

**Horsethief Springs Allotment
Management Plan**

Prepared by:

**U.S. Bureau of Land Management
California Desert District
Needles Resource Area**

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INTRODUCTION

The California Desert Plan and Environmental Impact Statement (EIS) for the California Desert Conservation Area established direction for the writing of an Allotment Management Plan (AMP) to be implemented for the Horsethief Springs Allotment. Implementation was to be effected, depending on funding, by September 1989.

The purpose of this AMP is to increase forage production to its maximum potential while protecting the rangeland resource through the application of range science. Other resource values are not to be adversely affected by livestock grazing. The AMP also provides for the planned use by: 1) designating numbers of livestock, 2) providing specific pastures, and 3) specifying times of the year for pasture use.

AMP implementation would occur through coordination between the rancher and a BLM multiple-disciplinary team of resource specialists. For more detail refer to the Analysis of Other Uses (Section II) and Objectives (Section III). Additional range improvements necessary to implement the AMP will be specifically addressed in separate Environmental Assessments.

According to the EIS, primary concerns about grazing management are for wildlife (especially bighorn sheep and desert tortoise), riparian habitat, desert vegetation, cultural resources, and the effects changing modes of grazing management would have on socio-economic conditions of the livestock operation itself. Important, but secondary issues are grazing impacts on soil, wild horses and burros, wilderness, and of Critical Environmental Concern (ACECs), and recreation. Other resources and uses are discussed in the Environmental Impact Statement for the Desert Plan.

Glossary

ACEC - Area of Critical Environmental Concern.

Animal Unit (AU) - An adult cow and calf or an equivalent combination of other animals for a period of one year.

Animal Unit Month (AUM) - The amount of forage required by one animal unit for one month.

Aspect - The predominant plant(s) in a range vegetation type either by density or by visual dominance.

California Desert Conservation Area Plan - The Federal Land Policy and Management Act of 1976 (FLPMA) directed BLM to inventory CDCA resources and to prepare a comprehensive land-use plan for the area.

Composition - Percentages are based on the proportion of the total density provided by perennial plants as a fractional part of ground cover including litter, rocks, and bare ground.

Density - Under the ocular reconnaissance method, density will consist of general estimates of overhead (vertical) ground cover for the current year's growth of all useable perennial vegetation on each range type. Density will be recorded as the decimal proportion of the ground that is covered or the plant canopy as viewed from directly above

Grazing Capacity - The average number of animal unit months of forage which can be harvested from a specified area each year, while maintaining the condition of the range.

Key Species - A plant whose response to management is used as an indicator of the progress being made toward desired goals.

Locater Cattle - Cows which have knowledge of waters and parts of the range that are usable either by herding or habit. These animals are also referred to as native cattle if they were born on the range.

Proper - "Proper use" for a particular plant is the degree to which its current growth will be utilized by a grazing animal when the range is properly used. Such percentage use factors are derived by determining the differences between total current production in a normal growth year and the amount left after proper use.

Range - The extent to which a plant community approaches its potential.

Rangeland Program Summary - The Rangeland Program Summary is the initial report on the results of the livestock grazing portion of the California Desert conservation Area Land Use Plan and Environmental Impact Statement. It is not a decision document.

Range - The direction in which range condition is changing.

Range Types - A range type is the mapping unit used in forage surveys and other range studies. It is a relatively homogeneous classification unit of appropriate minimum size consisting of a portion or sometimes all of a vegetative type as determined by general aspect.

Riparian Habitat - Vegetation and wildlife associated with a perennial source of water.

Sensitive Plant - A plant either identified as a candidate for listing or officially proposed for listing as a threatened or endangered plant by the U.S. Fish and Wildlife Service; or a plant of special concern designated as sensitive by the California State Director, BLM.

Trend Plot - A sampling of density, utilization, and composition in a representative key species area.

UPA - Unusual plant assemblage; vegetation within the CDCA that is considered unusual due to its restricted or discontinues habitat, distribution, age, size, or density.

Utilization - The average degree to which the annual growth of key forage species has been grazed.

Vegetation Composition - Composition ratings are based on the proportion of the total vegetative density provided by each species. The sum of the ratings is 100 percent.

Horsethief Springs Allotment Management Plan

I. Allotment Analysis

A. General Information

1. Base Map

A 15' quadrangle map is available for use with this allotment management plan in the Needles Resource Area Office. Appendix I shows present pastures and present and proposed improvements.

2. Location and Size

The Horsethief Springs Allotment headquarters is north of I-15 in California; this is approximately 100 miles northwest of Needles. The house is on the southcentral side of the grazing lease.

According to the Master Title Plat, the allotment contains 137,418 acres of public land, 8,627 of leased state land, and an unknown acreage of other private land. Land status and area are found in Appendix II, Table #2.

B. Resource Data

1. Topography and Associated Vegetation

The rugged Kingston Mountains traverse the southern boundary of the lease. The Kingston Mountains are the highest mountains in the vicinity and display a large variety of geologic features. A bajada slopes south from the mountain range and leads into Kingston Wash.

The vegetation of this area is as diverse as the landform and changes primarily with elevation. In the washes, interior valleys, and at the base of the mountains, are a variety of low desert shrubs with creosote being the dominant plant. In the higher interior valleys there are Joshua trees, yucca, barrel cactus, and cholla. Above the high interior valleys, on the steep mountain sides, there is a Pinyon/Pine/Juniper forest, which finally leads to a White Fir forest at the highest elevations in the Kingston Mountains.

The west side of the allotment includes the southern portion of the Nopah Range. This range is rugged and folded with color striations throughout. The bajada and valley of the Nopah Range is a moderately low rolling slope that appears light gray brown, becoming lighter toward the valley floor. The vegetation varies with terrain and elevation. The mountain vegetation is very sparse, consisting of creosote

and a few other desert shrub and grass species. The western bajada and valley are also sparsely vegetated with predominately light green creosote, cacti, and other desert shrub and grass species. The valley drainage is dominated by dark green mesquite and catclaw species.

To the north of the Kingstons are portions of the California Valley, Mesquite Valley and Pahrump Valley. These north-facing bajadas are moderately sloped with many winding washes. Vegetation is composed of grasses, yucca, cacti, Joshua trees, and mixed desert shrub species. The valleys are predominately desert shrubs.

To the east of the allotment is a wide horseshoe-shaped valley. To the south are rugged mountains with lower foothills to the west and north. Creosote covers the entire valley, except for the small hills in the middle. Scattered areas of cacti, desert shrub, native grasses, and isolated Joshua trees are also present. To the west is a limited variety of terrain including rolling brown foothills with a few steeper reddish brown geologic features. Steeper mountains comprise the major reddish brown geologic features.

2. Climate

Average annual precipitation for the allotment is almost 16 inches. A high of approximately twenty-three inches has occurred in the Kingston Mountains. Rain gauge records have been kept for the past sixteen years. The majority of the rainfall is in the fall and the spring.

3. Range Types

Major range types include creosote/ephemeral, desert shrub and mountain shrub. The dominant species of the ephemeral type are creosote (Larrea tridentata), white bursage (Ambrosia dumosa), and galleta grass (Hilaria ridiga). The desert shrub type includes Mojave yucca (Yucca schidigera) and Mormon tea (Ephedra californica). The mountain shrub type consists of blackbrush (Coleogyne ramosissima) and bitterbrush (Purshia glandulosa). Galleta grass is abundant below 4,500 feet and needle grass (Stipa speciosa) is predominant above this elevation.

4. Estimated Grazing Capacity

Analysis of vegetative ground cover, species composition, utilization, and range condition on the Allotment as it was at the time of the Desert Plan (1980) indicates that there are 5,626 AUMs of forage available on Public Land. Exchange-of-use lands, for which the lessee has not offered proof of ownership or control, amount to 196 AUMs on state land. The authorized use is 2,424 AUMs. The difference between the authorized use and the grazing preference was derived by

subtracting 28 AUMs for bighorn sheep and 1,407 AUMs for a fair condition rating from the carrying capacity (5,626 AUMs) can be monitored under a short-term use authorization leaving 4,191 AUMs. The difference between the final carrying capacity and the authorized use (1,767 AUMs) until studies determine if it can become part of the authorized use. The 1,407 AUMs subtracted for condition can be reinstated to the authorization by a decision upon application because the range condition has improved to a "good" class rating. Exchange of use for state school land has been calculated as 16 CYU additional cattle. Application for this use can be made if the land is currently leased.

The Desert Plan Staff used Multistage Imagery from the Jet Propulsion Laboratory in Pasadena, California to determine biomass. Standing forage vegetation was converted to pounds per acre. Suitability deductions were made for slope, wildlife, and distance from water. The amount left was converted to AUMs as explained in the Livestock Appendix to the Desert Plan.

5. Range Condition and Trend

The Area Range Conservationist has determined with condition and trend plots, that as an average, range condition is good with a stable trend. Past examinations in relatively inaccessible areas to cattle show this to be true by density and composition comparisons.

6. Existing Range Improvements

An overlay to the base map shows fences, pipelines, troughs, windmills and other water developments. Information on these projects is in the case file and job files. These are maintained in the Needles Resource Area Office. Appendices I and III show locations of existing improvements.

7. Wildlife Population

A number of wildlife habitat types are represented in the Horsethief Springs Grazing Allotment. The peripheral portions of the allotment are lowest in elevation and are primarily creosote/bursage and Mojave yucca/buckhorn cholla associations with some blackbrush scrub and Joshua tree woodland habitats. The higher elevations and more mountainous terrain supports bitterbrush/sagebrush scrub and pinyon/juniper woodlands along with two rather specialized communities of Nolina woodland and an isolated white fir/pinyon community near the top of the Kingston Range.

In terms of significant wildlife habitat, the Kingston Mountain range is the primary feature within this grazing allotment. Centrally located in the grazing allotment, the Kingston range rises to over 7000 feet in elevation and supports several isolated plant communities and species of wildlife which are restricted to these habitats. The Kingston Mountain chipmunk, considered a separate subspecies of the Panamint chipmunk, is found only in the Kingston Mountains in pinyon/juniper woodlands. Certain species of birds such as the hepatic tanager, Virginia's warbler, and others do not normally occur in the eastern Mojave desert and are restricted to these "island" habitats in the higher elevations of the Kingston Mountains.

The Kingston Mountains comprise good habitat for desert bighorn sheep and is one of the better areas for mule deer in the eastern Mojave desert. Previous California Department of Fish and Game estimates of bighorn numbers in the Kingston Mountains were at 30 bighorn sheep. A recent aerial survey of the range (June 1984) yielded 52 bighorn sheep in the Kingston Mountains. Five mule deer were also counted.

There are no federal or state listed species known to occur in the Kingston Mountain range or on the Horsethief Springs Grazing Allotment. The banded gila monster, however, is being considered for listing as "rare" by the State of California and is on BLM's Sensitive Species list. There are four separate sightings of this rare reptile in the Kingston Mountains, which is one of four localities in southeastern California having confirmed gila monster sightings.

8. Wild Horse and Burro Populations

No wild horses have been identified on this allotment. The allotment does not contain any Burro Concentration Areas, neither does it have a Herd Management Area.

C. Past and Present Management

Past

Harry Adams leased the range west of Horsethief Springs from 1949 through 1961. He had 96 head of cattle with a 250 head carrying capacity.

The area to the east was used by Bill Teuscher from 1952 through 1955. He leased 33,000 acres from the Las Vegas BLM. With a cow-calf operation, he eventually increased his herd from 50 head of cattle to 90 head. Harry Adams then bought the rights to this eastern portion from Red Johnson, the manager of the Excelsior Mine (it is not known when the transfer from Teusches to Johnson occurred). This action consolidated the lease area east and west of Horsethief Springs.

The extreme western area of the lease, California Valley, was hardly used during the 1950's.

Present

Typically, the east side of the lower elevations (Pastures 3A and 3 B as shown on figure 1) are used by the herd from April through May. The west side or Pasture 2, California Valley, is used from November through March if there is ephemeral forage available. The Kingston Mountains (Pasture 1) are used from June through August. In any event, cattle come down and travel north from the mountains approximately two weeks before the first freeze. There can be a month of variation in the dates either way depending on the amount and timing of rainfall and the temperature. For more detail, see IV, Grazing Management, B Grazing System, 1 Grazing Formula and schedule.

Cows and steers are run together in the spring. Approximately fifty percent of the heifer calfs are kept for replacement of culled cows. They are culled at nine years of age. Eight to nine percent death loss occurs.

D. Special Management Problems

- Unpredictable precipitation patterns result in unpredictable forage production, making it difficult to design pastures and set stocking rates for a grazing system. The carrying capacity is dependent on rainfall and it can vary as much as fifty percent from year to year.
- Water distribution in the majority of the allotment is good. The exception is in the northwest portion. The existing grazing system would be enhanced if a reliable water source could be developed in this area.

The county roads through the allotment are high speed throughways for people taking a shortcut between I-15 and Tecopa. Signs warning of the extent of free-roaming cattle would alleviate the amount of livestock losses due to vehicle impacts.

II. Analysis of Other Uses

A. ACECs

One Area of Critical Environmental Concern is partially within the Horsethief Springs Allotment. The Kingston Range ACEC was designated as such so that special management attention could be provided for the area's significant scenic, floral and faunal resources.

Page 14 of the Rangeland Program Summary states "In all of the allotments with ACECs, coordination of the ACEC management plans with grazing concerns will be required". The Kingston Range ACEC is extensive, covering 12,372 acres in the northern portion of the allotment. A Habitat Management Plan (HMP) and an ACEC Management Plan will be combined into one document which will serve as a comprehensive resource management plan.

B. Wilderness Study Areas

Approximately 50 percent of the Horsethief Springs allotment is under wilderness review, and covers all or parts of five wilderness study areas (WSAs):

WSA 150	Nopah Range	recommended suitable for wilderness designation
WSA 150A	South Nopah Range	nonsuitable
WSA 154	Pahrump Valley	nonsuitable
WSA 222	Kingston Range	most of the WSA within the allotment is suitable
WSA 223	North Mesquite Mtns	nonsuitable

These recommendations, made by the 1980 Desert Plan, will be presented to Congress sometime before 1991 for final decisions on each area's status. The Horsethief Springs Allotment is a grandfathered use and a valid existing right that is transferable, giving the operator certain privileges for continued use no matter how the wilderness issues are decided.

C. Recreation

Recreation use within this allotment is focused on the Kingston Range. Excellent opportunities for hiking, nature study, photography and camping are available. In addition, opportunities exist for gem and mineral collecting, hunting, and ORV touring. Overall, visitor use is limited due to the area's distance from population centers and the absence of good quality roads providing access.

Conflicts between recreation use and grazing occasionally occur from camping near waters, indiscriminate shooting, open gates, cut fences, careless ORV use, and trapping near livestock waters.

D. Wildlife

Recommendations in the wildlife portion of the EIS and Desert Plan include rehabilitation of springs. It should be noted that the rancher has the water rights on the perennial waters within the lease area, therefore any water developments for wildlife should be coordinated with the rancher.

No federally or state listed species of wildlife are known to occur within the Horsethief Springs Grazing Allotment. The Livestock Grazing Appendix to the California Desert Plan did not identify the Horsethief Springs Grazing Allotment as having any specific conflicts with wildlife. Nevertheless, potential conflicts do exist.

1. Bighorn Sheep

Although no conflicts with desert bighorn sheep were identified in the Livestock Grazing Appendix, the Desert Plan (page 32) states that "...the BLM will study the effects of livestock grazing on bighorn sheep in the eastern Mojave Desert (specifically mentioning the Kingston Range) and will determine (1) the numbers of bighorn sheep in each mountain range; (2) the health, condition, and population trends in each herd; (3) the effects of livestock grazing in concentration areas and permanent and seasonal ranges. If livestock grazing is found to have negative impacts on the bighorn sheep and grazing threatens the health and viability of herds, then changes will be made in grazing allotments so that healthy, viable herds of bighorn can continue to exist in this region." Before any changes are made, the livestock operator will be consulted and his basic operation will be taken into consideration.

As stated previously, the central portion of the Horsethief Springs Grazing Allotment includes the Kingston Mountains which are good habitat for the desert bighorn sheep. Livestock have access to and utilize portions of the Kingston range.

2. Desert Tortoise

No conflicts with desert tortoise were identified in the Livestock Grazing Appendix. There is no identified crucial or highly crucial desert tortoise habitat in the Horsethief Springs Grazing Allotment.

3. Riparian Habitat

Page 31 of the Desert Plan states, where conditions warrant and where legally possible, all existing water sources and those developed in the future on public land will include consideration for wildlife. The intent of this is discussed under objectives for wildlife in riparian habitat.

Coordination in the form of maintenance agreements will be necessary where it is the permittee who performs the labor. This is especially true for those waters the permittee has the water rights on and where cattle do not receive the principle benefits. Written permission from the lessee will be required before any improvements are implemented on these waters.

E. Cultural

Studies of past human behavior contribute to understanding cultural processes which transcend both time and space. The accurate reconstruction of past lifeways is dependent upon the integrity of cultural remains, however various processes, both naturally and cultural induced, serve to modify the matrix and content of archaeological deposits. Modifications effected by livestock entail trampling and dust wallowing which displace cultural and related assemblages, overgrazing which can result in accelerated erosion and subsequent loss of deposits, and introduction of extraneous pollens which can lead to inaccurate interpretations. These modifications are particularly evident in areas of livestock concentrations, notably around salt licks, supplemental feeding areas and springs.

Less than one percent of the allotment has been inventoried for cultural resources. However, evaluation of base data indicates that much of the area is of very high archaeological sensitivity. While no properties within the allotment are listed on the National Register of Historic Places, several locations are considered suitable for inclusion, and are under eligibility review. These locations evidence episodic habitation spanning thousands of years.

F. Botanical

1. Sensitive, Threatened, and Endangered Plants

The following sensitive plants are known to occur within the existing and proposed boundaries of the Horsethief Springs allotment:

Galium hilendiae ssp. kingstonense - Kingston Bedstraw (Fed. Category 2) Occurs mainly in the pinon-juniper and white fir communities between 5,500 feet and 7,300 feet.

Penstemon fruticiformis ssp. amargosae - Death Valley Beardtongue (Fed. Category 2) occurs mainly on dolomitic substrate in the central part of the allotment between 3,200 feet and 4,500 feet.

Penstemon stephensi - Stephen's Beardtongue (Fed. Category 2), widespread between 3,000 feet and 6,000 feet on dry, rocky slopes.

Potentilla patillifera - Kingston Mountain Cinquefoil (Fed. Category 2). Occurs in cracks between 4,500 feet to 7,000 feet.

2. Unusual Plant Assemblages (UPAs)

a. Highly Sensitive UPA's

- 1) Vegetation associated with seeps and springs
This UPA includes all seeps and springs within the existing and proposed allotment boundaries (Horsethief Springs is included in this UPA although it has been considered as a riparian area in some documents).
- 2) Basic Rupicola Assemblage
This UPA is associated with limestone and dolomitic outcroppings, and is placed in this category due to the large number of endemic plants that occur on the calcareous soils. This UPA occurs primarily in the northern and northeastern portions of the Kingston Range between 2,800 feet and 6,200 feet.

b. Very Sensitive UPA

- 1) Kingston Mountain White Fir Stand
This UPA is one of three enclaves of Rocky Mountain White Fir (Abies concolor ssp. concolor) located in the CDCA. It occurs in four locations between 6,000 feet and 7,200 feet on north-facing slopes.

c. Sensitive UPA

- 1) Giant Nolina Assemblage
Nolina wolfii occurs in the Kingston Range on steep, rocky slopes from 3,200 feet to 7,300 feet. In the eastern Mojave desert, this species occurs only in the Kingston Range.

G. Socio-Economic

A discussion on socio economic issues relative to grazing is in the CDCA Desert Plan.

H. Soils

The soils of this allotment were not inventoried during the Desert Plan, nor is there an inventory available from which information can be extracted. It is evident from the complexity of the land form types established in the 1976 East Mohave Soil Inventory that there are a variety of soils present. They are the most important factor in determining which plant communities grow in different locations.

The desert contains a variety of different and extensive landform types. Many areas also have very complex patterns of washes; alluvial fans and dissected alluvial fans are found along mountain fronts. The majority of desert soils remain free from disturbance by human activity.

III. Objectives

A. Range Management

1. Vegetation

Forage production will be increased in terms of density of high value forage plants. The amounts of proposed increases are shown in Table 1. In order to accomplish this goal, the grazing management system must provide for the vegetative changes in Table 1. This will be accomplished by authorizing an appropriate carrying capacity as established in the CDCA Plan and implementation of the proposed range improvements.

Vegetation Types

Increases in perennial grass plants have been obtained at the Santa Rita Experimental Station near Tucson. Although climatic conditions there are more favorable, the same principles used to achieve their results, e.g., rest during the spring-summer growing * season, should be applicable in this area.

Accomplishment of these goals include conditions, validity of the grazing system, and the degree of cooperation between the BLM and the allotment operator. (Refer to IV Grazing Management, B Grazing System and Appendix V, Proposed Range Improvements).

2. Livestock

The following are dependent on the movement of livestock from one pasture to another and implementation of range improvements (specifically the development of water in California Valley). It is possible to achieve the following goals upon implementation of the grazing system.

- a. Raise present calf crop for breeding age cows.
- b. Raise present calf weight for yearlings.
- c. Increase the grazing capacity from 2,418 to 5,598 AUMs or 458 AUMs.
- d. Utilize ephemeral forage from January 1 through July when forage is available (use not to exceed 500 steers).

The aforementioned will be accomplished by increasing the density of key forage species and the implementation of the grazing system, and its associated range improvements as indicated in Sections IV Grazing Management, B Grazing System, and 2 Key Species.

B. Other Resources

1. Wildlife

a. Bighorn Sheep

A bighorn sheep/livestock study is needed to determine the effects, if any, of livestock grazing on bighorn sheep in the Kingston Mountains. Specific information to be determined would include:

- 1) numbers of bighorn sheep,
- 2) important water sources and sheep concentration areas,
- 3) health, condition, and trends of bighorn sheep populations and habitat -
 - a. determination if bighorn sheep have been exposed to any domestic livestock diseases and, if so, to what extent (percentage of population),
- 4) areas of bighorn sheep and livestock overlap, and
- 5) the effects, if any, of livestock grazing on the bighorn sheep populations and on important water sources as well as other habitat components.

Both the Bureau and the California Department of Fish and Game jointly have been conducting bighorn sheep surveys and collecting information relative to points 1, 2, and 3 for the past several years in a number of desert mountain ranges. This effort has been and will continue to be a fairly high priority but contingent upon funding. As more and more information is gathered and analyzed, various land use actions such as livestock grazing practices may need to be modified as outlined in the Desert Plan (page 32). No specific information exists at present; however, if at some future date it is determined that livestock use is occurring in bighorn sheep range in the Kingston Mountains and is having an adverse effect on bighorn sheep, then corrective measures will have to be taken.

b. Riparian Habitat

New or existing range improvements shall be designed or modified to reduce or eliminate competition between wildlife and cattle for both forage and space. All new waters developed for livestock on federal lands must be made available to wildlife. No troughs will exceed 24 inches in height and should have steps, a ramp, or rocks piled on at least one end so that smaller animals may have access to the water. Bird ramps or floats also should be installed in all troughs and open storage tanks. Any new springs or waters developed for livestock on federal lands must allow for ample quantities of water to remain at the source for wildlife (with the remaining water piped down for livestock).

Existing waters are maintained at the lessee's expense, and their availability benefits wildlife.

2. Cultural

In compliance with Executive Order 11593 and the National Historic Preservation Act, the Bureau of Land Management must take into account actions which may affect cultural resources. ✖

Cultural resources in proximity of such undertakings are inventoried and evaluated for National Register of Historic Places eligibility. Possible effects to the resources and feasible mitigative measures are then determined in consultation with the State Historic Preservation Office.

3. Botanical

a. Sensitive, Threatened, and Endangered Plants

- 1) Site specific surveys will be conducted prior to construction of range improvements. If sensitive, rare, threatened, or endangered plants are found, protective measures will be initiated at that time.
- 2) Collection of data to determine the status of sensitive, threatened, and endangered plants will be conducted on an on-going basis, as priorities and funding permit. Procedures may include study/photo plots, transects, and if necessary, exclosures. If the above studies show that protective measures are necessary, consultation and coordination between the grazing lessee and BLM will occur prior to implementing any actions that will adversely affect the grazing lease.

b. UPAs

Monitoring of UPAs on the Horsethief Springs Allotment will be in accordance with the individual monitoring plans being developed for all UPAs in the CDCA. Generally, existing range studies will be used where applicable, with additional monitoring, as prescribed by the individual monitoring plans, being developed as necessary. These additional studies may include study/photo plots, transects, and ranger patrols. If the studies show that protective measures are necessary, consultation and coordination between the grazing lessee and BLM will occur prior to implementing any actions that will adversely affect the grazing lease.

4. ACEC

In order to protect bighorn sheep, the Kingston Range ACEC plan will consider the following actions:

- a. Establish big game guzzlers accessible only to bighorn sheep. Normal environmental assessment procedures would accompany all proposed actions.
- b. Develop additional water sources as deemed necessary or appropriate; block off livestock access if necessary.

- c. Ensure wildlife access to existing developed water sources or pipe water to areas removed from cattle access. Ensure that water remains available to wildlife at the source of developed waters.
- d. Determine effects of grazing on the population of bighorn. Adjust allotment size and/or AUMs if necessary.
- e. Explore possible erection of drift fences to segregate cattle and bighorn sheep in particular areas (i.e., certain canyons where wildlife waters are present).
- f. Monitor any burro populations and reduce if necessary.
- g. Determine if travel corridors for bighorn extend to and from the ACEC. Consider special management of these corridors, if necessary.
- h. Livestock should be allowed, consistent with the AMP.

5. Wilderness

The Wilderness Act of 1964 provides for continued livestock grazing where such use was established prior to an area's designation as a WSA or a wilderness area. However, all authorized uses, including grandfathered grazing activities, must conform to certain guidelines when they occur in an area under wilderness review or are within a Congressionally designated wilderness area.

Until Congress acts, the five WSAs will be managed according to the "Interim Management Policy and Guidelines for Lands Under Wilderness Review: (IMP; USDI, 1979). During this interim management period, all proposed actions generated by this AMP will be reviewed for compliance with the IMP guidelines (See Appendix VIII). For example, vehicles may be used whenever necessary for maintenance of fences or waters, so long as existing routes are used; new improvements will be approved for the purpose of better protecting the rangeland in a natural condition, so long as the IMP non-impairment criteria are met.

If an area is not designated wilderness by Congress, it would be managed under Desert Plan multiple use class guidelines L or M.

If any area within this allotment is designated wilderness, a wilderness management plan would be prepared that would address the following range concerns:

- a. the use of motorized vehicles or equipment, specifying type, where it is to be used, when, and the purpose of use;
- b. rangeland improvement structures and installations to be maintained, constructed or reconstructed in achieving rangeland management objectives, including maintenance standards;
- c. the means to handle emergencies.

New improvements would be permitted if they would improve or maintain wilderness quality, but not if their sole justification is to aid intensive management resulting in increased grazing. All work would be reviewed prior to construction to insure that it conformed to the Bureau's Wilderness Management Policy (USDI, 1981).

6. Recreation

The following are recommendations for future actions:

- a. Review all fences to determine where new gates may be required to improve access to recreation sites and reduce vandalism.
- b. Determine where gates should be replaced with cattle guards.
- c. Prohibit competitive events within one mile of waters.
- d. Sign all waters as closed to camping within 200 yards.
- e. Consult with the operator to determine his access needs during the route approval process (currently underway).

IV. Grazing Management

A. Initial Stocking for AMP

<u>Type Use</u>	<u>Livestock (AUMs)</u>	<u>Acres</u>	<u>Percent of Licensed Use</u>
Private, other			0
Federal Range	4191	88,312	57
State	192	10,560	0
Suspended Preference	-1767	0	0
Condition Exclusion	-1407	98,872	
Total	1,209		

Based on vegetative ground cover, species composition, utilization, and suitability, the range has an estimated proper grazing capacity of 5,598 AUMs. This is equivalent to 467 animal units (AU) year long or approximately one cow per section on the total usable range.

A 25 percent condition rating exclusion was made for a fair condition in the amount of 1,407 AUMs. Although as many as two cows per section were stocked, current policy is to wait until monitoring studies show that under-utilization is taking place before a permanent increase for additional forage is authorized. This short-term increase has not been applied for to date. Because condition and trend have improved, the 25 percent reduction could be reinstated with a grazing decision. (See California Desert Plan Table 6 and Appendix II). An additional 16 AUs are available for exchange-of-use.

Using digitized slope classes obtained from Jet Propulsion Laboratory satellite images, suitability deductions in the Desert Plan were made which equaled 1,000 AUMs. Four percent of the area not excluded for slope accessibility was removed for water accessibility in the amount of 266 AUMs. Additional water developments and improved range condition can reinstate AUMs to the authorization. The total for these two deductions is 1,266 or 105 AUs year-round.

When the 1982 Desert Plan Amendment Fourteen was approved; it removed the rule-of-thumb guidelines for determining the available amount of suitable range that assures proper utilization of forage plant species adjacent to water sources and on the gentler slopes of ranges. It is the professional judgement of BLM range personnel that within the CDCA, gentler slopes and areas adjacent to waters are receiving proper utilization under this criteria, and that the former standards actually may have been somewhat strict during the majority of the year.

The criteria are arbitrary, and do not reflect seasonal variations in livestock use. Other controls are already built in (condition, class, rest, monitoring, and present Desert Plan allocations). Additionally, excluding areas from calculations of carrying capacity due to these criteria carries potential implication that these areas are excluded from the lease, which is not the intent of the Desert Plan. A grazing decision could reinstate the AUMs deducted for suitability. Ephemeral use of annuals by cattle on a short-term use basis can be authorized from none to an unlimited amount. It is dependent on the amount of annual production. Short-term use will conform with desert tortoise restrictions.

During a drought, supplemental feeding which has been approved by the authorized officer, may occur anywhere it is necessary.

B. Grazing System

1. Grazing Formula and Schedule

The present system has been described in the Past and Present Management section. The system proposed here will be similar.

Although this allotment was proposed for an intensive AMP, it is recommended that the degree of intensity should be moderate. That is some form of rotation of livestock use would be practiced on a seasonal basis, but a fully deferred rotation system would not be developed.

Natural barriers and fencing separate the four pastures on the allotment. Pasture 1 consists of the Kingston Mountains, including the north and west slopes. North and west of this pasture is Pasture 2 which is the same as California and Pahrump Valleys. Pastures 3A and 3B contain no specific geographic feature. See Figure 1 for the locations of all Pastures.

Pasture 1 does not have any cross-fences situated parallel to changes in elevation, therefore grazing can be deferred only on a seasonal basis.

Deferment is accomplished by moving or allowing cattle to drift into the pasture in June. Movement out of Pasture 1 into Pasture 3A can be accomplished by allowing natural downward drift which occurs by the first freeze, usually October 1. From Pasture 3A the cattle drift east towards ephemeral forage, developing in the lower elevations of the eastern portions of Pasture 3B, usually January or early February. In May, the cattle complete the cycle by moving up into the Kingston Mountains again. During exceptional years of forage production, Pasture 2 and 3b are used in the same manner, with additional use in pasture 2 from November through March.

November through March. See Figure 1.

Pasture 3A could be switched with Pasture 1 on alternate years. That way annual rest would occur. Some minimal cross-fencing would be required between Pastures 3A and 3B and Pastures 3A and 1. The livestock will stay in the higher elevations of this area which is basically Pasture 3A.

All use requires sustaining an average proper use factor for key species of no more than fifty percent unless this occurs during drought. During such times plants can take on the appearance of being over utilized as a "survival" response to drought conditions. If this level is exceeded, livestock will have to be moved elsewhere on the allotment.

All schedules will be dependent on rainfall and its resultant forage. Well distributed rain in the form of light showers keeps the soil surface wet for continued plant growth.

Locations of cows will be dependent on adequate water. Movement from one pasture to another will be no later than the time when an average proper use factor of fifty percent is attained on key forage species. A schedule may repeat itself or it may not be used at all. A master rotation plan should be developed as a result of careful documentation of this schedule.

a. Proposed Improvements

Each pasture could hold the entire herd if there was adequate water. However, Pasture 2 would not have enough water unless a pipeline is developed from Wildhorse Spring in T. 20 N., R. 9 E., Sec. 34. Upon completion of the new North Boundary Fence this pipeline should extend at least 7 1/2 miles in a northwesterly direction. Otherwise, Davis Well should be redeveloped. It is in T. 20 N., R. 9 E., Sec. 6.

Pasture and gap fences should be completed between Pastures 2, 3a and 3b. Without these, cattle can not be confined for definite dates and an annually deferred rotation system can not be implemented.

If Pasture 2 is fully stocked, drift and boundary fences will need to be installed around Rabbit Hole Springs, which is near the south end of this pasture. Also a boundary line agreement will need to be worked out for this portion of the lease between the Valley Wells lessee and Horsethief Springs. (Cattle from Horsethief Springs are currently using Coyote Holes which is technically on Valley Wells).

Steers may be in Pasture 2 or 3B depending on the availability of ephemeral forage however, if at any time a pasture exceeds an average proper use factor of fifty percent on key forage species, cattle will be moved to another pasture. If forage is insufficient or unpalatable due to drought, gates will be opened on any pasture necessary to sustain the livestock.

GRAZING FORMULA

ck												
Graze for Trampling												

YEARLY GRAZING SCHEDULE

MANAGEMENT UNIT Present System		JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.
19	Pasture 1												
	Pasture 2												
	Pasture 3a												
	Pasture 3b												
	Ephemeral Production												
19	Pasture 1												
	Pasture 2												
	Pasture 3a												
	Pasture 3b												
	Switch												
19	Pasture 1												
	Pasture 2												
	Pasture 3a												
	Pasture 3b												
Year													

note - need a # 2 below

Form 4112-2
(August 1968)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

District
California Desert

Date March 1985

Examiner

E. Sorenson

PHENOLOGICAL DATA, GRAZING TREATMENT, FORMULA
AND
YEARLY GRAZING SCHEDULE WORKSHEET

Allotment: Horsethief Springs, Pasture 3a Key Species: Squirrel Tail and Bitter Brush

SPECIES	COMPOSITION PER-CENT	FORAGE VALUE* (check one)				DEVELOPMENT STAGES						
		EX	GD	FR	PR	DATE					REGROWTH**	
						START GROWTH	FLOWERING	PEAK OF FLOWERING	SEED RIPE	SEED DISSEMINATE		
Grasses												
alleta grass	5		x			7/11	8/15	9/15	9/30			3/31
ush Muhly	2	x				7/11	8/15	9/15	9/30			3/31
quirrel Tail	1	x				7/11	8/15	9/15	9/30			3/31
ianricegrass	trace		x			7/11	8/15	9/15	9/30			3/31
luff grass	2			x		7/11	8/15	9/15	9/30			3/31
eedlegrass	2	x				7/11	8/15	9/15	9/30			3/31
Forbs												
iliree		x										
chismus		x										
ad Brome				x								
atil Yucca	6			x								
leosote	4				x							
rittlebush	5			x								
lackbrush	21	x			x							
itterbrush	5											
addersage	15			x								
Shrubs												
lobe Mallow	trace		x			3/15	4/15	9/15	9/30			3/31
ormon Tea	9	x				3/15	4/15	9/15	9/30			3/31
ange ratany	2		x			3/15	4/15	9/15	9/30			3/31
oiny menodora	8		x			3/15	4/15	9/15	9/30			3/31
interfat	1		x			3/15	4/15	9/15	9/30			3/31
olfberry	7		x			3/15	4/15	9/15	9/30			3/31
irpentine	5											
TOTAL	100											

Remarks

Forbs as annuals are not counted as a percent of the total composition because they are only present for a short period of time.

* Forage value for livestock (L) and/or wildlife (W) Ex = Excellent Gd = Good Fr = Fair Pr = Poor

** How late in spring species can be grazed and still produce grazeable leaves, twigs, or seed-producing flower stalks

2. Key Species

Observation of key species provides an indication of the trend in range condition and the intensity of grazing. Plants used as key species should be relatively palatable and nutritious, responsive to changes in grazing pressure, and well adapted to the area being studied. Changes in abundance and vigor of the key species are an important measure of the trend in range condition.

Squirrel tail, desert needle grass, range ratany, galleta grass, Indian ricegrass, bush muhly, Mormon tea, saltbush, winterfat and bitter brush are key perennial species found on the Horsethief Springs Allotment. Key annual species are six weeks grama and filiree.

Squirrel tail starts growth in early spring. It can flower as many as two times per year with favorable moisture. Reproduction is by seed. A fair forage value rating for cattle and sheep is due to the injuries which may result from the sharp seeds and awns after maturity of the inflorescences. It is also unpalatable in fall and winter.

Needlegrasses rank fairly high as forage plants on western ranges. Foliage tends to be somewhat wiry and occasionally coarse, lessening the palatability. On the other hand, their foliage usually remains green over a long growing period and cures well on the ground making them valuable for late fall and winter grazing. Abundance, wide distribution, and leafiness add to its value. Most of them are prolific seeders, have deep fibrous roots, and withstand grazing well.

Burrobrush or white bursage is a browse plant which is most succulent and therefore, palatable in the spring. Horses prefer this plant to all other desert plants. It may accumulate nitrates.

Range ratany is both relished by livestock and is drought-resistant. It grows on dry flats, bajadas, or mesas.

The capacity for heavy foliage production and abundance of the individual plants make galleta an important species. It is of the highest palatability after the summer rainy growing season. Maximum use at this time is desirable. Unless green and succulent, its palatability is lower. It is also palatable when it is dry unless it is too coarse. It is also rejected during late fall and winter unless more palatable species are not available, and there is sufficient rain to cause "greening up". Its rootstocks increase its effectiveness as a soil binder. The species is drought-resistant and maintains itself on arid ranges. It is not easily killed by overstocking. Without summer rain, it is less palatable in winter.

Indian ricegrass is one of the most drought-enduring of the native range grasses. It is moderately tolerant to alkaline conditions. This grass grows in abundance on some areas which have been ungrazed or conservatively grazed because of inaccessibility to livestock or because of their remoteness from watering places where livestock congregate.

On winter ranges, Indian ricegrass is highly palatable, and it is rated as good to very good. The individual plants produce an abundance of forage which cures well on the stalk and is nutritious. Seeds are high in food value and are sought after by grazing animals. It has a high value for sustaining livestock during severe winters. This grass has sufficient abundance and distribution to be one of the most important forage grasses on the western deserts.

Bush muhly is highly palatable. It remains green most of the year, which makes it especially nutritious in the winter, and before the summer rains start. It is easily killed by overgrazing because plants can not be grazed continuously to a stubble height closer than four inches if it is unprotected by surrounding bushes. The species grows abundantly at the lower elevations on semidesert grassland ranges in good condition. It is also found in the desert shrub type. It becomes established in bushes and thrives in this protective habitat. It requires two to three summer rains and hot weather in order for it to grow in the fall.

Ephedra or Mormon tea species are valuable browse in winter when better forage is lacking. They are also a food source for bighorn sheep. It is a year-round source of forage.

Fourwing saltbush, also called chamiza, is drought resistant and inhabits dry, saline, or alkaline soils. In the winter it is one of the most palatable shrubs inhabiting the southwest. It withstands grazing well. Under prolonged overgrazing the bushes become weakened or succumb entirely. Because the seeds are desirable, reproduction of saltbush is often sparse where summer grazing is too heavy.

Winterfat, also called white sage, has a deep taproot which helps to make this species drought resistant. It is chiefly valuable on winter ranges where it often furnishes an abundance of palatable and nutritious forage for cattle and deer.

It is a warm season grower with the season of growth being from March 1 to October 1. Persistent and continuous overgrazing has greatly reduced this plant on many ranges. However, on this allotment, as an example of a range in good condition, it is represented as a significant part of the aspect of range vegetation types. It is a palatable plant that is present on ranges in good condition. Winterfat is intolerant of a tree overstory.

Bitterbrush is one of the most widespread shrubs on western ranges. In the southwest it is restricted primarily to the pinyon/juniper types. Palatability is considered good to excellent. It furnishes a stable winter browse. Bitterbrush withstands grazing well, but it can be killed by excessive use. If close grazing continues, it assumes a hedged, prostrate, spreading form. It is found in the upper elevations of this allotment.

A large quantity of forage for a short duration of time is provided by six-weeks grama. It is dependent on two or three rains and hot weather in order to grow during the summer. As a staple it is dependable in late summer under these conditions.

Fall rain and subsequent winter rain makes larger quantities of filiree. It is excellent to good spring forage for cattle, sheep and wildlife. Overindulgence by livestock without roughage may result in bloat. The plants usually survive only a few weeks in the more arid desert regions, such as the Sonoran desert, but livestock continue to feed on the dried stems.

Phenological data is on Figure 3.

C. Range Improvements

Range improvement project maintenance is the responsibility of the rancher. An environmental assessment analyzing all relevant resource concerns will be prepared prior to maintenance or construction. The BLM will be notified prior to any surface disturbing activities.

D. Flexibility

Due to variability in herbage production from year to year caused by precipitation conditions, it may sometimes be necessary to move to a pasture ahead of schedule, stay in the present pasture longer, spread the stock over the entire range or even reduce numbers to avoid damage to the vegetation. As soon as conditions improve, the grazing schedule would be resumed. This is because the schedule is based on forage production and forage production is dependent upon the time of year and amount of rainfall. Changes in the grazing system can not be absolutely predicted and must be judged as dictated by the current situation regarding plant growth, range utilization, climatic, and livestock conditions. Any changes will be made by consultation with the lessee.

Periodic drought years are a natural phenomenon in the Mojave Desert and as a result annual production of forage species can be drastically reduced in some years. Therefore, the permittee must have the ability to either adjust herd size to respond to these conditions or be able to readily acquire alternative forage sources. This, however, is the permittee's responsibility. The Bureau's range management policy indicates that herd size will be determined through several years monitoring. Also, the AMP can be revised to require livestock movements contingent upon utilization levels.

In general, moves will be accomplished within two weeks of the grazing schedule. Exceptions will require approval by the authorized officer.

The AMP will not conflict with any plans for suitably designated wilderness areas or ACEC's. Should it become necessary, a change in the RPS will be brought about by the update process or a plan amendment will be submitted and the lessee will be notified in writing.

E. Evaluation

1. Primary Studies

BLM manual procedures will be used to conduct range studies for the purpose of evaluating and adjusting the management plan. These studies include actual use, utilization, climate analysis, and range condition and trend. Study locations are identified in Appendix VI. Consideration of the results of all these studies will be used when making adjustments in the grazing system or the allowable use.

Actual use records will be kept by the allottee and recorded on a form supplied by BLM. See Figure 4. Records will be kept for each grazing unit designated in the grazing schedule and must be submitted to BLM within 15 days of the end of each grazing year (the end of February) in accordance with BLM Manual 4120.22D.

The Key Forage Plant Method of measuring utilization will be used to monitor grazing intensity and help determine whether adjustments in stocking are needed. Average utilization of the suitable range in each pasture will be measured by BLM range personnel during and/or at the end of each grazing period. Trend plot studies will be conducted twice per year. Trend plot locations are listed in Appendix VI.

An average utilization of fifty percent on the key species should assure the desired light stocking as discussed in the section on allowable use. If average utilization on key species in pasture reaches fifty percent, a decision on what action to take must be made based on all available information as described in the section on flexibility.

The final adjustment in stocking will also include consideration of factors other than utilization (mainly climate and trend).

Rain gauges will be placed in each pasture to monitor precipitation. The BLM measure and record precipitation every four months near Horsethief Springs. This data will be kept by the BLM along with any actual use records.

Trend is the change in vegetation and soil characteristics as a direct result of environmental factors, primarily climate and grazing. The trend in range condition will be considered along with actual use, utilization, and climatic data when making management decisions.

2. Additional Studies

In addition to the manual procedures for range trend studies, a 100 pace transect is established at each study location to monitor changes in plant density and species composition. Either a vegetative hit and/or closest plant species will be recorded at

each pace. The starting point will be the trend plot and the transect will be walked in the same direction as the general trend photo is taken or across the drainage. New transect locations will be established in consultation with the lessee. These procedures conform to BLM Manual 4413.1.

F. Modifications

Modification to this plan must be in writing, and must be agreed to by the BLM and the allottee.

V. Participating Staff

George Meckfessel, Archaeologist, Needles Resource Area

Jim Bicket, Wildlife Biologist, Needles Resource Area

John Bailey, Outdoor Recreation Planner, Needles Resource Area

Elizabeth Ridgely, Range Conservationist, Needles Resource Area

Roger Alexander, Natural Resource Specialist, Needles Resource Area

Sue Woods, Visitor Services Specialist, Needles Resource Area

VII. Agreement to Plan

We, the undersigned, agree to abide by the provisions of this Allotment Management Plan.

Charles V. Mitchell
Allottee

Nov 11 - 85
Date

Everell M. Hayes
Area Manager

14 NOV 85
Date

Original Draft Prepared by:

Elizabeth Ridgely
Elizabeth Ridgely

August 1985
Date

APPENDIX I
Secondary Base Map

T21N.

HORSE THIEF SPRINGS

BASE MAP

LEGEND

 DEVELOPED SPRING

 TROUGH

 PILE LINE

 FENCE

 CATTLE GAURD

20N

T19N.

R8E.

R9E.

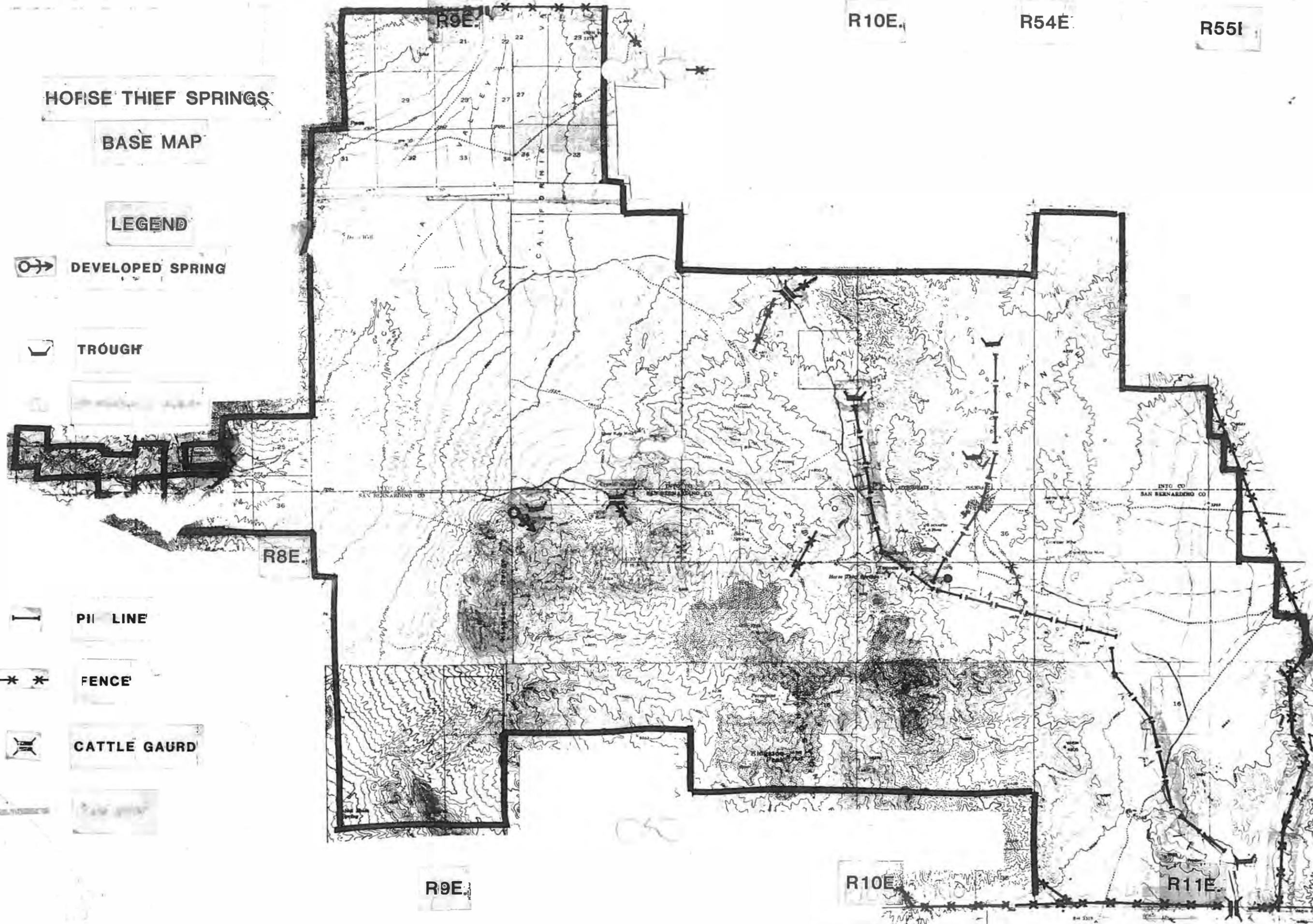
R10E.

R11E.

R10E.

R54E.

R55I.



APPENDIX II

Acreage Calculation and Biomass

Table 1

<u>Vegetation Association</u>	<u>Acres</u>	<u>Percentage</u>
Pinyon/Juniper/Chaparral	3	
Mohave Yucca/Joshua Tree/Blackbrush	15	
Yucca/Cat Claw	20	
Creosote/Burrobush	55	
Creosote/Cheesebush	17	
Galleta grass/Ricegrass	1	
Creosote/ephemeral	1	
Limestone Outcrop	<u>1</u>	<u>100</u>

TABLE 2

STANDING BIOMASS BY SLOPE CATEGORY
AND LAND OWNERSHIP
BIOMASS IN KILOGRAMS

<u>PUBLIC 0-25PCT slope</u>	<u>PRIVATE 0-25PCT slope</u>	<u>TOTAL 0-25PCT slope</u>	<u>PUBLIC 26-50PCT slope</u>	<u>PRIVATE 26-50PCT slope</u>	<u>TOTAL 26-50PCT slope</u>	<u>PUBLIC GT50PCT slope</u>	<u>PRIVATE GT50PCT slope</u>	<u>TOTAL GT50PCT slope</u>
175773728.0	8645753.00	184419472.0	31601392.0	2265802.00	33867184.0	5414698.00	608582.50	6023280.00

STANDING BIOMASS
AND FORAGE PRODUCTION
BY LAND OWNERSHIP

<u>PUBLIC STANDING BIOMASS</u>	<u>PRIVATE STANDING BIOMASS</u>	<u>TOTAL STANDING BIOMASS</u>	<u>PUBLIC FORAGE PRODUCTION</u>	<u>TOTAL FORAGE PRODUCTION</u>
211789808.0	11520137.0	224309936.0	135115.12	2884201.00

APPENDIX III
Existing Improvements

<u>NUMBER</u>	<u>COOPERATIVE AGREEMENTS</u>	<u>LOCATION</u>
9118	Horsethief pipeline	T. 19 N., R. 10 E.
9498	Horsethief fence	T. 19 N., R. 10 E.
9499	Half Mile Stretch fence	T. 20 N., R. 9 E.
9494	Mitchell fence	T. 19 n., R. 11 E.
9497	Adams drift fence	T. 20 N., R. 11 E.
9500	Kingston drift fence	T. 19 N., R. 10 E.
9501	Tecopa Pass fence	T. 19 N., R. 10 E.
9495	Noon Day Fence	T. 20 N., R. 8 E.
9494	Horsethief Springs Fence	T. 21 N., R. 9 E., R. 10 E.
C-95-5	Adams Well	T. 20 N., R. 10 E. Sec. 13
9432	M&M Fence	T. 18 N., R. 10 E.
9625	M&M Cattleguard	T. 18 N., R. 11 E, Sec. 2
9502	Sandy Valley Fence	T. 20 N., R. 11 E.
9119	Wildhorse Spring	T. 20 N., R. 9 E.
9433	Mesquite Drift Fence	T. 19 N., R. 11 E.
	Stump Spring	
	Emigrant Spring	
	Kingston Spring	T. 19 N., R. 10 E., Sec. 9
	Tecopa Spring	
9190	Tule Springs	T. 20 N., 9 E., Sec. 19
9512	Mitchell Boundary Fence	T. 21, 20 1/2, 9-10-11 E.,
9805	KINGSTON MTNS BGG	T. 19 N., R. 10 E., Sec. 17
9810	KINGSTON BGG	T. 19 N., R. 10 E., Sec. 17

Springs

137,418

,207

until monitoring

V. Forage Production Determination from Remote Sensing Survey 1976-1979.

1. Acreage Corrections

1. Acreage 108,793 JPL 111,514

2. Acreage Adjustments Rationale New boundary fence and MTP Plats

used 32,000 Ac. Ext.

Allotment 137,418

2,992,502 6,650

381,599

68,486

3,442,587 7,650

C. Slope Exclusion

% 0

% 4

% 1

- 27 AUM

2,531,700 Kg 5,626

APPENDIX IV
Grazing Schedule

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

District
California Desert

Date March 1985

Examiner
E. Sorenson

PHENOLOGICAL DATA, GRAZING TREATMENT, FORMULA
AND/
YEARLY GRAZING SCHEDULE WORKSHEET

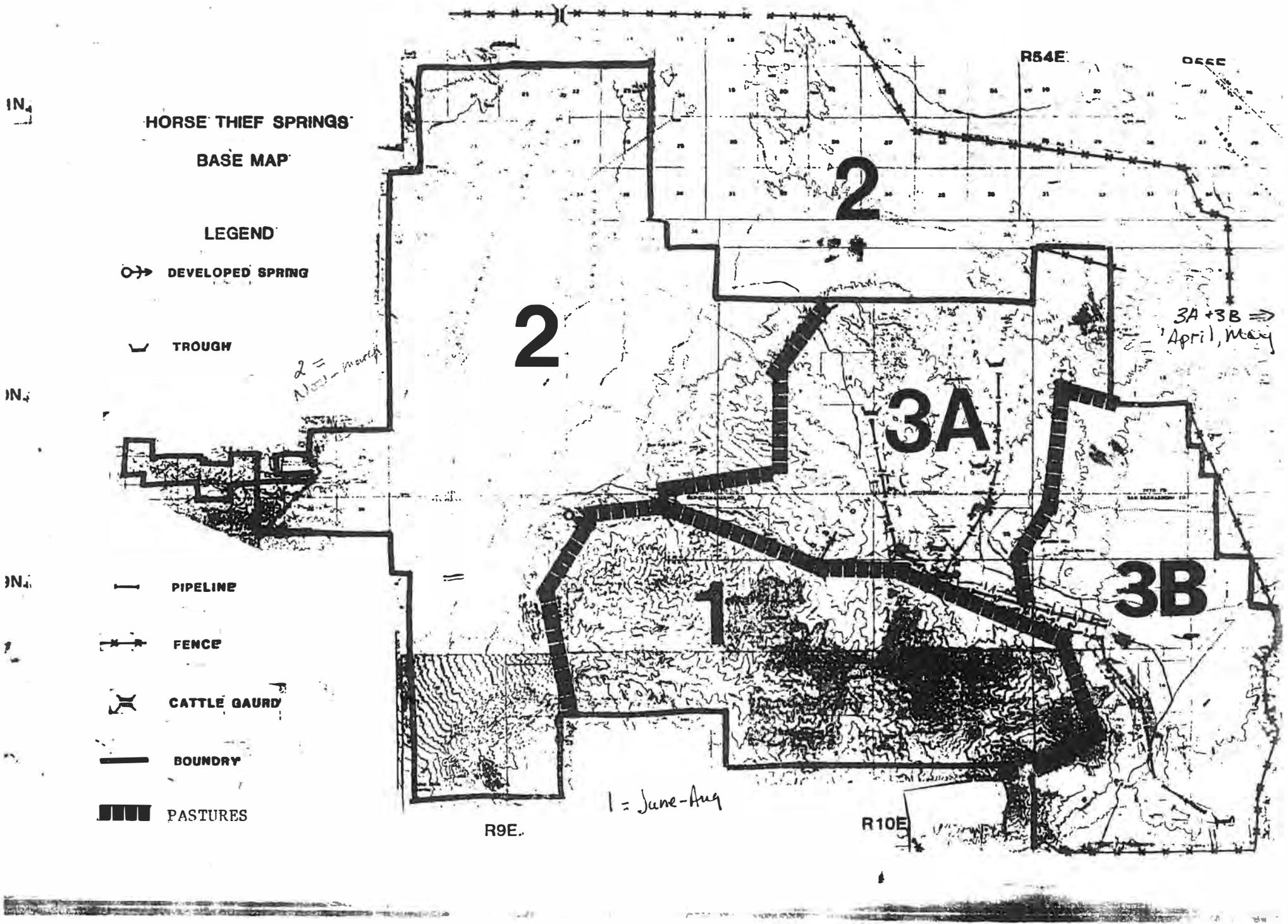
Allotment						Key Species					
Horsethief Springs, Pasture 3a						Squirrel Tail and Bitter Brush					
SPECIES	COMPOSITION	FORAGE VALUE* (check one)				DEVELOPMENT STAGES					
		PER. CENT	EX	GD	FR	PR	DATE				
							START GROWTH	FLOWERING	PEAK OF FLOWERING	SEED RIPE	SEED DISSEMINATE
Grasses											
Galleta grass	5		x			7/11	8/15	9/15	9/30		3/31
Bush Muhly	2	x				7/11	8/15	9/15	9/30		3/31
Squirrel Tail	1	x				7/11	8/15	9/15	9/30		3/31
Indianricegrass	trace		x			7/11	8/15	9/15	9/30		3/31
Fluff grass	2			x		7/11	8/15	9/15	9/30		3/31
Needlegrass	2	x				7/11	8/15	9/15	9/30		3/31
Forbs											
Filiree		x									
Schismus		x									
Red Brome				x							
Datil Yucca	6			x							
Creosote	4				x						
Brittlebush	5			x							
Blackbrush	21	x			x						
Bitterbrush	5										
Bladdersage	15			x							
Shrubs											
Globe Mallow	trace		x			3/15	4/15	9/15	9/30		3/31
Mormon Tea	9	x				3/15	4/15	9/15	9/30		3/31
Range ratany			x			3/15	4/15	9/15	9/30		3/31
Spiny menodora	8		x			3/15	4/15	9/15	9/30		3/31
Winterfat	1		x			3/15	4/15	9/15	9/30		3/31
Wolfberry	7		x			3/15	4/15	9/15	9/30		3/31
Turpentine	5										
TOTAL	100										

Remarks

Forbs as annuals are not counted as a percent of the total composition because they are only present for a short period of time.

* Forage value for livestock (L) and/or wildlife (W) Ex = Excellent Gd = Good Fr = Fair Pr = Poor
** How late in spring species can be grazed and still produce grazeable leaves, twigs, or seed-producing flower stalks

Figure 1.



APPENDIX V
Proposed Improvements

Proposed Improvements

New

1. A corral needs to be built around the last water on the Horsethief Pipeline, #0099. It is located in T. 19 N., R. 11 E., Sec. 33 (unsurveyed).
2. Wildhorse Spring (0505) needs three miles of pvc pipe extending in a northerly direction from the source in T. 20 N., R. 9 E., Sec. 34.

Maintenance

1. ^{Davis Well}~~Fule Springs~~ needs to be reconstructed. It is called Davis Well on maps. The legal description is T. 20 N., R. 9 E., Sec. 6. It will need a tower, mill, trough, and a tank.
2. Beck Springs in T. 20 N., R. 10 E., Sec. 31 was covered up by mining activity. It needs to be dug out.

Additional projects are discussed in Proposed Improvements.

APPENDIX VI
Trend Plot Locations

Plot Number	Priority	Study - Objectives, Rationale	Location	Method	Timing
A	High	Blackbrush/Antelope Bush Reestablished Plot, Rain Guage	T. 20 N., R. 10 E., Sec. 34	Photo Trend Plot/Utilization	March
B	High	Creosote/Galleta Grass Improved Condition/Trend	T. 19 N., R. 11 E., Sec. 9	Photo Trend Plot/Utilization	September
C	High	Bladdersage/Blackbrush Improved Condition/Trend	T. 19 N., R. 10 E., Sec. 4	Photo Trend	March

APPENDIX VII
Bighorn Sheep Habitat

T21N

HORSE THIEF SPRINGS

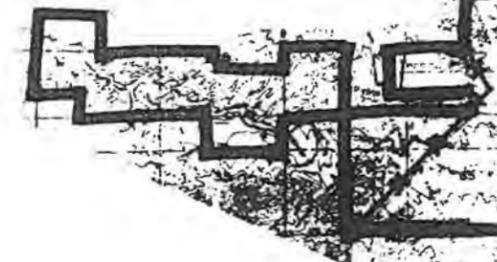
BASE MAP

LEGEND

 DEVELOPED SPRING

 TROUGH

T20N



T19N

 PIPELINE

 FENCE

 CATTLE GAURD

 BOUNDRY

 HMP AREA

 BIGHORN9 SHEEP RANGE

R9E

R10E

R11E

R54E

R55E

