

2/1991

NORTH STEPTOE ALLOTMENT (0405) EVALUATION SUMMARY

I. INTRODUCTION

The North Steptoe Allotment (0405) is comprised of 12,701 total acres (12,541 acres public and 160 acres private). The preference is 700 AUMs of sheep use with no AUMs in suspension. Season of use is from February 1 to April 15. The allotment is categorized as an "M" or maintain selective management category allotment. The current permittee is Holtz, Inc., for whom Merlin Kingston is the authorized officer empowered to act in behalf of the corporation.

II. INITIAL STOCKING LEVEL

A. Livestock Use

The preference for the allotment is 700 AUMs for sheep use with a season-of-use of late winter through early spring (2/1 to 4/15). The three year average use listed in the Egan Resource Management Plan (RMP) and Rangeland Program Summary (RPS) is 418 AUMs per year of sheep use (calculated for 1979-81).

B. WILD HORSE USE

The North Steptoe Allotment is located on the western edge of the Antelope Herd Management Area (HMA) and lies entirely within the HMA. Of the total wild horse use for the herd area, the RPS objective for this allotment is to provide forage for 3 horses or 36 AUM's. Existing wild horse use is estimated at 108 AUM's or 9 horses. Wild horse use areas within the allotment are seasonally defined with summer use occurring primarily on the Schell Creek Range; and fall, winter, and spring use occurring on the benchlands on the east side of Steptoe Valley.

Determination of Wild Horse Actual Use

Wild horse census was flown in the Antelope HMA on the following dates: August 1978, January 1980, May 1983, June 1985, February 1987, February 1988, March 1990, October 1990, and February 1991. Table I gives the actual number of wild horses counted in the North Steptoe Allotment during aerial census of the Antelope HMA.

Table I. Aerial Census of Wild Horses in North Steptoe Allotment

<u>Dates</u>	8/78	1/80	5/83	6/85	2/87	2/88	3/90	9/90	2/91
<u>Census</u>	*	*	0	4**	6**	0	15**	16**	9**

\* Wild horse numbers not specific to allotment.

\*\* These numbers represent horses in the Antelope HMA utilizing both the North Steptoe and Schellbourne Allotments. The numbers of horses allocated to each allotment is covered in the "Summary of Studies Data" section.

The number of horses in the allotment at the time of census multiplied by 12 months/year equals the total AUM's. This is the formula by which actual use is derived. The total AUM figures in Table II serve as the best information available to determine actual use.

Table II. Wild Horse AUMs In North Steptoe Allotment

<u>Dates</u>	8/78	1/80	5/83	6/85	2/87	2/88	3/90	10/90	2/91
<u>Census</u>	*	*	0	48**	72**	0	180**	192**	108**

\* Wild horse AUMs not specific to allotment.

\*\* These AUMs represent horses in the Antelope HMA utilizing both the North Steptoe and Schellbourne Allotments. The horse AUMs allocated to each allotment is covered in the "Summary of Studies Data" section.

### C. WILDLIFE USE

The RPS objective for this allotment is to provide forage and habitat for reasonable numbers of wildlife, i.e. 24 AUMs for deer and 18 AUMs for antelope. Existing wildlife use listed in the RPS is 15 AUMs for deer and 15 AUMs for antelope. Since publication of the RPS, the antelope population in Steptoe Valley has increased significantly. Over winter mortality has been reduced due to mild winters resulting in an increase in the antelope population within the allotment. Current actual wildlife numbers were requested from the Nevada Department of Wildlife (NDOW) in November 1991. However, NDOW refused to provide these numbers. Their letter stated that "playing the numbers game for wildlife on an allotment basis will not help resolve...problems." (NDOW letter dated 12/11/91). Since numbers could not be obtained from NDOW, estimates of current wildlife numbers for the allotment from the Egan Resource Area Wildlife Biologist are: 30 deer from 4/1 to 10/31 and 20 deer from 11/1 to 3/31 (62 AUMs total); 32 antelope yearlong (77 AUMs).

There is one documented Ferruginous hawk nest site on the allotment.

An antelope guzzler was installed on the allotment in 1988 resulting in more even distributed and utilization by antelope throughout the allotment.

#### D. RIPARIAN

Riparian areas, the green zones along the banks of rivers and streams and around springs, wet meadows, lakes and ponds, are among the most productive ecosystems found on public lands. They display a greater diversity of plant and wildlife species and vegetation structure than adjoining drier upland ecosystems. The 1982 Water Resource Inventory indicated that the North Steptoe Allotment had 4 water resource sites. These include 3 springs and 1 ephemeral stream (Zips Cabin Creek). Appendix I gives the legal locations of these riparian sites.

### III. ALLOTMENT PROFILE

#### A. Description

The North Steptoe Allotment is located in Steptoe Valley approximately 40 miles north of Ely. The allotment encompasses 12,701 acres of which 12,541 acres are public (BLM) and 160 acres are private. Elevation ranges from 6000 feet in Steptoe Valley to 8600 feet in the Schell Creek Range. The allotment is situated on both the east and west sides of U.S. Highway 93 and parallels the highway for approximately six miles in a north/south direction. The western boundary extends one mile west of Highway 93 while the eastern boundary lies approximately three miles east of the highway. The Zips Cabin (Long Gulch) area comprises 160 acres of private land and is located in the east central portion of the allotment. The allotment is bounded on the north by the Becky Creek Allotment (0404) and on the south by the Schellbourne Allotment (0407). There are no allotment boundary fences established at this time.

#### B. Temperatures

Temperatures vary considerably in the area with extremes of 100 degrees in the summer to -30 degrees in the winter with wind chill making it even colder. Average temperatures in the summer are 68 degrees Fahrenheit and 24 degrees Fahrenheit in the winter. Temperatures may vary daily as much as 45 degrees.

### C. Growing Season

The growing season is short with approximately 100 frost-free days annually. In the valley and on the adjacent benches, spring growth normally begins in mid-March and continues through late May/early June. At higher elevations growth begins on the average of 30-45 days later. Heavy snowfall may occur in December/January ending the grazing season until spring.

### D. Allotment Specific Objectives

#### 1. Land Use Plan Objectives

a. Rangeland Management- "All vegetation will be managed for those successional stages which would best meet the objective of this proposed plan." (Egan Resource Area Record of Decision (ROD), p.3).

b. Wild Horse and Burros- "Wild horses will be managed at a total of 14 animals in the Antelope Herd Use Area." (Egan ROD, p.6). Actual wild horse numbers will be determined by this evaluation in conjunction with monitoring data to maintain a thriving natural ecological balance and prevent deterioration of the rangeland. (Note: The 14 animals identified above, as well as the 37 AUM's identified in the RPS is no longer a valid AML. The Interior Board of Land Appeals June 7, 1989 decision (IBLA 88-591, 88-638, 88-648, 88-679) ruled in part, "an AML established purely for administrative reasons because it was the level of wild horse use at a particular point in time cannot be justified under the statute" (Dahl vs. Clark, Supra at 595). The IBLA further ruled that the AML must be established through monitoring "in terms of the optimum number which results in a thriving natural ecological balance and avoids a deterioration of the range.")

c. Wildlife- "Habitat will be managed for "reasonable numbers" of wildlife species as determined by the Nevada Department of Wildlife." (Egan ROD, p.6).

- "Reintroductions of big game species will be accomplished in cooperation with the Nevada Department of Wildlife, where such reintroductions would not conflict with existing uses and if sufficient forage is available." (Egan ROD, p.6).

- "Forage will be provided for "reasonable numbers" of big game as determined by the Nevada Department of Wildlife." (Egan ROD, p. 8).

d. Riparian- "Where management objectives are not being obtained through application of management practices, fencing will be considered." (Egan ROD, p.13).

e. Watershed- "Establish utilization limits to maintain watershed cover, plant vigor and soil fertility in consideration of plant phenology, physiology, terrain, water availability, wildlife needs, grazing system and aesthetic values." (Egan ROD, p.44).

## 2. Rangeland Program Summary Objectives

### Range

a. "Provide forage for up to 418 AUM's of livestock use. (Preference is actually 700 AUM's). Maintain or enhance native vegetation with utilization not to exceed Nevada Rangeland Monitoring Handbook levels on key species. Maintain or improve current ecological condition of native range." Maximum utilization on native key species is 50%.

### Wild Horses

b. "Initially manage rangeland habitat to support Appropriate Management Level (AML) of 3 horses in the North Steptoe Allotment as part of the Antelope HMA. Provide forage for up to 37 AUM's of wild horse use." Actual wild horse numbers will be determined by this evaluation in conjunction with monitoring data to maintain a thriving natural ecological balance and prevent deterioration of the rangeland.

### Wildlife/Riparian

c. "Manage rangeland habitat and forage condition to support reasonable numbers of wildlife as follows: mule deer 24 AUM's, antelope 18 AUM's." Utilization of key species will not exceed the levels listed in 2 a. above.

d. "Maintain or improve mule deer yearlong habitat and antelope summer habitat to good or better condition." This is also accomplished by limiting utilization to the levels listed in 2 a. above.

e. "Protect Ferruginous hawk nest sites."

f. "Improve 1.0 mile of stream riparian habitat condition to good or better."

### 3. Key Species Identification

The landscape in the North Steptoe Allotment is dominated by black sagebrush (Artemisia nova). Co-dominant species include: big sagebrush (Artemisia tridentata), shadscale (Atriplex confertifolia), budsage (Artemisia spinescens) and green rabbitbrush (Chrysothamnus viscidiflorus). Limited quantities of horsebrush (Tetradymia canescens), spiny hopsage (Grayia spinosa), winterfat (Ceratoides lanata), and ephedra (Ephedra nevadensis) are intermixed. The major grass species are: indian ricegrass (Oryzopsis hymenoides), Sandberg bluegrass (Poa secunda), bottlebrush squirreltail (Sitanion hystrix), bluebunch wheatgrass (Agropyron spicatum) and needle-and-thread grass (Stipa comata). The hills are dominated by singleleaf pinyon pine (Pinus monophylla) and Utah juniper (Juniperus utahensis).

The key forage species in the North Steptoe Allotment for sheep are black sagebrush, shadscale, budsage and winterfat.

Native perennial grasses and winterfat are key species for wild horses. However, all users will utilize perennial grasses during spring greenup. Indian ricegrass is the most preferred with Sandberg bluegrass, bottlebrush squirreltail, needle-and-thread grass and bluebunch wheatgrass as important secondary species. Forbs are critical to the diet of wildlife and provide important late spring/early summer forage but no species is present in sufficient quantity to be considered key.

The primary key species for antelope and mule deer are the same as sheep. Mule deer will utilize big sagebrush to a greater degree than sheep or antelope.

## IV. MANAGEMENT EVALUATION

### A. Purpose

The purpose of this evaluation is to assess whether current multiple use management practices are meeting the multiple use objectives for the allotment and to determine the appropriate stocking level and management system for domestic livestock and appropriate management level for wild horses.

## B. Summary of Studies Data

A permanent frequency, trend, utilization, cover, density and phenology wildlife transect was established on the North Steptoe Allotment in June 1987 in conjunction with the Nevada Department of Wildlife. The study was located in pronghorn antelope key winter-spring range. In 1987, trend studies indicated twelve species present on site. In August 1991, only ten species were identified, of which 6 demonstrated a significant downward trend at a 95% confidence interval. This downward trend is directly attributed to the persistent drought that this area of Nevada is experiencing.

Use mapping and utilization monitoring studies were conducted on the allotment in 1988, 1990, and 1991. The following tables summarize precipitation data, use pattern mapping, actual use, estimated carrying capacity and recalculated livestock preference and wild horse AUMs.

### 1. Precipitation

Data from the National Oceanic and Atmospheric Administration weather station located at Ely is being used for this evaluation due to its proximity to the North Steptoe Allotment. The normal crop year precipitation for Ely for the period 1951-1980 was 7.75". Crop yield is the effective precipitation for plant growth. It is the "crop year" precipitation that is measured to compute yield indices. The crop year precipitation is measured from September of the previous year through June of the growth year in the Intermountain Big Sagebrush Region (Sneva et. al. 1983). Table II illustrates the yield index for Ely in 1988, 1990 and 1991.

Table II. - Yield Index For Ely

Year	Crop Yield	Precipitation Index	Yield Index
1988	8.17	105%	106%
1990	7.12	92%	90%
1991	7.75	100%	100%

Annual precipitation varies from 7-12 inches. The general precipitation pattern is one of limited moisture, yet moisture is normally available during the growing season. There is a slight increase in precipitation with a rise in elevation. Much of the total precipitation occurs during the winter months in the form of snow.

2. Use Pattern Mapping Summary - acres and percent of the allotment by use category.

<u>Year</u>	<u>Slight</u> (1-20%)	<u>Light</u> (21-40%)	<u>Moderate</u> (41-60%)	<u>Heavy</u> (61-80%)	<u>Severe</u> (81-100%)
1988	9399 (74%)	1703 (13%)	1599 (13%)	0	0
1990	5478 (43%)	4204 (33%)	2509 (20%)	510 (4%)	0
1991	5734 (45%)	2134 (17%)	4833 (38%)	0	0

3. Estimated Actual Use Summary (AUM's)

<u>Year</u>	<u>Sheep</u>	<u>Wild Horses*</u>	<u>Antelope**</u>	<u>Deer***</u>
1988	308	0	5	62
1990	707	136	77	62
1991	619	77	77	62

\* Wild horses move continuously between the North Steptoe Allotment and the Schellbourne Allotment (0407) to the south. The use area is primarily east of Highway 93 and south to the Schellbourne Pass Road in the Schellbourne Allotment (see map). Wild horse use was proportioned between the two allotments by acreage. This area encompasses 15,162 acres of which 10,813 acres (71%) are within the North Steptoe Allotment. Therefore, 71% of the census counts within this area are attributed to the North Steptoe Allotment. The remaining 29% portion will be evaluated in the Schellbourne Allotment evaluation.

\*\* Antelope AUMs for 1988 and 1990 were taken from the Nevada Department of Wildlife (NDOW) Antelope Herd Composition Survey of August 16, 1988 and January 4-5, 1990. Actual antelope numbers for 1991 were requested from NDOW but were not given. Therefore, 1991 antelope AUMs are assumed to be equal to those of 1990.



\*\*\* Deer AUMs are an approximation supplied by the Egan Resource Area Wildlife Biologist after NDOW declined to provide any big game actual use numbers for the allotments in the Egan Resource Area. (NDOW letter dated 12/11/91).

4. Livestock, Wildlife and Wild Horse Estimated Carrying Capacity

<u>Year</u>	<u>Actual Use(AUMs)</u>	<u>Measured Util.(%)*</u>	<u>Yield Index</u>	<u>Adjusted Util.(%)</u>	<u>Desired Use(%)</u>	<u>Desired AUMs**</u>
1988	375	46%	1.06	49%	50%	383
1990	982	45%	.90	41%	50%	1198
1991	835	42%	1.00	42%	50%	994

\*Measured utilization was derived from utilization transect data recorded in the heaviest use zones using the Key Forage Plant Utilization Method.

\*\*The "Desired AUMs" are calculated using the following formula:

$$\frac{\text{Actual Use (AUMs)}}{\text{Adjusted Util.(\%)}} = \frac{\text{Desired Use (AUMs)}}{\text{Desired Use (\%)}}$$

5. Recalculated Livestock Preference and Wild Horse AUMs

Supply: Desired Aums (3 Year Average).....858 Aums

Demand: Adjudicated Preference .....700 Aums  
 Wild Horses (last count: 2/91).....77 Aums  
 Antelope .....77 Aums  
 Deer .....62 Aums  
 Total.....916 Aums

Deficit: .....58 Aums

Reduction: .....6%\*

\* (See Technical Recommendations)

C. Riparian Data Summary

1) Ephemeral Stream

a) Zips Cabin Creek - T23N, R64E, S13

Overall stream habitat was rated to be in poor condition in 1980 but with no livestock conflicts. Off bank stream riparian condition survey rated Zips Cabin Creek in good condition in 1991.

2) Springs

a) The following spring sources have been eliminated from monitoring due to inaccessibility of site.

T23N, R64E, S01 SWSE

T23N, R64E, S01 SENE

b) The following spring site is in good or better condition with utilization levels not exceeding 55% on perennial grasses and grass-like species and 45% on shrubs along riparian areas and mesic meadows.

T23N, R65E, S18 NWSW

D. Ecological Condition

Ecological condition was read on the allotment in 1990 at T24N, R64E, S34. The study area is a Loamy 5"- 8" P.Z. range site dominated by shadscale.

Loamy 5"- 8" P.Z.....70% or Late-seral ecological condition. The plant communities within the allotment are considered in the desired condition classes and with the desired mix of plant species. A third order soil survey has been completed on the allotment. The survey includes information such as soil productivity potentials, soil limitations, suitabilities, etc., as well as range site and woodland site data (complete information is on file in the Ely District office).

V. CONCLUSIONS

A. LAND USE PLAN OBJECTIVES

III.,D.,1.,(a) - Met

Rationale: Existing vegetation is in the desired successional stages and short term utilization is within the allowable use levels.

III.,D.,1.,(b) - Met

Rationale: Proper utilization levels are being achieved in areas where wild horses are present and the thriving natural ecological balance of the range is being maintained.

III.,D.,1.,(c) - Met

Rationale: Allowable use levels are not being exceeded and areas used by mule deer and antelope are in appropriate seral stages.

III.,D.,1.,(d) - Met

Rationale: Utilization levels are not exceeding 55% on perennial grasses and grass-like species and 45% on shrubs along stream riparian areas and mesic meadows.

III.,D.,1.,(e) - Met

Rationale: Allowable use levels are not being exceeded on key species within the allotment.

## B. Rangeland Program Summary Objectives

### Range

III.,D.,2.,(a) - Met

Rationale: Utilization on key species are within NRMH guidelines and the current ecological condition of the range is appropriate and being maintained.

### Wild Horses

III.,D.,2.,(b) - Met

Rationale: Monitoring studies indicate that the rangeland habitat is adequate to support previously established Appropriate Management Levels (AML) of wild horses.

### Wildlife

III.,D.,2.,(c) - Met

Rationale: Deer and antelope habitat is in the appropriate condition and providing for at least "reasonable numbers" of deer and antelope.

III.,D.,2.,(d) - Met

Rationale: Areas used by mule deer and antelope are in appropriate seral stages and allowable use levels are not being exceeded on key species.

III.,D.,2.,(e) - Met

Rationale: Utilization on key species within two miles of ferruginous hawk nest sites do not exceed proper use.

III.,D.,2.,(f) - Met

Rationale: 1.0 mile of stream riparian habitat is in good or better condition as surveyed in 1991.

## VI. Technical Recommendations

### A. Problem

There are no major resource problems or conflicts on this allotment at this time. All resource objectives are being met.

### B. Solutions

#### 1. Short Term Solutions/Options

Total demand by livestock (700 AUMs), wild horses (77 AUMs), deer (62 AUMs) and antelope (77 AUMs) are within the desired limits for the allotment. The six percent reduction (58 Aums) in grazing preference is considered to be within the margin of error for proper grazing by all grazing animals on the allotment. Also, the majority of the allotment has received slight to light use and sheep can be herded into areas of under-utilization. Additional monitoring data will be collected prior to the third and fifth year reevaluations to determine the final proper stocking rate for livestock and the wild horse AML. Therefore, the livestock preference will remain unchanged at 700 Aums and the wild horse AML will be established at 77 Aums.

#### 2. Long Term Solutions/Options

The Egan RPS, when revised, needs the wildlife objectives changed to reflect a more realistic number of deer and antelope on the allotment.

#### 3. Additional Monitoring Data Required

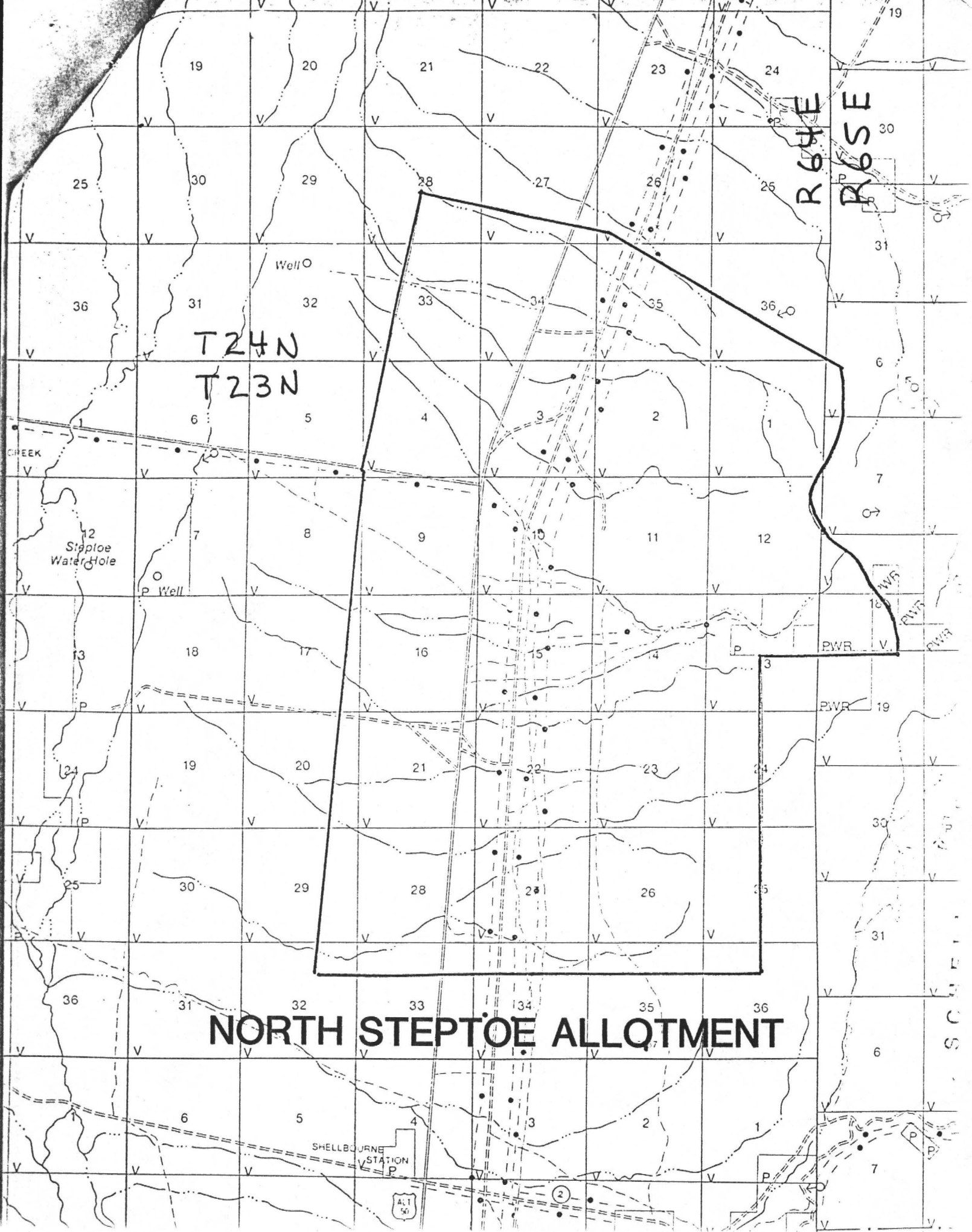
Continue to conduct key forage plant utilization on key areas every 2-3 years to ensure correct stocking rates and utilization by wildlife and wild horses.

Continue to monitor sheep, wild horse and wildlife actual use.

Establish frequency trend study(s) on the native range as funding and manpower permits.

Appendix I.-1982 Water Resource Inventory on North Steptoe

Site	Location			
UNNAMED SPRING	T23N	R64E	S01	SWSE
UNNAMED SPRING	T23N	R64E	S01	SENE
UNNAMED SPRING	T23N	R65E	S18	NWSW
ZIPS CABIN CREEK	T23N	R64E	S13	NW



T24N  
T23N

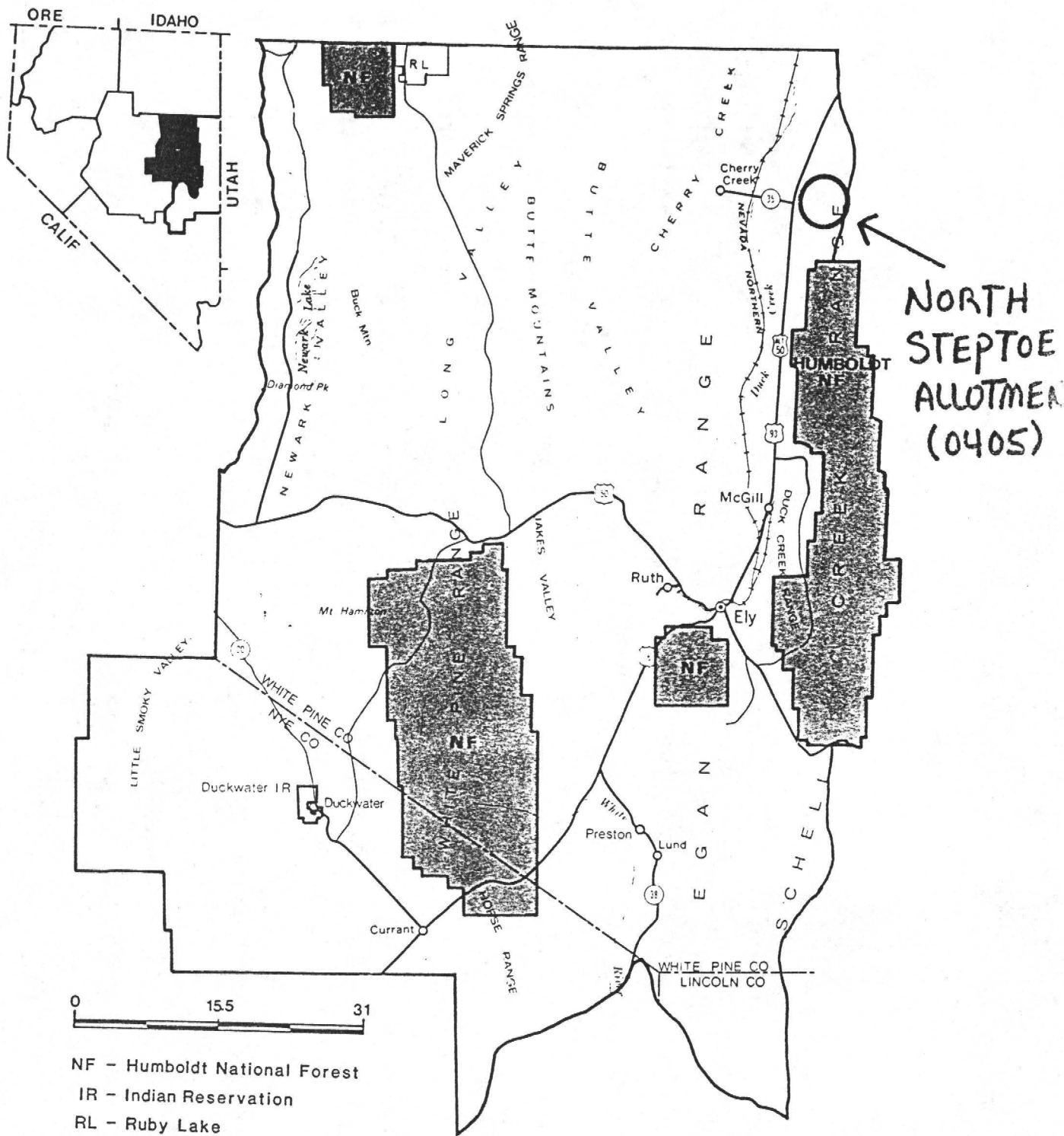
# NORTH STEPTOE ALLOTMENT

R6SE  
R6WE

SHELLBOURNE  
STATION

Alt 50

S  
C  
R  
I  
P  
T



# EGAN RESOURCE AREA LOCATION MAP