



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Carson City District Office  
1535 Hot Springs Rd., Ste. 300  
Carson City, NV 89706-0638



IN REPLY REFER TO:  
4130CF  
(NV-03480)

8/4/93

AUG 04 1993

Hines  
-6475

Dear Interested Party:

We have completed the allotment evaluation process on the following allotments and have enclosed a copy of the Management Actions Selected by the Lahontan Area Manager for you information:

Salt Wells                      La Beau Flat  
Phillips Well                  Cleaver Peak

This letter will serve to close the allotment evaluation process since neither a grazing or multiple use decision is necessary to implement these actions.

Thank you for your interest and involvement in these evaluations.

Sincerely yours,

James M. Phillips  
Area Manager  
Lahontan Resource Area

THE FACT THAT  
THEY'VE DECIDED  
THIS MAKES  
IT APPEALABLE  
ANY DECISION  
IS APPEALABLE

IS THIS W/POLICY

VIII. Technical Recommendations to the Area Manager for the Cleaver Peak Allotment:

- A. I recommend the following Livestock Management Technical Recommendations to be implemented to meet management objectives on the Cleaver Peak Allotment.

VII.A. Monitoring - Establish two additional trend plots in the allotment.

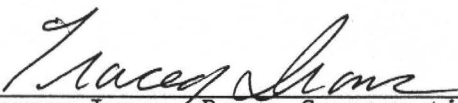
VII.B. Key Species - Establish key species as:

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides  
White sage or Winterfat - Eurotia lanata  
Fourwing saltbush - Atriplex canescens

VII.C. Utilization Levels - Key shrub utilization not to exceed Moderate (41-60%). Indian ricegrass utilization in the spring Light (21-40%) on spring production.

VII.D. Livestock Numbers and Season of Use - Continue the current season of use. Do not authorize grazing past March 30. Adjust actual livestock numbers or time on an annual basis based on forage production in the allotment.

VII.G. Allotment remain in the "Maintain" category.

  
\_\_\_\_\_  
Tracey Irons, Range Conservationist  
Lahontan Resource Area

7/14/93  
Date

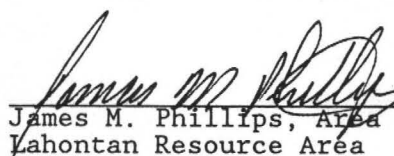
Concurrence:

  
\_\_\_\_\_  
R.H. Wolfe, Supervisory Range Conservationist  
Lahontan Resource Area

7/19/93  
Date

- B. Acceptance or Modification by Area Manager

I accept the technical recommendations with the exception of VII.D. Adjustments in actual livestock numbers or time (grazing preference) will be made following periodical reviews of the grazing permit and will be supported by monitoring, as evidenced by rangeland studies conducted over time. This will be done in accordance with 43 CFR 4110.3, 4110.3-2(b) and 4130.6-1(a).

  
\_\_\_\_\_  
James M. Phillips, Area Manager  
Lahontan Resource Area

7/19/93  
Date

VIII. Technical Recommendations to the Area Manager for the Salt Wells Allotment:

A. I recommend the following Livestock Management Technical Recommendations to be implemented to meet management objectives on the Salt Wells Allotment.

VII.A. Monitoring - Establish one additional trend plot in the allotment.

VII.B. Key Species - Establish key species as:

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides

White sage or Winterfat - Eurotia lanata

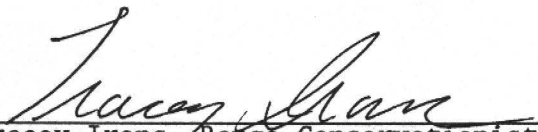
Fourwing saltbush - Atriplex canescens

VII.C. Season of Use - Continue the current season of use. Do not authorize grazing past April 15. Adjust actual livestock numbers or time on an annual basis based on forage production in the allotment.

VII.D. Utilization Levels - Key shrub utilization not to exceed Moderate (41-60%). Indian ricegrass utilization in the spring Light (21-40%) on spring production.

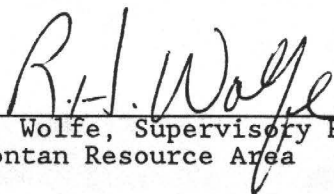
VII.E. Distribution - Work with permittee to add a water haul site near Sand Mountain to increase distribution in this area.

VII.G. Allotment remain in the "Maintain" category.

  
\_\_\_\_\_  
Tracey Irons, Range Conservationist  
Lahontan Resource Area

7/19/93  
Date

Concurrence:

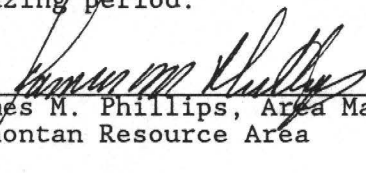
  
\_\_\_\_\_  
R.H. Wolfe, Supervisory Range Conservationist  
Lahontan Resource Area

7/19/93  
Date

B. Acceptance or Modification by Area Manager

I accept the technical recommendations with the exception of VII.C. Adjustments in actual livestock numbers or time (grazing preference) will be made following periodical reviews of the grazing permit and will be supported by monitoring, as evidenced by rangeland studies conducted over time. This will be done in accordance with 43 CFR 4110.3, 4110.3-2(b) and 4130.6-1(a).

Also enforce compliance with the terms and conditions of the grazing permit to submit actual use 15 days after the end of the grazing period.

  
\_\_\_\_\_  
James M. Phillips, Area Manager  
Lahontan Resource Area

7/19/93  
Date

VII. Technical Recommendations to the Area Manager for the La Beau Allotment:

A. I recommend the following Livestock Management Technical Recommendations to be implemented to meet management objectives on the La Beau Allotment.

VI.A. Season of Use - Rotate spring grazing areas.

VI.B. Utilization Levels - Key shrub utilization not to exceed Moderate (41-60%). Indian ricegrass utilization in the spring Light (21-40%) on spring production.

VI.C. Livestock Numbers - Continue the current season of use. Do not authorize grazing past April 15. Adjust actual livestock numbers or time on an annual basis based on forage production in the allotment.

VI.D. Key Species - Establish key species as:

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides

Needlegrass - Stipa nevadensis

White sage or Winterfat - Eurotia lanata

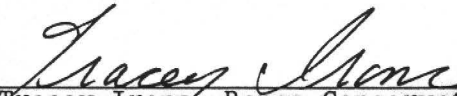
Fourwing saltbush - Atriplex canescens

VI.E. Raingauge - Establish a raingauge in the La Beau Flat area and one in the Rawhide or Dead Horse Well area.

VI.F. Livestock Management - 1. Construct a temporary or permanent boundary fence between the BLM and Walker Indian Reservation. 2. Construct needed drift fences between La Beau, Bell Flat and Bucky O'Neil. 3. Develop additional water in the Rawhide area.

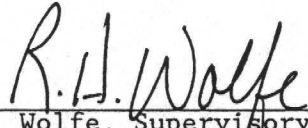
VI.G. Trend - Maintain existing trend plot #1. Establish two additional trend plots. Measure shrubs within the 20-80% frequency level.

VI.H. Land Closure - Reduce livestock preference if monitoring shows increase utilization following land closure.

  
\_\_\_\_\_  
Tracey Irons, Range Conservationist  
Lahontan Resource Area

6/29/93  
Date

Concurrence:

  
\_\_\_\_\_  
R.H. Wolfe, Supervisory Range Conservationist  
Lahontan Resource Area

6/28/93  
Date

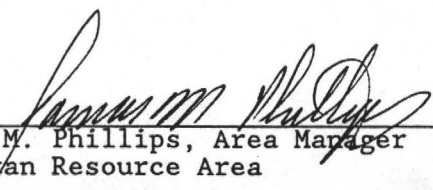
B. Acceptance or Modification by Area Manager

I accept the technical recommendations with the exception of the following:

VI.C.. Adjustments in actual livestock numbers or time (grazing preference) will be made following periodical reviews of the grazing permit and will be supported by monitoring, as evidenced by rangeland studies conducted over time. This will be done in accordance with 43 CFR 4110.3, 4110.3-2(b) and 4130.6-1(a).

VI.F. Boundary fencing on the Walker Lake Reservation is not the responsibility of the Bureau.

VI.H. Land Closure--Since approximately 15,500 acres of public land will be removed from the allotment livestock preference will be reduced when the fence around the contaminated area is completed. This reduction in preference will be made in accordance with 43 CFR 4110.4-2, 4130.6-1(a), 4110.3-2(b) and 4110.3..

  
\_\_\_\_\_  
James M. Phillips, Area Manager  
Lahontan Resource Area

7/19/93  
Date

VII. Technical Recommendations to the Area Manager for the Phillips Well Allotment:

A. I recommend the following Livestock Management Technical Recommendations to be implemented to meet management objectives on the Phillips Well Allotment.

VI.A. Trend - Establish two additional trend plots. Measure shrubs within the 20-80% frequency level.

VI.B. Key Species - Establish key species as:

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides

White sage or Winterfat - Eurotia lanata

Fourwing saltbush - Atriplex canescens

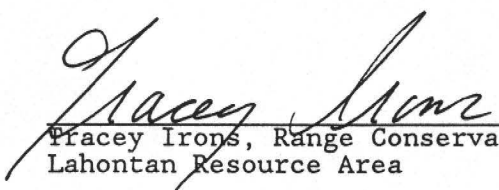
VI.C. Utilization Levels - Key shrub utilization not to exceed Moderate (41-60%). Indian ricegrass utilization in the spring Light (21-40%) on spring production.

VI.D. Season of Use - Continue the current season of use.

VI.E. Livestock Numbers - License 150 AUMs for the Dead Horse Well area as TNR. Monitor Dead Horse Well area to determine if, where and how many livestock are grazing the area. Determine the carrying capacity of the use area by 1995.

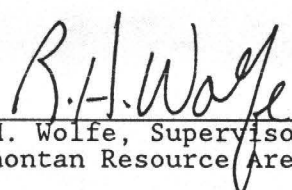
Continue the current season of use. Do not authorize grazing past March 30. Adjust actual livestock numbers or time on an annual basis based on forage production in the allotment.

VI.F. Raingauge - Establish one raingauge in the allotment. Location should be between Phillips Well and Eastgate.

  
\_\_\_\_\_  
Tracey Irons, Range Conservationist  
Lahontan Resource Area

6/28/93  
Date

Concurrence:

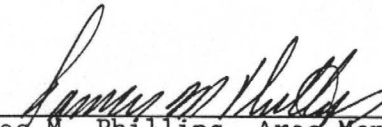
  
\_\_\_\_\_  
R.H. Wolfe, Supervisory Range Conservationist  
Lahontan Resource Area

6/28/93  
Date

B. Acceptance or Modification by Area Manager

I accept the technical recommendations with the exception of VI.E. Adjustments in actual livestock numbers or time (grazing preference) will be made following periodical reviews of the grazing permit and will be supported by monitoring, as evidenced by rangeland studies conducted over time. This will be done in accordance with 43 CFR 4110.3, 4110.3-2(b) and 4130.6-1(a).

Also require the submission of actual use by area, the areas being Phillips Well and Dead Horse Well.

  
\_\_\_\_\_  
James M. Phillips, Area Manager  
Lahontan Resource Area

7/19/93  
Date

4/20/93



# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CARSON CITY DISTRICT OFFICE  
1535 HOT SPRINGS RD., STE. 300  
CARSON CITY, NV 89706-0638



4130CF  
IN REPLY REFER TO (NV 03480)  
273011

APR 20 1993

Dear Reviewer:

Enclosed you will find a copy of the Cleaver Peak Allotment Evaluation for your information. We will be issuing a Multiple Use Decision later this year for the allotment.

Thank you for your interest.

Sincerely yours,

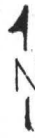
James M. Phillips  
Area Manager  
Lahontan Resource Area

Enclosure  
1. Allotment Evaluation



# MAP 1.

T.17 N.

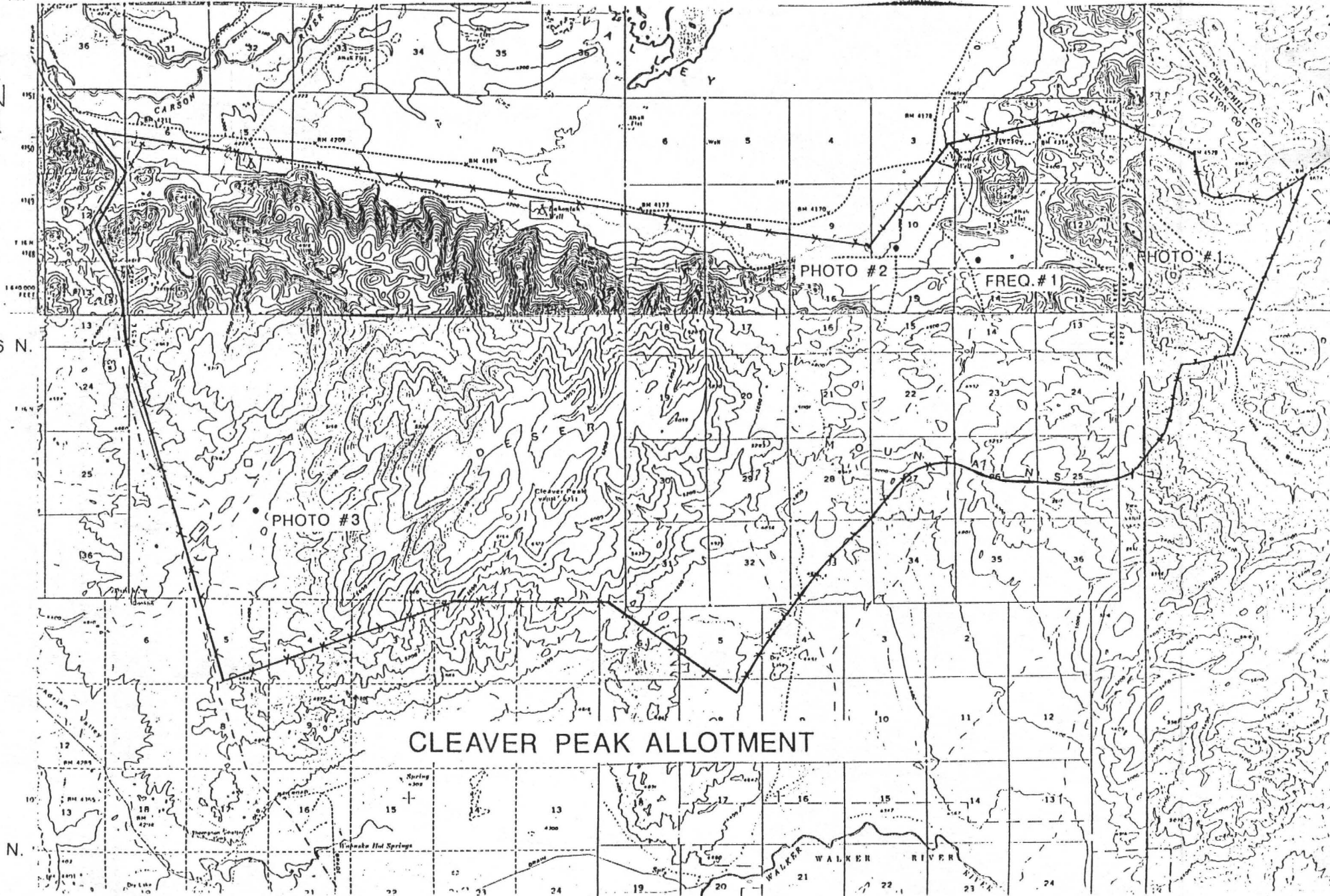


T.16 N.

T.15 N.

R.25 E.

R.26 E.



CLEAVER PEAK  
ALLOTMENT EVALUATION SUMMARY

I. INTRODUCTION

- A. Allotment Name & Number : Cleaver Peak # 3010
- B. Permittee(s) : Rafter "D" Ranch
- C. Evaluation Period : 1976-1992
- D. Selective Management Category : Maintain (M)

II. INITIAL STOCKING LEVEL

A. Livestock Use

- 1. Adjudicated AUMs
  - a. Total Preference: 1250 AUMs
  - b. Suspended: 0
- 2. Season of Use: 11/1-3/31
- 3. Kind and Class of Livestock: Cow/Calf
- 4. Percent Federal Range: 100%

B. Wildlife Use

The area is not currently contained in an Habitat Management Plan area. Primary wildlife use is by nongame species. Main game species in the allotment are chukars and mourning dove.

C. Wild Horses

The 1989 Rangeland Program Summary Update list 0 horses in the portion of the HMA that is within this allotment.

III. ALLOTMENT PROFILE

A. Description (see Map 1.)

The allotment is located within the Desert Mountains, approximately 15 miles south and south east of Silver Springs, Nevada. Within the allotment is Cleaver Peak, elevation 6711 feet. Grazing occurs around the peak on the Sandy, 5-8" rainfall range site. Approximately 50% of the 40,456 acres in the allotment is unavailable to livestock due to water and topography (see Map 3.). This allotment has historically been a cattle and domestic horse allotment during the winter.

B. Projects

Projects constructed in this allotment are three wells, 2 reapers for

livestock, a pit reservoir and 12 wildlife guzzlers. Most of the allotment boundary is fenced.

C. Acreage

1. Total : 40456 AC.
2. Grazable: Approximately 20,228 AC.

D. Allotment Specific Objectives

1. Land Use Plan (LUP) Objectives
  - a. Short Term : Incorporated into Rangeland Program Summary (RPS)
  - b. Long Term : Same as above
2. Rangeland Program Summary Update 1989 (RPS) Objectives
  - a. Short Term
    - (1). Maintain existing ecological condition and trend.
    - (2). Maintain utilization not to exceed 55 percent on identified key species on upland key areas.
    - (3). Initially allow 1,250 AUMs of livestock use.
    - (4). Improve and maintain chukar and mourning dove habitat through water development.
  - b. Long Term
    - (1). Maintain existing ecological condition and trend.
3. Activity Plan Objectives :No activity plan is scheduled on this "M" allotment to meet management objectives. Management actions needed to maintain proper grazing management can be found in the Technical Recommendation section.
4. Threatened and Endangered species (T&E) : There are no known T&E plants or animals on the allotment. Loggerhead shrike, a Category 2 candidate species may occur in the area but the BLM has no record of nests in the allotment. Grazing should have no adverse effect on Loggerhead shrike if utilization levels specified in the Technical Recommendations section are maintained.

D. Key Species Identification

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides

E. Phenology

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides (ORHY)  
Critical Growth Period - 3/15 to 7/15

Winterfat - Eurotia lanata (EULA)  
Critical Growth Period - 4/1 to 7/15

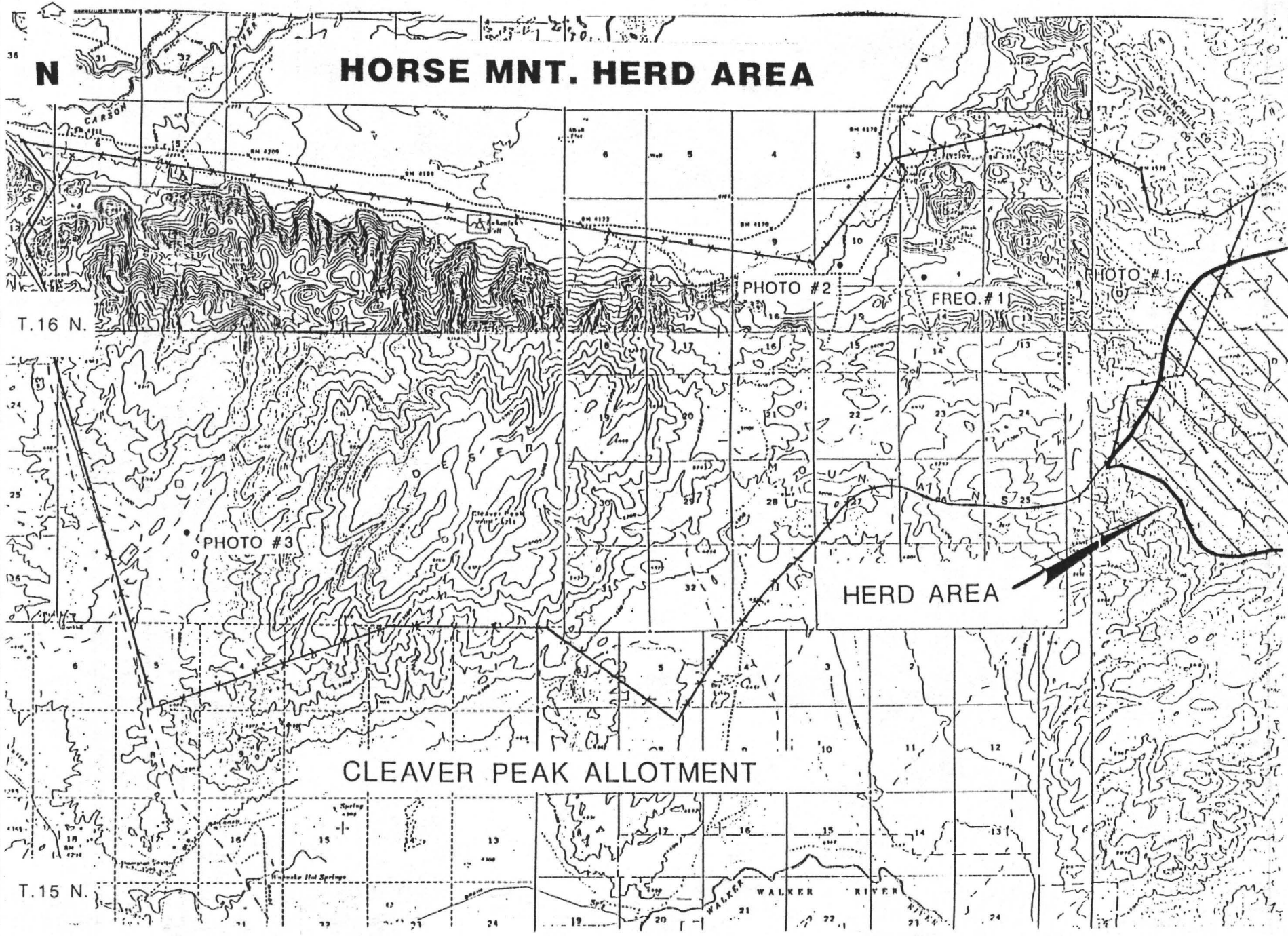
Fourwing Saltbush - Atriplex canescens (ATCA2)  
Critical Growth Period - 3/15 to 9/1

F. Wild Horses

A portion of the Horse Mountain Herd Area (HA) is located within the Cleaver Peak allotment boundary. Approximately less than 1% of the HA is within the allotment (see Map 2.). The 1989 Rangeland Program Summary Update listed 0 horses in the portion of the HA that is within this allotment. No horses have been observed within the Cleaver Peak allotment. It appears that when the HA boundary was drawn, an error resulted in the inadvertent inclusion of approximately 150 acres of the Cleaver Peak allotment in the Horse Mountain HA.

# MAP 2.

## HORSE MNT. HERD AREA



R. 25 E.

R. 26 E.

#### IV. MANAGEMENT EVALUATION

##### A. Purpose

The purpose of this evaluations is to gather existing study data to determine if management objectives are being met.

##### B. Summary of Studies Data

###### 1. Precipitation

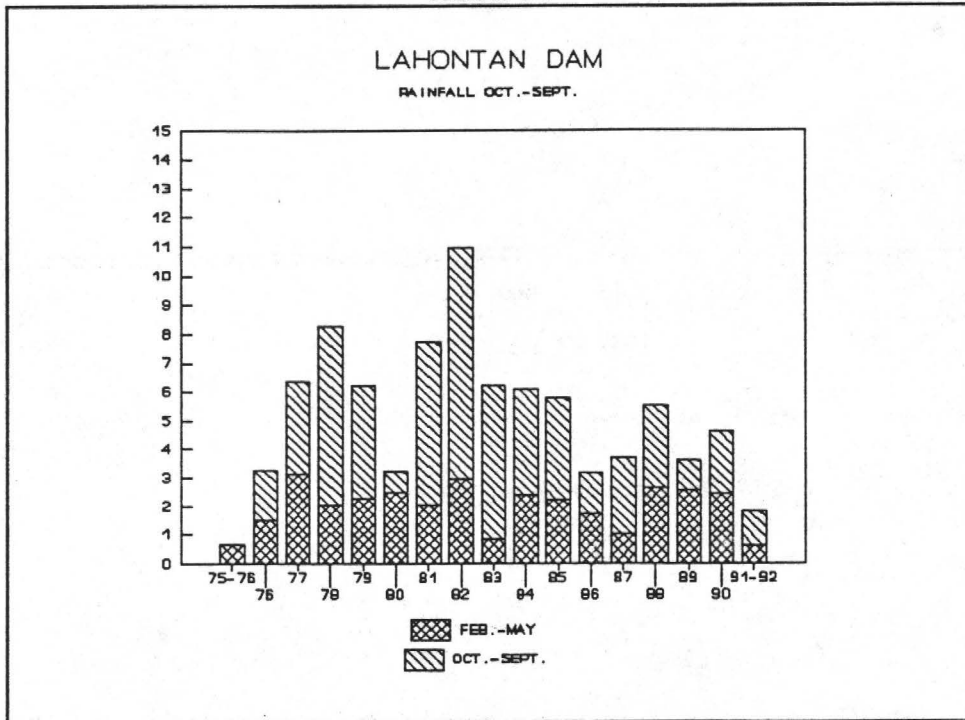
Two rainfall stations are located very near the allotment. One station is Lahontan Dam, which is approximately 15 miles northeast of the allotment and the other is Wabuska, which is approximately 5 miles southwest of the allotment. Rainfall is displayed for the months of February to May, which is the most critical rainfall period for the desert grasses and shrubs. The water year, October to September is also displayed.

TABLE 1.  
LAHONTAN AND WABUSKA RAINFALL STATIONS

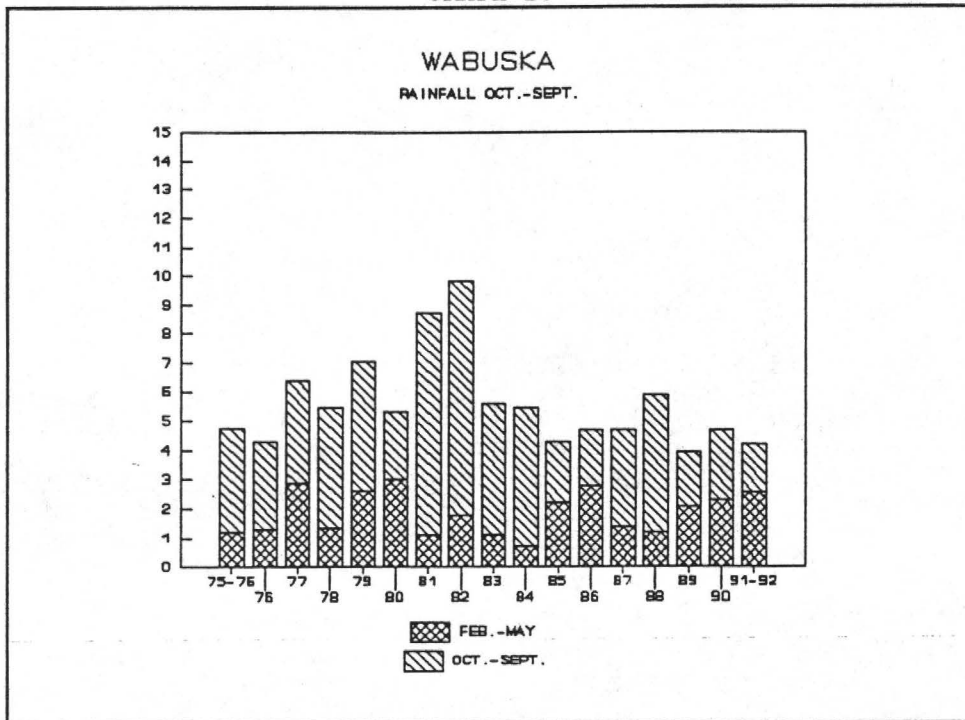
<u>Year</u>	<u>Lahontan Feb.-May</u>	<u>Wabuska Feb.-May</u>	<u>Year</u>	<u>Lahontan Oct.-Sept.</u>	<u>Wabuska Oct.-Sept.</u>
76	.68	1.22	75-76	No record	4.75
77	1.51	1.28	76-77	3.29	4.32
78	3.15	2.91	77-78	6.38	6.39
79	2.04	1.35	78-79	8.27	5.46
80	2.27	2.64	79-80	6.24	7.05
81	2.47	3.0	80-81	3.25	5.33
82	2.06	1.14	81-82	7.74	8.71
83	2.97	1.78	82-83	10.95	9.83
84	.84	1.13	83-84	6.25	5.58
85	2.30	8.72	84-85	6.09	5.47
86	2.20	2.24	85-86	5.80	4.30
87	1.72	2.80	86-87	3.17	4.69
88	1.00	1.38	87-88	3.71	4.72
89	2.67	1.22	88-89	5.53	5.90
90	2.57	2.08	89-90	3.64	3.97
91	2.45	2.30	90-91	4.63	4.69
92	.62	2.57	91-92	1.83	4.23

Rainfall during the evaluation period has varied greatly from year to year and between the two stations. Rainfall for the two stations were compared with production in three photo plots. There appears that there is some correlation between the Lahontan rainfall station and production in two photo plots on the northern portion of the allotment. The station in Wabuska correlates with the photo plot in the south west corner of the allotment. Graph 1. and 2. display the spring rainfall and the

GRAPH 1.



GRAPH 2.



water year rainfall. Graph 1. shows a great fluctuation from year to year for water year rainfall. The spring rainfall was the highest for years 77-78, 82-83, and 88-89. The lowest rainfall in the spring was 75-76, 83-84 and 91-92. These three years the spring rainfall was less than 1 inch.

Graph 2. shows less of a variation in the water year rainfall in Wabuska compared to Lahontan. Spring rainfall in Wabuska was the highest for the years 77-78, 80-81 and 86-87. The lowest rainfall in the spring was 75-76, 83-84 and 84-85. Rainfall was over 1 inch for two years and one year it was below 1 inch. Both graphs illustrate the great variation in rainfall from station to station for the same year.



2. Livestock Use

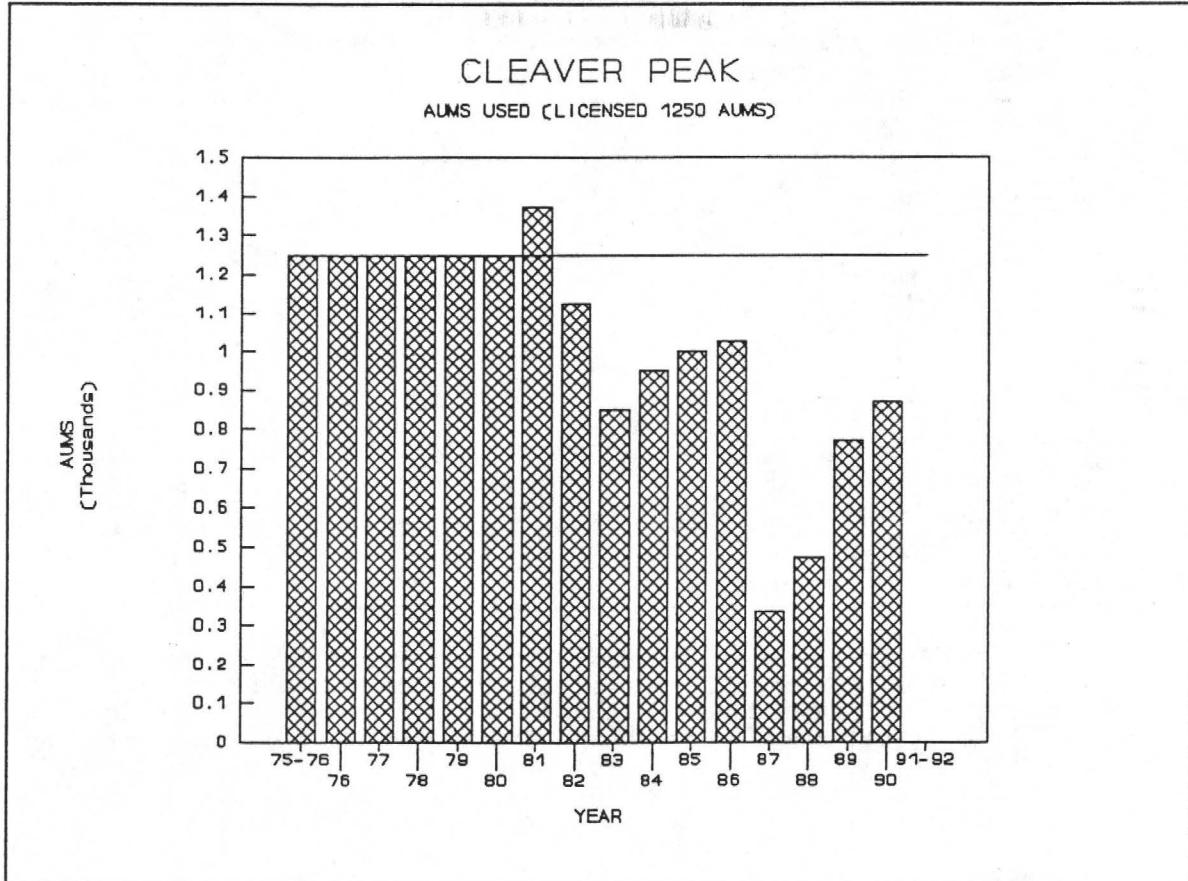
Licensed and actual livestock use for the allotment was compiled for the grazing years 1976-77 to 1991-92 on Table 2.

TABLE 2.  
LIVESTOCK USE  
LICENSED USE 1250 ANIMAL UNITS MONTHS (AUMS)

YEAR	LICENSED USE	ACTUAL USE	NON USE	Temp.Non.Renew.
75-76	1250 AUMS	1250 AUMS		
	250 C from 11/1-3/31	same		
76-77	1250 AUMS	NO RECORD		
	250 C from 11/1-3/31			
77-78	1250 AUMS	NO RECORD		
	250 C from 11/1-3/31			
78-79	1250 AUMS	NO RECORD		
	250 C from 11/1-3/31			
79-80	1250 AUMS	1250 AUMS		
	250 C from 11/1-3/31	same		
80-81	1250 AUMS	1250 AUMS		
	250 C from 11/1-3/31	same		
81-82	1250 AUMS	1375 AUMS		125 AUMS
	250 C from 11/1-3/31	250 C from 11/1-4/15		
82-83	1250 AUMS	1126 AUMS	124 AUMS	
	250 C from 11/1-3/31	251 C from 11/15-3/31		
83-84	850 AUMS	850 AUMS	400 AUMS	
	170 C from 11/1-3/31	same		
84-85	950 AUMS	950 AUMS	300 AUMS	
	200 C from 11/1-3/31	same		
85-86	1000 AUMS	1000 AUMS	250 AUMS	
	200 C from 11/1-3/31	same		
86-87	1027 AUMS	1027 AUMS	223 AUMS	
	200 C from 10/15-3/31	same		
87-88	250 AUMS	337 AUMS	913 AUMS	
	50 C from 11/1-3/31	50 C from 11/7-4/4		
88-89	472 AUMS	472 AUMS	778 AUMS	
	95 C from 11/1-3/31	same		
89-90	868 AUMS	771 AUMS	479 AUMS	
	175 C from 11/1-3/31	175 C from 11/12-3/31		
90-91	868 AUMS	NO RECORD	382 AUMS	
	175 C from 11/1-3/31			
91-92	0 AUMS	0 AUMS	1250 AUMS	

During the evaluation period, the years from 1976-77 to 1980-81 livestock use was at the licensed level. One year, 1981-82 was over the licensed use with 125 AUMs Temporary Non Renewable. From 1982-83 to 1991-92, the permittee took a portion of non use and AUMs were below the licensed use. In 1991-92 the permittee took total non use. See Graph 3.

GRAPH 3.



### 3. Utilization

Utilization data was collected in the allotment 9 years out of 16. Utilization was collected mainly on Indian ricegrass (Oryzopsis hymenoides) ORHY. Very little utilization data was collected on white sage or winterfat (Eurotia lanata) EULA, shadscale (Atriplex confertifolia) ATCO and four-wing saltbrush (Atriplex canescens) ATCA2, on an allotment wide basis. The allotment was examined at or near the end of the grazing period.

#### a. Use Pattern Mapping

Use Pattern Mapping was derived from each grazing year utilization data to produce a map of utilization classes with acreage determined for each class (see Table 3). The percent acres grazed in each utilization category was calculated based on the total acres available to cattle grazing. Approximately 50% or 20,228 acres is available to cattle for grazing.

The utilization objective for the allotment is not to exceed 55% utilization on annual growth of key species.

**TABLE 3.**  
**PERCENT OF AVAILABLE ACRES GRAZED IN MODERATE, HEAVY AND SEVERE USE**  
**COMPARED WITH RAINFALL**

YEAR	MODERATE (41-60%)	HEAVY (61-80%)	SEVERE (81-100%)	AUMS	RAINFALL FEB.-MAY <sup>1</sup> LAHONTAN	WABUSKA
76-77	18% 3650 ac.	32% 6670 ac.	16% 3060 ac.	1250	.68	1.22
77-78	28% 5770 ac.	30% 6060 ac.	10% 2080 ac.	1250	1.51	1.28
78-79	0%	0%	0%	1250	3.15	2.91
79-80	42% 8439 ac.	0%	0%	1250	2.04	1.35
80-81	2% 96 ac.	0%	0%	1250	2.27	2.64
81-82	70% 14110 ac.	16% 3065 ac.	0%	1375	2.47	3.00
82-83	24% 4923 ac.	36% 7294 ac.	0%	1126	2.06	1.14
83-84	20% 3858 ac.	4% 872 ac.	0%	850	2.97	1.78
84-91	NO UTILIZATION MAPPING DONE					

The best situation on the allotment would be to have almost 100% of the grazable acres in the Moderate (41-60%) utilization category. Due to water and topography this is not attainable. But the percentage of acres in the Heavy and Severe utilization category should not be more than 10% of the grazable acres, and only adjacent to the water. Four years out of 8, utilization was greater than 10% in the Heavy and/or Severe category.

There appears to be some correlation between the acres in each utilization category and rainfall. The three years with the lowest rainfall at the Lahontan and Wabuska stations (76-77, 77-78 and 82-83) also had the highest number of acres in Moderate, Heavy and Severe utilization. For the year 81-82, AUMs were the highest, rainfall was average at Lahontan and high at Wabuska and most of the grazable area was in Moderate with a little in Heavy. The next year, 1982-83, AUMs were low, rainfall was average for Lahontan and low at Wabuska and a large percentage of the acreage was in Heavy use.

The above table shows that there is a variation in production from year to year in this allotment. During the years that utilization data was collected, AUMs used were fairly consistent but there was a great variation in percent acres in each utilization category and recorded rainfall.

b. Composite Utilization Map (see Map 3).

A map was compiled from utilization mapping. In most years there was an area around Hooten well that received Heavy utilization. Distribution in the allotment is fairly good based on available water and topography. The south central area of the allotment receives limited grazing due to water and topography.

<sup>1</sup> Rainfall is from the previous year. Grazing occurs on the production of forage from the previous year.

T.17 N.

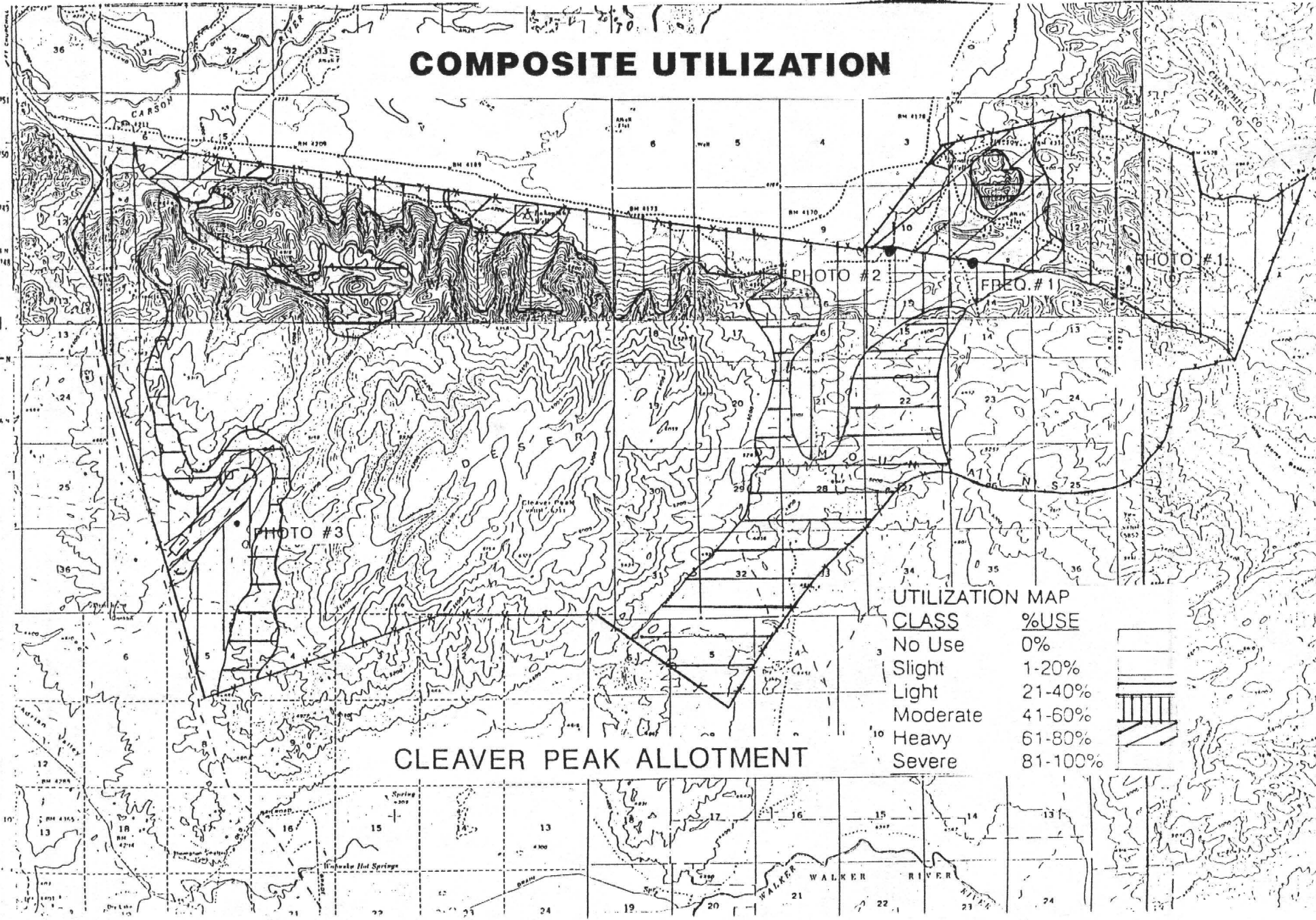
# MAP 3.

## COMPOSITE UTILIZATION

N

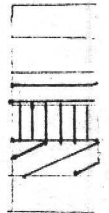
T.16 N.

T.15 N.



## CLEAVER PEAK ALLOTMENT

UTILIZATION MAP	
CLASS	%USE
No Use	0%
Slight	1-20%
Light	21-40%
Moderate	41-60%
Heavy	61-80%
Severe	81-100%



R.25 E.

R.26 E.

c. Key Area Utilization

Utilization was measured at three photo plots and one frequency plot in the allotment (see Map 4.)

TABLE 4.  
UTILIZATION IN KEY AREAS

YEAR	PHOTO #1	PHOTO #2	PHOTO #3	FREQUENCY PLOT
76-77	90% ORHY	88% ORHY, 88% EULA	87% ORHY, 90% EULA	NOT ESTABLISHED
77-78	70% ORHY	90% ORHY	82% ORHY, 82% EULA	
78-79	30% ORHY	36% ORHY	10% ORHY	
79-80	50% ORHY	50% ORHY	54% ORHY	
80-81	30% ORHY	20% ORHY	24% ORHY	
81-82	50% ORHY	64% ORHY	46% ORHY	
82-83	70% ORHY	70% ORHY	30% ORHY	
83-84	70% ORHY	74% ORHY	30% ORHY	
85-86	NO READING			74% ORHY
87-88	30% ORHY	70% ORHY	70% ORHY	70% ORHY 50% ATCA

From Table 4., plot #2 received the most years with utilization over the 55% utilization limit. Plot #3 had the least number of years with utilization over 55%. During the years monitored, the frequency plot received Heavy utilization.

d. Utilization of Key Species

Most of the utilization monitoring in this allotment has been on Indian ricegrass. Since this is a winter grazed allotment, it is also important to consider shrubs in the management of this allotment. In the winter grasses are dormant and little affected by grazing as most of their stored food reserves are in their roots. However, twigs of shrubs, and leaves of those that are evergreen, are living tissue. Shrubs are less damaged by grazing during the cold weather period of dormancy than during spring growth, but they are at a disadvantage compared to grasses.

In the winter, livestock graze both shrubs and grasses. If cattle are to subsist during the winter on range forage, a mixture of shrubs and grasses will come closer to meeting the requirements of a balanced ration than either one alone. Shrubs are higher in protein, phosphorus, and carotene (vitamin A) than grasses, whereas grasses are superior only in energy-yielding qualities (Cook and others 1954).

White sage and fourwing saltbush is not presently identified as a key species, they need to be recognized as such and monitored. They are important forage plants during the winter grazing period for cattle. It is important to limit utilization of shrubs to Moderate (41-60%) utilization on annual production to maintain the health and vigor of these plants. The allotment has a mix of grasses and shrubs.

A limiting factor to improved range conditions in this

allotment is spring grazing. The critical growing period for Indian ricegrass is March 15 through July 15, winterfat is April 1 to July 15, and fourwing saltbush is March 15 to September 1. This is when the plants are most susceptible to damage by grazing.

4. Trend (see Map 4. for location of plot)

Long term monitoring measures changes in soil and vegetation over time and is used to periodically measure progress toward meeting long term grazing management objectives. Long term studies are usually done at permanent sampling locations in key areas.

a. Frequency

There are several techniques used for long term monitoring in which frequency is one of them. Frequency transect data indicates statistically significant changes in the frequency of occurrence of the key species, this change is then evaluated to see if the specific management objectives for the rangeland represented by the key area are being met. Frequency is collected using the Bureau's accepted procedures contained in the Nevada Rangeland Monitoring Handbook.

TABLE 4.  
FREQUENCY RESULTS DURING THE EVALUATION PERIOD  
FRAME SIZE 20 INCH FRAME

SPECIE	DATE		COMPARISON		COMPARISON			COMPARISON		OVERALL TREND
	84	87	84-87	95% 80%	DATE	87-91	91	95% 80%	84-91	
ORHY (all)	49	56	NO	YES	26.5	YES	YES	YES	YES	DOWN
ORHY (mature)		56			9	YES	YES			DOWN
ORHY (seedling)		30			15.5					
STCO4 (all)					28.5					
STCO4 (mature)					14					
STCO4 (seedling)					9					
ATCA2	6	4			2.5					DOWN
PSP0	9	10			7.5					STATIC

One frequency trend plot is located in the allotment. This plot is located on Range Site 27-09, Sandy 5-8" rainfall. This range site was rated as in Good Condition in 1982.

From Table 4. and Graph 4. there is an apparent change in plant composition in this plot. Indian ricegrass (ORHY) is decreasing, while needleandthread grass (STCO4) has established in the plot. The decline in ORHY can be found on many of the Sandy, 5-8" range sites around the Fallon area. This general decline does not appear to be directly related to livestock grazing. The increase

T.17 N.

# MAP 4.

## MONITORING LOCATIONS

N

T.16 N.

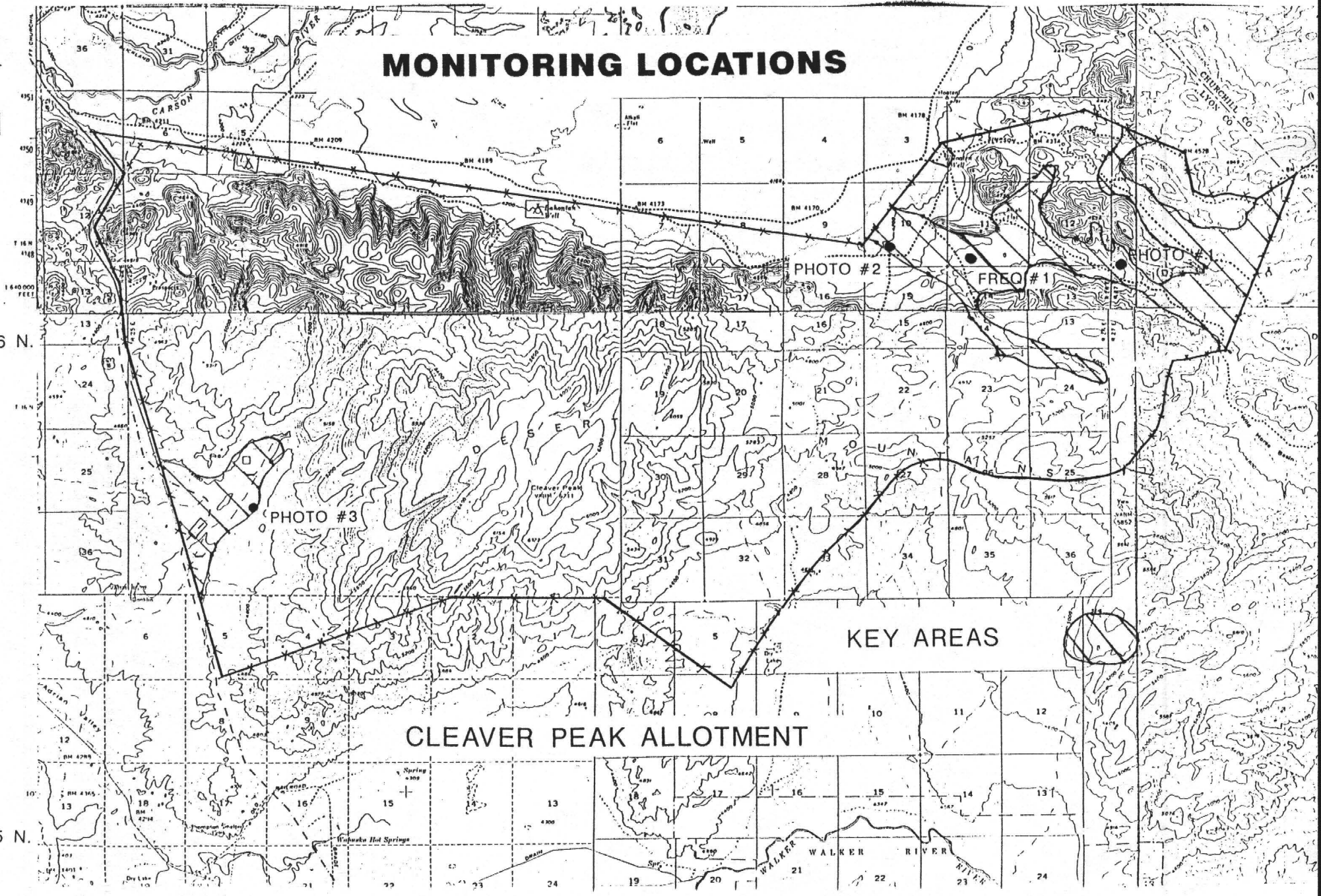
## CLEAVER PEAK ALLOTMENT

## KEY AREAS

T.15 N.

R.25 E.

R.26 E.

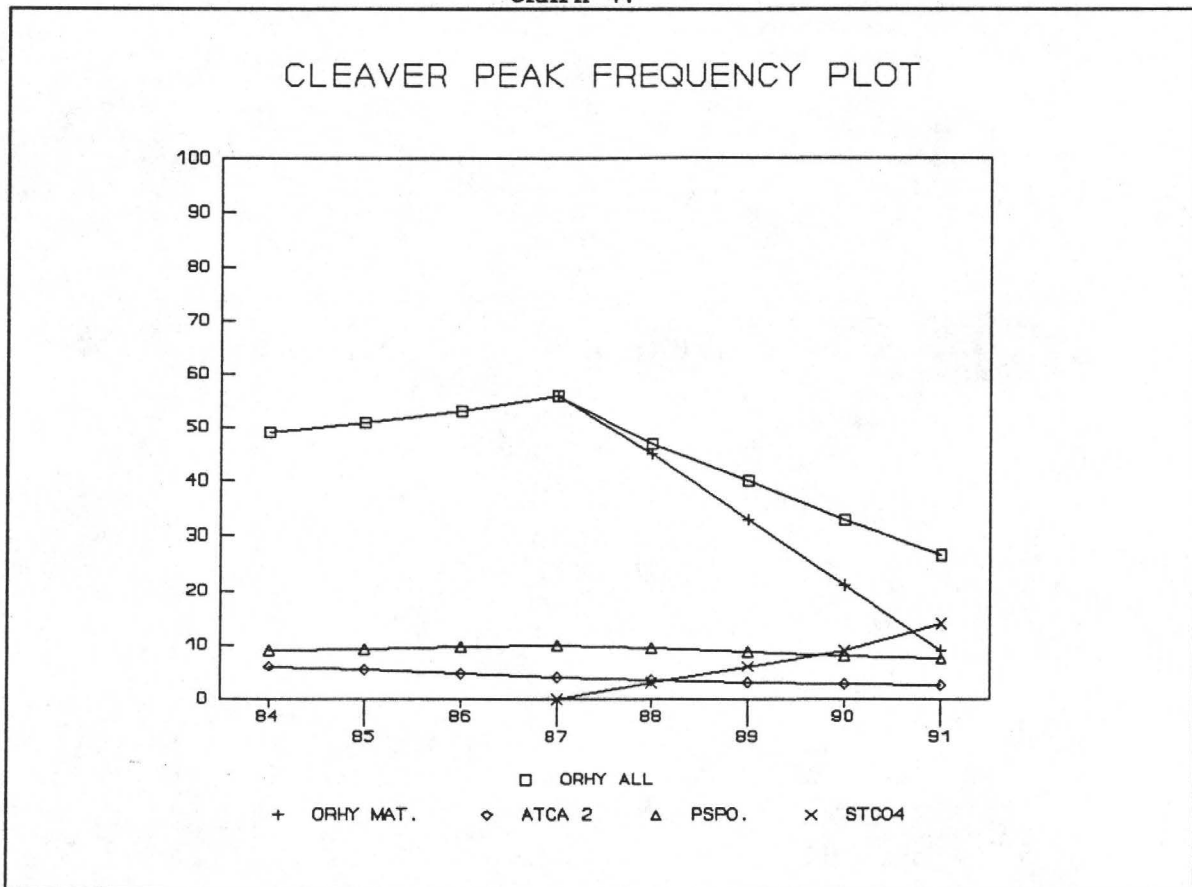


in STCO4 is also occurring in a plot in the Lahontan allotment.

From conversations with Robert Depaoli, apparently when his parent acquired the Cleaver Peak grazing permit in the 1950's Needleandthread grass was very abundant in the allotment. Over the years, Indian ricegrass increased and needleandthread decreased. Now it appears that needleandthread may again be on the increase. Based on these observations and the frequency trend plot, this could be a common phenomenon on these sandy range sites and may be related to rainfall.

Both shrubs, fourwing saltbush (ATCA2) and delia (PSPO) are showing a decline in the trend plot. This decline is not statically significant due to the small sample size. The decline in both shrubs can be observed at this plot location and in other areas in the allotment. Overall apparent trend in this plot is DOWN.

GRAPH 4.





b. Photo Trend Plot

Three photo trend plots were established in the allotment in 1977 (see Map 4.) The below tables compares the number of plants in the plot from 1971 to 1991. The plots are 5X5'.

TABLE 5.  
PHOTO TREND PLOT #1

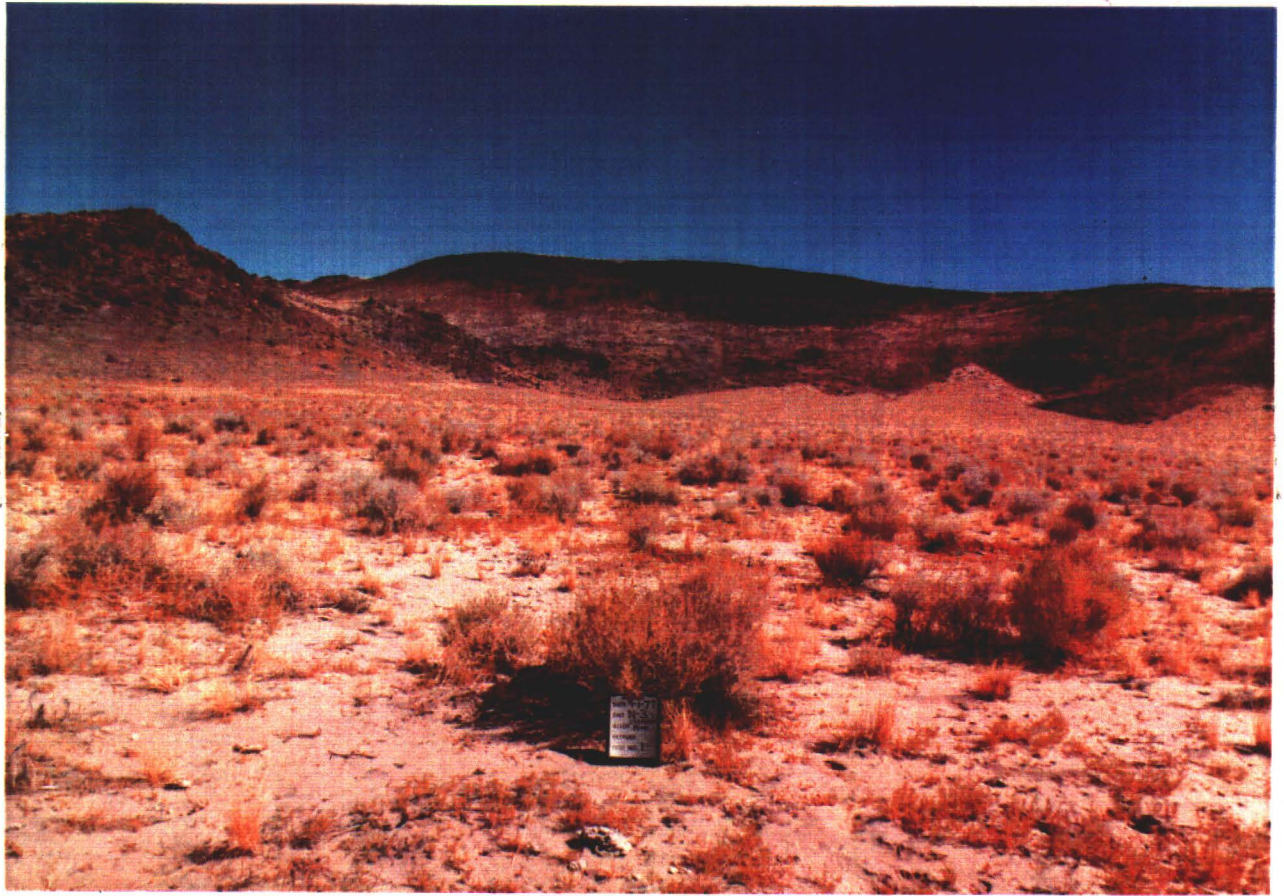
Specie	1977	1979	1981	1982	1985	1991
ORHY	4	0	0	0	0	0
ATCA2	1	1	1	0	0	0

This photo plot is found on range site 27-09, Sandy 5-8 inch rainfall. Ecological condition was rated as Good in 1982. This plot shows an interesting trend that is occurring in the vegetation inside and outside the plot. From the photos of this plot there is a drastic decrease in Indian ricegrass (ORHY) and fourwing saltbush (ATCA2) (see Photos 1 and 2). In the photos, the ATCA2 in the plot and in the background can be seen dying out from the years 1977 to 1991. At this time the cause appear to be a combination of insects and drought. Those plants sampled in the area that are still alive showed an high infestation of scale insects, mealy bugs, flatheaded root borers and roundheaded root-boring larva. While these insects can be found in healthy population of shrubs, the number of infested shrubs and the amount of insects found on individual plants indicate a major infestation. Between the insects and low rainfall years, the combination is be proving to be lethal to the shrubs on the allotment. Apparent trend is DOWN.

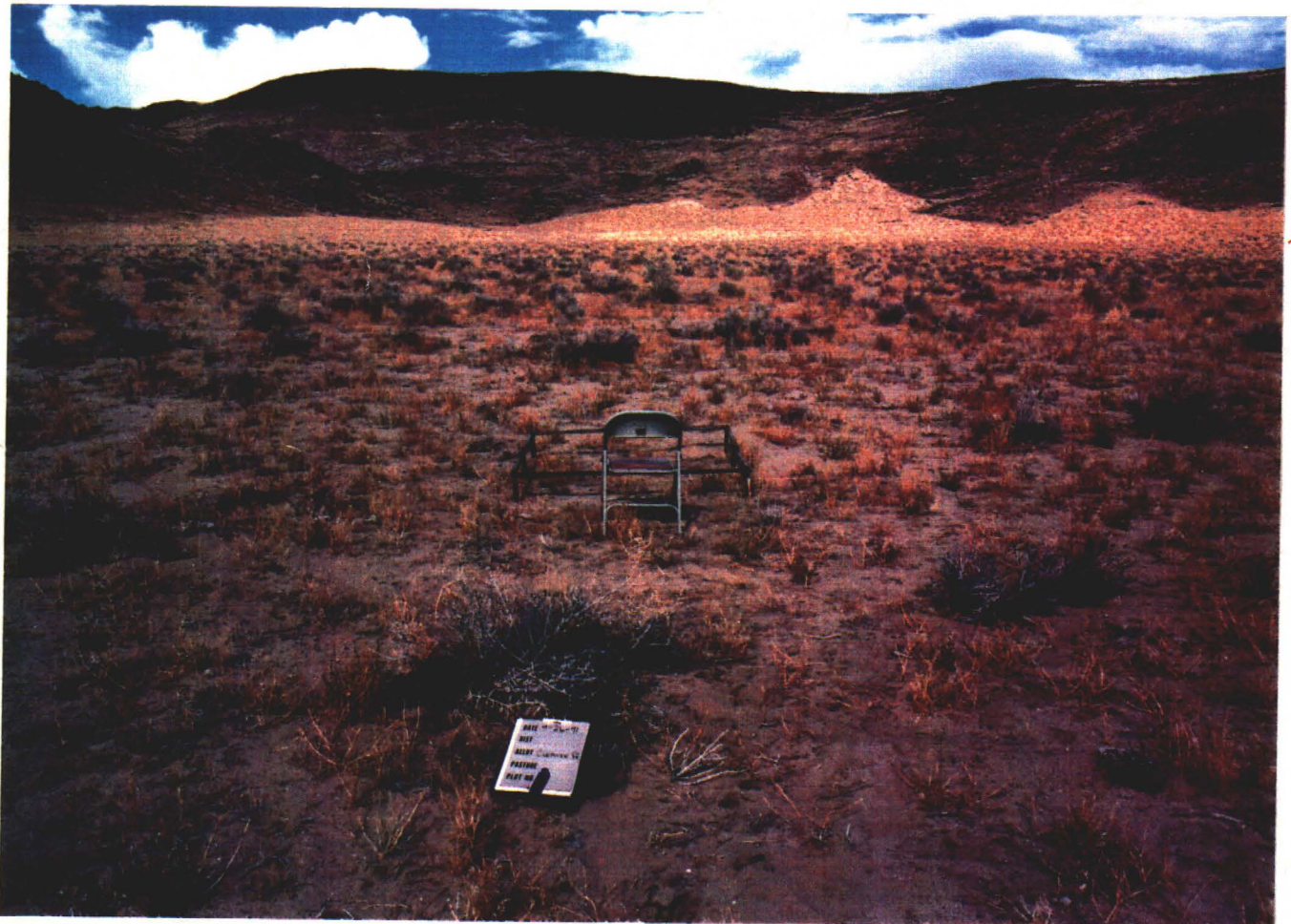
TABLE 6.  
PHOTO TREND PLOT #2

Specie	1977	1979	1981	1982	1985	1991
ORHY	2	3	3	3	3	4
CHVI	1	1	0	0	0	0
ARSP	4	6	2	2	2	2
EULA	1	3	1	1	1	1

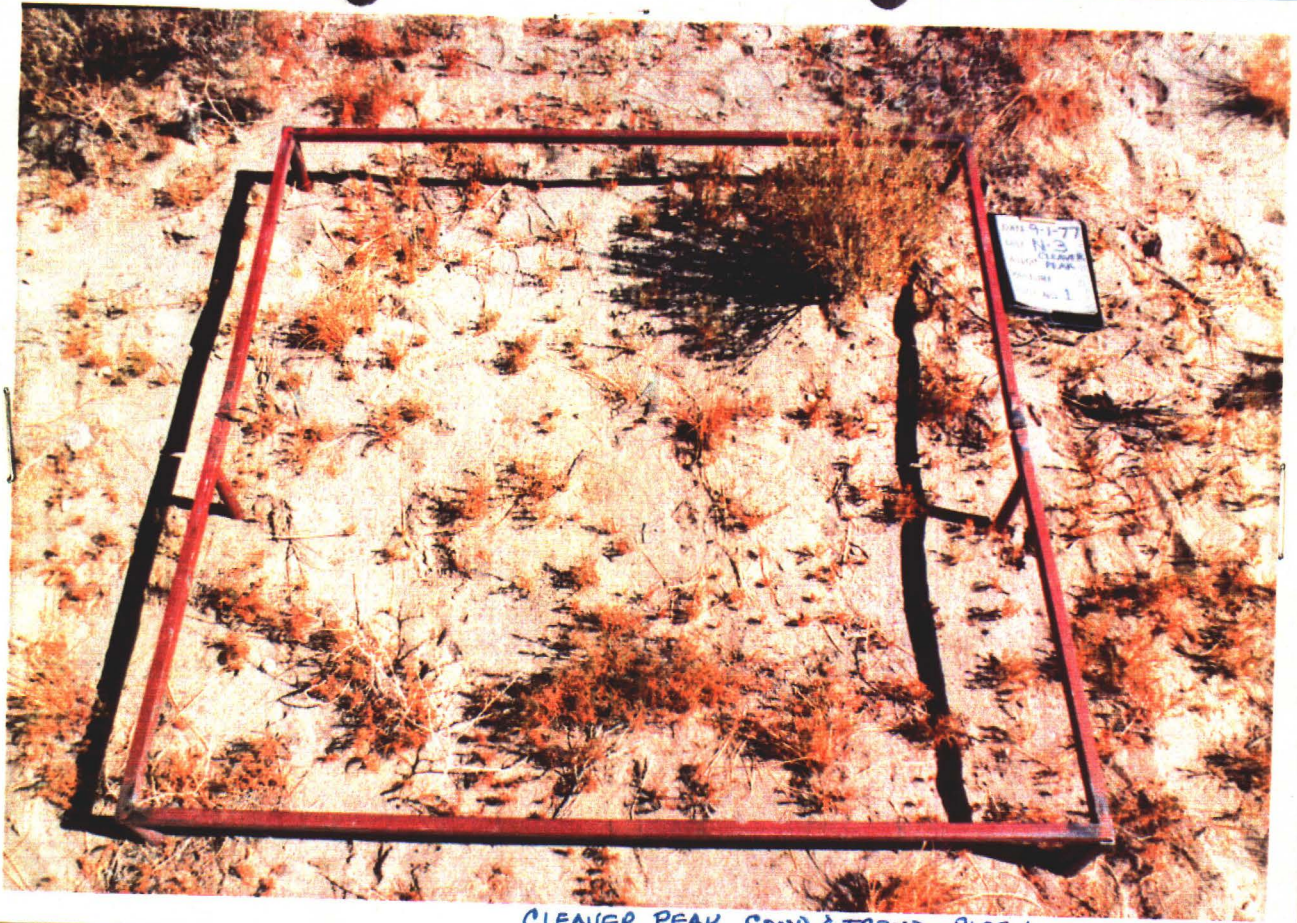
This photo plot is mapped as a Sandy 5-8" range site in Good condition in 1982. This site better fits the description of a Coarse Gravelly Loam, 5-8" range site description. Plants occurring in the plot are rabbitbrush (CHVI), budsage (ARSP), and white sage (EULA). The change that has occurred is an slight increase in ORHY, disappearance of CHVI, and a slight decrease of ARSP. Trend is SLIGHTLY UPWARD for ORHY and SLIGHTLY DOWNWARD for shrubs.



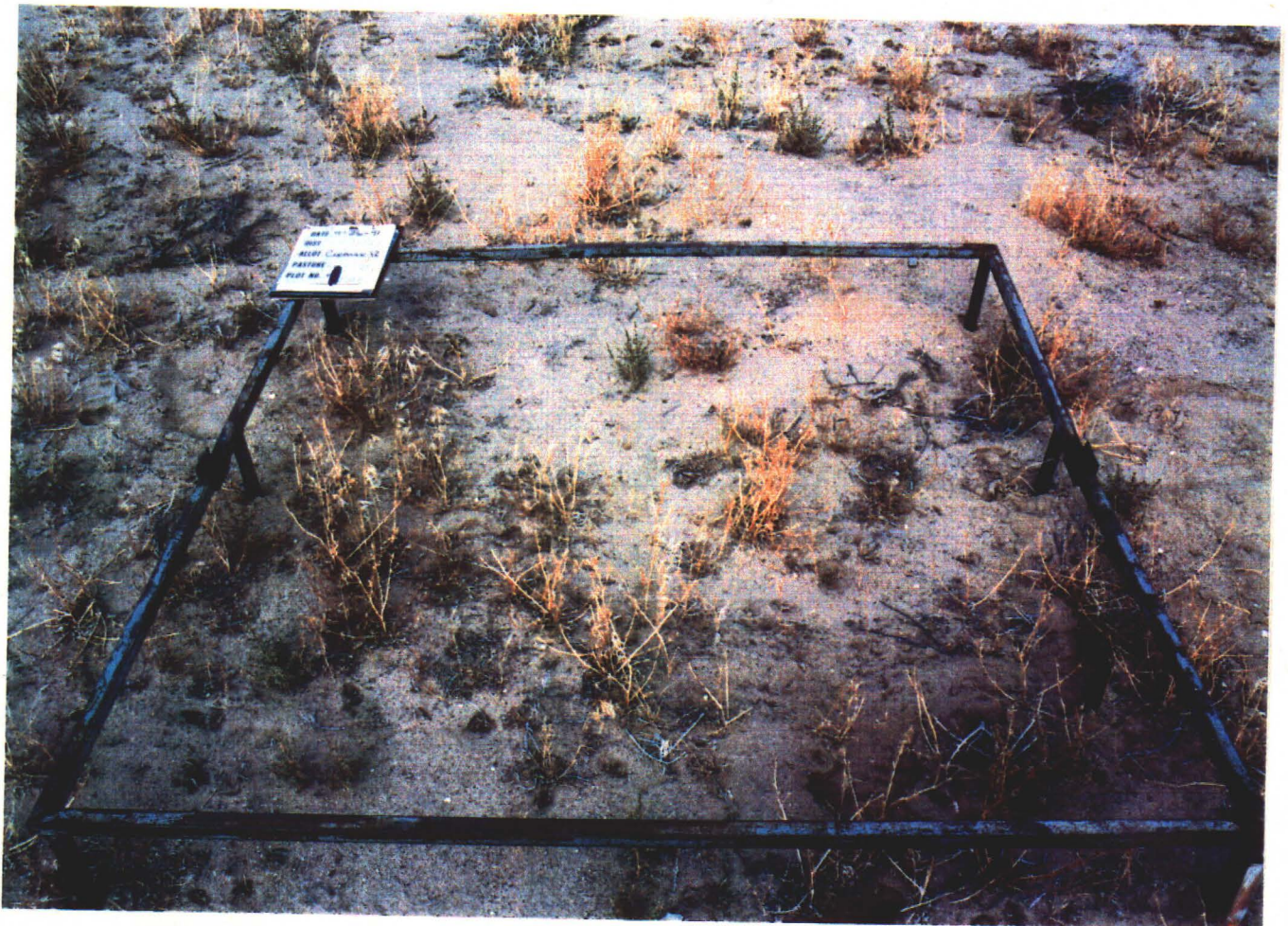
CLEAVER PEAK COND & TREND PLOT 1 1977



1991



CLEAVER PEAK COND & TREND PLOT 1 1977



1981

TABLE 7.  
PHOTO TREND PLOT #3

Specie	1977	1979	1981	1982	1985	1991
ORHY	3	4	>4	>5	>6	10
SPCR	1	1	1	1	1	1
SIHY	1	1	1	1	1	1
EULA	1	1	1	1	1	0
ATCO	2	2	1	1	1	1

This photo plot is mapped as a Gravelly Loam, 4-8" range site in Fair condition in 1982. The photos show an increase in ORHY. It appears that the increase is from new plants and the breaking up of one old plant in the plot. From 1985 to 1991 EULA died in the plot. The decrease in ATCO (schadscale) appears to be due to a small ATCO dying in the plot. Other plants occurring are Sand dropseed (SPCR) and squirreltail (SIHY). Apparent trend in this plot is UP for ORHY and DOWN for EULA and ATCO.

5. Shrub Die Off

Based on the above trend data, photos and field observations, a significant decline of ATCA2 is occurring in the north-east portion of the allotment on sandy soils (see Map 5.). This decline appears to have been occurring for the last 10 years. From field observations in the spring of 1993, an estimate of almost 90% of the ATCA2 has died or is dying with no regeneration of the population occurring. The area where Frequency Plot #1 is located, many dead ATCA2 plants can be found. There is also an observable die off of Nevada delia (PSPO) and Harry horsebrush (TECO2). None of these plant show heavy browsing. An initial field investigation with Ph.D. Richard Rust, entomologist from UNR, concluded that a combination of scale, mealy bugs and root bores along with drought years has contributed to the massive die-off of the shrubs. An estimate of the area effected is around 2,000 acres. It appears that the vegetation in the north eastern portion of the allotment is changing from a shrub/grass mix to a grass mix with Needleandthread grass being the dominant grass in some locations.

6. Ecological Status : No new data is available for analysis

b. The ecological condition of the allotment is based on the 1982 inventory is as follows:

	<u>POOR</u>	<u>FAIR</u>	<u>GOOD</u>	<u>EXCELLENT</u>
ACRES	784 ac.	16,156 ac.	19,942 ac.	0 ac.
% ALLOTMENT	2%	44%	54%	0%

7. Wildlife Habitat

Primary game species using the area are chukar and mourning dove. Management for these species has resulted in the construction of 12 guzzlers. Habitat diversity in the area is low and there is little opportunity for improvement.

There have been observations of deer using portions of the allotment in the winter.

8. Wild Horses

There have been no known sightings or sign of wild horses in the allotment. Horses do not use the portion of the Horse Mountain HMA that is within this allotment. Due to the small size and separation from the Herd Area by a fence, it would not be feasible to manage horse within this allotment.

9. Projects

At this time no additional projects are proposed for the allotment. There does not appear to be additional opportunity for further water development in the allotment.

V. Consultation

John Axtell - Lahontan Wild Horse Specialist  
Jim Ramakka - Lahontan Wildlife Biologist

## VI. CONCLUSIONS

### A. Precipitation (IV.B.1.)

Precipitation records are adequate. There may be some local weather patterns that are not recorded at either station.

### B. Actual Use (see IV.B.2.)

The Rafter "D" Ranch has kept good actual use records.

### C. Utilization (see IV.B.3.)

There is a need to monitor more than one key species in this allotment. Utilization monitoring on this allotment has been limited to Indian ricegrass. Since this is a winter allotment, both grasses and shrubs are both important components of a cattle diet. Grasses will provide some energy, but shrubs will provide protein and vitamins. Utilization monitoring should include palatable shrubs for livestock.

Downward trend of Indian ricegrass is occurring, but the cause has not been determined. It is known that spring grazing effects the production of grasses and shrubs. Cook and Harris (1968) found that more than 25% utilization in the spring is detrimental to salt-desert vegetation. Grazing in this allotment ends in March. Grazing in March it should be limited to Light (21-40%) utilization of spring production for Indian ricegrass to maintain the vigor and provide for regrowth after livestock are removed from the allotment. Utilization of shrubs should be within Moderate (41-60%) utilization.

### D. Distribution of Livestock (see IV.B.3.b.)

The utilization mapping in the allotment over the evaluation period shows that livestock are well distributed. Water is fairly well distributed except for one location in the south central portion of the allotment. There does not appear to be much more opportunity for more water development in this allotment. Livestock use needs to be decreased in the area adjacent to Hooten Well and increased in other areas if possible.

### E. Shrub Die-off (see IV.B.5.)

There is approximately 2000 acres in the allotment where ATCA2 and PSPO have died or is dying. This is occurring on the sandy soils in the allotment. Insect and drought years appear to be the cause.

### F. Wildlife Habitat (see IV.B.7)

There is no need for additional wildlife projects at this time in the allotment.

### G. Wild Horses (see IV.B.8.)

Wild horses probably were never present in this allotment. The portion of the HA within the allotment is too small to manage for wild horses. The number of wild horses in the Cleaver Peak portion of the HA should be managed for 0.

H. Allotment Objectives (see III.D.2.a.)

(1). Objective: Maintain existing ecological condition and trend.

Results: Ecological condition not measured (see IV.B.5.).  
Ecological condition measured only in 1982.

Results: Trend objective not met. (See IV.B.4.)  
Trend for the allotment is based on one frequency plot and 3 photo plots. Trend is DOWN for Indian ricegrass and fourwing saltbush in the eastern portion of the allotment and UP for Indian ricegrass and slightly DOWN for shrubs in the southwestern portion of the allotment.

The information on frequency data is limited to two plant species. Shrubs were not measured at a statically reliable level. The frequency plot showed a significant decrease in Indian ricegrass and the establishment of needleandthread grass. This change in frequency and composition cannot be directly correlated with either number of livestock or level of utilization. This trend has also been seen on other allotments in the Carson District on the Sandy 5-8" range sites. Some of the allotments where this trend is occurring have had only limited to no grazing in the areas of decreased Indian ricegrass. It is hypothesized that this downward trend may be more of an cyclic phenomena related to climatic changes and (or) small mammal populations, than to livestock management.

During the beginning of the evaluation period livestock numbers were at preference. From 1983 to 1992, livestock numbers were below preference. During the period of 1982 to 1987, Indian ricegrass increased in frequency. From 1987 to 1991, livestock numbers were at their lowest, at the same time a downward trend in frequency was measure for Indian ricegrass at key areas. Utilization levels on Indian ricegrass during the evaluation period have been Heavy, but this utilization was on dormant Indian ricegrass and should not be effecting the health and vigor of the plants.

In the frequency plot, shrub species need to occur at an higher frequency than currently in order to detect a change that is statistically reliable. The shrubs in the plot occurred less than 20% of the time, which is below what can be measured statistically. A larger plot frame is needed to better measure changes in shrubs.

(2) Objective: Maintain utilization not to exceed 55% on identified key species on upland key areas.

Results : Objective not met (see IV.B.3.). Utilization levels have varied greatly on this allotment during the evaluation period. During the evaluation period the AUMs that were used in the allotment remained fairly consistent while the acres receiving Moderate, Heavy and Severe use varied. It appears that production of forage in the allotment varies due to rainfall.

The stocking rate should be such that utilization of key shrub species (white sage and fourwing saltbush) would be Moderate (41-60%) during the winter. It is easier to measure and achieve utilization limits that are within a range than a 55% average limit. Shrub species are more susceptible to damage from grazing than grass species during the winter. It is recommend to manage

for the health and vigor of shrubs on this allotment.

During the spring green up period most livestock will switch from grazing shrubs to grazing green grass. This is the most critical period of growth for grass plants and grazing should be limited. Utilization on Indian ricegrass in the spring (mid-Feb to March) should be in the Light (21-40%) category in order to maintain the vigor and production of this grass.

(3) Objective: Initially allow 1250 AUMs of livestock use (see IV.B.2.).

Results :Objective met.

(4) Objective: Improve and maintain chukar and mourning dove habitat through water development (see IV.B.7.).

Results: Objective met.

b. Long Term

The long term is not being evaluated at this time as the long term period begins in 1992.



## VI. Technical Recommendations

### A. Trend - Conclusion V.H.(1)

Establish additional monitoring in the allotment.

Action: Add two trend plots in Range Site NV27-09. Establish one in the area where the fourwing saltbrush has died to monitor any recovery that might occur. Add another plot in the south west portion of the allotment. Range Site NV27-09 has a moderate potential to respond to grazing management. The additional trend plot would better indicate overall trend in the allotment.

Action: Measure key shrubs within the 20-80% occurrence level.

Action: Measure utilization of both key grass and shrubs at each trend location.

### B. Key Species - Conclusion V.B.

Key species in this allotment should be:

Indian Ricegrass or Sandgrass - Oryzopsis hymenoides

White sage or Winterfat - Eurotia lanata

Fourwing saltbush - Atriplex canescens

### C. Utilization Levels - Conclusion V.B., V.H.(2)

Change utilization level of key species from 55% to Moderate (41-60%) on key shrub species (white sage and fourwing saltbush) and utilization on Indian ricegrass in the spring to Light (21-40%) on spring production.

Action: Measure utilization of annual production on key shrub species and measure utilization on spring production of key grass plants.

### D. Livestock Numbers and Season of Use - V.B., V.H.(3)

Continue the current season of use. Do not authorize grazing past March 30.

Adjust actual livestock numbers or time on an annual basis based on forage production in the allotment.

Action: Work with permittee to adjust livestock numbers based on late summer field checks of annual production.

Action: If conditions are such that seedlings of fourwing saltbrush germinate in substantial numbers, minimize the effect grazing might have on seedlings by resting or deferring areas from livestock in order to promote establishment.

### F. Wild Horses - Conclusion V.E.

Set the Appropriate Management Level (AML) of wild horses to 0 in that portion of the Cleaver Peak that is within the Horse Mountain HA.

G. Allotment remain in the "Maintain" category.

Prepared by: Gracey Shon Date 4-20-93

References

Cook, C.W. The effect of intensity and season of use on desert vegetation. Bull. 483. Logan, UT: Utah Agricultural Experiment Station; 1971. 57 p.

Cook, C.W. and L. E. Harris. Nutritive value of seasonal ranges. Bul. 472. Utah Agr. Ex. Sta; 1968. 55 p.

# MAP 5.

T.17 N.

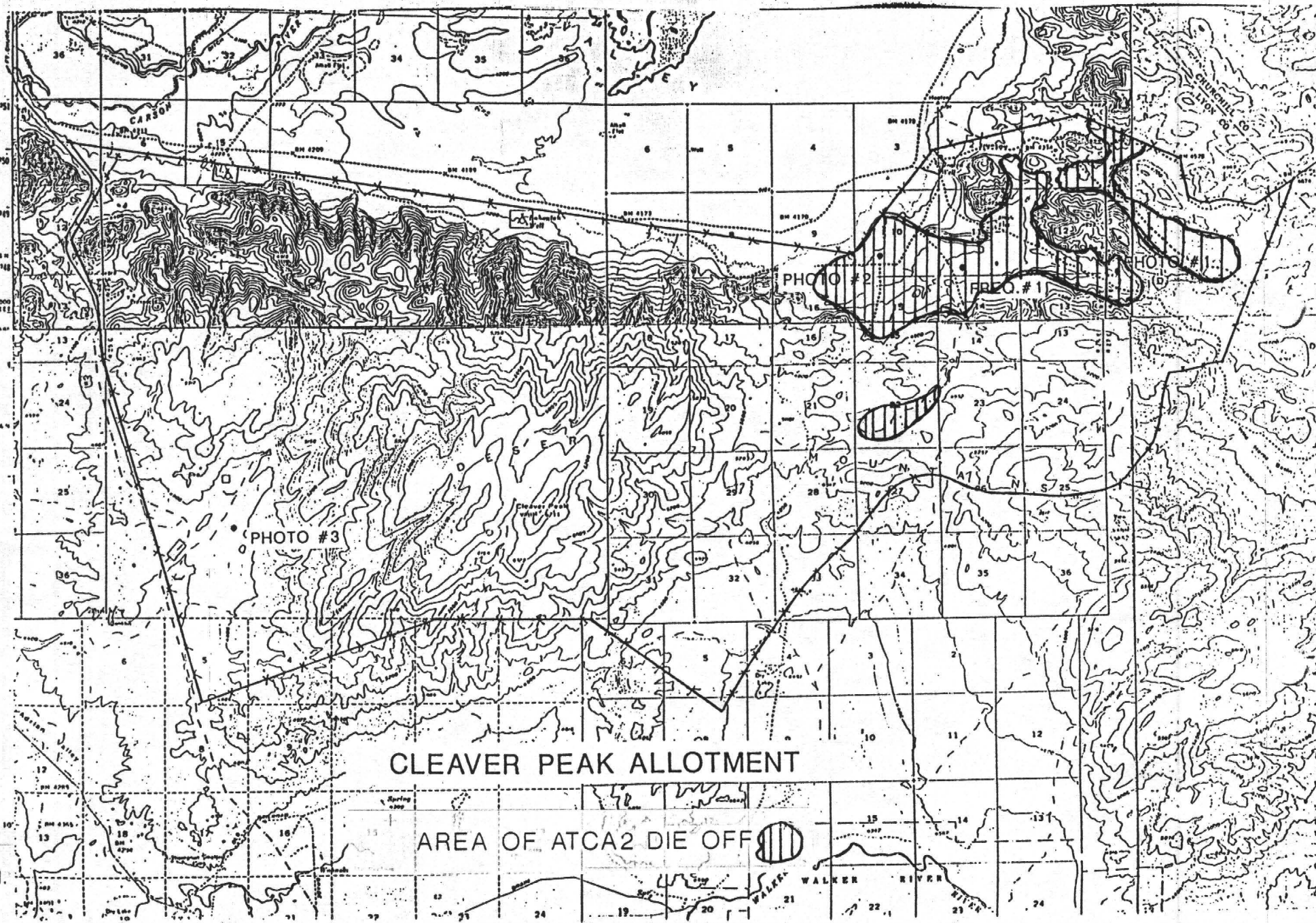


T.16 N.

T.15 N.

R.25 E.

R.26 E.



CLEAVER PEAK ALLOTMENT

AREA OF ATCA2 DIE OFF



WALKER RIVER