postreproductive (Smith, 1974). Reproduction is restricted to particular age groups and mortality is more conspicuous to others. Smith suggests constructing an age pyramid (bargraph) for presentation of the age structure and subsequent analysis of the age ratios. This technique was utilized for depiction of the Antelope HMA population sample from the 1980 gather data (see Figure 1).

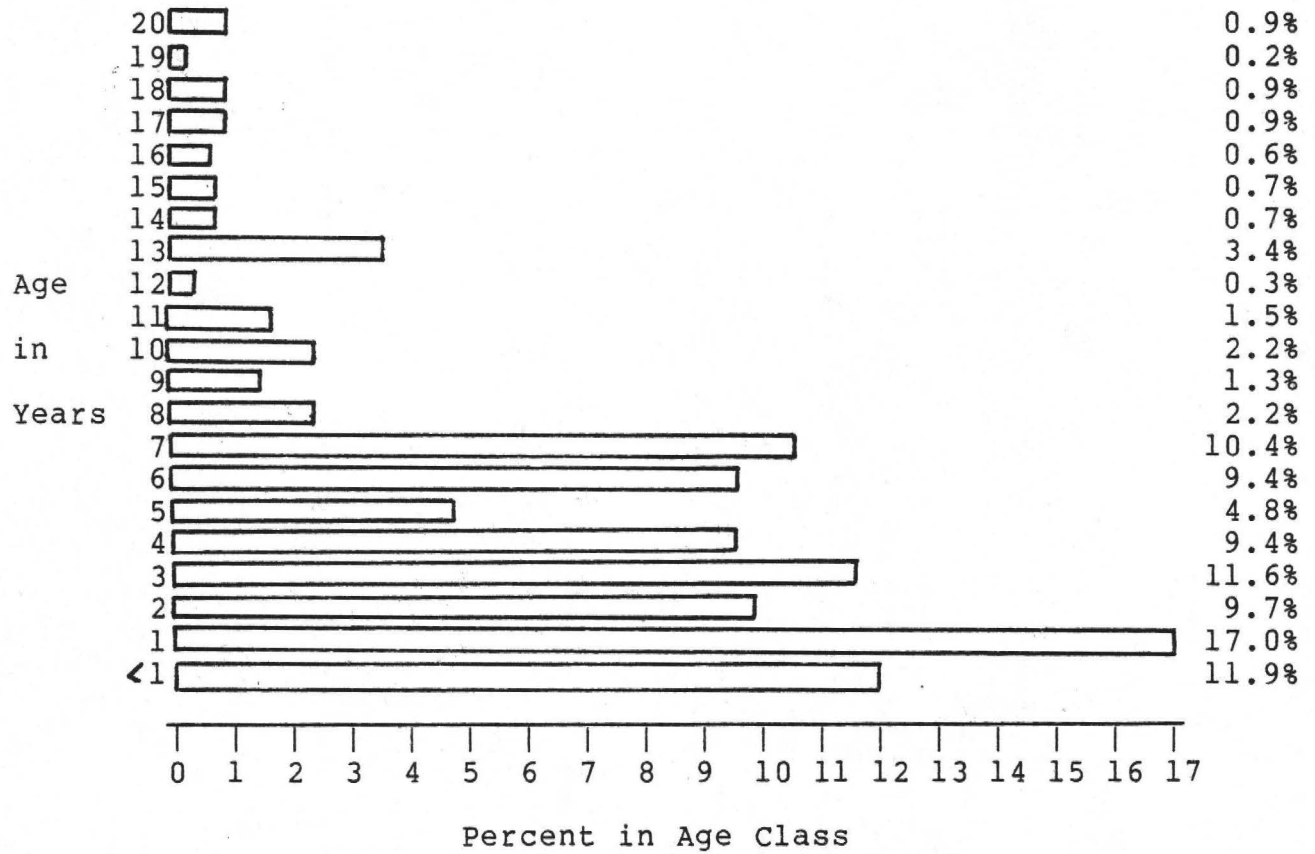


Figure 1. Antelope Wild Horse Herd Age Class Structure (1980)

Mortality rates in a wild population are extremely difficult to determine. Many ways are available to obtain estimates of mortality, but these are only approximations. One such way to do this is by taking a population sample and developing a time specific life table. This data is limited in some ways, but does provide a starting place to determine mortality and, conversely, survival. A life table was not developed using the 1980 capture data, but will be developed when more data becomes available. It will be added as an appendix to this plan.

A reproductive rate was calculated based on the 1980 capture data, and from 1981, 1983, and 1985 census data. The remaining census data was not used since there was no data on young versus adults obtained during the inventories. The reproductive rate was calculated to be 18.0 percent based on the formula:

$$\text{Reproductive Rate} = \frac{\text{Number of Animals 0-1 Year of Age}}{\text{Number of Animals 1 Year of Age and Older}}$$

This is in accordance with Nevada State Office Manual Supplement 4730.11A5a(1).

The wild horse habitat requirements can be divided into four categories - forage, water, cover, and living space - all of which are equally important to preserve the wild and free-roaming nature of the wild horses. There is sufficient habitat in the Antelope HMA to presently allow for the free-roaming characteristics of the horses.

Wild horse forage conditions are very similar to that of livestock forage conditions due to a considerable dietary overlap (see Elko D.O. Fecal Analysis reports). Some monitoring studies have been established in the Antelope HMA. Ultimately these studies (actual use, utilization and trend) will be used to determine proper grazing levels of wild horses, livestock, and wildlife on the range. Sufficient data is not available to make adjustments at this time. Ecological site condition has been determined on key areas but not throughout the HMA. All studies data is on file at the Ely District Office. Ecological site data can be found in Appendix II.

Water availability is good throughout most of the HMA, although there is a distribution problem (see section on Water, page 4, for details).



Cover for horses can be provided by either vegetation or terrain. The rugged hills in the HMA (Antelope Range, Schell Creek Range, and others) and the pinyon-juniper vegetation provide excellent cover for escape and protection from adverse weather conditions. Cover is lacking in the valley bottoms but this does not presently appear to be a problem.

The HMA covers sufficient acreage to provide adequate living space for the Antelope herd. Fencing in the HMA does not seriously impede the horses' movement since they are mostly open ended fences. Refer to Appendix I, Map no. 7 for the locations of existing and proposed fences.

To attain a greater knowledge of the Antelope herd and its habitat, the existing habitat studies (utilization, trend, census, and precipitation) should continue to be monitored. In addition, other habitat studies need to be established where none exist currently. Population studies data is also needed to achieve a better understanding of this herd (home range and seasonal movements, productivity and survival, color, animal condition, age structure, and sex ratio determinations).

#### C. Reference to the Land Use Plan

As stated earlier, the Wells Resource Area management of the Antelope Valley horses within its boundaries will be addressed in a separate HMAP. This is in compliance with the Wells RMP and Record of Decision. Management of the Ely Antelope herd by this HMAP is in compliance with the Schell Resource Area MFP and Record of Decision, and the Proposed Egan RMP and Record of Decision.

A Coordinated Management Planning meeting to set management objectives was held in February 1984. The participants included personnel from both the Ely and Elko BLM Districts, National Mustang Association, Nevada Department of Wildlife, and livestock permittees. At this meeting it was recommended that combined Ely and Elko District wild horse management numbers be initially set at 452, the census numbers available in 1982 for the Antelope HMA (1981 inventory). In addition, a range of 250 to 600 horses was recommended as the level within which wild horse numbers would be allowed to fluctuate. The recommended management number of 452 is not in compliance with the Schell MFP. Therefore, the Ely District will manage its herd at the 1983 inventory level of 303 horses. This is in compliance with the Schell MFP and Egan RMP. The Elko District will manage its herd in compliance with the Wells RMP at 164 horses (1981 Elko census). Wildlife populations will use existing and reasonable numbers, and initial livestock stocking levels will be based on existing use and/or interim stocking rate agreements. Any future adjustments in management numbers will be determined through and based on monitoring studies.

#### D. Existing Projects

Existing projects in the HMA include fences, wells, reservoirs, and pipelines. Individual projects are shown on Map no. 4, Existing Waters, and Map no. 7, Existing and Proposed Fences, in Appendix I. Water availability within the HMA could be improved to better distribute grazing pressure from not only wild horses, but livestock and wildlife as well. At the present time, poor water distribution in the HMA is resulting in uneven use of the available forage. Improvement of water distribution will spread out grazing pressure, thus reducing heavy utilization in some areas and increasing utilization in presently unused areas. Water in the valley bottoms and benchlands is presently provided by reservoirs, wells, rain and snow for the most part. Water in the mountains is provided mainly by spring sources. Map no. 6, Proposed Water Developments, in Appendix I shows the locations of those waters proposed for future development.

There are a few fences in this area that alter the north-south movement of horses. These fences force the horses, which are accustomed to them, to run along the fence line for four to five miles before they can get around them. Since these fences run from mountain range to mountain range across the valley bottoms, they do not greatly interfere with the normal seasonal migrations which are generally in an east-west direction from the mountains to the valleys. Fences along the Goshute Indian Reservation boundary have kept the horses concentrated on public lands and off the reservation.

### III. Objectives

Based upon the information presented under Section I, Introduction, and Section II, Background Information, the following objectives have been identified for the Antelope Wild Horse Herd. These objectives have been coordinated with the objectives and actions of the other resource activity plans in the Antelope HMA. The overall objective is to maintain and manage the wild free-roaming horse population as a recognized component of the public land environment, in balance with its habitat and other resource uses.

#### A. Habitat Objectives

The habitat objectives for the Antelope HMA are as follows:

1. Manage for the most appropriate seral stages to provide desired quantity, quality, variety and density of forage in order to meet the requirements of the wild horses and other foraging animals. Refer to Appendix II for Specific Management Objectives (seral stages) by key management areas. Ecological condition trends toward or away from desired seral stages will be measured on the key management areas.



2. Improve distribution and provide water yearlong for wild horses throughout the Antelope HMA where possible.

#### B. Animal Objectives

The Antelope HMA wild horse population objectives are as follows:

1. Maintain the wild free-roaming characteristics of the horses in the Antelope HMA.

2. Maintain the wild horse population through periodic removals at an appropriate management level of 303 wild horses with a range of 258 to 348 ( $\pm$  15 percent) in order to maintain a viable breeding population.

#### IV. Management Methods

##### A. Habitat Maintenance and Improvements

The planned actions needed to achieve the habitat objectives established in this plan are as follows:

1. To manage for the most appropriate seral stages to provide the desired quantity, quality, variety, and density of forage needed to meet the requirements of the grazing animals in the Antelope HMA the following steps will be taken:

The wild horse population will be initially adjusted down to the lower range for the appropriate management level (258 animals) within the Antelope HMA (see planned actions for Animal Objective no. 2). This initial adjustment in the wild horse population will have a direct impact on the utilization levels within the HMA, by reducing the forage utilization in critical areas.

Some key areas have been and others will be established through consultation with the affected livestock permittees, wild horse interests, and the Nevada Department of Wildlife. The results of monitoring studies on these key areas will be used for subsequent adjustments in the numbers of grazing animals, either up or down.

Utilization levels on key areas, and use mapping, will be used as one of the major factors in determining the number of animals to be maintained in the HMA. Generally maintain utilization levels on key forage species in the herd area at approximately 45 percent on shrubs, and 55 percent on grasses and forbs.

If additional forage is available after meeting livestock number objectives and reasonable wildlife numbers have been reached, all available forage will be divided proportionately among all foraging animals based on animal numbers and forage preference.

If monitoring data shows reductions of animal numbers are necessary, reductions will be made in the following manner:

a. Where a kind of foraging animal can be identified as the primary cause of forage resource damage in a specific area, adjustments will be made from the base levels for that particular kind of animal (active preference for livestock, AML for wild horses, and reasonable numbers for wildlife). This foraging animal will be determined from monitoring studies, utilization, actual use, sightings, counts, etc.

b. Where a single kind of foraging animal cannot be identified as the primary cause of forage resource damage, adjustments will be made proportionately between livestock and wild horses according to forage preference (i.e., grazing animals vs key grass species and browsing animals vs key shrub species). The proportionate adjustments will be based upon active preference for livestock and AML for wild horses.

c. If additional forage is available after meeting livestock number objectives, AML for wild horses, and reasonable numbers for wildlife, additional forage may be divided proportionately among all foraging animals based on animal numbers and forage preference.

2. Yearlong water for wild horses will be provided and water distribution and availability will be improved through spring developments, pipeline construction, and development of catchment reservoirs. Many areas receive very little use due to the lack of water. Improved water distribution will relieve many areas of the heavy use they presently receive as a result of better distribution of grazing animals. The water developments identified below and shown on Map no. 6 in Appendix I have been proposed by other resource activities but will have major benefits to wild horses. The first four of these waters are very important to the improvement of wild horse habitat. These projects will be funded using wild horse funding when available. All projects are listed in descending priority for development and for consideration of joint funding with other resource activities at such time as any resource activity is capable of funding the project:

- a. Domingo Well Spring and Pipeline (redevelopment) 1/
- b. Kingsley Spring Pipeline 1/
- c. Cattail Spring and Pipeline 1/ 2/
- d. Ayarbe Spring Redevelopment
- e. Black Hills Well Pipeline 2/
- f. Grouse Spring 2/
- g. Skull Spring 2/
- h. Horse Spring 2/
- i. Deep Creek Well and Pipeline
- j. Goshute Reservoir
- k. Antelope Well Pipeline
- l. North Creek Pipeline
- m. Cress Spring
- n. Sampson Creek Pipeline
- o. Camp Spring
- p. Lookout Spring Pipeline
- q. Tunnel Canyon Spring Redevelopment
- r. Sharp Creek Pipeline
- s. North Spring
- t. South Spring
- u. Sand Spring
- v. Water Canyon Pipeline

1/ The National Mustang Association has expressed an interest in entering into Cooperative Agreements to assist BLM in development of these waters for wild horse use.

2/ The Nevada State Commission for the Preservation of Wild Horses has expressed an interest in entering into Cooperative Agreements to assist BLM in development of these waters for wild horse use.

Note: Development of each of the above waters is dependent upon attaining water rights from the Nevada State Water Engineer prior to development and will be within the scope of the Schell MFP.

In the event the above projects do not provide adequate water for wild horses, an inventory will be conducted to determine requirements for additional water to be developed in addition to those proposed. Waters to be developed will remain in scope with the land use plan.

3. Wild horse habitat studies will be established in areas where none exist to determine the impact of grazing animals on the HMA. Existing studies will continue to be read.

These include utilization, trend, precipitation and wild horse population estimates. All vegetative studies will be coordinated with the Schell Resource Area wildlife biologist and range conservationist in charge of each grazing allotment and all other interested parties. Refer to the Evaluation and Revision Section for details on studies.

#### B. Animal Characteristics and Population Levels

The planned actions to achieve the animal objectives established in the HMAP are as follows:

1. In order to maintain the wild free-roaming characteristics of the horses in the Antelope HMA, the following will be accomplished:

All projects proposed for the Antelope HMA will be analyzed in depth through an environmental analysis (EA) to determine if the project will impact the wild free-roaming characteristics of wild horses. Wild horse distribution, seasonal movements, daily movements, and home ranges will also be preserved in accordance with NSO Manual Supplement 4730, Release NV 4-6.

Resource uses involving an increase in human activity in the HMA (eg. mining) and fences will be evaluated closely. These types of activities will most likely impact the free-roaming characteristics of the horses. Each activity or project will be handled on an individual basis. In analyzing the impacts, the overall and cumulative impact will also be analyzed.

At the present time the fences proposed in the Antelope HMA, when constructed, will be designed to preserve the normal distribution and movement patterns for the majority of animals in accordance with NSO Manual Supplement 4730, Release NV 4-6.

New fencing for livestock control and management will be minimized in the HMA. Use of herding and salting will be emphasized. If fences are absolutely necessary they will be designed with wild horses in mind, in accordance with NSO Manual Supplement 4730. Fencing for the most part will be open-end allotment boundary and pasture drift fences across the valley bottoms, and gap fences across narrow canyons. In either case, horses will have access around the ends. Gates will be opened by the livestock permittee, the District Wild Horse Specialist, or the Schell Range Technician when livestock are not authorized in the area, except on those fences designed to protect vegetation treatments and riparian areas. New fences will be flagged to increase visibility to wild horses.

2. In order to manage the number of wild horses (303  $\pm$  15%) as the appropriate management level from which to begin monitoring studies within the HMA the following actions are necessary:

A removal effort will be conducted to reduce the herd down to the appropriate management level. The number of remaining horses will not be allowed to drop below 258. Gathering down to the low end of the management range will allow for fewer gathers over a longer time period to maintain the herd within the limits of 258 to 348 horses. The actual number to be removed, as well as the removal method, will be determined in a later capture plan and EA.

Once the appropriate management level has been achieved, periodic removal of excess horses will still be required. The population range is to be 258 to 348 horses. Basically, the population will be allowed to increase to 348 animals and then reduced back to 258 and allowed to increase again. This will result in a gather every three or four years.

To assure proper management of the Antelope horse herd, the level of horse use on the adjacent Elko District herd will also be considered.

3. Studies information relative to sex ratios, age structures, productivity and survival, color, animal condition, home ranges and seasonal movements will be evaluated on the Antelope wild horse population.

For details on studies see the Evaluation and Revision Section.

#### V. Evaluation and Revision

This plan and associated studies will be evaluated periodically to determine if objectives are being met.

As the wild horse program is a relatively new program, much of the data necessary to intensively manage the horses is unavailable. Thus the need for studies is essential. Studies as described in this plan, will be established to collect the necessary data. Until the data becomes available the best available information must be utilized in developing interim management actions. The following studies have been or will be conducted to evaluate the effectiveness of the management methods identified in this plan in meeting the objectives:



## A. Habitat Studies

1. Trend - Trend studies will be conducted to evaluate attainment of the desired seral stages by management area as shown in Appendix II. Trend is defined as a change in vegetation and soil characteristics as a direct result of environmental factors. The frequency sampling procedure described by Tueller et. al., (1972) will be the methodology utilized to determine trend. The data collected will be stored in the allotment files located in the Ely Bureau of Land Management Office. Trend plots will be located on key areas in each allotment within the herd area and will be read every three to five years within the herd area.

2. Utilization - Utilization is defined as the amount of current year's growth removed from the plant. Utilization studies help to evaluate management systems by determining patterns and quantity of use. The Expanded Key Forage Plant Method is the technique adopted for this management plan. Section 4412.22 of the Bureau of Land Management Manual and the Nevada Range Monitoring Procedures Handbook (1981) delineates this particular method in detail. Utilization data will be collected annually contiguous with movement of livestock from the management area, thus acquiring livestock and wild horse use patterns. The utilization studies will be timed where possible to determine levels of use between grazing animals particularly between horses and cattle or sheep. Data will be correlated with trend, wild horse population estimates, and livestock actual use information.

3. Precipitation - Precipitation data will be gathered for the HMA at least quarterly. There are rain gauges located on each allotment within the area which will continue to be read.

4. Population Estimates - Wild horse population estimates will be used to help evaluate the plan effectiveness. Estimates will be obtained from aerial census using a helicopter. The census will be conducted at least once every five years, but preferably every three years, in accordance with NSO Manual Supplement 4730, by the Ely District Wild Horse Specialist. Census will be conducted in late December or early January and require approximately 10 hours to complete each census. Wild horse sighting locations and census route will be plotted on a map. All censuses will be conducted simultaneously with censuses on the Elko District Antelope Valley herd.

## B. Wild Horse Population Studies

1. Home Range and Seasonal Movements - A comprehensive study will be conducted to understand home ranges and seasonal movements of wild horses. The study will be conducted seasonally four times a year in January, April, July,

and October. The preferred method is through aerial observations from a B-1 helicopter but an alternate method using a vehicle for on the ground observations may be used. Sighting locations will be plotted on a map using either method. Horses may be captured, marked, and released for further study of movement patterns. This will be accomplished by collaring horses, observing animals in the field, and by recording animal locations during aerial censuses. Collaring horses may be accomplished either during removal roundups or special captures. Horses collared and released will be monitored to determine movements and mortality.

2. Productivity and Survival - General productivity indices will be estimated from the relative age composition (percent foals) of the HMA population as per NSO Manual 4730 (Wolfe, 1980). Aerial (helicopter) censuses, as well as field observations, will be used to secure the desired data.

Information on young/adult ratios will be collected when funding is available, but should be gathered at least once every three years. Young/adult surveys will be conducted in July and again the following January.

First year survival rates will be approximated through shrinkage of foal incidence between the surveys (Wolfe, 1980).

3. Color - Updated color data will be determined concurrent with other population studies and from information obtained during gather operations.

4. Animal Condition - Physical condition of wild horses will be determined concurrent with collecting other population data, from general observations made in the field, and from information obtained during gather operations.

5. Age Structure - Relative age structure of the Antelope HMA population will be periodically evaluated and updated as a result of gathering operations. This information will be further supplemented as described in NSO Manual 4730.

6. Sex Ratio Determination - The sex ratio of the Antelope wild horse population will be estimated from an analysis of capture data obtained whenever excess animals are removed from the HMA.

## VI. Coordination

Information on horse numbers and locations may occasionally be provided by Nevada Department of Wildlife. All studies affecting wild horses, wildlife and livestock will be closely coordinated.

All actions pertaining to the Antelope wild horse herd will be coordinated between the Ely and Elko Districts prior to initiating the action. If, as a result of this coordination, it is determined that a memorandum of understanding will facilitate coordination between districts, one will be drawn up between the two districts and will be included as an appendix to this plan.

VII. Modification and Review

A joint review of this plan will be conducted periodically by the the Ely District Wild Horse Specialist and the Schell Resource Area Manager. This plan may be modified if data from public input, resource studies, or experience gained in plan operation indicate that changes are desirable.

All studies will be evaluated to see if objectives are being met. If not this plan may have to be revised.

It is understood that all actions undertaken pursuant to this plan are contingent upon available funding.

VIII. Approval

Prepared By:

Robert E. Brown  
Robert E. Brown, Wild Horse Specialist  
Ely District

9/17/87  
Date

Recommended By:

Gerald M. Smith  
Gerald M. Smith, Area Manager  
Schell Resource Area

9/17/87  
Date

Approved By:

Kenneth G. Walker  
Kenneth G. Walker, District Manager  
Ely District

9-17-87  
Date

Concurred By:

Fred Wolf  
Edward F. Spang, Nevada State Director

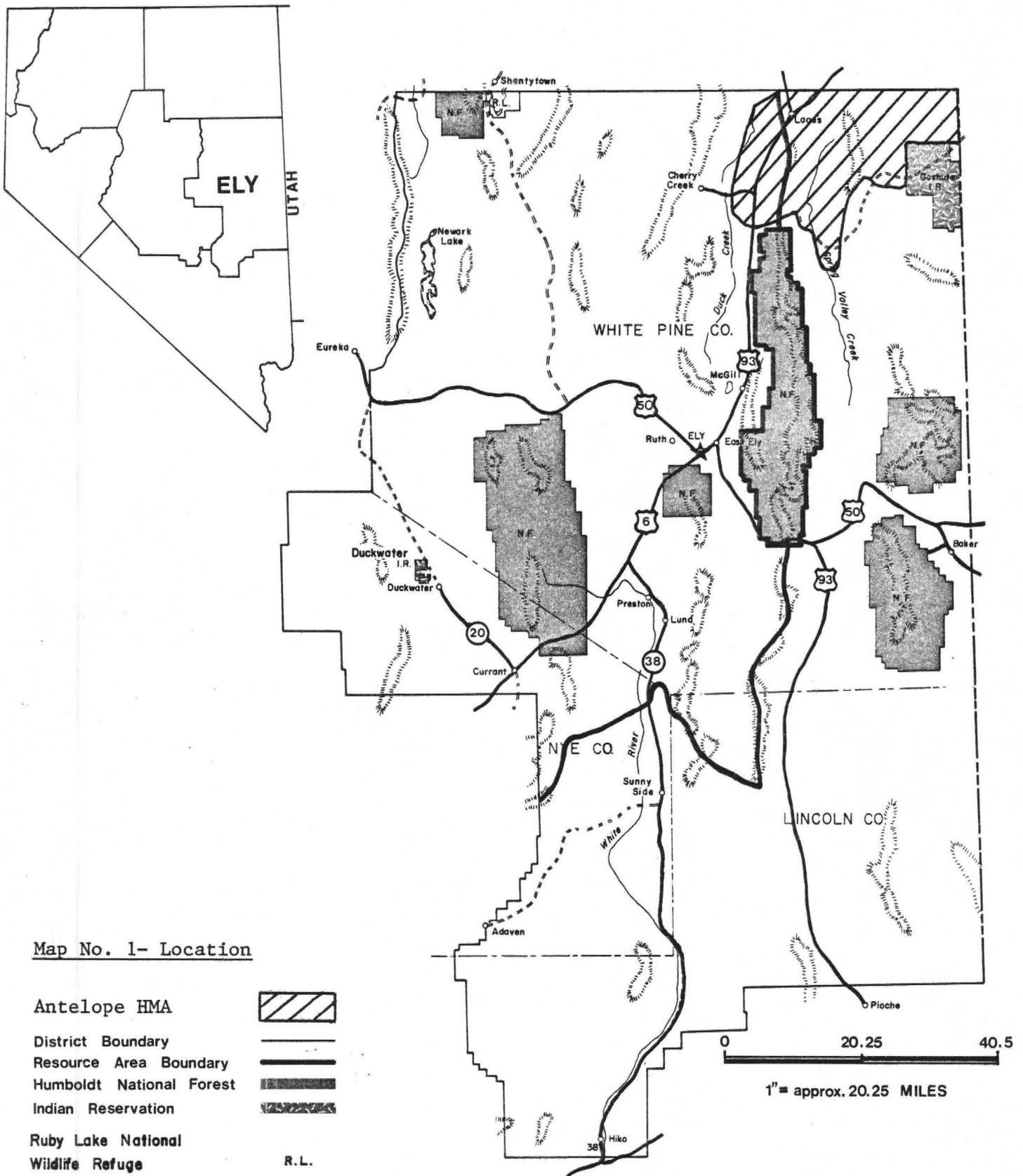
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Date



APPENDIX I

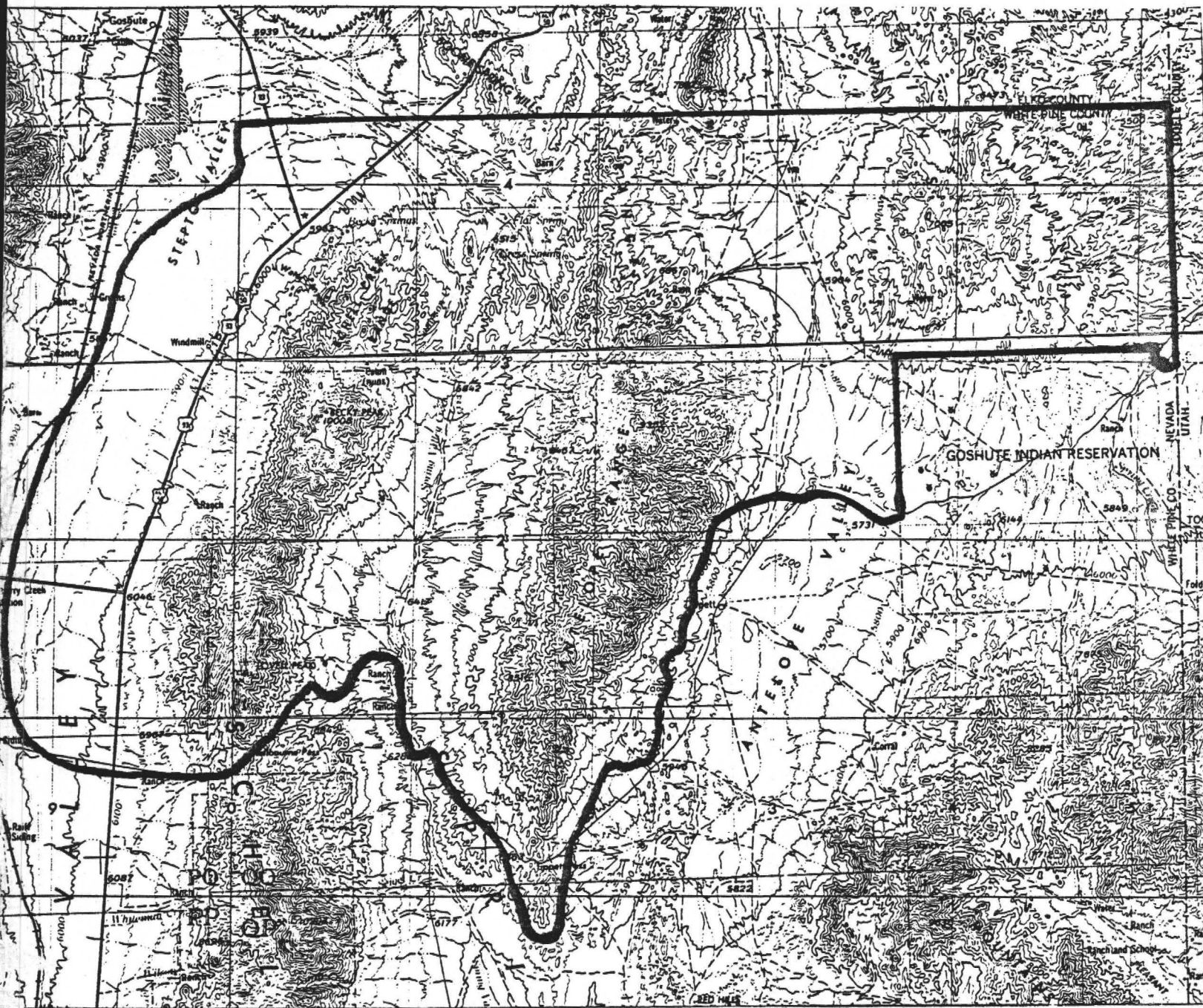
Maps

- Map No. 1 - Location
- Map No. 2 - Antelope HMA
- Map No. 3 - Land Status
- Map No. 4 - Existing Waters
- Map No. 5 - General Seasonal Use Areas
- Map No. 6 - Proposed Water Developments
- Map No. 7 - Existing and Proposed Fences

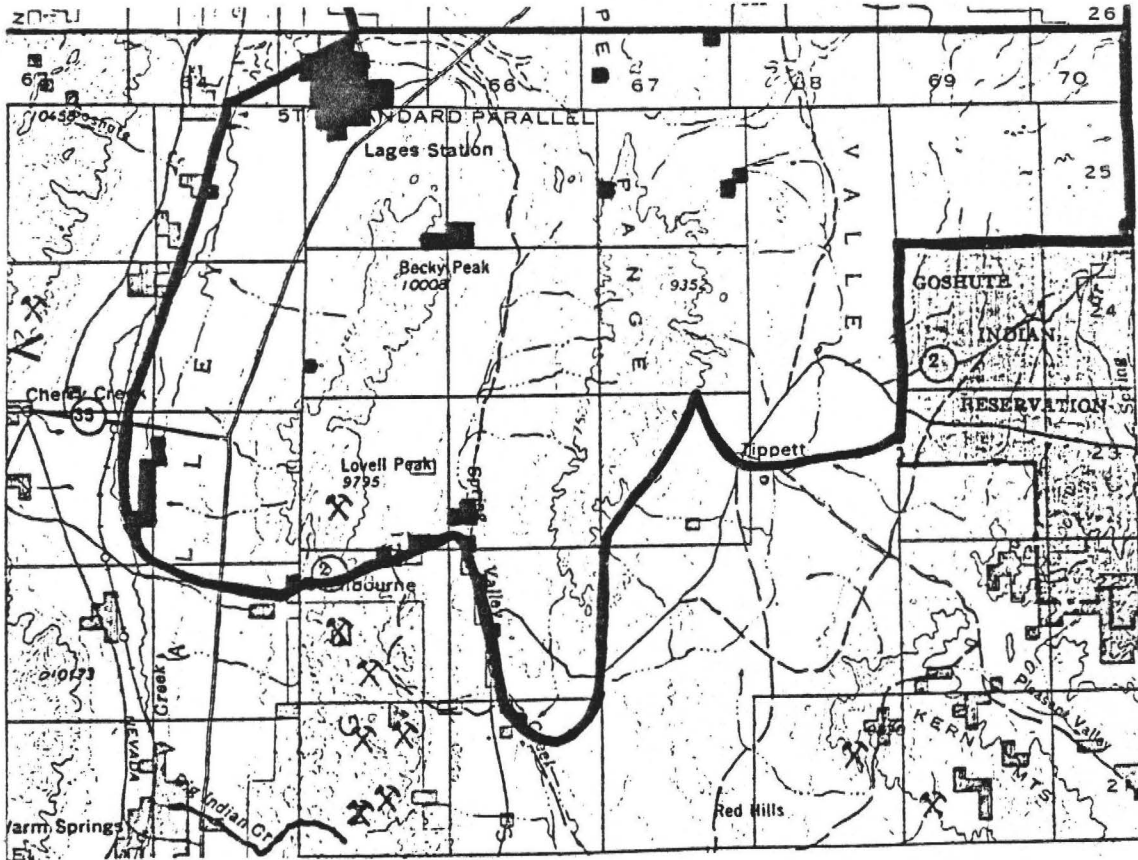


# ELY DISTRICT

BUREAU OF LAND MANAGEMENT  
U. S. DEPARTMENT OF THE INTERIOR



Map No. 2- Antelope HMA

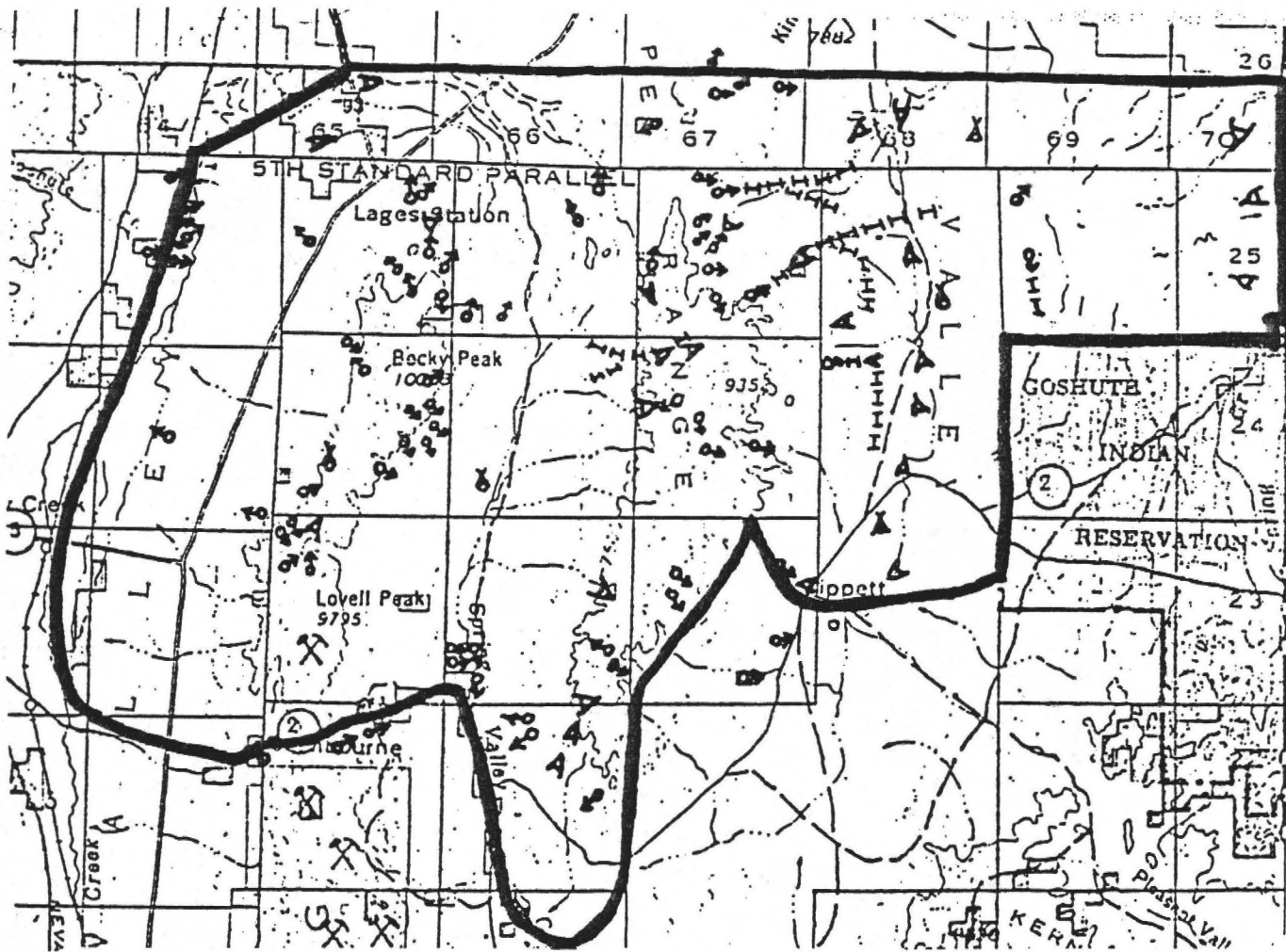


Map No. 3- Land Status

Private (Patented) Land

Public (BLM) Land

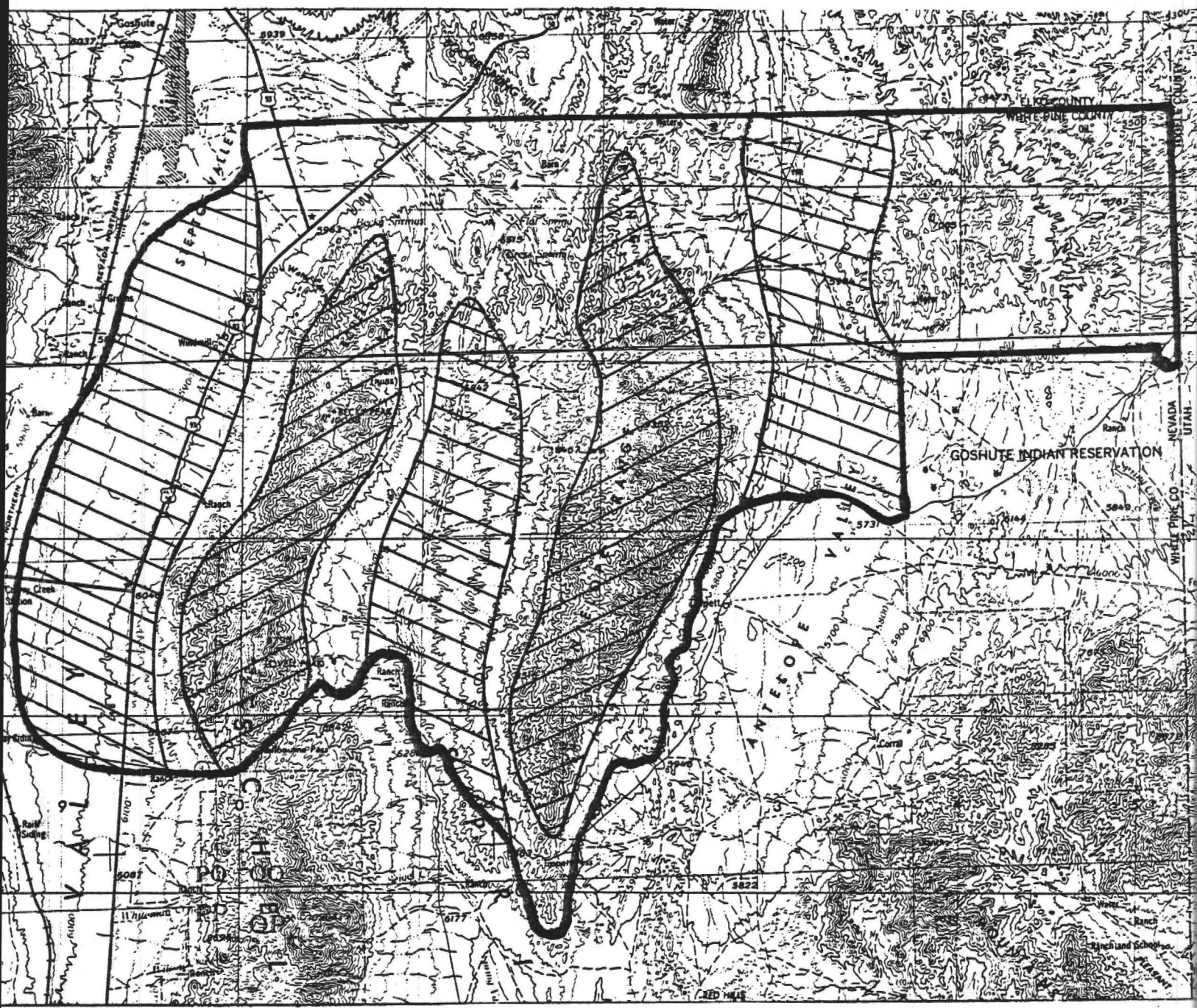




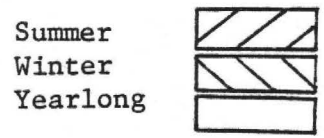
Map No. 4- Existing Waters

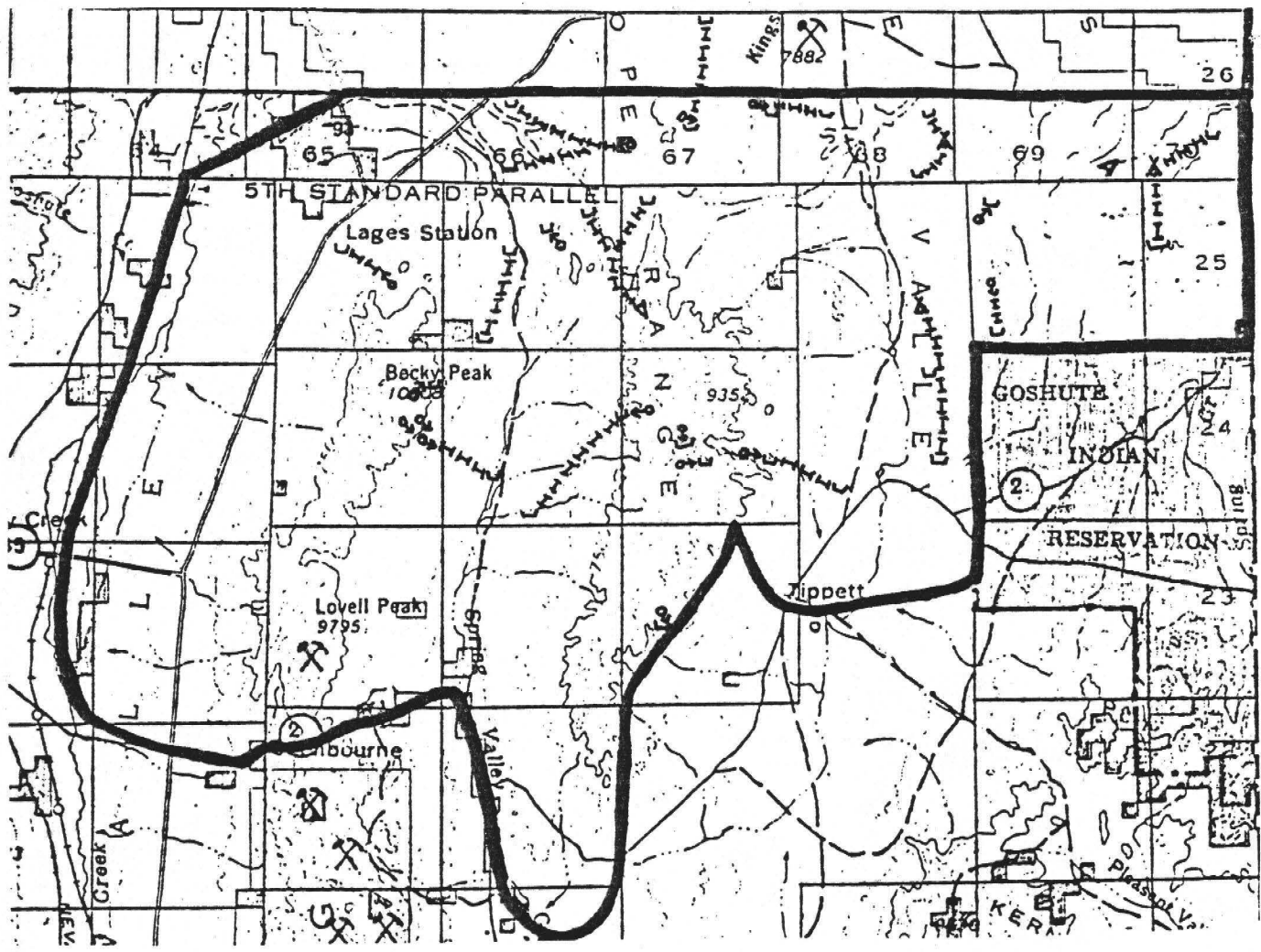
- |            |   |
|------------|---|
| Springs    | ○ |
| Wells      | ● |
| Reservoirs | △ |
| Pipelines  | — |





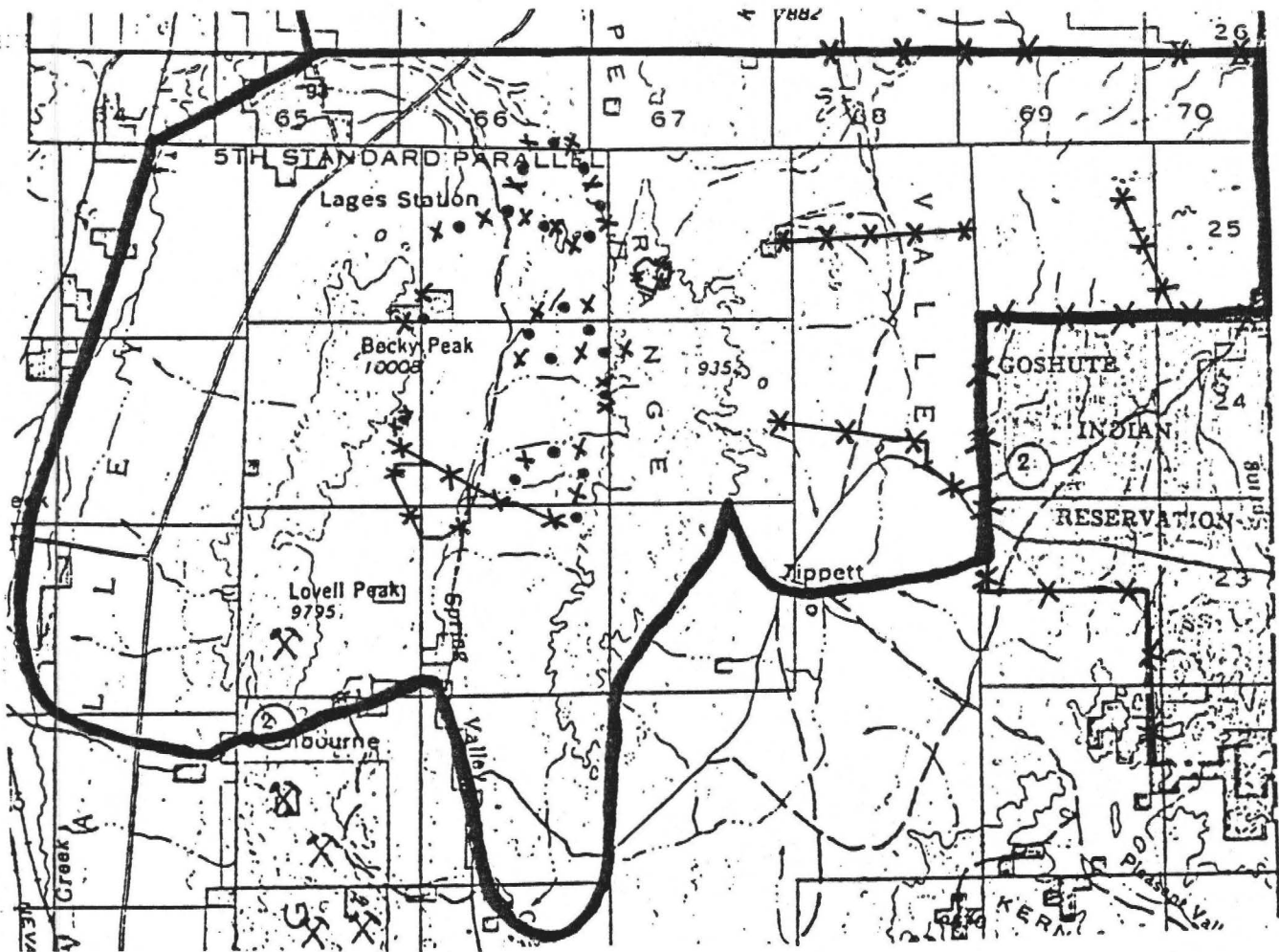
Map No. 5- General Seasonal Use  
Areas





Map No. 6- Proposed Water Developments

- |                     |     |
|---------------------|-----|
| Wells               | Δ   |
| Reservoirs          | Λ   |
| Pipelines           | I I |
| Troughs             | U   |
| Spring Developments | ⊙   |



Map No. 7- Existing and Proposed  
Fences

Existing Fences      \* - \* - \*

Proposed Fences      X . X . X



APPENDIX II  
Specific  
Management Objectives

Management areas were chosen which could be used to address problems and measure effectiveness of solutions for each foraging animal group of the Antelope Plan Area. Many of these areas overlapped and could be combined so that livestock, wild horses and wildlife needs could be addressed in common. (Fig. II-1). Each management area is (or will be) represented by one or more key use areas. The primary foraging animals were identified for each management area. For each management area the location, Soil Conservation Service (SCS) ecological site number, the district study number, and the present production and density of plant species have been identified.

The specific resource objectives were developed using the SCS ecological site descriptions to obtain a realistic idea of potential production for each species while taking into consideration response potential of each management area based on present species composition and whether or not vegetative treatment is to be proposed (realizing that certain communities cannot respond favorably to grazing treatments alone). Also considered was the fact that the unusually high amounts of precipitation over the last 2 to 3 years have resulted in higher levels of production than could be expected in normal years. For instance, production of desirable species on some management areas exceeded potential according to range site descriptions. Although it would be desirable to maintain this high level of production, it is recognized that this may not be possible. Therefore, these species are to be maintained at the potential level, as a minimum, even though this level is less than present production. In instances where production of undesirable species, particularly shrubs, exceeded potential levels for the site, it had to be recognized that the only way to decrease this level would be vegetative treatment. Where such treatments were proposed, the objective would be to decrease the density and production of that species. For those areas where shrubs would not be reduced without losing desirable species, the objective is to maintain production of undesirable shrubs at or below present levels, which equates to preventing any increase. If desired species are producing at or near the potential for that site, the objective for these species will be to maintain present production.

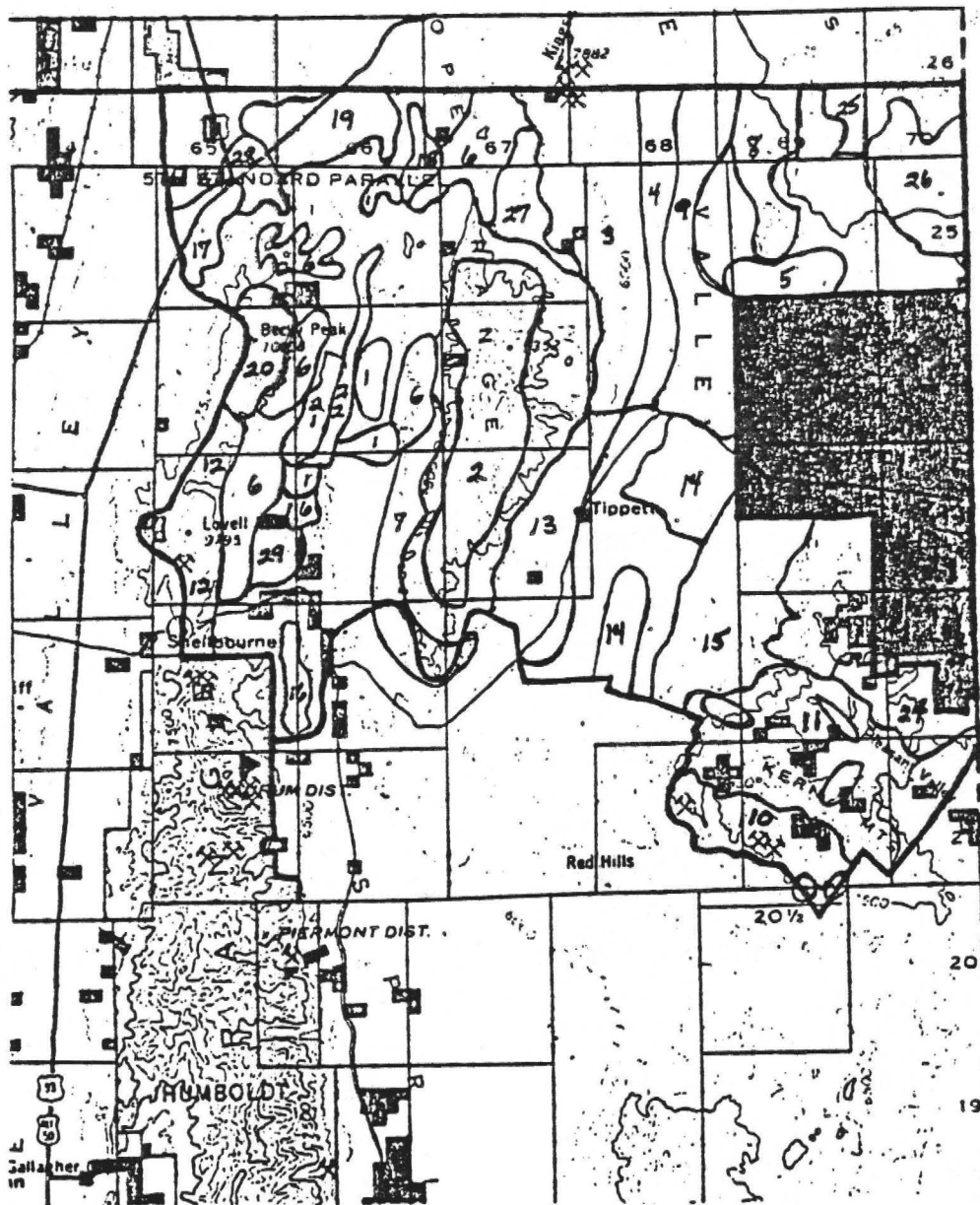


Figure II-1. Management Areas Corresponding to the Management Objectives and Management Actions for the Antelope Herd Management Area Plan Area, Nevada.

The specific resource objectives identify key forage species, the existing density and production, and the levels of density and production to be managed for after plan implementation. Objectives for an individual key species may vary greatly between different areas because of site potential and proposed treatments. Monitoring studies will be used to measure the relative success of achieving these objectives. If the resources are responding favorably and moving toward desired levels on management areas, it is assumed that the overall area will be in upward trend in areas where conditions are improving (desirable species are increasing) or static trend in areas where good conditions are being maintained or downward trend has been halted. Under this assumption, even those species for which no data was available should be expected to respond in the same manner as the listed species. Monitoring will pick up any increases in species diversity as well as production. Also portions of the planning area were not included in management areas because these portions were not critical to the development and implementation of the plan. These areas will not be intensively monitored, but will be affected by the plan and are expected to respond in a similar manner to the management areas.

Numbers of foraging animals from which monitoring will be based are as follows:

- a. Present numbers of wildlife will be used.
- b. Existing use and/or interim numbers of livestock as determined in each Allotment Management Plan will be used.
- c. The 1983 wild horse inventory number of 303 animals will be used.

Specific Management Objectives

1. Management Area - Seedings

Foraging Animal - Livestock

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 23 N., R. 66 E., sec. 6 (Henriod Seeding)	Not Applicable	TAR 12

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	76,000	179	Increase	200
Wyoming Big Sagebrush	3,000	110	Maintain	110

-----

Ecological Status - Not Applicable -  
(% of Climax or PNC\*\*)

-----

Relative Composition (all species)	Grasses - 59%	50-75%
	Forbs - -	
	Shrubs - 41%	25-50%

\*\* PNC = Potential Natural Community - the biotic community that would become established if all successional sequences were completed without interferences by man under the present environmental conditions.

- 0 - 25% of PNC = Early Seral Stage
- 26 - 50% of PNC = Mid Seral Stage
- 51 - 75% of PNC = Late Seral Stage
- 76 - 100% of PNC = Climax or PNC

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 25 N., R. 66 E., sec. 12 (Flat Spring Seeding)	Not Applicable	CCR 6

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	18,000	85	Increase	150
Forbs	581	2	Increase	10
Wyoming Big Sagebrush	6,000	188	Decrease	100

-----

Ecological Status - Not Applicable -  
(% of Climax or PNC\*\*)

-----

Relative Composition (all species)	Grasses - 26%	45-70%
	Forbs - 1%	2-5%
	Shrubs - 73%	25-50%

\*\* PNC = Potential Natural Community.



<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 24 N., R. 66 E., sec. 3, NE <sup>4</sup> (North Creek Seeding)	Not Applicable	CCR 5

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	38,000	184	Increase	200
Forbs	27,000	8	Increase	10
Black Sagebrush	12,000	467	Decrease	400
Wyoming Big Sagebrush*	400	-	Maintain	-

-----

Ecological Status                                    - Not Applicable -  
 (% of Climax or PNC\*\*)

-----

Relative Composition (all species)	Grasses - 28%	45-70%
	Forbs - 1%	1-5%
	Shrubs - 71%	25-50%

One area of Wyoming big sagebrush is used by sage grouse for hunting pressure escape cover and possibly wintering. This area should be maintained at the present density.

\*\* PNC = Potential Natural Community.

Location

Ecological Site

Studies Number

T. 24 N., R. 66 E., sec. 34  
(Robison Seeding)

Not Applicable

CCR 7

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	17,000	4	Increase	150
Black Sagebrush	4,300	370	Decrease	200

-----

Ecological Status  
(% of Climax or PNC\*\*)

- Not Applicable -

-----

Relative Composition (all species)	Grasses -	5%	30-60%
	Forbs -	-	-
	Shrubs -	95%	40-70%

\*\* PNC = Potential Natural Community.

2. Management Area - Antelope Mountains - Chin Creek, and Tippet Allotments

Foraging Animals - Upland Game Birds, Deer Summer, Cattle, Sheep, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 24 N., R. 67 E., sec. 9, SW <sup>4</sup>	D28BO37N		CCR 3	
	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u>	<u>Production</u>		
<u>Key Species</u>	(Plants/ac.)	(Lbs./ac.)	<u>Density</u>	<u>Production</u>
Bluebunch Wheatgrass	30,000	49	Increase	60
Forbs	59,000	113	Maintain	Above 75
Low Sagebrush	45,000	250	Maintain	Maintain
-----				
<u>Ecological Status</u>	<u>Late Seral Stage</u>		<u>Late Seral Stage</u>	
(% of Climax or PNC**)	(55% of PNC)		(51-75% of PNC)	
-----				
<u>Relative Composition</u>	<u>Grasses - 26%</u>		25-45%	
(all species)	<u>Forbs - 28%</u>		10-20%	
	<u>Shrubs - 46%</u>		45-55%	

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 25 N., R. 67 E., sec. 31, SWNE	D28B026N	CCW 2

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Needle Grasses (Thurber's and Letterman)	17,000	44	Maintain or Increase	Maintain Above 44
Forbs	63,000	280	Maintain	Maintain Above 150
Snowberry	3,000	70	Increase	100

-----

Ecological Status (% of Climax or PNC**)	Mid Seral Stage (38% of PNC)	Mid Seral Stage (35-50% of PNC)
---	---------------------------------	------------------------------------

-----

Relative Composition (all species)	Grasses - 21%	20-40%
	Forbs - 21%	10-20%
	Shrubs - 58%	55-65%

\* Need to increase total production from 800 lbs/ac to 950 lbs/ac.

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 24 N., R. 67 E., sec. 33	D28B030N	TAR 15

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Western Wheatgrass	204,000	145	Maintain	Maintain Over 100
Forbs*	12,000	37	Increase	75
Mountain Big Sagebrush	2,000	698	Maintain	Maintain Above 500

-----

Ecological Status (% of Climax or PNC**)	Mid Seral Stage (33% of PNC)	Mid Seral Stage (30-50% of PNC)
---	---------------------------------	------------------------------------

-----

Relative Composition (all species)	Grasses - 17%	20-50%
	Forbs - 6%	5-10%
	Shrubs - 77%	45-70%

\* Larkspur will be monitored separately because of poisoning problems.

\*\* PNC = Potential Natural Community.



<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 23 N., R. 67 E., sec. 17	D28B022N		TAR 14	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Western Wheatgrass	23,000	38	Increase	100
Forbs	176,000	70	Maintain or Increase	150
Mountain Big Sagebrush	16,000	57	Maintain	Maintain
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	Mid Seral Stage (42% of PNC)		Mid Seral Stage (45-65% of PNC)	
-----				
<u>Relative Composition</u> (all species)	Grasses - 45%		45-50%	
	Forbs - 31%		15-25%	
	Shrubs - 24%		20-30%	

\* Increase total production from 200 lbs/ac to 500 or more lbs/ac.

\*\* PNC = Potential Natural Community.

3. Management Area - East Antelope Bench, North - Chin Creek Allotment

Foraging Animals - Antelope Kidding Ground, Antelope Winter, Cattle, Sheep, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 24 N., R. 68 E., sec. 8, SWNE	D28A026N		CCR 8	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian ricegrass	1,000	19	Increase	60
Forbs	2,900	1	Increase	10
Winterfat*	23,000	35	Maintain	50
Bud Sagebrush*	16,000	18	Maintain	30
Shadscale*	1,500	100	Increase	30
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Mid Seral</u> (28% of PNC)		<u>Mid Seral Stage</u> (26-50% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses</u> - 79%		40-65%	
	<u>Forbs</u> - -		0-5%	
	<u>Shrubs</u> - 21%		30-60%	

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 24 N., R. 68 E., sec. 8, NWNW <sup>4</sup>	D28A026N	CCW 1

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian ricegrass	8,700	50	Increase	75
Forbs	-	1	Increase	10
Shadscale*	1,100	21	Increase	30
Winterfat*	580	3	Increase	20
Bud Sagebrush*	-	3	Increase	15

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Mid Seral</u> (32% of PNC)	<u>Mid Seral Stage</u> (26-50% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 46%	40-55%
	Forbs - 1%	1-5%
	Shrubs - 53%	45-60%

\* Increase overall production of shrubs, but not one species at the expense of the others because they are codominants.

\*\* PNC = Potential Natural Community.

4. Management Area - Antelope Valley Bottom - Chin Creek Allotment

Foraging Animals - Antelope Yearlong, Cattle, Sheep,  
Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 25 N., R. 68 E., sec. 27, SW <sup>4</sup>	D28B109N		CCR 1	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Salt Sage (A. Tridentata)	8,700	29	Maintain	30
Winterfat	9,800	164	Maintain or Increase	245

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral Stage</u> (72% of PNC)	<u>Late Seral to Climax</u> (70-90% of PNC)
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Relative Composition*** (all species)	Grasses - -	0-10%
	Forbs - -	0-10%
	Shrubs - 100%	80-100%

\* Total production should be increased from 200 lbs/ac to 350 lbs/ac.

\*\* PNC = Potential Natural Community.

\*\*\* It is desirable, but perhaps not feasible, to increase forbs and grasses without interseeding.

5. Management Area - Ayarbe - Chin Creek Allotment

Foraging Animals - Antelope Key Winter, Sheep, Cattle  
Wild Horses

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 25 N., R. 69 E., sec. 31, SWNE	D28A024N	CCW 3

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian ricegrass	580	22	Increase	50
Forbs	2,300	Trace	Maintain or Increase	15
Shadscale	1,400	32	Increase	75
Black Sagebrush	400	-	T	10

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Ecological Status (% of Climax or PNC**)	Early Seral (25% of PNC)	Mid Seral Stage (26-50% of PNC)
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Relative Composition (all species)	Grasses - 61%*	30-55%
	Forbs - -	0-5%
	Shrubs - 39%	40-65%

\* Relatively high production of grasses (particularly Stipa comata) due to high ppt. year.

\*\* PNC = Potential Natural Community.



<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 25 N., R. 69 E., sec. 28, SE <sup>4</sup>	D28A013N	CCR 4

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian ricegrass	10,000	100	Maintain	Maintain
Forbs*	2,000	(Trace)	Increase	12
Winterfat	3,000	5	Increase	40
Shadscale	900	6	Increase	12

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral Stage</u> (59% of PNC)	<u>Late Seral Stage</u> (51-75% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 33%	35-45%
	Forbs - 8%	5-10%
	Shrubs - 59%	45-60%

\* Need to increase forbs other than Opuntia.

\*\* PNC = Potential Natural Community.

6. Management Areas -

Foraging Animals -

Antelope Mountains	Pronghorn Antelope Winter, Mule Deer Summer & Winter, Pronghorn Antelope Yearlong, Cattle, Sheep, Wild Horses. Chin Creek Allotment
Cedar Pass	Cattle-Sheep, Mule Deer Summer/Winter. Tippett Allotment
Sharp Creek	Pronghorn Antelope Yearlong, Cattle-Sheep, Mule Deer Winter, Wild Horses. Chin Creek Allotment
East Schell Bench	Pronghorn Antelope Yearlong, Mule Deer Winter, Sheep, Wild Horses. Sampson Creek Allotment

These treatment areas will have key areas established at the time treatment is done. At this time, specific management objectives will be established by species. In general pinyon-juniper will be reduced. Preferred forage will be increased to the following approximate percentages:

- Grasses (40-60%) (5-10 species).
- Forbs (10-30%) (20-40 species).
- Shrubs (5-30%) (5-10 species).

Exact species and composition will be determined at the time of treatment based on what can grow on the specific sites.

7. Management Area - Sharp Creek - Chin Creek Allotment, Tippett Allotment, Tippett Pass Allotment

Foraging Animals - Deer Winter, Wild Horses, Cattle-Sheep

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

8. Management Area - Black Hills - Chin Creek Allotment

Foraging Animals - Pronghorn Antelope Yearlong, Wild Horses

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need for key areas here. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

9. Management Area - East Antelope Valley - Chin Creek Allotment

Foraging Animals - Antelope Yearlong, Cattle, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 26 N., R. 68 E., sec. 26, SW <sup>4</sup>	D28A021N		CCR 2	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian ricegrass	11,000	103	Maintain	Maintain
Forbs	-	(Trace)	Increase	10
Winterfat	15,000	68	Maintain or Increase	100
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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral Stage</u> (71% of PNC)		<u>Late Seral Stage</u> (70-75% of PNC)	
-----				
<u>Relative Composition</u> (all species)	Grasses - 39%		35-45%	
	Forbs - -		0-10%	
	Shrubs - 61%		55-70%	

\* Increase total production from 250 lbs/ac to 450 lbs/ac.

\*\* PNC = Potential Natural Community.

10. Management Area - Tungstonia Seeding - Tippet Allotment  
Foraging Animals - Deer Winter, Cattle, Sheep

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 20 N., R. 69 E., sec. 33	Not Applicable	TAR 13

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	22,000	140	Maintain	Maintain
Native Grasses	22,000	114	Maintain or Increase	140
Forbs	-	12	Increase	15
Antelope Bitterbrush	-	14	Maintain or Increase	40
Trees (P/J)	267	-	Maintain below 400	-

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Ecological Status - Not Applicable -  
 (% of Climax or PNC\*\*)

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Relative Composition	Grasses - 82%	75-85%
(all species)	Forbs - 5%	5-10%
	Shrubs - 13%	10-20%

\* Increase total production from 300 lbs/ac to 400 lbs/ac.  
 \*\* PNC = Potential Natural Community.

11. Management Area - Multiple Use Chainings - Tippet Allotment  
Foraging Animals - Deer Yearlong, Cattle, Sheep

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 22 N., R. 68 E., sec. 25, NE <sup>4</sup> (Moffat Chaining)	Not Applicable	TAR 9

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	23,000	194	Maintain	Maintain
Native Grasses	5,000	47	Increase	60
Forbs	-	(Trace)	Increase	10
Trees (P/J)	166	-	Maintain below 400	-

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Ecological Status - Not Applicable -  
 (% of Climax or PNC\*\*)

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Relative Composition	Grasses - 65%	60-70%
(all species)	Forbs - -	0-5%
	Shrubs - 35%	30-40%

\*\* PNC = Potential Natural Community.



<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 22 N., R. 69 E., sec. 27, SE <sup>4</sup> (Blind Spring Chaining)	Not Applicable	TAR 10

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	110,000	368	Maintain or Decrease	Maintain Above 250
Native Grasses	128,000	25	Maintain or Decrease	40
Forbs	-	(Trace)	Increase	10
Antelope Bitterbrush	167	-	Increase	25
Trees (P/J)	223	-	Maintain Under 400	-

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Ecological Status - Not Applicable -  
(% of Climax or PNC\*\*)

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Relative Composition (all species)	Grasses - 98%	80-90%
	Forbs - -	0-5%
	Shrubs - 2%	5-15%

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 21 N., R. 69 E., sec. 15 (Rock Spring Chaining)	Not Applicable	TAR 11

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	66,000	227	Maintain	Maintain Above 175
Native Grasses	66,000	64	Maintain	80
Forbs	-	27	Maintain	30
Wyoming Big Sagebrush	1,598	150	Maintain	Maintain

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Ecological Status                    - Not Applicable -  
(% of Climax or PNC\*\*)

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Relative Composition	Grasses - 60%	55-65%
(all species)	Forbs - 5%	5-10%
	Shrubs - 35%	30-40%

\*\* PNC = Potential Natural Community.

12. Management Area - Schell Range - Tippett Allotment

Foraging Animals - Upland Game Birds, Deer Summer, Cattle, Sheep, Wild Horses

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 23 N., R. 65 E., sec. 8, SW <sup>4</sup> Calcutta Burn	Not Applicable	TAR 1

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Crested Wheatgrass	24,000	196	Maintain	Maintain Above 150
Native Grasses	71,000	176	Maintain	Maintain
Forbs	104,600	27	Maintain	Maintain
Snowberry	799	393	Maintain	Maintain Above 200

-----

Ecological Status - Not Applicable -  
(% of Climax or PNC\*\*)

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Relative Composition	Grasses - 36%	35-45%
(all species)	Forbs - 2%	2-10%
	Shrubs - 62%	50-65%

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 24 N., R. 65 E., sec. 27, SW <sup>4</sup> (Calcutta Burn)	D28B037N	TAR 2

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Bluebunch Wheatgrass	16,000	50	Maintain	60
Forbs	70,400	84	Maintain	Maintain Above 55
Low Sagebrush	71,000	331	Maintain	Maintain Above 150

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral Stage</u> (57% of PNC)	<u>Late Seral Stage</u> (50-75% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 20%	20-35%
	Forbs - 17%	10-20%
	Shrubs - 63%	50-65%

\*\* PNC = Potential Natural Community.

13. Management Area - East Antelope Bench - Tippett Allotment  
Foraging Animals - Antelope Key Winter, Sheep, Cattle

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 22 N., R. 67 E., sec. 11, SE <sup>4</sup>	D28A012N	TAR 6

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	10,000	47	Increase	60
Shadscale	1,000	4	Increase	50

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Seral Stage</u> (23% of PNC)	<u>Mid Seral Stage</u> (26-50% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 33%	25-35%
	Forbs - -	0-5%
	Shrubs - 67%	60-70%

\* Increase total production from 150 lbs/ac to 250 lbs/ac.

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 22 N., R. 67 E.	D28A012N	TAW 2

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	6,000	14	Increase	50
Forbs	-	-	Increase	5
Shadscale	1,000	29	Increase	60

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Seral Stage</u> (24% of PNC)	<u>Mid Seral Stage</u> (26-50% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 18%	20-30%
	Forbs - -	0-5%
	Shrubs - 82%	65-80%

\*\* PNC = Potential Natural Community.



<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 24 N., R. 68 E., sec. 30, SE <sup>4</sup>	D28A074N	TAR 5

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density (Plants/ac.)</u>	<u>Production (Lbs./ac.)</u>	<u>Density</u>	<u>Production</u>
Indian Ricegrass	11,000	178	Maintain	Maintain Above 125
Shadscale	400	1	Increase	10
Little Rabbitbrush	6,000	61	Maintain	Maintain

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Seral Stage</u> (20% of PNC)	<u>Mid Seral Stage</u> (26-50% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 74%	30-50%
	Forbs - -	0-5%
	Shrubs - 26%	45-55%

\*\* PNC = Potential Natural Community.

14. Management Area - Antelope Valley - Tippet Allotment

Foraging Animals - Antelope Yearlong, Cattle, Sheep

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 23 N., R. 68 E., sec. 2, NW <sup>4</sup>	D28B071N		TAR 3	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Western Wheatgrass	130,000	134	Maintain	Maintain Above 100
Forbs	5,000	21	Increase	25
Winterfat	-	-	Increase	10
Shadscale	-	(Trace)	Increase	10
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Late Seral</u> (53% of PNC)		<u>Late Seral Stage</u> (51-70% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses - 65%</u>		55-65%	
	<u>Forbs - 25%</u>		15-20%	
	<u>Shrubs - 10%</u>		15-30%	

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 23 N., R. 68 E., sec. 1, NW <sup>4</sup>	D28B109N	TAR 4

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	7,000	23	Increase	50
Winterfat	12,000	255	Maintain	Maintain Above 245

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Climax</u> (78% of PNC)	<u>Climax</u> (76-100% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 8%	5-15%
	Forbs - -	0-5%
	Shrubs - 92%	80-90%

\* Increase total production from 250 lbs/ac to 350 lbs/ac.

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 22 N., R. 68 E., sec. 21, SW <sup>4</sup>	D28B109N		TAR 7	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species*</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Winterfat	300,000	415	Maintain or Decrease	Maintain Above 245
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral</u> (70% of PNC)		<u>Late Seral to Climax</u> (70-100% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses</u> - -		0-10%	
	<u>Forbs</u> - -		0-5%	
	<u>Shrubs</u> - 100%		85-100%	

\* An increase in species diversity is desirable but unpredictable.

\*\* PNC = Potential Natural Community.

\*\*\* Although these Key areas are in MLRA 28A, there is no appropriate site description developed, therefore, descriptions from MLRA 28B are used for now.

15. Management Area - East Antelope Valley South - Tippet Allotment  
Foraging Animals - Antelope Yearlong, Cattle, Sheep

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 23 N., R. 68 E., sec. 34	D28A021N	TAR 8

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	42,000	123	Maintain	150
Winterfat	89,000	323	Maintain	Maintain Above 200
Bud Sagebrush	1,600	23	Increase	30

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<u>Ecological Status</u> (% of Climax or PNC**)	Late Seral (61% of PNC)	Late Seral (60-75% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 26%	25-30%
	Forbs - -	0-5%
	Shrubs - 74%	70-75%

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 22 N., R. 69 E., sec. 13, NWNE	D28A013N	TAW 1

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	581	5	Increase	15
Forbs	2,300	(Trace)	Increase	5
Black Sagebrush	2,000	138	Maintain	160
Winterfat	3,400	1	Maintain or Increase	10

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<u>Ecological Status</u> (% of Climax or PNC**)	Mid Seral (46% of PNC)	Mid to Late Seral (45-75% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 4%	5-10%
	Forbs - -	0-5%
	Shrubs - 96%	85-95%

\* Increase total production from 200 lbs/ac to 400 lbs/ac.

\*\* PNC = Potential Natural Community.



16. Management Area - Spring Gulch North/Stone House - Tippett Allotment

Foraging Animals - Deer Winter, Sage Grouse, Cattle-Sheep, Wild Horses

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

17. Management Area - Water Canyon - Becky Springs Allotment

Foraging Animals - Antelope Yearlong, Sheep, Cattle, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 25 N., R. 65 E., sec. 22, SW <sup>4</sup>	D28B011N		BSR 1	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass*	1,700	2	Increase	10
Forbs	580	7	Increase	14
Bud Sagebrush	67	(Trace)	Maintain	5
Winterfat	334	82	Maintain	Maintain Above 70
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	Late Mid Seral (50% of PNC)		Mid to Late Seral (50-65% of PNC)	
-----				
<u>Relative Composition</u> (all species)	Grasses - 33%		30-40%	
	Forbs - 2%		2-5%	
	Shrubs - 65%		60-70%	

\* Increase total production from 400 lbs/ac to 550 lbs/ac.

\*\* PNC = Potential Natural Community.

18. Management Area - Lookout Springs - Becky Springs Allotment  
Foraging Animals - Antelope Yearlong, Sheep, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 26 N., R. 66 E., sec. 25, SW <sup>4</sup>	D28B011N		BSR 2	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Squirreltail	3,000	29	Maintain	Maintain
Forbs	-	3	Increase	5
Black Sagebrush	4,000	358	Maintain	Maintain
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	Mid Seral Stage (43% of PNC)		Mid to Late Seral (45-60% of PNC)	
-----				
<u>Relative Composition</u> (all species)	Grasses - 8%		10-15%	
	Forbs - 1%		1-5%	
	Shrubs - 91%		80-90%	

\*\* PNC = Potential Natural Community.

<u>Location</u>	<u>Ecological Site</u>	<u>Studies Number</u>
T. 26 N., R. 66 E., sec. 25, SW <sup>4</sup>	D28B011N	BSR 3

<u>Key Species</u>	<u>Present Situation</u>		<u>Management Objective</u>	
	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Squirreltail	5,000	6	Increase	10
Forbs	1,200	4	Increase	8
Black Sagebrush	3,000	112	Increase	120

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Mid Seral Stage</u> (40% of PNC)	<u>Mid to Late Seral</u> (40-60% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 2%	5-20%
	Forbs - 3%	3-10%
	Shrubs - 95%	70-90%

\* Increase total production.

\*\* PNC = Potential Natural Community.

19. Management Area - Old Highway Bench - Becky Springs Allotment  
Foraging Animals - Pronghorn Antelope Yearlong, Sheep-Cattle,  
 Wild Horses

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

20. Management Area - Becky Peak - Sampson Creek Allotment  
Foraging Animals - Deer Summer, Sheep, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 24 N., R. 65 E., sec. 2, NE <sup>4</sup>	028B037N		SCR 1	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Bluebunch Wheatgrass	1,000	15	Increase	30
Perennial Forbs*	42,000	100	Maintain	75
Low Sagebrush	14,000	500	Maintain	200
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	Early-Late Seral (57% of PNC)		Late Seral (51-75% of PNC)	
-----				
<u>Relative Composition</u> (all species)	Grasses - 28%		25-40%	
	Forbs - 12%		10-15%	
	Shrubs - 60%		50-60%	

\* Due to climatic conditions, total forb production exceeded potential. The objective is to at least maintain potential.

\*\* PNC = Potential Natural Community.

21. Management Area - Black Sage Foothills - Sampson Creek Allotment  
Foraging Animals - Antelope Yearlong, Sheep, Wild Horses, Cattle

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 24 N., R. 66 E., sec. 30	D28B011N		SCR 2	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production*</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Squirreltail	6,000	24	Maintain	Maintain
Black Sagebrush	7,000	339	Maintain	Maintain
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Mid Seral Stage</u> (40% of PNC)		<u>Mid to Late Seral</u> (40-60% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses - 10%</u>		10-20%	
	<u>Forbs - -</u>		0-5%	
	<u>Shrubs - 90%</u>		75-90%	

\* Increase total production.

\*\* PNC = Potential Natural Community.

22. Management Area - Spring Valley Bottom - Sampson Creek Allotment  
Foraging Animals - Antelope Yearlong, Sheep, Cattle, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 24 N., R. 66 E., sec. 32, NE <sup>4</sup>	D28B013N		SCR 3	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	42,000	15	Maintain	30
Forbs	-	-	Increase	5
Winterfat	233,000	296	Maintain	300
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Late Seral</u> (55% of PNC)		<u>Late Seral</u> (51-75% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses - 42%</u>		30-45%	
	<u>Forbs - -</u>		0-5%	
	<u>Shrubs - 58%</u>		55-65%	

\*\* PNC = Potential Natural Community.



24. Management Area - South Indian Reservation - Tippet Allotment

Foraging Animals - Deer Summer, Cattle

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

25. Management Area - Goshute Mountain Allotment

Foraging Animals - Antelope Yearlong, Sheep, Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 26 N., R. 69 E., sec. 35, SE <sup>4</sup>	D28A013N		GMR 1	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	-	3	Increase	5
Shadscale	1,000	6	Increase	20
Black Sagebrush	15,000	314	Maintain	Maintain Above 200
-----				
<u>Ecological Status</u> (% of Climax or PNC**)	<u>Mid Seral Stage</u> (40% of PNC)		<u>Mid to Late Seral</u> (40-65% of PNC)	
-----				
<u>Relative Composition</u> (all species)	<u>Grasses</u> - 4%		5-15%	
	<u>Forbs</u> - -		0-5%	
	<u>Shrubs</u> - 96%		80-95%	

\*\* PNC = Potential Natural Community.

26. Management Area - Deep Creek Allotment

Foraging Animals - Antelope Yearlong, Cattle, Wild Horses

<u>Location</u>	<u>Ecological Site</u>		<u>Studies Number</u>	
T. 26 N., R. 70 E., sec. 33, SW <sup>4</sup>	D28A012N		DCR 1	
	<u>Present Situation</u>		<u>Management Objective</u>	
<u>Key Species</u>	<u>Density</u> (Plants/ac.)	<u>Production</u> (Lbs./ac.)	<u>Density</u>	<u>Production</u>
Indian Ricegrass	16,000	13	Increase	25
Forbs	-	12	Increase	15
Bud Sagebrush	-	2	Increase	5
Shadscale	867	29	Increase	50
Winterfat	-	7	Increase	10

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<u>Ecological Status</u> (% of Climax or PNC**)	<u>Early Seral Stage</u> (25% of PNC)	<u>Mid Seral Stage</u> (26-50% of PNC)
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<u>Relative Composition</u> (all species)	Grasses - 26%	20-30%
	Forbs - 4%	5-10%
	Shrubs - 70%	65-75%

\*\* PNC = Potential Natural Community.

27. Management Area - East Chin Creek - Chin Creek Allotment

Foraging Animals - Pronghorn Antelope Winter/Yearlong,  
Wild Horses, Cattle-Sheep

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

28. Management Area - Becky Springs Area - Becky Springs Allotment

Foraging Animals - Pronghorn Antelope - Winter/Yearlong,  
Wild Horses, Cattle/Sheep

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

29. Management Area - Spring Gulch South - Tippett Allotment

Foraging Animals - Pronghorn Antelope - Yearlong, Wild Horses

No specific resource objectives were developed for this Management Area because no key areas have been established yet. Until now, there has been no need to establish key areas here since little or no use has been made in this area. Implementation of planned actions will be necessary in this area to help meet objectives in other Management Areas. As implementation occurs and use patterns develop, key areas and specific resource objectives will be established.

Maintain 21% shrub cover not to exceed a maximum height of 24 inches for sage grouse strutting and nesting areas.

Because the soil survey and ecological site correlation efforts have just begun in the plan area, some of the ecological site descriptions used to formulate specific objectives may eventually be revised thus requiring minor adjustments in the objectives. This is further complicated by the fact that two major land Resource Areas (28A and 28B) join within the planning area so that some key areas now identified as 28B sites may be 28A sites and vice versa.

Allotment specific, wild horse specific and wildlife specific management objectives are listed in detail in each individual foraging animal plan (see AMP, HMAP, HMP).

### APPENDIX III

#### Environmental Analysis

A mid-level environmental analysis (EA-NV-040-4-40) was prepared for the Antelope Herd Management Area Plan, the Antelope Range Habitat Management Plan (wildlife), and Allotment Management Plans for the Chin Creek, Tippett, Becky Springs, Goshute Mountain, Deep Creek, and Sampson Creek grazing allotments. This environmental analysis is on file at the Ely District Office. In addition, site specific environmental analyses will be prepared prior to initiating any actions to be accomplished as a result of this HMAP.

## APPENDIX IV

### Literature Cited

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