8/28/87

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WINNEMUCCA DISTRICT OFFICE
705 East 4th Street
Winnemucca, Nevada 89445

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
4700
(NV-023.5)

August 28, 1987

Commission for the Preservation
of Wild Horses
c/o Terri Jay, Executive Director
625 Fairview, Suite 111
Carson City, NV 89701

Dear Ms. Jay:

Enclosed for your records is a copy of the approved Little Owyhee-Snowstorm Mountains Herd Management Area Plan (HMAP).

Most of the comments and suggestions we received for the draft HMAP were incorporated into the approved HMAP. Based upon public comments and suggestions, the following are the changes made to the final plan.

Section I.B.1.

Page 4 -- Second paragraph of both the draft and final copy. The word "will" was deleted from the second sentence.

Page 4 -- Third paragraph of both the draft and final copy. This paragraph was updated to reflect current estimated population numbers as of January, 1986.

Section I.B.2.

Page 6 -- Third paragraph of both the draft and final plan. The draft reflected total grazing use levels (line 1) as being 9,880 AUMs in 1985. The correct number is 10,080 AUMs.

Page 6 -- Sixth paragraph of the draft copy and fifth of the final plan. A sentence was added to the final plan stating - - - "Until management decisions are made based upon monitoring data, the CRMP Plan provides for a minimum of 2,400 AUMs (yearly) for wild horses.

Page 7 -- The narrative description section under "Constraints" was rewritten to clarify the constraints mentioned in the draft copy, to delete redundant references, and to add constraints not discussed in the draft copy.

Section II.A.2.

Page 8 -- Habitat Objective Number 2 was deleted from the final HMAP. This objective originally proposed a revegetation project in the Castle Ridge

Pasture. Since this proposed project would have been implemented primarily in a Wilderness Study Area (WSA) and because comments were received expressing concern that the project (if implemented) would interfere with the natural environment of the wild horses, this objective was not approved for the final HMAP.

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A few comments were received requesting that the AMLs for both HMAs be reconsidered. The reviewers expressed concern that the AMLs for both HMAs are too low. In response to these concerns, I explained that the AMLs for both HMAs were established through the Land Use Planning (LUP) process and specifically, by the Coordinated Resource Planning (CRMP) process. The AMLs were recommended by the CRMP group (with wild horse and burro representation), and I accepted the recommendations and made them part of the Paradise-Denio LUP decision document. Both the CRMP group and I believe that the AML for both HMAs will ensure viable and thriving herds.

Section III. Management Methods

A. Habitat Objective Number:

1. This paragraph was reworded for clarification purposes.

2. The proposed revegetation project was not included in the final plan for reasons explained in Section II.A.2 above.

5. This paragraph was expanded to more fully explain one of the methods which will be used to help determine the distribution and movement patterns of wild horses.

B. Animal Objective Number

1. A sentence was added which states that a total count census will be conducted periodically.

3. The reference to the Sonoma Range HA was deleted in the final HMAP.

Section VI. Appendices

A. Maps

One reviewer wanted to know why the HMA and Herd Use Area (HUA) boundary delineations were not the same for the Snowstorm Mountains HMA. As I responded in my letter to the reviewer, the present HMA boundary was

recommended by the Coordinated Resource Management Planning (CRMP) committee. I accepted the recommendation of the CRMP group, and made the recommendation part of the Paradise-Denio LUP on June 30, 1982.

B. Range Improvements

The proposed revegetation project along with three proposed reservoirs in the Castle Ridge Pasture were deleted from the draft HMAP. The proposed projects were located within a WSA boundary.

Section C. Color Types and Assorted Population Data

Two reviewers noted additional discrepancies in Appendix C. These mistakes were corrected in the final HMAP.

In summary, the final HMAP was prepared within the framework of those CRMP recommendations I accepted, and these recommendaitons were made part of the Paradise-Denio LUP decision document.

I would like to thank you for your time and effort in reviewing the draft HMAP. Comments received from the public have indeed improved both the quality and the clarity of the HMAP.

Sincerely yours,

Frank C. Shields

Frank C. Shields
District Manager

Enclosure

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BUREAU OF LAND MANAGEMENT
WINNEMUCCA DISTRICT OFFICE
705 East 4th Street
Winnemucca, Nevada 89445

TAKE PRIDE IN AMERICA

August 28, 1987

IN REPLY REFER TO:
4700
(NV-023.5)

Wild Horse Organized Assistance
c/o Dawn Lappin
P.O. Box 555
Reno, NV 89504

Dear Ms. Lappin:

Enclosed for your records is a copy of the approved Little Owyhee-Snowstorm Mountains Herd Management Area Plan (HMAP).

Most of the comments and suggestions we received for the draft HMAP were incorporated into the approved HMAP. Based upon public comments and suggestions, the following are the changes made to the final plan.

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Sincerely yours,

Frank C. Shields
District Manager

Enclosure

Little Owyhee Desert-Snowstorm Mountains

Wild Horse

Herd Management Area Plan

1987

Little Owyhee Desert-Snowstorm Mountains

Wild Horse Herd Management Area Plan

Paradise-Denio Resource Area

Winnemucca District

Prepared by:

Dick W Ruder — 3/31/87

Wild Horse and Burro Specialist — Date

and

Recommended and Approved by:

Scott Billings — 7-9-87

Paradise-Denio Resource Area Manager — Date

Jim Haizell — 5-26-87

Elko Resource Area Manager — Date

Concurred by:

Fred Wolf — 8/6/87

Associate State Director, Nevada — Date

Rodney Harris — 5-26-87

District Manager, Elko — Date

Marvin C Shields — 7/13/87

District Manager, Winnemucca — Date

Table of Contents

Little Owyhee Desert-Snowstorm Mountains
Wild Horse Herd Management Area Plan

I. Introduction and Background Information

A. Location and Setting

This activity plan (HMAP) is developed to set forth management goals and objectives for two Herd Management Areas (HMA) -- the Little Owyhee Desert and Snowstorm Mountains HMAs. Wild, free-roaming horses will be managed to achieve and maintain a thriving ecological balance on public lands (BLM). Refer to Appendix A for location of the HMAs.

The geographical center of the HMAs is located approximately 40 air miles northeast of Winnemucca and 20 miles northeast of Paradise Valley, Nevada.

Prominent landmarks/features found within or near the HMAs are the North and South Forks of the Little Humboldt River, portions of the Snowstorm Mountains, the Santa Rosa Mountains, and the South Fork of the Little Owyhee River.

The area is in the Paradise Planning Unit of the Paradise-Denio Resource Area. The area consists of approximately 560,258 acres, of which about 95 percent is public (BLM) land. The east one-third of the area lies within the Elko BLM District, but all renewable resources occurring within this area are administered by the Winnemucca District.

A Coordinated Resource Management and Planning (CRMP) Plan was developed and approved for both allotments in 1982.

The Little Owyhee Desert HMA is located within the Little Owyhee Allotment, and the Snowstorm Mountains HMA is in the Bullhead Allotment.

Relation To Planning Documents

An Allotment Management Plan (AMP) was signed in 1972 for the Little Owyhee Allotment. Since 1972, this plan has been modified a number of times. An AMP for the Bullhead Allotment was signed in 1985. Both plans contain elements that conflict with wild horse use. Refer to discussion on Constraints on page 8 for information of impacts of these AMPs on wild horses.

The Paradise-Denio Unit Resource Analysis (URA) was completed in 1979. The URA described the physical resources of the HA, the conditions/problems of the wild horse population, and presented (in tabular form) the estimated population for both HAs. The primary condition/problems which were described were: fences that cause problems and injure horses; improper distribution of water sources; no specific use levels (AUMs) for wild horses; existence of wilderness study areas that could be potential problem (specifics

were not addressed); and degradation of some riparian areas caused by over-utilization of forage. At the time the URA was prepared, it was estimated that there were 565 wild horses in the Snowstorm Mountain HMA, and about 2,324 in the Little Owyhee HMA.

The Paradise-Denio land use plan (Management Framework Plan - Step III) was approved on July 7, 1982. This decision document established an Appropriate Management Level (AML) of 200 adult wild horses in the Little Owyhee Desert HMA and 50 adults in the Snowstorm Mountain HMA. Also of significance, the land use plan did not reserve any forage (AUMs) for wild horses. The decision was to make future adjustments in grazing use based levels upon monitoring.

B. Resource Information

1. Wild Horse and Burro Use History

There are no burros in either HMA.

Since 1981, there have been five BLM authorized removals. These were:

Capture Data

Calendar Year	Number of Wild Horses Gathered	HA Removed From
1977	1,065	Little Owyhee Desert
1981	51	Little Owyhee Desert
	479	Snowstorm Mountains
1983	342	Little Owyhee Desert
	426	Snowstorm Mountains
1984	487	Little Owyhee Desert
	199	Snowstorm Mountains
1985	726	Little Owyhee Desert
	258	Snowstorm Mountains
TOTAL REMOVED =	4,033	

Past removals have removed approximately 60% females and 40% males. The age structure of these animals indicates that removals are leaving adequate numbers of each age class--especially in the one to five year old class.

The following table represents all BLM censuses conducted in the HMAs.

Year	Population Count and HMA	Method Of Inventory
1974	875 Little Owyhee	Aerial count/Super Cub
1975	954 Little Owyhee	Aerial count/Super Cub
1976	1,399 Little Owyhee	Aerial count/Super Cub
	429 Snowstorm Mountains	Aerial count/Super Cub
1977	1,381 Little Owyhee	Aerial count/Super Cub
1979	1,081 Little Owyhee	Aerial count/Bl Helicopter
	453 Snowstorm Mountains	Aerial count/Bl Helicopter
1980	1,483 Little Owyhee	Aerial count/Bl Helicopter
	545 Snowstorm Mountains	Aerial count/Bl Helicopter
1982	1,024 Little Owyhee	Aerial count/Super Cub
	456 Snowstorm Mountains	Aerial count/Super Cub
1984	833 Little Owyhee	Aerial count/Bl Helicopter
	234 Snowstorm Mountains	Aerial count/Bl Helicopter
1986	291 Little Owyhee	Aerial count/Bl Helicopter
	124 Snowstorm Mountains	Aerial count/Bl Helicopter

Research conducted by Siniff et al. (1981) suggests that when conducting an aerial census, only a percentage of the total number of animals are ever counted. An analysis of past inventories in the HMAs further suggests some factors which may have influenced the accuracy of census data in the HMA. The primary factors to consider are:

a. Different types of aircraft were used.

b. Number of observers varied from one to two in succeeding years.

c. Census was not conducted at the same time period each year.

d. Prior to 1979, animals which were counted in the southern portion of the Lake Creek Pasture (Little Owyhee HMA) were added to the Snowstorm HMA. Those counts should have been added to the Little Owyhee data.

e. For a number of years, there has been periodic emigration and immigration occurring into and out of both HMAs. Bureau personnel have been aware of the fluctuations in population numbers for a number of years. There appears to be more influx of horses coming into both HAs than are leaving. It is suspected that horses are coming into the HMAs from the Hot Springs HA, and possibly from HMA's located in the Elko District.

The obvious concern with the continuing immigration is that it is difficult to reach Appropriate Management Levels (AMLs). Another problem associated with fluctuations in population numbers concerns the monitoring and removal processes. For example, if an aerial census indicates there are X number of wild horses in an HMA, and shortly

thereafter an additional unknown number enter from another HMA, there would be no reliable population information for monitoring and removal decisions would be somewhat unreliable.

A documented cause for the fluctuations in numbers is the lack of fence maintenance. For example, the fence separating the Kelly Creek Pasture and the Tall Corral Pasture requires maintenance. The exterior fence on the northwest side of the Little Owyhee Allotment is down. Portions of the fence which separates the very southeast corner of the Bullhead Allotment from the Elko District requires repair. The fence which divides the Lake Creek Field and the Owyhee Allotment (Elko District) requires maintenance. The fence between the Little Owyhee and Bullhead Allotments needs maintenance. In 1984 and 1985 much of this maintenance was done by the BLM and permittees. In some areas it was obvious that wild horses had broken through these fences as part of continuing their normal distribution and movement patterns. In other places the reason for fence damage could not be determined. Refer to maps for general locations.

Approximately 60 miles of interior fence have been installed in the Little Owyhee Allotment. By 1986, almost 40 miles of interior fences have been installed in the Bullhead Allotment. These fences have impeded and restricted the movement of wild horses. An inventory was conducted in 1982 (Little Owyhee Allotment) to determine what maintenance was necessary for these fences. The inventory revealed almost 50 holes in the fences. The holes were created by wild horses because the fences disrupted their normal distribution and movement patterns. There is an obvious need for some type of fence modification--especially for the interior pasture fences in the Little Owyhee Allotment, and between the Little Owyhee and Bullhead Allotments.

It is estimated (from inventory data) that the present population, as of January, 1986, of wild horses in the two HMAs is 415 animals. The horses migrate from north to south in the Little Owyhee area and east to west in the Snowstorms area. In the summertime the horses are scattered (in the Little Owyhee from the North Fork of the Little Humboldt River to the Oregon and Idaho borders). The concentrations become less dense the farther north one goes.

Refer to Appendix A. map for seasonal migration patterns for both HMAs.

In both HMAs, there is a lack of demographic characteristics such as sex ratios, age structures, young adult ratios, and actual use.

In the late spring, summer, and fall, the wild horses in the Snowstorm Mountains HMA will concentrate in the Castle Ridge area, and also south along the breaks of the South Fork of the Little Humboldt River. Historically, the horses also utilized the higher country up to, and around, the Kelly Creek Burn Fence.

In the wintertime, the wild horses in the Little Owyhee HA will concentrate on the southern slopes and breaks around the North Fork of the Little Humboldt River. The wild horses in the Snowstorm Mountain HMA will winter in the Dry Hills and Kinney Creek Areas. Refer to Appendix A for further details of movement patterns.

There is suspected, although not documented, movement of wild horses from the Little Owyhee to the Snowstorm Mountains HMA, and vice versa. There are two fences which physically separate the two HMAs. These fences always require maintenance, and if some movement does occur between the two HMAs, it is a result of movement through very poorly maintained fences. Since the fences are constructed on private land, and the BLM has no control about maintenance of the fences, the two HMAs will be kept separate for management purposes.

The major limiting habitat factor in the summer for both HMAs is the lack of adequate water. At certain time during the winter, the lack of exposed forage is a problem.

Over 90 percent of the wild horses in both HMAs exhibit a solid bay or sorrel color pattern.

2. Reference To Land Use Plan

The Little Owyhee and Bullhead CRMP Committee recommended an initial AML of 200 adult wild horses for the Little Owyhee Allotment and 50 for the Bullhead Allotment. The Winnemucca District Manager approved this recommendation, and the Elko BLM District concurred with the AML numbers. These numbers represent the initial AML for the HMAs.

An AMP for the Little Owyhee Allotment was signed in 1972. An AMP for the Bullhead Allotment was signed in 1985. The monitoring plan for the Bullhead Allotment was completed in 1986. The Little Owyhee plan will be completed in 1987. CRMP recommendations were developed and approved for both allotments in 1982. These documents are located in the District files and can be reviewed upon request.

The land use plan (MFP III) did not establish levels of use (in AUMs). Since 1982, the use of forage for all consumptive users (wildlife, wild horses, and livestock) for both allotments is based upon CRMP recommendations. These forage use levels will be used until adjustments are indicated by monitoring data.

There are seven pastures in the Little Owyhee Allotment--three spring pastures and four summer pastures. The Little Owyhee Desert HA encompasses all three spring pastures. The names of the spring pastures are Twin Valley, Fairbanks, and Lake Creek. One of the spring pastures is rested each year. Except for consumptive use by wildlife, this exclusion benefits those wild horses located in the rested pasture by lessening competition for forage, water and space.

The Bullhead AMP is also a spring-summer rest-rotation grazing complex. Wild horses have free access to the First Creek, Castle Ridge, and Dry Hills Pastures (spring pastures). The AMP was designed and implemented to exclude livestock grazing from one of the spring pastures each year.

CRMP Recommendations

Bullhead Allotment

The active preference for the Bullhead Allotment is 12,050 AUMs. Based upon CRMP recommendations and subsequent District Manager's decision to make the recommendations operational, the initial forage use levels (AUMs) for all consumptive users was:

Year	Livestock	Wildlife	Wild Horses	Total
1982		1,029 deer		
		101 antelope		
	5,700	1,130	3,000	9,830

As horse numbers are reduced to AML, livestock use levels increase in direct proportion to the number of horses removed the previous grazing year until voluntary non-use is restored. For example, the 1985 use level was:

	Livestock		Wildlife		Wild Horses	Total
(1)	7,614	(3)	1,130	(1)	1,336	10,080
(2)	5,886	(3)	1,130	(2)	3,064	10,080

(1) AUMs available if horses removed as scheduled.
(2) AUMs available if horses are not removed as scheduled.
(3) AUMs for wildlife will remain constant unless requested differently by the Nevada Department of Wildlife.

Based upon land use plan decisions, and subsequent CRMP recommendations, the forage use levels (for 1985 through 1988) for the Bullhead Allotment will be 8,350 AUMs for livestock and 900 AUMs for wild horses. After 1988, levels of use will be determined by management decisions based upon monitoring data.

The CRMP recommendations for both HMAs will be implemented to the extent possible, and as funding becomes available. If recommended by the CRMP #1 Wild Horse Committee, and concurred with by the District Manager, all three of the objectives (a, b and c of Objective #5) will be considered for implementation, along with Animal Objective #3.

Little Owyhee Allotment

The active preference for the Little Owyhee Allotment is 44,882 AUMs. Based upon CRMP recommendations and subsequent District Manager's decision to make the recommendations operational, the initial forage use level (AUMs) for all the consumptive users was:

Year	Livestock	Wildlife	Wild Horses	Total
1982		1,233 antelope 63 deer		
	15,800	1,296	15,578	32,674

The CRMP Plan has as one of its objectives a ten year (1992) goal to provide 44,882 AUMs for livestock and 3,840 AUMs for wild horses. Monitoring data will determine if this goal is attainable. Until management decisions are made based upon monitoring data, the CRMP Plan provides for a minimum of 2,400 AUMs (yearly) for wild horses.

Constraints

The interior fences which were installed in 1986 in the Bullhead Allotment will restrict migration of horses to areas which they historically used as summer range. These areas are the Snowstorm Flat, Winters Ridge, First and Pole Creek areas.

As previously mentioned, lack of water is a problem. Areas where more water should be developed for wild horses in the Bullhead Allotment are the Dry Hills area, and Castle Ridge and First Creek Pastures. Areas in the Little Owyhee Allotment are the south one-half and the northeast corner of the Fairbanks Pasture, the northwest portion and the south one-half of the Lake Creek Pasture, and the northern one-third of the Twin Valley Pasture.

During the summer and fall seasons, wild horses have historically used the Castle Ridge Pasture. There is very little water and available forage in this pasture. In fact, water and forage are so limited that livestock haven't made use of this pasture for a number of years. The horses that use this area are required to travel some distance to a reliable source of water (South Fork of the Little Humboldt), and the quantity and quality of forage isn't adequate for the general health and welfare of the horses. Water and vegetative manipulation projects which may be proposed in this area would benefit wild horses. Therefore, a program of cost sharing for such projects may be appropriate. An equitable cost-share method could be one based upon percentage use (AUMs) of a pasture by livestock vs. wild horses. A constraint to habitat improvement projects in this area is the existence of the Little Humboldt Wilderness Study Area (WSA). This WSA, which is administered by the Elko BLM District, encompasses 36,593 acres. A WSA designation precludes the development of habitat improvement projects such as reservoirs and vegetative manipulation projects.

When implemented, (1972), the Little Owyhee AMP established a three-pasture rest-rotation grazing system for the spring pastures--one pasture would be grazed early, one after seedripe (July 15), and one pasture receiving complete rest. Since 1982, the pasture schedule has been based upon CRMP recommendations. Use occurred in two of the spring pastures, with one of them rested. During 1985 and 1986, Twin Valley and Lake Creek fields were used, due to a fire closure in the Fairbanks field. Use will again be based upon the CRMP recommendations in 1987.

3. Other Biotic Components

In addition to wild horses, other important resource values in the HMA are: wildlife, watershed, fisheries, Wilderness Study Areas, and riparian values. All of these resources are considered to be of equal value to one another and any activity plan must be formulated to consider all multiple-use values.

Wildlife

Wildlife species currently found within the HMAs are many and varied. However, those which principally compete with domestic livestock and wild horses for forage are limited to mule deer (Odocoileus hemionus), antelope (Antilocapra americana), rodents, lagomorphs, and insects. The Lahontan cutthroat trout is the only threatened species that occurs within the HMAs. Other important game species are found within the HMAs are:

Quail	Deer
Brook trout	Chukar partridge
Antelope	Sage grouse

II. Objectives

A. Habitat Objectives

1. Maintain the forage use levels for all herbivores within the HMA at a level which does not exceed proper use of key forage plant species as identified by the Little Owyhee and Bullhead Monitoring Plan. By 1988, provide 3,578 AUMs of forage for wild horses in the Little Owyhee Desert HMA, and 900 AUMs for wild horses in the Snowstorm Mountains HMA.

2. Provide for additional year-round water in both HMAs.

3. Improve the free-roaming nature of the horses within both HMAs by the installation of let down panels, and leaving gates open at critical times during migration.

4. Acquire data on the home ranges and distribution/movement patterns of the animals in both HMAs to facilitate evaluation of effects of range improvement.

5. Determine to what extent, if any, horses move back and forth between the two HMAs. and between the two HMAs and the HMAs located in the Elko District.

B. Animal Objectives

1. Within the AMLs of 200 adult wild horses in the Little Owyhee Desert HMA and 50 adult wild horses in the Snowstorm Mountains HMA, allow the population to increase by +35 percent in both HMAs before another removal is considered. The +35 percent variance factor would allow the population to increase to 270 adult wild horses in the Little Owyhee HMA, and to 68 adult wild horses in the Snowstorm Mountains HMA before an additional reduction is considered. Although more information needs to be obtained (Animal Objective No. 2), an adult population of 270 means there would be approximately 383 total animals in the Little Owyhee HMA, and 121 in the Snowstorm Mountain HMA.

2. Acquire data on the demographic characteristics of the wild horse population in both HMAs to include information on sex ratios, age structures, young/adult ratios, and actual use. These parameters will be analyzed to determine natality, mortality, and rate of increase.

3. Genetically enhance the color patterns in both HMAs.

III. Management Methods

A. Habitat Objective Number:

1. Wild horses will be maintained within the AML of 200 adults in the Little Owyhee HMA and 50 adults in the Bullhead HMA until forage objectives are met. Adjustments in forage use levels will be made on a proportinate basis.

2. Develop additional permanent water sources for wild horses by developing new springs and reservoirs, and improving existing springs and reservoirs. Refer to Appendix B for specific location and type of improvement.

3. Implement action items 8, 9, and 10 of the CRMP Wild Horse Management Plan recommendations. Refer to Appendix D for specifics.

4. Conduct studies designed to collect information regarding wild horse distribution and movement patterns.

5. During the next removal operations, seven horses from the Snowstorm HMA will be collared and released back into the HMA. The collars will be orange in color. Also, 25 horses from the Little Owyhee Desert HMA will be collared and released back into the HMA.

These collars will be white in color. BLM personnel from the Elko and Winnemucca Districts will coordinate and determine if any migration occurs between the two districts HMAs.

B. Animal Objective Number:

1. A total count census will be conducted periodically to determine whether actual wild horse numbers exceed the AML in each HMA. In addition, a total count census will be conducted (by helicopter) on both HMAs immediately prior to a proposed removal to determine the exact number of adult wild horses which would have to be removed to reach the AML of 200 (Little Owyhee) and 50 (Snowstorm Mtns.) in each HMA.

   During removals, the wild horse population will not be reduced below the AML for either HMA.

2. Studies will be established to collect information regarding sex ratios, age structure, rate of increase, and actual use. This kind of information needs to be obtained before some of the action items of the CRMP Wild Horse Management Plan recommendations can be implemented.

   For more details on types, frequency and intensity of study methods, refer to Section IV, Evaluation and Revision, and Appendix D of this plan.

3. Introduce wild horses into both HMAs that have solid white, Pinto or Paint color patterns.

   Introduce 10 horses with any combination of these colors into the Little Owyhee Desert HMA, and 5 into the Snowstorm Mountains HMA.

   The 15 introduced animals will range from one to seven years in age.

   The 15 animals will be inspected by a veterinarian before they are turned loose into the HMA. Details of the introduction (location, age, sex) including photographs will be inserted into the Herd Area file.

IV. Evaluation and Revision

Data necessary to effectively manage the wild horse and burro population is virtually unavailable for the HMA. The following studies have been initiated or will be established to evaluate the effectiveness of the management methods identified in this plan to meet the objectives. Refer to the Little Owyhee and Bullhead Monitoring Plan, Appendix E, to find the time of year and frequency that the following studies will be read as well as the key area locations.

A. Habitat Study Methods

1. Climatological

Climatological data will be obtained from the Dry Canyon Remote Automated Weather Station located in Paradise Valley. This data can be supplemented by data published by the National Oceanic and Atmospheric Administration. This data will be obtained on a yearly basis and will consist of average monthly precipitation and temperature.

2. Frequency and Trend

One of the parameters to show changes in plant composition (trend) is frequency. Frequency data will be collected using the quadrat-frequency method as described in the Nevada Range (1984) Monitoring Procedures Handbook. Data will be stored and analyzed using standard statistical analysis procedures as a part of the Bureau ADP computer program. When a statistically significant change in frequency data is noted, a double- sampling transect will be read. Frequency data will be used in combination with the ecological status to determine trend. This data will be collected at key areas on a yearly basis until management determines that adequate information has been obtained.

Refer to Appendix A map which shows key area locations.

3. Ecological Status

Ecological status (formerly referred to as "ecological range condition") was determined in FY 1986 on all of the key management areas discussed in the monitoring plan. The double-sampling methods as described in the National Range Handbook (SCS 1976) will be used to determine ecological status.

Refer to Appendix A map which shows key area locations.

4. Utilization

Vegetation utilization data, which includes utilization made by livestock, wildlife and wild horses will be collected using the key forage plant method, which is also described in the Range Monitoring Handbook. Utilization cages will be placed on all key areas for calibration purposes.

Utilization data will be collected twice a year, once just prior to livestock turn-out, and once just after livestock are removed. These studies would show the degree of utilization made by wild horses and wildlife when livestock are absent from specific pastures. Studies will also be conducted when all three kinds of herbivores are using a specific pasture. These studies will be able to show the total utilization which occurred, during that period, but will not be able to differentiate use made by any particular species.

B. Wild Horse Population Study Methods

1. Home Range and Seasonal Movements

A comprehensive study will be conducted to secure an understanding of home ranges and seasonal movements of wild horses. This will be accomplished by collaring 25 wild horses in the Little Owyhee HMA and 7 in the Snowstorm Mtns. HMA with radio tracking equipment. Once accomplished the animals will be observed in the field from vehicles and from the air, and their locations and movements will be recorded. Observations will be conducted a minimum of four times each year, for a period of at least two years (i.e., spring, summer, fall, and winter). Collaring horses may be accomplished either during removal roundups or special capture operations.

2. Productivity, Survival, and Population Estimates

To implement the Wild Horse Management Plan CRMP recommendations, additional information is needed for wild horses in both HMAs.

Productivity and Survival

General productivity indices will be estimated from the relative age composition (percent foals) of the HAs population as per NSO Manual 4730. The desired data will be secured from aerial census and ground observations every third year until the indices become established and are predictable. Aerial censuses designated to obtain wild horse home range and seasonal movement patterns can also supply relative age composition.

First year survival rates will be approximated through shrinkage of foal incidence between post-parturition composition surveys and parturition surveys (Wolfe 1980). Such surveys will be conducted in July and January in conjunction with seasonal movement and home range inventories. The surveys will be conducted every third year.

Population Estimates-Actual Use

Population estimates will be developed every third year. These estimates will be derived by conducting an aerial census using a Bell 47B1 or equivalent helicopter in September or October.

These estimates will be analyzed with other wild horse studies to obtain a more reliable data base of population estimates. The census will place the animals in adult, foal, and if possible, in yearling categories.

Locations of the wild horses, weather conditions, flight period and flight patterns will be recorded as described in NSO Manual Supplement 4730.

3. Sex Ratio-Age Structure Determination

Both the sex ratio and age structure of the population of wild horses in the HMAs will be estimated from an analysis of capture data obtained whenever excess animals are removed. This information will be further supplemented by developing basic life tables as described in NSO Manual 4730.

4. Animal Condition

Since the general condition of the animals is also an indicator of the population health and habitat conditions, during any on-the-ground observations or aerial censuses, all negative animal conditions will be recorded. Some of the conditions that will be recorded are deformities within individual bands, glossiness of coat, fleshiness of animals, etc.

C. Revision

Revision of this plan may be necessary when adequate studies data is gathered which indicates that changes to the grazing system, Monitoring Plan, and/or the AML of animals are warranted because key area and/or resource objectives are not being met. This plan may also be modified or changed if experience gained in the operation of the plan indicates that a change is necessary to meet resource and/or management objectives. This will be determined by the Area Manager, Supervisory Range Conservationist, and District Wild Horse/Burro Specialist in consultation with the CRMP group.

If the habitat studies data indicates that additional forage is available, proportionate increases will be given to wild horses, wildlife, and livestock. This provision is consistent with both CRMP plans. The CRMP plans also provide for a proportionate decrease to wild horses and livestock. Wildlife forage will not be reduced unless requested by the Nevada Department of Wildlife.

V. Coordination

A. Cooperation in Management

Approximately one-third of the HMA is located within the administrative boundary of the Elko BLM District. An agreement (CN-020-33) for the Administration of Resource between the Winnemucca and Elko Districts was signed on August 19, 1977. This agreement allows the Winnemucca District to administer the wild horses for the entire HMA.

Both the Little Owyhee and Bullhead CRMP and AMPs have received concurrence by the Elko BLM District.

The Elko District RMP and the Paradise-Denio LUP were coordinated. There are no discrepancies between the two documents as to areas of use and number of animals.

There is an agreement between the Bureau of Land Management and the State Department of Agriculture. State brand inspections will be conducted to determine if horses captured during roundups should be released to the state and transferred to private owners under estray laws. Unbranded horses will be considered wild with the exception of those which can be shown, to the satisfaction of the BLM authorized officer, after consultation with the state brand inspector, to be privately owned.

VI. Appendices

A. Maps

Maps are attached as Appendix A.

B. Range Improvements

Refer to Appendix B. For both allotments, all of the existing projects were installed for the benefit of livestock. Some of the proposed projects would be be beneficial for wild horses, and are so noted under "comments."

C. Color Types and Assorted Population Data

Refer to Appendix C.

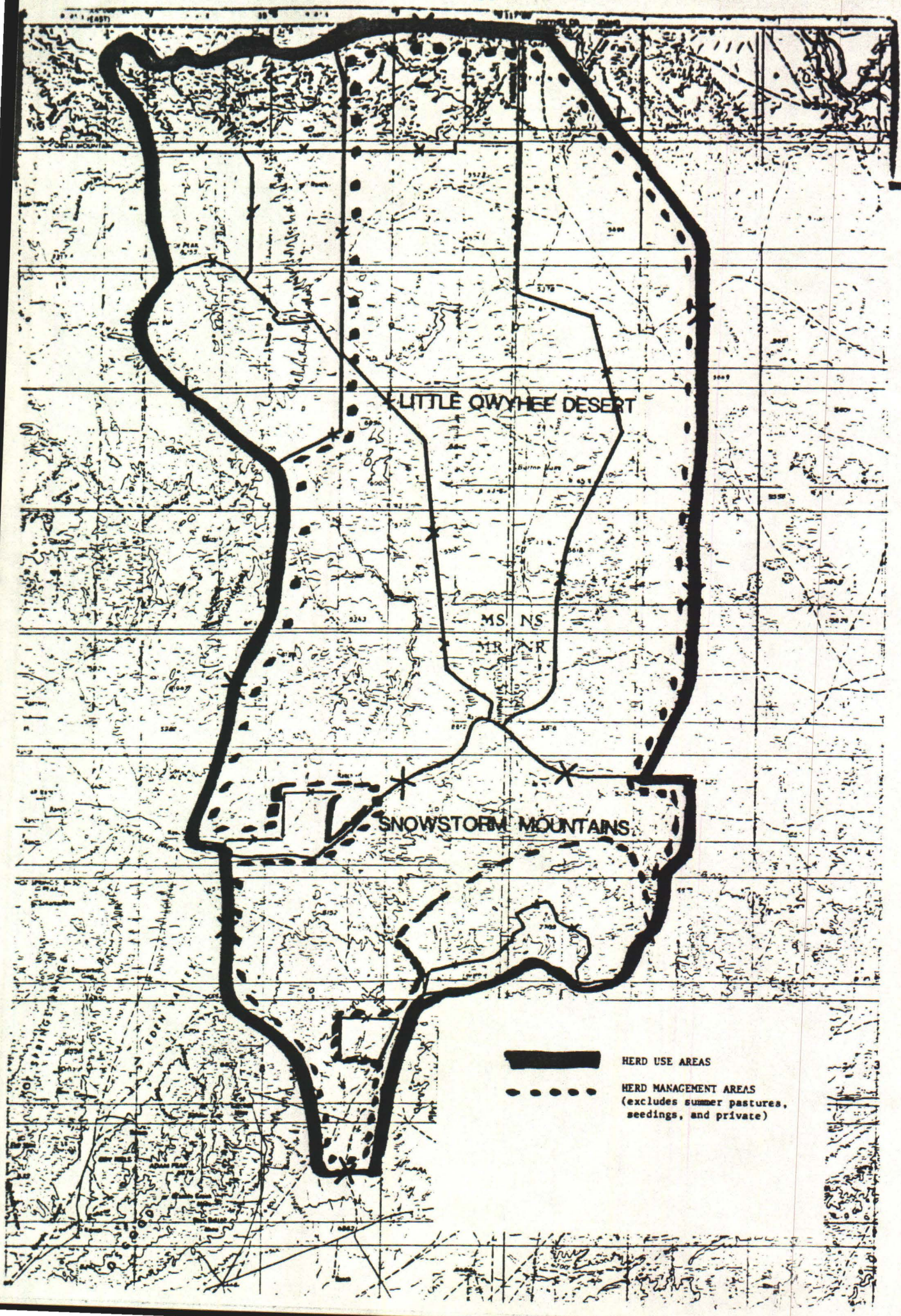
D. CRMP Wild Horse Management Plan Recommendations

Refer to Appendix D.

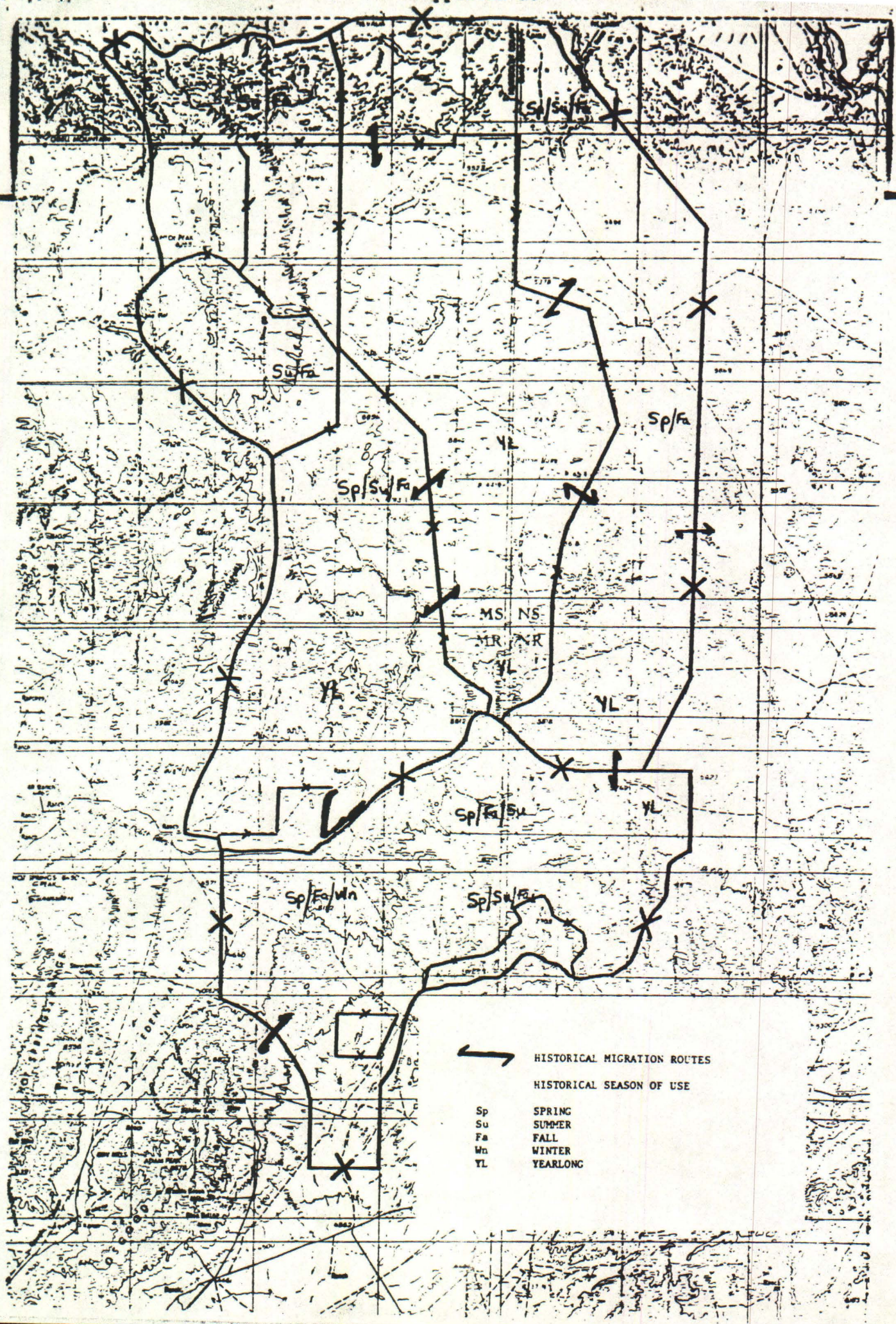
VII. Funding

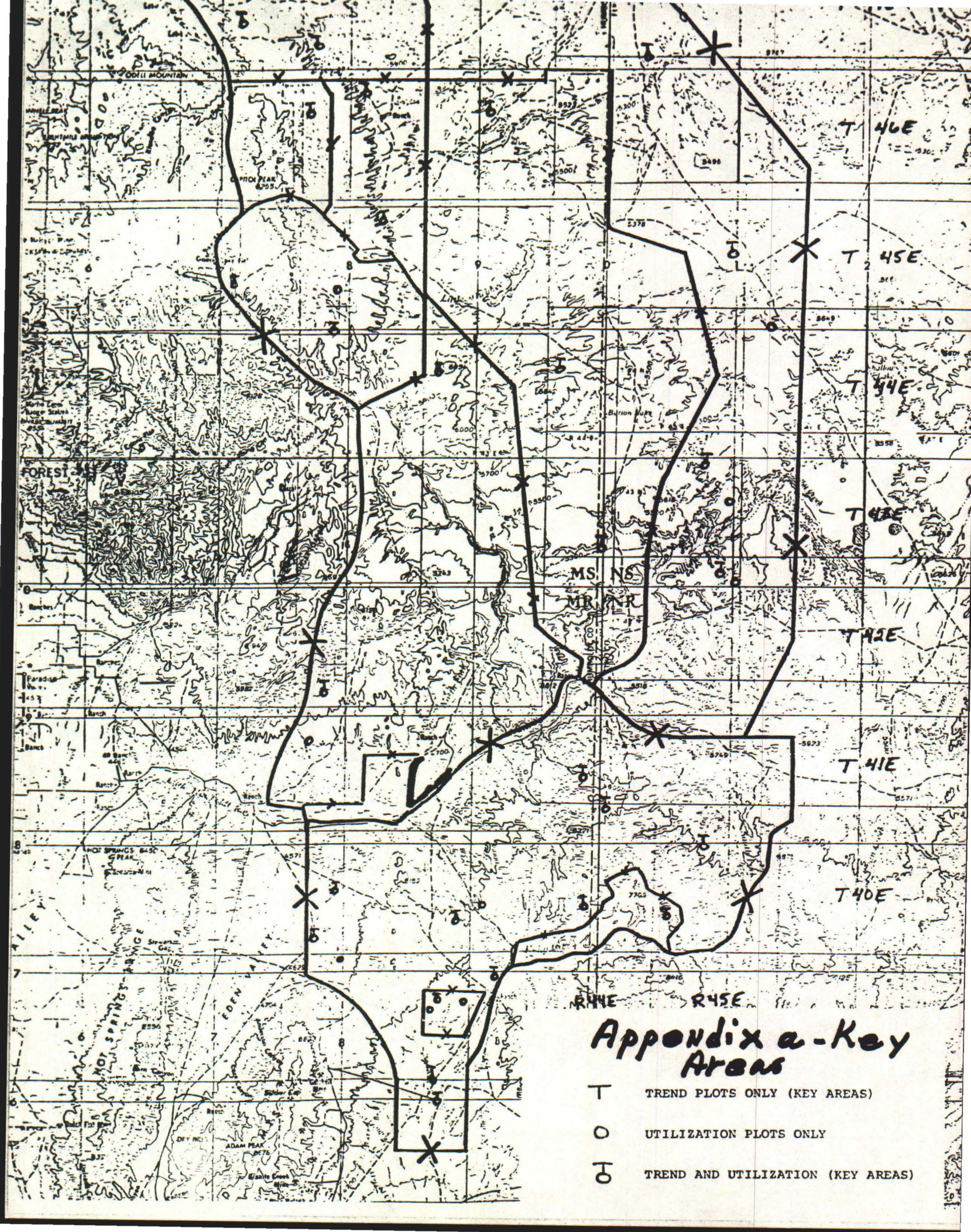
All actions undertaken pursuant to this plan are contingent upon available funding. Funding for range improvement projects will be secured from various Bureau programs, the District Advisory Board, and contributed monies from livestock permittees. The possibility also exists that some funding may be provided by the Nevada Governor's Wild Horse Committee appointed to administer the Heil Fund bequest. These monies would be used for animal and habitat studies.

Appendix a.


LITTLE QWYHEE DESERT
MS NS
MR NR
SNOWSTORM MOUNTAINS
HERD USE AREAS
HERD MANAGEMENT AREAS
(excludes summer pastures,
seedings, and private)

Appendix E.


Sp/Su/Fa
Sp/Fa
Sp/Su/Fa
YL
MS NS
MR NR
YL
YL
YL
Sp/Fa/Su
Sp/Fa/Wn
Sp/Su/Fa
HISTORICAL MIGRATION ROUTES
HISTORICAL SEASON OF USE
Sp SPRING
Su SUMMER
Fa FALL
Wn WINTER
YL YEARLONG

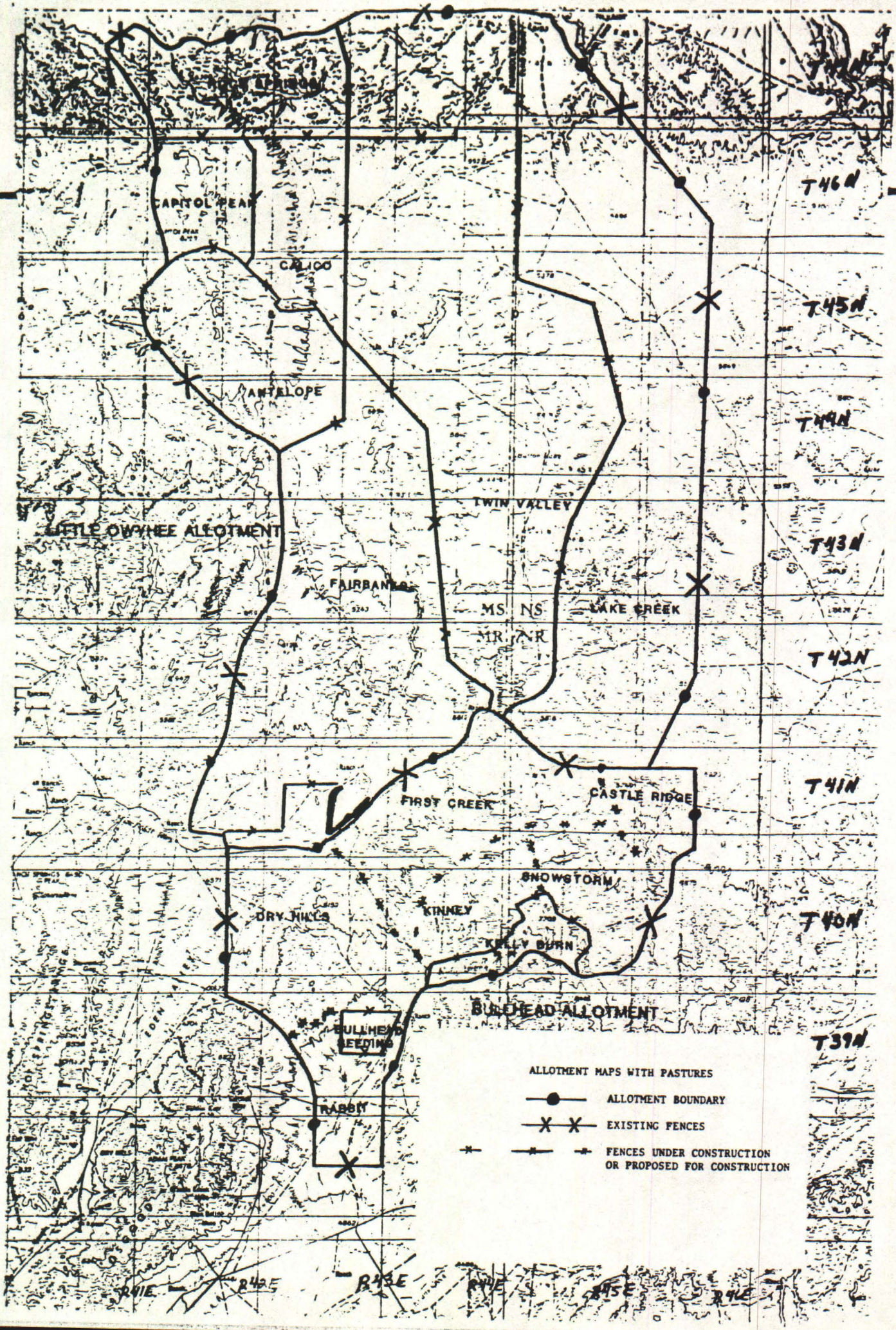


Appendix a - Key Areas

T TREND PLOTS ONLY (KEY AREAS)

O UTILIZATION PLOTS ONLY

T O TREND AND UTILIZATION (KEY AREAS)


CAPITOL PEAK
CALICO
ANTELOPE
LITTLE OWYHEE ALLOTMENT
TWIN VALLEY
FAIRBANKS
MS NS
MR AR
LAKE CREEK
FIRST CREEK
CASTLE RIDGE
SNOWSTORM
KINNEY
DRY HILLS
KELLY BURN
BULLHEAD ALLOTMENT
BULLHEAD SEEDING
RABBIT
T46N
T45N
T44N
T43N
T42N
T41N
T40N
T39N
R41E
R42E
R43E
R44E
R45E
R46E
ALLOTMENT MAPS WITH PASTURES
ALLOTMENT BOUNDARY
EXISTING FENCES
FENCES UNDER CONSTRUCTION
OR PROPOSED FOR CONSTRUCTION

Appendix B.

Range Improvements

Existing Projects (Bullhead Allotment)

Project Name	No.	Location	Date Constructed	Condition	Comments
Kelly Creek Wash Res.	410	T. 39 N., R. 42 E., Sec. 24	1946	Fair	Not used by horses
Tobin Reservoir	412	T. 39 N., R. 42 E.	1946	Fair	Reservoir is dry when used by horses
Meyer Reservoir	413	T. 39 N., R. 43 E.	1946	Fair	Dry when horses are in area.
Mainroad Reservoir	4796	T. 40 N., R. 43 E., Sec. 29		No data	Dry when horses are in area
Dry Hills Reservoir	4797	T. 40 N., R. 43 E., Sec. 19		Fair	Sometimes beneficial to horses.
Rimrock Reservoir	4798	T. 41 N., R. 45 E., Sec. 32	1968	Good	Beneficial to horses
Cleavage Reservoir	4813	T. 40 N., R. 44 E., Sec. 3	1968	Fair	Beneficial to horses
Bullhead Seeding Pipeline	1187	T. 39 N., R. 43 E. Sec. 16, 17, 20	1968	Good	Reconstructed 1981. Horses do not use this area.
Bullhead Seeding Fence	1038	T. 39 N., R. 43 E.	1967	Excellent	
Snowstorm Fire Rehab. Fence	4720	T. 40 N., R. 45 E.	1976	Good	1980-1, Restricts movement of horses to historic summer range.
Bullhead Well	4230	T. 39 N., R. 43 E., Sec. 9	1972	Good 1)	No benefit to horses
Hot Springs Well	4231	T. 40 N., R. 42 E., Sec. 4	1972	Good	Sometimes beneficial to horses.
North Fork Cattleguard	546	T. 41 N., R. 42 E.	1964	Good	
Bullhead Seeding Cattleguard	1134	T. 39 N., R. 43 E., Sec. 14 and 22	1968	Good	
Rodear Flat West Cattleguard	4848	T. 41 N., R. 45 E., Sec. 16	1983	Excellent	NFC installed

Project Name	No.	Location	Constructed	Condition	Comments
Rodear Flat East Cattleguard	4848	T. 41 N., R. 45 E., Sec. 15	1983	Excellent	NFC installed
Snowstorm Short fence	4871	T. 40 N., R. 44 E., Sec. 26	1986	Excellent	Would have no effect on horses
Snowstorm Fence	4875	T. 40 N., R. 43 E.,	1986	Excellent	Could restrict movement of horses to historic summer range. Should be checked periodically for damage
Surprise Spring and Reservoir	4814	T. 40 N., R. 43 E., Sec. 12, NW	1983	Good	Beneficial to horses
Ernie Spring		T. 42 N., R. 44 E., Sec. 14, NESE¼			Beneficial to horses
South Fork Fence	4510	T. 40 and 41 N., R. 45 E.			Restricts movement of horses
Kelly Creek & Red House Cattleguard	1161	T. 38 N., R. 43 E., Sec. 20	1967	Good	
Snowstorm Fire Rehab. Cattleguards	4721	T. 40 N., R. 45 E., Sec. 20; T. 40 N., R. 44 E., Sec. 12	1976	Good	
First Creek Cattleguard	4877	T. 40 N., R. 44 E., Sec. 2	1983	Excellent	

Proposed Projects (Bullhead Allotment)

Project Name	No.	Location	Date Constructed	Condition	Comments
Purple Sage Reservoir	4811	T. 40 N., R. 43 E., Sec. 14 NW NE			Would appreciably benefit horses
Cupola Reservoir	4818	T. 41 N., R. 46 E., Sec. 20 SW SW			Would appreciably benefit horses
Triangle Butte Res.	4821	T. 41 N., R. 45 E., Sec. 17 NW SW			Would appreciably benefit horses

Project Name	No.	Location	Constructed	Condition	Comments
Kelly Spring and Pipeline	4795	T. 40 N., R. 43 E., Sec. 22			Pipeline and troughs would benefit horses
Surprise Spring and Reservoir	4812	T. 40 N., R. 43 E., Sec. 12 NW SW			Would benefit horses
Hot Springs Pipeline	4806	T. 39 N., R. 42 E., Sec. 4			
Hot Springs Pipeline Ext.	N/A	T. 39 N., R. 42 E., Sec. 4			
Ernie Spring		T. 42 N., R. 44 E., Sec. 14 NE1/4SE1/4			To be constructed by BLM. Would benefit horses.
Rabbit Fence	N/A	T. 39 N., R. 42 and 43 E.			Could possibly effect movement of horses.
Kelly Creek Prescribed Burn	N/A	To be determined			Would benefit horses
First Creek Aspen Burn	N/A	T. 40 N., R. 44 E., Sec. 9 and 10			Would benefit horses

Refer to CRMP Plan for implementation stages and responsible parties (Objectives number 3, 4 and 8).

Additional projects needed will be added to this plan as they are identified. The projects will be implemented in consultation and recommendations from the licensee and CRMP committee. Funding responsibilities have been agreed to in the CRMP Plan under Objectives number 3, 4 and 8.

Existing Projects (Little Owyhee Allotment)

Project Name	No.	Location	Date Constructed	Condition	Comments
Fairbanks Field:					
Gonda Division Fence	550	T. 41 N., R. 41 E.		Good	No effect to horses
Fairbanks Management Fence	4711	T. 43 N., R. 43 E.		Fair	Restricts movement
North Fork Stream Improvement	4397	T. 43 N., R. 42 E.		Unknown	No effect
McCleary Well	34	T. 44 N., R. 43 E.		Unknown	Benefit to horses
Antelope Reservoir	428	T. 42 N., R. 42 E.		Good	Beneficial to horses
Jackrabbit Reservoir	430	T. 42 N., R. 42 E.		Good	Beneficial to horses
Fairbanks Reservoir	431	T. 41 N., R. 42 E.		Fair	Beneficial to horses
McCleary Reservoir	871	T. 41 N., R. 41 E.		Good	Beneficial to horses
Owyhee #1 Reservoir	968	T. 42 N., R. 41 E.		Good	Beneficial to horses
Sagehen Protection Fence	935	T. 42 N., R. 43 E.		Good	No effect
Twin Valley Spring Field:					
Twin Valley Capture Corral	4746	T. 45 N., R. 43 E.		Unknown	No effect
Four Mile Reservoir	4729	T. 42 N., R. 45 E.		Fair	Beneficial to
Eight Mile Reservoir	4731	T. 43 N., R. 45 E.		Fair	Beneficial to horses
Button Lake Reservoir	327	T. 44 N., R. 44 E.		Good	Beneficial to horses
Owyhee #13 Reservoir	4499	T. 43 N., R. 44 E.		Good	Beneficial to horses
Owyhee #9 Reservoir	4501	T. 43 N., R. 45 E.		Fair	Beneficial to horses

Project Name	No.	Location	Date Constructed	Condition	Comments
Button Lake Well	694	T. 44 N., R. 44 E.		Unknown	Beneficial to horses
Owyhee #14 Reservoir	4502	T. 43 N., R. 45 E.		Good	Beneficial to horses
Owyhee #44 Reservoir	4503	T. 43 N., R. 45 E.		Good	Beneficial to horses
Owyhee #8 Reservoir	4504	T. 44 N., R. 45 E.		Unknown	Unknown benefits
Owyhee #20 Reservoir	4505	T. 44 N., R. 45 E.		Unknown 2)	Unknown benefits
Owyhee #21 Reservoir	4506	T. 44 N., R. 45 E.		Good	Beneficial to horses
Owyhee #22 Reservoir	4507	T. 44 N., R. 45 E.		Unknown 2)	Unknown benefits
Owyhee #25 Reservoir	4508	T. 44 N., R. 45 E.		Good	Beneficial to horses
Lake Creek Field:					
Lake Creek Management Fence	4693	T. 43 N., R. 45 E.		Good	Restricts movement of horses
Corral Lake Pipeline	4258	T. 44 N., R. 46 E.		Unknown	Beneficial to horses
Reed and Taylor Reservoir	4727	T. 45 N., R. 45 E.		Unknown	Beneficial to horses
Lake Creek Reservoir	4728	T. 47 N., R. 45 E.		Unknown	Beneficial to horses
Owyhee #43 Reservoir	4498	T. 45 N., R. 46 E.		Unknown	Unknown benefits

3) Proposed Projects (Little Owyhee Allotment)

Project Name	Location	Comments
North Fork Fence	From Forks Ranch to Greeley Crossing	Could close access of horses to water
Construct fence around Maiden Springs	Maiden Springs	No effect to horses
Repair wells	As needed	Beneficial to horses
Develop new reservoirs in the Fairbanks, Twin Valley, and Lake Creek Fields	Refer to pages 8 and 9	Beneficial to horses
If feasible, develop new springs in the Fairbanks and Lake Creek Fields	As determined by feasibility studies	Beneficial to horses
Vegetative manipulative projects	As determined by feasibility studies	Beneficial to horses

1) Fenced seeding - not used by horses.
2) Requires maintenance.
3) From CRMP Plan. Site specific projects have yet to be located.

Appendix C

Color Types

Data From 1981 Little Owyhee/Snowstorm Gather

Color Type	Number	Percent
Appaloosa	1	-
Bay	123	23
Black	46	9
Brown	39	7
Buckskin	16	3
Chestnut	15	3
Gray	25	5
Palomino	17	3
Roan	37	7
Sorrel	189	36
Pinto	8	1
Sevina	5	1
Dun	6	-
Albino	3	-
	530	100

Sex Ratio

1. Total population = 57% females; 43% males
2. Adult population = 59% females; 41% males
3. Foal population = 53% females; 47% males
4. Foal/100 adults = 34/100

Appendix C

Color Types
Data From 1983 Little Owyhee/Snowstorm Gather

Color Type	Number	Percent
Bay	162	21
Black	43	6
Brown	87	11
Buckskin	25	3
Chestnut	31	4
Gray	125	16
Palomino	28	4
Roan	79	11
Sorrel	160	21
Pinto	17	2
Sevina	7	1
Dun	1	-
Albino	3	-
	768	100

Color Types
Data From 1984 Little Owyhee/Snowstorm Gather

Color Type	Number	Percent
Bay	232	33
Black	76	11
Brown	85	12
Buckskin	12	2
Chestnut	14	2
Gray	64	9
Palomino	5	1
Roan	49	7
Sorrel	141	21
Pinto	4	1
Sevina	4	1
	686	100

Data from 1983 Little Owyhee/Snowstorm Gather

Age Class	Males	Females
0-11 months	97	108
1 year	42	68
2	55	64
3	29	38
4	5	13
5	10	18
6	29	31
7	41	39
8	16	32
9	5	9
10	-	5
11	-	-
12	7	5
13	2	-
TOTAL	338	430

56% Females vs. 44% Males

Appendix C

Data from 1984 Little Owyhee/Snowstorm Gather

Age Class	Males	Females
0-11 months	71	84
1 year	48	87
2	19	39
3	17	35
4	15	15
5	9	22
6	18	34
7	22	33
8	29	27
9	4	7
10	4	7
11	1	6
12	2	2
13	1	1
14	3	1
15	2	1
16	1	2
17	4	1
18	4	1
19	-	-
20	2	2
22	1	-
25	1	-
27	1	-
TOTAL	279	407

59% Females gathered vs. 41% Males

Appendix C

Color Types
Data From 1985 Little Owyhee/Snowstorm Gather

Color Type	Number	Percent
Pinto	6	1
Sorrel	218	22
Roan	53	5
Chestnut	26	3
Bay	249	26
Black	79	8
Brown	96	10
Buckskin	28	3
Gray	196	20
Palomimo	14	1
Quemella	3	-
Sevina	12	1
White	2	-
Dun	1	-
Albino	1	-
	984	100

Sex Ratio

1. Total population = 51% females; 49% males
2. Adult population = 52% females; 48% males
3. Foal population = 52% females; 48% males
4. Foal/100 adults = 40/100

Appendix C

Data from 1985 Little Owyhee/Snowstorm Gather

Age Class	Males	Females
0-11 months	56	90
1 year	79	63
2	55	76
3	24	20
4	23	47
5	50	23
6	46	76
7	37	30
8	18	26
9	13	6
10	10	9
11	7	4
12	8	2
13	5	5
14	6	4
15	2	3
16	7	8
17	2	0
18	4	4
19	0	0
20	6	2
21	1	1
22	0	3
23	5	0
24	0	0
25	7	1
26	5	0
27	2	0
28	0	0
29	0	0
30	0	0
31	1	0
32	1	1
TOTAL	480	504

49% Females vs. 51% Males

CRMP Wild Horse Management Plan Recommendations:

Note: The following objectives are taken from the CRMP plans precisely as they were written in the early 1980s in order to demonstrate the intent of the plans. Some of the planned actions have been accomplished and some have not.

Appendix D.

Objective #5

Establish a wild horse management plan.

a. Perpetuate a viable herd which is manageable and compatible with livestock operations, wildlife, and resources available.
b. Preserve unique types and primitive mustang markings.
c. Reduce internal barriers to herd migration within wild horse herd area.

A base herd of 200 wild horses was agreed as compatible with livestock operations as planned, wildlife demand, and resources available in the Little Owyhee spring range area. An additional 50 wild horses shall be included as part of the Owyhee herd and Bullhead allotment spring range shall be included as part of the wild horse management area.

ACTIONS:

1. Gathering of wild horses in Little Owyhee and Bullhead Allotment.
   Who: BLM
   When: 1981, 1982 and 1983 before spring turn-out.

2. Select a base herd of 250 head for the Little Owyhee and Bullhead spring range consisting of:
   a. Equal numbers of male and female.
   b. Approximately proportions of 45% age 204 year olds, 40% age 5-8 year olds, and 15% age 9+ years.
   c. All primitive marking mustang types gathered will be returned as part of the base herd.
   Who: BLM
   When: 1982, 1983

3. Select with base herd a considerable portion of foals to assure replacements surviving two winters prior to time they become part of the base herd. Efforts will be made to allow foals to "mother-up" with mares selected for the base herd.
   Who: BLM
   When: 1982, 1983

4. Select with the base herd a portion of yearlings needed to develop into two year olds for base herd replacements for death loss from old age and other causes.
   Who: BLM
   When: 1982, 1983

5. Establish a herd monitoring system including:
   a. Observation of gathering and selection process.
   b. Inventory of initial herd by age, sex, type & condition.
   c. Herd photographic inventory.
   d. Seasonal inventory by location (ocular & photographic every spring and fall).
   e. Yearly review of herd proportions, condition, health, locations, migrations and trends.

   Who: BLM & CRMP #1 Wild Horse Committee
   When: Beginning 1982

6. Adjust herd inventory if monitoring indicates any age or sex group is disproportionately large or small. Gather excess groups, return deficient group with large proportion of potential replacements.

   Who: Wild Horse Committee decides and recommends adjustments to be made by BLM.
   When: Every two years.

7. In the event the natural base herd is reduced below 100 head by disease, accident or other causes, reintroduction of a base herd up to 250 head should be made from wild horse gatherings within Nevada.

   Who: BLM
   When: Within two years of the time base herd is found to be reduced below 100 head.

8. Internal division fences in herd area shall have gates at one mile minimum intervals and new gates (minimum 20 ft. wide) at all locations receiving heavy pressures from past wild horse populations.

   Who: BLM
   When: 1982

9. All gates on division fences between Lake Creek, Twin Valley, Fairbanks pastures and Bullhead Allotment, shall be opened and tied back from July 1 to March 15 to facilitate "free-roaming" migration of the base herd within spring range area and Bullhead Allotment. A deterioration of range condition caused by excessive use in any one field may be controlled by gate closure if deemed necessary by CRMP Wild Horse Committee.

   Who: BLM & NFC
   When: 1983

10. Wild horse use of checkerboard and scattered deeded properties. Where wild horses now exist, wild horses shall be permitted use of unfenced Nevada First Corporation deeded properties in the same ratio of domestic livestock to wild horses as in the Little Owyhee and Bullhead CRMP plans when managed under a plan approved by CRMP Local #1. BLM will adjust the exchange of use agreement with Nevada First Corporation to account for AUMs used by wild horses on Nevada First Corporation private lands.

    Who: BLM & NFC
    When: 1982

Glossary of Terms

Active Preference - the allowable grazing use made by domestic livestock during the grazing year, and generally expressed in AUMs.

Adjudication (or range adjudication) - the allocation of grazing areas or use of allotments, season of grazing use, numbers and class of livestock, and numbers of AUMs to qualified livestock operators (Nevada Report). The "Nevada Report" is a document prepared by Bureau personnel in 1974. The Nevada Report was about the effects of livestock grazing on wildlife, watershed, recreation, and other resource values in Nevada.

Adult Horse - any wild horse two years or older (NSO Instruction Memorandum NV 83-289).

Allotment - an area of land where one or more individuals graze their livestock. It generally consists of public lands but may include parcels of private or state owned lands. The number of livestock and period-of-use are stipulated for each allotment. An allotment may consist of several pastures or be only one pasture (Nevada Report).

Allotment Management Plan (AMP) - means a documented program which applies to livestock operations on the public lands, prepared in consultation and cooperation with the permittee(s), lessee(s), or other involved affected interests (43 CFR 4100.0-5).

Animal Unit Month (AUM) - means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month (43 CFR 4100.0-5).

Appropriate Management Levels (AMLs) - the median number of wild horses or burros to be maintained by herd management area (NSO Instruction Memorandum No. 83-289).

Carrying or grazing capacity - as used in this document, the words are synonymous. The phrase means the maximum stocking rate possible without inducing damage to vegetation or related resources.

Coordinated Resource Management and Planning (CRMP) - public involvement program in which interest groups, other agencies, users, and affected individuals develop multiple-use plans as part of the BLM's planning process (Winnemucca Preliminary Final Environmental Impact Statement).

Endangered species - any species in danger of extinction throughout all or a significant portion of its range (WPFEIS).

Grazing system - systematic sequence of grazing use and nonuse of an area, which is designed to achieve established objective (Nevada Report).

Herd - means one or more stallions and their mares or jacks and their jennies (43 CFR 4700.0-5).

Herd Management Area Plan (HMAP) - an activity plan which addresses the management of wild horses or burros and the habitat on one or more herd management areas (NSO Instruction Memorandum NV 83-289).

Herd Management Area (HMA) - a herd area identified in an approved land use plan where wild horses or burros will be maintained and managed (WO Instruction Memorandum No. 83-289).

Management Framework Plan (MFP) - a land-use plan for the public lands which provides a set of goals, objectives, and constraints for a specific planning area to guide the development of detailed plans for the management of each resource (WPFEIS).

MFP II - a BLM Area Manager's recommendation to the District Manager for the Management Framework Plan based on conflict resolution (WPFEIS).

MFP III - the District Manager's land use decision for management of the public lands and their resources (WPFEIS).

Management Plan - means a written program of action designed to protect, manage, and control wild free-roaming horses and burros and maintain a natural ecological balance on the public lands (43 CFR 4700.0-5).

Multiple use - the management of public lands and their various resource values so that they are utilized in a combination that will best meet the present and future needs of the public (WPFEIS).

Public lands - means any lands administered by the Secretary of the Interior through the Bureau of Land Management (43 CFR 4700.0-5).

Range survey (vegetation inventory) - a method for the measuring or inventory of vegetation to provide base data for use in management decisions and establishment of the grazing capacity.

Riparian - a biological zone influenced by the presence of water. Also used to refer to vegetation that grows along streams or around springs (WPFEIS).

Threatened species - any species likely to become endangered within the foreseeable future throughout all or a significant part of its range (WPFEIS).

Unit Resource Analysis (URA) - a description of the basic physical characteristics of an area.

Wilderness Study Area (WSA) - an area determined to have wilderness characteristics. Study areas will be subject to interdisciplinary analysis and public comment to determine wilderness suitability. Suitable areas will be recommended to the President and Congress for wilderness designation (WPFEIS).

Wild free-roaming horse and burro - all unbranded and unclaimed horses and burros that use public lands as all or part of their habitat or that have been removed from these lands by the authorized officer but have not lost their status under section 3 of the Act (NSO Instruction Memorandum NV 83-289).

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5. Reilly, Helen, President, International Society For the Protection of Mustangs and Burros, personal communication.

6. Steele, Rufus, "Trapping Wild Horses in Nevada," McClure's Magazine, December 1909.

7. U.S. Department of the Interior, Bureau of Land Management, Little Owyhee Allotment Management Plan, Winnemucca, NV., approved in 1972.

8. U.S. Department of the Interior, Bureau of Land Management, Paradise-Denio Management Framework Plan Step III, Winnemucca, NV., 1982.

9. U.S. Department of the Interior, Bureau of Land Management, Paradise-Denio Unit Resource Analysis, Winnemucca, NV., 1979.

THE BUREAU OF LAND MANAGEMENT'S
MONITORING SYSTEM AS
IMPLEMENTED IN THE
WINNEMUCCA DISTRICT

I. Introduction — one time sampling

II. History Of Why We Are Monitoring

5-18 PD
-10 SG

III. Development Of The Monitoring Program
A. Monitoring means the orderly collection of data to evaluate:
1. Effects of managment actions; and
2. Effectiveness of actions in meeting management objectives. — June field day

IV. How Monitoring Is Accomplished

V. Time Needed To Complete Monitoring Plans

VI. When Will The Monitoring Results Be Used In Management Decisions

VII. Discussion Of Possible Streamlining Of The Mnoitoring Process

Geo. Blair
Star Valley

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Ecological Site Description

A. PHYSICAL CHARACTERISTICS

1. Physiographic Features

This site occurs on summits and sideslopes of lower mountains, hills and upper piedmont slopes. Slopes range from 2 to 50 percent, but slope gradients of 8 to 30 percent are most typical. Elevations are 5,000 to 7,000 feet (1,525 to 2,135 meters).

2. Climatic Features

Average annual precipitation is 10 to 12 inches (255 to 305 mm). Mean annual temperatures are 45 to 48 degrees F (7 to 9 degrees C). Extreme temperatures are 105 to -35 degrees F (40 to -37 degrees C). Average frost-free season is 80 to 110 days.

3. Potential Native Vegetation

a. The plant community is dominated by bluebunch wheatgrass, Thurber needlegrass and low sagebrush. Webber ricegrass, Cusick bluegrass, Sandberg and pine bluegrasses are important grasses associated with this site. Idaho fescue is found on those sites having thicker surface soils and a more favorable water balance. Potential vegetative composition is about 55% grasses, 15% forbs and 30% shrubs.

3. Potential Native Vegetation (continued)

b. Major plant species and percentages of the total community by air-dry weight:

Grasses	Plant Symbol	Percent
bluebunch wheatgrass	AGSP	15-20
Thurber needlegrass	STTH2	15-20
Webber ricegrass	ORWE	5-10
Sandberg bluegrass	POSE	5-8
pine bluegrass	POSC	5-8
Cusick bluegrass	POCU3	5-8
other perennial grasses	PPGG	5-10**
basin wildrye	ELCI2	
Idaho fescue	FEID	
Nevada bluegrass	PONE3	
bottlebrush squirreltail	SIHY	
Indian ricegrass	ORHY	

**Allow no more than 5% of each species of this group in the potential plant community.

Forbs		
balsamroot	BALSA	2-5
eriogonum	ERIOG	1-3
phlox	PHLOX	1-3
other perennial forbs	PPFF	5-10**
rockcress	ARABI2	
bluebells	MERTE	
foothill deathcamas	ZYPA	
milkvetch	ASTRA	
tapertip hawksbeard	CRAC2	
biscuitroot	LOMAT	
penstemon	PENST	
aster	ASTER	
goldenweed	HAPLO2	
sandwort	ARENA	
pussytoes	ANTEN	

**Allow no more than 1% of each species of this group in the potential plant community.

3. Potential Native Vegetation (continued)

Shrubs

low sagebrush	ARAR8	20-30
other shrubs	SSSS	2-10**
downy rabbitbrush	CHVIP	
Douglas rabbitbrush	CHVI8	
horsebrush	TETRA3	
broom snakeweed	GUSA2	
spiny hopsage	GRSP	

**Allow no more than 2% of each species of this group in the potential plant community.

c. Apprxoimate ground cover (basal and crown) 15-30%.

d. As ecological condition deteriorates, low sagebrush, snakeweed and rabbitbrush become dominant with increases of Sandberg and pine bluegrasses, bottlebrush squirreltail, balsamroot and phlox species in the understory. Cheatgrass is the species most likely to invade this site.

4. Total Annual Production (weight per acre air-dry)

Favorable years	-	700 pounds (785 kg/ha)
Normal years	-	500 pounds (560 kg/ha)
Unfavorable years	-	300 pounds (335 kg/ha)

5. Soils

a. The soils in this site are moderately to deep and are well drained. The thickness of the surface layer and depth to a fine-textured, moderately to strongly structured subsoil ranges from 5 to 13 inches (13 to 33 cm). The fine-textured subsoil swells on wetting and shrinks and cracks upon drying. These subsoils interfere with deep root development, but some roots, mainly of shrubs and forbs, are able to penetrate the subsoil along vertical cleavage planes. The swelling of the subsoil with wetting results in poor aeration during the early spring, forming a perched water table near the soil surface. Plant growth is initiated with the early spring warming of these soils. The surface layer has a low available water capacity due to its limited thickness. Infiltration of water is restricted once these soils are wetted and the site has potential for considerable loss of water by runoff. Loss of the surface layer will result in decreased productivity of the site. Pedestalling of shallow rooted grass plants is common during the winter due to frost heaving.

b. Soil taxonomic unit representative of this site:*

Series	Survey Areas	Classification
Zoesta, cobbly loam, 8-15% slopes	775	Fine, montmorillonitic, frigid Xerollic Paleargids

*For additional soils in this site, see Item B. 9.

c. Complete soil survey descriptions are available in the soil survey descriptive legend.

5. Location of Typical Example of the Site

No suitable location of this site in good or excellent condition has been found at this time.

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT

SVIM CONDITION CLASS WRITE-UP

	SPECIES	Present	Climax
37 % Grass	Thurber needlegrass	20	20
	Webber ricegrass	2	2
	Sandberg bluegrass	5	5
	Bluebunch wheatgrass	5	5
	Cheatgrass	5	0
7 % Forbs	Balsamroot	2	2
	Phlox	5	3
56 % Shrubs and Trees	Low sagebrush	40	30
	Green rabbitbrush	10	2
	Horsebrush	6	2
TOTAL			71

Allotment: _____
Technician(s): _____
Transect #: _____
Map Unit #: _____
Range Site: _____
Date: _____
Photo #: _____

REMARKS: Plant vigor; animal signs (hedging, terracing, droppings, etc.); severe erosion signs; % surface rock; burned/unburned; seedlings; seeded; PJ invasion; etc. _____

Seral Stage	Condition Class	Estimated Percentage of Present Plant Community that is Climax (natural vegetation) for the Range Site.
Climax	Excellent	76 - 100
High	Good	51 - 75
Medium	Fair	26 - 50
Low	Poor	0 - 25

Vegetation aspect: _____
Slope aspect: _____
% Slope: _____
Elevation: 4500'
Total lbs/acre: 600
Gr-F-S canopy cover: _____
Tree canopy cover: _____
SSF: _____
Apparent trend: _____

FINAL CONDITION CLASS:
Good (High Seral Stage)

FINAL SWA NO. _____

NV-010-1731-1 (5/79)

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT

SVIM CONDITION CLASS WRITE-UP

	SPECIES	Present	Climax
20 % Grass	Webber ricegrass	5	5
	Sandberg bluegrass	5	5
	Cheatgrass	10	0
	Phlox	1	1
	Tapertip hawksbeard	9	1
10 % Forbs			
	Low sagebrush	50	30
	Green rabbitbrush	10	2
	Horsebrush	10	2
70% Shrubs and Trees			
	TOTAL		46

Allotment: _____

Technician(s): _____

Transect #: _____

Map Unit #: _____

Range Site: _____

Date: _____

Photo #: _____

REMARKS: Plant vigor; animal signs (hedging, terracing, droppings, etc.); severe erosion signs; % surface rock; burned/unburned; seedlings; seeded; PJ invasion; etc.

Seral Stage	Condition Class
Climax	Excellent
High	Good
Medium	Fair
Low	Poor

Estimated Percentage of Present Plant Community that is Climax (natural vegetation) for the Range Site.

76 - 100	
51 - 75	
26 - 50	
0 - 25	

Vegetation aspect: _____

Slope aspect: _____

% Slope: _____

Elevation: 5500

Total lbs/acre: 400

Gr-F-S canopy cover: _____

Tree canopy cover: _____

SSF: _____

Apparent trend: _____

FINAL CONDITION CLASS:
Fair (Medium Seral Stage)

FINAL SWA NO. _____

NV-010-1731-1 (5/79)

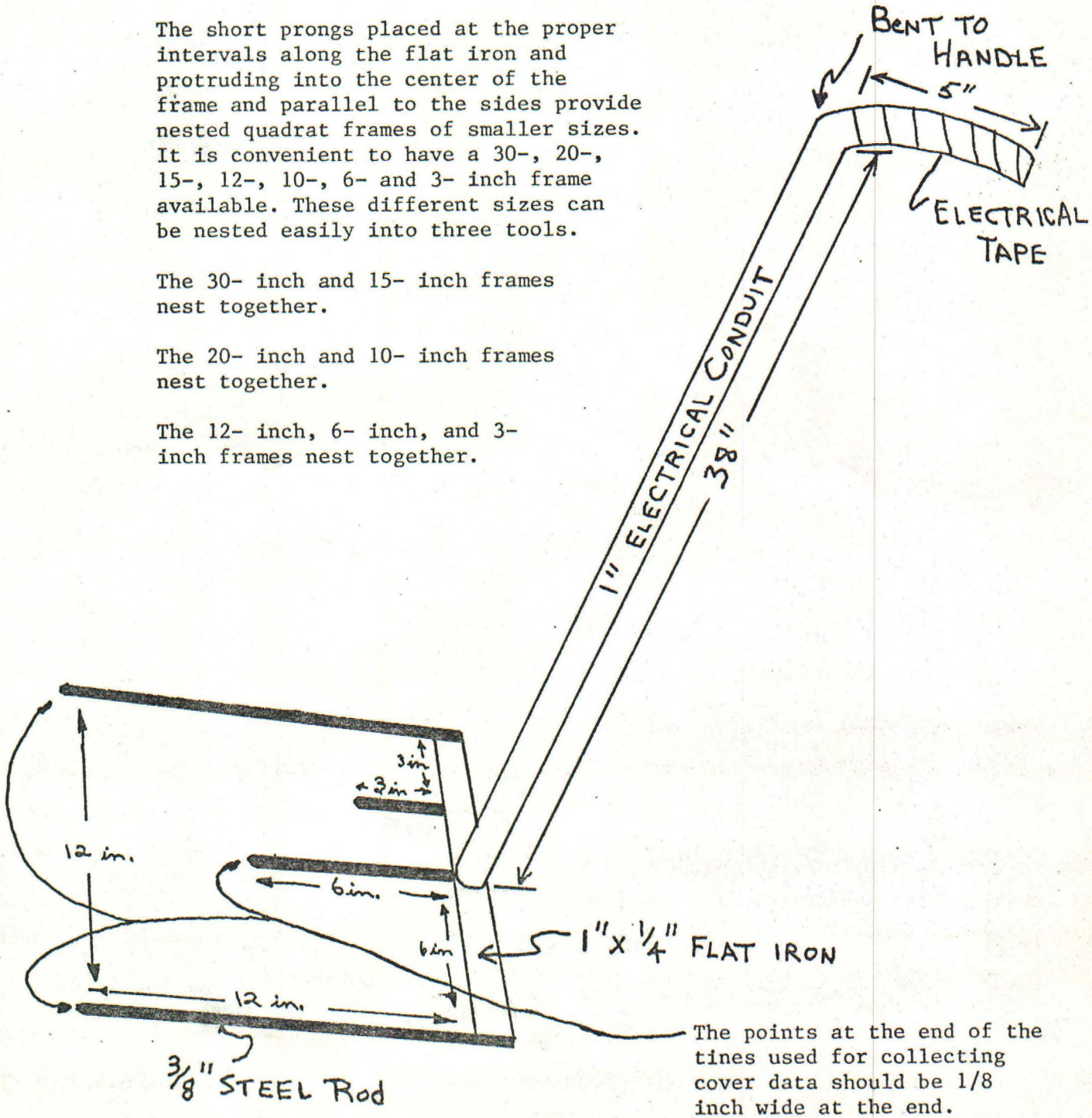
QUADRAT FREQUENCY FRAMES

The short prongs placed at the proper intervals along the flat iron and protruding into the center of the frame and parallel to the sides provide nested quadrat frames of smaller sizes. It is convenient to have a 30-, 20-, 15-, 12-, 10-, 6- and 3- inch frame available. These different sizes can be nested easily into three tools.

The 30- inch and 15- inch frames nest together.

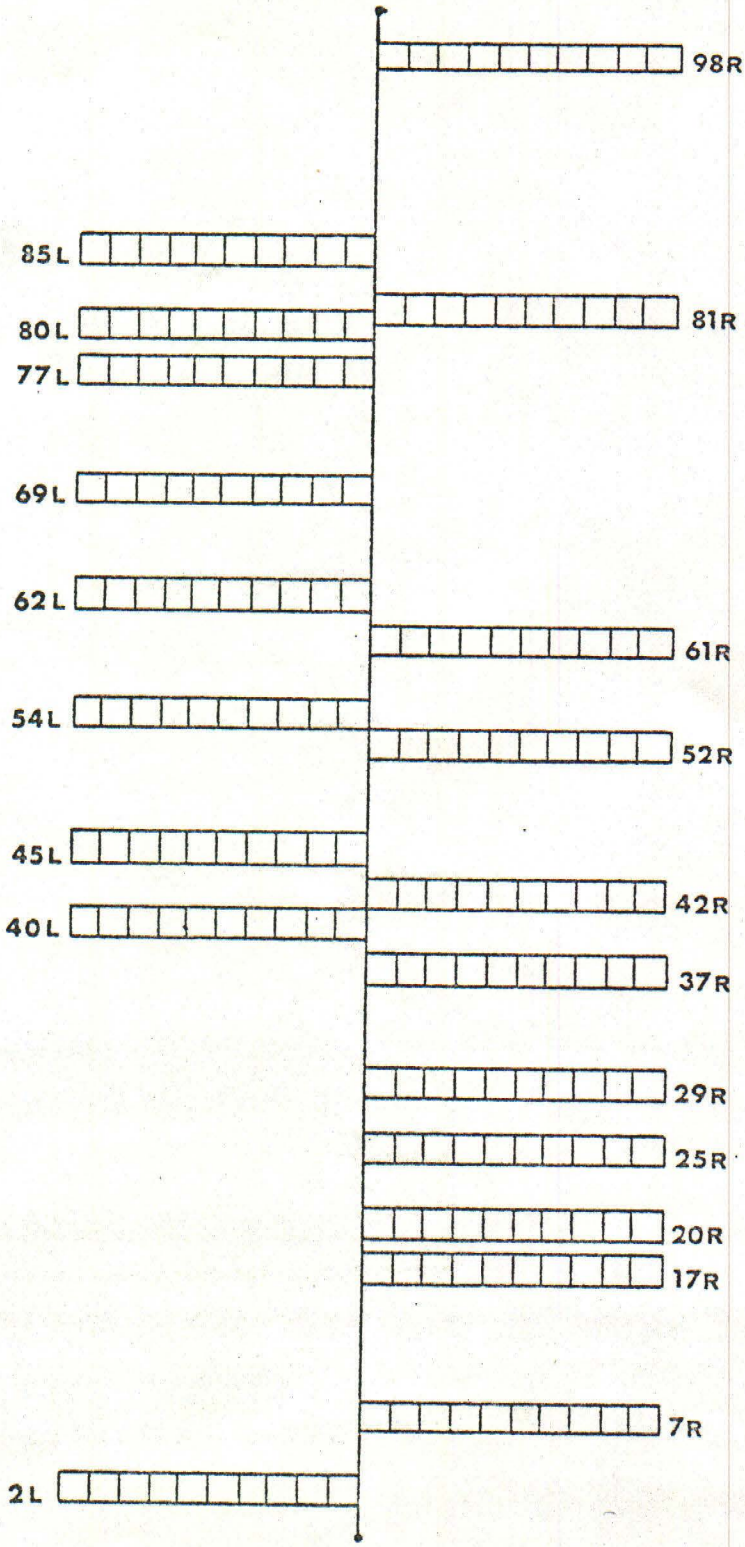
The 20- inch and 10- inch frames nest together.

The 12- inch, 6- inch, and 3- inch frames nest together.



The points at the end of the tines used for collecting cover data should be 1/8 inch wide at the end.

Diagram of the frequency transect baselines.



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FREQUENCY DATA

EXAMINER Keller Boni, Armentrout
DATE (YYMMDD) (1) 820930
NO. OF TRANSECTS (2) 10
NO. OF QUADRAT/TRANSECT (3) 20
WILDLIFE SEASON OF USE (4) 123
BIG GAME RANGE NAME (5)

BLM ADMIN UNIT (ST/DI/RA/PU) (6) NV0228448
ALLOTMENT (7) 0049
PASTURE (8)
KEY AREA NO./NAME (9) 0MS2
RANGE SITE (HABITAT TYPE) (10) 025X005N
HABITAT SITE PØNE3-HØBR2-OMR

	SPECIES	FRAME SIZE	1	%	2	%	3	%	4	%	5	%	6	%	7	%	8	%	9	%	10	%	FREQ OF HITS	% FREQ
RANDOM NUMBERS	TOTAL of 10 / FIRST 10 of 20		2L / 2L		17R / 7R		25R / 17R		37R / 20R		42R / 25R		52R / 29R		61R / 37R		69L / 40L		80L / 42R		85L / 45L			
GRASSES	PØNE3	12																					136	68.5
	HØBR2																						93	41.5
	AGAL																						13	6.5
	AGSM																						93	46.5
	CAREX	3																					161	80.5
FORBS	IRMI	12																					97	48.5
	ASTER																						27	13.5
	TAØF																						151	75.5
	ARNIC																						45	22.5
	LEPID																						41	24
	PØGL																						25	12.5
	ACMIL																						55	27.5
	AAFF																						4	2
SHRUBS																								

NV 6630-2 (June 1982)

Illustration 21
(.16D7, .16F4, .16H1)