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UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
SUSANVILLE DISTRICT  
SUPRISE RESOURCE AREA

Tuledad Allotment Management Plan  
Evaluation

1980 - 1986

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2/22/88  
Date



# United States Department of the Interior 4130(C-028) AMP File

BUREAU OF LAND MANAGEMENT  
SURPRISE RESOURCE AREA  
P.O. Box 460  
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## TULEDAD AMP EVALUATION

### I. TULEDAD ALLOTMENT (0802)

Tuledad Grazing Association

Permittees/Members

Ed Berryessa  
Juanita Bicondoa  
Wesley Cook  
Lazy SJ Ranch, c/o Adrian Dollarhide  
North Fork Ranch Co., c/o Manager  
Marcel Muira, leased by Wes Cook  
Clyde Summers

### II. LIVESTOCK USE

#### A. Grazing Preference

| <u>Total Preference</u> | <u>Suspended</u> | <u>Active</u> |
|-------------------------|------------------|---------------|
| 22,451                  | 12,935           | 9,516         |

#### B. Season of Use

##### 1. Cattle

The final AMP specified the use period for cattle as follows:

April use confined to seedings.  
May 1 turnout on native range.  
September 30 takeoff.

The Tuledad and Worland Seedings were being developed during this evaluation cycle. While being developed an agreement had been reached to turnout no earlier than April 16 on the lower elevation range and to turnout no more than one-half the cattle numbers prior to May 1. The September 30 takeoff was used during the entire cycle.

2. Sheep

The final AMP specified the use periods for sheep as follows:

April 17 to June 30  
September 1 to October 15

There were two sheep operations with a total of 3,000 sheep at the beginning of the evaluation. One operation (1,000 sheep) had the April 17 turnout date while the other had a March 26 to June 30 turnout for 2,000 sheep. The single band operation is not currently in use or expected to operate in the future. The two band operation (2,000 sheep) has continued to use its' historical March 26 turnout.

When the final AMP was agreed to, this sheep permittee had planned on changing his operation to an inside lamb operation which would require only a May 16 turnout. However, having leased an inside lamb operation for three years the permittee determined he could not feasibly operate an inside lamb operation. He requested his historic turnout date be reinstated. BLM granted this request on a temporary basis while it evaluated the effects of the lambing operation through the monitoring program.

C. Class of Livestock

The Tuledad Allotment has both cattle and sheep. The cattle operators run a cow/calf operation. The sheep operator runs a typical desert sheep operation.

3,000 sheep - combination of three permits (Cook, Bicondoa, Muira)  
1,412 cow - combination of five permits (Cook, Lazy SJ Ranch,  
North Fork Ranch Co., Berryessa and Summers)

One operator (Cook) runs both cattle and sheep.

D. Private Land

The Allotment consists of 11 percent private land. A large percentage of this land is intermingled and unfenced with the Allotment boundaries. Of the six permits licensed in the Allotment only one (Summers) is 100 percent Federal Range. The remaining five have some AUMs adjudicated to their own private lands. There are 627 AUMs adjudicated to private land at this time.

E. Changes in Use

Since the AMP started, Juanita Bicondoa has given up a Forest Service permit for 1,000 sheep. This has eliminated her summer range for the sheep operation, which makes her sheep operation unfeasible for a typical desert operation. Cook leased the Bicondoa base property with the permit for six years. Since he has relinquished the lease, Mrs. Bicondoa has taken nonuse for two years.

The Lackerman Ranch permit controlled by Clyde Summers has been in nonuse status four of the seven years of this evaluation period, due to financial reasons. The Berryessa permit has taken nonuse four of the seven years of the evaluation. Two years of nonuse were taken due to wildfire rehabilitation project in his use area. The other two years of nonuse were taken because Berryessa takes nonuse when the grazing system specifies use in the South Pasture early.

### III. ALLOTMENT PROFILE

- A. The Tuledad Allotment's northern boundary is one mile south of Eagleville and extends 1-3 miles past the Buckhorn Road on the southern boundary. The area is characterized as being topographically diverse. The lower country is dominated by annual grasses and forbs, Wyoming big sagebrush and some perennial grasses. The higher elevations are dominated by perennial grasses and forbs and Mountain big sagebrush. There are extensive zones of dense bitterbrush stands in the upper elevations.

An Allotment Management Plan was established in this area in 1980. This evaluation covers seven grazing seasons from April 1980 to October 1986. Baseline trend data on upland range sites was not gathered until late 1980 or the spring 1982.

B. Acreage

| <u>Status</u> | <u>Acres</u> |
|---------------|--------------|
| Federal       | 142,756      |
| Private       | 17,644       |
| State         | -0-          |
| TOTAL         | 160,400      |

C. Objectives

1. Initiate and maintain an upward trend toward range site potential.
2. Demonstrate a statistically significant increase in ground cover (including litter) within six years on key study plots.
3. Increase canopy cover of rushes, sedges, and grasses to 90-100 percent (reduce bare ground 0-10%) within six years on all wet meadows and riparian communities.
4. Demonstrate a statistically significant increase in perennial grass basal cover within 12 years on key study plots.
5. Increase livestock productive capacity (i.e. increased calf crop, increase lamb and calf weights.)

6. Reduce and maintain wild horse numbers at proper management levels of 100 head, as per Tuledad/Home Camp MFP.
7. Improve and maintain bitterbrush in a satisfactory condition for game and non-game species in all pastures.
8. Improve wildlife habitat to the point where it could sustain a population of 3,750 deer and 1,000 antelope.
9. Improve soil stability by initiating or maintaining an upward trend toward range site potential.

D. Key Species

1. Idaho fescue (Festuca idahoensis)
2. Thurber's needlegrass (Stipa thurberiana)
3. Western needlegrass (Stipa occidentalis)
4. Bluebunch wheatgrass (Agropyron spicatum)
5. Bitterbrush (Purshia tridentata)

These are the dominant key species for the Tuledad Allotment. Occasionally some other species are used as key species on a transect specific basis.

E. Grazing System

The Tuledad AMP was originally developed to be a two pasture deferred rotation system which would evolve into a two pasture rest-rotation system. Under the deferred system early turnout use would be alternated annually between the two pastures. The other pasture would be utilized as the after seedripeness use pasture. This system was implemented in 1980. The rest-rotation part of the Plan has never been fully implemented. This is due, for the most part, to the late season forage limitations in the North Pasture of this Allotment. In 1982, the South Pasture was used season long. An exceptional forage production year had occurred in 1982 and the BLM took advantage of the opportunity to rest the North Pasture.

The Tuledad grazing system evolved into a eight pasture deferred/rest system during the evaluation cycle. Six native range pastures are a result of elevation differences and fire rehabilitation. The Bare Creek and Rye Patch Pastures are both low elevation pastures which are generally below 5700 feet. These areas are normally at range readiness by April 16 and are the early turnout areas on an alternate year basis. These areas are not fenced from the North or South Pasture respectively, however, the elevational changes within these areas have had a significant influence on how livestock move through and utilize the area. When the South Pasture receives late use, the Rye Patch Pasture receives virtually complete rest. The same relation is true between the North Pasture and Bare Creek Pasture.

The North and South Pastures are the largest pastures and are above 5700 feet and below 6800 feet. These two units receive alternate grazing treatment of May 16 to July 15 (early use) and July 15 to September 30 (late use).

The Cottonwood and Boot Lake Pastures are both high elevation (6500-7700 feet) units. These pastures receive use by cattle no earlier than July 15 each year.

The following depicts the use periods for eight pastures in the Allotment since 1980.

Native Range

| <u>Year</u> | <u>Bare Creek<br/>below 5700'</u> | <u>Rye Patch<br/>below 5700'</u> | <u>N. Pasture<br/>5700'+</u> | <u>S. Pasture<br/>5700'+</u> | <u>Bootlake<br/>Pasture</u> | <u>Cottonwood<br/>Pasture</u> |
|-------------|-----------------------------------|----------------------------------|------------------------------|------------------------------|-----------------------------|-------------------------------|
| 1980        | 4/16-6/15                         | Rest                             | 5/16-7/15                    | 7/16-9/30                    | 7/07-9/30                   | 8/01-9/30 <sup>1/</sup>       |
| 1981        | 4/16-6/15                         | Rest                             | 5/16-7/15                    | 7/16-9/30                    | 7/07-9/30                   | 8/01-9/30 <sup>1/</sup>       |
| 1982        | Rest                              | 4/16-6/30                        | Rest                         | 6/15-9/30                    | 7/16-9/30                   | 7/15-9/30 <sup>1/</sup>       |
| 1983        | 4/16-6/15                         | Rest                             | 5/16-7/15                    | 7/16-9/30                    | 7/16-9/30                   | Rest                          |
| 1984        | Rest                              | 4/16-6/30                        | 7/16-6/30                    | 5/16-7/15                    | 7/16-9/30                   | Rest                          |
| 1985        | 4/16-6/15                         | Rest                             | 5/16-7/15                    | 7/16-9/30                    | 7/16-9/30                   | 8/01-9/30                     |
| 1986        | Rest                              | 4/16-6/30                        | 7/16-9/30                    | 5/16-7/15                    | 7/16-9/30                   | 8/01-9/30                     |

Seeding

| <u>Year</u> | <u>Tuledad</u> | <u>Worland</u> |
|-------------|----------------|----------------|
| 1979        | Treated        |                |
| 1980        | Rest           |                |
| 1981        | Rest           |                |
| 1982        | Rest           | Treated        |
| 1983        | 4/01 - 4/30    | Rest           |
| 1984        | Rest           | Rest           |
| 1985        | 4/01 - 4/30    | Rest           |
| 1986        | 4/01 - 4/25    | 4/01 - 4/26    |

The AMP has been followed as designed with the exception of two years. In 1981, the South Pasture was scheduled for early use, however, the Cottonwood Mountain Burn Rehabilitation Fence was not completed. Therefore, the decision was made to go north for the second year in a row. As stated earlier the North pasture received complete rest the following year in 1982.

<sup>1/</sup> Cottonwood Mountain Pasture received light use overall during these years. The burn area within the pasture received heavy use from deer, wild horses and cattle.

#### IV. MANAGEMENT EVALUATION

##### A. Purpose of Evaluation

This evaluation will analyze the effects of the deferred rotation grazing system with regard to meeting the Tuledad AMP management objectives. Use patterns and actual use will be used to determine if stocking rates are at appropriate levels. Quantitative vegetative studies, photo comparison studies and professional judgement will be used to determine trend. Current seasons of use by pasture will be evaluated based on trend indicators and utilization.

Objectives will be analyzed to determine if they are reasonable and achievable.

##### B. Summary of Studies Data

The following information summarizes data collected during the last seven years and in some cases longer for the Tuledad Allotment. This information is stored in the Allotment Management Plan File and in the long term vegetative trend files.

##### 1. Actual Use (AUMs)

|        | <u>1980</u>  | <u>1981</u>  | <u>1982</u>  | <u>1983</u>  | <u>1984</u>  | <u>1985</u>  | <u>1986</u>  |
|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Cattle | 5,785        | 5,986        | 6,423        | 6,566        | 6,204        | 5,503        | 6,240        |
| Sheep  | 2,064        | 1,963        | 2,485        | 2,448        | 2,470        | 2,340        | 1,826        |
| Wild   |              |              |              |              |              |              |              |
| Horses | <u>3,557</u> | <u>2,371</u> | <u>2,964</u> | <u>3,697</u> | <u>2,293</u> | <u>2,917</u> | <u>2,028</u> |
| TOTAL  | 11,406       | 10,320       | 11,872       | 12,711       | 10,967       | 10,760       | 10,094       |

##### 2. Precipitation (Crop Year Totals)<sup>1/</sup>

|            | <u>1980</u> | <u>1981</u> | <u>1982</u> | <u>1983</u> | <u>1984</u> | <u>1985</u> | <u>1986</u>        | 10yr<br>Avg. |
|------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|--------------|
| Eagleville | 11.82       | 6.33        | 11.45       | 10.36       | 10.36       | 5.78        | (12) <sup>2/</sup> | 8.40         |
| Cedarville | 17.15       | 9.66        | 14.10       | 12.06       | 16.70       | 8.95        | 18.66              | 13.74        |

The Eagleville and Cedarville precipitation stations were used to indicate the above average and below average precipitation years. Precipitation was above normal during the three year period of 1982, 1983 and 1984. This cycle was preceded by and followed with significantly below average precipitation years.

<sup>1/</sup> These numbers reflect a crop year of October thru July.

<sup>2/</sup> Approximation based on partial data for 1986.

### 3. Utilization

In general the utilization patterns have been fairly uniform and within utilization limits. However, there have been problem areas, in Tuledad Canyon, Express Canyon, the east side of the Wire Lakes area and the Cottonwood Mountain area.

Some management remedies have been put into place to solve these problems prior to this evaluation. The Cottonwood Mountain Fire Rehabilitation Fence was finally completed in 1983. The Tuledad Allotment Division Fence was constructed in 1986 and will provide a means of controlling grazing use and time of use more effectively in Tuledad and Express Canyons. Wire Lakes continues to be a problem which must be studied.

The attached use pattern map is a composite of seven years of utilization information in the Tuledad Allotment. This indicates areas which have been under utilized (slight use) and overutilized (heavy or severe use).

### 4. Trend

#### a. Vegetative Trend Transects

Ten trend transects have been analyzed for this evaluation. Six were located in the South Pasture and four were located in the North Pasture. These transects were located in key management areas and are representative of the upland vegetation in the Tuledad Allotment.

##### 1. South Pasture

Total cover increased on four of six transects in this Pasture. The live cover on SOB Lake transect dropped because of sagebrush and bitterbrush dying on the site, thereby reducing total cover. Perennial grass basal cover was slightly up on three transects and slightly down on three transects. None of the changes were at a significant level.

Of the six transects evaluated three had indications of upward trend, two were stable and one was stable or slightly down.

##### 2. North Pasture

Total cover increased on four of four transects measured in this Pasture. Total litter cover increased on all four transects. Perennial grass basal cover decreased slightly on all four transects but not at a significant level.



Bitterbrush cover showed an increase at a 75% significance level. This occurred at a transect where heavy utilization of key species has taken place for the last four years.

Of the four transects evaluated, only one had indicators of an upward trend. One transect was considered to be stable, while two were considered to be stable or slightly down.

b. Bitterbrush Condition Transects

Twelve (12) Cole type bitterbrush transects have been analyzed for this evaluation. Three transects in the South Pasture, two transects in Cottonwood Mountain and seven transects in the North Pasture.

1. South Pasture

Two transects along the Buckhorn Road have declined in form class and age class. Much of the decline appears to be related to the dying of brush plants at both sites as well as heavy ungulate use on all available bitterbrush.

One transect west of Express Canyon has remained stable for both form and age class. This site was in the overlap zone between the North and South Pastures prior to the Division Fence construction.

2. Cottonwood Mountain

The Cottonwood transects have remained stable or dropped for both form and age class. Since late summer, livestock use has been strictly regulated and it appears that the declines are primarily related to fall deer concentration on the unburnt bitterbrush zones. Cottonwood is right in the middle of the seasonal migration corridor from the South Warner Mountains and Hays Canyon Range to the winter ranges.

3. North Pasture

One transect near Barber Creek started out in satisfactory condition and has shown slight improvement in average form class.

One transect east of Newland Meadow has improved to satisfactory condition. Two transects on the west side of the Wire Lakes have remained in unsatisfactory condition with poor vigor and leader production. Two of the Wire Lakes transects have also remained in

poor condition with almost no leader production. These transects have received relatively low levels of cattle use, unknown levels of sheep and horse use and heavy deer use.

One transect in upper Tuledad Canyon has had alot of variability in form class with a stable age class. Recent readings indicate an upward trend with satisfactory form class.

c. Riparian

One meadow transect located in the North Pasture below Ant Spring indicated an upward trend based on increased cover. This transect is representative of most of the stringer meadow complexes in the Tuledad Allotment.

A historical photo point was established at the Pryor Spring Meadow complex in the North Pasture. Based on the interpretation of this photo point the Pryor Meadow has experienced an upward trend. This improvement is representative of observed conditions on the larger meadow complexes in the Allotment during the evaluation period.

The Snake Lake shoreline and meadow complex have also improved based on observations inside and outside the enclosure.

The Express Canyon riparian zone located in the South Pasture has experienced some improvement during the evaluation period. Although heavy use occurs on this zone when used during the late season, sod development and bank stablization has occurred.

The Cedar Canyon riparian zone located in the South Pasture was never identified as a key area with riparian potential. Based on observations made during this evaluation, significant gains in woody vegetation (willow and rose) has improved the stream channel stability.

d. Watershed

Information collected from the Trend transects was used to determine soil loss using the Revised Range Universal Soil Loss Equation (RRUSLE).

Based on this equation, the erosion factor decreased on eight of ten transects. The two increases were only very slight. Of the two which showed an increase, one had reduced canopy cover due to sagebrush and bitterbrush die-off while the other had a decrease in litter cover. All ten of the transects erosion factor were less than the T value (erosion tolerance) for their respective soils.

## V. CONCLUSIONS

### A. Objectives (Referred to by number in III.C.)

1. Upward trend toward range site potential has been initiated in the Tuledad Allotment. Results are mixed, however, conclusions can be drawn from the data and from professional judgement. The basis for this is:
  - a. Of the ten trend transects measured, three showed obvious improvement towards upward trend. Four transects were stable but had obvious plant vigor improvement. Three transects were classified as stable or slightly down. Two of the stable to slightly down transects are located in areas mapped as heavy use. The third is on an area where total live cover has declined due to a sagebrush and bitterbrush die off without an equivalent or greater increase in herbaceous species. This brush die off is fairly recent. If key grass species occupy the site over time this transect will show improvement toward range site potential.
  - b. Riparian data gathered indicates upward trend is being attained on most riparian sites in the Allotment. Riparian data and observations indicate upward trend is occurring in the meadow and riparian zones located in the Bare Creek and Rye Patch Pastures. The shallow soiled stringer meadows with rock armor in the channels are responding in an upward trend in the North and South Upland Pastures. The deeper soil riparian sites in these pastures are remaining stable to slightly down. The riparian zones in the two mountain pastures are stable.
  - c. Soil erosion has been reduced on eight of ten transects measured in the Allotment. Reduced erosion has resulted in improvement toward range site potential.
2. Total ground cover increased significantly during the evaluation period on six of ten transects. Two transects increased in total cover but results were not significant. Two decreased slightly but results were not significant. This objective has been achieved.
3. Canopy cover on wet meadows and riparian has increased in the Allotment. The increase most likely does not meet the 90% level of cover on all meadows or riparian zones as stated in the objective.

In general, meadow and riparian areas below 5700 feet have responded well under this grazing system due to alternate year rest afforded these areas. Those sites located above 5700 feet are used annually either early or late. These areas are responding at a slower rate but are improving.

4. None of the upland ecological sites measured had a significant increase or decrease in perennial grass basal cover. This is only the sixth year of a 12 year objective. Cover of perennial grasses appears to be stable. Vigor of perennial grasses has increased due to the grazing deferrment on most sites measured.

A significant increase in perennial grass basal cover will be an unattainable objective in the next six years. Current canopy cover of mountain big sagebrush (Artemisia vasseyana) is such that the 7-Loamy Range Sites are near fully occupied with respect to vegetation. It is anticipated that perennial grass basal cover will be maintained and grass vigor will continue to improve during this next six year period.

In order for perennial grasses to increase on key areas consisting of the 7-Loamy Range Site, some form of brush removal will need to be completed.

5. The objective for increasing the livestock productive capacity for the Allotment has not been achieved. Utilization patterns and levels of use indicate the current active use is approximately correct. This objective also suggested measuring productivity of the Allotment based on weight gain by livestock. This, however, has not been monitored by the BLM or the permittees.
6. The objective to reduce and maintain wild horse numbers at 100 head was achieved in 1986. This has been the only year in which this objective was attained during the evaluation period.
7. The results of bitterbrush monitoring are highly variable. Changes in condition have occurred including both improvement and decline in condition. In those key areas where bitterbrush condition is unsatisfactory, the cause is not clearly defined. In the Wire Lakes area which has had only two years of late season cattle use and little or no sheep use, the cause may be deer use. The Cottonwood Mountain area problems may be a combination of sheep and deer use. The Buckhorn Road area is a major migration route for deer and receives significant cattle and sheep use. Analysis of the site indicates bitterbrush die out along the Buckhorn may be from causes other than current grazing practices. This area supports very old, decadent stands of bitterbrush, therefore age could be a factor. In this same area, stands of sagebrush are also dying. This could be the result of some disease, insects or high water tables.

Two very important factors have affected condition of bitterbrush in the Allotment. First of all, bitterbrush use by deer has increased. This use is due to losses of transition range adjacent to Tuledad, as a result of recent wildfires, and due to very poor condition deer winter range to the south of

Tuledad. This has resulted in deer staying in the Allotment longer. Secondly, the deferred rotation grazing system has concentrated cattle and sheep into pastures where key bitterbrush areas are located and at the time when bitterbrush zones are most palatable. The deferred grazing system may not be providing adequate rest to overcome the combined effects of heavy livestock and deer utilization of bitterbrush. Unless use patterns by deer and livestock can be altered radically the objective will continue to be unattainable in certain areas.

Since it appears deer may be more of a problem than livestock in some bitterbrush zones, a better cause and effect relation between deer and the current heavy utilization of bitterbrush in the concentration areas must be determined.

8. Wildlife habitat conditions were and are in a condition to support 3,750 deer and 1,000 antelope. Based on early counts by California and Nevada wildlife agencies these populations existed on the Allotment. These counts are, admittedly by the agencies, very rough approximations.

At the coordination meeting for this Allotment in May, 1987 both agencies expressed the opinion that the use of population objectives in the AMP should be eliminated and emphasis placed upon habitat related objectives.

9. Soil stability on the major use range sites has been improved. The improved litter and live vegetative cover has reduced soil loss to or has maintained soil loss at acceptable levels based on SCS guidelines on erosion tolerance (T) values for specific soils.

## B. Grazing Management

### 1. Systematic Grazing

Systematic grazing has occurred in the Allotment from 1980 to present. The grazing scheme has allowed for periods of deferment and rest on the Allotment.

Each pasture has a specified time of use based on range readiness. Areas receiving mid-April to mid-May use one year, are rested the next year. The high elevation mountain pastures do not receive use until mid-July and utilization limits are adhered to. The two upland pastures receive a growing season treatment (May 15 to July 15) one year followed by a seed ripe treatment the next (July 16 to September 30).

In addition, the two seeded pastures (Tuledad and Worland) receive use in early April, cattle are then removed while there is sufficient soil moisture to allow for regrowth of the seeded species. Several native species (Indian ricegrass, basin wildrye) are responding well in these Pastures. By allowing for regrowth, these areas can be used early each year.

## 2. Season of Use

The season of use licensed during the evaluation period coincides with range readiness for the Allotment. April 1 turnout is allowed only in the Tuledad and Worland Seeding Pastures. Approximately one-third of the cattle licensed in the Allotment can be held in the Seeding until May 1. April 16 turnout, with the remaining two-thirds of the cattle, is allowed on those low elevation native pastures where range readiness is earlier than the upland pastures. These sites are dominated by cheatgrass, squirreltail, and some Indian ricegrass. Cattle do not normally reach the high elevation Idaho fescue, bluebunch wheatgrass sites until May 15 or May 30.

The March 26 turnout by sheep corresponds to the lambing operation by the sheep permittee. Two bands of sheep lamb on the Allotment in the lower elevation native pastures. Bands of sheep are scattered over large areas during this time. One band is removed from April 15 to May 20 every year to an adjacent Winnemucca District Allotment. Both bands are back on the Allotment by May 22.

Observed impacts to this lower elevation area during lambing seem to be minimal. The more noticable impacts of sheep utilization occurs later in the grazing season (May to June) when they are bunched together.

## 3. Stocking Rate

The current active stocking rate appears to be the appropriate level. Problem areas have been identified by use maps for the Allotment, but these problems are associated with natural concentration areas and livestock distribution problems. Fencing has been completed to alleviate some of these problems. The Allotment has been stratified into nine pastures since the start of the Plan. This will assist in assuring proper stocking is achieved in each of these pastures.

## C. Riparian and Watershed Management

### 1. Upland Watershed

Upland transects indicate management is improving the watershed base for Tuledad Allotment. However, there is insufficient data collection on specific watersheds within the Allotment to assist management making long term management decisions for watershed and riparian improvement.

### 2. Riparian

In general, the smaller stringer meadow riparian zones are responding well under the current system. There is, however, a

need to specialize management on some key riparian zones in the Allotment (i.e. Express Canyon, Tuledad Canyon, Bud Brown Cabin).

### 3. Exclosures

Three exclosures were constructed in this Allotment for the protection of riparian values. These exclosures are at Barber Creek, Bare Creek and Snake Lake.

The Bare Creek Exclosure has been the most successful in rehabilitating a trout stream fishery. This is one of only a few stream fisheries in the Resource Area.

The Barber Creek Exclosure has also been successful. The Creek is located along a major trail and drift area for BLM and Forest Service permitted cattle. The Exclosure has resulted in tremendous vegetative response along the Creek.

The Snake Lake Exclosure has provided an intermittant lakebed with complete rest for ten years. Vegetative response inside and outside the Exclosure are similar under the current grazing system which provides this area with rest every other year.

All three exclosures have been difficult to maintain. Snake Lake has been the most difficult due to water damage at the north end and by antelope damage on the east and west sides.

### 4. Potential Projects

The potential for additional riparian and watershed projects exists in the Allotment. The Express Canyon, Tuledad Canyon, Bud Brown Cabin, Cedar Canyon and Upper Tuledad Canyon are all potential projects which will require additional management to improve. The Pasture Division Fence constructed in 1985 provided additional control of cattle in the Tuledad Canyon and Express Canyon areas.

#### D. Project Development

##### 1. Range

Extensive water development has been completed in the Tuledad Allotment. Water distribution in the Allotment is optimum by most standards. Additional water development should be minimal.

Two crested wheatgrass seedings were developed in the Allotment (Tuledad and Worland). A third seeding (Rye Patch) was proposed for development. Neither seeding (Tuledad or Worland) can be considered a great success. Tuledad Seeding (900 acres) is the best of the two with regard to germination success.

This area provides 250-300 AUMs annually during the month of April. The Worland Seeding (1,600 acres) is larger but provides no more forage. The poorer response in Worland is due to a poor sagebrush kill. This area was sprayed with 2,4-D. The Tuledad Seeding had been chained. The Rye Patch Seeding area would not be expected to respond much better than the two preceding seedings.

The Cottonwood Fire Rehabilitation Fence was constructed in 1983 to protect the burned area. This fence will be maintained to provide a late season mountain pasture in the southern portion of the Allotment.

In 1985, the Tuledad Pasture Division was constructed to split the North and South Pastures. Additional large scale fencing needs are not anticipated for the Tuledad Allotment in the future. An occasional drift or protective fence may be necessary to take care of special problems.

## 2. Riparian

The Tuledad Allotment has a high diversity of existing and potential riparian projects.

Existing projects which need work are the Bare Creek Exclosure and the Snake Lake Exclosure. The Bare Creek Exclosure was attached to some very old privately constructed fence. Cattle are leaking into this Exclosure annually. There is also an open gate problem on the north end annually. The Snake Lake Exclosure is a tremendous fence maintenance problem annually. The maintenance demands of this fence exceed the Resource Area's ability to repair it annually. The exclosures purpose was originally to protect lakebed forage for antelope kidding and nesting waterfowl. Antelope's dependence upon this lakebed does not appear to be critical. The potential for waterfowl nesting seems to be the most important value for this area. This could be accomplished by fencing an area on the northeast shoreline of the lake.

## E. Other Resources

### 1. Big Game Habitat

There are some very puzzling aspects to bitterbrush management in this Allotment. Key areas for bitterbrush could be studied by establishing a series of transects and exclosures to monitor different grazing treatments, brush removal techniques and kinds of animal use on this very important species.

### 2. Wild Horses

The Copper Smith and Buckhorn HMA boundaries have been affected by the construction of the Tuledad Pasture Division Fence. The



affect on the horses in relation to historic use is minimal. The boundaries had originally used Tuledad Canyon due to proximity and obvious land feature identification. However, current wild horse use patterns indicate the Coppersmith horses move to Tuledad Canyon in times of cold stress while the Buckhorn horses move to Duck Flat. The fence has no adverse effects on the use patterns.

## VI. RECOMMENDATIONS

### A. Objectives

#### 1. Existing Objectives

- a. The initiation and maintenance of trend toward range site potential should be dropped as a general objective. This objective should be specific to certain key areas based on resource values in that area.

It must be realized that range site potential (climax or excellent condition) is not necessarily the best condition for all vegetation types in the Allotment. Range site potential as defined by SCS Range Site Guide would result in predominantly a grassland situation in the Tuledad Allotment which could adversely affect deer management in the area.

- b. Objective #2 regarding total ground cover should be retired. This general cover objective was achieved on eight of ten upland range sites in the first six years. Total ground cover should still be measured on these upland sites, but the data should be used in conjunction with the RRUSLE to monitor soil erosion tolerances.

Specific total ground cover objectives should be developed for the Upper Tuledad, Express Canyon, Cedar Canyon and Bud Brown Cabin Watersheds (see Map). Three of these areas incurred heavy use during the initial evaluation period. Management actions should be designed to lessen use on these zones during the next six years.

- c. Objective #3 should be retired. This general riparian objective for all wet meadow and riparian zones emphasized increases in rushes, sedges and grasses, which are not necessarily the most desirable species composition and does not recognize the woody species component.

This objective should be replaced with key area objectives emphasizing increased plant diversity. Decreased bare ground will still be the most important parameter of the objective.

- d. Objective #4 is unattainable without some form of brush removal on seven key areas in the 7-Loamy Range Site currently being monitored. All seven sites have significant brush canopy cover which will inhibit perennial grass response. A significant increase in perennial grass basal cover is unlikely without some form of brush removal.
- e. Retire Objective #5 regarding livestock productivity as related to percent calf and lamb crop and weights. These elements were not measured during the first evaluation cycle. Improved livestock productive capacity can best be measured by BLM based on total active AUMs.
- f. Revise Objective #6 on wild horses to read the same as the revised Tuledad/Home Camp MFP III (1983).
- g. The satisfactory bitterbrush condition objective (#7) based on form class standards is unattainable for the key bitterbrush areas of Wire Lakes, Buckhorn Road and Cottonwood Mountain. All three areas receive intensive deer use as a transition range during the spring and fall (6 months). In addition, these areas receive late season (3 months) cattle and sheep use on every other year basis for Buckhorn and Wire Lakes and every year for Cottonwood Mountain. With this extensive use these areas will not improve to satisfactory condition.

Management success in Tuledad with regards to bitterbrush (big game habitat) should be based on the big game it is supporting as well as the maintenance of bitterbrush on a sustained basis no matter what its form class. Recruitment levels (reproduction), total population levels and physical condition of big game should be used as indicators of proper management as well as evaluating bitterbrush age, reproduction, form class and productivity. No single element can be the sole indicator to the success or failure of management in the area.

- h. The habitat condition in the Tuledad Allotment was satisfactory to support reasonable numbers of big game. The objective for reasonable numbers was achieved and even exceeded.

Nevada Department of Wildlife (NDOW) and California Fish and Game have expressed an interest in retiring Objective #8 regarding reasonable population levels for deer and antelope. BLM being habitat managers initially concurred with this thought. However, part of BLM's concurrence was based on the fact that population information for deer and antelope was difficult to obtain for the specific area of Tuledad Allotment.

In retrospect there is a need for reasonable number objectives for big game at given points in time in order for BLM to evaluate the effects of habitat management on big game. Even if these number objectives are rough approximations they give the Game Agencies and the BLM a yardstick to measure in terms of success.

This Objective should be maintained.

- i. Objective #9 regarding reduced soil loss should be maintained. It should, however, be specific to watershed areas identified for improvement.

2. New or Revised Objectives

- a. Maintain soil loss below the accepted T-value for specific soils on the ten existing key area transects. (Use the RRUSLE.)

Rationale: Maintenance of soil loss at an acceptable level is a good indicator of management actions on the most basic soil resource.

Action: Continued implementation and refinement of the Tuledad grazing system. Lighter utilization standards in certain key areas.

- b. Reduce soil loss below the accepted T-value for specific key area soils on the Upper Tuledad, Express Canyon, Cedar Canyon and Bud Brown Cabin Watersheds (see Map).

Rationale: This objective assumes soil loss may be higher than the accepted T-value on those watersheds mentioned (this however is an unknown at this time). The heavy utilization and steeper slopes make these areas prime candidates for high erosion. Reduced erosion would be the best indicator of successful management.

Action: Continue current grazing system. Establish lighter utilization standards for these areas. Develop specific watershed plans for each area.

- c. Improve 40 acres of waterfowl nesting habitat at the north end of Snake Lake in six years.

Rationale: This area has a high potential for waterfowl nesting habitat. The current enclosure is not providing sufficient nesting habitat under fence.

Action: Remove existing enclosure and construct an enclosure specific to waterfowl nesting in the best location.

- d. Reduce juniper encroachment in the Upper Tuledad Canyon Watershed in six years.

Rationale: A significant encroachment of 10 to 20 year old juniper is dominating the canopy of the Upper Tuledad Canyon Watershed. A reduction of juniper is necessary to improve herbaceous ground cover, increase water infiltration, and improve bitterbrush condition.

Action: Prescribe burn, treat with herbicide or chain approximately 100 acres.

- e. Increase willow and rose cover along four miles of the Cedar Canyon drainage in six years.

Rationale: This will continue an existing trend started on the drainage. The four mile goal would improve conditions on 90 percent of the length.

Action: Continue with current grazing rotation.

- f. Increase perennial grass basal cover by five percent on the Burnt Lake and Boot Lake key areas in six years.

Rationale: Both areas have a dominant mountain big sagebrush canopy cover and vigorous perennial grass understory.

Action: Prescribe burn and provide two years growing season rest.

- g. Maintain perennial grass basal cover in the SOB, Copper-smith Mountains, Wasted Walk, and Cottonwood Mountain key areas during the next six years.

Rationale: These sites are all Loamy-7 Range Sites currently dominated by mountain big sagebrush, bitterbrush and squawapple. Since deer management relies on this browse, the brush canopy will be maintained. Little or no perennial grass increase will be expected.

Action: Continue implementation and refinement of the Tuledad grazing system.

- h. Reduce bare ground to ten percent on the Bud Brown Cabin meadow complex in six years.

Rationale: Bare ground on this meadow is currently 50-75 percent. Rehabilitation of this meadow complex is dependent on increased ground cover.

Action: Protective fence.

- i. Reduce or maintain bare ground below ten percent on ten key area meadows in the Allotment in six years. Diversity of plant species composition will also be improved.

Rationale: Ten key area meadows would be used to represent the varied meadow and riparian zones in the Allotment. Reduced bare ground and improved species diversity are the best indicators of improved trend on these sites.

Action: Continue implementation and refinement of grazing system. Construct special protective fences in certain key areas.

- j. Stabilize key bitterbrush areas to either satisfactory condition (average form class less than 2.25) or to the point that fall forage is available to meet the physiological requirements of the migrant and resident deer herds without resulting in loss of bitterbrush (see Map).

Rationale: Bitterbrush form class probably would not improve to satisfactory condition on all sites even without livestock browsing. Resident deer are at a long time high and recent fires and die-offs have reduced bitterbrush to a long time low. There is probably not enough bitterbrush in key areas to provide the required deer forage and allow for improvement in form class.

Action: Designate key area to receive special management. Schedule sheep use periods, utilization standards and periods of total rest.

- k. Maintain habitat in a condition to support 4,000 deer and 1,000 antelope.

Rationale: These numbers are based on approximated populations in the Tuledad Allotment during peak migration periods through Tuledad.

Action: Provide special management for key bitterbrush areas along major migration routes. Continue to implement and refine the grazing system.

- l. Maintain current livestock productivity for the Tuledad Allotment, which is 9,516 Animal Unit Months.

Rationale: Current utilization and actual use information indicate the Allotment is properly stocked.

Action: None

- m. Maintain wild horse numbers at proper management levels of 100-150 wild horses for the entire Allotment. This would equate to 50-75 wild horses in the Coppersmith HMA (North Pasture) and 50-75 wild horses in the Buckhorn HMA (South Pasture).

Rationale: Conforms with the Tuledad/Home Camp MFP III Decision for this area.

Action: Slight revision to the HMA boundaries to coincide with the new fenceline.

B. Grazing Management

1. Continue the grazing system which has evolved during the first evaluation period. The deferred/rest-rotation grazing system will assist in meeting the livestock productivity objective, the big game reasonable number objective, the maintenance of soil loss at acceptable levels objective, the improvement of total cover on meadow sites objective, and the maintenance of perennial grass basal cover objective. Revise the AMP to reflect this system with the following additions.
  - a. Fence the Express Canyon drainage into a riparian zone pasture. The season of use for this unit following a one year rest would be April 16 to May 15 each year. The total nonuse incurred during the remaining 11 months will assist in reaching the soil loss objective as well as increased cover and channel stabilization.
  - b. Fence a small pasture around the Bud Brown Cabin area for meadow protection. This area would be used only a few days each year by livestock as a holding field while trailing and branding. This would also relieve current heavy use by wild horses.
  - c. Remove the Snake Lake Enclosure Fence as it is in bad repair. Build a smaller total enclosure for waterfowl nesting habitat. The grazing system for the Snake Lake area shall specify an April 16 to June 15 use period once every two years. No late season use would be authorized.
  - d. Specify that the Rye Patch Pasture, would receive early use only once every two years. Livestock would not be pushed into the area during the late season. This reflects existing livestock use and will further promote willow and rose establishment in the Cedar Canyon drainage.

- e. Delineate in the AMP specific use periods for sheep in problem area bitterbrush zones. These more specific use periods would be integrated with the current late season use of the Upland and Mountain Pastures.
2. Continue the current season of use in the Tuledad Allotment for both cattle and sheep. However, turnout dates will be based on range readiness for specific pastures scheduled for use. Range readiness of a pasture will be the determining factor for turnout.
3. Continue management with the existing stocking rates. Each of the pastures must be better evaluated for carrying capacity. The capacity of the pastures, coupled with range readiness may affect the number of cattle which can be turned out early. Utilization mapping and transects will be important in determining the proper stocking rate for each unit based on its use period. Lighter utilization standards can then be set on identified problem areas (i.e. Wire Lakes, Buckhorn, Cottonwood Mountain).

C. Riparian and Watershed Management

Specific plans should be developed for key areas (i.e. Express Canyon, Upper Tuledad, Cedar Canyon and Bud Brown) for improved watershed management. These plans should evaluate if the objectives specified in the recommendations are reasonable and attainable as well as determine if they will accomplish the desired results.

D. Project Development

1. Range

- a. Future water development in Tuledad should be funded by the permittees, Grazing Advisory Board contributions or approved fee credit projects.
- b. The planned development of the Rye Patch Seeding should be dropped as presently designed. Only 640 acres on the southwest end of the Rye Patch area should ever be considered as potential seeding. The remaining area has the same droughthy soils and even lower precipitation than the Tuledad and Worland Seedings. Seeding success would be doubtful and not cost effective.
- c. In order to meet the objective to increase perennial grass basal cover on the Burnt Lake and Boot Lake key areas, some form of brush removal must take place. The best available method presently at BLM disposal is prescribed burning.

- d. The improvement of bitterbrush on certain key areas may require additional pasture fence whereby livestock use can be better controlled.
- e. One hundred acres of juniper removal will be necessary in the Upper Tuledad Canyon Watershed area. If the area cannot be burned, a cost of 15 to 30 dollars an acre would have to be incurred to chain the area. In addition, some protective fence would be necessary.
- f. The use of 2,4-D herbicide would be very beneficial for the reduction of sagebrush without significant loss of bitterbrush.

2. Riparian and Watershed

- a. Approximately seven miles of fence will have to be built to manage the Express Canyon area as a riparian pasture.
- b. Approximately three miles of fence will have to be built to protect the Bud Brown Cabin meadow complex.

3. Big Game Habitat

Develop three bitterbrush study areas in the Tuledad Allotment. The three study areas would be located along the Buckhorn Road, on Cottonwood Mountain and in the Coppersmith Hills. These studies will provide more detail on cause and effect relations on bitterbrush condition. This study will require minimal fence.

4. Others

Revise the Buckhorn and Coppersmith Herd Management Area boundaries to reflect the 1985 pasture division fence. The use of the fence best reflects the use areas of each of the herds.

Coordination with the wild horse interests will be necessary to fully evaluate concerns over additional habitat fencing or protective fencing.



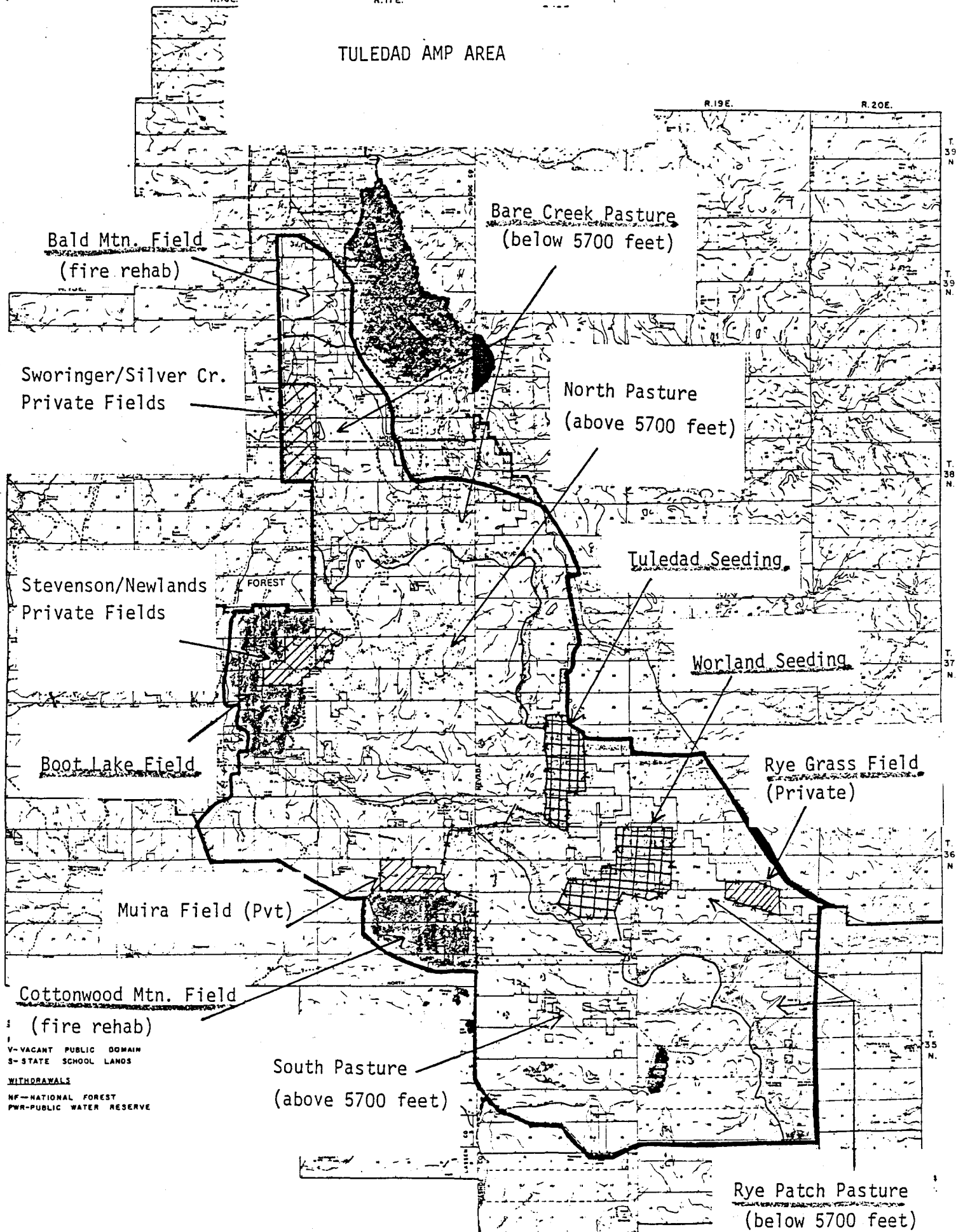
R.16E

R.17E

R.19E

R.20E

TULEDAD AMP AREA



Bald Mtn. Field  
(fire rehab)

Bare Creek Pasture  
(below 5700 feet)

Sworinger/Silver Cr.  
Private Fields

North Pasture  
(above 5700 feet)

Stevenson/Newlands  
Private Fields

Tuledad Seeding

Worland Seeding

Boot Lake Field

Rye Grass Field  
(Private)

Muira Field (Pvt)

Cottonwood Mtn. Field  
(fire rehab)

South Pasture  
(above 5700 feet)

Rye Patch Pasture  
(below 5700 feet)


V-VACANT PUBLIC DOMAIN  
S-STATE SCHOOL LANDS


WITHDRAWALS  
NF-NATIONAL FOREST  
PWR-PUBLIC WATER RESERVE


DRAWING NUMBER:04-020-08-3





Use Map

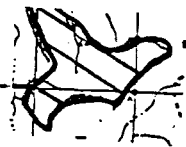
 Slight

 Light

 Moderate

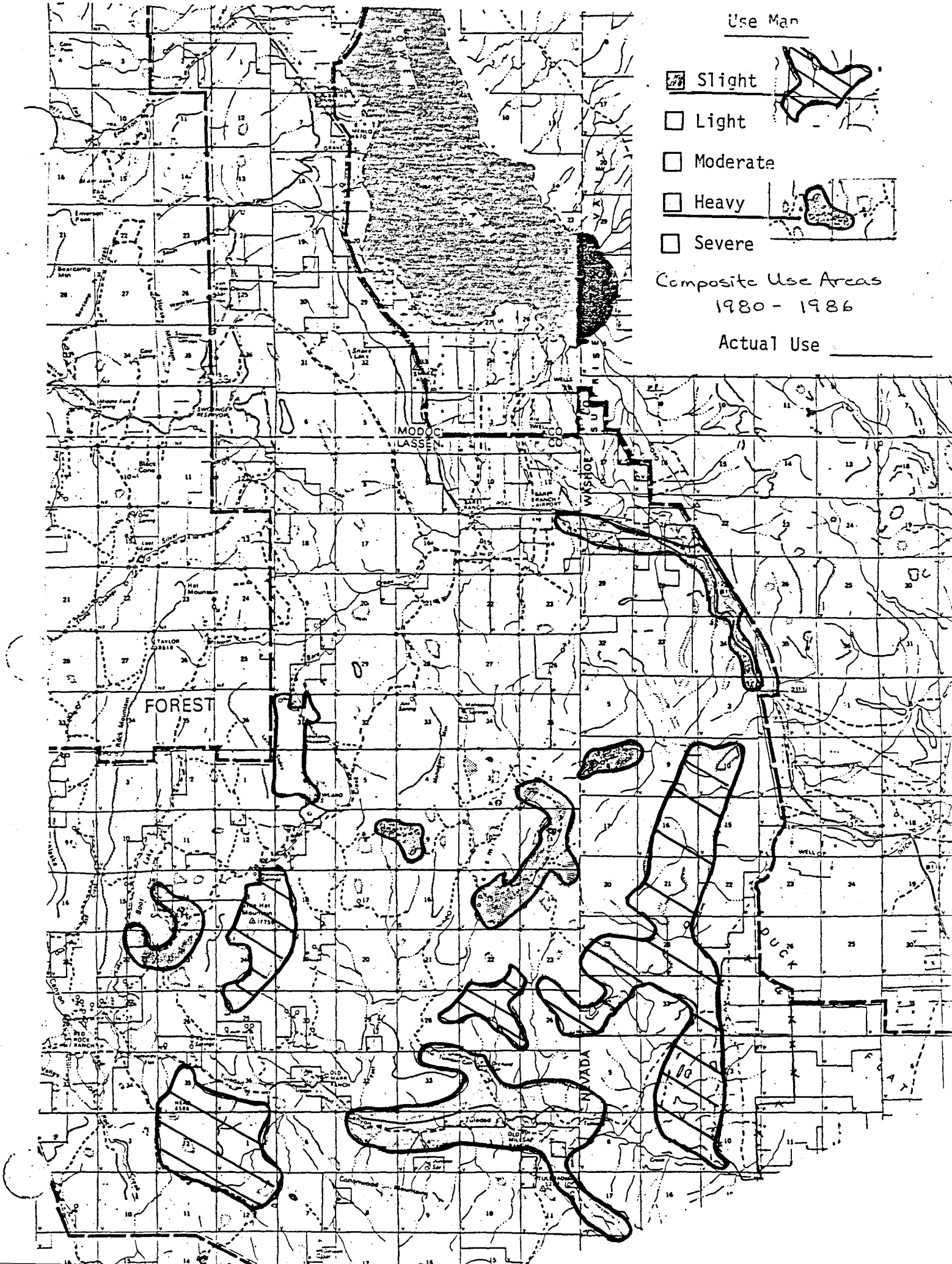
 Heavy

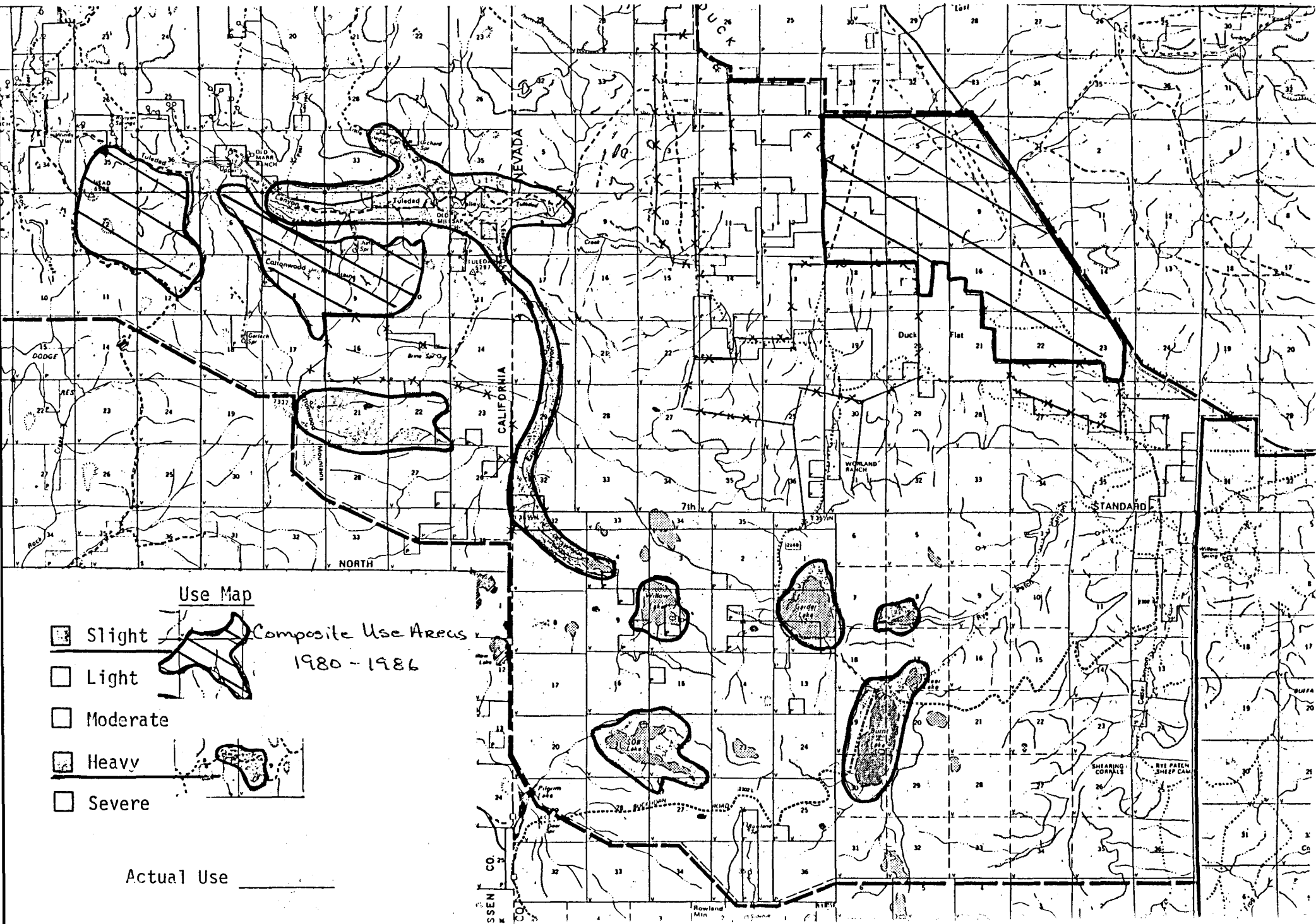
 Severe








Composite Use Areas  
1980 - 1986

Actual Use





Use Map

-  Slight
-  Light
-  Moderate
-  Heavy
-  Severe

Composite Use Areas  
1980 - 1986

Actual Use \_\_\_\_\_

R. 16E.

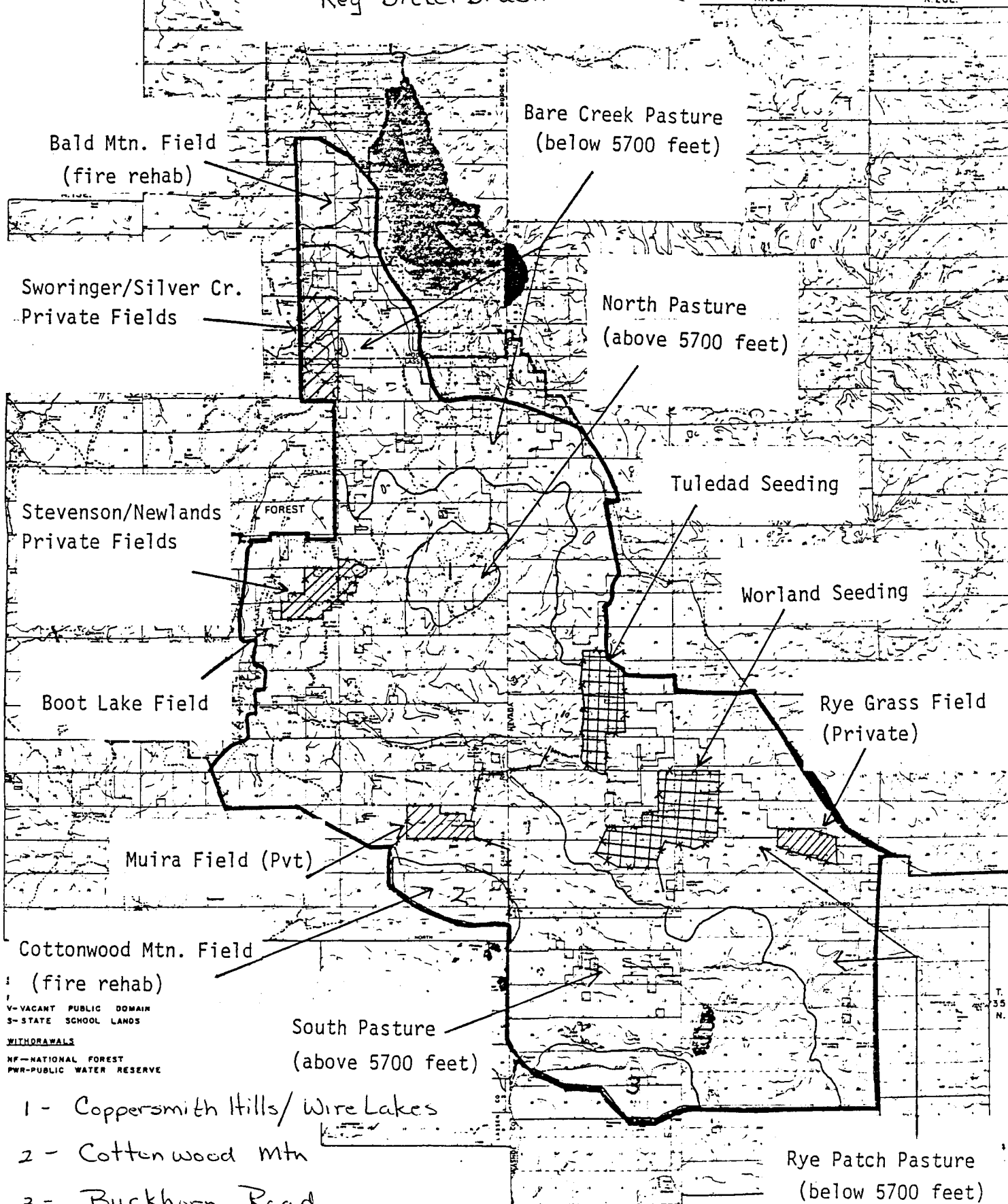
R. 17E.

R. 19E.

R. 20E.

TULEDAD AMP AREA

Key Bitterbrush Areas (KBA)



Bald Mtn. Field  
(fire rehab)

Bare Creek Pasture  
(below 5700 feet)

Sworinger/Silver Cr.  
Private Fields

North Pasture  
(above 5700 feet)

Stevenson/Newlands  
Private Fields

Tuledad Seeding

Worland Seeding

Boot Lake Field

Rye Grass Field  
(Private)

Muira Field (Pvt)

Cottonwood Mtn. Field  
(fire rehab)

South Pasture  
(above 5700 feet)

Rye Patch Pasture  
(below 5700 feet)

V-VACANT PUBLIC DOMAIN  
S-STATE SCHOOL LANDS

WITHDRAWALS  
NF-NATIONAL FOREST  
PWR-PUBLIC WATER RESERVE

- 1 - Coppersmith Hills/ Wire Lakes
- 2 - Cottonwood Mtn
- 3 - Buckhorn Road

DRAWING NUMBER: 04-020-08-3



# United States Department of the Interior

IN REPLY REFER TO:

4120(CA-028)  
Tuledad AMP

## BUREAU OF LAND MANAGEMENT SURPRISE RESOURCE AREA

P.O. Box 460  
Cedarville, CA 96130

### TULEDAD AMP EVALUATION SUMMARY

#### 1. DESCRIPTION OF GRAZING PRACTICES

A deferred rotation grazing system utilizing eight pastures has been the method of management in this Allotment for six years. Each of the eight pastures is used during different time periods based on range readiness of the pasture.

| <u>Pasture</u>          | <u>Season of Use</u> | <u>Cycle</u>   |
|-------------------------|----------------------|----------------|
| Tuledad Seeding         | 04/01 to 04/30       | Each year      |
| Worland Seeding         | 04/01 to 04/30       | Each year      |
| Bare Pasture            | 04/16 to 05/30       | Alternate year |
| Rye Patch Pasture       | Rest                 | Alternate year |
| South Pasture           | 06/01 to 07/31       | Alternate year |
| North Pasture           | 08/01 to 09/30       | Alternate year |
| Cottonwood Mtn. Pasture | 07/16 to 09/30       | Each year      |
| Boot Lake Pasture       | 07/16 to 09/30       | Each year      |

April use on native range by cattle has been reduced by 78 percent. Sheep use has remained the same with the exception of moving lambing locations around within the Allotment. Sheep have also been herded to avoid certain bitterbrush areas during the six years.

Moderate utilization has been the key management criteria for livestock during the evaluation period.

#### 2. SUMMARY OF RESOURCE OBJECTIVES

- a. Initiate and maintain an upward trend toward range site potential.

Result: Upward trend has been initiated in the Allotment.

- b. Demonstrate a statistically significant increase in ground cover (including litter) within six years on key study plots.

Result: Total ground cover increased on transects measured by the Daubenmire cover method.

- c. Increase canopy cover of rushes, sedges, and grasses to 90-100 percent (reduce bare ground 0-10%) within six years on all wet meadows and riparian communities.

Result: Canopy cover on meadows and riparian zones has increased on the Allotment based on observations, photo points and one Daubenmire cover transect.

- d. Demonstrate a statistically significant increase in perennial grass basal cover within 12 years on key study plots.

Result: Perennial grass basal cover has remained static during the first six years of the 12 year period.

- e. Increase livestock productive capacity (i.e. increased calf crop, increase lamb and calf weights).

Result: Current active livestock use (productive capacity) has been maintained but not increased.

- f. Reduce and maintain wild horse numbers at proper management levels of 100 head, as per Tuledad/Home Camp MFP.

Result: Proper management levels for wild horses were not achieved until 1986 (end of evaluation period).

- g. Improve and maintain bitterbrush in a satisfactory condition for game and non-game species in all pastures.

Result: Bitterbrush condition started in poor and has remained in poor for most transects.

- h. Improve wildlife habitat to the point where it could sustain a population of 3,750 deer and 1,000 antelope.

Result: Wildlife habitat can support recommended populations of deer and antelope.

- i. Improve soil stability by initiating or maintaining an upward trend toward range site potential.

Result: Soil stability has been improved due to increased ground cover in the Allotment.

### 3. OTHER OBSERVATIONS

- a. Utilization: In general the utilization patterns have been uniform and within the utilization limits. Observed problem areas are Tuledad Canyon, Express Canyon, east of Wire Lakes and Cottonwood Mountain. Fences constructed in 1983 (around Cottonwood Mountain) and in 1986 (pasture division fence) will provide effective means of controlling grazing use on Cottonwood Mountain and in Tuledad and Express Canyons.

- b. Precipitation: Precipitation was above normal from 1982-1984. It was preceded by and followed with periods of significantly below average precipitation.

- c. Vigor: Although basal cover of upland perennial grass species has not increased, an improvement in plant vigor was noted throughout the Allotment.

- d. Bitterbrush: Many more questions than answers about bitterbrush have surfaced during the evaluation period. Heavy ungulate utilization continues to occur throughout the Allotment. In some areas, livestock use has been strictly regulated and it appears the continued heavy use is primarily related to deer concentration. In another area, bitterbrush and sagebrush are both dying and the cause is unknown.
- e. Statistical Significance: Some transects did not reflect statistically significant data. This does not imply a static situation but rather an inability to monitor to a statistically significant level. Observation and professional judgement were relied on heavily in those instances.

#### 4. STUDIES

Ten upland range site studies were conducted for this evaluation. In addition, 12 bitterbrush studies, ten meadow photo points and one meadow transect were evaluated in areas grazed by livestock. Four years of utilization mapping and six years of actual livestock use were also collected and evaluated. Precipitation data from Eagleville and Cedarville were analyzed covering a ten year period from 1977 to 1987.

#### 5. STAFF RECOMMENDATIONS

##### A. AMP Objectives

1. Set a new ground cover objective by transect area.

Example:

"Maintain or increase total ground cover on the key management areas in six years."

The maintain or increase goal would be based on each key management areas current condition.

2. Set a new meadow/riparian objective for the next evaluation period.

Example:

"Increase foliar cover to 90 percent and species diversity of the desirable riparian plant species on key wet meadow and riparian communities in the next six years."

3. Eliminate statistical significance statement from the perennial grass basal cover objective.

Example:

"Increase perennial grass basal cover in 12 years on key management areas."



4. Develop watershed objectives for specific areas in the Allotment. Coordinate watershed plans with the AMP.

Example:

"Maintain soil loss levels at or below the accepted soil loss tolerance value for soils in key areas."

B. Grazing System

1. Continue with nine pasture rotation grazing system developed during the evaluation period.
2. Continue with the season of use specified for each pasture, for both cattle and sheep.

C. Stocking Rate

1. Continue with current active stocking rate for cattle and sheep.

D. Projects

1. Future water development should be funded primarily by the permittees. Adequate water for grazing management has been developed by the BLM.
2. The proposed Rye Patch Seeding should be dropped due to the limited success of two previous seedings in the area.

# TREND TRANSECT SUMMARY

April, 1981  
Evaluation  
R. Cooper

ALLOTMENT: TULEAD

PASTURE: NORTH

EVALUATION PERIOD: 1960 to 1986

PAGE 1 OF 1

| KEY AREA<br>TRANSECT #                                | Estimate/Measured<br>ECOLOGICAL STATUS                             | OBJECTIVES BY<br>KEY AREA                                      | KEY SPECIES                     | UTILIZATION  | CLIMATIC FACTORS  | TREND CHANGE   | OTHER CHANGES   | STATISTIC RESULTS  | COMMENTS   |
|---|--|--|---------------------------------|--|---|--|---|--|--|
| 5361707<br>GERLACH<br>SADDLING<br>TREND PLOT<br>82-86 | "Estimate"<br>MID SERAL<br>(High End)<br>NV23-17<br>STONEY CLAYPAN | TOTAL COVER ↑ 6yrs.<br>Basal Cover ↑ 12yrs<br>Perennial Grass  | FEID<br>STTH2<br>PUTR2          | 80 Moderate Early<br>81 Heavy Early<br>82 Light Rest<br>83 Slight Early<br>84 Heavy Late<br>85 Light Early<br>86 Moderate Late       | Ppt ↑<br>Ppt ↓<br>Ppt →<br>Ppt →<br>Ppt ↑<br>Ppt ↓<br>Ppt ↑ | Total Cover ↑<br>32.3 to 38.4<br>Perennial Grass Basal Cover 5.7 ↓<br>Perennial Grass Freq. ↑      | LTR Cover ↑<br>9.8 - 21.1<br>Arar Cover ↑<br>19.7 - 27.5<br>Arar Freq. ↓<br>60 - 40                         | Grass Cover 90%<br>LTR Cover NS<br>Grass Freq. NS<br>Arar Cover NS<br>Arar Freq. 95%                     | UPWARD TREND<br>TOTAL Grass Cover is down<br>However the decline was<br>in POSE; FEID & STTH2<br>increased at a 90% sig. lev<br>The measurements show<br>a sig decline in Arar at<br>in POSE. Free.    |
| 5371614<br>BOOT LAKE<br>TREND PLOT<br>82-86           | "Estimate"<br>MID SERAL<br>NV23-7<br>Loamy 12"-16"                 | TOTAL COVER ↑ 6yrs<br>Basal Cover ↑ 12yrs<br>Perennial Grasses | FEID<br>STOC2                   | 80 Moderate Late<br>81 Moderate Late<br>82 Light Late<br>83 Moderate Late<br>84 Rest<br>85 Heavy Late<br>86 Heavy Late               | Ppt ↑<br>Ppt ↓<br>Ppt →<br>Ppt →<br>Ppt ↑<br>Ppt ↓<br>Ppt ↑ | TOTAL COVER ↓<br>31.2 - 35.0<br>PERENNIAL Grass Basal Cover ↓<br>Perennial Grass Freq. ↓           | LTR Cover ↑<br>31.1 - 42<br>Artrv Cover ↑<br>22.5 - 23.2<br>Artrv Freq. ↓<br>1 -                            | Grass Cover NS<br>LTR Cover NS<br>Grass Freq. NS<br>Artrv Cover NS                                       | STABLE/DOWN<br>ALTHOUGH THE DATA ANAL<br>INDICATES N.S. the gene<br>trend based on my ob<br>tations is down. I think<br>of the trend can be at<br>to recent utilization.<br>There were also some plant |
| 5371703<br>Mahogany Ridge<br>Trend Plot<br>82-86      | "Estimate"<br>MID SERAL<br>(High End)<br>NV23-7<br>Loamy 12"-16"   | TOTAL COVER ↑ 6yrs<br>Basal Cover ↑ 12yrs<br>Perennial Grasses | FEID<br>STTH2<br>STOC2<br>PUTR2 | 80 Moderate Early<br>81 Heavy Early<br>82 Slight Rest<br>83 Moderate Early<br>84 Moderate Late<br>85 Heavy Early<br>86 Moderate Late | Ppt ↑<br>Ppt ↓<br>Ppt →<br>Ppt →<br>Ppt ↑<br>Ppt ↓<br>Ppt ↑ | TOTAL COVER ↑<br>35 - 43.3<br>Perennial Grass Basal Cover 8.5 ↓<br>Perennial Grass Freq. ↓         | LTR Cover ↑<br>38 - 43<br>Artrv Cover ↑<br>15 - 18<br>Artrv Freq. ↓<br>15 - 3                               | Grass Cover NS<br>Grass Freq. 90%<br>LTR Cover NS<br>Artrv Freq. NS                                      | STABLE<br>This site is heavily im<br>by cattle, horses, deer<br>always has. Site has<br>very little.<br>The radical change freq<br>of vegetation puts some doubt                                       |
| 5371711<br>Wire Lake<br>Trend Plot<br>82-86           | "Estimate"<br>MID SERAL<br>NV23-7<br>Loamy 12"-16"                 | TOTAL COVER ↑ 6yrs<br>Basal Cover ↑ 12yrs<br>Perennial Grasses | FEID<br>STTH2<br>STOC2          | 80 Moderate Early<br>81 Heavy Early<br>82 Slight Rest<br>83 Heavy Early<br>84 Heavy Late<br>85 Heavy Early<br>86 Heavy Late          | Ppt ↑<br>Ppt ↓<br>Ppt →<br>Ppt →<br>Ppt ↑<br>Ppt ↓<br>Ppt ↑ | TOTAL COVER ↑<br>30.8 - 41.5<br>Perennial Grass Basal Cover 5.3 - 4.5 ↓<br>Perennial Grass Freq. ↓ | LTR Cover ↑<br>34.8 - 36<br>Artrv Cover ↑<br>10.8 - 16.2<br>Artrv Freq. ↓<br>10.5 - 3<br>PUTR2 Cover ↑ 13.7 | Grass Cover NS<br>Grass Freq. 95%<br>LTR Cover 95%<br>Artrv Freq. NS<br>Artrv Cover NS<br>Artrv Freq. NS | STABLE/DOWN<br>Site is heavily grazed by c<br>and horses.<br>Cover indicators are<br>to upward while Freq<br>indicators are radical<br>down. General Appear<br>is stable or down                       |

ALLOTMENT: TULEDAD PASTURE: SOUTH EVALUATION PERIOD: 1980 to 1986 PAGE 1 OF 2

| KEY AREA<br>TRANSECT #                                 | Estimate/Measured<br>ECOLOGICAL STATUS                                      | OBJECTIVES BY<br>KEY AREA   | KEY SPECIES                             | UTILIZATION<br>Horses, Cattle, Sheep  | CLIMATIC<br>FACTORS   | TREND<br>CHANGE  | OTHER<br>CHANGES  | STATISTIC<br>RESULTS<br>(0.1 Level)   | COMMENTS  |
|--|---|---|---|---|---|--|---|---|---|
| S361721<br>Cottonwood<br>Burn<br>Tri Plot<br>81 vs '86 | "Estimate"<br>Early Seral<br>NV23-7<br>LOAMY 12"-16"                        | Total Cover ↑ 6 years<br>Basal Cover<br>Perennial Grass ↑ 12years | Feid<br>Stoc2<br>Stth2<br>Elci2         | 80 - Heavy Late<br>81 - Heavy Late<br>82 - Heavy Late<br>83 - Rest<br>84 - Rest<br>85 - Light Late<br>86 - Moderate Late                                | Pot ↑<br>Pot ↓<br>Pot →<br>Pot →<br>Pot ↑<br>Pot ↓<br>Pot ↑ | Total Cover ↑ 24.1<br>Perennial Grass Basal Cover ↑ 3.1<br>Perennial Grass Frequency →                           | Artrv Cover ↑ 13.5<br>Artrv Freq ↑ 10<br>LITR ↑ 4.3<br>16.9   | ANOVA<br>Grass Cover N.S.<br>Grass Freq N.S.<br>LITR 95%<br>Artrv Cover 95%<br>Artrv Freq               | Perennial Grass response is slow<br>Feid was adversely affected by<br>heat of wildfire; % cover of<br>has declined.<br>Artrv is recouping the site<br>very obvious change.<br>Early grazing utilization in<br>80,81,82 has resulted in slow<br>response by p.grasses. |
| S351811<br>Cook's CABIN<br>TREND PLOT<br>80 vs 86      | "ESTIMATE"<br>MID SERAL<br>NV23-17<br>STONE CLAYPAN                         | same as above   | Feid<br>Agsp                            | 80 - Light Late<br>81 - Light Late<br>82 - Moderate Season<br>83 - Moderate Late<br>84 - Light Early<br>85 - Light Late<br>86 - Moderate Early          | Pot ↑<br>Pot ↓<br>Pot →<br>Pot →<br>Pot ↑<br>Pot ↓<br>Pot ↑ | Total Cover ↑ 24.36<br>Perennial Grass Basal Cover ↑ 5.7<br>Perennial Grass ↓ Freq.                              | LITR Cover ↑ 4.3 to 15.7<br>Artrv 8 Cover ↑ 13.2 to 21.8<br>Artrv Freq ↓ 37 to 29                                 | ANOVA<br>Grass Cover N.S.<br>Grass Freq 95%<br>LITR N.S.<br>Artrv Cover N.S.<br>Artrv Freq N.S.         | AWARD TRENDS<br>Feid. shows a decline in<br>frequency. This is attribut<br>to reading frequency on the<br>upper line in 1980 and the<br>on the center line in 1986<br>This site has changed very<br>little in 6 years. Increase in<br>litter was the obvious visual   |
| S351809<br>Wasted Walk<br>Trend Plot<br>80 vs 86       | "Estimate"<br>Mid Seral<br>(Late Seral Possible)<br>NV23-7<br>Loamy 12"-16" | Total Cover ↑ 6 years<br>Basal Cover<br>Perennial Grass ↑ 12years | Feid<br>Agsp<br>Stth2<br>Stoc2<br>Putr2 | 80 - Moderate Late<br>81 - Moderate Late<br>82 - Moderate Season<br>83 - Moderate Late<br>84 - Heavy Early<br>85 - Light Late<br>86 - Moderate Early    | Pot ↑<br>Pot ↓<br>Pot →<br>Pot →<br>Pot ↑<br>Pot ↓<br>Pot ↑ | Total Cover ↑ 33.44.5<br>Perennial Grass Basal Cover ↓ 12.2<br>10.2<br>Perennial Grass ↑ Freq.<br>Browse Cover ↑ | LITR Cover ↓ 38.1 to 32.1<br>Artrv Cover ↑ 14.6 to 24.6   | ANOVA<br>Grass Cover N.S.<br>Grass Freq 90%<br>LITR COVER N.S.<br>Browse Cover N.S.<br>Artrv Cover N.S. | This site has changed very<br>little in 6 years. Vegetation<br>is impacted by cattle, sheep,<br>deer, wildhorses.<br>The lower litter cover corre<br>sponds to a difference in m<br>sites during the late use treat<br>and the early use treatment.<br>STABLE TREND   |
| S351825<br>BURN LAKE<br>TREND PLOT<br>80 vs 86         | "Estimate"<br>Mid Seral<br>NV23-7<br>Loamy 12"-16"                          | Total Cover ↑ 6 years<br>Basal Cover<br>Perennial Grass ↑ 12years | Feid<br>Agsp<br>Stth2<br>Stoc2<br>Putr2 | 80 - Moderate Late<br>81 - Moderate Late<br>82 - Moderate Season<br>83 - Moderate Late<br>84 - Moderate Early<br>85 - Heavy Late<br>86 - Moderate Early | Pot ↑<br>Pot ↓<br>Pot →<br>Pot →<br>Pot ↑<br>Pot ↓<br>Pot ↑ | Total Cover ↑ 39.4<br>43.2<br>Perennial Grass Basal Cover ↓ 5.8<br>5.7<br>Perennial Grass Freq →                 | LITR Cover ↓ 37.4<br>33.1<br>Artrv Cover ↑ 15.5<br>22.3<br>Artrv Freq ↓   | ANOVA<br>Grass Cover N.S.<br>Grass Freq N.S.<br>LITR COVER N.S.<br>Artrv Cover N.S.                     | This site has changed very<br>little in 6 years. All measur<br>changes were non significant<br>The difference in litter cov<br>is for the same reason as<br>identified in S351809.  |
| S351826<br>SOB LAKE<br>TREND PLOT<br>80 vs 86          | "Estimate"<br>Mid Seral<br>NV23-7<br>Loamy 12"-16"                          | Total Cover ↑ 6 years<br>Basal Cover<br>Perennial Grass ↑ 12years | Feid<br>Agsp<br>Stth2                   | 80 - Moderate Late<br>81 - Heavy Late<br>82 - Moderate Season<br>83 - Moderate Late<br>84 - Moderate Early<br>85 - Moderate Late<br>86 - Moderate Early | Pot ↑<br>Pot ↓<br>Pot →<br>Pot →<br>Pot ↑<br>Pot ↓<br>Pot ↑ | Total Cover ↓ 35.6<br>30.0<br>Perennial Grass Basal Cover ↓ 9.1<br>8.8<br>Perennial Grass Freq →                 | LITR Cover ↓ 42.8<br>30.3<br>Artrv Cover ↓ 17.6<br>12.8<br>Artrv Freq ↓ 23<br>16<br>Standing Dead LITR ↑ 0<br>5.7 | ANOVA<br>Grass Cover N.S.<br>Grass Freq N.S.<br>LITR COVER N.S.<br>Artrv Cover N.S.                     | This site is heavily imp<br>by deer, sheep and c<br>As with several sites at<br>the Bethern Rd., Artrv<br>and Putr are dying. This<br>corresponds with the slight<br>decrease in total cover.<br>STABLE to Down TREND   |

