



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Winnemucca Field Office
5100 East Winnemucca Boulevard
Winnemucca, Nevada 89445
<http://www.nv.blm.gov/winnemucca>



In Reply Refer To:
(NV-022.42)
4120

May 5, 1999

John and Vella Torvick
455 N. Harmon Road
Fallon, NV 89406

Dear Mr. and Mrs. Torvick:

Enclosed is a copy of the draft Pole Canyon Allotment Evaluation. The Evaluation has a number of grazing alternatives for you to comment on. Please submit your comments by June 9, 1999. After consideration of your comments, you will receive the final allotment evaluation and proposed multiple use decision.

If you have any questions, please contact Tom Seley or George Gamblin at (775) 623-1500.

Sincerely yours,

Colin P. Christensen
Assistant Field Manager
Renewable Resources

cc: Resource Concepts, Inc.
NV Cattleman's Association
NV Woolgrowers Association
Friends of Nevada Wilderness
Nevada Division of Wildlife
Washoe County Department of Community Development
Wild Horse Organized Assistance
Nevada Commission for the Preservation of Wild Horses
Natural Resources Defense Council
Sierra Club-Toiyabe Chapter
Pyramid Lake Paiute Tribe

POLE CANYON ALLOTMENT EVALUATION

I. ALLOTMENT INFORMATION

- A. Allotment Name: Pole Canyon
Allotment Number: 00126
- B. Permittee(s): John Torvick
- C. Evaluation Period: 1988-1997
- D. Selective Management Category: C
Priority: 13

II. INITIAL STOCKING LEVEL

- A. Livestock Use:
1. Permitted Use: 540
Historical Suspended: 1508
 2. Season of Use: 05/01 - 09/30
 3. Kind and Class: Cow/calf
 4. Grazing System: No grazing system exists.
 5. Percent of Federal Range: 100% Federal Range

B. Wild Horse Use:

1. Recommended Wild Horse Numbers for the Pole Canyon Allotment from the Sonoma-Gerlach MFP-III:

	<u>Wild Horse Numbers</u>	<u>AUMs</u>
Fox & Lake Range HMA	100	1200

Eight (8) percent of the Fox & Lake Range Herd Management Area (HMA) lies within the Pole Canyon Allotment. The other 92% of the HMA is in the Rodeo Creek Allotment.

C. Reasonable Numbers for Wildlife:

1. Reasonable Numbers from the Sonoma- Gerlach MFP-III - 1982:

Mule Deer - (<u>Odocoileus hemionus</u>)	15 AUMs
Pronghorn - (<u>Antilocapra americana</u>)	7 AUMs
Bighorn Sheep - (<u>Ovis canadensis californiana</u>)	37 AUMs

2. Key or Critical Management Areas within the allotment:

A Habitat Management Plan has not been written for this area. The Sonoma-Gerlach MFP-III identified mule deer, pronghorn, potential California bighorn sheep, and sage grouse habitat on the Fox Range in the Pole Canyon Allotment. Maps of these areas can be found in the Winnemucca Field Office.

III. ALLOTMENT PROFILE

A. Description:

The allotment is located in Central Washoe County. It is bordered on the north by the Rodeo Creek Allotment, the Pyramid Lake Indian Reservation on the South, and the Smoke Creek Desert to the west. The primary topographic feature of the allotment is the high elevation north-south trending Fox Range which descends to the valley floor of the Smoke Creek desert. The allotment is approximately 5 miles long in a north-south direction and 6 miles wide in a east-west direction.

Vegetation types in the allotment vary from greasewood- saltbrush at lower elevations to sagebrush-bluegrass-needlegrass at higher elevations.

B. Acreage:

LAND STATUS

Public Land

Other Land

13,877 Acres (100%)

0 Acres (0%)

C. Allotment Objectives:

Activity plans have not been written for the Pole Canyon Allotment. The only objectives that currently exist are the Long Term Land Use Plan objectives that provide the direction for management. These objectives can also be found in the Rangeland Program Summary (RPS) Update 1992.

1. Range - long term:

- a. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis with an initial stocking level of 540 AUMS.
- b. Maintain an acceptable use level on key forage species ¹ that will provide a sustained yield.
- c. Improve range/ecological condition ² from fair to good on 2,177 acres and from good to excellent on 37 acres.
- d. Consider increasing existing forage by artificial methods wherever appropriate and feasible.

2. Wildlife - long term:

- a. Manage, maintain, and improve public rangeland condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 15 AUMs for mule deer, 7 AUMs for pronghorn, and 37 AUMs for bighorn sheep, by:
 - 1) Improving or maintaining the following mule deer habitat in the Fox Range DY-1 to at least good condition.
 - 2) Improving and maintaining the Fox Range AY-1 pronghorn habitat condition to at least good condition.

¹ Key forage species are those species whose use serves as an indicator to the degree of use of associated species; or those species which must, because of their importance, be considered in a management program.

² The range/ecological conditions in the objective refer to forage conditions.

- b. Wildlife habitat management objectives for vegetation utilization shall be as follows except where adjusted by an approved HMP, AMP, and HMAP.
 - 1) Terrestrial: will not exceed levels established in the Sonoma-Gerlach EIS Table I-4 for key species.
 - 2) Wetland Riparian: shall not exceed 50% for key species.
 - c. Protect sage grouse strutting grounds and nesting wintering habitat and improve brooding habitat by: (WL-1.11)
 - 1) Following NDOW's guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada.
 - 2) Maintain sagebrush canopy at 30% in sage grouse nesting and wintering areas where sagebrush does not exceed (3) feet in height.
3. Wild Horses - long term:
- a. Manage, maintain, and improve public rangeland conditions to provide an initial level of 1,200 AUMs of forage on a sustained yield basis for 100 (AMLs) Wild Horses in the Fox & Lake Range Herd Management Area.
 - b. Manage Wild Horse habitat to improve range/ecological condition as listed under livestock objectives.
 - c. Maintain an acceptable allowable use level on key forage species that are consistent with those established for livestock and wildlife.
 - d. Maintain and improve the free-roaming behavior of wild horses by protecting their home ranges.
 - e. Maintain/improve wild horse habitat by assuring free access to water.

D. Standards and Guidelines for the Sierra-Front-Northwest Great Basin Resource Advisory Council:

1. Soils: Soil processes will be appropriate to soil type, climate and land form. As indicated by:
 - * Surface litter is appropriate to the potential of the site;
 - * Soil crusting formations, in shrub interspaces, and soil compaction are minimal or not in evidence, allowing for appropriate infiltration of water;
 - * Hydrologic cycle, nutrient cycle and energy flow are adequate for the vegetative communities;
 - * Plant communities are diverse and vigorous, and there is evidence of recruitment; and
 - * Basal and canopy cover (vegetative) is appropriate for site potential.
2. Riparian/Wetlands: Riparian/Wetland systems are in properly functioning condition. As indicated by:
 - * Sinuosity, width/depth ratio and gradient are adequate to dissipate streamflow without excessive erosion or deposition:
 - * Riparian vegetation is adequate to dissipate high flow energy and protect banks from excessive erosion: and
 - * Plant species diversity is appropriate to riparian-wetland systems.
3. Water Quality: Water quality criteria in Nevada or California State Law shall be achieved or maintained. As indicated by:
 - * Chemical constituents do not exceed the water quality standards;
 - * Physical constituents do not exceed the water quality standards;
 - * Biological constituents do not exceed the water quality standards; and
 - * The water quality of all water bodies, including ground water located on or influenced by BLM lands will meet or exceed the

applicable Nevada or California water quality standards. Water quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under State law, and as found in Section 303(c) of the Clean Water Act.

4. Plant and Animal Habitat: Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse. As indicated by:

- * Good representation of life forms and numbers of species;
- * Good diversity of height, size, and distribution of plants;
- * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

5. Special Status Species Habitat: Habitat conditions meet the life cycle requirements of special status species. As indicated by:

- * Habitat areas are large enough to support viable populations of special status species;
- * Special status plant and animal numbers and ages appear to ensure stable populations;
- * Good diversity of height, size and distribution of plants;
- * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

IV. MANAGEMENT EVALUATION

A. Purpose:

The Allotment Evaluation will evaluate the actual use, climate, utilization, ecological site inventory, wild horse census and distribution, and wildlife habitat data to determine the effectiveness of the present management on the Pole Canyon Allotment. This evaluation will address the Land Use Plan objectives to determine whether the objectives are being met or not met, and the standards for rangeland health. Management actions will be developed to set carrying capacity for the allotment and establish the appropriate management level for wild horses and the appropriate livestock numbers. Setting allowable use levels, and establishing a grazing strategy will also be part of the management action. The evaluation will be the basis for the Multiple Use Decision.

B. Summary of Studies Data:

1. Actual Use:

a. Livestock:

The permittee has taken non-use throughout the evaluation period due to forage condition, water availability, and the substantial use made by wild horses in the allotment. Since 1993 an emergency livestock closure has been in effect for the Pole Canyon Allotment.

b. Wild Horses:

The following table outlines the estimated wild horse population and AUM demand for the Fox & Lake Range HMA contained within the Pole Canyon Allotment. The population estimates and actual use are based on helicopter census.

Table #1. Estimated Wild Horse Population and AUM Demand for the Pole Canyon Allotment.

<u>YEAR</u>	<u>POPULATION NUMBERS</u>	<u>AUMS</u>
1988	46	552
1989	185	2220
1990	88	1056
1991*	98	1176
1992	94	1128
1993	30	360
1994*	33	396
1995	40	480
1996*	44	528
1997	128	1536

* Not censused. An 11% rate of increase was applied to the previous years population.

Evaluation of Table #1

The number of wild horses found in the allotment has fluctuated from year to year, and season to season. Census flights were conducted in the spring (1993), summer (1989, 1995, and 1997), and fall (1988, 1990, and 1992). Data indicate horses use the allotment on a seasonal basis, primarily in the summer and fall. The fluctuating population shown in Table 1 may be attributed to a combination of the following:

- movement of horses between the allotment and the Pyramid Lake Indian Reservation
- season that census flights were conducted
- periodic removal of horses from the Pyramid Lake Indian Reservation
- death loss during the winter of 92/93

Determination of a relatively accurate actual use for wild horses is not possible for the evaluation period.

2. Wildlife Trend:

Table #2. Mule Deer Population Trend

<u>YEAR</u>	<u>SPRING FAWNS/100 DOES</u>	<u>OVERWINTER FAWN LOSS</u>
1987	35	- 32.0%
1988	25	- 29.2%
1989	11	- 52.2%
1990	41	- 16.0%
1991	35	- 47.0%
1992	29	- 36.0%
1993	5	- 75.0%
1994	8	- 64.1%
1995	17	- 4.2%
1996	31	- 27.9%
1997	<u>27</u>	<u>- 56.4%</u>
AVERAGE	24	- 40.0%

Evaluation of Table #2.

These data indicate that mule deer trend was downward through most of the evaluation period. Overwinter fawn loss has been quite variable and most likely would be controlled by weather conditions. When the fawns per 100 does is 30 to 35 the population remains stable and with less than 30 fawns the population will have a downward trend while over 35 fawns the population will have an upward trend.

The pronghorn antelope population is low density in the 022 Management Unit. Kid recruitment for Unit 022 is similar to the adjacent management areas 011- 015 which have been up. There is an estimated 125-150 pronghorn utilizing the Fox and Lake Range area, with an annual increase of 10-20 animals per year. (personal comm., M. Dobel)

3. Climate:

Table #3. Climate Data

STATION	ELEV.	ANNUAL		GROWING		WINTER	
Gerlach	3950'	8.08"		3.84"		3.46"	
Year		Annual	% Norm.	Growing	% Norm.	Winter	% Norm.
1988		6.68	83%	2.72	71%	2.49	72%
1989		6.69	83%	3.80	99%	3.88	112%
1990		8.38	104%	6.28	164%	1.41	41%
1991		8.11	100%	4.27	111%	2.41	70%
1992		6.00	74%	2.99	78%	1.88	54%
1993		6.97	86%	3.81	99%	3.30	95%
1994		6.70	83%	2.66	69%	1.57	45%
1995		12.79	158%	7.46	194%	5.88	170%
1996		11.98	148%	4.54	118%	5.20	150%
1997		7.70	95%	3.34	87%	6.29	182%

¹ Annual is January - December

² Growing Season is March - August

³ Winter is November - February

Climatological Data provided by the Western Regional Climate Center - Atmospheric Sciences Center, Desert Research Institute.

Evaluation of Table #3.

Precipitation varied greatly during the evaluation period. Drought conditions prevailed in 1988, 1992 and 1994 when annual, growing season and winter precipitation were below average (less than 85% of normal). Typically, below average rainfall results in decreased forage production, ground water recharge, and plant vigor.

In 1995 and 1996 the annual, growing season and winter precipitation were above average (more than 115% of normal). Above average precipitation usually results in increased forage production, ground water recharge, and plant vigor.

During 1990 and 1991 winter precipitation was below normal, but growing season precipitation was above average in 1990 and average in 1991. Although the winter precipitation was below average, growing season precipitation data indicate normal forage production. Below average winter precipitation indicates decreased ground water recharge.

Annual precipitation was below average in 1989, and average in 1993 and 1997. Winter precipitation in 1989 and 1993 were average, and above average in 1997. Growing season precipitation was average for the three years which indicates normal forage production.

4. Utilization:

1989 - There was no apparent use on the lower elevations in the Pole Canyon Allotment.

1990 - A utilization cage was placed at the head of Wild Horse Canyon in the spring. Moderate use was found at this time. Light use was observed at lower elevations. Fall monitoring found heavy use at the head of Wild Horse Canyon. The lower elevations were not monitored.

1991 - Spring monitoring found heavy use on Sandbergs bluegrass, and moderate use on bottlebrush squirreltail at the head of Wild Horse Canyon. Fall weather conditions prevented the collection of monitoring data in the allotment. Monitoring was conducted on 1991 forage production in April of 1992. Heavy use was monitored at the utilization cage at the head of Wild Horse Canyon on both grass and shrub species present.

1992 - A utilization cage was placed at the head of Mullens Canyon in the spring. There was light use on Sandberg's bluegrass and slight use on bottlebrush squirreltail. At the head of Wild Horse Canyon there was slight use on Sandberg's bluegrass and bottlebrush squirreltail. Slight use was found at lower elevations. Fall monitoring found that upper elevations had heavy use on bottlebrush squirreltail and Sandberg's bluegrass. Snowberry, rabbitbrush, and buckwheat had severe use. At lower elevations light use was monitored on bottlebrush squirreltail and Sandberg's bluegrass. Slight use was found on shadscale and spiny hopsage. Ephedra nevadensis had heavy use.

1993 - Summer and fall monitoring on upper elevation sites found slight use on Thurbers needlegrass, bottlebrush squirreltail, and snowberry. At lower elevations summer monitoring found slight use, while fall monitoring found light use on Indian ricegrass with select winterfat plants receiving moderate to heavy use.

1994 - Slight use was monitored at the head of Wild Horse Canyon on Thurbers needlegrass, bottlebrush squirreltail and sandbergs bluegrass. At the head of Mullens Canyon slight use was monitored on bottlebrush squirreltail and Sandbergs bluegrass. At lower elevations slight use was found on Indian ricegrass and winterfat.

5. Trend:

Trend studies have not been established in this allotment.

6. Ecological Site Inventory:

An ecological status inventory (ESI) was completed during the 1992 field season. The following lists the acres and percentage by seral stage for the allotment.

<u>Seral Stage</u>	<u>Acres</u>	<u>Percent</u>
Early	0	0%
Mid	4589	35%
Late	4752	36%
Potential Natural Community	1536	12%
Unclassified*	2321	17%

* The unclassified acres are a Juniper woodland site which is not classified for Ecological Condition.

Ecological Site 023XY039 (Loamy Slope 10-14") dominates the upper elevation sites on the Fox Range of the Pole Canyon Allotment by comprising 75% of these upper sites and 32% of the total allotment. This site is in mid seral condition. Typically with overuse, big sagebrush and rabbitbrush will dominate the site: bluebunch wheatgrass, and Thurbers needlegrass will decrease: and cheatgrass and Utah juniper will invade the site. Big sagebrush potential is 15 to 25% of the total composition by weight. Big sagebrush is currently 69% on this site. Perennial grasses potential is 65%, but presently are only 10% of the total composition by weight.

Ecological Sites 024XY002 (Loamy 5-8") and 027XY027 (Barren Gravelly Slope 4-8") dominate the lower elevations of the Pole Canyon Allotment and comprises 12% and 10% respectively of the allotment. Both of these sites are in late seral condition. The 024XY002 vegetation is dominated by shadscale-budsage.

The 027XY027 vegetation is dominated by shadscale/budsage/Indian ricegrass. Existing grasses make up 3% of the total composition by weight and at potential they should make up 40% of the total composition by weight.

7. Wildlife Habitat Condition Ratings:

Table #4. Habitat Condition Ratings for Mule Deer and Pronghorn Antelope, Comparing the 1992 ESI seral stage to the Potential Natural Community (PNC).

Ecological Site 023XY037

Mule Deer

Current	72 (Good)
PNC	64.8 (Good)

Pronghorn Antelope

Current	52 (Fair)
PNC	56 (Fair)

Evaluation of Table #4.

Ecological Site 023XY037 comprises 4% of the allotment, and was used to determine the habitat condition ratings. Habitat condition ratings were determined by using the procedures in BLM Manual Supplement NSO 6630 - Big Game Studies. The rating is based on water, disturbance, vegetation and vertical cover factors. The rating does not include browse vigor factors. The habitat condition rating for mule deer and antelope indicate vegetation is the limiting factor, and that improving the ecological status to PNC will not result in a higher rating.

7a. Sage Grouse:

The Fox Range has been identified as sage grouse habitat, but at this time there are no known sage grouse inhabiting the area. Specific sage grouse habitat condition studies have not been established. There are no identified strutting, nesting, brood rearing or winter habitat sites within the Pole Canyon Allotment at this time.

The Western States Sage Grouse Committee presented a comprehensive guide to habitat requirements for sage grouse in their 1974 Guidelines for Habitat Protection in Sage Grouse Range (Report). In this report, habitat conditions observed most frequently which resulted in the highest success by sage grouse are as follows:

a. Strutting Habitat

Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

b. Nesting Habitat

- 1) Areas within 2 miles of strutting grounds.
- 2) Sagebrush between 7 and 31 inches in height (optimum = 16 inches)
- 3) Sagebrush canopy cover of 20-30% (optimum = 27%)

c. Brood Rearing

- 1) Sagebrush canopy cover of 10-21% (optimum = 14%)
- 2) High composition of forb species
- 3) Vigorous available meadow vegetation in late summer and fall

d. Winter Habitat

- 1) Greater than 20% sagebrush canopy cover
- 2) Areas that do not maintain high winter snow depth due to either elevation or topography

In addition NDOW personnel cited various literature sources which indicated the importance of good understory growth beneath and surrounding the nest bush. Understory cover helps to conceal the nests from predation and creates a microclimate around the nest where environmental conditions are more favorable.

8. Riparian Habitat:

The 1984 water inventory identified 53 sites: 2 intermittent seeps, 12 perennial springs, and 39 intermittent springs. Riparian habitat makes up approximately 13 acres.

9. Wild Horse Distribution:

The attached maps illustrate the seasonal use areas and trails between the allotment and Pyramid Lake Indian Reservation identified through an analysis of distribution and census flight data, and ground observations. Wild horses were found using all areas of the allotment except for the steep west face of the Fox Range.

During the evaluation period there has been a high degree of fluctuation in the number of wild horses found in the allotment from season to season, and from year to year. There appears to be a considerable amount of movement between the allotment and Pyramid Lake Indian Reservation, but very little movement of horses between the Pole Canyon and Rodeo Creek Allotments. Data indicates peak use by horses in the allotment occurred during the summer and early fall months.

There were no horses found at upper elevations during the winter, and few horses were found at lower elevations. The largest number of horses (15 head) were found in the winter of 92/93 when extremely poor forage availability and heavy snows forced horses to scatter over a large area from lower elevations in the HMA to the shore of Pyramid Lake in search of forage.

At the beginning of spring, there were few horses found using the lower and mid elevation areas. As the season progressed, larger numbers of horses were found at upper elevations. It appeared that most of the horses found at this time had moved onto the allotment from the Pyramid Lake Indian Reservation, along the area indicated on the spring map.

During the summer horses were found scattered on upper elevations, except for a few head along the toe slopes of the mountain. There may be daily movement across the boundary primarily at the head of Mullens Canyon and Fox Canyon as wild horses move between water and forage.

The distribution of horses in the fall was nearly the same as the summer season except that there were horses found using the flats and toe slopes along the Pyramid Lake Indian Reservation boundary, northwest of Mullens Canyon. By late fall to early winter the majority of horses appeared to have moved onto the Pyramid Lake Indian Reservation.

An inspection of the Pyramid Lake Indian Tribe's boundary fence found that only one half mile (in Fox Canyon) of the six mile long boundary fence was in functional condition while the remainder of the fence did not impede the movement of horses between public and reservation lands. There were many trails found crossing the boundary between Mullens and Fox Canyons.

The allotment boundary fence between the Pole Canyon and Rodeo Creek Allotments is in good condition and restricts the movement of horses between the two allotments. There is limited movement of horses between the two allotments at the head of Wild Horse Canyon and on the flats west of Wild Horse Canyon when gates are left open.

APPENDIX #2, WILD HORSE DISTRIBUTION, shows the flight date, total number of horses observed, and type of aircraft used. It also included a brief description of where horses were found during each flight.

10. Wild Horse Removal Data:

In August 1986, 133 wild horses were removed from the Pole Canyon Allotment portion of the Fox & Lake Range HMA.

11. Noxious Weeds

A complete noxious weeds inventory for the allotment has not been completed. However, noxious weeds have been documented along roads/trails.

12. Other:

On March 26, 1993 a Full Force and Effect Decision closed the Pole Canyon Allotment to livestock grazing. The decision will be in effect until the allotment evaluation and Multiple Use Decision are issued, and the following criteria are met:

- a. close livestock grazing until seedripe (approximately July 15)

- b. and close livestock grazing until the growth requirements are met on the primary forage species. The growth requirements for cool season grasses, which includes: needlegrass, bottlebrush squirreltail, Idaho fescue, and Indian ricegrass, is a minimum of three inches of leaf growth. Bluegrass should have the seedhead emerging from the boot.
- c. and adjust livestock numbers according to the amount of use that has already occurred by wild horses and wildlife, so that the estimated use will not exceed 50% before livestock are removed from the Pole Canyon Allotment.

V. CONCLUSIONS

A. Range- long term:

1. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis with an initial stocking level of 540 AUMS.

Not Met. The permittee has taken non-use from 1988 through 1992 for the conservation of the public lands because of forage conditions, water availability, and the substantial use made by wild horses. On March 26, 1993 a Full Force and Effect Decision closed the allotment to livestock grazing until the outlined criteria was met. The allotment remains closed to livestock grazing at this time.

Refer to page 7.

2. Maintain an acceptable use level on key forage species that will provide a sustained yield.

Met on upper elevations in 1993 and 1994, and on lower elevations in 1989, and 1992 through 1994. Utilization at upper elevations was slight, and utilization at lower elevations varied from no apparent to light use.

Not Met on upper elevations in 1990, 1991, and 1992. Use by wild horses exceeded the allowable use level.

For years where utilization data was not collected, a review of wild horse census and distribution, and precipitation data were compared with data for years the objective was Met or Not Met. The comparison indicated the objective was Met on upper elevations in 1988, 1995, and 1996, and on lower elevations in 1988, 1990, 1991, and 1995 through 1997. The comparison indicated the objective was Not Met on upper elevations in 1989 and 1997.

Refer to pages 11 & 12.

3. Improve range/ecological condition from fair to good on 2177 acres and from good to excellent on 37 acres.

The Ecological Site Inventory was not completed until 1992, and trend studies have not been established which could indicate if the range/ecological condition is on an upward, downward, or static trend.

The Ecological Site Inventory indicates that the objective has not been met. The majority of the upper elevation sites are in a mid-seral condition with grasses comprising 10% composition by weight versus 65% composition by weight in a potential natural community. At lower elevations the sites are in a late seral condition but grasses are comprising a very low composition by weight as compared to the potential.

Refer to pages 12 & 13.

4. Consider increasing existing forage by artificial methods wherever appropriate and feasible.

Soil survey and ecological site data indicate that there are no suitable areas in the allotment where forage can be increased by artificial methods. This objective is a management action, not a resource objective.

B. Wildlife - long term:

1. Manage, maintain, and improve public rangeland condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 15 AUMs for mule deer, 7 AUMs for pronghorn, and 37 AUMs for bighorn sheep, by:

- a. Improving or maintaining the following mule deer habitat in the Fox Range DY-1 to at least good condition.

This objective was met. The mule deer habitat condition rating was 72 or good habitat condition.

- b. Improving and maintaining the Fox Range AY-1 pronghorn habitat condition to at least good condition.

The pronghorn habitat condition was determined to be fair. Vegetation appears to be the limiting factor for pronghorn antelope habitat condition. The low rating is a result of low percentage and diversity of forbs combined with a high percentage of shrubs in the community. As the site progresses towards PNC the ratings for vegetation improve, but not enough to raise the condition from the fair to good class.

Refer to page 13.

2. Wildlife habitat management objectives for vegetation utilization shall be as follows except where adjusted by an approved HMP, AMP, and HMAP.

- a. Terrestrial: will not exceed levels established in the Sonoma-Gerlach EIS Table I-4 for key species.

Met on upper elevations in 1993 and 1994, and on lower elevations in 1989, and 1992 through 1994. Utilization at upper elevations was slight, and utilization at lower elevations varied from no apparent to light use.

Not Met on upper elevations in 1990, 1991, and 1992. Use by wild horses exceeded the allowable use level.

For years where utilization data was not collected, a review of wild horse census and distribution, and precipitation data were compared with data for years the objective was Met or Not Met. The comparison indicated the objective was Met on upper elevations in 1988, 1995, and 1996, and on lower elevations in 1988, 1990, 1991, and 1995 through 1997. The comparison indicated the objective was Not Met on upper elevations in 1989 and 1997.

Refer to pages 11 & 12.

- b. Wetland Riparian: shall not exceed 50% for key species.

Utilization data was not collected on riparian sites. However heavy use on upper elevation sites from 1990 to 1992 indicates the objective was not met in 1990, 1991 or 1992. Riparian habitat occurring in steep, rocky canyons, such as Rough Canyon probably had no or very little use due to the topography, slope, and terrain and thus the objective was met on those habitats. Utilization data collected on terrestrial sites in 1993 and 1995 was slight and light which indicates the objective was met in 1993 and 1995.

3. Protect sage grouse strutting grounds and nesting wintering habitat and improve brooding habitat by: (WL-1.11)

- a. Following NDOW's guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada.

- b. Maintain sagebrush canopy at 30% in sage grouse nesting and wintering areas where sagebrush does not exceed (3) feet in height.

Met. This objective has been met. Sagebrush canopy cover was maintained during the evaluation period. There were no vegetal manipulations as a result of new range improvement projects such as fencing, brush control, or pipelines or alterations to the vegetation by wildland fires.

C. Wild Horses - long term:

1. Manage, maintain, and improve public rangeland conditions to provide an initial level of 1,200 AUMs of forage on a sustained yield basis for 100 (AMLs) Wild Horses in the Fox and Lake Range Herd Use Area.

Not Met. There were less than 100 horses using the Pole Canyon Allotment except for 1989 and 1997. Census, distribution flights, and on the ground observation indicated that wild horses use the allotment from late spring to early fall and then move onto the Pyramid Lake Indian Reservation. Utilization and population data indicate that 1,200 AUMs of forage can not be provided on a sustained yield basis.

Refer to pages 7, 8, 15 & 16.

2. Manage Wild Horse habitat to improve range/ecological condition as listed under livestock objectives.

The Ecological Site Inventory was not completed until 1992, and trend studies have not been established which could indicate if the range/ecological condition is on an upward, downward, or static trend.

The Ecological Site Inventory indicates that the objective has not been met. The majority of the upper elevation sites are in a mid-seral condition with grasses comprising 10% composition by weight versus 65% composition by weight in a potential natural community. At lower elevations the sites are in a late seral condition but grasses are comprising a very low composition by weight as compared to the potential.

Refer to pages 12 & 13.

3. Maintain an acceptable allowable use level on key forage species that are consistent with those established for livestock and wildlife.

Met on upper elevations in 1993 and 1994, and on lower elevations in 1989, and 1992 through 1994. Utilization at upper elevations was slight, and utilization at lower elevations varied from no apparent to light use.

Not Met on upper elevations in 1990, 1991, and 1992. Use by wild horses exceeded the allowable use level.

For years where utilization data was not collected, a review of wild horse census and distribution, and precipitation data were compared with data for years the objective was Met or Not Met. The comparison indicated the objective was Met on upper elevations in 1988, 1995, and 1996, and on lower elevations in 1988, 1990, 1991, and 1995 through 1997. The comparison indicated the objective was Not Met on upper elevations in 1989 and 1997.

Refer to pages 11 & 12.

4. Maintain and improve the free-roaming behavior of wild horses by protecting their home ranges.

Met. The free roaming behavior of wild horses within the Pole Canyon Allotment was maintained during the evaluation period. Census and distribution data indicated that horses have complete freedom of movement within the allotment and that most of the horses are moving between the allotment and the Pyramid Lake Indian Reservation.

Refer to pages 15 & 16.

5. Maintain/ improve wild horse/burro habitat by assuring free access to water.

Met. Wild horses have had free access to public water.

D. Standards and Guidelines for the Sierra Front-Northwest Great Basin Resource Advisory Council Area:

1. Soils: Soil processes will be appropriate to soil type, climate and land form. As indicated by:

- * Surface litter is appropriate to the potential of the site;
- * Soil crusting formations, in shrub interspaces, and soil compaction are minimal or not in evidence, allowing for appropriate infiltration of water;
- * Hydrologic cycle, nutrient cycle and energy flow are adequate for the vegetative communities;
- * Plant communities are diverse and vigorous, and there is evidence of recruitment; and
- * Basal and canopy cover (vegetative) is appropriate for site potential.

Utilization data indicates the standard was met on upper elevations in 1993 and 1994, and on lower elevations in 1989, and 1992 through 1994. Not Met on upper elevations in 1990, 1991, and 1992.

The ecological site inventory indicates that vegetative cover is appropriate for site potentials, and documents the communities are diverse and vigorous.

2. Riparian/Wetlands: Riparian/wetland systems are in properly functioning condition. As indicated by:

- * Sinuosity, width/depth ratio and gradient are adequate to dissipate streamflow without excessive erosion or deposition:
- * Riparian vegetation is adequate to dissipate high flow energy and protect banks from excessive erosion: and
- * Plant species diversity is appropriate to riparian-wetland systems.

There are no perennial streams in the allotment, therefore that portion of the standard does not apply. Lentic functionality (springs/seeps) has not been completed. It is not known if that portion of the standard is met.

3. Water Quality: Water quality criteria in Nevada or California State Law shall be achieved or maintained. As indicated by:

- * Chemical constituents do not exceed the water quality standards;

- * Physical constituents do not exceed the water quality standards;
- * Biological constituents do not exceed the water quality standards; and
- * The water quality of all water bodies, including ground water located on or influenced by BLM lands will meet or exceed the applicable Nevada or California water quality standards. Water quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under State law, and as found in Section 303(c) of the Clean Water Act.

The Field Office has been concentrating efforts on collecting this information on higher priority streams and has not collected data on springs or seeps. It is not known if this standard is met.

4. Plant and Animal Habitat: Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse. As indicated by:

- * Good representation of life forms and numbers of species;
- * Good diversity of height, size, and distribution of plants;
- * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

Met. Ecological site inventory data indicates that vegetative diversity and cover are appropriate for site potentials. The ecological site inventory map indicates there is minimal habitat fragmentation.

5. Special Status Species Habitat: Habitat conditions meet the life cycle requirements of special status species. As indicated by:

- * Habitat areas are large enough to support viable populations of special status species;
- * Special status plant and animal numbers and ages appear to ensure stable populations;

- * Good diversity of height, size and distribution of plants;
- * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

Met. There are no special status species found on the allotment at this time. The area has been identified as historic sage grouse habitat. The ecological site inventory indicates that vegetative diversity and cover are appropriate for site potentials, and that there is minimal habitat fragmentation.

VI. RECOMMENDATIONS

A. Technical Recommendations:

1. Carrying Capacity:

A weighted average utilization was calculated using the moderate, heavy, and severe use classes. There was no moderate or severe use mapped. The weighted utilization was then used in the potential stocking level calculation. Calculations can be found in APPENDIX #3, CARRYING CAPACITY AND STOCKING LEVEL CALCULATIONS.

Carrying capacity is based solely on wild horse use data since livestock did not use the allotment during the evaluation period.

Total Carrying Capacity is 635 AUMs.

2. Management Action Alternatives:

a. Construct and Maintain Boundary Fence

Coordinate with the Pyramid Lake Indian Tribe to complete construction and maintenance of their existing Pyramid Lake Indian Reservation Boundary fence.

OR

Construct a Bureau boundary fence on the Pole Canyon Allotment.

1) Manage the number of wild horses and livestock by using the Land Use Plan Ratios.

a) Existing Livestock Season of Use: 05/01 - 09/30

wild horses	69%	438 AUMs	36 horses
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livestock	31%	197 AUMs	39 cows
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Livestock use would include the following changes:

Change From:

Permitted Use	Historical Suspended	Period of Use	Numbers
540	1508	05/01 - 09/30	108

Change To:

Permitted Use	Historical Suspended	Period of Use	Numbers
197	1508	05/01 - 09/30	39

b) Change Livestock Season of Use to: 09/01 - 12/31

wild horses 69% 438 AUMs 36 horses

livestock 31% 197 AUMs 49 cows

Livestock use would include the following changes:

Change From:

Permitted Use	Historical Suspended	Period of Use	Numbers
540	1508	05/01 - 09/30	108

Change To:

Permitted Use	Historical Suspended	Period of Use	Numbers
197	1508	09/01 - 12/31	49

The change in season of use would allow for use after the critical growing period for key species.

Rationale: This alternative is consistent with the Sonoma-Gerlach MFP-III grazing decision RM 1.1 and WH/B 1.1. Construction of a boundary fence would reduce and/or stop the uncontrolled movement of wild horses between the allotment and the Pyramid Lake Indian Reservation, and allow for implementation of management actions to achieve resource objectives. However, a boundary fence could trap horses at higher elevations when heavy winter storms occur, which may lead to the loss of some wild horses.

- 2) Manage for 53 wild horses yearlong and 0 livestock.

Rationale: Wild horses tend to range farther from water sources and utilized steep mountainous terrain more uniformly than livestock. Construction of a boundary fence would reduce and/or stop the uncontrolled movement of wild horses between the allotment and the Pyramid Lake Indian Reservation, and allow for implementation of management actions to achieve resource objectives. However, a boundary fence could trap horses at higher elevations when heavy winter storms occur, which may lead to the loss of some wild horses.

This alternative would require amending the Sonoma-Gerlach MFP-III decision RM 1.1 to manage for 0 livestock in the Pole Canyon Allotment.

- 3) Manage for 0 wild horses and 159 livestock. Livestock use would include the following changes:

Change From:

Permitted Use	Historical Suspended	Period of Use	Numbers
540	1508	05/01 - 09/30	108

Change To:

Permitted Use	Historical Suspended	Period of Use	Numbers
635	1413	09/01 - 12/31	159

The change in season of use would allow for use after the critical growing period for key species.

Rationale: Wild horse movement patterns observed during the evaluation period indicates that there is insufficient yearlong habitat in the allotment. The majority of wild horses move onto Reservation Lands in late fall and return in late spring, rather than move to lower elevations within the allotment. Construction of a boundary fence would reduce and/or stop the uncontrolled movement of horses from Reservation Lands to the allotment, and allow for implementation of management actions to achieve resource objectives.

This alternative would require amending the Sonoma-Gerlach MFP-III decision WH/B 1.1 to manage for 0 wild horses in that area of the Fox & Lake Range HMA contained within the Pole Canyon Allotment.

- b. Do not Construct and Maintain Boundary Fence in coordination with the Pyramid Lake Indian Tribe, and do not construct a Bureau boundary fence on the Pole Canyon Allotment. Manage for 0 wild horses and 0 livestock.

Rationale: Coordinating and obtaining an agreement with the Pyramid Lake Indian Tribe for the construction and maintenance of their existing boundary fence may not be possible due to differing management priorities and funding. Construction of a continuous Bureau boundary fence is not feasible. Steep, rocky terrain in the vicinity of Mullens Canyon (T. 29 N., R. 21 E., sections 19,20 & 21) would require gap fencing between natural barriers.

Census and distribution data indicate wild horses use the allotment primarily in the summer and fall, and that the numbers have a high degree of fluctuation from season to season, and year to year. Given the uncontrollable movement and variable numbers of wild horses, it is not possible to assure forage would be available for livestock, or that allotment objectives would be met. Managing for 0 livestock would allow attainment of short term utilization objectives for years that small numbers of wild horses move onto the allotment.

Establishment of an AML for wild horses is not feasible. Given the uncontrollable movement and variable numbers of wild horses, it is not possible to manage for a specific number of animals, or implement currently available fertility control techniques which must be performed in the winter.

This alternative would require amending the Sonoma-Gerlach MFP-III decision RM 1.1 to manage for 0 livestock in the Pole Canyon Allotment, and WH/B 1.1 to manage for 0 wild horses in that area of the Fox & Lake Range HMA contained within the Pole Canyon Allotment.

3. Terms and Conditions:

The following term and condition will be added to the grazing permit if Management Action Alternative a. 1) b) or a. 3 is the selected Management Action.

- a. If utilization is 50 % or greater by August 31, livestock use will not be authorized.

B. Allotment Objectives:

1. Short Term Objectives:

- a. For Management Action Alternatives a. 1) a), a. 2), and b:
 - 1) Requantify the objectives for Range b, Wildlife b. 1), and Wild Horses c to:

Utilization of key species in upland habitats shall not exceed 50% of current years growth.

- 2) Requantify Wildlife objective b 2) to:

Utilization of key plant species in riparian habitat shall not exceed 50%.

- b. For Management Action Alternative a. 1) b), and a.3:

- 1) Utilization on upland habitat shall not exceed 25 % of current years growth by August 31.

- 2) Requantify the objectives for Range b, Wildlife b. 1), and Wild Horses c to:

Utilization of key species in upland habitats shall not exceed 50% of current years growth.

- 3) Requantify Wildlife objective b. 2) to:

Utilization of key plant species in riparian habitat shall not exceed 50%.

2. Long Term Objectives:

a. For Management Action Alternative a. 1) a), a. 1) b), and a. 2:

1) Requantify the objectives for Range a and c, and Wild Horses a and b to Desired Plant Community Objectives.

2) Retain Wildlife objective a:

Manage, maintain, and improve public rangeland condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 15 AUMs for mule deer, 7 AUMs for pronghorn, and 37 AUMs for bighorn sheep, by:

a) Improving or maintaining the following mule deer habitat in the Fox Range DY-1 to at least good condition.

b) Improving and maintaining the Fox Range AY-1 pronghorn habitat condition to at least good condition.

3. Requantify Wildlife objective c to:

Protect and maintain suitable Sage Grouse Habitat within the potential of the ecological site by:

a. Strutting Habitat

Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

b. Nesting Habitat

1) Areas within 2 miles of strutting grounds.

2) Sagebrush between 7 and 31 inches in height (optimum = 16 inches)

3) Sagebrush canopy cover of 20-30% (optimum = 27%)

c. Brood Rearing

- 1) Sagebrush canopy cover of 10-21%
(optimum = 14%)
- 2) High composition of forb species
- 3) Vigorous available meadow vegetation in
late summer and fall

d. Winter Habitat

- 1) Greater than 20% sagebrush canopy cover

4. Requantify Wild Horses objectives d and e to:

Maintain and improve the free-roaming behavior of wild horses and burros by:

- (1) protecting their home range
- (2) assuring free access to water

b. For Management Action Alternative a. 3), and b):

- 1) Requantify the objectives for Range a and c, and Wild Horses a and b to Desired Plant Community Objectives.
- 2) Retain Wildlife objective a:

Manage, maintain, and improve public rangeland condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 15 AUMs for mule deer, 7 AUMs for pronghorn, and 37 AUMs for bighorn sheep, by:

- a) Improving or maintaining the following mule deer habitat in the Fox Range DY-1 to at least good condition.
- b) Improving and maintaining the Fox Range AY-1 pronghorn habitat condition to at least good condition.

3. Requantify Wildlife objective c to:

Protect and maintain suitable Sage Grouse Habitat within the potential of the ecological site by:

a. Strutting Habitat

Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

b. Nesting Habitat

- 1) Areas within 2 miles of strutting grounds.
- 2) Sagebrush between 7 and 31 inches in height (optimum = 16 inches)
- 3) Sagebrush canopy cover of 20-30% (optimum = 27%)

c. Brood Rearing

- 1) Sagebrush canopy cover of 10-21% (optimum = 14%)
- 2) High composition of forb species
- 3) Vigorous available meadow vegetation in late summer and fall

d. Winter Habitat

- 1) Greater than 20% sagebrush canopy cover

3. Requantified Desired Plant Community Objectives:

Objectives for this allotment were based on ecological status inventory data. The seral stage of each vegetative community and its potential was considered in conjunction with the wildlife, wild horse, and livestock use to develop Desired Plant Community (DPC) objectives. Short term objectives will be used to determine the progress each community is making toward its desired seral stage. Following is a list of the key species plant symbols used, the common name and the scientific name:

Key Species

<u>Symbol</u>	<u>Common Name</u>	<u>Scientific Name</u>
AGSP	bluebunch wheatgrass	<u>Agropyron spicatum</u>
ARSP5	budsage	<u>Artemisia spinescens</u>
ATCO	shadscale	<u>Atriplex confertifolia</u>
ELCI2	basin wildrye	<u>Elymus cinereus</u>
LUPIN	lupine	<u>Lupinus spp.</u>
ORHY	indian ricegrass	<u>Oryzopsis hymenoides</u>
POA++	bluegrass	<u>Poa spp.</u>
POSE	Sandberg bluegrass	<u>Poa secunda</u>
SIHY	bottlebrush squirreltail	<u>Sitanion hystrix</u>
STTH2	Thurber needlegrass	<u>Stipa thurberiana</u>
SYMPH	snowberry	<u>Symphoricarpos spp.</u>

Resource Objectives

Key areas will be established by an interdisciplinary team in the Site Write-Up Area (SWA) and Ecological Site indicated for each objective. The long term DPC objectives percentages may need to be adjusted slightly once key areas are established. The amount of change would remain the same however.

a. **Objective 1**

1) **Short Term**

On Ecological Site 023XY039 (Loamy Slope 10-14") within SWA F200, initiate an upward trend by increasing the cover of key grasses and forbs.

Quantify and identify key species for this objective when the initial trend study is established.

2) **Long Term**

Manage for the following percent composition by weight:

Percent Composition By Weight			
Lifeform	Existing	Desired	Potential
Perennial Grasses	10%	20%	65%
Forbs	6%	6%	10%
Shrubs	79%	72%	25%
Annual Grasses	5%	2%	0%

Increase perennial grasses (SIHY, STTH2, and AGSP) from 10 to 20% composition by weight. Maintain and improve SYMPH at 3%.

This objective should be achieved by the year 2025.

Rationale: This area has been identified as a livestock use area, and as a yearlong use area for wild horses, mule deer, and pronghorn. The area has also been identified as potential bighorn sheep habitat. By achieving these objectives the vegetative communities should be meeting the needs of livestock, wild horses, and wildlife.

b. **Objective 2**

1) **Short Term**

On Ecological Site 024XY002 (Loamy 5-8") within SWA F201, maintain an upward trend of key grasses and forbs.

Quantify and identify the key species for this objective when the initial trend study is established.

2) **Long Term**

Manage for the following percent composition by weight:

Percent Composition By Weight			
Lifeform	Existing	Desired	Potential
Perennial Grasses	2%	2%	25%
Forbs	1%	1%	5%
Shrubs	93%	93%	70%
Annual Grasses	2%	2%	0%
Annual Forbs	1%	1%	0%

Maintain ARSP5 at 29% of the composition by weight.

This objective should be achieved by the year 2025.

Rationale: This area has been identified as a livestock use area, and as a yearlong use area for wild horses, mule deer, and pronghorn. The area has also been identified as potential bighorn sheep habitat. By achieving these objectives the vegetative communities should be meeting the needs of livestock, wild horses, and wildlife.

4. Standards and Guidelines for the Sierra-Front-Northwest Great Basin Resource Advisory Council:

a. Soils: Soil processes will be appropriate to soil type, climate and land form. As indicated by:

* Surface litter is appropriate to the potential of the site;

* Soil crusting formations, in shrub interspaces, and soil compaction are minimal or not in evidence, allowing for appropriate infiltration of water;

- * Hydrologic cycle, nutrient cycle and energy flow are adequate for the vegetative communities;
 - * Plant communities are diverse and vigorous, and there is evidence of recruitment; and
 - * Basal and canopy cover (vegetative) is appropriate for site potential.
- b. Riparian/Wetlands: Riparian/wetland systems are in properly functioning condition. As indicated by:
- * Sinuosity, width/depth ratio and gradient are adequate to dissipate streamflow without excessive erosion or deposition:
 - * Riparian vegetation is adequate to dissipate high flow energy and protect banks from excessive erosion: and
 - * Plant species diversity is appropriate to riparian-wetland systems.
- c. Water Quality: Water quality criteria in Nevada or California State Law shall be achieved or maintained. As indicated by:
- * Chemical constituents do not exceed the water quality standards;
 - * Physical constituents do not exceed the water quality standards;
 - * Biological constituents do not exceed the water quality standards; and
 - * The water quality of all water bodies, including ground water located on or influenced by BLM lands will meet or exceed the applicable Nevada or California water quality standards. Water quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under State law, and as found in Section 303(c) of the Clean Water Act.

- d. Plant and Animal Habitat: Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse. As indicated by:
- * Good representation of life forms and numbers of species;
 - * Good diversity of height, size, and distribution of plants;
 - * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
 - * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.
- e. Special Status Species Habitat: Habitat conditions meet the life cycle requirements of special status species. As indicated by:
- * Habitat areas are large enough to support viable populations of special status species;
 - * Special status plant and animal numbers and ages appear to ensure stable populations;
 - * Good diversity of height, size and distribution of plants;
 - * Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
 - * Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

VII. MONITORING STRATEGY

A. Utilization:

Complete Use Pattern Maps in conjunction with the Rodeo Creek Allotment.

Complete Key Forage Plant transacts at key areas.

B. Wild Horse Census/Distribution:

Continue collecting wild horse census and seasonal distribution data to determine population trends (reproductive rate, recruitment rate, etc.) and seasonal use areas. Monitoring should be conducted on alternate years as follows:

1. Census every three years in July/August.
2. Conduct aerial distribution mapping every three years with flights conducted in January, April, July, and October, as funding allows.
3. Conduct on the ground distribution mapping in July and October every three years to supplement aerial distribution mapping, and provide more specific population information on band size and composition.

C. Key Areas for livestock, wildhorses, and wildlife:

2000 Establish double sampling and ocular transacts, photo trend and line intercept studies for the two resource objectives to establish baseline data. Fine tune Desired Plant Community objectives.

2001 Reread photo trend and line intercept studies for the two resource objectives as part of establishing baseline data.

2006 Reread photo trend and line intercept studies for the two resource objectives.

2011 Reread photo trend and line intercept studies for the two resource objectives.

2025 Reread Double Sampling and ocular transacts at the key areas to determine if long term objectives are being met.

D. Functionality:

2000 Complete functionality on 13 acres of wetland/riparian habitat.

APPENDIX #1 USE PATTERN MAPPING

I. 1989

November 8

38% No Apparent Use; 62% Not Mapped

Only the flats in the Pole Canyon Allotment were monitored. No apparent use was found on the flats.

II. 1990

A. May 21

58% No Apparent Use; 31% Light Use; 11% Moderate Use

Light use was found on the loamy 4-8" and the droughty loam 8-10" sites at the mouth of Rough Canyon. The sodic terrace and the sodic flat had no apparent use. At the head of Wild Horse Canyon, the loamy 10-14" and the clay slope 8-12" had moderate use just inside the allotment fence with light use on the sideslopes.

B. November 6-9

100% Heavy

Heavy use was found on Sandbergs bluegrass - Poa secunda and Lupine - Lupinus from the allotment boundary near Pah Rum Peak down to Fox Canyon Spring. Only this area was mapped. The rest of the allotment was not mapped.

III. 1991

May 15 & 16

100% Heavy Use

Heavy use on bluegrass - Poa++ and moderate use on bottlebrush squirreltail - Sitanion hystrix. Light use on Thurber needlegrass - Stipa thurberana at the head of Wild Horse Canyon just inside the allotment fence. Heavy use also occurred on 1990's production. Lanceleaf rabbitbrush - Chrysothamnus viscidiflorus lanceolatus had been heavily hedged over the winter.

IV. 1992

A. April 6-9

100% Heavy Use

Use on 1991 forage production was monitored. Heavy use was found on bottlebrush squirreltail - Sitanion hystrix, Sandberg bluegrass - Poa secunda, and Saskatoon serviceberry - Amelanchier alnifolia. Snowberry - Symphoricarpos spp had moderate use and the scattered rabbitbrush - Chrysothamnus viscidiflorus had heavy use. 1992 production is behind what it was the same time in 1991.

B. April 20-23

46% No Apparent Use; 40% Slight Use; 14% Light Use

Generally the use was slight on upper and lower elevations, with an area of light use on top of the Fox Range. The use was on the Sandberg bluegrass - Poa secunda and bottlebrush squirreltail - Sitanion hystrix. Use on 1991 forage production was heavy on Sandberg bluegrass - Poa secunda and moderate on bottlebrush squirreltail - Sitanion hystrix on upper elevations. On lower elevations bottlebrush squirreltail - Sitanion hystrix had light use, while shadscale - Atriplex confertifolia and budsage - Artemisia spinescens had light use.

C. November 2-5

37% Light Use; 63% Heavy Use

Fresh stud Piles were seen throughout the area. Cattle have not used the Pole Canyon Allotment for the last three years because of lack of water and forage. The upper elevations had heavy use on the loamy 10-14" and clay slope 8-12" ecological sites. Heavy use was found on bottlebrush squirreltail - Sitanion hystrix and Sandberg bluegrass - Poa secunda. snowberry - Symphoricarpos spp, rabbitbrush - Chrysothamnus viscidiflorus, and eriogonum - Eriogonum spp (shrub) had severe use whenever they were seen. The use on the sodic terrace ecological sites generally had light use on bottlebrush squirreltail - Sitanion hystrix and Sandberg bluegrass - Poa secunda, which composed less than 10% of the total composition by weight. Shadscale - Atriplex confertifolia spiny hopsage - Grayia spinosa had slight use and the Ephedra - Ephedra spp when present had heavy use. Horse

sign was scarce on the lower elevations, but horses were seen using these areas. No cow sign was seen in the allotment while conducting the mapping.

V. 1994

June 7

100% Slight Use

Upper elevations had slight use on Thurber needlegrass - Stipa thurberana, bottlebrush squirreltail - Sitanion hystrix, Sandberg bluegrass - Poa secunda, snowberry - Symphoricarpos spp., snowberry - Symphoricarpos spp., and Saskatoon serviceberry - Amelanchier alnifolia. At lower elevations there was slight use on Indian ricegrass - Oryzopsis hymenoides, winterfat - Eurotia lanata, and budsage - Artemisia spinescens.

APPENDIX #2 WILD HORSE DISTRIBUTION FLIGHTS

Pole Canyon Allotment

<u>Date</u>	<u># Horses</u>	<u>Aircraft</u>
10/88*	46	Bell 47G3B-1
7/89*	185	Bell 47G3B-S (Soloy)
2/90	6	Cessna 206
9/90*	88	Hughes 500D
1/91	6	Cessna 210
7/91	77	Maule MX-5
3/92	20	Cessna 210
5/92	61	Maule MX-5
7/92	71	Maule MX-5
9/92	19	Maule MX-5
10/92*	94	Hiller II-E (Soloy)
1/93	15	Maule MX-5
4/93*	30	Bell 47G4A-S
10/93	12	Cessna 210T
4/94	5	Cessna 210T
6/94	9	Husky A-1
8/95*	40	Bell 47G4A-S
8/97*	128	Bell 47G4A-S

* Census Flights

October 1988 - Census

The majority of horses found were at upper elevations from the Pyramid Lake Indian Reservation Boundary north to the upper watershed of Rough Canyon. There was one group of 11 head on the upper fans northwest of Mullens Canyon near the Pyramid Lake Indian Reservation Boundary.

The Pyramid Lake Indian Reservation was not flown, however one group containing 2 adults were observed on upper elevations near Mullens Canyon.

July 1989 - Census

Horses were concentrated on mid and upper elevations throughout the allotment from the Pyramid Lake Indian Reservation Boundary north to Wild Horse Canyon. There were 5 horses found along the base of the mountain north of Mullens Canyon, near the reservation boundary.

The Pyramid Lake Indian Reservation was not flown, however one group containing 16 head were observed on upper elevations near Mullens Canyon.

February 1990 - Distribution

Only two groups of horses were observed in the allotment. One group of 3 were observed on the upper fans near Pole Canyon, and a second group of 3 were observed at mid elevation near Wild Horse Canyon.

The Pyramid Lake Indian Reservation was not flown, and there were no horses observed along the reservation boundary.

September 1990 - Census

In cooperation with the Pyramid Lake Indian Reservation, a census was conducted on the reservation and Fox & Lake Range HMA. Within the allotment, horses were concentrated on mid and upper elevations from the reservation boundary at Mullens Canyon, north to Wild Horse Canyon. There were 3 groups containing 15 head on the flats/upper fans northwest of the mouth of Mullens Canyon that were within a mile of the Pyramid Lake Indian Reservation Boundary.

The census found a total of 387 horses on the Pyramid Lake Indian Reservation. There were 34 head found south of the allotment, with one group of 8 head observed near the boundary on the flats west of Mullens Canyon.

January 1991 - Distribution

There were only 6 horses found in the allotment. One group was observed on the flats between Pole and Rough Canyon's, and the second group was found on the flats near Wild Horse Canyon.

The reservation was not flown and there were no horses observed along the boundary.

July 1991 - Distribution

Horses were distributed fairly evenly on mid to upper elevation areas, with the majority found between Rough and Wild Horse Canyon's. There were 2 adults found on the flat along the boundary fence of the Pole Canyon and Rodeo Creek Allotment's.

The reservation was not flown except for an area approximately one mile south of the boundary. There were 27 horses found on reservation lands between Fox and Mullens Canyon's.

March 1992 - Distribution

All of the horses were found at mid elevations between Wild Horse and Rough Canyon's. There were two groups of horses at the head of Mullens Canyon, with one of the groups found on the allotment/reservation boundary.

The reservation was not flown except for an area approximately one mile south of the boundary. There were 10 horses observed on reservation lands in Fox Canyon, near the boundary.

May 1992 - Distribution

The horses were found at upper elevations from Fox Canyon Spring, northwest to Wild Horse Canyon, except for one group of 3 adults observed on the upper fans just south of Wild Horse Canyon.

The Pyramid Lake Indian Reservation was not flown.

July 1992 - Distribution

The majority of horses were located at upper elevations from Fox Canyon Spring, northwest to Wild Horse Canyon. There were 2 adults and 1 foal just north of the reservation boundary near the mouth of Mullens Canyon .

The reservation was not flown except for an area approximately one mile south of the boundary. There were no horses observed on reservation lands.

September 1992 - Distribution

Horses were found on mid to upper elevations from Fox Canyon Spring, north to Wild Horse Canyon. There was one group found on the flat along the Pyramid Lake Indian Reservation Boundary, and another group on the lower slope just north of Pole Canyon.

On the Pyramid Lake Indian Reservation there were 19 horses on the flats southwest of Mullens Canyon.

October 1992 - Census

The majority of horses were found widely scattered on mid and upper elevations. There were 5 groups of horses containing 26 head found on the flats and toe slopes northwest of Mullens Canyon within 1 mile of the reservation boundary.

The Pyramid Lake Indian Reservation adjacent to the allotment was not flown, except for an area approximately ½ mile south of the boundary. There were no horses found in this area.

January 1993 - Distribution

There were 15 head found on the flats from Wild Horse Canyon south to the Pyramid Lake Indian Reservation Boundary. There were no horses found at higher elevations in the allotment or on reservation lands.

The Pyramid Lake Indian Reservation was flown from the boundary to Sweetwater Canyon. There were 106 horses found on the flats from Mullens Canyon, south to Sweetwater Canyon. Of the horses found, there were 23 head on the flats south of Mullens Canyon.

April 1993 - Census

All of the horses observed were adults. There were two groups made up of 13 head found on the upper fans between Rough and Pole Canyon's. The remainder of the horses were widely scattered at upper elevations.

The Pyramid Lake Indian Reservation adjacent to the allotment was not flown.

October 1993 - Distribution

There were only 12 adult horses observed during the flight. There were 10 head scattered at mid to upper elevations from the reservation boundary north to Rough Canyon, and 2 horses were on the flats near Rough Canyon.

The Pyramid Lake Indian Reservation adjacent to the allotment was not flown, except for an area approximately 1½ mile south of the boundary. There were no horses found in this area.

April 1994 - Distribution

Five adult horses were observed at mid elevation approximately 1 mile north of Mullens Canyon near the Pyramid Lake Indian Reservation Boundary.

The Pyramid Lake Indian Reservation adjacent to the allotment was not flown, except for an area approximately 1½ mile south of the boundary. There were no horses found in this area.

June 1994 - Distribution

There were 9 head observed during the flight. All of the horses were located on upper elevations northwest of Fox Canyon Spring.

The Pyramid Lake Indian Reservation adjacent to the allotment was not flown, except for an area approximately 2 miles south of the boundary. There were 12 head found approximately 1/2 mile south of the boundary between Mullens and Fox Canyon's.

August 1995 - Census

Horses were scattered along mid and upper elevations from Mullens Canyon to the upper watershed of Rough Canyon. There were no horses observed on the flats.

An area approximately 6 miles below the boundary was flown on the Pyramid Lake Indian Reservation. There were a total of 101 horses found, with 58 head observed within 2 miles of the boundary on upper elevations between Mullens and Fox Canyon's. It is very probable that a large number of the horses observed on reservation lands utilize the allotment for part of the year.

August 1997 - Census

Horses were scattered along mid and upper elevations from Mullens Canyon, north to the allotment boundary. There were 21 horses found on the upper fans along the Pyramid Lake Indian Reservation, north of the mouth of Mullens Canyon.

There were 15 horses found on the Pyramid Lake Indian Reservation adjacent to the allotment, within 1.5 miles of the boundary.

APPENDIX #3 CARRYING CAPACITY AND STOCKING LEVEL CALCULATIONS

1. Carrying Capacity Calculations

a. November 6-9, 1990

1) weighted average utilization

$$\frac{(531 \text{ acres} \times .70)}{531 \text{ acres}} = .70$$

2) potential stocking level

a) actual use

$$\text{wild horses} = 726 \text{ AUMs}$$

b) potential stocking level

$$\frac{726 \text{ W. Horse AUMs}}{.70} = \frac{X}{.50}$$

$$.70X = 363$$

$$X = 519 \text{ AUMs}$$

b. April 6-9, 1992 (1991 production)

1) weighted average utilization

$$\frac{(189 \text{ acres} \times .70)}{189 \text{ Acres}} = .70$$

2) potential stocking level

a) actual use

wild horses = **1,176 AUMs**

b) potential stocking level

$$\frac{1,176 \text{ W. Horse AUMs}}{.70} = \frac{X}{.50}$$

$$.70X = 588$$

$$X = \mathbf{840 \text{ AUMs}}$$

c. November 2-5, 1992

1) weighted average utilization

$$\frac{(4,769 \times .70)}{4,769 \text{ Acres}} = .70$$

2) potential stocking level

a) actual use

b) stocking level

$$\frac{763 \text{ W. Horse AUMs}}{.55} = \frac{X}{.50}$$

$$.55X = 546$$

$$X = \mathbf{546 \text{ AUMs}}$$

2. Average Carrying Capacity

<u>YEAR</u>	<u>AUMs</u>
1990	519
1991	840
1992	<u>546</u>
AVERAGE	635

3. Stocking Level Calculations

Shown below are the stocking level calculations for each management action alternative outlined in the Technical Recommendations.

a. Construct and Maintain Boundary Fence

- 1) Manage the number of wild horses and livestock using the Land Use Plan Ratios.

	Land Use Plan Ratios	
	<u>Aums</u>	<u>%</u>
wild horses	1200	69
livestock	<u>540</u>	<u>31</u>
total	1740	100

- a) Existing Livestock Season of Use: 05/01 - 09/30

Wild Horses (69%) = **438 AUMs**

$$\frac{(\text{W. Horse \#'s})(365 \text{ days})}{30.41666} = 438$$

Wild Horse #'s = **36 wild horses**

Livestock (31%) = **197 AUMs**

$$\frac{(\text{Livestock \#'s})(153 \text{ days})}{30.41666} = 197$$

Livestock #'s = **39 cows**

b) Change Livestock Season of Use to: 09/01 - 12/31

Wild Horses (69%) = 438 AUMs

$$\frac{(\text{W. Horse \#'s})(365 \text{ days})}{30.41666} = 438$$

Wild Horse #'s = 36 wild horses

Livestock (31%) = 197 AUMs

$$\frac{(\text{Livestock \#'s})(121 \text{ days})}{30.41666} = 197$$

Livestock #'s = 49 cows

2) Manage for 53 wild horses yearlong and 0 livestock.

$$\frac{(\text{W. Horse \#'s})(365 \text{ days})}{30.41666} = 635$$

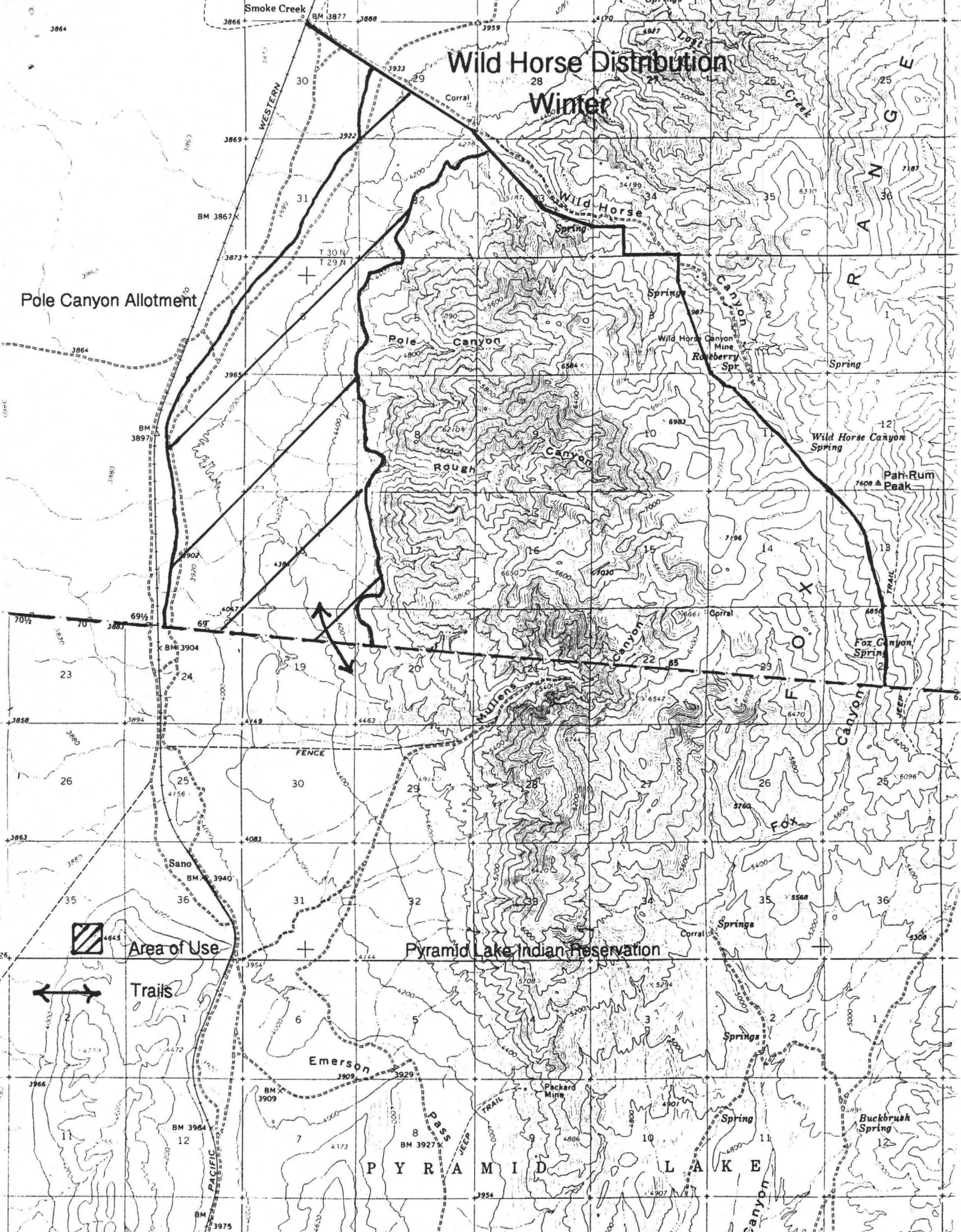
Wild Horse #'s = 53 W. Horses

3) Rest the allotment for 5 years. Then manage for 0 wild horses and 159 livestock.

$$\frac{(\text{Livestock \#'s})(121 \text{ days})}{30.41666} = 635$$

Livestock #'s = 159 cows

Wild Horse Distribution Winter



Pole Canyon Allotment

Area of Use

Trails

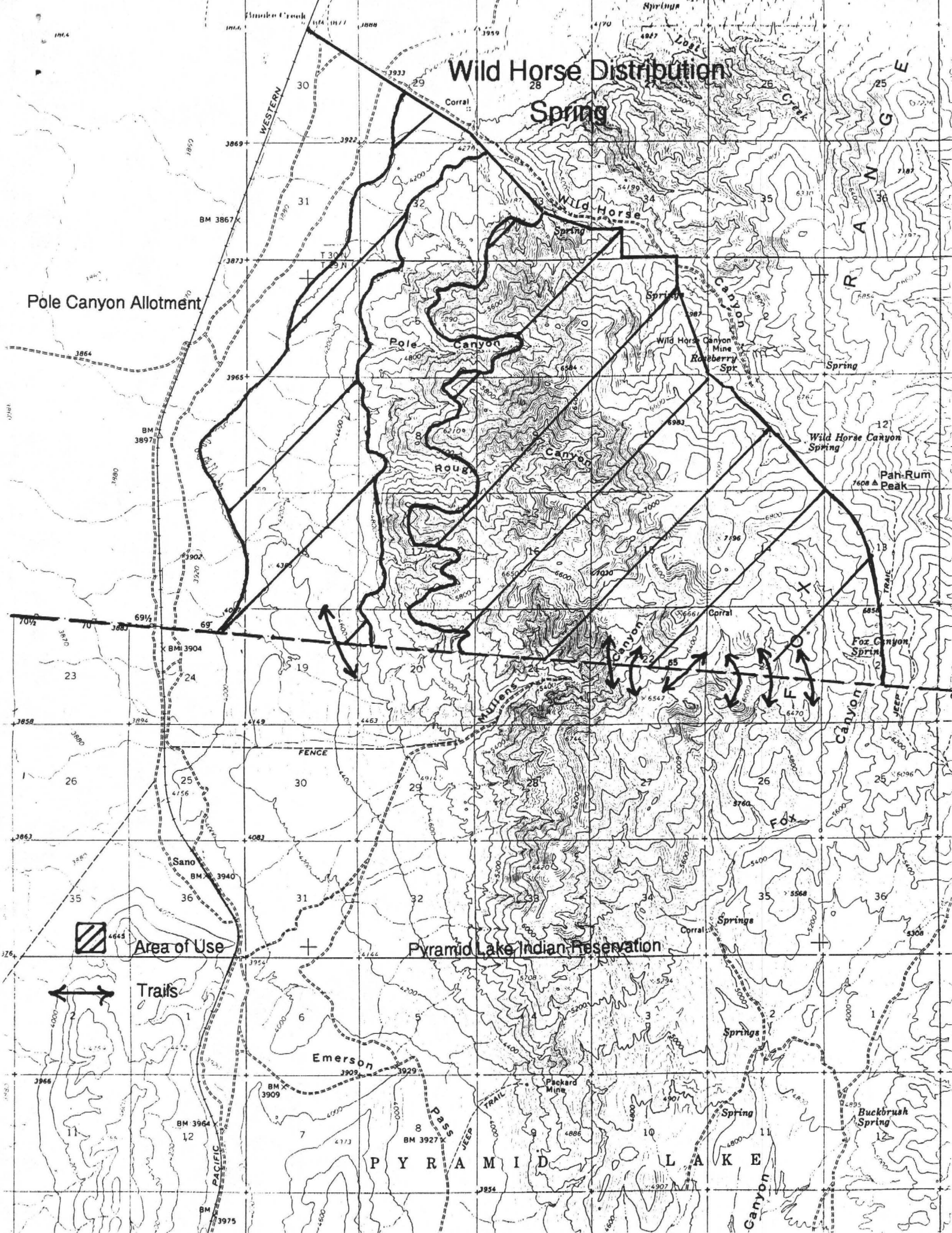
Pyramid Lake Indian Reservation

Emerson

P Y R A M I D L A K E

Buckbrush Spring

Wild Horse Distribution



Pole Canyon Allotment

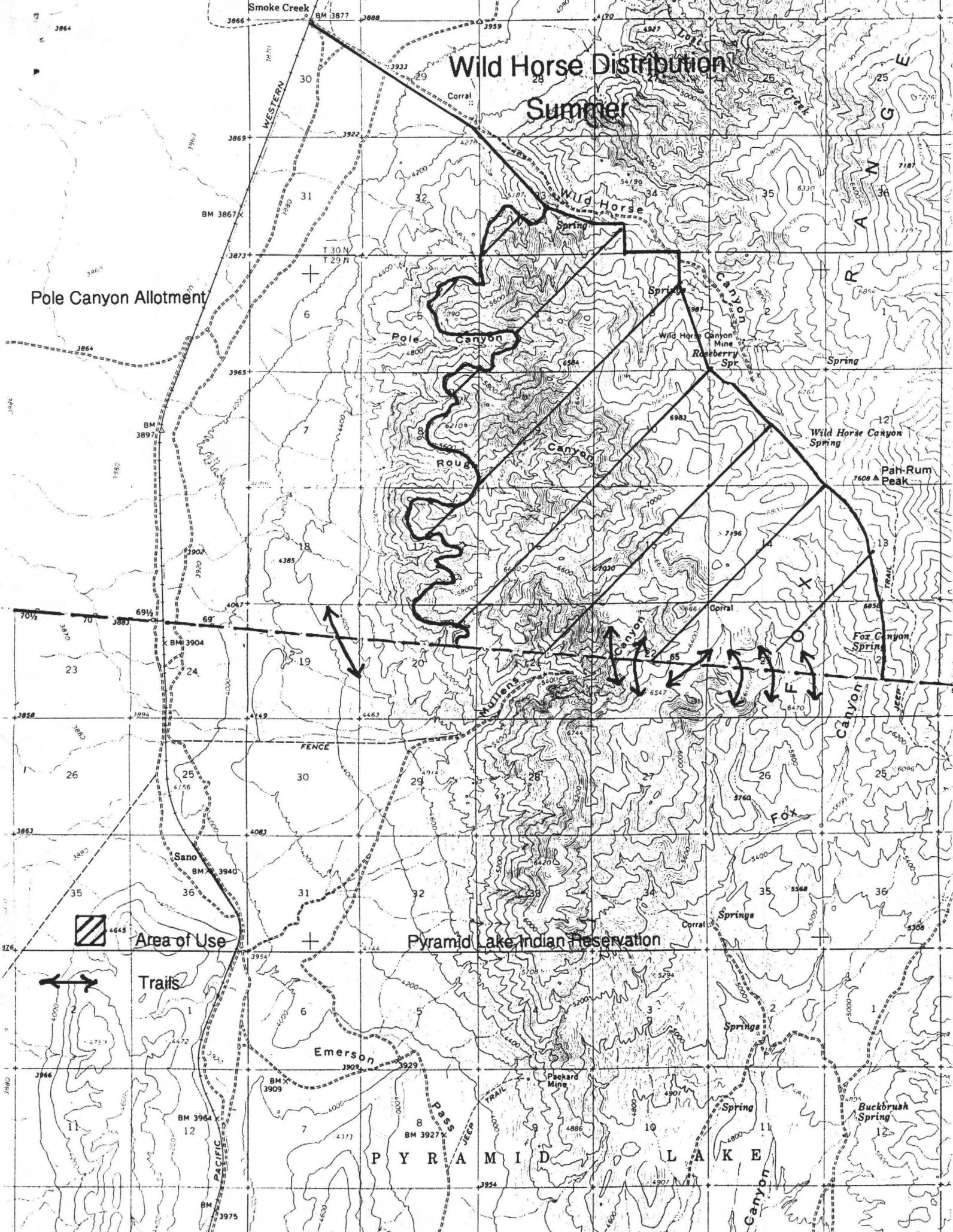
Area of Use

Trails

Pyramid Lake Indian Reservation

P Y R A M I D L A K E

Wild Horse Distribution Summer



Pole Canyon Allotment

Area of Use

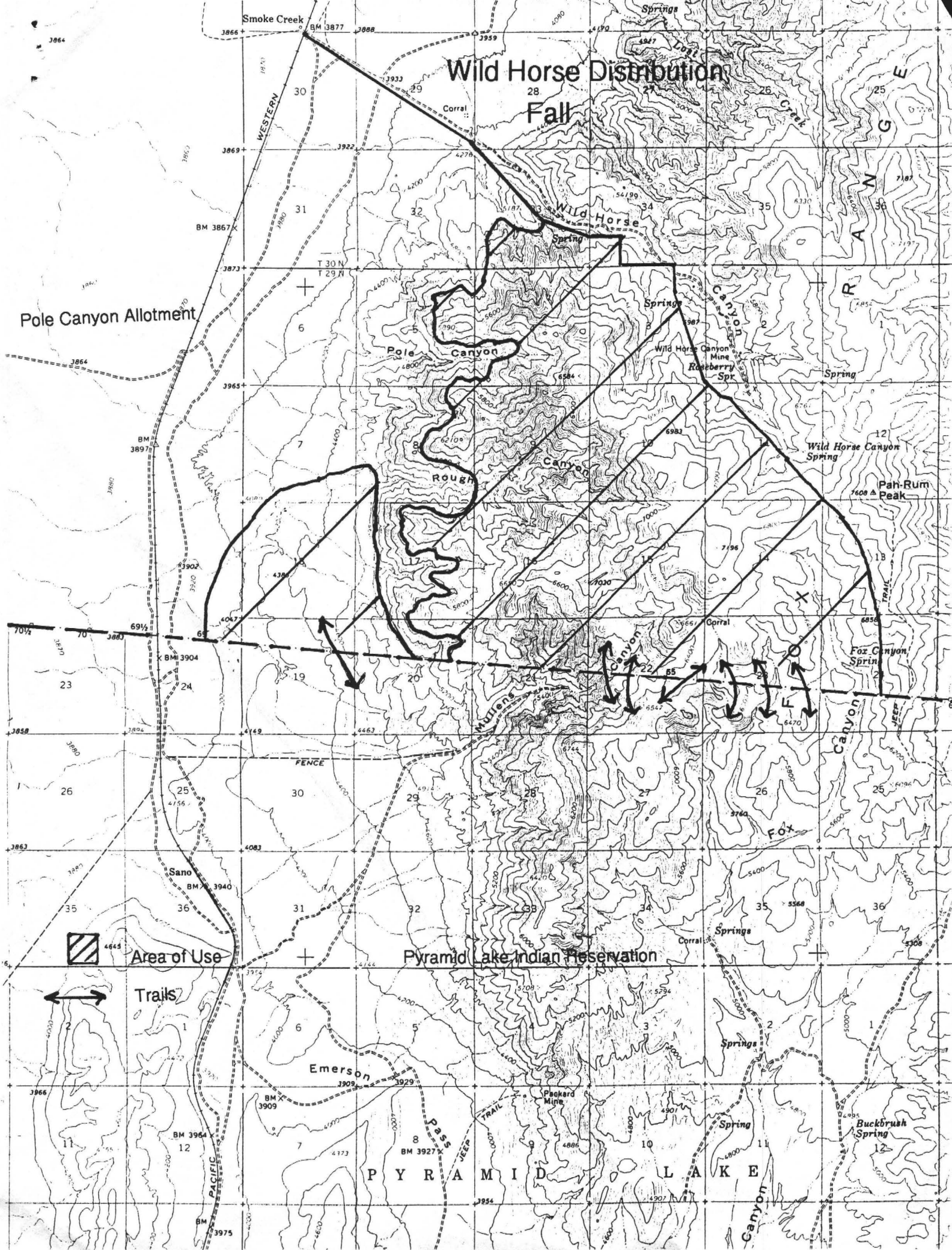
Pyramid Lake Indian Reservation

Trails

Emerson

PYRAMID LAKE

Wild Horse Distribution Fall



Pole Canyon Allotment

Area of Use

Trails

Pyramid Lake Indian Reservation

PYRAMID LAKE