

Down  
Interest?!

5-5-86



United States Department of the Interior

8300(C-028)  
High Rock CMA

IN REPLY REFER TO

BUREAU OF LAND MANAGEMENT  
Surprise Resource Area Hdqrs.  
P.O. Box 460  
Cedarville, California  
96104

May 5, 1986

Rose Strickland  
Toiyabe Chapter, Sierra Club  
P.O. Box 8096  
Reno, Nevada 89507

Dear Rose:

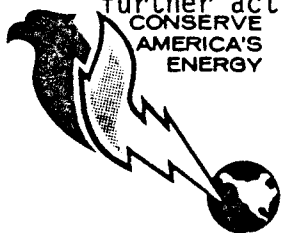
Thank you for your letter following our phone conversation. Both the phone conversation and your letter have forced me to collect my thoughts regarding a cooperative management agreement for the High Rock area. I don't feel I did a very good job of explaining my ideas. I want to emphasize, these are only ideas at this time and my feeling is that in working with a group, far better ideas will emerge.

Rose, I feel my biggest failure at this point in time is keeping everyone informed as to what BLM has done to implement the Stewardship recommendations for the High Rock area. I agree we still have problems to solve. I don't agree that there are a considerable number of problems or that they are worse as you have stated in your letters. Nor has time or the BLM stood still since the TRT submitted its recommendations. I don't want to delve into too much detail regarding implementation of the TRT recommendations in this letter as I will cover that in another letter (summary update) to the TRT members and at the May 15, 1986 TRT meeting. However, I do want to discuss what has occurred regarding the High Rock Canyon Complex and our actions over the last couple of year.

ACEC: The canyon complex has been designated as an Area of Critical Environmental Concern (ACEC) as of January, 1984. We intend to develop an ACEC Management Plan in FY 1987 using pertinent portions of the following plans.

Cultural Resources: A Cultural Resource Management Plan has been developed and implemented. Monitoring sites have been established and two caves has been grated.

Watershed: A Watershed Management Plan has been developed for the High Rock watershed. We are in the process of surveying and designing watershed control structures outside of the WSA's. We have also surveyed and designed some watershed structures within the WSA's but have suspended further action pending Congressional action on wilderness status.



Save Energy and You Serve America!

Wildlife: A Wildlife Habitat Management Plan has been developed. It contains management objectives for raptors (including potential reintroduction of peregrine falcon), bighorn sheep, habitat improvement (willow/riparian, upland wet meadows, upland swales and aspen) and sensitive plant species. It also identifies specific wildlife projects to be constructed as funding allows. We will finalize the survey and design of the fence along the west side of High Rock this year. I view the construction of the fence as the single most important step in controlling livestock use in the canyon complex. The plan also prescribes the grazing use that will be allowed in the canyon complex and to the east. Monitoring stations were developed in 1985 and will be completed in 1986.

Livestock:

	<u>% Non-use</u>	<u>Agreement</u> <sup>1/</sup>
1984		
Cockrell	36% <sup>2/</sup>	18.6%
Bunyard	25% <sup>3/</sup>	17.6%
1985		
Cockrell	28.5% <sup>2/</sup>	18.6%
Bunyard	25%	17.6%
1986		
Earp <sup>4/</sup>	100% <sup>5/</sup>	0
Bunyard	39% <sup>5/</sup>	0

- <sup>1/</sup> Agreement dated March, 1983 and good for 1984 and 1985.
- <sup>2/</sup> Cockrell leases Earp, includes Massacre Mountain and Little High Rock Allotments.
- <sup>3/</sup> Bunyard did not license any cattle in 1984 and 1985, which normally constitutes 11.3% of his use in Massacre Mtn. Allotment. Therefore, the nonuse shown includes 13.7% of sheep use.
- <sup>4/</sup> Cockrell relinquished his lease of Earp base property. Earp has applied for 100% nonuse, however, we have been notified that Earp has leased the case property to someone else. No documents have been filed with us yet.
- <sup>5/</sup> Estimated. Actual use will not be known until after grazing season ends. Bunyard activated all of allowable cattle use. BLM denied application for an additional 100 head of cattle. Nonuse is from sheep operation.

In 1983, Jim Cockrell did a good job of herding his cattle. They did not get into the canyons until late summer and then only for a short period. In 1984, he did not herd his cattle and heavier than desirable use in the canyon occurred. In 1985, the same occurred. In December, 1985, the BLM met with Bunyard and Earp to express concern about cattle use of the canyons bottoms and riparian areas throughout the allotment, particularly on Massacre Mountain. Specific interim control measures were discussed:

1. No drift of cattle from the Little High Rock Allotment to the Massacre Mountain Allotment will be allowed. An alternative would be to totally nonuse the Little High Rock Allotment.

2. More intensive distribution of cattle will be required, particularly during the early turnout. Defer as much use on the mountain area as possible.
3. After July 1, cattle use in the canyon complex will not be allowed. The "hot season" (July-August) use period is known to be the most detrimental to riparian zones under the season-long grazing regime. Earlier use and then removal is widely viewed as being acceptable on riparian zones. Until the fence is constructed on the west side of High Rock, this is our best bet to improve and protect the riparian zones in the canyon complex.
4. Attempt to attain some voluntary nonuse of cattle AUMs as per earlier agreement which expired at the end of 1985 grazing season.

During 1986, the BLM will finalize the survey and design of the fence along the westside of High Rock and survey and design livestock water structures.

Recreation: A draft Recreation Management Plan specific to the ACEC is scheduled for 1986. As mentioned in my letter of April 10, 1986, I believe the May 23, 1986 meeting will serve as a good basis for input to the plan.

Frankly Rose, in my opinion, the short discussion above demonstrates the BLM has not "sat on our hands" waiting for the litigation with Bunyard to be settled. While implementing livestock management throughout the rest of the Resource Area, we have not ignored livestock or other resource concerns in Massacre Mountain/High Rock. And as I mentioned in earlier conversations, as soon as the current litigation is settled, we stand ready to issue the remaining grazing decisions based on existing TRT recommendations or new ones if consensus is attained. In retrospect, I would say that everyone has lived up to their obligations, including the livestock operators (in regards to voluntary nonuse), pending settlement of the current litigation. None of us anticipated it taking this long to settle.

Now back to the proposed CMA, I know that I have mentioned it to you several times that since late 1984 I have been attempting to develop a CMA with The Nature Conservancy for the High Rock area. My thoughts were that they could serve as a coordinating agent to search out numerous groups or individuals who would be willing to provide funds, materials, labor, etc. to help in the management of the ACEC. TNC's membership and resources in Nevada are limited and therefore hindered our efforts. However, they remain greatly interested in participating as part of a group plan.

In my last letter (dated April 10, 1986), you will note that I encouraged everyone to bring anyone who may be interested. So as you can see, I did not intend this group to be closed as you letter somewhat infers. Also, I believe you have some misinformation. Tom Hunt offered assistance when he learned of my efforts with TNC. I responded to Tom that we were developing the CMA and "Hopefully, through the CMA we will be able to obtain manpower, materials and funding from organizations such as yours, TNC, Sierra Club,

etc. to effect the management of an area dear to all of us." So again Rose, I think you can see that the BLM has never intended to exclude anyone nor have we rejected offers of help. As I stated in my last letter, I agree that one agreement with all interested parties is preferable to several individual agreements. That is the intent of bringing everyone together. I talked with almost all of the people on the attached mailing list and they all agreed it would be good to try to develop an agreement. In light of that, I really hope that the Sierra Club can attend. We have a unique opportunity to pull several traditional advesaries together to support a positive management thrust for the High Rock Canyon ACEC. I am extremely confident that we can do this based on the enthusiasm that I encountered in response to my proposal.

I believe I will close on that note. This letter has been long winded enough! Hopefully, this helps to bring you somewhat up to date and explain my ideas for a group CMA. I have also enclosed several items that may help your understanding of where I am trying to go. If you have any further questions, please call.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lee Delaney".

Lee Delaney  
Surprise Resource Area Manager

HIGH ROCK  
HERD MANAGEMENT AREA PLAN

Surprise Resource Area  
Susanville District  
1985

## INTRODUCTION

### A. Location

The High Rock Herd Management Area (HMA) is located approximately 46 miles north of Gerlach, Nevada and 44 miles southeast of Cedarville, California. The HMA encompasses approximately 115,000 acres (114,447 acres BLM; 653 acres private), all of which are in Washoe County, Nevada. (see Map #1)

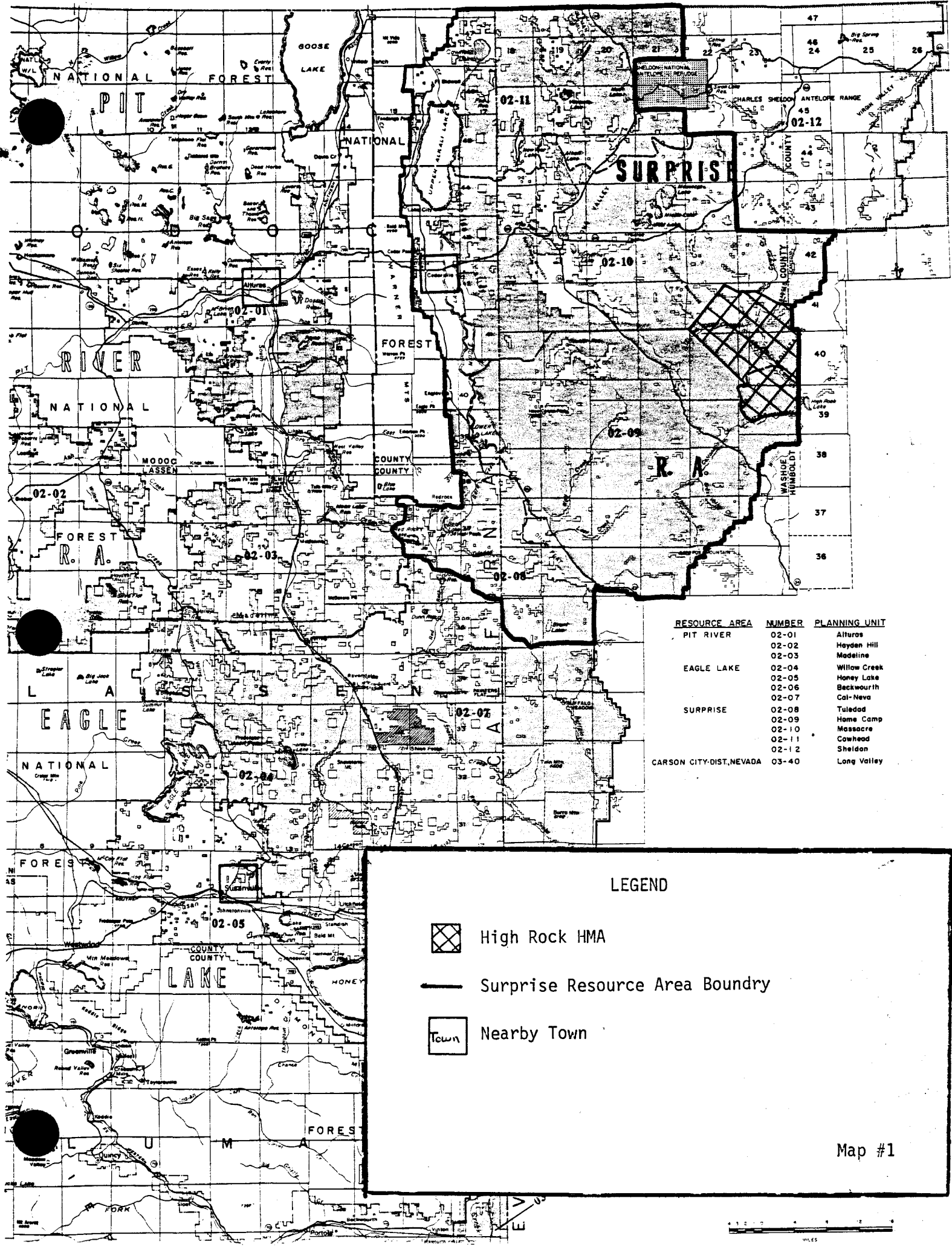
The area consists of six (6) major canyons dissecting the surrounding tablelands. This topography provides sufficient diversity to provide substantial year long range for wild horses. The vegetation is representative of cold desert sagebrush type communities with small amounts of aspen, meadow, aspen and willow types in the canyons.

The High Rock HMA is bordered to the south by Little High Rock Canyon, which is the northern boundary for the Fox-Hog HMA. It is bordered to the west by the Home Camp/Massacre Mountain Allotment boundary fence and to the east by the Winnemucca/Susanville District boundary fence. There are no man made boundaries limiting horse movements to the northwest however, historically horses rarely move past Grassy Cabin or Stevens Camp. The northern boundary is made up of the Wall Canyon and Nut Mountain Allotment boundary fences which are also boundaries for the Wall Canyon and Nut Mountain HMAs. (see Map #2)

### B. Wild Horse Use History




The original High Rock HMA encompassed the new High Rock HMA, the Nut Mountain HMA and the Wall Canyon HMA. (see Map 3)

The Susanville District Wild Horse and Burro Plan provides a general history of wild horses in the District. Appendix A provides a brief summary of the management levels determined for the High Rock HMA.

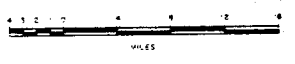


RESOURCE AREA	NUMBER	PLANNING UNIT
PIT RIVER	02-01	Alluros
	02-02	Hayden Hill
	02-03	Madeline
EAGLE LAKE	02-04	Willow Creek
	02-05	Honey Lake
	02-06	Beckworth
	02-07	Cal-Neva
SURPRISE	02-08	Tuledad
	02-09	Home Camp
	02-10	Mossacre
	02-11	Cowhead
	02-12	Sheldon
CARSON CITY-DIST, NEVADA	03-40	Long Valley

**LEGEND**




-  High Rock HMA
-  Surprise Resource Area Boundary
-  Nearby Town

Map #1

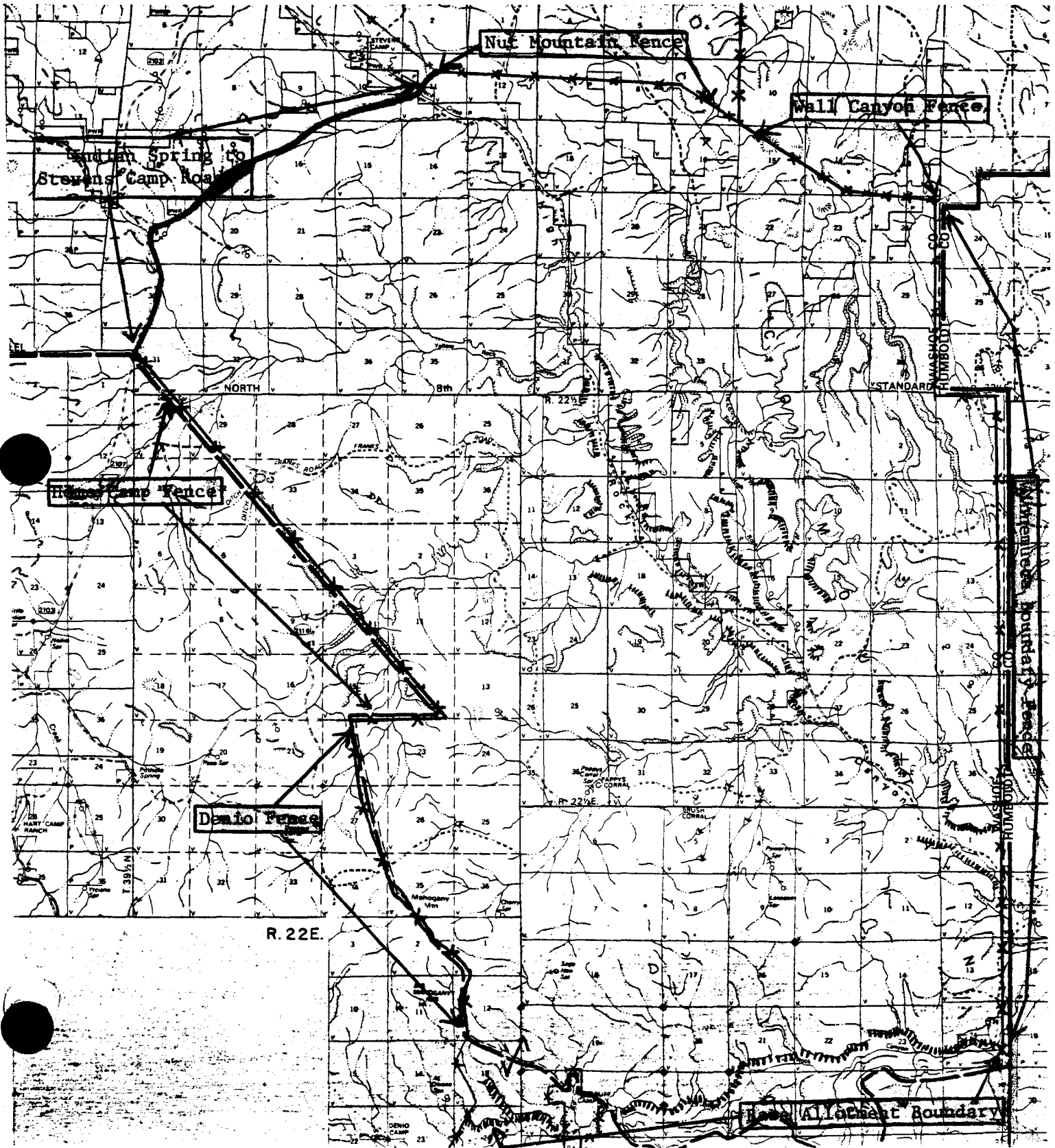


HIGH ROCK  
HERD MANAGEMENT AREA

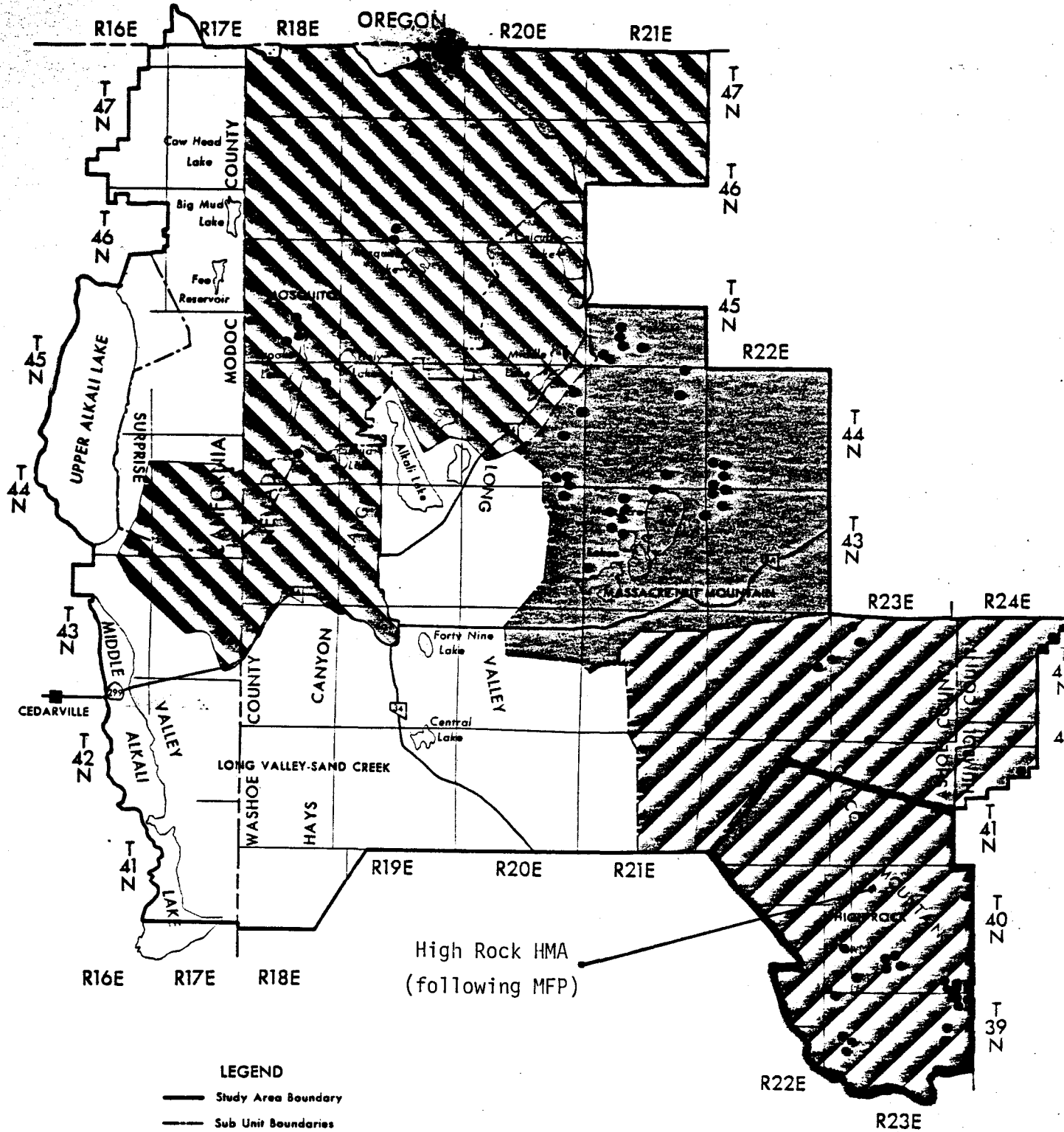
Legend:

-  HMA Boundry
-  Prominent Rims & Canyon Faces
-  Fences

Map #2







- LEGEND**
- Study Area Boundary
  - Sub Unit Boundaries
  - Herd Management Areas
  -  New Years Lake
  -  Massacre Lakes
  -  High Rock
  - Band Locations  
September 1977

**COWHEAD/MASSACRE  
STUDY AREA  
GRAZING ENVIRONMENTAL STUDY  
WILD HORSES**

## RESOURCE INFORMATION

### A. Land Use Plan

The Cowhead/Massacre Environmental Impact Statement was completed in 1980. Land use decisions were formed from this ES and documented in the Cowhead/Massacre Management Framework Plan (MFP) in 1981. The MFP established a minimum herd size of 70 head and maximum of 100 head. The MFP also states that this herd level could be adjusted to a lower level if wild horses are adversely impacting cultural resource sites in the High Rock area. Where feasible, cultural resources would be fenced for protection, however, if fencing is unfeasible, wild horse numbers would be removed in part or in whole.

### B. Wild Horses

As the boundary description indicates the High Rock HMA borders three (3) HMAs within the Surprise Resource Area as well as one (1) in the Winnemucca District. It is suspected that there is some interchange occurring between Herd Management Areas at this time. The degree of interchange has yet to be determined.

The High Rock HMA is divided into two (2) wild horse summer ranges. The East of High Rock Home Range will consist of 40-60 horses while the Little High Rock Home Range will consist of 30-40 horses. (see Map 4) During the winter distinguishing two separate herds or home ranges becomes difficult. There is considerable overlap in winter range between the two. (see Map 5)

Some of the wild horses in the High Rock area have primitive coloring and markings in particular, the dark dorsal stripe along the back and the bars or stripe markings on the legs. These characteristics occur infrequently and should be maintained on some the bands in this herd.

Wild horses tend to make a considerable amount of their use on low sage tablelands in the area. This use is made during both the summer and winter. During colder periods of winter, horses will migrate to the warmer south facing exposures and in some cases to the canyon bottoms.

### C. Other Resources

The High Rock Area is one of the most diverse areas in terms of resources in the Susanville District. With this diversity there will be a significant amount of coordination and resource plan integration to be done during the implementation of this HMAP.

There has been an extensive amount of documentation as to the resource values in the High Rock Area. The High Rock Habitat Management Plan provides an excellent description of resource values in the area (see Appendix B). A Cultural Resource Management Plan has been completed and an Allotment Management Plan will be developed for this Area. These Plans will describe the integration of their respective resources into the management of the Area.

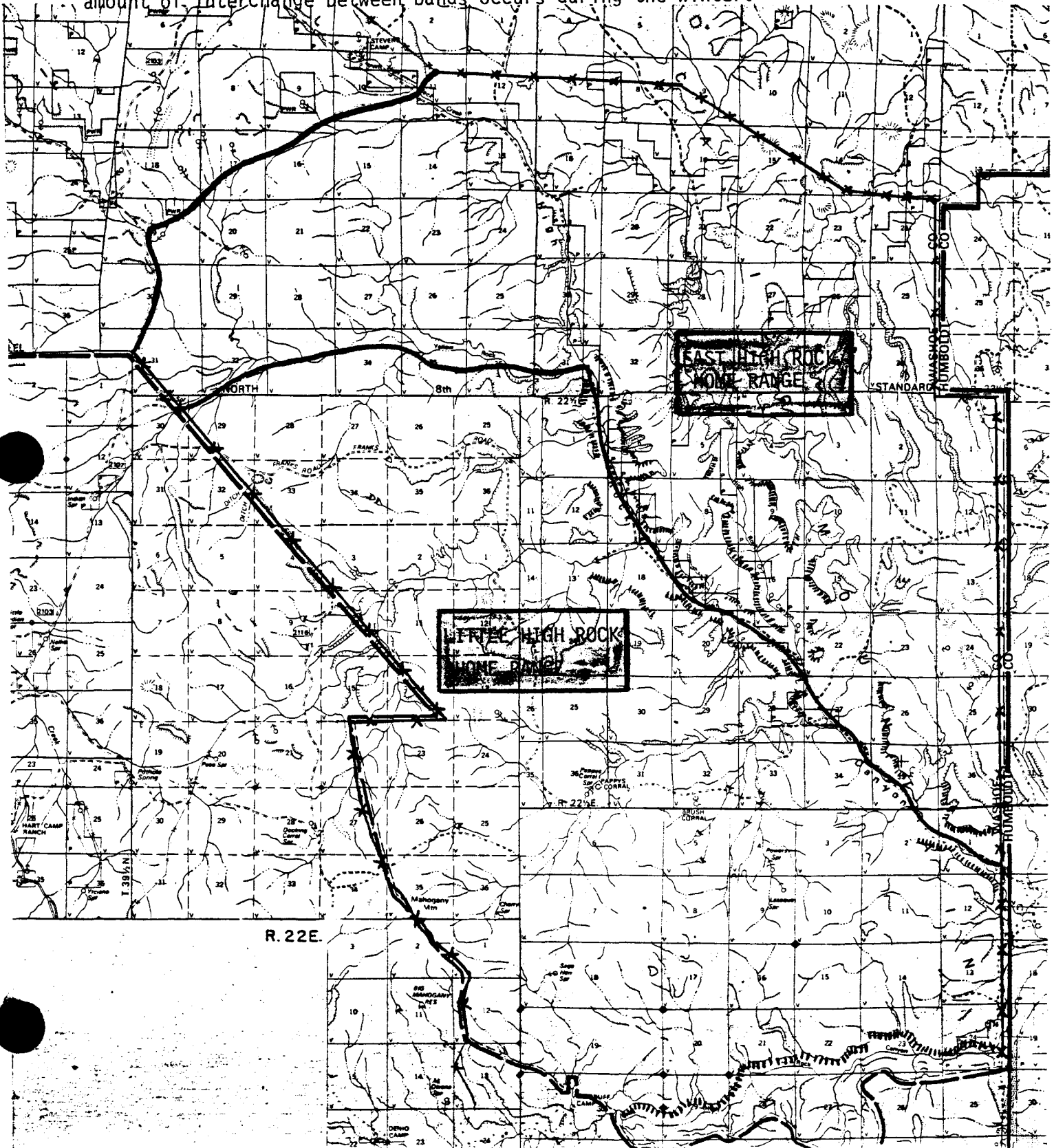
The management of the vegetative base will be the key to improvement of all resources in this Area. Healthy and productive ecological sites provide erosion control for cultural, riparian and hydrological values. These sites also provide forage for livestock, wild horses, deer, antelope and other wildlife species. The stocking rate of horses and their effects on the vegetative base will be monitored. This information will be recorded in this Plan and integrated into monitoring data for livestock and big game management.

HIGH ROCK  
HERD MANAGEMENT AREA

Legend: 1/2 inch = 1 mile

— Approximate Home Range Boundary Line




The Home Range unit depicts where bands of horses tend to summer. The number of horses for each home range are only approximations based on BLM's past observations. These areas are not totally isolated from one another. A considerable amount of interchange between bands occurs during the winter.

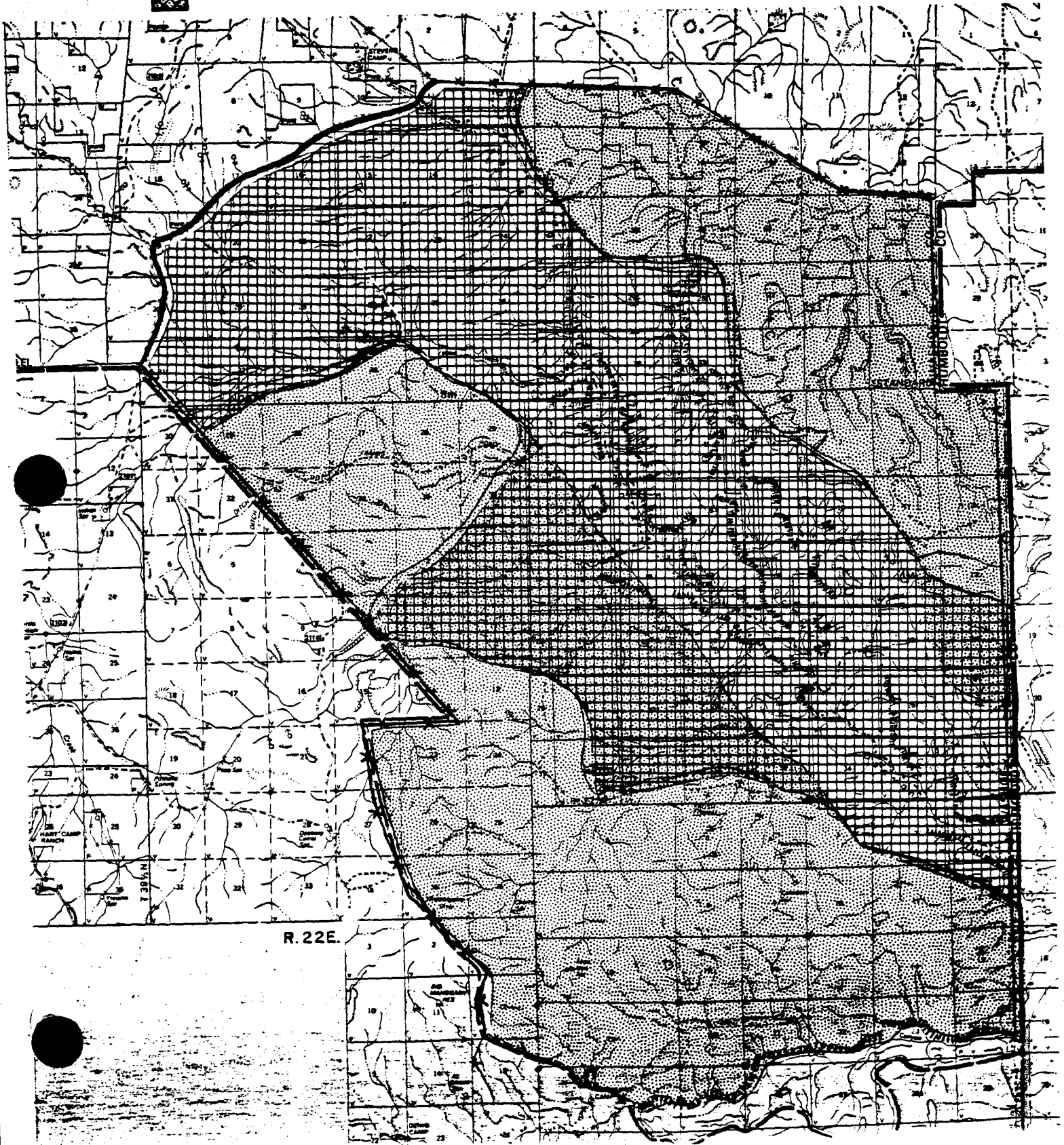


HIGH ROCK  
HERD MANAGEMENT AREA

Map #5

Legend: 1/2 inch = 1 mile

-  Summer Range
-  Winter Range
-  Summer/Winter Overlap



## OBJECTIVES

1. Maintain a healthy and viable wild, free-roaming horse herd in the High Rock HMA.

Method: Control herd numbers and implement AMP so as to maintain the vegetative base in a healthy and stable condition.

Monitor: Herd reproduction levels will be used as an indicator of health and viability. A rate of increase at or below 10% will be an indicator of low herd health and viability. In addition, vegetative trend will be monitored to evaluate vegetative condition.

2. Maintain a minimum of 70 head and maximum of 100 head of wild horses.

Method: Periodic removal of horses through accepted gathering methods.

Monitor: Bi-annual inventory of the herd will be made to determine herd size.

3. Assess the amount of interchange between the High Rock HMA wild horses and the surrounding HMAs in the Surprise R.A. and the Winnemucca District.

Method: Visual observations through the use of marker horses and known reproductive rates for the High Rock Herd. Marker horses will be collared with color coded plastic neck collars.

Monitor: Bi-annual inventory of wild horses in the HMA. Track the rate of increase.

4. Develop a highly adoptable horse through the selection of desirable breeding animals.

Method: Gather additional (greater than the excess) horses, when gathering this herd. Select horses with desirable characteristics for return into the breeding population (see selection criteria next section).

Monitor: Adoptability will be based on number of attempts required to adopt a horse compared with other HMA horses.

5. Reduce the incidence of inbreeding in the High Rock herd.

Method: Periodically introduce new horses into the herd from other wild, free-roaming horse herds.

Monitor: Viability as determined by rate of increase will be the primary indicator. Visual observations of conformation may also indicate inbreeding problems.

6. Maintain and enhance the primitive color markings on some of the wild horse bands in the High Rock HMA.

Method: Selection of horses to return to the breeding population and the introduction of new animals meeting the criteria.

Monitor: Bi-annual field observations and periodic observations at the trap site.

## MANAGEMENT METHODS

### Removal

The High Rock herd will be gathered when adult horse numbers reach or exceed 100 head. The herd would be reduced to the minimum management level of 70 horses including foals selected for retention. (Foals do not count toward maximum numbers until January 1, following the spring in which they were born.) It is anticipated gathering will be needed approximately every three years.

Horses, in addition to excess numbers, will be gathered when possible to allow for the selection of animals based on size, color, sex, conformation and age.

The maintenance of horses at this stocking rate level will assist in maintaining the vegetative sites in a healthy condition.

Wild horses will be gathered after foaling season. Trap site locations can be seen on the trap site map. (see Map #6)

### Selection

Wild horses in addition to the excess numbers will be gathered to facilitate the selection process. This will allow the manager to up grade the herd in an orderly manner. Those horses meeting the selection criteria will be returned to the breeding population.

### Criteria

#### 1. Quality

Quality will be based on the commonly accepted conformation standards for a light horse type, without regard to a particular breed.

#### 2. Color

All colors will be acceptable in this herd. Some horses will be selected with the dark dorsal stripe for return into the herd.

Dark or black hooves will be preferred over light or white hooves.

#### 3. Size

A fifteen hand or taller horse is preferred.

Selection criteria will be applied in order of quality, color and size.

It is assumed, the use of specific conformation, color, and size selection criteria will allow for the development of a more adoptable horse as well as maintaining a primitive set of characteristics in an established HMA.



### Sex Ratio

The commonly accepted natural sex ratio of 50% male and 50% female will be managed for in the High Rock HMA herds. When gathering an equal number of males and females will be removed from the herd.

In a herd of this size a 50/50 sex ratio should reduce potential inbreeding problems in this herd.

### Age Structure

An exact age structure will not be managed for in this HMA. However, when possible those horses which are less adoptable due to old age will be left on the HMA to live out their natural life.

### Interchange

In order to ascertain the degree of interchange occurring between the High Rock HMA and the surrounding HMA, 10 percent of the herd will be collared. This equates to 7 horses which will receive a color coded collar for the High Rock HMA. Wild horses selected at the trap site for retention will be the best candidates for collaring.

### Project Development

The need for approximately three cattleguards and two offset fence wing panels has been identified for the management of wild horses. Presently several gates between the High Rock HMA and the Winnemucca District are being left open continually. This allows wild horses to move back and forth between herd areas. Three of the heavily used gates have been identified for cattleguards. In addition, two offset fence wing panels have been identified to allow for the movement of horses back forth across this fence when gathering.

In addition two cattleguards and offset fence wing panels, some water development have been recommended specifically for wild horses on the east side of this HMA. Specific locations have not been identified. Presently wild horses have access to all available water in the area. Project locations can be seen on Map #6.





## EVALUATION AND REVISION

### A. Evaluation

Management methods as they relate to achieving the HMA's objectives will be evaluated based on the following monitoring techniques.

1. Rate of increase will be measured on the gather years. Reproduction information can best be gathered at this time. Bi-annual aerial counts of herds will assist in achieving an accurate rate of increase for the herd.
2. Visual observations of horses in the field, trap site or the corrals. These observations will enable observers to evaluate whether selection criteria is achieving conformation, color and size objectives. In addition, these observations may indicate inbreeding problems.
3. The tracking of horses through the adoption program by HMA will allow for the evaluation of selection criteria for the improvement of adoptability.
4. Bi-annual aerial counts and observations will allow for the evaluation of wild horse interchange between HMA boundaries and district boundaries. An aerial count in the winter and in the summer will be necessary to evaluate this problem.

Information will be recorded in Appendix C of this document.

### B. Revisions

Upon completion of annual evaluations minor revisions may be made to simplify the Plan or correct specific problems. Major revisions will be necessary if the Plan is not working as written or if reasonable progress towards objectives is not being made.

## COOPERATION IN MANAGEMENT

Coordination with adjacent Herd Management Areas in the Surprise Resource Area and especially in the Winnemucca District will be necessary. Presently, we believe there is some interchange of wild horses from and to the High Rock HMA. The bi-annual monitoring of this herd will enable the manager to determine the extent of this interchange. Should it be significant, control measures may have to be taken. These measures may be coordinated gathering and fence maintenance between Susanville and Winnemucca BLM Districts.

Evaluation and revisions of all resource management plan (Wildlife Habitat, Cultural Resources, Allotment and Herd Management Plans) in this area will be coordinated to ascertain the effects on each resource. This coordination process must take place prior to finalizing revisions to any of the plans.

## IMPLEMENTATION COSTS

The following specific actions and costs will be required to implement the High Rock HMAP. Specific actions will be broken into three categories; project development, annual costs and every three year costs.

1. <u>Project Development</u>	<u>\$ Cost</u>
Cattleguards (2 - @ \$2520.50/each)	5,041.00
Reservoirs (3 - @ \$2800/each)	8,400.00
Offset Fence Panels (2 - @ \$247/each)	494.00
TOTAL	\$13,935.00
2. <u>Annual Monitoring</u>	
2 Hours of flight time (@ \$150/hour)	300.00
.15 WM to record data track adoptability	525.00
TOTAL	\$ 825.00
3. <u>Every Three Years</u> <sup>1/</sup>	
Selection, Adoption	
Capture 55 horses (@ \$250/each)	13,750.00
Select 18 horses for return to HMA (@ \$50/each)	900.00
Adoption of 37 horses	
Processing (@ \$38/each)	1,406.00
Adoption (@ \$180/each)	6,660.00
Fixed & Overhead (@ \$145/each)	5,365.00
TOTAL	\$28,081.00

1/ It is anticipated this herd will be gathered every three years based on the current rate of increase of wild horses in this area.

APPROVAL

I, the undersigned, have reviewed this Herd Management Area Plan and agree it meets the elements of the Land Use Plan Decisions for wild, free-roaming horses in the Surprise Resource Area. This Plan is consistent with and subject to all provisions of the Code of Federal Regulations (43 CFR 4700).

\_\_\_\_\_  
Area Manager

\_\_\_\_\_  
Date

## APPENDIX A

The February 1973 inventory depicted 136 wild horses and 9 burros in the High Rock HMA. This inventory area covered the existing Wall Canyon HMA, the Nut Mountain HMA and the new High Rock HMA.

The 1981 Management Framework Plan developed the following management levels for the three HMA's.

	<u>Minimum</u>	<u>Mid-point</u>	<u>Maximum</u>
High Rock	70	85	100
Wall Canyon	15	20	25
Nut Mountain	<u>30</u>	<u>43</u>	<u>55</u>
	115	148	180

Presently there are approximately 235 wild horses in the High Rock HMA alone. Wild horses will be removed from the High Rock area to reach management levels in 1985.

The following forms will describe wild horses removed from and returned to the HMA.



## HIGH ROCK WILDLIFE HABITAT MANAGEMENT PLAN

### I. INTRODUCTION

The High Rock Wildlife Habitat Management Plan (WHMP) is one of several activity plans which will cover the High Rock area. The wildlife plan in combination with activity plans for cultural resources, recreation, fire management, livestock grazing, wild horses and potentially wilderness will serve as program guidance for the High Rock Area. At a future date all or portions of each plan may be incorporated into an Area of Critical Environmental Concern Management Plan.

This WHMP is intended to provide the necessary guidance and projects for wildlife land use decisions to be fully implemented. This Plan meets the requirements of a "comprehensive plan" as presented by Title II, Sec. 201(a) of the Sikes Act, as amended (P.L. 93452; 16 U.S.C. et. seq.). The Plan has been developed in cooperation with the Nevada Department of Wildlife in compliance with the Master Memorandum of Understanding between the Bureau and the Department signed in 1970. The Plan will serve as a memorandum of understanding for projects detailed in the Plan.

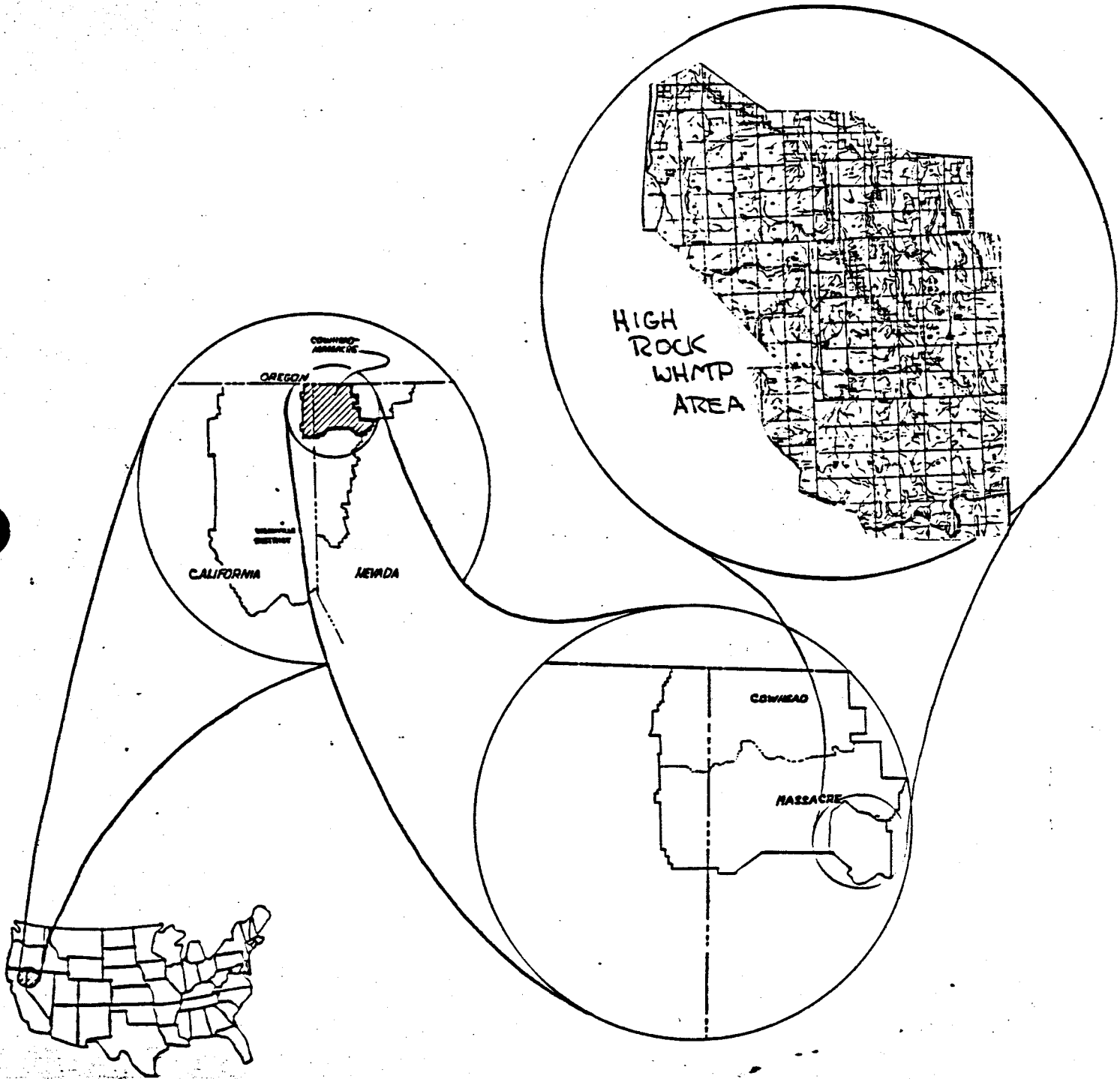
The High Rock Wildlife Habitat Management Area encompasses approximately 115,100 acres ( 114,447 acres BLM, 653 acres private) in northeastern Washoe County, Nevada (see Map 1). The HMA lies approximately 46 miles north of Gerlach, Nevada and 44 miles southeast of Cedarville, California. It is a series of six major canyons cutting through the volcanic tablelands. The vegetation is representative of cold desert sagebrush type communities with small amounts of meadow, aspen and willow types in the canyons.

Historically, the area has served as winter range for mule deer, antelope and an extirpated population of California bighorn sheep. Breeding populations of golden eagles, prairie falcons, red-tailed hawks, California quail, chukar, sage grouse, and numerous species of non-game wildlife make the area important wildlife habitat.

Due to the limited nature of suitable California bighorn sheep reintroduction sites, this area has received significant interest for the development of a habitat management plan by the BLM, the Nevada Department of Wildlife and the Modoc/Washoe Stewardship group.

Prior to development of this HMP, certain problems, constraints and actions were identified in the Cowhead/Massacre Management Framework Plan and various stewardship recommendations. These include delineation of areas to be grazed and at what intensity grazing will occur, class of livestock to be grazed, seasonal road closures, private mineral rights and the need to acquire private lands within the WHMA where possible.

HIGH ROCK WHMA  
Location Map  
Map 1



## II. DESCRIPTION OF HIGH ROCK HMP AREA

### A. Lands

The High Rock HMP area contains approximately 114,447 acres of federal lands. Private parcels total 653 acres and are located in Pole Canyon (160 acres), at the mouth of Little High Rock Canyon (180 acres) and in upper High Rock Canyon (313 acres). Of the federal acres, there are approximately 4,440 acres split estate lands where the federal government owns the surface and private parties own the minerals. These lands are in High Rock and Pole Canyons (see Map 2). The Management Framework Plan calls for the acquisition of private lands in Pole and Little High Rock Canyons through exchange or purchase and the acquisition of the private minerals through a minerals exchange whenever possible.

The private parcels within Pole and Little High Rock Canyons represent the only private lands in the lower canyons and are not presently being used by their owners for grazing or any other economic purpose. Both owners have expressed some interest in either sale or trade of their parcels.

The private mineral rights within the WHMA are the result of a 1975 land exchange in which the private land owner of the surface was only a partial owner in the sub-surface. Consequently only surface rights were exchanged. The private owner is in the process of acquiring all sub-surface ownership and it is hoped that a minerals exchange can be completed.

### B. Livestock Grazing

The entire WHMA with the exception of the rim areas, has received use by cattle, sheep and horses in the past. Currently the entire area is used by cattle spring, summer and fall and sheep use the western portions in early spring and late fall. The grazing use is scheduled to change in the near future as the sheep operator may convert from sheep to cattle and approximately 35,000 acres of the WHMA are scheduled to receive only prescription use by cattle. Prescription use is grazing scheduled for the purpose of achieving some goal other than red meat production. In this case grazing would be scheduled when it would be beneficial to wildlife primarily through the reduction of coarse grasses. Past and present livestock grazing has significantly altered many sites within the WHMA. Sites associated with perennial or seasonal surface waters are attractive to cattle in particular and these sites have been changed from meadow, willow and aspen sites to eroded, brush stands with lowered water tables. On the uplands continued selective grazing of grasses and forbs over brush species have favored an increase in brush density. The high brush densities have also been stabilized due to the lack of fire associated with the absence of fine fuels (primarily grasses) required to carry fires. It is probable that domestic sheep grazing are directly and indirectly responsible for the loss of bighorn sheep from the area. The domestic sheep were

HIGH ROCK WHMA

Land Status  
Map 2

Key:



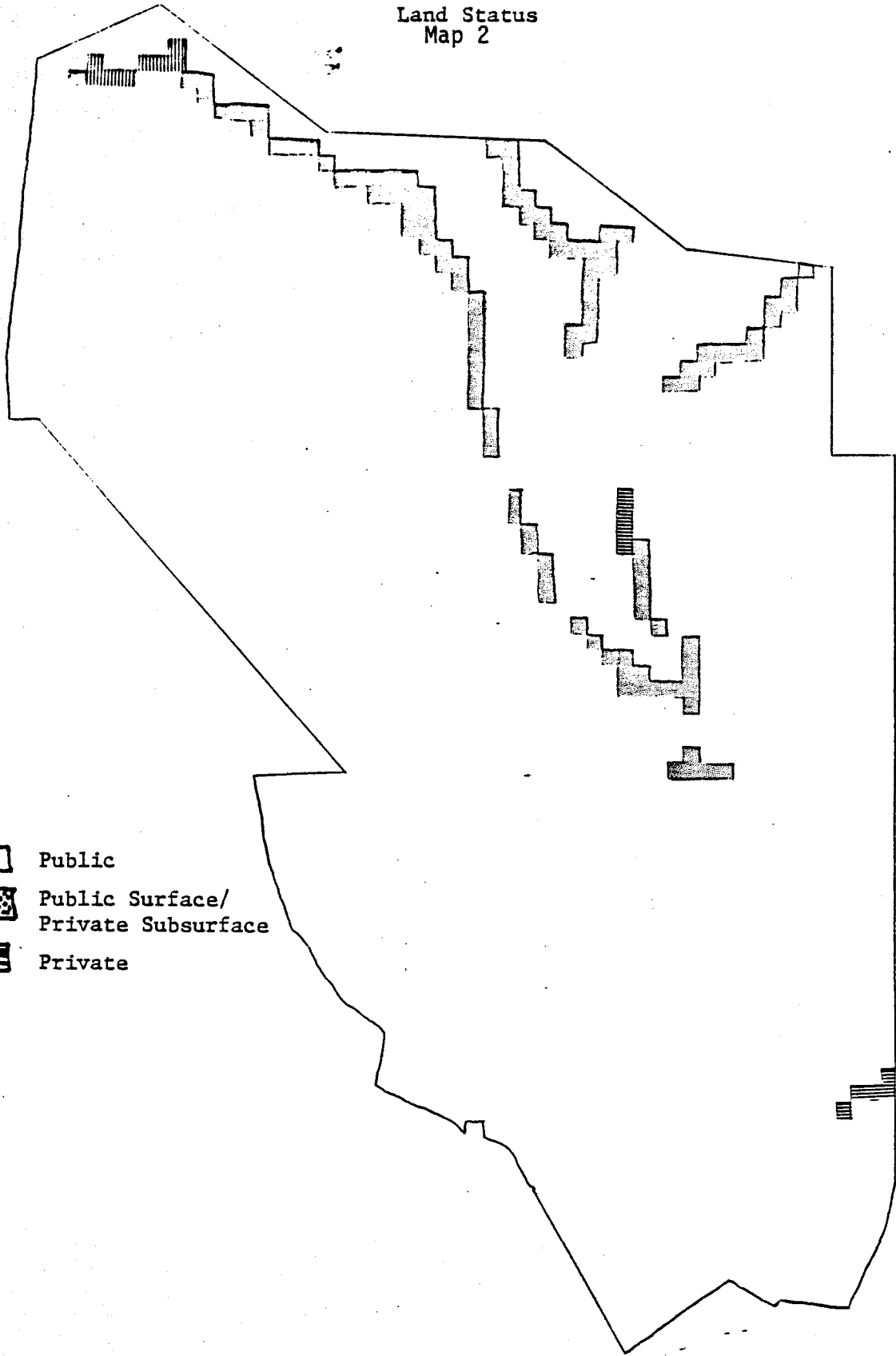
Public



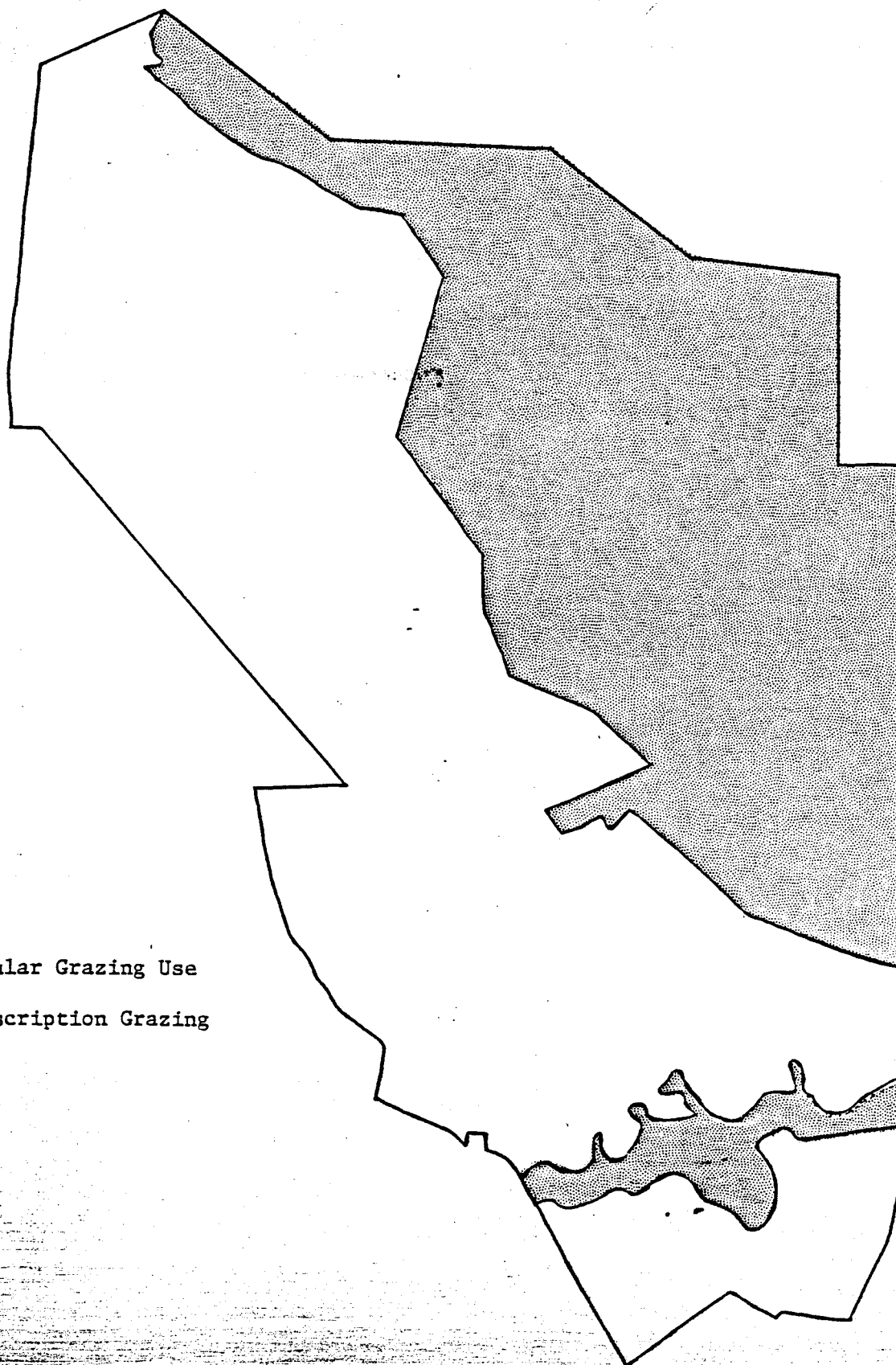
Public Surface/  
Private Subsurface



Private



HIGH ROCK WHMA  
Grazing Use Areas  
Map 3



Key:

- Regular Grazing Use
- Prescription Grazing

likely carriers of diseases such as bluetongue, pneumonia, soremouth and scabies to which bighorn are susceptible.

C. Wild Horses

There are an estimated 184 wild horses within the WHMA. Wild horses were last gathered in 1981 when 119 animals were removed. The MFP calls for 70-100 wild horses on the HMA, with 40-60 animals on the eastern portion and 30-40 animals on the western portion.

Wild horses can have significant negative impacts on wildlife habitat particularly at high horse numbers. Wild horses select meadows, willow stands and aspen sprouts resulting in trampling and close foraging. During drought years, horses sometimes actively keep other animals from access to spring sources. At low horse numbers, the impacts are substantially less. The major conflict could occur during winter months when bighorn, deer and wild horses would seek out southfacing slopes for foraging.

D. Mineral Resources

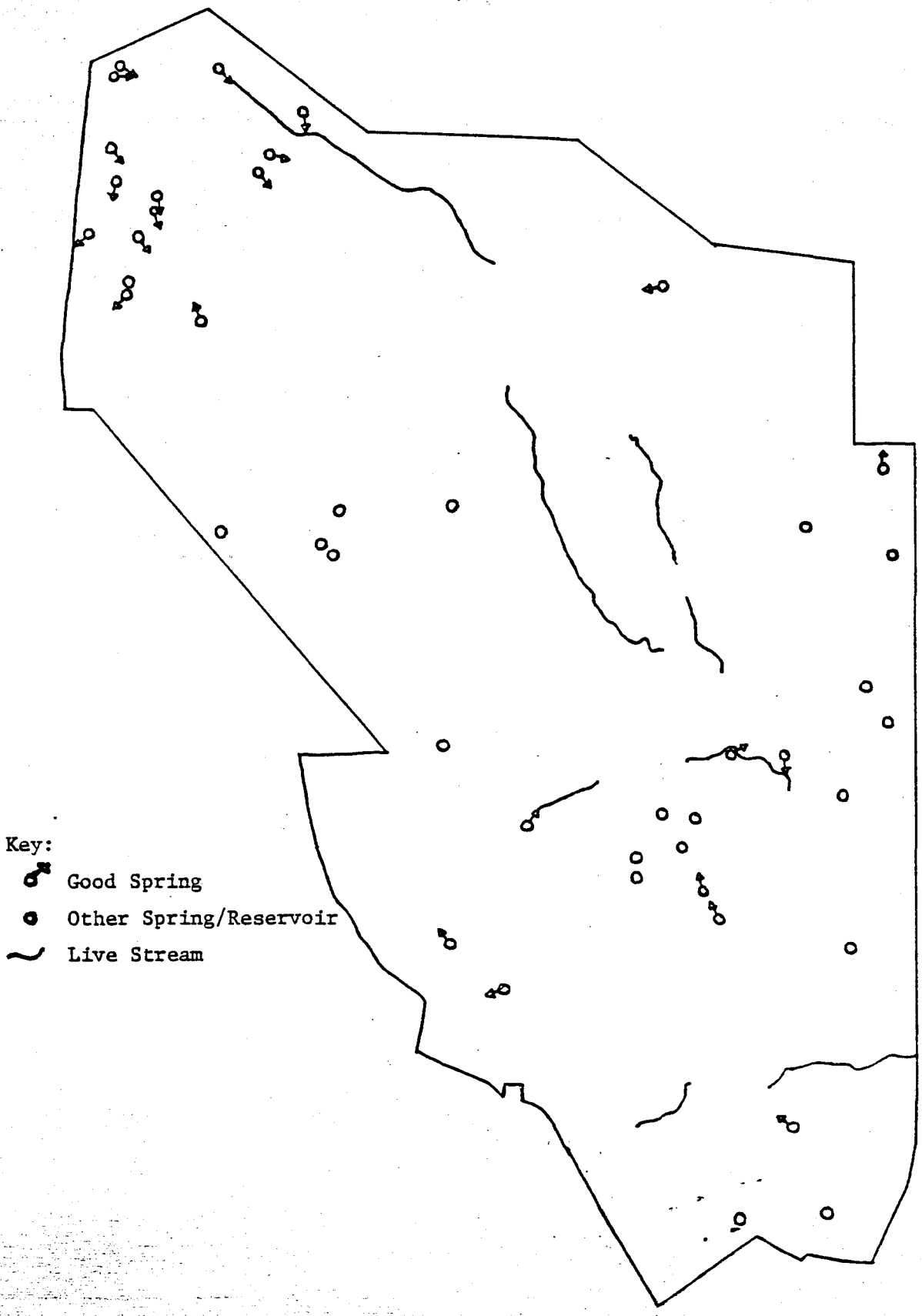
Mineral resources are largely unknown in the WHMA. Existing data comes primarily from the Barringer Resources study prepared for the Winnemucca District BLM in which the High Rock area was investigated. In this study elevated values for barium (an indicator of other metals) were found east of the canyons. Also, the report indicated other isolated anomalous values for gold and several other minerals. It should be noted that the report was not designed to determine economic significance, but only to detect mineral values above background levels. The northwestern portion of the WHMA and adjacent areas outside the WHMA have recent claim activity. Limited drilling was conducted near Grassy Rock in 1983 for precious metals. Results of the drilling is unknown, but no drilling was planned for 1984.

Outside of the WHMA there has been limited mineral activity. Near the western boundary there are some old prospecting activities for opalite.

E. Water

The WHMA has a limited and uneven distribution of water. Permanent water is primarily confined to sections of the canyon floors, with few good springs located on the benches. Additionally, there are a large number of wet weather seeps and springs which flow season long only during wet years. There are also a number of small reservoirs constructed by the livestock operators which generally do not hold water season long. The uneven distribution of water both seasonally and spatially tend to concentrate livestock and wildlife in vicinity of good waters. Waters are shown in the Appendix (Map 4). Water is particularly limited on the benches east of Pole Canyon. This portion of the WHMA has excellent forage for summering antelope, bighorn sheep and wild horses but water is the limiting factor.

HIGH ROCK WHMA  
Water Availability  
Map 4



Key:  
☉ Good Spring  
○ Other Spring/Reservoir  
~ Live Stream

There are no existing water rights which would affect any of the WHMA.

F. Climate

The climate of the WHMA is typical of northern Great Basin areas. Cold, wet winters alternate with hot, dry summers. The WHMA has an estimated annual precipitation of 6-10 inches with most of this coming as snow or spring rains. Additional rain falls in the summer as scattered, low intensity thunder storms. These storms move through the area in an irregular pattern. Mean January temperature is estimated at 25°F., mean July temperature is estimated at 60°F. and extreme temperatures are -30°F. to 110°F.

G. Soils and Watershed

I. Soils

Soils can be assigned to five general categories based upon topographic position.

Soils of upland benches and terraces are shallow, often rocky with bedrock at 3" to 6". These soils saturate quickly and all extra water readily runs off. Erosion is generally low due to a rock pavement and a fully occupied root zone. Estimated acreage for this category is 64,600 acres.

Soils of upland swales and recent fans are generally loamy with depths from 6 to 36 inches. The soils have a good water holding capacity but often saturate due to the passage of runoff from shallow soils above them. Erosion is slight to severe based upon specific topographic, watershed, and storm characteristics. Estimated acreage for this category is 18,000 acres.

Soils of mountain slopes occur at upper elevations in the southwestern corner of the WHMA. These soils are loamy, deep soils with a strong rock component. Depth ranges from 8 to 24 inches. Water holding capacity is high, but so is runoff due to generally steep slopes. Erosion is generally low due to the excellent vegetative cover. Estimated acreage for this category is 2,000 acres.

Soils of canyon walls are generally characterized as small pockets of soil interspersed among talus and rock rubble. Depth, water holding and runoff are highly variable. Estimated acreage for this category is 28,000 acres.

Soils of the canyon floors and spring meadows are well developed, deep soils with high organic content. Erosion is often severe due to lack of vegetative cover and extremely high stream flow levels. Many of these soils are now elevated above



the water levels at which soil development originally occurred. Estimated acreage for this category is 2,500 acres.

## 2. Watershed

The High Rock Lake watershed is dominated by soils with low water holding capacity and high rates of runoff. These two factors combined with heavy livestock grazing have led to a situation where all the major canyons in the watershed now exhibit deep gulying and active scour erosion on sites with old meadow soils.

## H. Vegetation

### 1. Plant Communities

Although the vegetation patterns are complex the number of major vegetation types are fairly limited.

The upland benches and terraces are dominated by low sagebrush and scattered Wyoming big sagebrush. Other species common are Sandberg's bluegrass, squirreltail, Thurber's needlegrass, Phlox spp., Astragalus spp. Eriogonum spp., and a wide variety of cushion forbs. Condition of these sites is mostly good with some of the rockiest sites rated excellent. These sites are used extensively by antelope and sage grouse as water availability allows. Potential for vegetation manipulation and improvement is generally low. Estimated acreage for this site is 65,500 acres.

Upland swales and recent fans are interspersed among the terraces. These sites are dominated by Wyoming and Basin big sagebrush sites. Other species associated with the sites are Thurber's needlegrass, squirreltail, and a wide range of perennial forb species. Condition of these sites are highly variable depending on distance to water. Areas isolated are in good condition while areas in close proximity to water are in poor condition with active erosion. Potential for vegetative manipulation and improvement is variable with disturbed, eroding sites good candidates for stabilization efforts. Estimated acreage for this site is 13,100 acres.

The southwestern portion of the WHMA is the only place where elevation exceeds 6000 feet. Here is found bitterbrush and patches of curl-leaf mountain mahogany. Condition is mostly high fair to good except near water. Major species are bitterbrush, mountain big sagebrush, Idaho fescue, needlegrass, mountain mahogany, onion grass and a wide range of perennial herbaceous forbs. Potential for vegetative manipulation and improvement is limited due to the sensitivity of bitterbrush to fire. Estimated acreage for this site is 2,040 acres.

The canyon walls are a talus, rubble type with patches of grasses and shrubs. Major species are spiny hopsage, basin wildrye, and bluebunch wheatgrass. Ecological condition is generally good to excellent with no potential for modification due to site location. Estimated acreage for this site is 31,750 acres.

The meadow types occupy the canyon floors and spring overflow areas. The sites run the full range of dry meadow to wet meadow. Dry meadow types are dominated by basin wildrye, and invading sagebrush and rabbitbrush, while the remaining wet meadow sites are dominated by willows, sod forming grasses, and a wide variety of perennial forbs. Much of what was traditionally meadow is now converted to upland type site through heavy grazing and erosional cycles. Water tables have dropped as much as 20 feet in some areas as headcutting occurred. These sites are in very poor to poor condition with great opportunity for improvement through protection, erosion control and vegetative manipulation. Estimated potential acreage for this site is 2,450 acres.

Aspen occurs only in upper High Rock Canyon above Steven's Camp and as a remnant stand in Pole Canyon. The aspen in upper High Rock show limited reproduction, while in Pole Canyon there is no reproduction. In the past, the Pole Canyon stand was a small, but healthy stand. Use by homesteaders and livestock combined with beaver introductions and a lowering of the water table has almost eliminated the Pole Canyon aspen site. Estimated potential acreage for this site is 185 acres.

A second important consideration of the vegetation is the complex patterns the vegetative types form on the landscape (see Map 5). The interspersion of rim/rubble/talus with riparian in the canyon bottoms and fingering into low sage and big sage types on the uplands is a major reason for the high wildlife values of the WHMA. Raptor hunting territories are nearby nesting sites and for bighorn sheep escape cover is interspersed with feeding areas.

## 2. Threatened and Endangered Plants

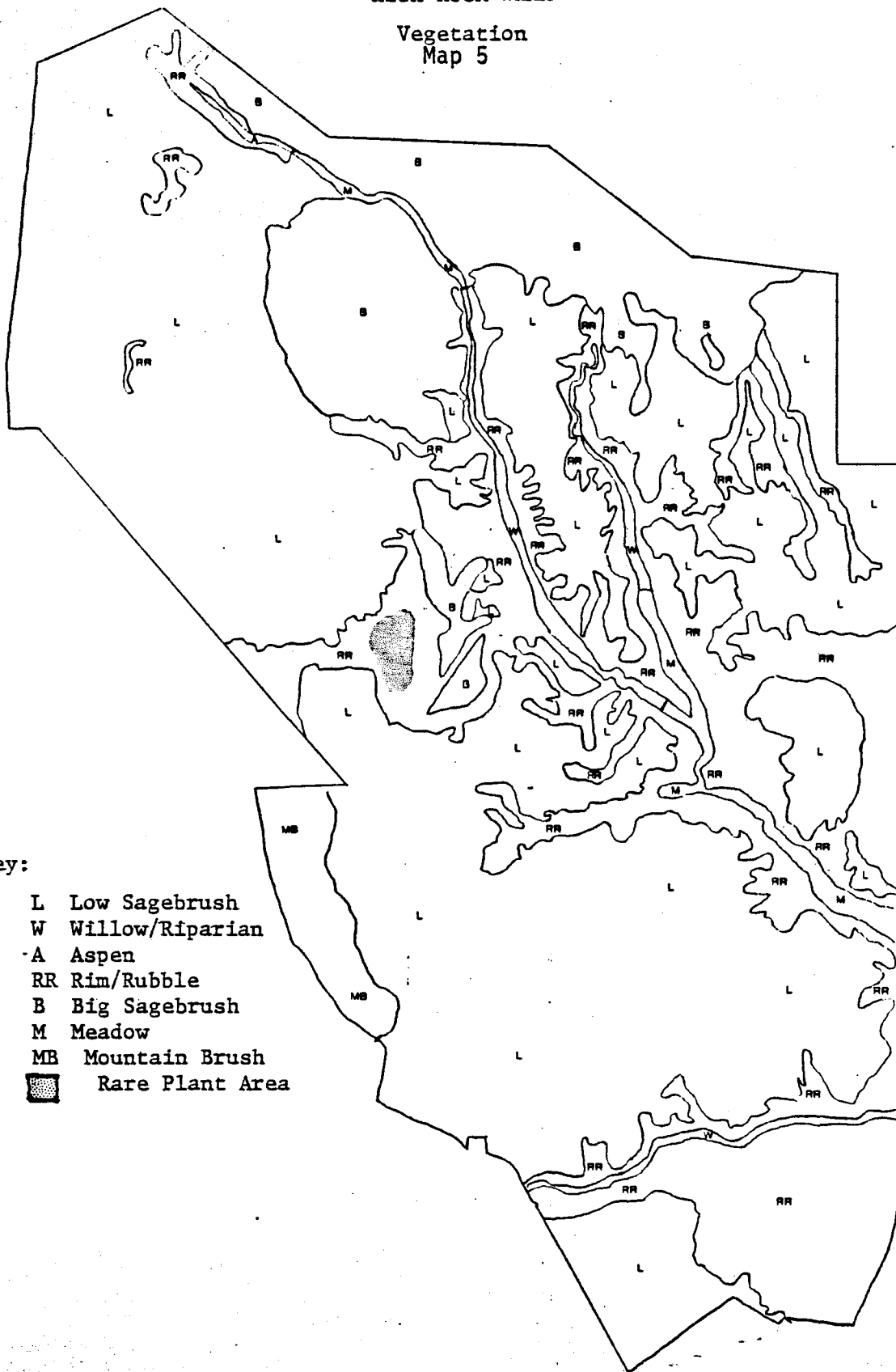
A T&E plant inventory was conducted during the summer of 1983. Inventory was concentrated in areas of unique soils since these commonly yield unique plant species.

No species on the Fish and Wildlife Service lists were found. However, several rare taxa were collected in Yellow Rock Canyon.

Dimeresia howellii was collected on fine talus slopes in Yellow Rock Canyon. Populations were vigorous and appeared stable.

Lomatium ravenii was found in Yellow Rock Canyon in open sandy patches between big sagebrush plants. Individual plants were

Vegetation  
Map 5



Key:

- L Low Sagebrush
- W Willow/Riparian
- A Aspen
- RR Rim/Rubble
- B Big Sagebrush
- M Meadow
- MB Mountain Brush
- █ Rare Plant Area

widely spaced and approximately 50% of the plants showed evidence of fruiting.

Trifolium andersonii ssp. beatleyae is a common forb in big sagebrush communities. Plants appeared vigorous and the population stable.

Izvesia rhypara was found in two small populations on open fine talus slopes. These populations are the first found in western Nevada. Plants were very infrequent but appeared vigorous. (see Map 5)

## I. Wildlife

### 1. Game

#### a. Mule Deer

The WHMA supports a relatively small year long population of approximately 100 animals. This population is distributed primarily in the canyons where water is plentiful and forage quality is the highest. The populations are limited by a lack of mountain brush fields (found only on Mahogany Mountain).

The resident population increases during the winter as migrants move into the WHMA. The number of winter migrants varies from year to year in direct relationship to the severity of the winter. On severe winters the south facing slopes and protected areas in the canyons are used extensively.

#### b. Antelope

Pronghorn antelope are the most visible game species inhabiting the WHMA. Antelope are common year round on the upland benches. The year round herd is relatively small with numbers near 150 head. In winter the WHMA antelope populations within the WHMA can swell to near 1000 animals. Year long populations are limited by lack of dependable water on the benches, particularly on the eastern half of the WSA. Construction of additional reservoirs and/or guzzlers would allow antelope to use large areas during the summer months which are currently not being used.

#### c. Bighorn Sheep

There are currently no bighorn sheep within the WHMA. The area was historically occupied by the California subspecies. Although, it is unknown when the last bighorn died in the area, bighorn were observed within 10 miles of the area into the 1930's. Also excavations of caves

within the WHMA indicates that bighorn were commonly hunted by Indians.

The preferred habitat of the bighorn includes the steep, rough country typified by the canyons as well as open slopes and benches with good stands of grass species. It is estimated that the WHMA contains 46,000 acres of habitat suitable for California bighorn sheep. The suitable habitat includes approximately 23,000 acres of rim/rubble type habitat covering approximately 75 linear miles of canyon wall, 22,000 acres of low and big sagebrush habitat within one mile of escape cover on the uplands and 1,000 acres of existing and potential riparian habitat capable of providing water and green forage during the summer months. Based upon the habitat evaluation method of Golden and Tsukamoto (1980) and using a conservative capacity of 2.5 to 3.5 bighorn per square mile it is estimated that the 46,000 acres could carry 180 to 250 sheep. Additionally, there are large blocks of suitable habitat adjacent to the WHMA in the Winnemucca District which could also support bighorn.

The major stumbling block to reintroduction of bighorn in the WHMA is the presence two bands of domestic sheep within and adjacent to bighorn habitat during portions of the year. The domestic sheep use the uplands on the western half of the WHMA during the month of April each year for lambing. At this time domestic sheep are scattered and are commonly lost from the band. The results in domestic sheep summering in the canyons, the heart of the bighorn habitat. The scattered sheep are gathered up in late fall when the bands are trailed back through the WHMA on the way to winter ranges. The major risk of joint use by domestic and bighorn is of disease transmission to the bighorn population. The major disease and parasites of bighorn are scabies mites, soremouth, blue tongue, footrot and bacterial pneumonia. The biology of these diseases are a subject of active wildlife research and will not be covered in detail in this Plan. While not everything is known concerning disease and parasites in bighorn, there seems to be a consensus that simultaneous use of ranges by domestic and bighorn sheep is to be avoided. The WHMA contains high quality bighorn habitat, but due to the continuing presence of domestic sheep the suitability for reintroduction of bighorn sheep is relatively low due to potential risk. The domestic sheep operator has periodically indicated an interest in conversion from sheep to cattle. The land use plan has been modified to allow this conversion. If the conversion is made then the WHMA would be expected to become a relatively high priority area for reintroduction of California bighorn sheep.

d. Chukar

The chukar is an introduced species which is common in the canyons. The species thrives in steep, rocky country when free water and grass seeds are available. Seasonal weather patterns appear to be the major limiting factor to chukar populations. There are several good sites in the southeastern portion of the WHMA for guzzlers.

e. Quail

California quail are common in the canyons in the vicinity of dependable water sources. Quail also depend upon thick stands of woody vegetation for cover which is not present except in the canyons. Populations would be significantly higher if willow/riparian sites were in better condition.

f. Sage Grouse

The WHMA contains a number of sage grouse strutting grounds which indicates that late winter and spring use is made within the area. Summer and fall use areas are very limited due to the lack of upland meadow sites. The northwestern portion of the WHMA contains a series of small spring meadows. Eight of these meadows have been fenced to allow specialized grazing management. Three of the meadows have not received any significant livestock use in approximately ten years. The remaining five enclosures are new. A grazing management prescription needs to be prepared for each meadow so that the meadows receive special protection, but at the same time contain succulent vegetation attractive to sage grouse. It is thought that most birds move out of the WHMA to areas of meadow and/or higher quality forage during the hot season of the year. The canyons do provide some summer habitat, but it is presently unknown how many birds currently move into the canyons.

g. Other Game

Morning dove and cottontail rabbits are also found within the WHMA, again primarily associated with the permanent water in the canyons. Better quality meadows and riparian areas would be expected to support higher populations of both species.

2. Non-Game

a. Raptors

One of the most outstanding features of the WHMA is density and diversity of raptors. Ten golden eagles and 13 prairie falcon territories have been identified as well as numerous red-tailed hawks, great horned owls, American

kestrels, and ravens. The key factors in supporting the raptors is abundance of undisturbed cliff nesting sites as well as a diverse prey base (primarily jackrabbits and small rodents).

Although existing densities are high, perhaps only behind the Snake River and the Owyhee Canyons, improvement of aspen, meadow and willow habitats would be expected to lead to an increase in the number of raptor species nesting within the WHMA. Northern Harriers would be expected to use meadow sites, while aspen groves could attract screech owls and Cooper's hawks. Also, if small non-game bird density was increased significantly there is a possibility that the WHMA could support one or more peregrine falcon territories. This increase in species could have potential results in the loss of golden eagle and prairie falcon territories. As habitat conditions improve, jackrabbits would tend to be replaced by more secretive cottontails and ground squirrels would be less visible to aerial attack.

Potential problems for nesting raptors is nest disturbance by recreational users during the spring. Visitor use is expected to increase within the canyons as the area is better known and if portions are designated wilderness. If visitor use is undirected, visitors could cause significant levels of nest abandonment. The degree to which visitors disturb nests is unknown but expected to be low. Monitoring is needed to develop a baseline and allow for future changes in nesting to be documented.

#### b. Other Non-Game Species

The WHMA has not been inventoried for non-game, other than raptors. However, the diversity of topographic and vegetative sites as well as casual field observations suggests that non-game species diversity is relatively high. However, due to habitat deterioration on the "wet" sites (aspen, meadow and riparian) population size, species abundance and to a lesser degree species richness are substantially below potential. While these sites represent only about 2% of the total WHMA they are extremely important or essential for over half the species of wildlife occurring within the Great Basin. Thus improvement of the "wet" sites would be accompanied by an improvement in non-game populations, species numbers and diversity.

### 3. Furbearers

#### a. Coyote

The coyote is the most common furbearer found within the WHMA. Population densities are relatively low on the

eastern portion of the WHMA due to lack of a large prey base except during antelope kidding (spring). The remainder of the WHMA has relatively high densities of coyotes due to good prey densities (both wildlife and domestic sheep). Coyotes are currently trapped and gunned when domestic sheep are in the area and trapped during the winter for pelts. If domestic sheep grazing is suspended and bighorn are reintroduced there is a possibility that coyotes would shift to bighorns. If this happened, significant lamb losses could occur until bighorns became familiar with their new home and coyote numbers stabilize with the prey base. During this transition phase, predator control of coyotes may be required to help give the bighorn sheep a good start.

b. Bobcat

Bobcat densities within the WHMA are unknown due to their secretive nature. However, the canyons do provide excellent bobcat habitat. It is expected, that when compared to the rest of the Resource Area bobcat densities are relatively high within the WHMA. Bobcats are trapped during the winter for pelts. Bobcats are mostly limited by territory, so increases in populations would not be expected with habitat improvement.

I. Recreational Uses

Recreational use within the WHMA can be divided into canyon use and upland use.

The heaviest use occurs in the canyons from Easter vacation through the chukar hunting season. Use is higher during spring and fall than during the hot summer. Visitors are interested in sightseeing, rockhounding, and hunting. Most canyon use occurs on the High Rock Canyon Road. Visitor use data collected by traffic counters indicate that more visitors come into High Rock from the bottom and return than travel all the way through the Canyon.

Upland use does not differ significantly from other areas in the Resource Area with peak use occurring during hunting seasons.

Recreational uses will be further detailed in the Recreation Management Plan.

There are potential problems between recreational users and wildlife habitat. On wet years, spring road use results in water gullying down roads and destruction of meadow vegetation. Secondly, spring visitor use may have negative impacts on raptor nesting as discussed under wildlife. A third problem, the disturbance of bighorn sheep during the lambing season (spring) would be expected only if significant numbers of spring hikers start using the WHMA. This could occur upon wilderness designation or if the WHMA becomes part of a Desert Trail network.



## J. Historic/Cultural Resources

The canyonlands of this area are among the most ecologically complex portions of the Resource Area. Sharp topographic relief, a high species diversity, and several reliable water sources made the region attractive to prehistoric inhabitants, witnessed by the great numbers of archaeological sites which occur there. Research suggests an antiquity of occupation spanning the last 12,000 years. The sub-unit has enormous research potential, particularly yielded by a large number of dry caves.

The archaeological richness of the canyonlands has attracted the intense vandalism in the study area. Caves, particularly, have been looted for over two decades and open sites annually have been cleaned of surface artifacts.

Historic use of the canyonlands enhances their cultural value. A major segment of the Lassen/Applegate Trail passes along High Rock Canyon, largely coincident with the existing road. Several of the early passers-through left graffiti, chiefly names and dates, carved in the walls or painted upon them in axle grease.

Five homesteads and line cabins, including the remains of one plank and five stone and pole structures, relate to the early grazing history of the area.

The 1911 massacre in Little High Rock Canyon of four Surprise Valley stockmen has been commemorated by a sign at the site of the event, and has generated several books and articles.

National Register of Historic Places: The Nevada portion of the Lassen/Applegate Trail corridor has been nominated to the National Register.

A Cultural Resources Management Plan has been prepared for the High Rock Area.

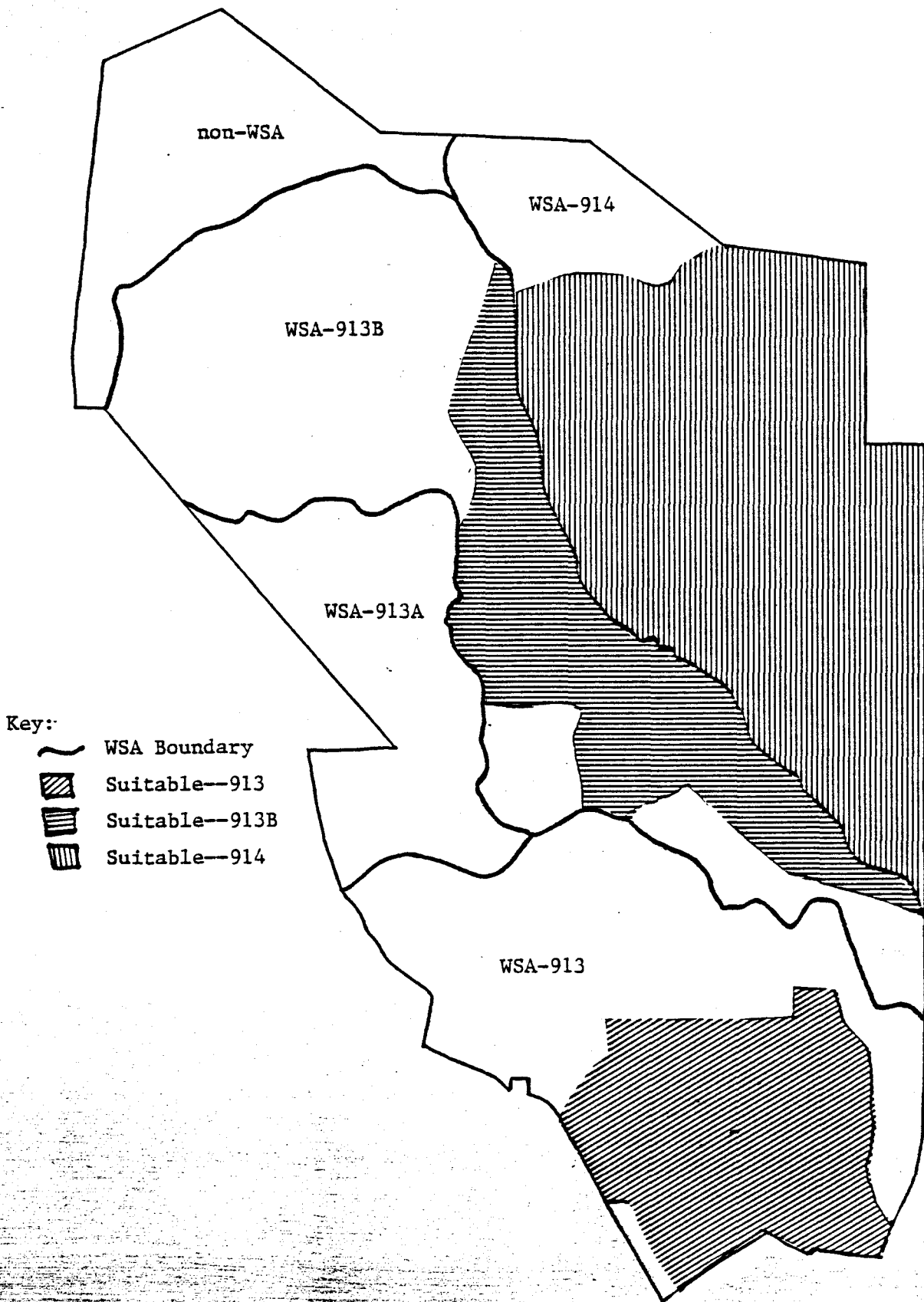
The major impact of the significant cultural resources on wildlife and wildlife habitat management is the requirement that all project work and the grazing management prescriptions designed for wildlife have minimum impact on the cultural resources. This will require on site inspection by archaeologists of each ground disturbing activity within the WHMA.

## K. Wilderness

The entire WHMA, with the exception of the northern end, is under study for potential addition to the Wilderness System. Four Wilderness Study Areas are involved (WSAs 913, 913A, 913B, 914, See Map). The study phase and recommendations are scheduled to be completed in 1985. The areas preliminarily recommended as suitable for wilderness designation are also shown on Map. Although significant portions of the WHMA are recommended as non-suitable, they

HIGH ROCK WHMA

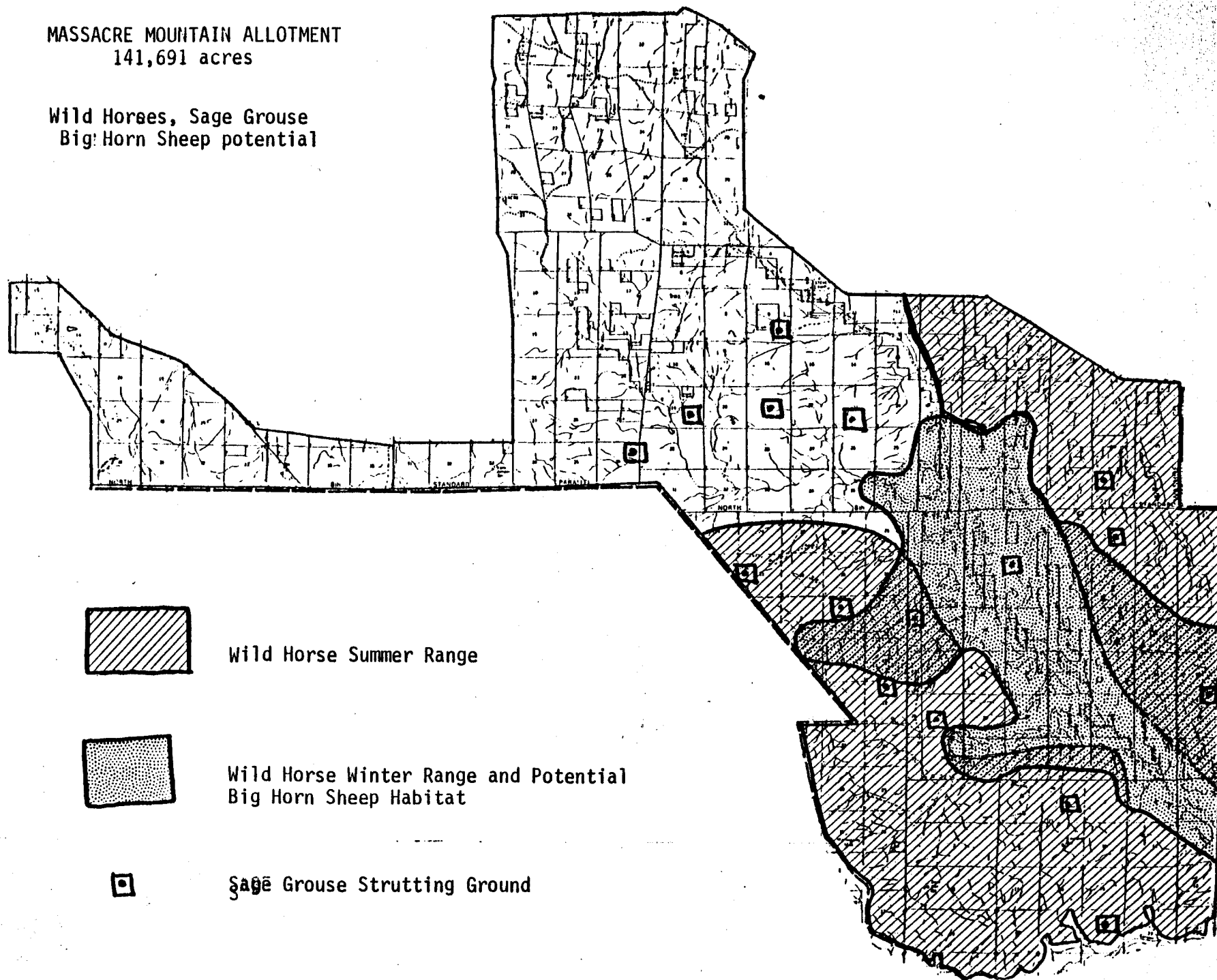
Wilderness  
Map 6



must be managed to preserve existing wilderness character until Congress acts upon designation/non-designation. The impacts of wilderness study upon the WHMA falls on project development. Each project within a WSA must meet the non-impairment criteria for wilderness lands. The criteria establish the types of projects allowable, the methods of construction, and other considerations which must be applied.

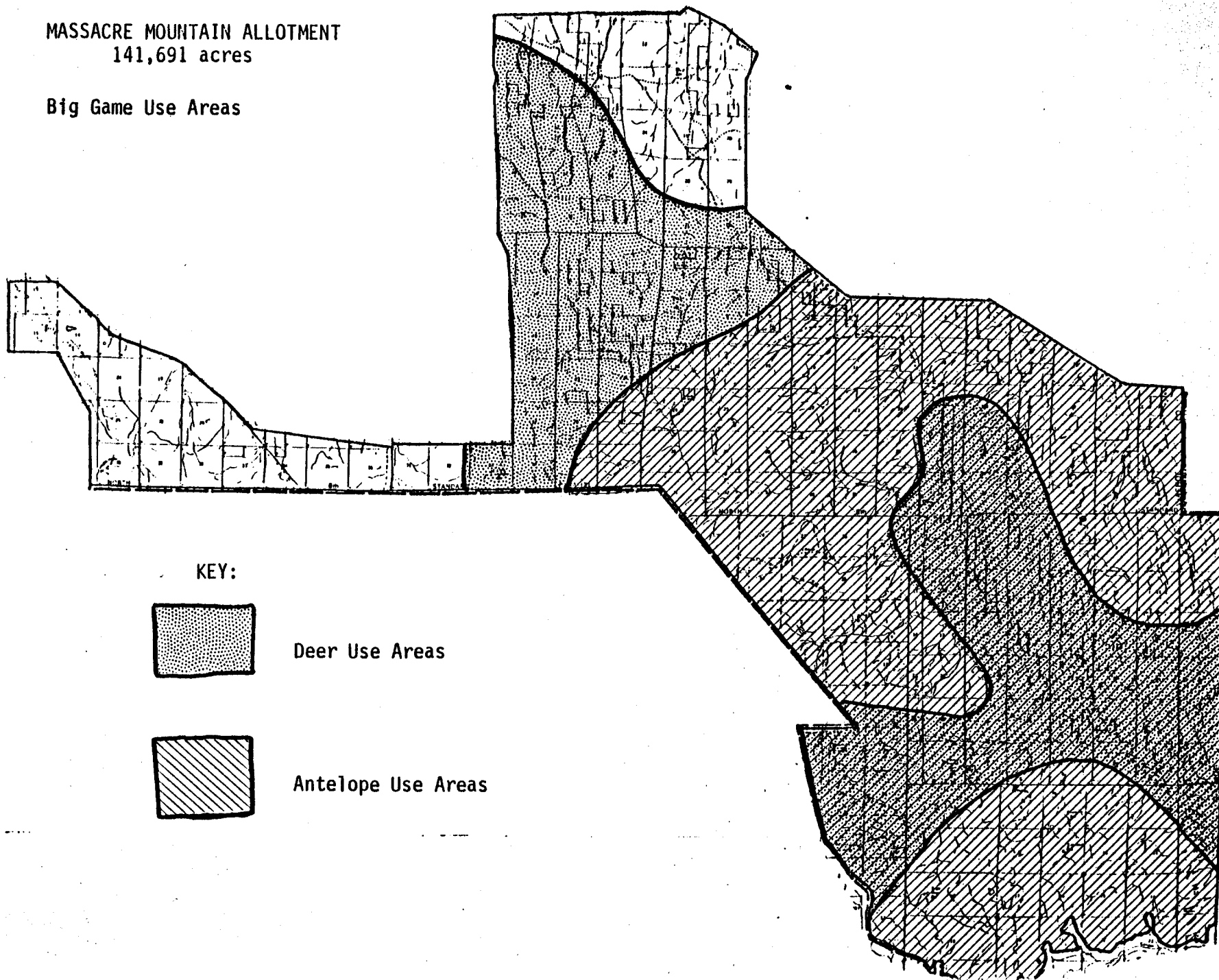
MASSACRE MOUNTAIN ALLOTMENT  
141,691 acres

Wild Horses, Sage Grouse  
Big Horn Sheep potential

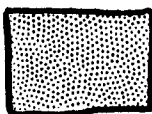


MASSACRE MOUNTAIN ALLOTMENT  
141,691 acres

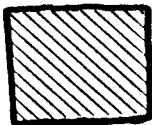
Big Game Use Areas



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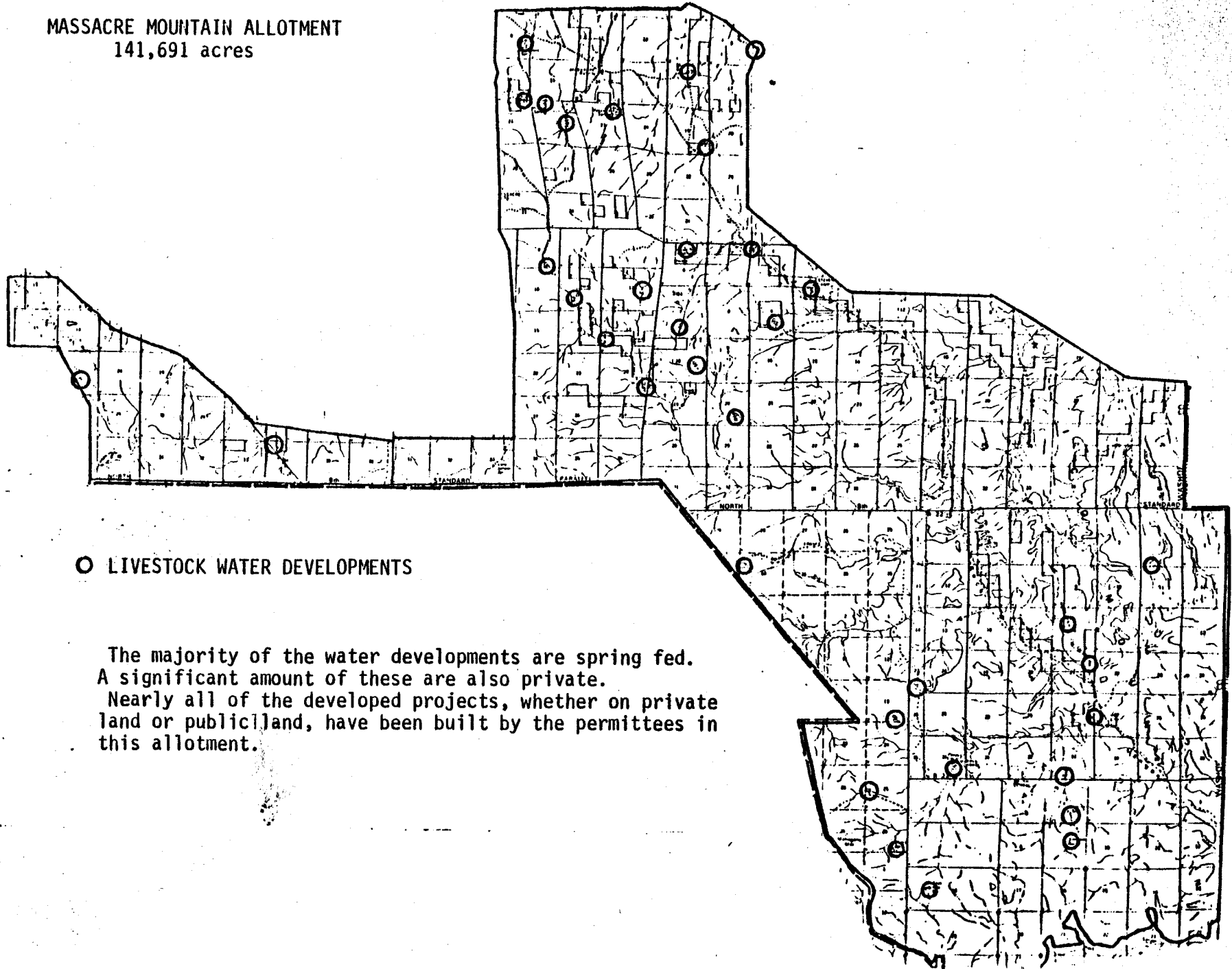


Deer Use Areas



Antelope Use Areas

MASSACRE MOUNTAIN ALLOTMENT  
141,691 acres



○ LIVESTOCK WATER DEVELOPMENTS

M

The majority of the water developments are spring fed.  
A significant amount of these are also private.  
Nearly all of the developed projects, whether on private  
land or public land, have been built by the permittees in  
this allotment.