10-1793

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ely District Office
HC 33 Box 33500
Ely, Nevada 89301-9408

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

4400 (NV-046)

OCT 12 1993

Dear Participant:

We appreciate your interest in being involved in the consultation process. Enclosed for your information and review is the Draft Cottonwood Allotment Monitoring Evaluation. This is your opportunity again to provide allotment specific information and also to provide comments to the evaluation. We would appreciate receiving your information and/or comments by November 10, 1993, to allow adequate time to review all input and to adhere to our deadlines. All of the information received will be evaluated and considered prior to development of the management action selection report which completes the monitoring evaluation process.

We appreciate your participation and solicit your continued involvement in the consultation process.

Sincerely,

Gerald M. Smith

Gerald M. Smith, Manager
Schell Resource Area

1 Enclosure
1. Draft Cottonwood Allotment Evaluation (31 pp)

COTTONWOOD ALLOTMENT EVALUATION

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OCT 12 1993

COTTONWOOD ALLOTMENT
EVALUATION SUMMARY

I. INTRODUCTION

A. Allotment Name and Number: Cottonwood 00132 (Map 1)

B. Permittee: Kirkeby Ranch, Gordon A. Kirkeby

C. Evaluation Period: 1983 to 1992

D. Selective Management Category and Priority: Maintain (M) category, Medium priority

II. INITIAL STOCKING LEVEL

A. Livestock Use

1. Land Use Plan Objective (AUMs):

a. Total preference - 4,106 AUMs
b. Suspended - 0 AUMs
c. Active - 4,106 AUMs
d. Temporary Nonrenewable - None

2. Season of Use:

a. EIS - 11/01 to 5/31
b. Permit - 3/1 to 2/28

3. Kind and Class of Livestock: Cattle (cow/calf)

4. Percent Federal Range/Exchange of Use: 100%/None

B. Wild Horse and Burro Use

1. Appropriate Management Levels (AML)

The 1983 Rangeland Program Summary (RPS) document recognized an AML of 28 wild horses (332 AUMs) for the allotment.

The 332 AUMs identified in the RPS are 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." The IBLA further ruled that AML must be established through monitoring "in terms of the optimum number which results from a thriving

natural ecological balance and avoids deterioration of the range".

2. Herd Use Area

A portion of the Cottonwood Allotment (Map 1) falls within the boundaries of the Wilson Creek Wild Horse Herd Management Area (HMA).

C. Wildlife Use (Map 6)

1. Mule Deer

a. Reasonable Numbers: 119 AUMs

b. Key/Crucial Areas: None identified.

2. Pronghorn Antelope

a. Reasonable Numbers: 77 AUMs

b. Key/Crucial Areas: South Spring Valley Antelope Kidding Ground (AKG) - 9,628 acres.

3. Threatened and Endangered Species

Bald eagles and peregrine falcons may be found on the allotment any time of the year, but no special use areas have been identified. Pygmy rabbits and loggerhead shrike, category 2 candidate species may also occur on the allotment. There are no known impacts to these species as a result of livestock grazing.

III. ALLOTMENT PROFILE

A. Description

The Cottonwood Allotment is located in Lincoln County, Nevada within the Schell Resource Area of the Ely District and is approximately 60 miles southeast of Ely, Nevada. It is located in the southern end of Spring Valley, and the elevation is approximately 6,200 feet above sea level. An allotment management plan (AMP) has not been written for this allotment.

Cottonwood Allotment facilities/improvements include five fenced pastures. A 5,445 acre crested wheatgrass seeding located in the northern portion of the allotment is divided into four pastures. Water sources include, the Kirkeby Pipeline from Cottonwood Spring to water tanks located in T. 9 N., R. 67 E., Sec. 25 and

T. 9 N., R. 68 E., Sec. 30; and the Lime Range Well located at T. 8 N., R. 68 E., Sec. 26 (Map 1).

B. Acreage

1. Allotment total: 48,512 acres

2. Pastures: (Map 1)

Pasture One (Upper Seeding): 1,480 acres
Pasture Two (Middle Seeding): 1,510 acres
Pasture Three (Lower Seeding): 1,677 acres
Pasture Four (Deer Flat Seeding): 2,350 acres
Pasture Five (native range): 41,495 acres

C. Allotment Specific Objectives

1. Land Use Plan and Rangeland Program Summary

a. Livestock

(1) The short-term objective will be accomplished through managing the allowable use levels (AUL) by season of use and/or stocking levels to improve or maintain the desired vegetation community throughout the allotment including the crested wheatgrass (AGCR) seedings (Appendices I and II).

(2) The long-term objective is to improve those acres in poor or fair livestock forage condition and maintain all acres presently in good livestock forage condition by managing for those seral stages which optimize livestock forage production (Appendices I and II).

b. Wild Horses

(1) The short-term objective will be accomplished through managing the allowable use level by season of use to improve or maintain the desired vegetative community.

(2) The long-term objective is to manage for the most appropriate seral stage to provide the desired quantity, quality, variety, and density of forage in order to meet the requirements of the wild horses.

c. Mule Deer

(1) The short-term objective is to limit yearlong use on key species to 40 percent for perennial grasses, grass-like plants, and forbs and to 35 percent for shrubs if the mule deer range is in poor habitat condition. If the range is in fair condition or better, the objective is to limit yearlong use on key species to 55 percent for perennial grasses, grass-like plants, and forbs and to 45 percent for shrubs.

(2) The long-term objective is to maintain mule deer range in at least fair habitat condition by providing diversity of forage species.

d. Pronghorn Antelope

(1) The short-term objective is to limit use on key perennial grasses and forbs listed for antelope kidding ground to 30 percent until June 30, and to 40 percent yearlong; also limit yearlong use on key shrubs to 45 percent (Appendix III).

(2) The long-term objective is to improve antelope kidding ground from fair to good habitat condition (Appendix III).

e. Riparian Areas

(1) The short-term objective is to limit use on wet meadows to 50 percent for grass and grass-like species by all animals yearlong (Appendix IV).

(2) The long term objective is to manage all wet meadows for late seral stage (80-85 percent grass and grass-like plants, 10-15 percent forbs, and 5 percent shrubs).

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D. Key Species Identification

1. Uplands

a. Livestock and Wild Horses

(AGCR)	Agropyron cristatum, crested wheatgrass
(ORHY)	Oryzopsis hymenoides, Indian ricegrass
(SIHY)	Sitanion hystrix, bottlebrush squirreltail
(STCO)	Stipa comata, needle and thread
(EULA)	Eurotia lanata, winterfat

b. Mule Deer

Spring Range (Unit 115)

(STCO)	Stipa comata, needle and thread
(COME)	Cowania mexicana, Mexican cliffrose

Winter and Yearlong Range (Unit 231)

(SYMPH)	Symphoricarpos, snowberry
(PUTR)	Purshia tridentata, bitterbrush
(CELE)	Cercocarpus ledifolius, curlleaf mountainmahogany

c. Pronghorn Antelope

(PHLOX)	Phlox, Phlox
(ORHY)	Oryzopsis hymenoides, Indian ricegrass
(ARARN)	Artemisia arbuscula nova, black sagebrush

2. Riparian

(POA)	Poa sp., bluegrass
(ELCI2)	Elymus cinereus, basin wildrye
(SALIX)	Salix sp., willow

3. Key/Crucial Areas - South Spring Valley AKG

(PHLOX)	Phlox, Phlox
(ORHY)	Oryzopsis hymenoides, Indian ricegrass
(ARARN)	Artemisia arbuscula nova, black sagebrush

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IV. MANAGEMENT EVALUATION

A. Purpose

The purpose of this document is to evaluate the nature of grazing that has occurred on the Cottonwood Allotment and to measure effectiveness in meeting specific management objectives identified in the land use plan (LUP). Included will be recommendations to make specific changes in current management where these LUP objectives are not being met.

B. Summaries of Studies Data

1. Appendix V, Key Management Area Evaluation Summary (Form NV 4400-17)

2. Actual Use

a. Livestock

Actual use has ranged from a low of 1,237 AUMs to a high of 3,535 AUMs. Actual use was determined from licensed use and Actual Grazing Use Report forms submitted. Actual use by pasture was requested by the BLM from the rancher, but was never received. The season of use for the past nine years during the evaluation period has been 11/1 to 6/30. Over the past nine years use averaged 2,224 AUMs, which is 54.2% of preference (Appendix V).

b. Wildlife

Use was extrapolated from Nevada Department of Wildlife's estimates of mule deer and pronghorn antelope herd numbers. Mule deer use has ranged from a low of 59 AUMs, in 1982 to a high of 299 AUMs, in 1988. Pronghorn antelope use has ranged from a low of 48 AUMs, in 1982 to a high of 263 AUMs, in 1988. The estimated use is based on the amount of deer and pronghorn range that is on the allotment and the season the animals are on the range (Map 6).

c. Wild Horses

Several aerial censuses of the wild horse population have been conducted in the Wilson Creek HMA during the allotment evaluation

period. Numbers counted in the Cottonwood Allotment were as follows:

Date	Number in Allotment
6/83	1
6/87	7
3/88	0
3/90	14
4/91	0
8/92	0
2/93	0

On-the-ground observations over the years have suggested that there are probably more than 14 horses using this allotment at least for portions of the year. It is likely that the horses are moving seasonally from the west side of the Fortification Range to the east side, but data are lacking to substantiate this. Wild horse use is minimal in areas where forage is being over utilized, except west of the Upper Pasture. In past years trampling of Cottonwood Spring had been a problem; however, current data show that this is no longer the case.

3. Precipitation

Data for this evaluation was obtained from the National Oceanic and Atmospheric Administration weather station located at Ely, Nevada. Ely is located approximately 60 miles northwest of the allotment. That weather station best represents the climatic conditions of the allotment. The normal average annual precipitation for the last thirty reporting years was 10.32 inches with a range from 6.94 inches to 17.11 inches. Precipitation data was used in the formulation of a yield index for the calculation of a long term stocking rate (BLM Technical Reference 4400-7, Appendix III). Most of the precipitation for the Cottonwood Allotment is received during the spring, late summer, and fall.

The first step was to calculate the crop yield, the effective annual precipitation for plant growth occurring between September and June of each year. The crop yield for each

year was arrayed to determine the median long term crop yield. The median crop yield for the Ely reporting station was 8.9 inches. The individual yearly crop yields during the evaluation period were then divided by the long term median crop yield to determine a precipitation index for each year. The yield index was then determined from the precipitation index by using the linear regression equation $\hat{Y} = -23 + 1.23X$, where $\hat{Y}$ represents the yield index and X represents the precipitation index. 1/

1/ Sneva, Forest, C. M. Britton. August 1983. Adjusting and forecasting herbage yields in the Intermountain Big Sagebrush Region of the Steppe Province. Agricultural Experiment Station, Oregon State University, Corvallis. Station Bulletin 659, Page 61.

4. Utilization

a. Key Area

Key area utilization data was collected by the BLM using the key forage plant method (Appendix V).

b. Use Pattern Mapping

Use pattern mapping (UPM) was completed on the allotment for 1989, 1990, 1991 and 1992. (Maps 2 through 5)

Use pattern mapping shows a large area of nonuse in the southern portion of the allotment.

The 1979 Ocular Reconnaissance Forage Survey indicates a large area (13,460 acres) in the western portion of the allotment to be a Pinyon-Juniper vegetation zone with little or no forage available for livestock use. The 1946 range survey shows this area to have 670 AUMs of forage that was originally adjudicated for livestock use; however, because of the loss of forage, this area is no longer suitable for livestock grazing.

5. Trend

Trend for the native range will require more data before any change in trend can be determined. Two

of the seedings, Middle and Lower, are showing a downward apparent trend.

6. Range Survey Data

The 1979 Ocular Reconnaissance Forage Survey indicated that there are 1,451 AUMs available for livestock grazing.

7. Ecological Status

Ecological status was completed in May 1985 for key area (CAW01). This key area is within a shallow calcareous loam range site (028BY011NV) with a condition rating of 41% of the Potential Natural Community (PNC) by air dry weight, placing it in a mid seral stage. The mid seral stage is due to the high composition of black sagebrush (ARARN) relative to the site description. Grass production is 04% of the total production on the site. PNC for grasses on this site is 50%. ARARN production is 66% of the total production on the site. PNC for ARARN is 25-35% (Appendix II).

8. Livestock Forage Condition

Livestock forage condition studies were conducted in each of the four crested wheatgrass pastures. These studies were performed in order to determine the vegetative condition status. Two studies were read in Upper Pasture, these studies showed 6.6 AC/AUM. Two studies were also read in Deer Flat Pasture, these studies showed 2.3 AC/AUM. One study each was read in the two remaining pastures, Middle and Lower. These studies showed 7.6 AC/AUM and 5.2 AC/AUM, respectively.

9. Wildlife Habitat

The South Spring Valley Antelope Kidding Ground has been rated in fair habitat condition (Appendix III). The percent composition of grasses and forbs is low.

10. Riparian Habitat

Based on subjective evaluations during the water resources inventory completed in 1983 and a field tour conducted in 1991, riparian areas are in good condition. Cottonwood Spring and Pipe Spring are located in the bottom of large canyons on the east side of the Fortification Range. Cottonwood

Spring is developed with water flowing down the pipeline at a rate of two gallons per minute. In past years trampling of Cottonwood Spring had been a problem; however, current data show that this is no longer the case. There is no surface water at Pipe Spring. The riparian areas associated with these two springs are dominated by narrow-leaf cottonwood, sumac, chokecherry, willow, and rose. The vegetation at Cottonwood Spring includes basin wildrye and bluegrass. There are very few grasses at Pipe Spring because the overstory canopy cover is so dense. No ecological status survey has been completed on these areas (Appendix IV).

V. CONCLUSIONS

A. Referred to by number from Section III. C., Allotment Specific Objectives

1. Allotment Objectives

a. Livestock

(1) Objective Attainment Determination:

Not met.

(2) Rationale:

Use pattern mapping indicates areas of heavy use occurred in 1989 through 1992 on the allotment. The AULs on the key area (Native Range) as well as the crested wheatgrass seedings were exceeded for all years in which utilization was read.

b. Wild Horse

(1) Objective Attainment Determination:

Not Met.

(2) Rationale:

AULs of key species were exceeded. An area west of the Upper Pasture has received heavy use by wild horses.

c. Mule Deer

(1) Objective Attainment Determination:

Met

(2) Rationale:

AULs of key species were not exceeded.

d. Pronghorn Antelope

(1) Objective Attainment Determination:

Not Met

(2) Rationale:

Habitat on antelope kidding ground is in only fair condition due to low percent composition of grasses and forbs.

e. Riparian Areas

(1) Objective Attainment Determination:

Met

(2) Rationale:

Utilization has not been exceeded on Cottonwood Spring or Pipe Spring. In past years trampling of Cottonwood Spring had been a problem; however, current data indicates that this is no longer the case.

VI. TECHNICAL RECOMMENDATIONS

A. Identified Issues:

- Forage demand exceeds livestock forage available.
- Inadequate livestock distribution.
- Allowable use levels exceeded.
- Areas not at the desired seral stage.
- Seedings in less than good condition.
- Key/crucial area for pronghorn antelope in only fair condition.

B. Short Term Recommendations:

- Reduce livestock use based on analysis of monitoring data.
- Change season of use.
- Implement a livestock grazing system.
- Improve livestock distribution.
- Establish appropriate management level (AML) for wild horses.

Reduce livestock use

The desired stocking rate analysis indicates 2,248 AUMs are available for livestock use on the allotment. A reduction of 1,858 AUMs would be required since livestock forage demand exceeds the desired stocking rate. This includes a reduction of 670 AUMs because of the lack of forage due to Pinyon-Juniper encroachment in the western portion of the allotment. The active preference of 4,106 AUMs would be reduced 1,858 AUMs leaving 2,248 AUMs of active preference.

Change season of use

Change the current season of use to 11/01 through 6/30. This change will be more in line with how the allotment has been grazed during the evaluation period, and conforms with the proposed grazing system.

Implement a Livestock Grazing System

Implement a three pasture rest rotation grazing system for the crested whestgrass seedings. Upper and Middle pastures would be combined to form one pasture having 386 AUMs. Lower and Deer Flat would make up the other two pastures of the grazing system. Lower Pasture has 320 AUMs and Deer Flat Pasture has 452 AUMs. This totals 1,158 AUMS in the crested wheatgrass seedings. The implementation of a grazing system will provide year-long rest for one of the three pastures each year.

The grazing system will accommodate 226 cows from 11/01 to 06/30 for a total of 1,796 AUMs. Periods of use and treatment levels will be adjusted by pasture to account for the disproportionate carrying capacities between pastures (Table 1).

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Table 1: Grazing Schedule for the Cottonwood Allotment.

YEARLY GRAZING SCHEDULE		
PASTURE	**PERIOD OF USE**	**TREATMENT LEVEL**
YEAR 1		
NATIVE	11/01 to 03/26	1,090 AUMs
A	03/27 to 05/17	386 AUMs
B	05/18 to 06/30	320 AUMs
C	REST	
YEAR 2		
NATIVE	11/01 to 03/08	958 AUMs
C	03/09 to 05/08	452 AUMs
A	05/09 to 06/30	386 AUMs
B	REST	
YEAR 3		
NATIVE	11/01 to 03/17	1,024 AUMs
B	03/18 to 04/29	320 AUMs
C	04/30 to 06/30	452 AUMs
A	REST	
YEAR 4		
REPEAT CYCLE STARTING WITH YEAR 1		

Treatments:
A - Upper and Middle = 386 AUMs
B - Lower = 320 AUMs
C - Deer Flat = 452 AUMs

A grazing system would increase available forage over the long term (Van Poollen et al., 1979). The allowable use level will be maintained at 60 percent.

Improve livestock distribution with herding, salting, and water hauling.

The use pattern map from 1989 through 1992 indicates areas of heavy use. The heavy use areas constitute less than 10% of the total allotment

acreage. Heavy use could be alleviated with increased herding, salting no closer than 1/4 mile from water, and water hauling. One recommended water haul site would be in T. 8 N., R. 68 E., Sec. 4 SW1/4. Pumping of the Lime Range Well will also improve livestock distribution (Map 7).

Establish appropriate management level (AML) for wild horses.

Based on census data, wild horses are using the allotment approximately 4 months of the year during the growing season, from March to June.

Based on 1990 utilization data and census data, wild horses were the primary contributors to heavy utilization levels on a portion of the allotment west of the Upper Pasture. There were 14 horses counted in March 1990. To reduce utilization levels from 70% to 55% on grasses, a reduction to 11 horses (44 AUMs) is necessary in order to meet the short-term objectives. AML for the allotment is 11 horses (44 AUMs) for four months, March to June.

C. Long-Term Recommendations:

Construct a water pipeline.

Construct a water pipeline from the Lime Range Well located in T. 8 N., R. 68 E., Sec. 23 to a water tank in T. 8 N., R. 68 E., Sec. 15 (Map 7).

Seeding Maintenance.

Perform seeding maintenance on Middle and Lower seedings. This would provide additional forage for livestock while meeting the long-term objective established for the seedings.

D. Additional Monitoring

Establish key areas in the seedings in order to monitor condition.

Establish a key area on native range within that portion of the Wilson Creek HMA.

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APPENDIX I

ALLOTMENT: COTTONWOOD - LIVESTOCK OBJECTIVES (Seedings)

				PRESENT SITUATION			LONG TERM OBJECTIVE				SHORT TERM OBJECTIVE	
Study No.	Key Area Location	Ecological Site No.	Key Species	Key Spp % Comp By Weight	Livestock Forage Condition	Maintain or Improve	Key Spp % Comp By Weight	Livestock Forage Condition	Allow-able Use Level	Season of Use	Met or Not Met	Rationale
C01	Upper Pasture	N/A	AGCR	79%	Good	Maintain	79%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded
C02	Upper Pasture	N/A	AGCR	61%	Good	Improve	>70%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded
C03	Deer Flat Pasture	N/A	AGCR	71%	Good	Maintain	>71%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded
C04	Deer Flat Pasture	N/A	AGCR	79%	Good	Maintain	79%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded
C05	Lower Pasture	N/A	AGCR	73%	Good	Maintain	>73%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded
C06	Middle Pasture	N/A	AGCR	50%	Fair	Improve	70%	Good	60%	11/01-06/30	Not Met	Allowable Use Levels Exceeded

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APPENDIX II

ALLOTMENT: COTTONWOOD - LIVESTOCK OBJECTIVES (Native)

				PRESENT SITUATION			LONG TERM OBJECTIVE			SHORT TERM OBJECTIVE		
Study No.	Key Area Location	Ecological Site No.	Key Species	Key Spp % Comp By Weight	Seral Stage (% of PNC)	Maintain or Improve	Key Spp % Comp By Weight	Seral Stage (% of PNC)	Allowable Use Level	Season of Use	Met or Not Met	Rationale
CAW01	T. 9 N., R. 68 E., Sec 14	028BY011NV	ORHY EULA ARARN	2 1 66	Mid 41	Improve	5 5 <66	Late 55 - 60	55% 45% 45%	Yearlong	Not Met	Allowable Use Level Was Exceeded

APPENDIX III

ALLOTMENT: COTTONWOOD - WILDLIFE OBJECTIVE

			PRESENT SITUATION	LONG TERM OBJECTIVE		SHORT TERM OBJECTIVE			
Study No.	Key Area Location	Key Species	Habitat Condition Rating 1/	Maintain or Improve	Habitat Condition Improve	Allowable Use Level	Season of Use	Met or Not Met	Rationale
South Spring Valley AKG	T. 9 N., R. 68 E., Sec. 14	PHLOX ORHY ARARN	42(Fair)	Improve	>61% (good)	40% 40% 45%	Yearlong	Not Met	Habitat condition is less than good

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APPENDIX IV

ALLOTMENT: COTTONWOOD - RIPARIAN OBJECTIVES

				PRESENT SITUATION		LONG TERM OBJECTIVE			SHORT TERM OBJECTIVE			
Study No.	Key Area Location	Ecological Site No.	Key Species	Key Spp % Comp By Weight	Seral Stage (% of PNC)	Maintain or Improve	Key Spp % Comp By Weight	Seral Stage (% of PNC)	Allowable Use Level	Season of Use	Met or Not Met	Rationale
Pipe Spring	T. 8 N., R. 67 E., Sec. 3, SWSE	Unknown	SALIX	No Ecological Status Survey Completed to Date					50%	Yearlong	Met	Allowable Use Levels Not Exceeded
Cotton-wood Spring	T. 9 N., R. 67 E., Sec. 27,SENW	Unknown	POA ELCI2 SALIX	No Ecological Status Survey completed to Date					50% 50%	Yearlong	Met	Allowable Use Levels Not Exceeded

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APPENDIX V

STOCKING LEVEL CALCULATION PROCEDURES
COTTONWOOD ALLOTMENT

The desired stocking level for the Cottonwood Allotment was determined using the following formula (BLM Technical Reference 4400-7):

$$\frac{\text{Active Use (AUMs)}}{\text{Adjusted Utilization}} = \frac{\text{Desired Actual Use (AUMs)}}{\text{Desired Utilization}}$$

Actual livestock use and utilization data was collected for the allotment between 1984 and 1992. The yield index discussed in a previous section was multiplied by the actual recorded utilization level. The result of this is a utilization level normalized by precipitation. The normalized utilization level is used as a guide. The average desired use AUMs for the evaluation period is 2,248. This is the desired stocking rate for the Cottonwood Allotment. Refer to Table I for specific monitoring data.

TABLE I

CALCULATED LIVESTOCK STOCKING RATES

Year Past	Estimated Livestock AUMs	Livestock Actual Utilization	Yield Index	Adjusted Utiliz	Desired Utiliz	Desired Use AUMs
1984	1,840	74%	.89	65.9%	60%	1,675
1985	2,440	72%	1.37	98.6%	60%	1,485
1986	3,535	*	1.07	0.0%	60%	**
1987	2,188	*	0.96	0.0%	60%	**
1988	2,800	*	0.60	0.0%	60%	**
1989	2,127	70%	0.60	42.0%	60%	3,039
1990	1,237	70%	0.48	33.6%	60%	2,209
1991	1,922	67%	0.53	33.5%	60%	3,248
1992	1,925	76%	0.83	63.1%	60%	1,830

*Livestock Actual utilization data was not collected.
** Desired Use AUMs were not calculated.

Because the permittee didn't submit actual use reports by pasture as requested, the following method was used to determine the initial stocking rate by pasture. The desired stocking rate formula (DSRF) was used to determine the carrying capacity of the allotment, 2,248 AUMs. Livestock forage condition studies were ran in each of the crested wheatgrass pastures, this totals 1,158 AUMS (see Section IV. B. 8.). The number of AUMs available in each pasture was subtracted from the total number of AUMs available for the allotment as determined using the DSRF (2,248 - 1,158 = 1,090) this remaining 1,090 AUMs will be used as the initial stocking rate for the native range.

COTTONWOOD ALLOTMENT (00132)

MAP 1

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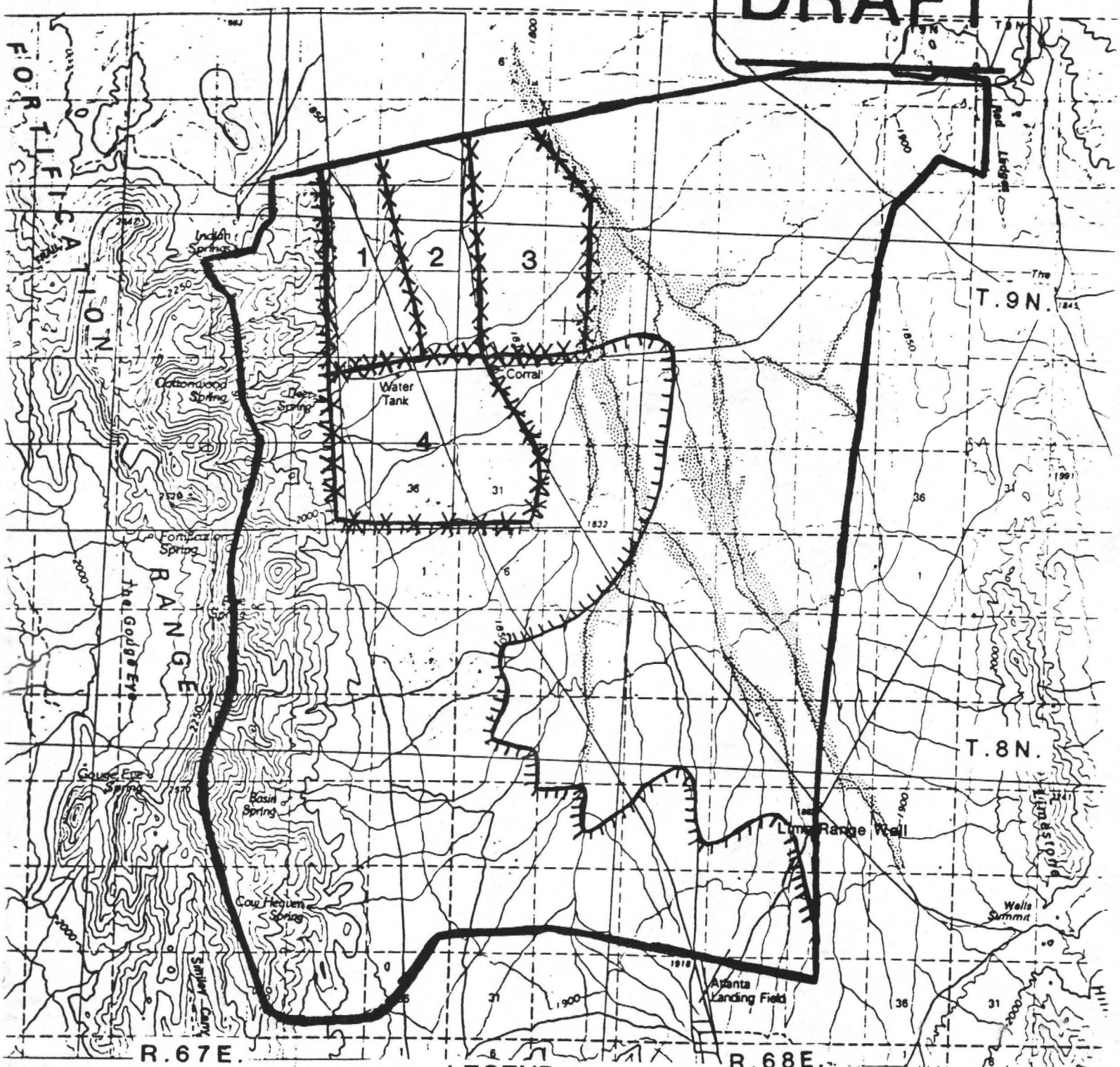


LEGEND

Wilson Creek HMA Boundry

Upper Pasture – 1

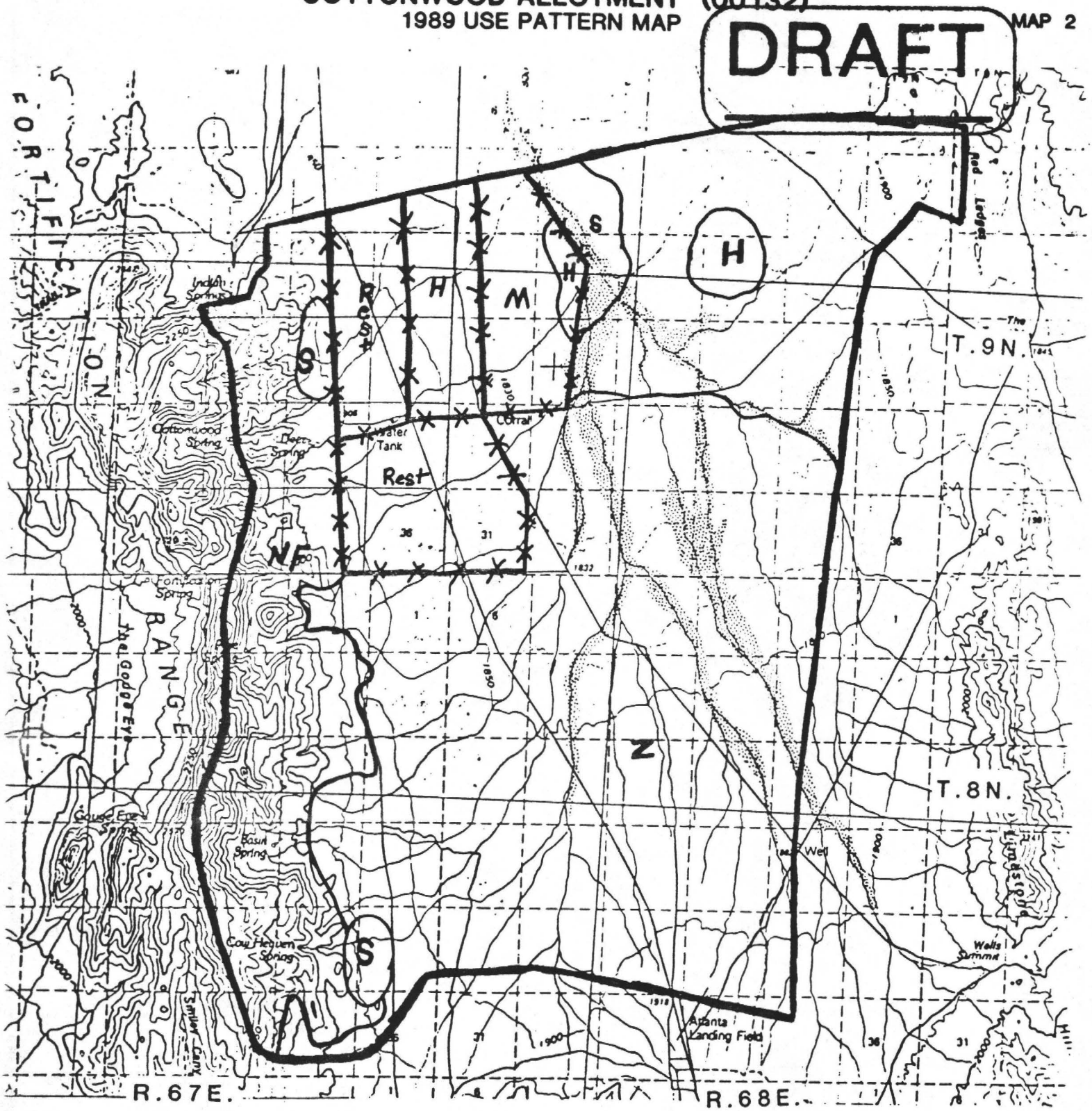
Middle Pasture – 2

Lower Pasture – 3

Fence X-X-X-X-X

COTTONWOOD ALLOTMENT (00132)
1989 USE PATTERN MAP

MAP 2



USE LEVEL KEY

S SEVERE (81-100%)

H HEAVY (61-80%)

M MODERATE (41-60%)

L LIGHT (21-40%)

SL SLIGHT (1-20%)

NF ZERO (No forage Available)

Z ZERO (Forage Available But No Use)

COTTONWOOD ALLOTMENT (00132)
1990 USE PATTERN MAP

MAP 3

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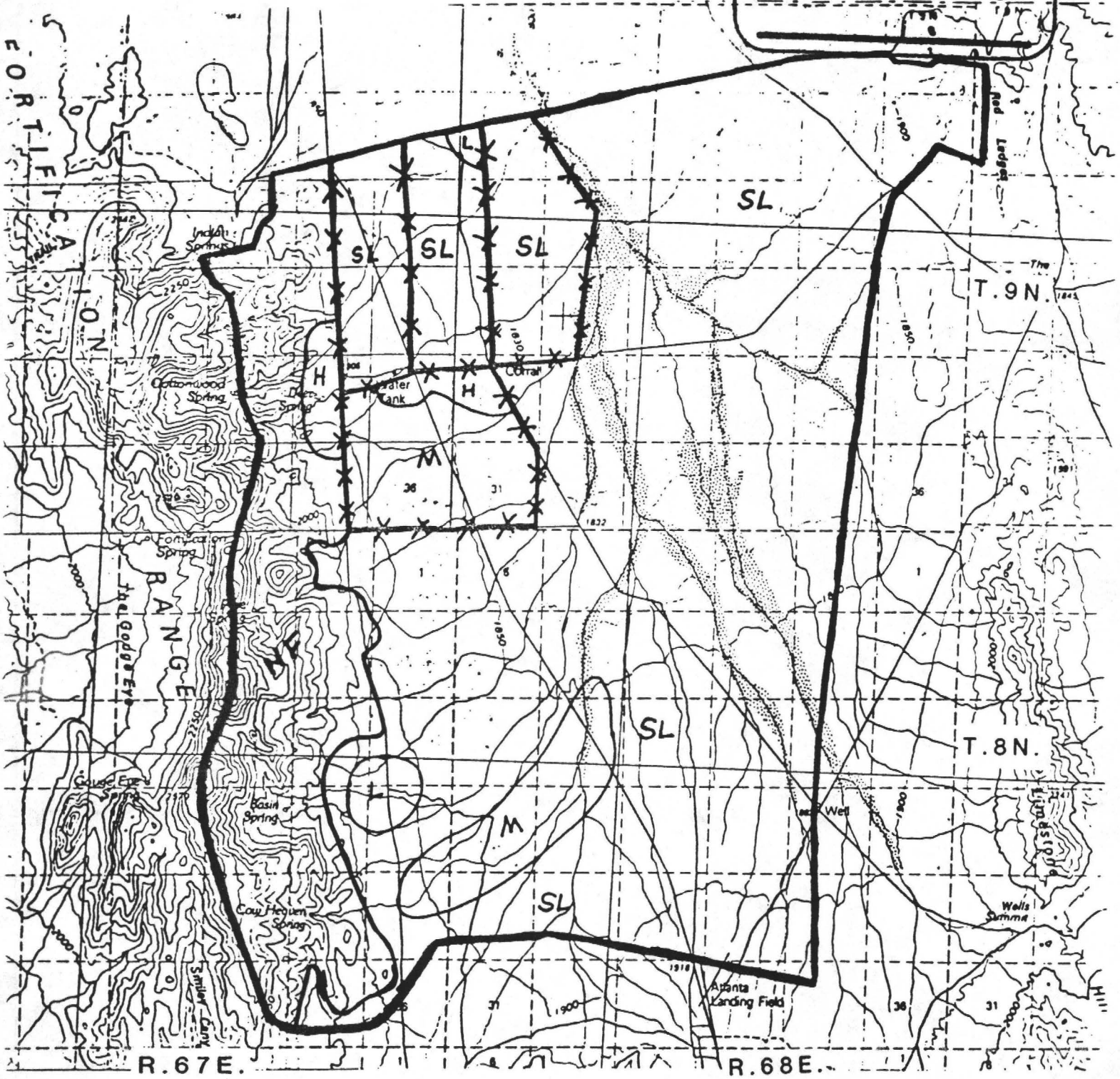

USE LEVEL KEY

S SEVERE (81-100%)

H HEAVY (61-80%)

M MODERATE (41-60%)

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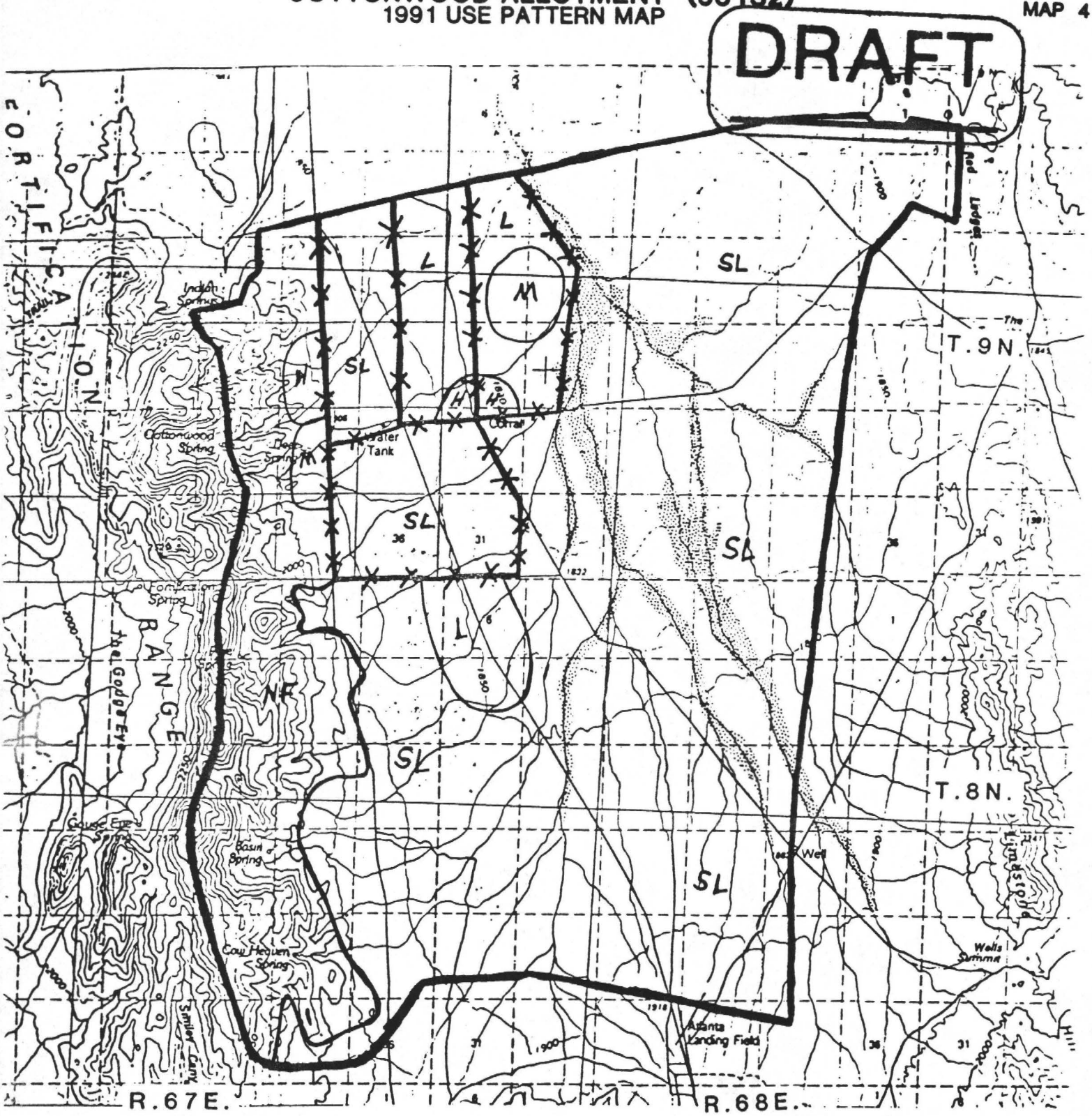
NF ZERO (No forage Available)

Z ZERO (Forage Available But No Use)

COTTONWOOD ALLOTMENT (00132)
1991 USE PATTERN MAP

MAP 4



USE LEVEL KEY

S SEVERE (81-100%)

H HEAVY (61-80%)

M MODERATE (41-60%)

L LIGHT (21-40%)

SL SLIGHT (1-20%)

NF ZERO (No forage Available)

Z ZERO (Forage Available But No Use)

COTTONWOOD ALLOTMENT (00132)
1992 USE PATTERN MAP

MAP 5

USE LEVEL KEY

S SEVERE (81-100%)

H HEAVY (61-80%)

M MODERATE (41-60%)

L LIGHT (21-40%)

SL SLIGHT (1-20%)

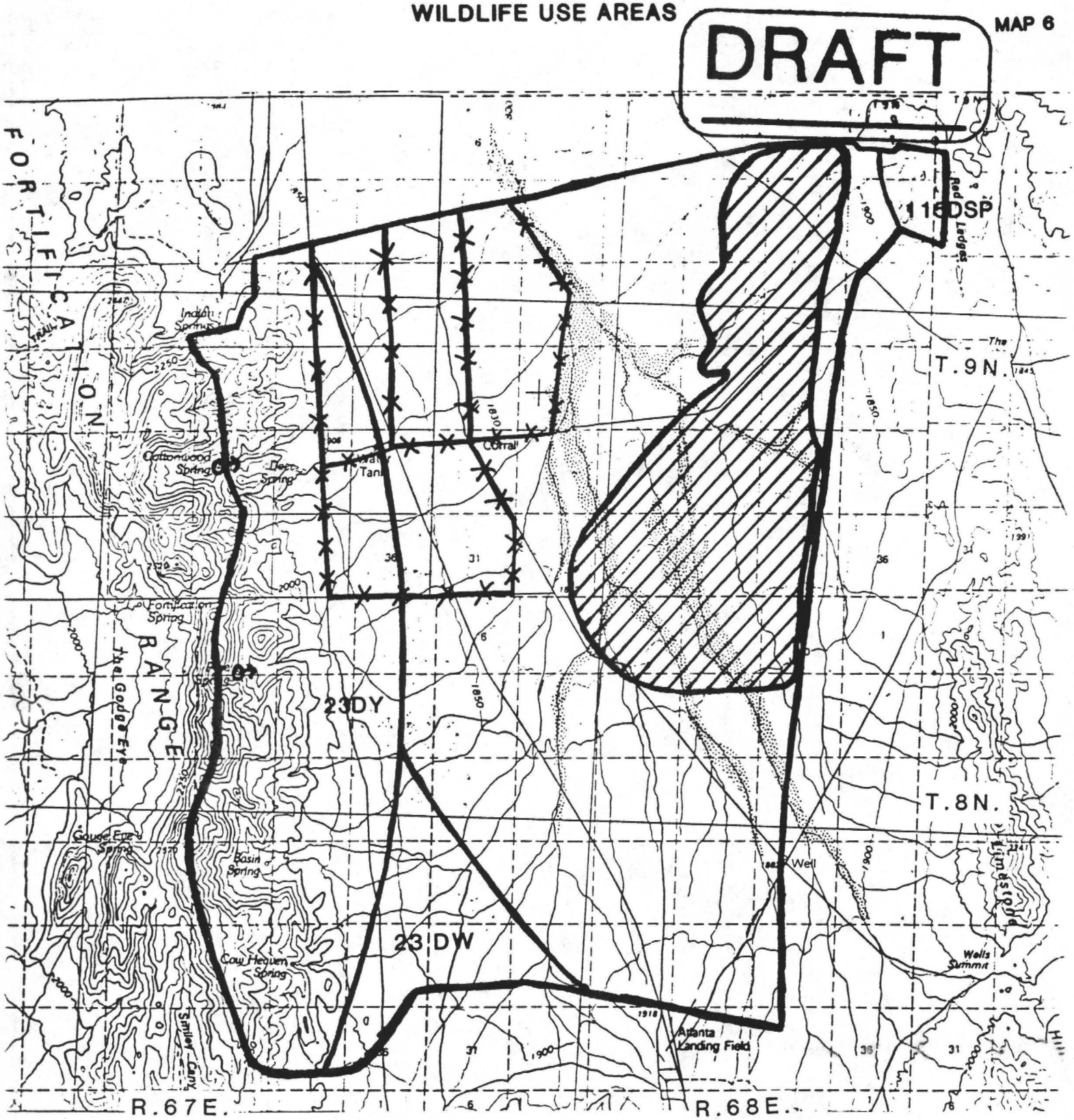
NF ZERO (No forage Available)

Z ZERO (Forage Available But No Use)

COTTONWOOD ALLOTMENT (00132)

WILDLIFE USE AREAS

MAP 6



LEGEND

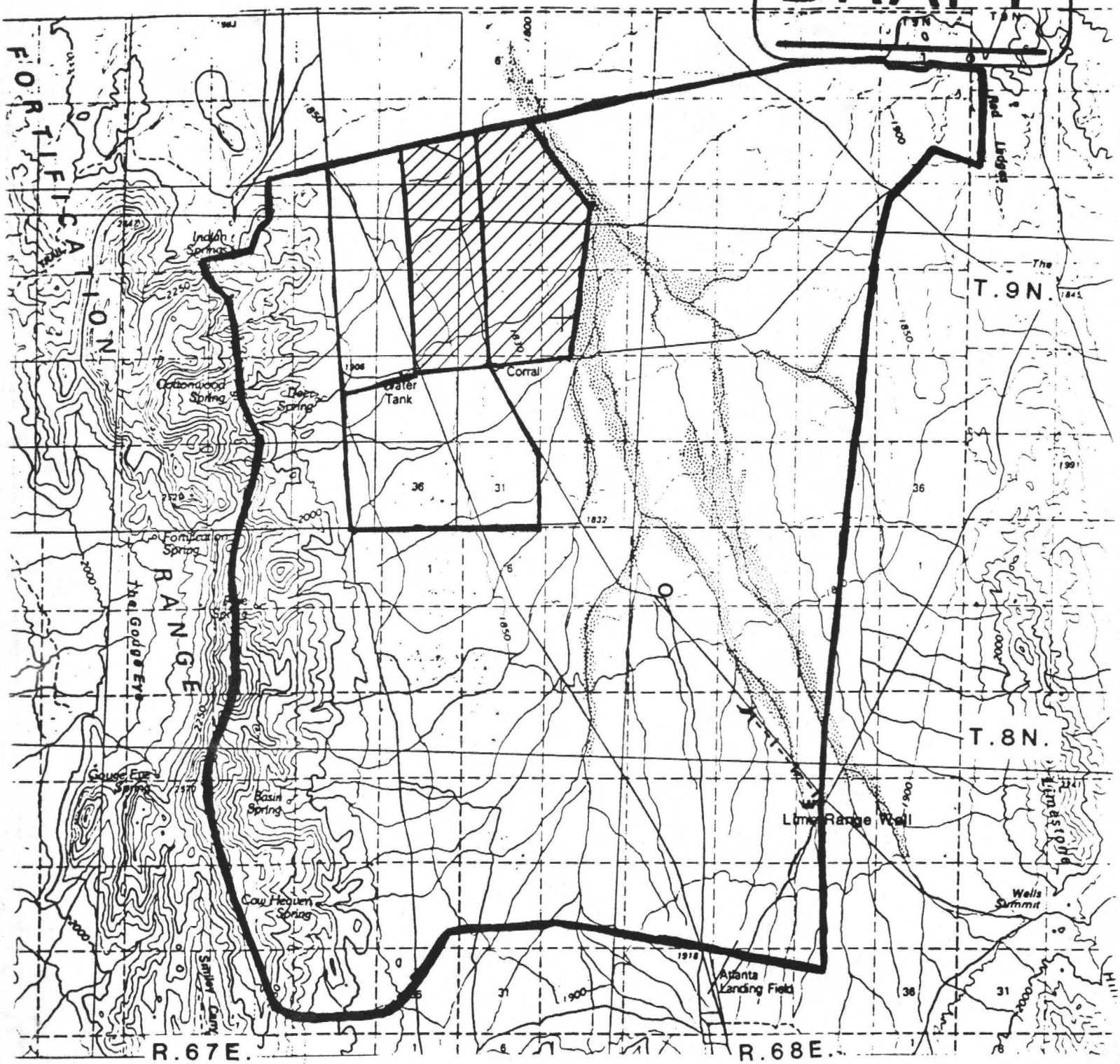
DSP	Deer Spring Range		Antelope Kidding Ground
DW	Deer Winter Range	⟿	Spring Riparian Area
DY	Deer Yearlong Range		

COTTONWOOD ALLOTMENT (00132)

Proposed Range Improvements

DRAFT

MAP 7



LEGEND

Seeding Maintenance

Pipeline

Water Haul Point O