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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Ely District Office
HC 33 Box 33500
Ely, Nevada 89301-9408



IN REPLY REFER TO:

4120 (NV-046)

OCT 4 1995

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

Dear Ms. Lappin:

Enclosed, for your information and review, is the draft Forest Moon Allotment Monitoring Evaluation. We appreciate your interest in being involved in the consultation process. 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 October 27, 1995, to allow adequate time to review all input and adhere to our schedule. All of the information received will be evaluated and considered prior to the 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, Manager
Schell Resource Area

FOREST MOON ALLOTMENT EVALUATION

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FOREST MOON ALLOTMENT EVALUATION SUMMARY**I. INTRODUCTION**

- A. Allotment Name and Number: Forest Moon 01010 (See Maps 1 and 2)
- B. Permittee: John E. Gurley
- C. Evaluation Period: 1989 - 1994
- D. Selective management category and priority: M category, low priority.

II. INITIAL STOCKING LEVEL**A. Livestock Use:**

1. Land Use Plan

- a. Grazing Preference: 4,027 AUMs (N-4): 3,727, (N-6): 300
- b. Suspended Preference: 47 AUMs (N-6)
- c. Permitted Use: 3,980 AUMs (3,727 AUMs N-4, 253 AUMs N-6)

2. Season of Use

- a. EIS (N-4 and N-6) - 3/01 to 2/28
- b. Permittee Use - 10/06 to 02/28 and 03/01 to 8/30

3. Kind and Class of Livestock

- a. Cattle (Cow/Calf)

4. Percent Federal Range/Exchange of Use

- a. 100% Federal Range/No Exchange of Use

- 5. Other Information: John Gurley leased his ranch operation to Dan Halstead in 1985. Prior to that the allotment had three years of nonuse. Dan Halstead's lease expired on 12/31/91 and livestock have not used the allotment since.

B. Wild Horse and Burro Use (See Map 3)

- 1. Appropriate Management Levels: The Schell Resource Area Record of Decision (ROD) set the initial stocking level at the number counted in the 1983 census. The Schell Resource Area Rangeland Program Summary (1987) recognized an AML of 164 AUMs for wild horses in the Forest Moon Allotment. The AML was established for administrative convenience as an initial stocking level. The Bureau is actually managing for a thriving natural ecological balance in implementing the land use plan through the evaluation of monitoring data. Through this evaluation, an AML will be established based on monitoring data.
- 2. Herd Management Areas within the allotment: A portion of the allotment is within the Seaman Herd Management Area (HMA). Horse use has been observed throughout the central

1 - 3

portion of the allotment, in the northern portion of the Seaman HMA.

C. Wildlife Use (See Map 4)

1. Mule Deer:

- a. Reasonable Numbers: 1,491 AUMs
- b. Key/Critical Areas: Key deer winter range occurs in the northwestern (KDW-1A, Perish Spring, 2,664 acres) and southwestern (KDW-1A, Horse Spring, 7,742 acres) portions of the allotment, in the Grant Mountain Range.

2. Pronghorn Antelope:

- a. Reasonable Numbers: None identified
- b. Key/Critical Areas: None identified. In 1984, 80 pronghorn antelope were released in White River Valley, and in 1985 another 36 were released. In addition, 104 antelope were released in Garden Valley

3. Threatened and Endangered Species:

Peregrine falcons (endangered) and bald eagles (threatened) may be found on the allotment any time of the year, but no special use areas have been identified.

Ferruginous hawks, a category 2 candidate species, nest on the allotment. There were at least two active nests on the allotment in 1988. Category 2 candidate species include those for which information now in the possession of the US Fish and Wildlife Service indicates that proposing to list them as endangered or threatened species is possibly appropriate, but further study is needed prior to doing so. Other category 2 candidate species which have been identified by the U.S. Fish and Wildlife Service as potentially occurring in the general area include: Eastwood's milkweed, Asclepias eastwoodiana; White River wood nymph butterfly, Cercyonis pegala ssp.; northern goshawk, Accipiter gentilis; mountain plover, Charadrius montanus; and white-faced ibis, Plegadis chihi.

Moon River Spring is located on private property adjacent to the allotment. This spring contains the Moormon White River Springfish, Crenichthys baileyi thermophilus, a category 2 candidate species.

III. ALLOTMENT PROFILE

A. Description

The Forest Moon Allotment is located in the northeastern portion of Nye County, Nevada within the Schell Resource Area of the Ely District. The allotment is approximately 90 miles southwest of Ely, Nevada and is in the west central portion of White River Valley (see maps 1 and 2). The allotment is flanked on the west by the Humboldt National Forest boundary and Tonopah Resource Area boundary in the Grant Mountain Range, and the Wayne E. Kirch Wildlife Management Area along the White River to the east. The

allotment borders "Reserved for Wildlife" and Hardy Springs Allotment to the north, Sunnyside Allotment to the east and Needles Allotment to the south. The "Reserved for Wildlife" allotment was established when the Wayne Kirch Wildlife Area was created. It is not clear what the intent for the Reserved for Wildlife area was but very little wildlife use is made there due to lack of appropriate vegetation and water.

The elevation ranges from 5,200 feet above sea level on the valley floor to 9,000 feet above sea level in the Quinn Mountain Range.

Forest Moon Allotment is located in both the N-4 Grazing District (Ely) and the N-6 Grazing District (Battle Mountain). There are 99,968 acres located in the N-4 district and 6,879 acres in the N-6 district. All permitted use authorizations are the responsibility of the N-4 district. The allotment had been run in conjunction with the Humboldt National Forest, they had permitted 152 head (532 AUMs) from 6/16 to 9/03. The Forest Service permit was not renewed due to non-use.

The allotment is fenced along most of the eastern border by private land and the Wayne E. Kirch Wildlife Management Area Boundary fences. A few interior boundary fences separate small private land parcels from the allotment. The southwest boundary of the allotment is partially fenced along the Forest Service boundary. (See Map 5 for improvements.)

An Allotment Management Plan (AMP) was written in 1970 but was never agreed to or implemented.

The primary water source is Forest Home Creek which flows from Forest Home Spring (T. 59 E., R. 6 N., Sec. 18, NESE). The spring produces approximately 1.2 to 4.2 cubic feet per second (CFS). In the early 1900s, the spring source was dug out to a depth of approximately 40 feet which apparently increased the flow tremendously. The entire length of the "creek" has been ditched at some point. A total of 14 miles of ditches direct water flow to a series of reservoirs (See Map 5). In the past the definition of riparian habitat included all artificially created riparian areas including ditches, overflow ponds, etc. As a result, the Schell Resource Area identified the ditch system as a stream and tentative riparian objectives were established. However, the permittee has the water rights and therefore the right to maintain the associated ditch system. To set riparian objectives on a ditch which has artificially created riparian areas associated with it is not realistic. Therefore, no riparian objectives were set because objectives may never be met.

The water flows from the spring approximately three miles to the private land at Forest Home, T. 59 E., R. 6 N., Secs. 22 and 23. There are three diversion ditches at this point. Below this point there are no riparian species because the ditches are only flowing for short periods of time when reservoirs are being filled.

The first ditch heads northeast from Forest Home reservoir No. 4, a distance of four miles. There are three reservoirs on this ditch, the center reservoir is called Forest Home No. 5.

The second or middle ditch heads in a south-easterly direction for a distance of four miles. There are three reservoirs along this portion, the first of which has been washed out.

The third ditch heads south for five miles then east a mile and one half. There are three reservoirs on this ditch line, the first is Forest Home Reservoir No. 2, the second is Forest Home Reservoir No. 1, the third is Forest Home Reservoir No. 3.

Some riparian vegetation occurs in areas where the ditches have washed out along the portion from the spring source to the private land at Forest Home. The majority of this area was once private hay meadow created by flood irrigation. These lands were reacquired through eminent domain.

The Nevada Division of Wildlife has identified the "stream" as fisheries habitat but fish are only known to occur along a two hundred yard stretch (T. 5 N., R. 59 E., Sec. 22 NW). At this site there is evidence of a breached dam and the water now flows through the bottom of the drainage instead of the ditch system. Just below this breached dam, the water returns to the ditch. The trout had evidently been planted at this location when it was an active homestead. Before the ditch system was created, water apparently never made it to the private land at Forest Home.

There are seven known springs with associated riparian areas occurring on the Forest Home Allotment. Mountain Spring (T. 6 N., R. 59 E., Sec. 29 SWSW), Horse Spring (T. 6 N., R. 59 E., Sec. 31 SESW), Little Spring (2 springs) (T. 6 N., R. 59 E., Sec. 32 NWSE), South Horse Spring (T. 5 N., R. 59 E., Sec. 7 NWNW), Unnamed Spring (T. 6 N., R. 59 E., Sec. 16 SWNE), Egan Spring (T. 6 N., R. 61 E., Sec. 8 NWSW) and Forest Home Spring (T. 6 N., R. 59 E., Sec. 18 NESE, the source of Forest Home ditch system).

Additional water sources include one well (PU Well), which is used when sheep are trailed through the allotment.

The wild horse grazing use primarily occurs in the central portion of the allotment. Along the northern portion of the Golden Gate Range, the wild horses primarily use the forage south of the second ditch system, watering at the reservoirs.

Cattle primarily utilize the central portion of the allotment, watering at the reservoirs on the first and second ditch systems.

The adjudicated White River Sheep Trail runs through the allotment. Sheep are currently trailed by two permittees through the allotment in the fall and the spring. Sheep water at PU well and Forest Home Reservoir #3.

A portion of the Riordan's Well Wilderness Study Area (WSA) extends into the north western portion of the allotment (see map 3).

B. Acreage

1. Allotment total: 106,847 acres (99,968 acres in N-4 and 6,879 acres in N-6)
2. Pastures: None

C. Allotment Specific Objectives

1. The allotment specific objectives tie the Land Use Plan and Rangeland Program Summary objectives together into quantified objectives for this allotment.

a. Livestock (See Appendix I)

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

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.

b. Wild Horses (See Appendix I)

The short term objective will be accomplished through managing the allowable use level (AUL) to improve or maintain the desired vegetative community.

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

c. Mule Deer (See Appendix II)

The short term objective is to limit use on key species listed for mule deer to 55 percent for perennial grasses, grass-like plants, and forbs, and to 45 percent for shrubs yearlong.

The long term objective is to maintain a diversity index of forage species on mule deer range at .80 or higher to achieve at least fair habitat condition.

d. Pronghorn Antelope

The short term objective is to limit use on key species listed for pronghorn antelope to 55 percent for perennial grasses, grass-like plants, and forbs, and to 45 percent for shrubs yearlong.

The long term objective is to maintain vegetation quality rating and diversity index of forage species on pronghorn antelope range at over 30 points to achieve at least fair habitat condition.

e. Ferruginous Hawks (See Appendix II)

The short term objective is to limit use on winterfat near occupied ferruginous hawk nests to 45 percent by all animals yearlong.

The long term objectives are to maintain integrity of existing pinyon/juniper "stringers" near winterfat

stands as nesting habitat, and to manage winterfat stands in mid to late seral stage.

f. Riparian Areas (See Appendix III)

The short term objective is to limit use on wet meadows and stream riparian areas to 50 percent for grass and grass-like species by all animals yearlong.

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).

g. Wilderness Study Areas

The short term objective is to maintain/improve the current vegetation within the wilderness study area to provide future wilderness values and biodiversity.

The long term objective is to manage the vegetative community to enhance or restore the natural ecosystem.

2. Activity Plan: None implemented.

D. Key Species Identification

1. Uplands: (See Appendix I)

a. Livestock and Wild Horses

FMR1: winterfat Eurotia lanata (EULA5)
Indian ricegrass Oryzopsis hymenoides (ORHY)

FMR2: Indian ricegrass Oryzopsis hymenoides (ORHY)
black sagebrush Artemisia arbuscula nova (ARARN)*

FMR3: Indian ricegrass Oryzopsis hymenoides (ORHY)
black sagebrush Artemisia arbuscula nova (ARARN)*

* black sagebrush is included because it is a major component of the plant community.

b. Mule deer

KDW-1A (Grant Range):
cliffrose Cowania mexicana (COME5)
antelope bitterbrush Purshia tridentata (PUTR2)
needle and thread grass Stipa comata (STCO4)

c. Pronghorn Antelope

bud sagebrush Artemisia spinescens (ARSP5)
black sagebrush Artemisia arbuscula nova (ARARN)
shadscale Atriplex confertifolia (ATCO)
globemallow Sphaeralcea spp. (SPHAE)
buckwheat Eriogonum spp. (ERIOG)
phlox spp. (PHLOX)

2. Riparian Areas

All grass and grass-like species

sedge Carex spp. (CAREX)
rush Juncus spp. (JUNCU)
bluegrass Poa spp. (POA++)

IV. MANAGEMENT EVALUATION

A. Purpose:

The purpose of this document is to evaluate the nature of grazing that has occurred on the Forest Moon 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 IV
(See Form No. 4400-17)
2. Actual Use (See Appendix V)

a. Livestock:

Actual use was estimated from licensed permitted use and actual use reports since 1985. When use has occurred, it ranged from 1,348 AUMs to 1,625 AUMs.

b. Wild Horses: (See Appendix V)

Wild horse use was estimated from aerial censuses of the Seaman herd:

<u>Date</u>	<u>Number Counted</u>
6/87	60
3/89	75
4/91	37
8/92	106
5/93	21
9/94	76
12/94	35
3/95	40

c. Wildlife: (See Appendix V)

Mule deer use was extrapolated from Nevada Division of Wildlife's (NDOW) estimates of herd numbers. The estimated use is based on the amount of deer range that is on the allotment and the season the animals are on that range. The number of AUMs listed in Appendix V is based on a normal winter when most of the deer in the herd migrate south onto the winter range. Since 1986, the winters have been more mild, and very few deer migrated onto Forest Moon Allotment; therefore, the actual wildlife use for the past five years was considerably less than what is shown in Appendix V.

Pronghorn Antelope have been observed on the allotment, but no formal survey has been conducted to determine the extent of use. Nevada Division of

Wildlife augmented antelope in 1984 into White River.

3. Precipitation

Precipitation data for this evaluation was obtained from the National Oceanic and Atmospheric Administration weather station located at Sunnyside, Nevada. The average annual precipitation for the last fourteen reporting years was 11.30 inches with a range from 6.94 inches to 17.11 inches.

Precipitation data was used in the formulation of a yield index in the calculation of a long term stocking rate. 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 Sunnyside reporting station was 8.78 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/} Table 1 shows the precipitation and yield indexes for the Sunnyside data.

^{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, Pages 61.

Table 1. Crop Yield, Precipitation Index and Yield Index for Sunnyside Reporting Station, Nevada.

Year	Crop Yield	Precipitation Index	Yield Index
1978	10.39	118	123
1979	9.46	108	110
1980	9.25	105	107
1981	10.58	121	125
1982	8.52	97	96
1983	12.02	137	145
1984	6.42	73	67
1985	7.15	81	77
1986	8.92	102	102
1987	7.74	88	85
1988	12.33	140	150
1989	6.37	73	66
1990	6.49	74	68
1991	7.46	85	82
1992	9.80	112	114
1993	9.49	108	110

4. Utilization

a. Key Area

Three key management areas have been established on the allotment (see Appendix 1 and Map 2). Key management area utilization levels were used in the calculation of the stocking rate for the allotment.

A yield index is not used to "correct" utilization levels. The actual measured utilization is used to determine if the allowable use level objective has been exceeded for a given use area. The index is used to account for the affect of yearly climatic variations in the calculation of an appropriate stocking level for all users. Since it is not feasible to adjust numbers of all grazing animals (livestock, wildlife, and wild horses) on a yearly basis to respond to annual fluctuations in precipitation, an average long-term carrying capacity was determined based on a "normal" year. The affects of precipitation on carrying capacity must be considered. After review of existing research on this subject, the Schell Resource Area chose the Sneva and Hyder model as the most appropriate for this region. Table 2 shows measured and normalized utilization levels.

Table 2. Key Area Utilization, Measured and Normalized							
		Measured Utilization			Normalized Utilization		
Year	Yield Index	Key Area			Key Area		
		FMR1	FMR2	FMR3	FMR1	FMR2	FMR3
1987	85	ORHY 51%	-	-	ORHY 43%	-	-
1989	66	ORHY 76% EULA 32%	ORHY 60%	ORHY 60% ATCO 50%	ORHY 50% EULA 21%	ORHY 40%	ORHY 40% ATCO 33%
1990	68	ORHY 75% EULA 32% SIHY 65%	ORHY 44%	ORHY 60%	ORHY 51% EULA 22%	ORHY 30%	ORHY 41%

b. Use Pattern Mapping

Use pattern mapping was completed for the allotment for grazing years 1989, 1990 and for part of 1993 and 1994 (see Maps 6, 7, 8, and 9). The use pattern map for those years showed areas of heavy and severe use. Utilization was made by both livestock and wild horses in 1989 and 1990. Livestock were not present on the allotment in 1993 or 1994 so all use is attributable to wild horses for those years.

5. Trend

Trend has not been determined. Frequency was read at Key Area FMR-3 in 1989.

6. Range Survey Data

The 1979 Ocular Reconnaissance Forage Survey indicated that there were 2,703 total AUMs within the allotment based on suitability, competitive and non competitive uses.

7. Ecological Status:

Ecological status was completed using the double sampling method on the key areas in June 1988.

Key Area 1 (FMR1), is within a silty range site (028BY013NV, revision of 3/91,) with a condition rating of 58% of Potential Natural Community (PNC) by air dry weight, placing it in late seral stage.

Key Area 2 (FMR2) is within a shallow calcareous loam range site (028BY011NV, revision of 3/91) with a condition rating of 74% of PNC by air dry weight, placing it in a late seral stage.

Key Area 3 (FMR3) is within a shallow calcareous loam range site (028BY008NV, revision of 3/91) with a condition rating of 54% of PNC, placing it in late seral stage.

8. Wildlife Habitat

The habitat condition for the key deer winter range (KDW) was determined in 1994/95. It was found to be in good condition.

9. Riparian

No ecological status survey has been completed on wet meadow riparian areas. In 1995, all springs in the allotment were analyzed using techniques described in Riparian Area Management Technical References TR-1737-9 and TR-1737-11 (1994) and (1993). All springs within the allotment were found to be properly functioning.

10. Wild Horse Habitat

Wild horse habitat condition ratings have not been conducted. In general, there appears to be adequate cover, forage and water for a limited number of wild horses. In recent years there has been a large number of horses on the allotment and forage is being overutilized.

11. Wilderness Study Area

No ecological status has been collected on the portion of the allotment within the Riordan's Well Wilderness Study Area.

V. CONCLUSIONS

Refer to by number from III.C., Specific Objectives

A. Livestock

(1) Objective Attainment Determination:

Not met.

(2) Rationale:

The allowable use levels were exceeded in 1989, and 1990 at FMR1. (See Appendix 1). Allowable use levels were exceeded in 1989 at FMR2. Allowable use levels were exceeded in 1989 and 1990 at FMR3. Use was made by livestock and wild horses at all three key areas.

Use pattern mapping for 1989 showed areas of heavy utilization in areas used by livestock and wild horses and a small area of severe utilization caused by livestock. In 1990, use pattern mapping was incomplete but showed areas of heavy use made by livestock and wild horses and small areas of severe utilization made by livestock.

B. Wild horses

(1) Objective Attainment Determination

Not met.

(2) Rationale:

The allowable use levels were exceeded in 1989, and 1990 at FMR1. (See Appendix 1). Allowable use levels were exceeded in 1989 at FMR2. Allowable use levels were exceeded in 1989 and 1990 at FMR3. Use was made by livestock and wild horses at all three key areas.

Use pattern mapping for 1989 showed large areas of heavy utilization in areas used by livestock and wild horses. In 1990, use pattern mapping was incomplete but showed areas of heavy use made by livestock and wild horses. Livestock have not been on the allotment since 1991 and utilization levels were exceeded in 1994 by wild horses.

C. Mule Deer

(1) Objective Attainment Determination:

Met

(2) Rationale:

Allowable use levels for key browse species were not exceeded. In addition, key deer winter range is in good condition.

D. Pronghorn Antelope

(1) Objective Attainment Determination:

Unknown

(2) Rationale:

No ecological status survey has been completed. Also, no use pattern mapping or utilization studies have been done on the key species identified for Pronghorn Antelope.

E. Ferruginous Hawks

(1) Objective Attainment Determination:

Not Met

(2) Rationale:

The allowable use levels for winterfat were exceeded in 1988, 1989, and 1990. Ferruginous hawks rely upon prey which utilize winterfat.

F. Riparian Areas

(1) Objective Attainment Determination:

Met

(2) Rationale:

Ecological status surveys have not been completed on any springs. Areas of heavy use on grass and grasslike plants occurred along Forest Home Creek in 1989. An unnamed spring in T. 6 N., R 59 E., sec. 16 was trampled in 1989. In the past, when livestock were using the allotment, riparian area objectives were not being met. Currently, objectives are being met because livestock are not using the allotment. If use levels remain the same as in the past, riparian objectives would probably be not met. Rapid Riparian Assessments in 1995 indicated that all springs were functioning properly. However, continued heavy utilization on riparian areas may change the assessment to functioning at risk.

G. Riordan's Well Wilderness Study Area

(1) Objective Attainment Determination:

Unknown

(2) Rationale:

No ecological status survey has been completed. However, use pattern mapping indicated areas of slight and light use, in part due to a lack of forage production.

VI TECHNICAL RECOMMENDATIONS

A. Issues Identified for the Forest Moon Allotment

- Insufficient forage available for livestock and wild horse demand
- Allowable use levels exceeded by livestock and wild horses
- Inadequate livestock and wild horse distribution
- Period of use too long during critical spring growth
- Approximately 700 acres around an old homestead is now covered with Russian thistle and soil erosion has been accelerated.

B. Short Term Recommendations

1. Reduce the number of livestock grazing.
2. Reduce the number of wild horses and establish an appropriate management level (AML).
3. Change the season of use for livestock
4. Control distribution of livestock and wild horses by water management

Refer to Appendix V for an explanation of the stocking level calculations. If no action other than an adjustment in numbers is initiated, the permitted use for livestock would become 2,263 AUMs.

Available AUMs were determined by using the formula:

$$\frac{\text{active use}}{\text{KA utilization}} = \frac{\text{desired actual use}}{\text{desired KA utilization}}$$

Utilization levels were from the key area utilization at Key Area 1 (FMR1) from 1987, 1989, and 1990. Livestock and wild horses both

contributed to the over-utilization. The total average stocking levels would be:

2,263 Livestock AUMs
<u>184 Wild Horse AUMs</u>
2,447 Total AUMs

Wild horses would be managed at an appropriate management level of 184 AUMs or 15 animals yearlong $\pm 15\%$. The range of $\pm 15\%$ allows the number of wild horses to vary to allow for movements between allotments. With a range of $\pm 15\%$ around the AML, removals would not be needed as frequently.

Wildlife AUMs are not included in the stocking rate formulas because wildlife were not determined to be causing overutilization due to different forage species being used.

According to the present data, with the stocking levels identified above, the allowable use levels will be met during a normalized year. Key areas would maintain or improve in seral stage.

Change the season of use. The season of use is currently yearlong. The Schell Resource Area Land Use Plan Decision RM-1.4 identifies the months to be rested on the Forest Moon Allotment as April and May, until intensive management can be initiated. Intensive management on Forest Moon Allotment is not feasible due to the relatively small size, restrictions in fencing due to the presence of wild horses and the lack of funding. Resting the allotment during April and May, which is the critical growth period for key species, will allow plants to replenish their carbohydrate reserves which maintains the root systems and plant vigor. Therefore, season of use will be from 06/01 to 03/31.

Livestock and wild horse distribution problems can be alleviated by using water. Water can be supplied in different locations at different times in the ditch systems to move the livestock and wild horses around. The ditches are not far enough apart to use in a pasture rotation system but can be effectively used to spread the use. The following grazing treatment would alternate use in late spring. The areas are not fenced but livestock would generally remain near the active ditch line as waters are not abundant on the allotment. Some drift may occur into other areas during the winter months when snow is available but the impacts to the range resources would be minimal due to the time of year and the fact that plants are dormant.

Table 3 shows a guideline for movement of livestock based on water control. The active ditch system would be turned off and cattle would move to the newly activated ditch system. After 15 days, if cattle are still along the closed system, they may need to be pushed to the active ditch line. Flexibility in movements will be considered based on weather conditions and whether or not reservoirs dry up.

In this system, the middle and north ditch systems are combined because according to the 1979 Range Survey, fewer AUMs are available in those areas combined than along the south ditch system. The area serviced by the south ditch has approximately 56% of the total AUMs. The area serviced by the middle and north ditches have approximately 44% of the total AUMs. Due to the probability that use will not be made exclusively along the active ditches, the difference in AUMs between the two rotation areas should not be a problem. Wild horses generally prefer to graze in areas where livestock are not present.

Table 3. Livestock Management System Using Water Control.		
General Area	Approximate Period of Use	Approximate Treatment Level
Year 1		
North Ditch System	06/01 - 10/31	1223.5
South Ditch System	11/01 - 03/31	1223.5
Year 2		
North Ditch System	11/01 - 03/31	1223.5
South Ditch System	06/01 - 10/31	1223.5
Repeat cycle starting with year 1		

C. Long Term Recommendations

1. A long term solution to livestock drift problem north of the allotment is to split the "Reserved for Wildlife" Allotment between Forest Moon Allotment and Hardy Springs Allotment. (See map 10 for the proposed split.) Fencing the resulting boundary would prevent drift. Because wildlife do not use the "Reserved for Wildlife" allotment to any extent, eliminating this allotment would not impact wildlife and would enhance livestock control. Wild horses would still inhabit the White River HMA north of the fence and the Seaman HMA south of the fence but would not move back and forth. Because the herd areas are separate, splitting the Reserved for Wildlife Allotment would not impact wild horses, except to control drift that presently occurs between the two areas.

2. Approximately 700 acres around an old homestead (T. 6 N., R. 60E., Secs. 29, 20, 31, 32) was once used for crops but upon returning to federal ownership, the fields were abandoned. Since that time (1940s or 50s), the area has been invaded by Russian thistle and wind erosion has been accelerated. As a long term solution, the area needs to be re-seeded with either crested wheatgrass or a native mix of perennial grasses to stabilize soils and rehabilitate the area. A fence, either permanent or temporary will need to be installed to allow establishment of seedlings.

D. Additional Monitoring Required

Continue rangeland vegetation monitoring for upland and riparian areas.

Read utilization on key species identified for livestock, wild horses, wildlife and riparian areas.

Develop Ecological Site Descriptions for riparian areas.

Continue to monitor wild horse levels and seasonal distribution by conducting aerial censuses annually.

Conduct trend studies.

Literature Cited:

Sneva, Forest, and C.M. Britton, 1983. Adjusting and Forecasting Herbage Yields in the Intermountain Big Sagebrush Region of the Steppe Province. Agricultural Experiment Station Oregon State University, Station Bulletin 659. P. 61.

Van Poolen, H. Walt and John R. Lacey, 1979. Herbage Response to Grazing Systems and Stocking Intensities. Journal of Range Management 32(4):250-253.

APPENDIX I

ALLOTMENT: Forest Moon - Livestock and Wild Horse Objectives

				PRESENT SITUATION			LONG TERM OBJECTIVES **		SHORT TERM OBJECTIVES			
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
FMR1	T. 6 N., R. 60 E., Sec. 8 NW	028BY013NV	ORHY EULA5	ORHY 5% EULA5 92% Grasses 6% Forbs 0% Shrubs 94%	58%	Improve	ORHY 5-10% EULA5 <92%	>60%	50% 45%	Yearlong ****	Not Met	AUL exceeded, 1989, 76% on ORHY 1990, 75% on ORHY
FMR2	T. 6 N., R., 59 E., Sec. 11 NW	028BY011NV	ORHY ARARN	ORHY 25% ARARN 65% Grasses 33% Forbs 2% Shrubs 65%	74%	Maintain	ORHY 20-35% ARARN <65%	50-75%	50% 45%	Yearlong ****	Not Met	AUL exceeded, 1989, 60% on ORHY
FMR3	T. 5 N., R. 60 E., Sec. 30 NE	028BY008NV	ORHY ARARN	ORHY 5% ARARN 69% Grasses 13% Forbs 5% Shrubs 82%	54%	Improve	ORHY 5-10% ARARN <69%	50-75%	50% 45%	Yearlong ****	Not Met	AUL exceeded, 1989, 60% on ORHY 1990, 60% on ORHY

* Ecological sites listed here can be referred to from the U.S. Soil Conservation Service Ecological Site Descriptions. Ecological sites were revised 3/91. Data collected prior to that time was re-analyzed according to the new range site write-ups.

** This is the percent composition and seral stage that would have the desired vegetative characteristics to optimize production, quantity, quality, and variety to provide the greatest forage value for all users.

*** Allowable use levels for utilization are the short term objectives established to meet the long term composition objectives.

**** Livestock season of use is 06/01 to 03/31 but wild horses use the allotment yearlong.

APPENDIX II

ALLOTMENT: FOREST MOON - WILDLIFE OBJECTIVES

				PRESENT SITUATION			LONG TERM OBJECTIVES		SHORT TERM OBJECTIVES			
Study No.	Key Area Location		Key Species	Habitat Condition Rating		Maintain or Improve	Habitat Condition Rating		Allowable Use Level	Season of Use	Met or Not Met	Rationale
FMW1 - Horse Spring KDW	T. 5 N., R. 59 E., Sec. 5, SENW		COME5 EPVI PUTR2	Good		Maintain	Good		30% 45%	by 11/1 Yearlong	Met	AUL not exceeded

APPENDIX III

Allotment: Forest Moon - Riparian Objectives

			PRESENT SITUATION	LONG TERM OBJECTIVES		SHORT TERM OBJECTIVES			
Study No.	Key Area Location	Key Species	Functioning Condition	Maintain or Improve	Functioning Condition	Allowable Use Level	Season of Use	Met or Not Met	Rationale
South Horse Spring	T. 5 N., R. 59 E., Sec. 7 NWNW	Grass & grass-like species	Proper Functioning Condition	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	
Unnamed Spring	T. 6 N., R. 59 E., Sec. 16 SWNE	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	Trampled in 1989
Forest Home Spring	T. 6 N., R. 59 E., Sec. 18 NESE	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	Good Condition
Horse Spring	T. 6 N., R. 59 E., Sec. 31 SESW	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	Good Condition
Mountain Spring	T. 6 N., R. 59 E., Sec. 29 SWSW	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	
Egan Spring	T. 6 N., R. 61 E., Sec. 8 NWSW	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	Good Condition
Little Spring (complex of 2)	T. 6 N., R. 59 E., Sec. 32 NESE	Grass & grass-like species	Proper Functioning	Maintain	Proper Functioning Condition	50%	Yearlong *	Met	Trampled in 1989

* Livestock season of use is 06/01 - 03/31 but wild horses use the allotment yearlong.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
KEY MANAGEMENT AREA
EVALUATION SUMMARY

District

E14

Planning Area

Date

5/5/95

Allotment

Forest Moon

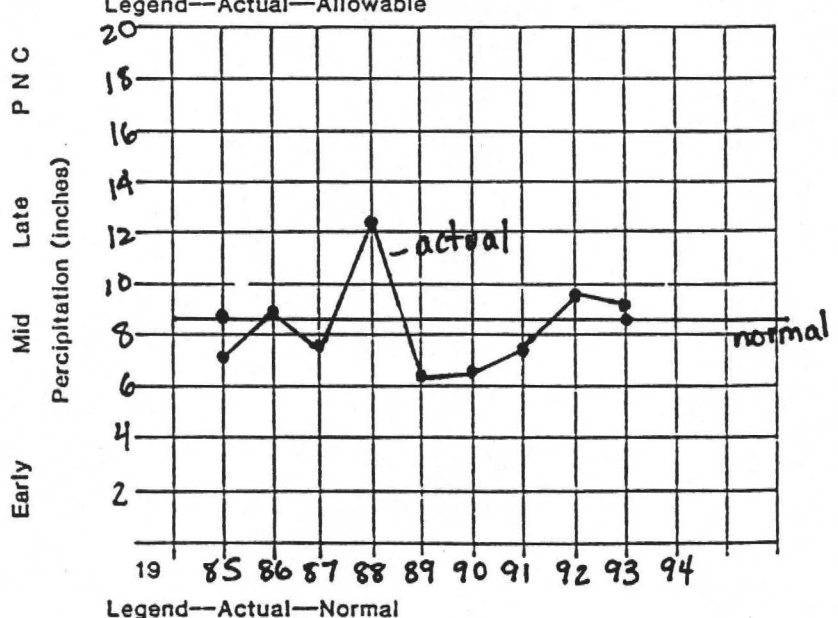
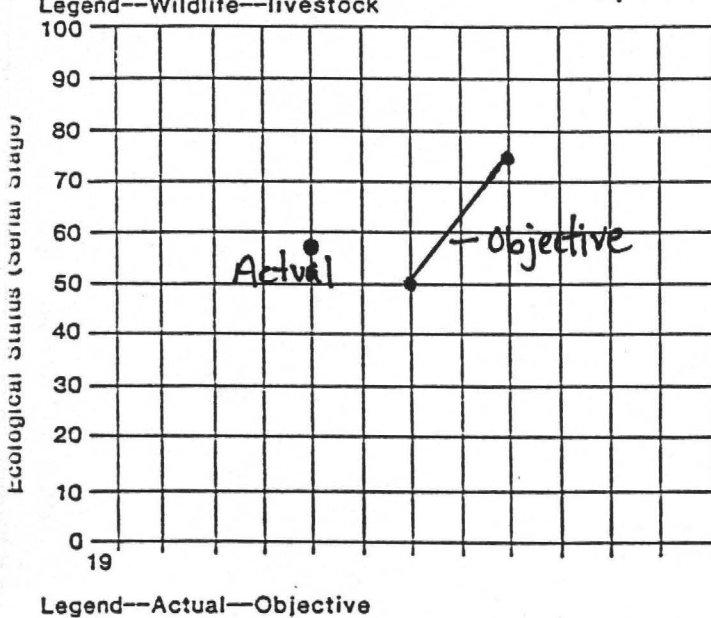
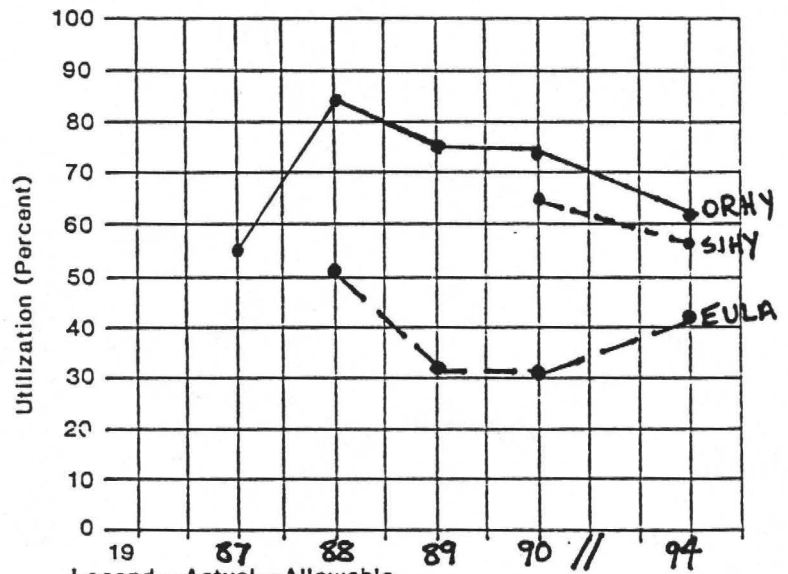
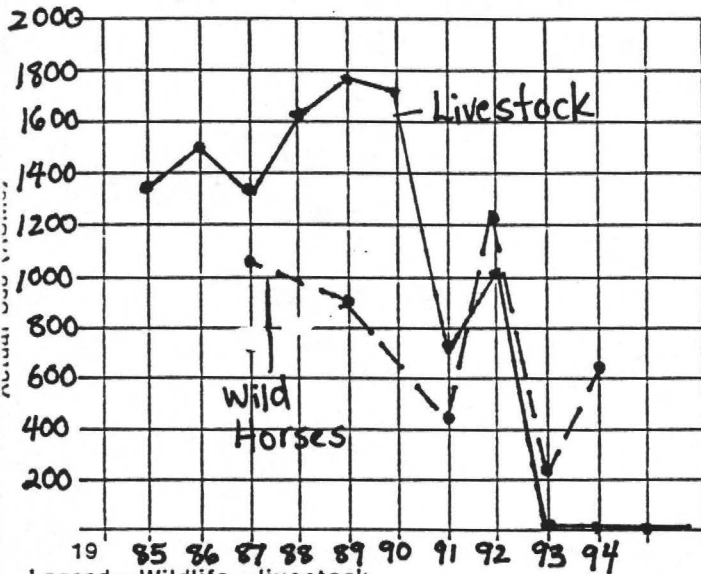
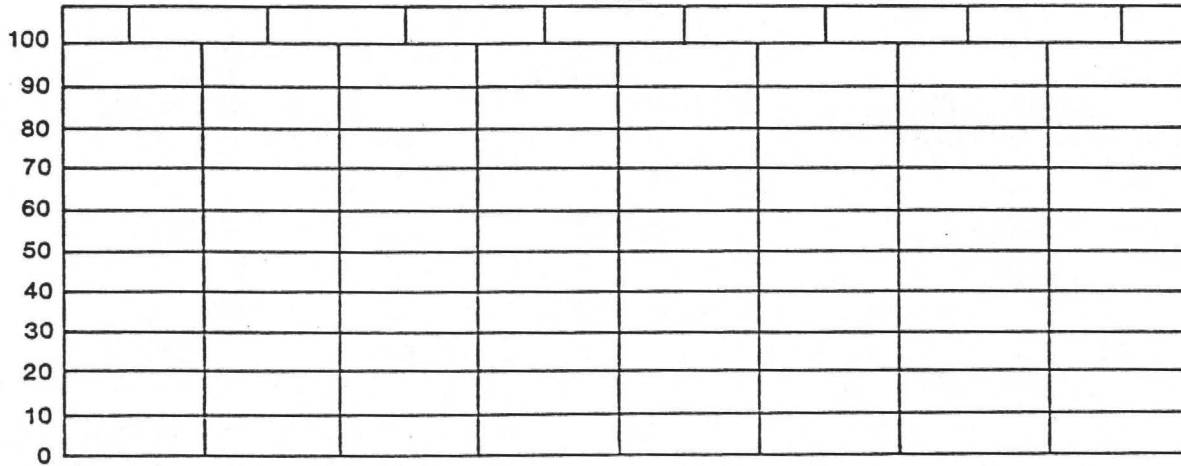
Key Management Area

FMRI

Trend Index (Frequency)
Date

Code

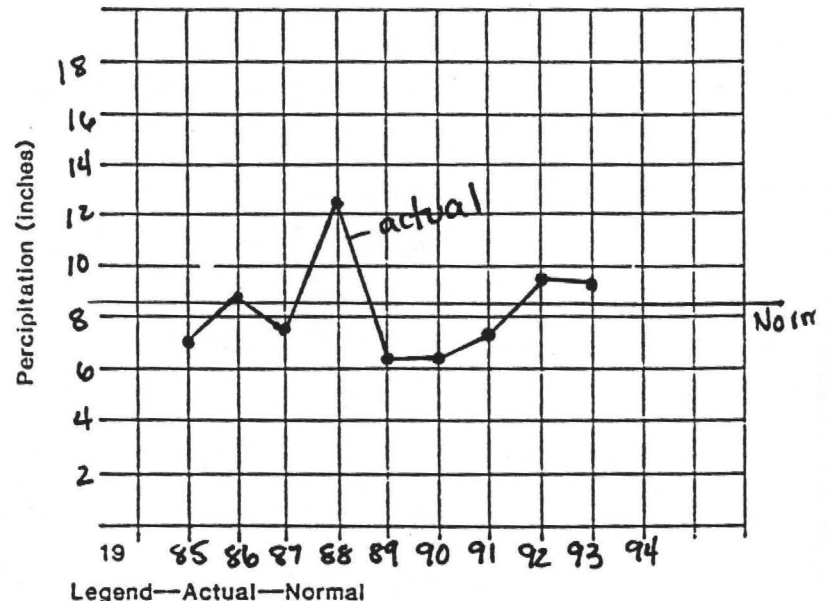
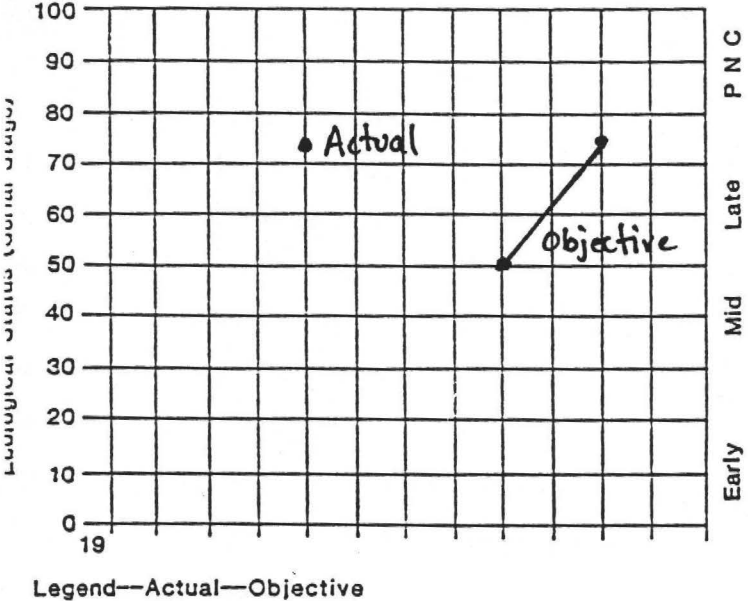
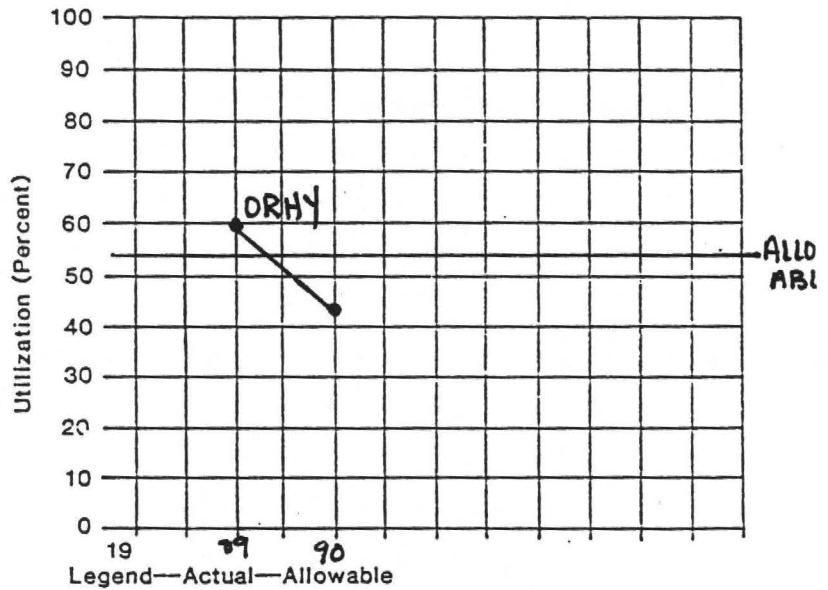
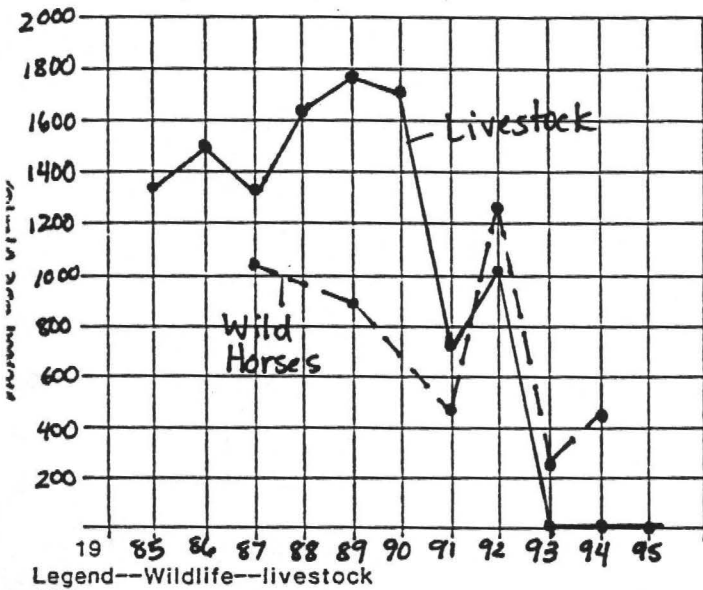
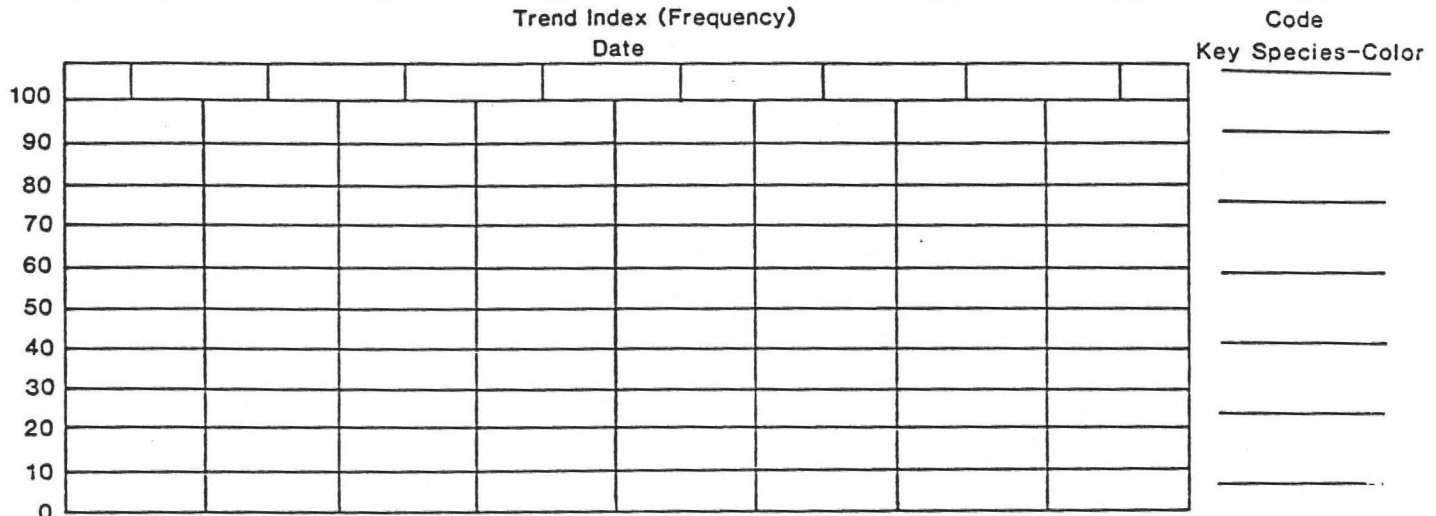
Key Species-Color



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
KEY MANAGEMENT AREA
EVALUATION SUMMARY

District **Ely**
Planning Area _____ Date **5/8/95**

Allotment **Forest Moon** Key Management Area **FMR 2**



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
KEY MANAGEMENT AREA
EVALUATION SUMMARY

District

ELY

Planning Area

Date

5/10/95

Allotment

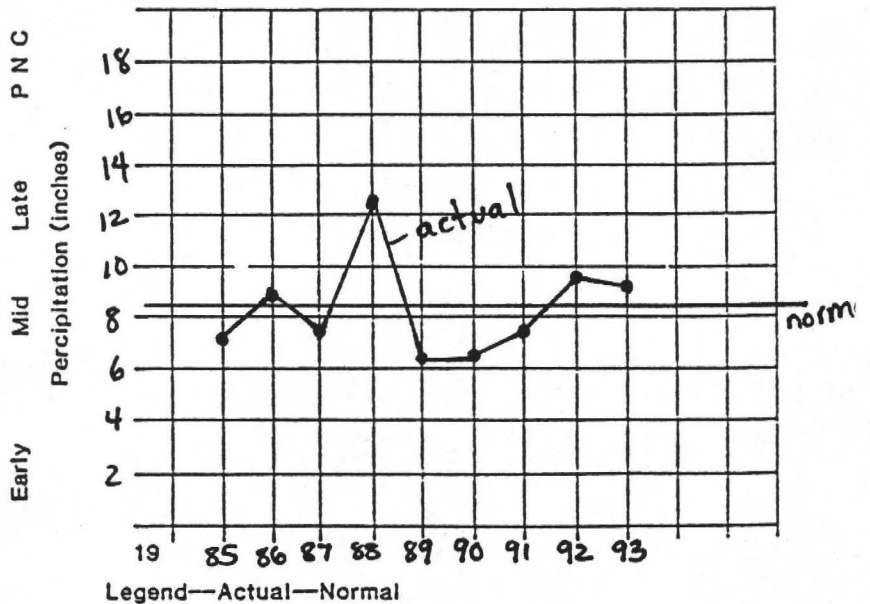
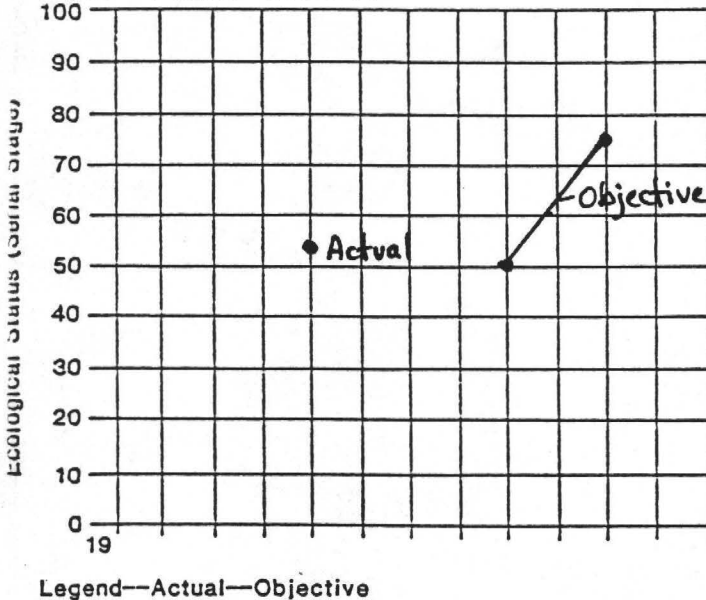
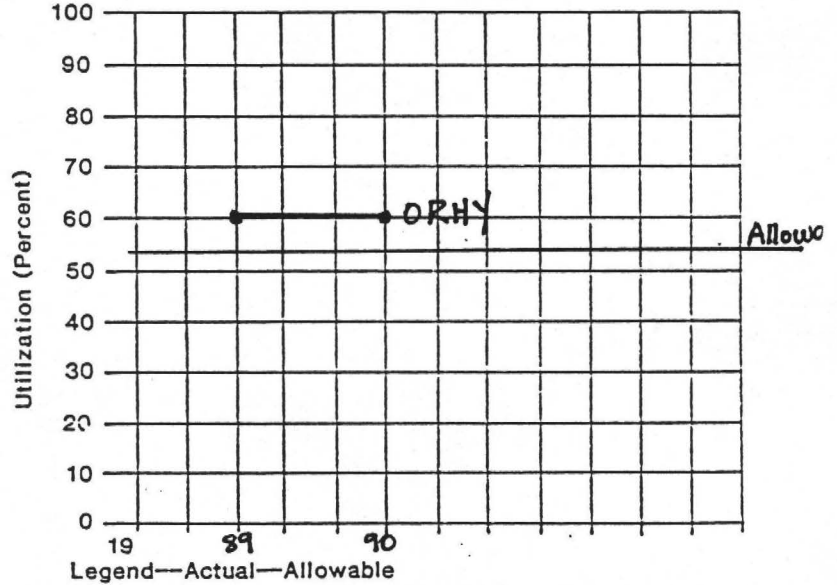
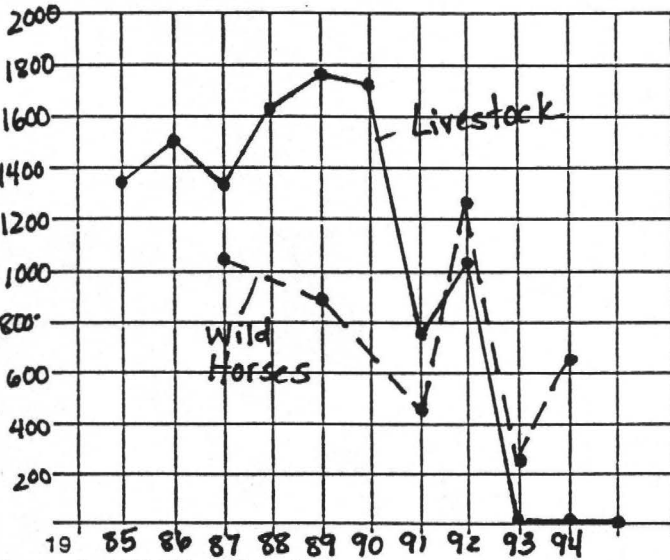
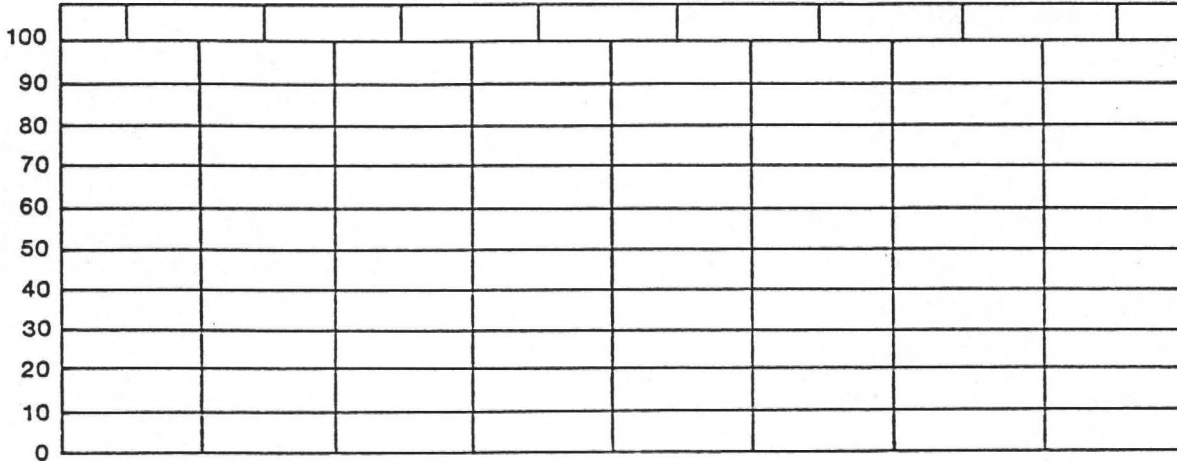
Forest Moon

Key Management Area

FMR 3

Trend Index (Frequency)
Date

Code
Key Species-Color



APPENDIX V

STOCKING LEVEL CALCULATION PROCEDURES
FOREST MOON ALLOTMENT

The desired stocking level for the Forest Moon Allotment was determined using the following formula from the BLM Technical Reference 4400-7:

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

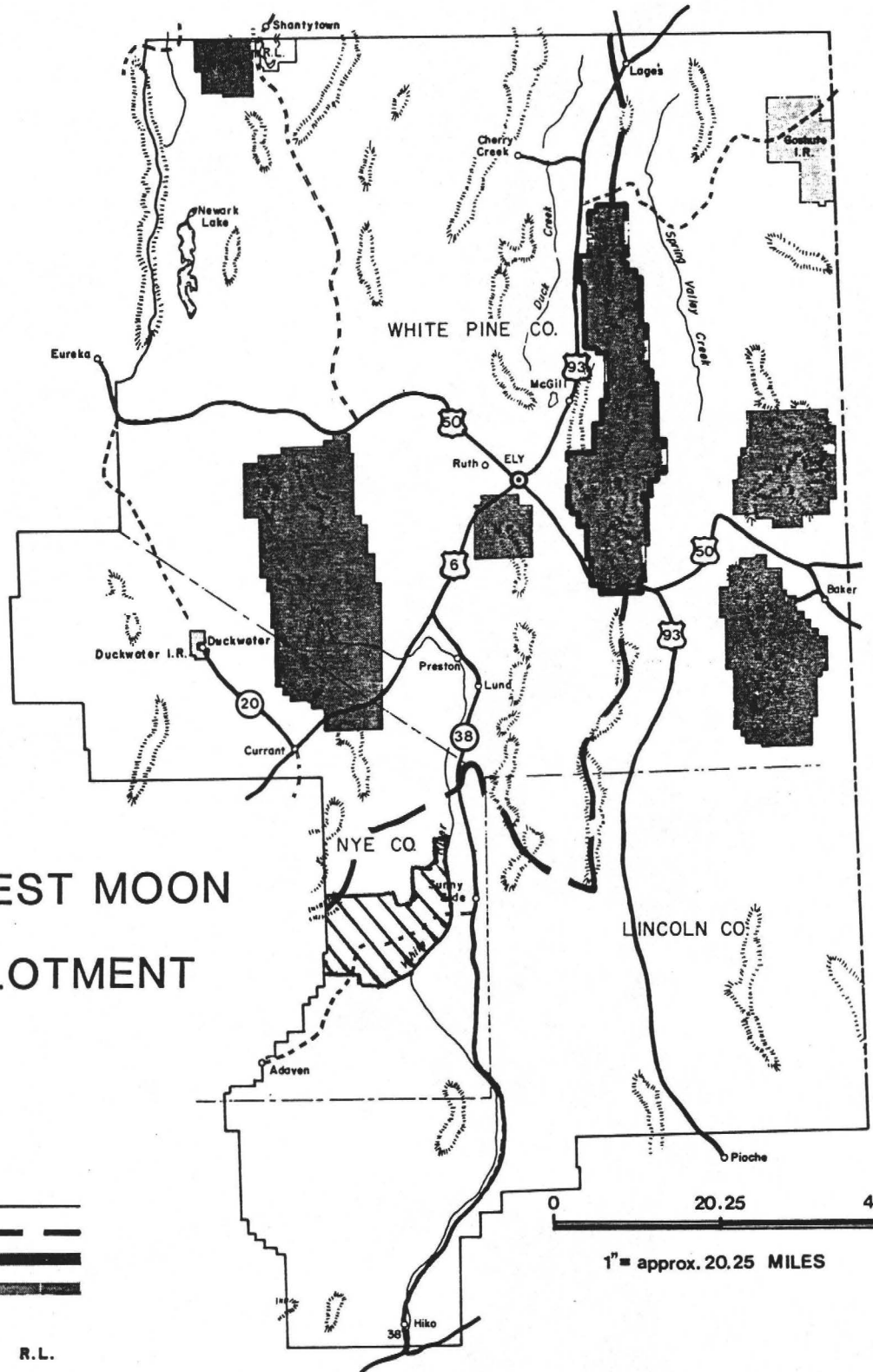
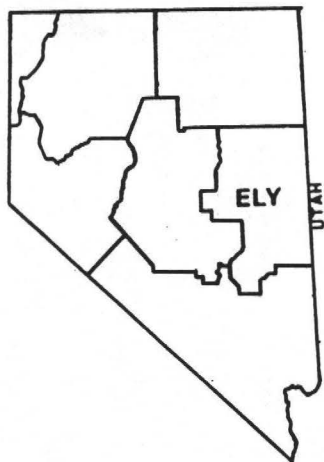
Actual livestock use and utilization data were collected for the allotment between 1980 and 1992. The yield index (discussed in a previous section) was multiplied by the measured utilization to normalize the precipitation data. This adjusted utilization is used in the stocking rate formula. A stocking rate was calculated for each year that also had utilization data. The stocking rates were then averaged to come up with the desired stocking level for the allotment of 2,447 AUMs. The 2,447 AUMs were then allocated to livestock and wild horses based on the proportions in the LUP. Those proportions were the three year average for livestock and the initial stocking level for wild horses.

Table V-1 shows the data used in the stocking rate formula.






Table V-1. Data Used to Calculate the Desired Stocking Levels for Livestock and Wild Horses for the Forest Moon Allotment.								
Year	Estimated Livestock Use AUMs	Estimated Wild Horse Use AUMs	Estimated Wildlife Use AUMs*	Measured Utilization	Yield Index	Adjusted Utilization	Desired Utilization	Desired Stocking Level
1987	1,348	720	545	51%	85	43%	50%	2,405
1989	1,696	900	293	76%	66	50%	50%	2,596
1990	1,716	672	278	75%	68	51%	50%	2,341
Average Levels	1,613	764	281					2,447

* Wildlife use is by mule deer. Mule deer AUMs were not included in the stocking rate formula because they have not been identified as contributing to overuse.

GENERAL AREA



 **FOREST MOON ALLOTMENT**

-  District Boundary
-  Resource Area Boundary
-  Humboldt National Forest
-  Indian Reservation
-  Ruby Lake National Wildlife Refuge

R.L.

0 20.25 40.5

1" = approx. 20.25 MILES

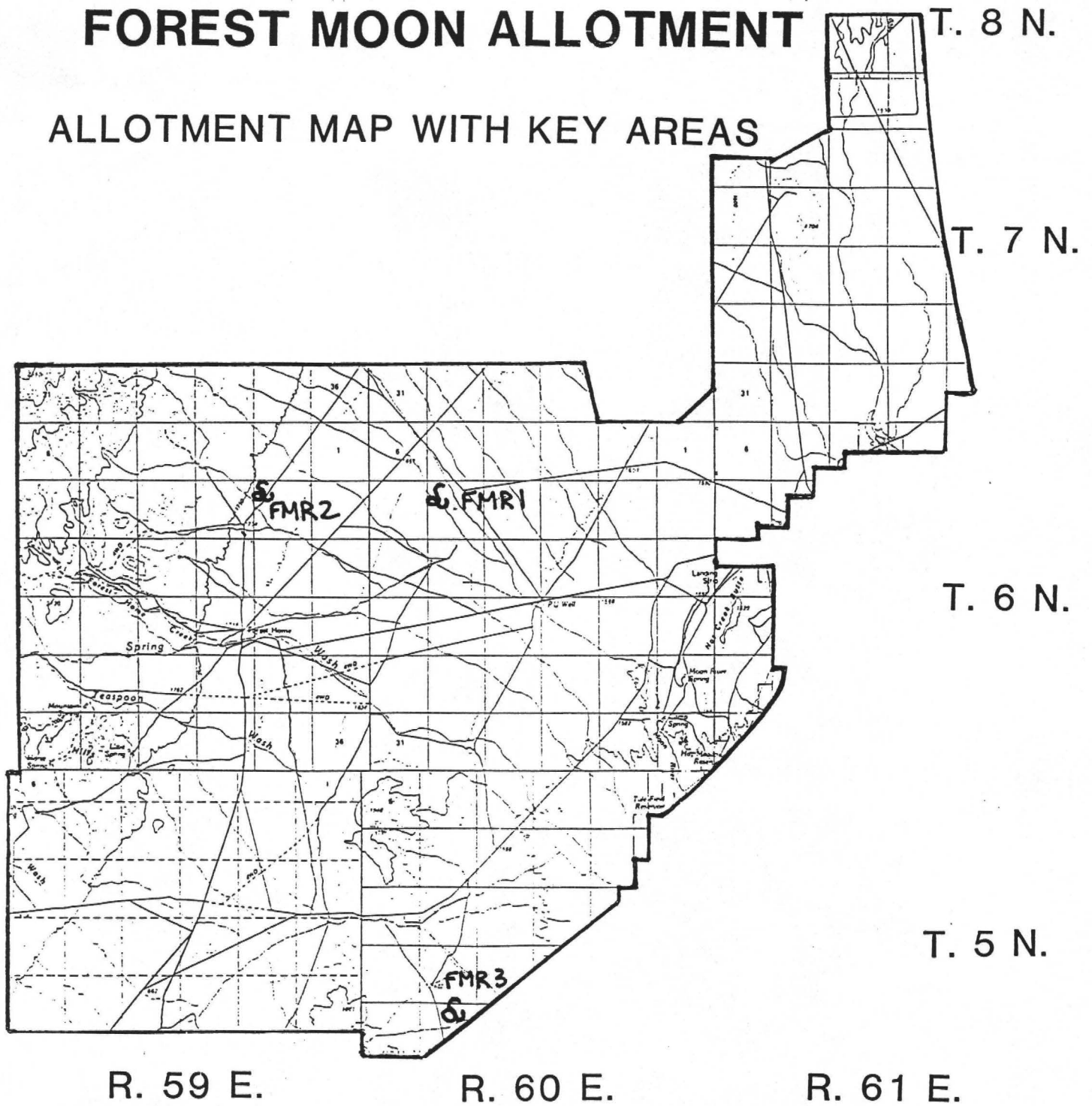
ELY DISTRICT

BUREAU OF LAND MANAGEMENT
U. S. DEPARTMENT OF THE INTERIOR

MAP 1

FOREST MOON ALLOTMENT

ALLOTMENT MAP WITH KEY AREAS

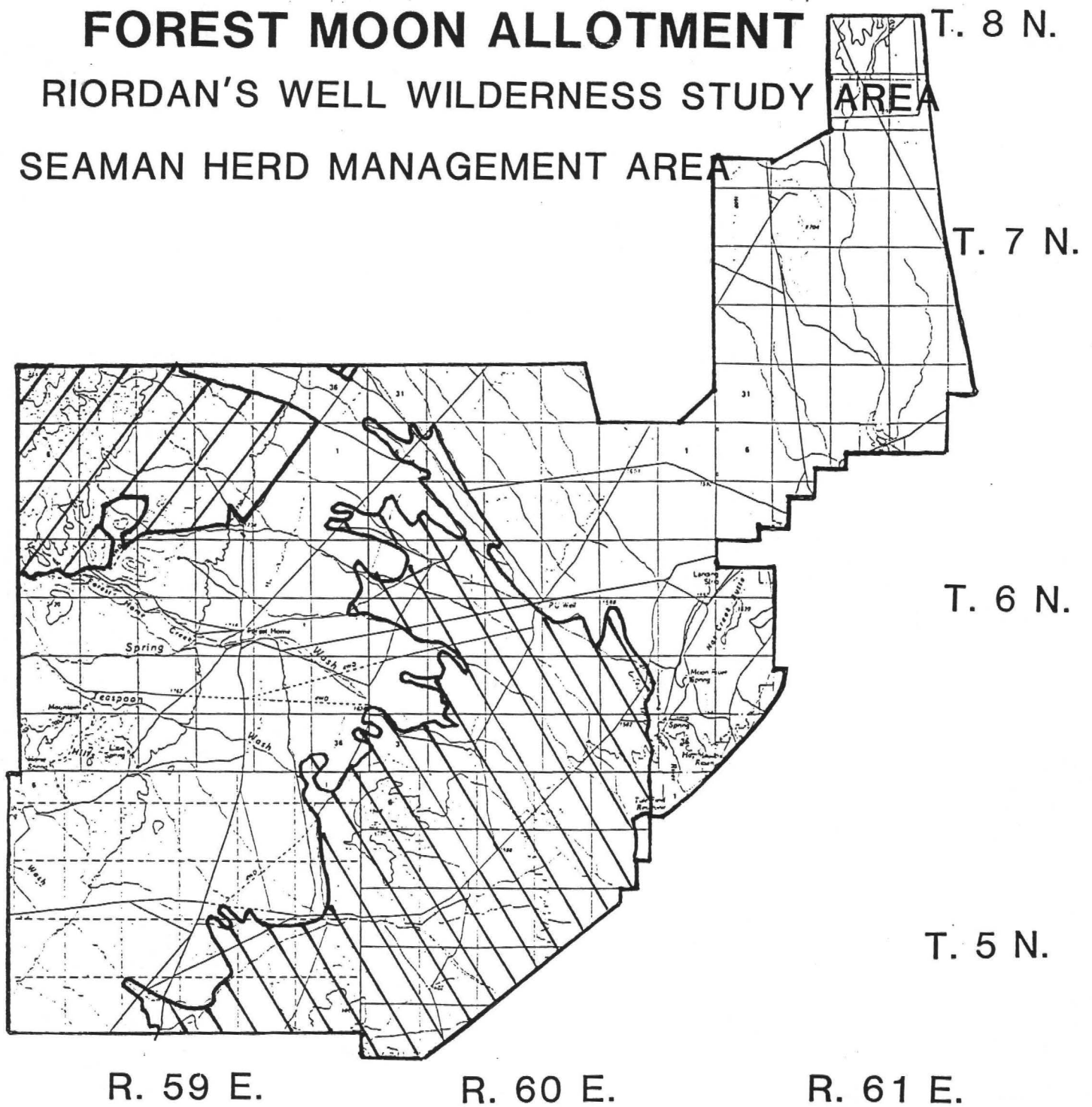




 Key Area

FOREST MOON ALLOTMENT

RIORDAN'S WELL WILDERNESS STUDY AREA

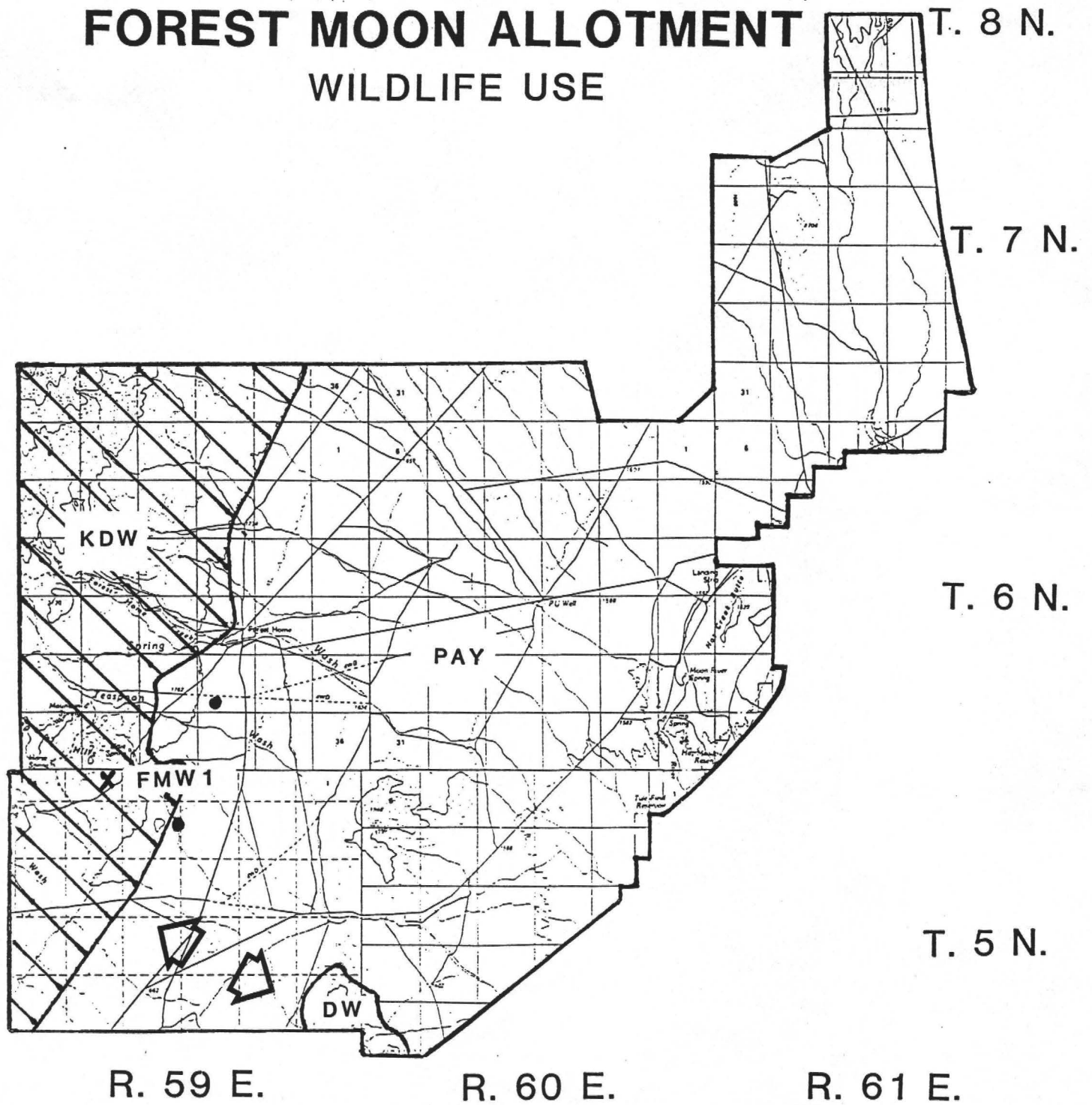
SEAMAN HERD MANAGEMENT AREA









-  Riordan's Well WSA
-  Seaman HMA

FOREST MOON ALLOTMENT

WILDLIFE USE

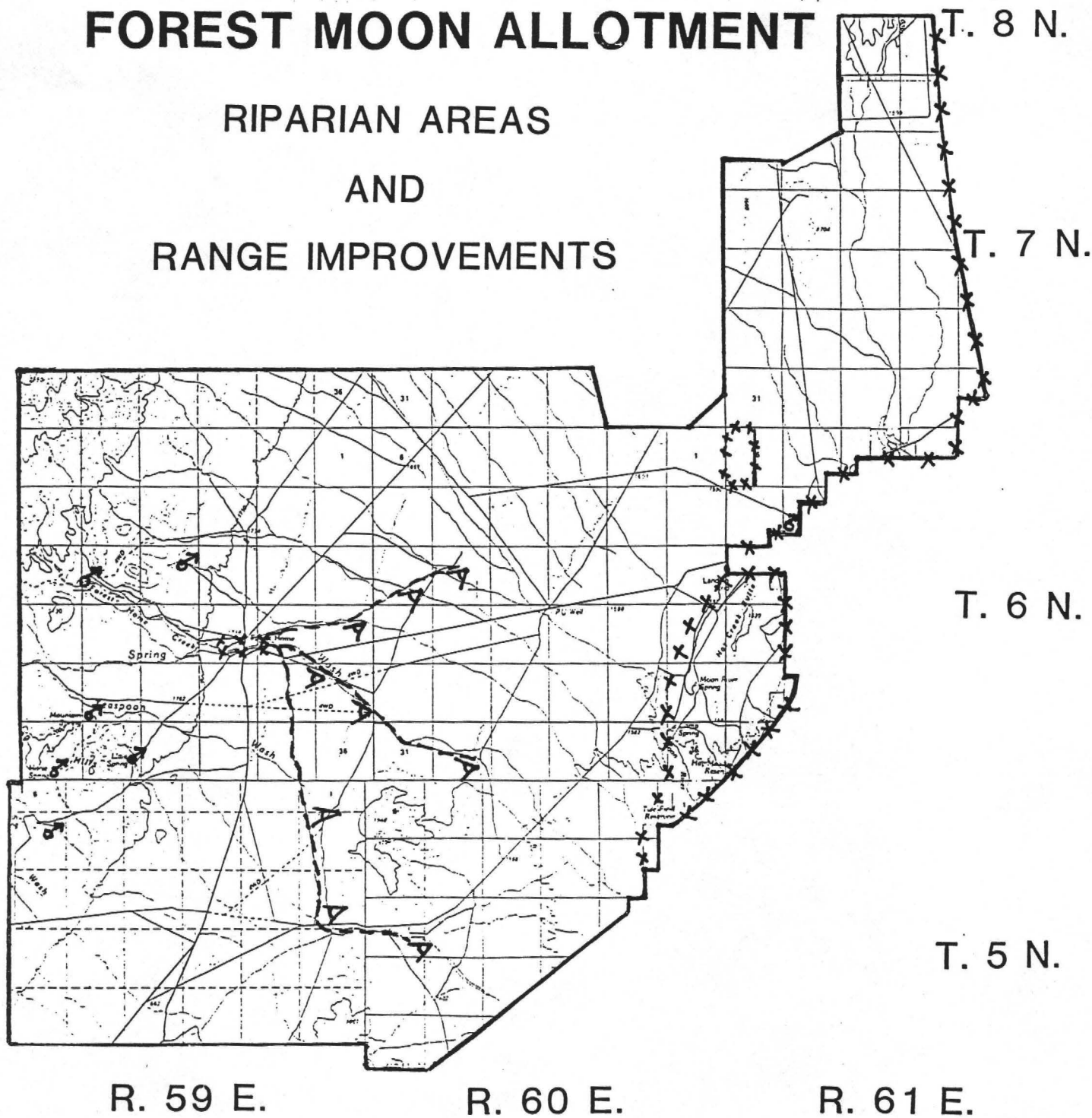




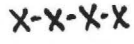

Legend

- | | | | |
|---|-----------------------------------|---|-----------------------|
|  | Deer Winter Range |  | Key Deer Winter Range |
|  | Deer Migration Route |  | Study Site |
|  | Pronghorn Antelope Yearlong Range |  | Ferruginous Hawk Nest |

FOREST MOON ALLOTMENT

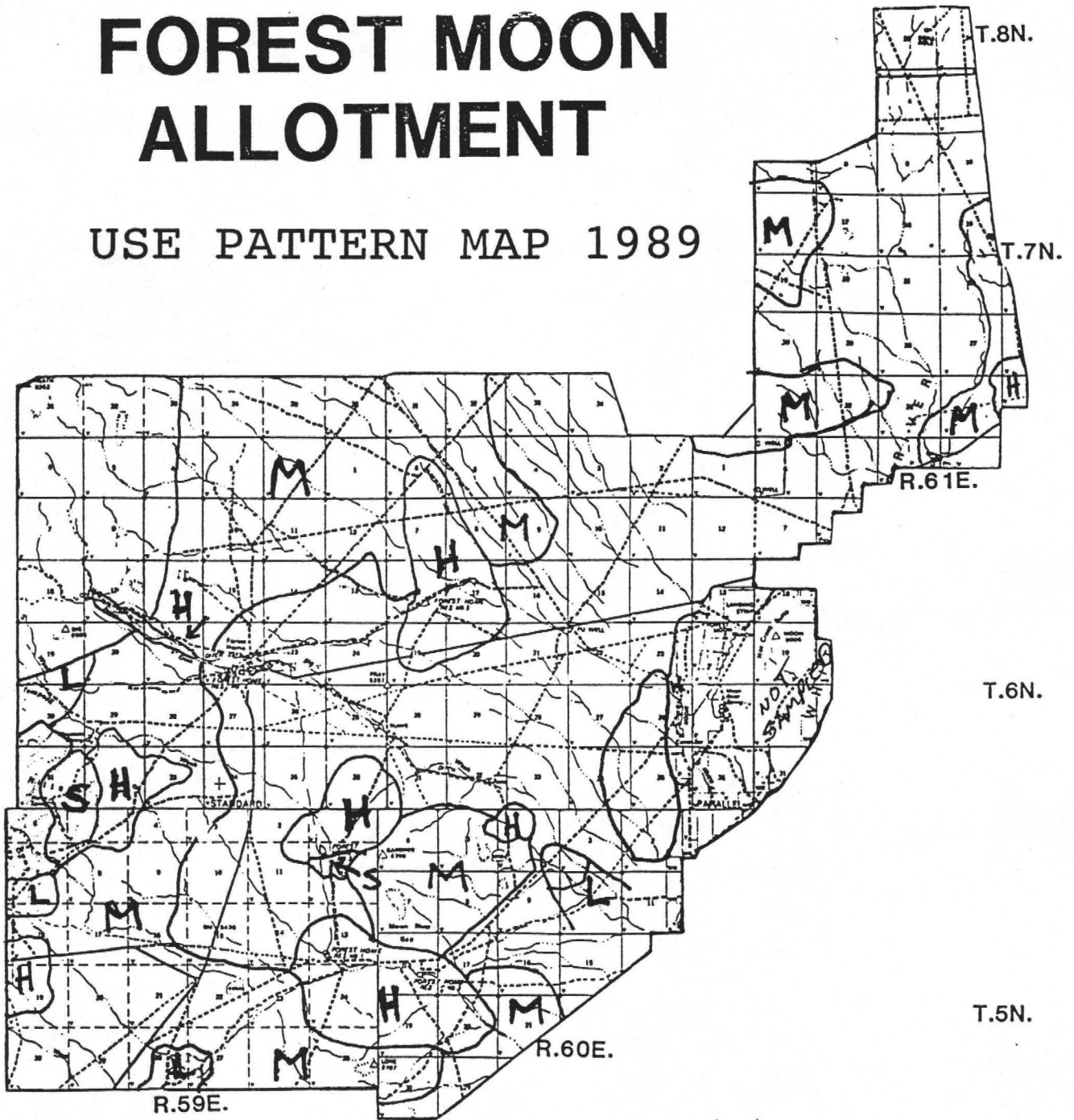
RIPARIAN AREAS AND RANGE IMPROVEMENTS



-  Springs
-  Reservoirs
-  Fence
-  Ditch

FOREST MOON ALLOTMENT

USE PATTERN MAP 1989



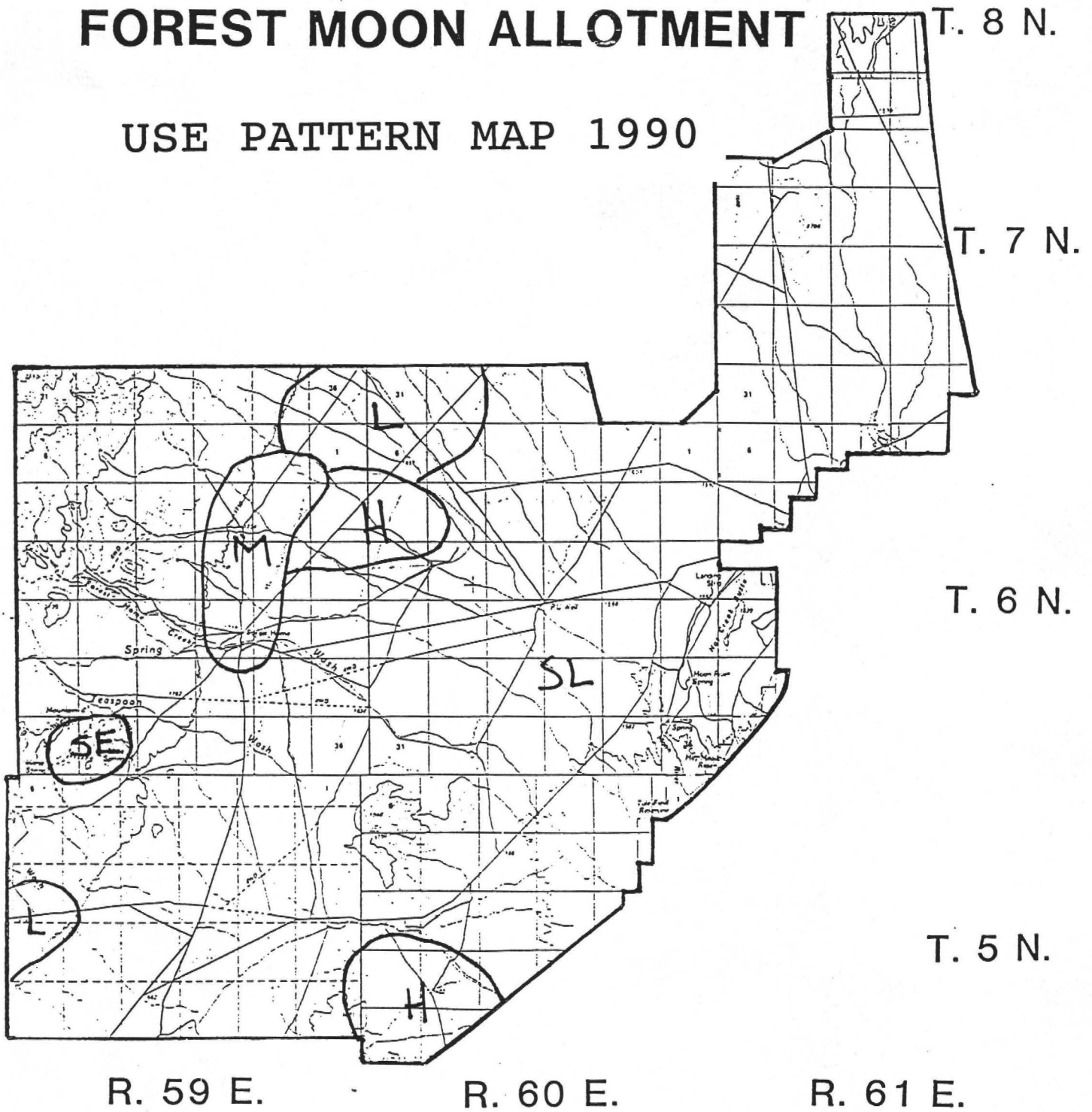
LEGEND

S SEVERE
H HEAVY
M MODERATE
L LIGHT
SL SLIGHT

MAP 6

FOREST MOON ALLOTMENT

USE PATTERN MAP 1990



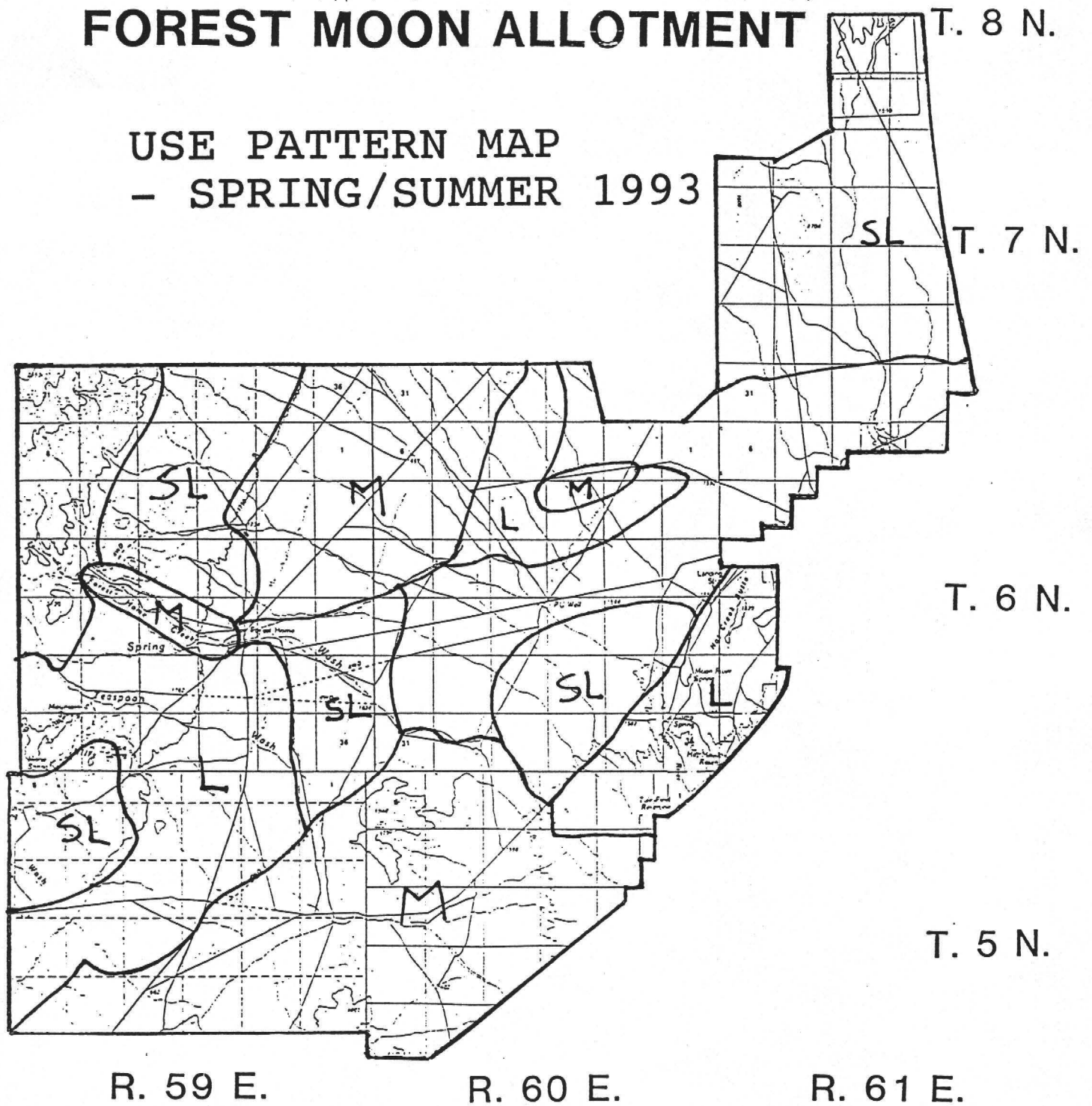
LEGEND

SE SEVERE
H HEAVY
M MODERATE
L LIGHT
SL SLIGHT

MAP 7

FOREST MOON ALLOTMENT

USE PATTERN MAP
- SPRING/SUMMER 1993



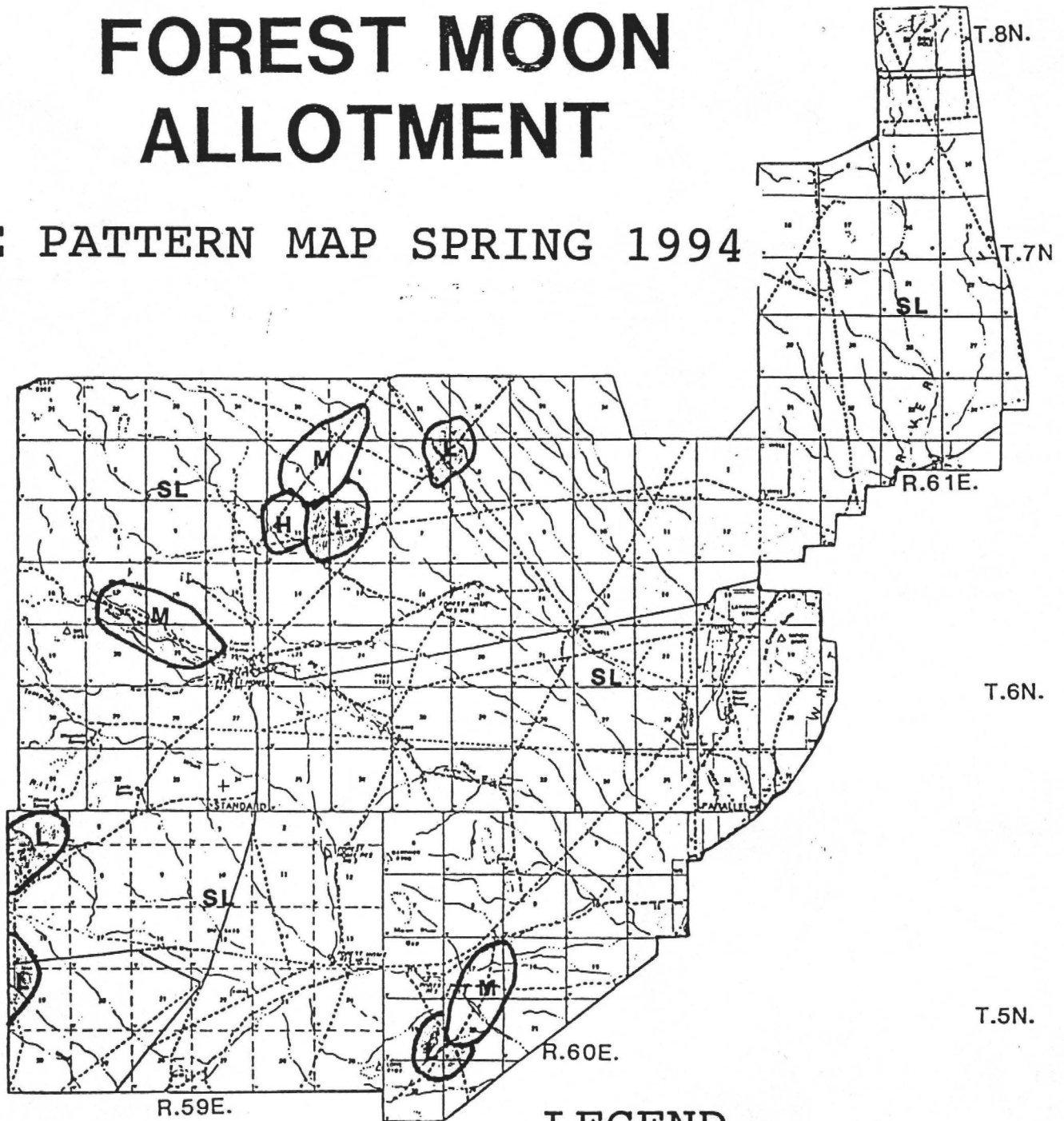
LEGEND

S SEVERE
H HEAVY
M MODERATE
L LIGHT
SL SLIGHT

MAP 8

FOREST MOON ALLOTMENT

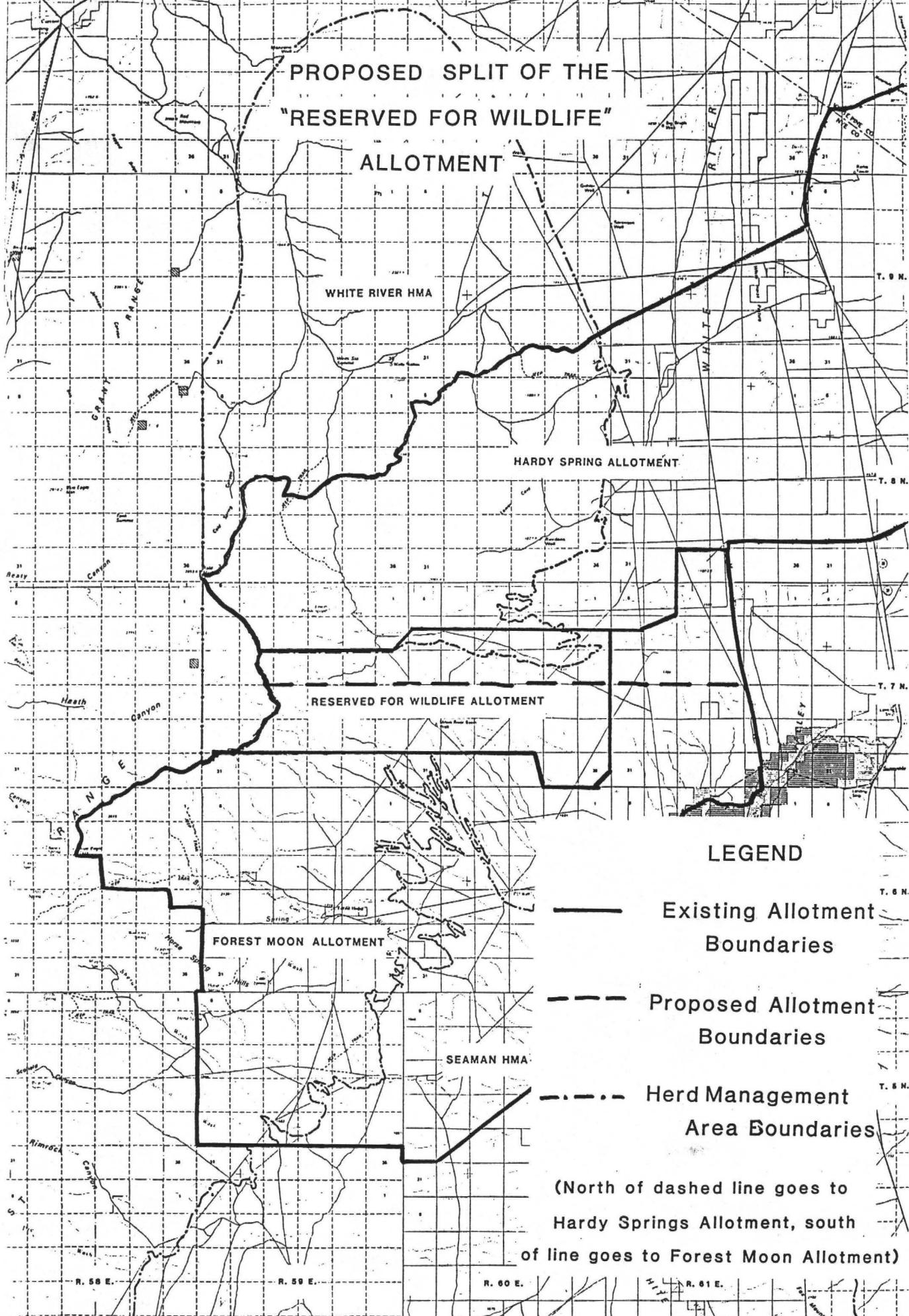
USE PATTERN MAP SPRING 1994



LEGEND

- S SEVERE
- H HEAVY
- M MODERATE
- L LIGHT
- SL SLIGHT

PROPOSED SPLIT OF THE
 "RESERVED FOR WILDLIFE"
 ALLOTMENT



LEGEND

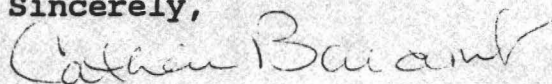
- Existing Allotment Boundaries
- - - Proposed Allotment Boundaries
- . - . Herd Management Area Boundaries

(North of dashed line goes to Hardy Springs Allotment, south of line goes to Forest Moon Allotment)

Mr. Jerry Smith
October 24, 1995
Page 3

It is obvious that our proposed alternative presents a significantly lower carrying capacity for the Forest Moon Allotment. However, more accurate actual use data could be applied in the computations. We suggest an appendix be amended to the allotment evaluation disclosing all available data. The season of livestock use adjustment could provide for more livestock use than indicated in our alternative.

Sincerely,



Catherine Barcomb
Executive Director

TYPE-ERASE
52% COTTON FIBER USA