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United States Department of the Interior

Bureau of Land Management

Caliente Field Station
P.O. Box 237
Caliente, Nevada 89008
http://www.nv.blm.gov

Rabbit mountain + Miller Flat 2 in 1 Same horses

MAY 17 1999

In Reply Refer To:
4400/4700

Dear Interested Public:

The Caliente Field Station, Ely District has completed a draft evaluation for the following four allotments contained within the Miller Flat Wild Horse Herd Management Area (HMA): Rabbit Springs, Sheep Springs, Oak Wells and Uvada.

The allotment evaluation process is used to evaluate livestock, wild horse and wildlife use. The purpose is to determine if existing multiple uses are meeting the allotment specific and land use plan objectives as described in the Caliente Management Framework Plan (MFP), Rangeland Program Summary (RPS) and Standards and Guidelines for the Mojave-Southern Great Basin Area. The Miller Flat Allotment Evaluation will determine the need for any short or long term changes in livestock grazing management for the allotments involved. This evaluation process will also be used in determining the appropriate management levels (AMLs) for wild horses for the Miller Flat HMA.

Based on the findings of the evaluation, changes in grazing use are needed in order to meet or progress toward meeting standards for grazing administration.

The draft evaluation was issued on February 11, 1999 to the respective permittees. Their concerns and recommendations have been incorporated into the enclosed document.

These documents are being sent to those interested publics that responded to the evaluation scoping letter issued July 23, 1997, as well as respective permittees, cooperating agencies and additional interested publics identified for 1999.

A thirty-day comment period has been established for this draft. This review period ends on June 18, 1999. If you have any questions or information pertaining to this evaluation, please contact the Caliente Field Station at the above address. All comments must be received in written form.

4 HMA's within traveling distance to each other

Sincerely,

James M. Perkins
Assistant Field Manager
Renewable Resources

water concerns shortage of public H2O's

Elk introduction

1 Enclosure
1. Evaluation for Miller Flat Wild Horse Herd Management Area (HMA)

Evaluation for Rabbit Spring, Sheep Spring, Oak Wells And Uvada Allotments

Miller Flat Wild Horse Herd Management Area

Bureau of Land Management
Caliente Field Station
Ely District
P.O. Box 237
Caliente, Nevada 89008

May 1999

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I. INTRODUCTION

A. Evaluation/Decision and Planning Process

The allotment evaluation process is used to evaluate livestock, wild horse and wildlife use. The purpose of this evaluation is also to determine if existing multiple uses are meeting the allotment specific and land use plan objectives as described in the Caliente Management Framework Plan (MFP), Rangeland Program Summary (RPS) and Standards and Guidelines for the Mojave-Southern Great Basin Area (Appendix III). Refer to the Allotment Objective Flow Chart (Appendix IX) and the Public Consultation Process Chart (Appendix X).

The Caliente Grazing Environmental Impact Statement (EIS) was issued in 1979. Subsequently, the MFP was approved in 1981 and confirmed in 1982 by the state director. The Caliente Resource Area Rangeland Program Summary was issued in June 1985. These documents guide the management of public lands within the Miller Flat wild horse herd management area (HMA).

The Caliente Resource Area EIS for livestock grazing states:

"The proposed action includes an evaluation and monitoring system to determine the effectiveness of current management and proposed management. If evaluation procedures determine that the specific management objectives are not being achieved, modification of the proposed action would occur. Such modifications could include changes in grazing system, management intensity, livestock numbers, period-of-use, or any combination of revisions in order to attain management objectives."

B. NEPA Compliance and Conformance

Proposed actions associated with the evaluation process are analyzed through the NEPA process. Management actions or practices developed through the evaluation process are reviewed to determine if they are in conformance with the land use plan decisions and to determine if the actions fall within the scope or the range of alternatives identified in either the resource management plans and environmental impact statements or the grazing environmental impact statements. If the proposed actions are in conformance with the land use plans, NEPA requirements are met through the use of The Plan Conformance/NEPA Compliance Record. In cases where a proposed action is not covered by an existing NEPA document, then an environmental assessment would be conducted. If necessary, NEPA compliance would be conducted when the development of management actions are completed. In coordination with the public consultation process, development of management actions may occur up to the point of incorporation into the final multiple use decision (FMUD).

C. The Miller Flat Wild Horse Herd Management Area

The Miller Flat wild horse herd management area (HMA) includes all or a portion of six allotments. Two of the six allotments, Sheep Flat and Clover Creek, are part of the Clover Mountain Evaluation already in progress in which all management recommendations will be included. The other four allotments will be evaluated at this time and include Rabbit Spring, Uvada, Sheep Spring and Oak Wells Allotments. The latter two fall within the Miller Flat HMA in their entirety (Map #1), while, the southern portion of Rabbit Spring Allotment (south of Highway 319) and the northern portion of Uvada Allotment fall within the Miller Flat HMA.

The presence of wild horses has increased the potential for resource conflicts within the Ely District. As a result of this evaluation, an Appropriate Management Level (AML) will be established to achieve the objective of acquiring a natural ecological balance. This evaluation covers the period from 1985 through 1997. The Miller Flat HMA has never been evaluated. Table 1 displays general information for each of the allotments included in this evaluation.

Table 1. General Information for Allotments within the Miller Flat HMA.

Allotment Name, Number & Permittee	Selective Management Category	Acres of Public Land		
		Allotment Total	Within HMA	% of HMA
Rabbit Spring (#01057) Kimner Jenson	Custodial (C)	20,975	* 15,824	17
Sheep Spring (#01070) H. Bruce & Marvyn K. Cox	Intensive (I)	31,077	31,077	34
Uvada (#01079) Kenny D. Lee	Maintenance (M)	13,608	* 5,879	6
Oak Wells (#01051) George Andrus	Intensive (I)	29,139	29,139	31
Sheep Flat (#01069) - Newby Cattle Co. - Francis Lytle & Lavar Wade	Intensive (I)	74,171	* 4,452	5
Clover Creek (#21015) - Roger Dieleman - National Mustang Assoc.	Custodial (C)	22,876	* 6,160	7
	TOTAL	**191,846**	**92,531**	**100**

* Approximate acreages within HMA.

II. INITIAL STOCKING LEVEL

A. Livestock Use

For an explanation of the process for changing authorized grazing use and a glossary of terminology, refer to Appendices VIII and XIII, respectively.

The information reflecting the total number of animal unit months of specified livestock grazing (active use), historical suspended use, kind of livestock, period of use and percent of Federal Range for each of the four allotments included in this evaluation is shown in Table 2.

Refer to Appendix IV for a record of licensed AUMs and associated periods of use (based on grazing billings) from 1985-1997 for each of the four allotments herein being evaluated.

Table 2. Livestock Operators, the Total Number of Animal Unit Months of Specified Livestock Grazing (Active Use), Historical Suspended Use, Kind of Livestock, Period of Use and Percent of Federal Range for Each of the Allotments.

Allotment and Permittee	* Total active grazing use (AUMs)	Active Use (AUMs)	Historical Suspended Use (AUMs)	Period of Use as Identified on Term Grazing Permit	Kind of Livestock	Percent of Federal Range
Rabbit Spring - Kimner Jenson	1,999	884	1,115	10/16 - 04/15	Cattle+	100
Sheep Spring - H. Bruce & Marvyn K. Cox	2,640	409	2,231	03/01 - 02/28	Cattle	100
Oak Wells - George Andrus	3,373	511	2,862	03/01 - 02/28	Cattle	100
Uvada - Kenny Lee	1,780	355	1,425	03/01 - 02/28	Cattle	100
** Sheep Flat - Newby Cattle Co. - Francis Lytle & Lavar Wade	1,309	1,309 668	0 862	06/01 - 09/30 06/01 - 09/30	Cattle Cattle	100 100
** Clover Creek - Roger Dieleman	804	447	357	03/01 - 04/30 11/01 - 02/28	Cattle	100
- National Mustang Assoc.	166	166	0	11/01 - 04/30	Cattle	100

* Total active grazing use = Active Use + Historical Suspended Use

** These allotments are part of the Clover Mountain Evaluation already in progress and, therefore, will not be evaluated in this document. Livestock are not currently being grazed within the portions of these allotments that are found within the Miller Flat Evaluation area.

\+ The permittee of this allotment also has the option of grazing sheep, because the conversion from sheep to cattle/sheep was made in 1983.

B. Livestock Use in Allotments within the Project Area

1. Rabbit and Sheep Springs Allotments

Available records indicate that livestock have not been grazed in the Sheep Spring Allotment since 1974 or in the Rabbit Spring Allotment since 1984, leaving mule deer and wild horses as the primary forage consumers within both allotments.

Sheep were the class of livestock authorized to graze within the Rabbit Springs Allotment, with an active grazing use of 1,122 AUMs, until the early 1980s when the conversion of class of stock from sheep to cattle/sheep occurred. The 1976 range survey included calculations of carrying capacity for both cattle and sheep and determined a proportionate ratio of 1.27 AUMs for sheep for each 1 AUM for cattle. Thus, 1,122 sheep AUMs ÷ 1.27 sheep AUMs per cow AUM = 844 AUMs for cattle (rounded to the nearest whole number). Even though the conversion occurred, the season of use remained October 16 to April 15.

There are no fences separating the Rabbit Spring from the Sheep Spring Allotment. This may cause a problem if either permittee decides to graze cattle with respect to the location of Rabbit Spring, the only reliable year-round watering location within the Rabbit Spring Allotment, located along the Rabbit/Sheep Spring Allotment boundary. See Map #8 in Appendix VI showing the location of Rabbit Spring with respect to both allotments. Cattle grazing within the Rabbit Spring Allotment and relying on this watering location could easily trespass into Sheep Spring Allotment. Contrastingly, cattle grazing within the Sheep Spring Allotment and sensing the Rabbit Spring water source could easily trespass into Rabbit Spring Allotment.

In addition, because Rabbit Spring is the only watering source within the allotment and due to its location, it can potentially create a livestock distribution problem. Therefore, watering sites would need to be developed elsewhere within the allotment, to attain a more appropriate and desirable cattle distribution. Such additional watering sites, strategically located, would not only be especially advantageous where forage is more plentiful, but could lend itself as an aid in preventing potential livestock trespassing problems onto the Sheep Spring Allotment.

2. Uvada

Approximately 1,500 acres within the allotment have had site preparation and were subsequently seeded to crested wheatgrass during the mid-1950s. Approximately 1060 acres involved sagebrush eradication and 440 acres involved chaining of pinyon-juniper. Most of the grazing use occurs within the crested

wheatgrass seedings in the north-central and northeast portions of the allotment and the seeding immediately south of the Union Pacific Railroad (Map #22). However, incidental grazing also occurs in the pinyon-juniper habitat surrounding the seedings.

3. Oak Wells Allotment

Use occurs primarily along an approximate four mile pipeline which runs east-west through the center of the allotment and services three water troughs along its route. See any of the Use Pattern Maps (#16 - #21) in Appendix VI for a graphic depiction of the pipeline and troughs. There is neither a cattleguard at the Oak Wells/Sheep Spring Allotment boundary on the Oak Wells road nor a fence between the allotments west of the road, which would prevent cattle from freely crossing between the two allotments.

C. Wild Horse Use

1. Appropriate Management Levels (AML)

The Caliente Grazing EIS recommends an initial management level for wild horses within the Miller Flat HMA of 100 horses yearlong (1200 AUMs) and recommends that the Uvada Allotment be managed for zero (0) wild horses (Table 16).

The Rangeland Program Summary (RPS) set initial management levels of 50 wild horses in the Miller Flat HMA. This is an initial stocking level, however, future adjustments to this level will be based upon vegetation monitoring studies, consultation and coordination, baseline inventory, or a combination of these. The Bureau is actually managing for a thriving natural ecological balance in implementing the land use plan.

2. Herd Use Areas Within the Project Area

a. Miller Flat HMA

The Miller Flat HMA consists of approximately 92,531 acres of public land and encompass all or portions of the Oak Wells, Sheep Spring, Uvada, Clover Creek, Sheep Flat, and Rabbit Spring Allotments.

This HMA can be divided into four principal use areas for horses. The largest of these is the Rabbit Spring/Sheep Spring use area, which is located in the northern half of the Miller Flat HMA. This use area is the main foraging and watering area for over 60% of the horses within the HMA. Several perennial water sources exist here, which provide water for this HMA

ORO HMA?

as well as the Little Mountain HMA which is located west of and contiguous to the Miller Flat HMA. This use area is used heavily during the spring through fall period, but yearlong use does occur with a few resident herds. The horses from this area generally move to the Little Mountain HMA during the late fall and winter due to snow cover.

The Oak Wells use area is second in size in both acreage and population. This area is primarily the Oak Wells Allotment, but also includes the Crossroads Allotment, which is non-HMA. Use in this area occurs yearlong. The horses water along the Oak Well Spring pipeline or on private property at the spring source. A portion of the horses from this area make considerable amounts of use within the Crossroads Allotment's crested wheatgrass seedings. This movement has been a perpetual problem over the years.

The third largest use area is associated with the Sheep Flat and Clover Creek Allotments along Clover Creek in the southern portion of the HMA. The horses use this area yearlong and some of the horses also make use within the southwest portions of the Crossroads and Oak Wells Allotments. Clover Creek supplies the majority of the water needs, but several small springs also exist in the area. The horses are making excessive use on the riparian area associated with Clover Creek on a yearlong basis.

The smallest principal use area is the Uvada Allotment. This is the smallest use area in size and population. The majority of the use is made when water is available in the reservoirs within the allotment. Otherwise, when there is no other water available, they either water elsewhere within the HMA or leave the HMA to water on the Deer Lodge Canyon HMA, which is located to the north of this use area.

D. Wildlife Use

1. Mule Deer

a. Reasonable Numbers: 1,301 AUMs (This number includes the Clover Creek and Sheep Flat Allotments, of which only a portion of the allotments overlap with the Miller Flat HMA)

b. Key/Crucial Areas: The west side of the HMA has been identified as crucial deer winter range.

2. Rainbow Trout

   a. Reasonable Number: None identified.

   b. Key/Crucial Areas: None identified.

3. Threatened and Endangered Species

   Clover Creek may provide potential habitat for the Southwestern Willow Flycatcher, a Federally listed endangered species. There are no other known Federally listed threatened or endangered species within the HMA.

   Two sensitive fish species are located within Clover Creek along the southwest edge of the HMA: Meadow Valley Wash Desert sucker and Meadow Valley Wash Speckled Dace.

III. HMA / ALLOTMENT PROFILE

A. Description

Miller Flat HMA

The Miller Flat wild horse herd management area is located in Lincoln County, Nevada. Elevation ranges from approximately 4,750 feet along Clover Creek to 7,343 feet on Mosey Mountain peak which is located in the northwest section of Oak Wells Allotment. Precipitation varies from four to eight inches at the lower elevations, in the southern and western portions of the HMA, to eight to sixteen inches at higher elevations. Pinyon-juniper woodlands dominate a majority of the HMA.

The northern border of the HMA is dictated by State Route 319, while its southern border is formed by Clover Creek and the south border of Oak Wells Allotment. Its eastern border reaches to the Nevada-Utah state line and the western border mostly follows the west boundaries of Sheep Spring, Rabbit Spring, and Oak Wells allotments.

The HMA is fenced along most of its western and southern borders. The northeast boundary of Sheep Spring Allotment, along State Route 319, constitutes the only section of the northern boundary of the HMA which is not fenced.

There are no Wilderness Study Areas (WSAs) or threatened and endangered flora or fauna located within the HMA.

Mule deer habitat in the HMA areas consists of approximately 141,961 acres of

yearlong habitat and 12,320 acres of crucial winter habitat. The crucial winter habitat it located along the eastern edge of the HMAs (See Map 2).

The Draft Lincoln County Elk Management Plan has identified the HMA as potential elk habitat. The plan identified the areas as yearlong moderate habitat except for the northern tip of the HMAs in the Rabbit Spring and Sheep Spring Allotments. Management actions and strategies outlined in the plan will be followed to manage elk within the HMAs.

Allotment Profiles

The Rabbit Spring Allotment varies in elevation from approximately 5,300 feet in the western portions of the allotment several miles east of Panaca, Nevada to approximately 6,700 feet (Panaca Summit) in the eastern portion. The west half to two-thirds of the allotment consists of rolling hills supporting mostly sagebrush and grasses with encroaching juniper with slopes ranging from zero to approximately 30% and, in moving east, transitions into Pinyon-juniper woodlands. The steepest terrain occurs in the east half of the portion of the allotment north of Highway 319. The allotment has potential for good forage production if mechanical and/or chemical treatments were applied.

Most of the Sheep Springs Allotment is dominated (approximately 90%) by pinyon-juniper overstory with dense sagebrush stands primarily occupying areas where pinyon-juniper has failed to invade, such as draws. Most of the mountainous terrain occurs in the west half of the allotment. Pinyon-juniper understory varies from little to no vegetation with possible pavement under more dense tree canopies to various types of shrubs and grasses under the less dense canopies. Small scale commercial woodcutting has occurred within the allotment, since the mid-1980s, with scattered cutting units located along Crestline Road totalling approximately 875 acres. Five springs are located within the allotment: Dow Spring, Miser Spring, Miller Spring, Chokecherry Spring (#1) and Sheep Spring. Sheep and Miller Springs are located on private land with the respective permittee owning the land while Dow, Miser and Chokecherry (#1) Springs are located on public lands. The fence forming the western boundary of the allotment is in disrepair.

Rabbit Spring and Oak Wells Allotments have only one spring each within their boundaries - Rabbit Spring and Oak Well Spring, respectively. The water rights to Rabbit Spring are not currently held by the current permittee but the land surrounding the spring source is owned by the permittee. The water rights for Oak Well Spring have been applied for by the respective permittee, Mr. George Andrus, on September 18, 1996. The land surrounding the spring is owned by Mr. Andrus.

Most of the Oak Wells Allotment is dominated by pinyon-juniper overstory (approximately 90%). Pinyon-juniper understory varies from little to no vegetation

with possible pavement under more dense tree canopies to increasing amounts of various types of shrubs and grasses under the less dense canopies. Cliffrose (*Cowania mexicana*), desert bitterbrush (*Purshia glandulosa*) and antelope bitterbrush (*Purshia tridentata*) exist in sufficient amounts, in portions of the allotment, and may elicit a significantly favorable increase as a response to overstory removal.

Water within the Oak Wells Allotment is provided by a pipeline which supplies water to three troughs along its approximate four mile stretch. A fourth watering area, along with the water source (Oak Well Spring), is located on private land where the pipeline originates. Topographically, this pipeline is located within Oak Well Hollow, a main drainage into which other smaller drainages empty. Grazing predominantly occurs along this pipeline, thereby creating a livestock distribution problem as evidenced by each of the use pattern maps in Appendix VI (Maps #16 - #21). The pipeline also serves to attract horse and deer use, thereby compounding the grazing use problem within the drainage. Consequently, this lends itself to annually repeated undesirable grazing pressure along the pipeline and necessitates a need for water developments, in other locations within the allotment, that would result in better cattle distribution. Wadsworth Well, in the northeast portion of the allotment, was tested in 1966 with water production exhibiting approximately 3 gallons/minute. A large trough (approximately 500 gallon capacity) exists adjacent to the well.

There are three watering locations within the Uvada Allotment: the Old Highway Reservoir in the northwest portion, the Uvada Reservoir in the northeast portion and a well in the central portion. The well has a windmill which can pump water to fill adjacent water troughs when needed.

Currently, there are no existing Allotment Management Plans and there are no grazing systems being implemented regarding any of the allotments. Thus far, the BLM has relied on permittee stewardship regarding livestock grazing within the Oak Wells and Uvada Allotments.

B. Allotment Specific Objectives

The Caliente Management Framework Plan (MFP) is the Land Use Plan (LUP) which provides direction in making sound decisions to manage its resources on a planning area basis. This LUP provides guidance for making sound decisions for a variety of land uses within the planning areas. The Rangeland Program Summary (RPS) Objectives are derived from the MFP. The allotment specific objectives are a quantification of the Mojave-Southern Great Basin Area Standards & Guidelines, MFP (LUP) Objectives and RPS objectives down to site specific objectives. The allotment specific objectives are clearly consistent and in conformance with the Land Use Plans and Standards (Refer to the Allotment Objective Flow Chart in

Appendix IX).

1. Standards

   a. Standard 1 *SOILS:*

   "Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle."

   Soil indicators:
   - Ground cover (vegetation, litter, rock, bare ground);
   - Surfaces (e.g., biological crusts, pavement); and
   - Compaction/infiltration.

   Riparian soil indicators:
   - Stream bank stability.

   b. Standard 2 *ECOSYSTEM COMPONENTS:*

   "Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses."

   "Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function)."

   Upland indicators:
   - Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
   - Ecological processes are adequate for the vegetative communities.

   Riparian indicators:
   - Stream side riparian area are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.
   - Elements indicating proper functioning condition such as avoiding acceleration erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

     - Width/Depth ratio;

- Channel roughness;
- Sinuosity of stream channel;
- Bank stability;
- Vegetative cover (amount, spacing, life form); and
- Other cover (large woody debris, rock).

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Water quality indicators:
- Chemical, physical and biological constituents do not exceed the stat water quality standards.

c. Standard 3. *HABITAT AND BIOTA:*

"Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species."

Habitat indicators:
- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age classes);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Wildlife indicators:
- Escape terrain;
- Relative abundance;
- Composition;
- Distribution;
- Nutritional value; and
- Edge-patch snags.

2. Management Framework Plan (MFP) Objectives

a. Continue to manage grazing of domestic livestock on the Federal range for maximum yield of livestock forage in the Caliente Planning Unit (MFP Range RM-1).

b. Establish seasons of use for each allotment in the Caliente Planning Unit (MFP Range RM-1.1).

c. Increase livestock forage production and availability in the planning unit through mechanical or chemical treatment (MFP Range RM-2)...on sagebrush and pinyon-juniper vegetation types (MFP Range RM-2.1).

d. Encourage and assist the grazing permittees to develop livestock management facilities (MFP Range RM-3)...encourage and assist the permittees in constructing fences where needed (MFP Range RM-3.1)...encourage and assist the permittees in developing new water sources (MFP Range RM-3.2).

e. Increase species diversity/distribution of desired animals throughout a variety of habitat type (MFP Wildlife WL-2).

f. Provide sufficient quantity and quality of food, cover, and shelter to satisfy the demands of all species utilizing habitats in the planning unit through habitat improvement methods (MFP Wildlife WL-3).

g. Manage wild horse and burro populations in those areas (Wild Horse and Burro Areas) where they existed at the passage or the Wild and Free-Roaming Horse and Burro Act (PL 92-195) on December 15, 1971 (MFP Wild Horse and Burro WH/B-1)...establish the maximum number of wild horses or burros to be maintained in each HMA based on current available forage (MFP Wild Horse and Burro WH/B-1.5)...manipulate vegetation in herd management areas where there is potential (MFP Wild Horse and Burro WH/B-1.5).

h. Insure that water remains available to wild horses at those water sources in HMAs where wild horse use has been identified (MFP Wild Horse and Burro WH/B-1.8).

i. Obtain information on wild horses and burros through the use of inventories and studies (MFP Wild Horse and Burro WH/B-2).

j. Initiate intensive management (orderly and efficient use of water, soil and vegetative cover) of livestock by implementing livestock grazing systems to increase vegetative cover and reduce soil loss due to livestock trampling of frail soils (MFP Watershed W-1.1).

k. To manage and sell forest products from all sites identified as suitable...for firewood...and other viable woodland products (MFP Forestry 1.0).

3. Rangeland Program Summary Objectives

a. Rabbit Spring

(1) Range

Continue management and development at a level which will maintain forage production at 884 AUMs for livestock on a sustained yield basis and not sustain a downward trend in ecological status.

Continue to permit rangeland improvement project development and maintenance which will achieve the objectives for this allotment.

(2) Wildlife

Provide sufficient forage to sustain existing populations of and future reasonable numbers agreed to be 26 deer yearlong.

Implement plans which will achieve habitat management objectives for this allotment by:

- providing riparian habitat protection at the water source
- vegetative manipulation project establishment and/or maintenance
- implementation of the Beaver Dam HMP

(3) Wild Horses and Burros

Continue to manage wild horses within the 12 recognized herd areas at the time of enactment of P.L. 92-195 in Dec. 1971.

Implement plans which will achieve the objectives for this herd area by:

- implementing the Miller Flat Herd Management Area Plan.
- vegetative manipulations
- developing additional water

Provide forage for 50 wild horses in the Miller Flat Herd Area.

Conduct management practices which will maintain wild horse home ranges, and retain dun coloration or other unique markings.

b. Sheep Springs

(1) Range

Improve management developments which will achieve and/or maintain forage production on a sustained yield of 409 AUMs for livestock and to a level which will enhance the ecological status for all uses.

Implement plans which will achieve the objectives for this allotment by:

- implementing a management and project specific AMP

Achieve management and development which would permit this allotment to be removed from the "I" Category.

(2) Wildlife

Provide sufficient forage to sustain existing populations of and future reasonable numbers agreed to be 87 deer yearlong.

Implement plans which will achieve habitat management objectives for this allotment by:

- providing riparian habitat protection at the water source
- vegetative manipulation project establishment and/or maintenance
- implementation of the Beaver Dam HMP
- emphasis on management of the crucial deer winter habitat

(3) Wild Horses and Burros

Continue to manage wild horses within the 12 recognized herd areas at the time of enactment of P.L. 92-195 in Dec. 1971.

Implement plans which will achieve the objectives for this herd area by:

- implementing the Miller Flat Herd Management Area Plan

Provide forage for 50 wild horses in the Miller Flat Herd Area.

Conduct management practices which will maintain wild horse home ranges, and retain dun coloration or other unique markings.

c. Uvada

(1) Range

Maintain management, development, and project maintenance at a level which will provide 355 AUMs for livestock.

Maintain the present satisfactory Resource Value Rating (RVR).

Maintain a static or upward trend in the ecological status.

Ensure implementation of plans which will be:

- project development and management specific AMP which also provides for maintenance of existing projects and achieves the objectives for this allotment

(2) Wildlife

Provide sufficient forage to sustain existing populations of and future reasonable numbers agreed to be 32 deer yearlong.

Implement plans which will achieve habitat management objectives for this allotment by:

- vegetative manipulation project establishment and/or maintenance

(3) Wild Horses and Burros

Continue to manage wild horses within the 12 recognized herd areas at the time of enactment of P.L. 92-195 in Dec. 1971.

Implement plans which will achieve the objectives for this herd area by:

- implementing the Miller Flat Herd Management Area Plan

Provide forage for 50 wild horses in the Miller Flat Herd Area.

Conduct management practices which will maintain wild horse home ranges, and retain dun coloration or other unique markings.

d. Oak Wells

(1) Range

Improve management and implement developments which will achieve and/or maintain forage production on a sustained yield of 511 AUMs for livestock and to a level which will enhance the ecological status for all uses.

Implement plans which will achieve the objectives for this allotment by:

- developing an AMP specific to management and projects

Achieve management and development which would permit this allotment to be removed from the "I" Category.

(2) Wildlife

Provide sufficient forage to sustain existing populations of and future reasonable numbers agreed to be: 82 deer yearlong.

Implement plans which will achieve habitat management objectives for this allotment by:

- providing riparian habitat protection at the water source
- vegetative manipulation project establishment and/or maintenance
- implementation of the Beaver Dam HMP

(3) Wild Horses and Burros

Continue to manage wild horses within the 12 recognized herd areas at the time of enactment of P.L. 92-195 in Dec. 1971.

Implement plans which will achieve the objectives for this herd area by:

- implementing the Miller Flat Herd Management Area Plan

Provide forage for 50 wild horses in the Miller Flat Herd Area.

Conduct management practices which will maintain wild horse home ranges, and retain dun coloration or other unique markings.

4. Activity Plan Objectives

a. Clover Creek HMP

(1) Short Term Objective: To limit use on riparian vegetation to 50 percent.

(2) Long Term Objective: To increase the percent of habitat optimum rating to 60.

b. Beaver Dam HMP

There were no short or long term objectives outlined in this HMP. The overall goal of the HMP is to document ways of increasing the carrying capacity of the terrestrial habitat in the region for the widest variety of wildlife species.

Specifically the objectives are:

(1) To improve the availability of already existing waters to wildlife by developing springs, installing bird ladders in livestock waters, etc..

(2) To employ habitat treatment methods on about 25,000 acres to:

(a) increase the composition of palatable forbs from the present trace to 5-10%.

(b) increase bitterbrush-cliffrose composition, reproduction and availability on Barclay, Enterprise, Sheep Flat, Cottonwood, Oak Wells and Sheep Spring Allotments.

(3) To maintain or improve riparian habitat for small animals along the Meadow Valley Wash and Clover Creek and near other water sources.

(4) To increase the edge effect by leaving islands of cover for wildlife during chaining, plowing or burning vegetative type conversions in heavily wooded areas.

(5) To assist the range activity in the development of Allotment Management Plans and other mean of grazing management on areas containing crucial wildlife habitat by providing basic data on the habitat requirements of wildlife.

(6) To initiate studies that will identify habitat condition and trend of

crucial areas for endangered and other non-game species, areas of heavy competition among cattle, horses and wildlife, and gather other information which will aid in the management of this area.

5. Allotment Specific Objectives

   a. Livestock (Appendix I)

      (1) Short term objective: To manage the allowable use levels (AULs) by season of use and/or stocking levels to improve or maintain the desired vegetative community throughout each of the allotments.

      (2) Long term objective: To manage for the most appropriate seral stage to provide desired quantity, quality and variety of forage in order to meet the requirements for livestock forage production.

   b. Wild Horses (Appendix I)

      (1) Short term objective: To manage the allowable use level (AUL) to improve or maintain the desired vegetative community.

      (2) Long term objective: To manage for the most appropriate seral stage to provide desired quantity, quality and variety of forage in order to meet the requirements of wild horses.

   c. Mule Deer

      (1) Short term objective: To limit use on key browse species listed for mule deer to 45 percent yearlong.

      (2) Long term objective: To maintain mule deer yearlong range in at least fair habitat condition.

      Improve or maintain mule deer crucial winter range in at least good habitat condition.

   d. Riparian

      (1) Short term objective: To limit use on riparian vegetation to 50 percent.

      (2) Long term objective: To restore lentic and lotic riparian areas to Proper Functioning Condition.

C. Key Species Identification

1. Livestock and Wild Horses (Appendix I and Map #3)

Key Area	Common Name	Scientific Name
R-1C	needleandthread	*Stipa Comata* (STCO4)
	Indian ricegrass	*Oryzopsis hymenoides* (ORHY)
	galleta	*Hilaria jamesii* (HIJA)
S-1	needleandthread	*Stipa Comata* (STCO4)
	Indian ricegrass	*Oryzopsis hymenoides* (ORHY)
U-1	crested wheatgrass	*Agropyron cristatum* (AGCR)
U-2	needleandthread	*Stipa Comata* (STCO4)
	Indian ricegrass	*Oryzopsis hymenoides* (ORHY)
	bottlebrush squirreltail	*Sitanion hystrix* (SIHY)
U-3	Muttongrass	*Poa fendleriana* (POFE)
	bottlebrush squirreltail	*Sitanion hystrix* (SIHY)
	junegrass	*Koleria cristata* (KOCR)
	Stansbury cliffrose	*Cowania mexicana stansburiana* (COMES)
OW-1	needleandthread	*Stipa Comata* (STCO4)
	bluegrass	*Poa Spp.*

2. Upland

a. Mule Deer

Key Area	Common Name	Scientific Name
R-2	Stansbury cliffrose	*Cowania mexicana stansburiana* (COMES)
S-2	Stansbury cliffrose	*Cowania mexicana stansburiana* (COMES)

3. Riparian

Riparian grasses may include sedges (*Carex spp.*; CAREX) rushes (*Juncus spp.*; JUNCU), and Nevada bluegrass (*Poa nevadensis*; PONE3).

Woody species may include willows (*Salix spp.*; SALIX), ashes (*Fraxinus spp.*; FRAXI) and cottonwoods (*Populus spp.*; POPUL).

4. Crucial Habitat

The west side of the HMA has been identified as crucial deer winter range (Map #2).

IV. MANAGEMENT EVALUATION

A. Purpose

This evaluation addresses four allotments within the Miller Flat wild horse herd management area. The purpose of this document is to evaluate the nature of grazing that has occurred on the allotments and to measure effectiveness in meeting allotment specific objectives. Included will be recommendations to make specific changes in current management where these multiple use objectives are not being met. Documents referred to in this evaluation and worksheets used to collect data through the years (i.e., trend, utilization, ecological condition) are available to the public for review in allotment monitoring files located in the Caliente Bureau of Land Management Office.

B. Summaries of Studies Data

1. Key Management Area Evaluation Summary

Appendix V (Key Management Area Evaluation Summary) summarizes the monitoring studies data in graphic form. Compare Appendix V with the following sections: actual use, precipitation, utilization, trend and ecological status. Regarding utilization graphs representing percent use on key species at the key areas, a space for a particular species above a given year indicates that there was no measurable use on that species.

2. Actual use

a. Livestock

Livestock use (AUMs) was determined from past licensed use and has varied from year to year. Annual licensed use from 1985 to 1997 for each permittee is displayed, by allotment, in Appendix IV.

b. Wild Horses

Actual use was estimated from the census and gather information pertinent to the Miller Flat HMA. The census and gather information documented for this herd management area may be found in Table 3. Counts are not allotment specific unless noted.

Table 3. Wild Horse Census and Gather Data for the Period 1985-1997 for the Miller Flat and Little Mountain HMAs.

WILD HORSE CENSUS AND GATHER DATA FOR THE PERIOD 1985-1997 FOR THE MILLER FLAT AND LITTLE MOUNTAIN HMAs					
	HERD MANAGEMENT AREA (Total Number of Horses - juvenile and adult)			TOTAL AUMs BY HMA (Based on year-long use)	
YEAR	Miller Flat	Little Mountain	Crossroads Allotment (non-HMA)	Miller Flat	Little Mountain
1985	32			384	
1987	***45***				
1988	67 *	16		804	192
1989	***79***	39			468
1990	***94***	***46***			
1991	***110***	***55***			
1994	72 **	124		864	1488
1995	***85***	***147***			
1996	101 ***	48***	19 ***	1212	576
1997	59 ****	33	5	708	396

NOTES:
Actual census data appears as plain, non-bold, non-italicized numbers.

All census data listed is from the census flight unless shown in ***Bold Italics*** which is a population estimate based on an 18% increase from the last census conducted within the HMA.

*** 101 horses were gathered from both HMAs and 19 horses were gathered from the Crossroads Allotment due to drought emergency in 1996. Forty-eight (48) horses were counted on the Miller Flat and Little Mtn HMAs following the gather operation.

Adult horse numbers identified within each allotment:

*	Rabbit Spring=37	Sheep Spring=18	Uvada=0	Oak Wells=0	Clover Creek=12	Buckboard=16
**	Rabbit Spring=23	Sheep Spring=21	Uvada=1	Oak Wells=13	Clover Creek=3	Sheep Flat=0
****	Rabbit Spring=12	Sheep Spring=28	Uvada=0	Oak Wells=6	Clover Creek=1	Sheep Flat=4

Movement of horses in and out of the Miller Flat HMA has been documented in several locations. Movement between the Miller Flat and Deer Lodge Canyon HMAs, along their common boundary at Highway 319, has been documented through visual observation (routine sightings along the roadside, trailing, and locations of horses during census flights), communications with the public, and documented through traffic reports due to vehicular accidents with horses. There

is a large public concern about the horses travelling across the highway between the two HMAs. At least two accidents per year are reported due to vehicles striking horses on the road.

A second area of movement is between the Oak Wells portion of the HMA and the adjacent Crossroads Allotment, which is non-HMA. The horse population in this part of the HMA is about 25 horses and are believed to be using both allotments. Some of the horses are residing completely within the Crossroads Allotment and utilizing the crested wheatgrass seedings on a yearlong basis. The movement between the two areas is a forage/water related movement and the horses tend to remain in the non-HMA area versus the HMA. Wild horses are also entering the allotment from the adjacent Sheep Spring and Buckboard Allotments to water at the Oak Well Spring and associated pipeline troughs.

The most observable movement of wild horses is between the Miller Flat and Little Mountain HMAs. Horses are routinely observed along the boundary separating the HMAs. The movement is a daily occurrence due to extremely limited water availability within the Little Mountain HMA. The horse population existing within the Little Mountain HMA is the same horses that are using the Miller Flat HMA. The horses have a home range that covers both HMAs but have to travel into the Miller Flat to find a reliable water supply. A noticeable movement occurs during the late fall and early winter when accumulating snowfall forces the horses to move to the open sagebrush associated with the Little Mountain HMA in the lower elevations to the west. However, during the warmer months the reverse occurs when the horses move to take advantage of the available water and trees for shade associated with Miller Flat. This relative ease of movement, between the two areas, identifies the need to manage this area as one HMA instead of two HMAs as is currently being done.

c. Wildlife

Mule deer herd numbers are determined by the Nevada Division of Wildlife on a Management Area basis. The Miller Flat HMA is located at the northeast corner of Management Area 24. Because the HMA is only a small part of Management Area 24, there is no way to determine the herd size.

3. Precipitation

Precipitation data for this evaluation was obtained from the National Oceanic and Atmospheric Administration weather station located in Caliente, Nevada. Caliente is located approximately 10 miles west of the Miller Flat HMA. For this reason the data should be used only as a guide to precipitation for the allotments within the HMA.

The 13 year average (1985-1997) precipitation value at the Caliente weather station is 8.55 inches, ranging from a high of 12.08 inches in 1987 to a low of 5.2 inches in 1989 (Table 4). However, a majority of the Miller Flat HMA is composed of pinyon-juniper woodland, classified as a 029XY065NV site in the Major Land Resource Area (MLRA) range site description published by the Soil Conservation Service. According to these descriptions, this type of woodland site receives 10-12 inches of precipitation annually. Within the HMA, most of the precipitation typically occurs during the winter months, with occasional intense thunder storms occurring during the summer months.

Table 4. Annual Precipitation Data Collected at the Caliente NOAA Weather Station for the Period (1985-1997).

Total Precipitation (in inches)													
1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	13 Year Average
7.89 M	* M	12.08 M	6.22 M	5.2	8.93	7.49 M	12.0 M	11.83 M	9.0	7.98	6.65	7.3	8.55

M= Insufficient or partial data. For each month within a year, M is appended to average and/or total values computed with 1-9 daily values missing and M appears alone if 10 or more daily values are missing - if M occurs during any month of the year the yearly total cannot be computed and, therefore,. the yearly total value receives an M also.

* See Appendix XII for monthly values.

In contrast, the 30 Year (1961-1990) average at this weather station is 9.57 inches. Monthly precipitation values for each year in Table 4 may be found in Appendix XII.

4. Utilization

a. Key Areas

Key management areas have been established within each of the allotments. Map #3 shows their general locations. A more detailed location of each key area within each allotment may be found on each of the use pattern maps in Appendix VI. A list of these key areas, their legal locations and the key plant species monitored at each key area may be found, along with other associated information, in Appendices I (Livestock and Wild Horses) and II (Wildlife). For each year both were available, key management area utilization data (using the key forage plant utilization method) was used in conjunction with the corresponding use pattern map in calculating the desired stocking rates within each allotment (Appendix XI).

With the exception of the newly established key area OW-1, within the Oak Wells Allotment, the key areas within the other three allotments were established in mid-1982. During monitoring efforts in 1997, the existing key area

(established in 1981) within the Oak Wells Allotment was found to be inappropriately located due to its proximity to water (three tenths of a mile). Therefore, a new key area was established which would more appropriately monitor use within the allotment.

Key areas R-2 (Rabbit Spring Allotment) and S-2 (Sheep Spring Allotment) are wildlife key areas. Table 5 shows utilization data obtained at these key areas using the Cole Browse method for Stansbury cliffrose for the years noted.

Table 5. Utilization on Stansbury cliffrose at Key Areas R-2 and S-2.

Key Area			
R-2		S-2	
Date	% Utilization	Date	% Utilization
4/4/94	16%	4/23/97	9%
4/23/93	11%	4/4/94	9%
4/4/90	31%	4/4/90	18%
3/31/89	16%	3/31/89	10%
9/9/87	23%	7/12/88	5%
5/3/85	29%	3/25/87	7%
3/27/84	18%	4/26/86	13%
11/2/82	10%	3/27/84	7%
		11/20/82	36%

In addition, Stansbury cliffrose is a key species at key area #3 in the Uvada Allotment. The following utilization data was collected on the dates noted.

Table 6. Utilization on Stansbury cliffrose at Key Area #3 within the Uvada Allotment.

Date	% Utilization
5/21/97	No Measurable Use
11/23/90	No Measurable Use
11/6/89	8%
9/19/86	12%
11/1/84	18%
12/28/83	20%

b. Use Pattern Mapping

Use pattern mapping was completed for each of the allotments during the years shown in the second column in Table 7. The growing season each use pattern map represents is in the third column. Grazing use patterns are shown on Maps #4 - #21 in Appendix VI.

Table 7. Month and Year in which Each of the Allotments were Use Pattern Mapped and the Growing Season the Map Represents.

Allotment	Month & Year in which Each of the Allotments Were Use Pattern Mapped	Growing Season Use Pattern Map Represents	Map No. in Appendix VI
Rabbit Spring	Feb. 1991	1990	4
	April 1996	1995	5
	Feb. 1997	1996	6
	Nov. 1997	1997	7
Sheep Spring	July 1996	1995	8
	March 1997	1996	9
	Nov. 1997	1997	10
Uvada	Oct. 1985	1985	11
	April 1988	1987	12
	Nov. 1989	1989	13
	Dec. 1995	1995	14
	Nov. 1997	1997	15
Oak Wells	Nov. 1986	1986	16
	April 1988	1987	17
	Sept. 1989	1989	18
	Dec. 1995	1995	19
	March 1997	1996	20
	Nov. 1997	1997	21

* See text under Section V(A)(2)(b).

Table 8 is a Use Pattern Mapping Summary Indicating the Acreage within Each Grazing Category for Each Allotment for the Years the Allotment was Use Pattern Mapped during 1995-1997.

Table 8. Use Pattern Mapping Summary Indicating the Acreage within Each Grazing Category for Each Allotment for the Years the Allotment was Use Pattern Mapped during 1995-1997.

Allotment Name (Acreage)	Year in which Allotment Was Use Pattern Mapped	Growing Season Use Pattern Map Represents	No Measurable Use	Slight (1-20%)	Light (21-40%)	Moderate (41-60%)	Heavy (61-80%)	Severe (80-100%)	Not Mapped (No Data)
Rabbit Spring (20,975)	April 1996 (Map #5)	1995	5,553	3,576	2,508	3,246	1,827	4,265	0
	Feb. 1997 (Map #6)	1995 *	5,673	184	1,892	181	4,084	8,961	0
	Nov. 1997 (Map #7)	1997	4,304	13,357	54	0	0	0	3,260
Sheep Spring (31,077)	July 1996 (Map #8)	1995	19,352	6,569	45	71	0	1,029	4,011
	March 1997 (Map #9)	1996	19,846	4,339	1,760	234	56	1,848	2,994
	Nov. 1997 (Map #10)	1997	18,750	8,383	0	0	0	0	3,944
Uvada (13,608)	Dec. 1995 (Map #14)	1995	0	5,388	410	344	173	28	7,265
	Nov. 1997 (Map #15)	1997	60	3,710	16	303	1,281	563	7,675
Oak Wells (29,139)	Dec. 1995 (Map #19)	1995	27,004	809	927	209	134	56	0
	March 1997 (Map #20)	1996	18,068	4,373	1,404	1,997	1,510	1,787	0
	Nov. 1997 (Map #21)	1997	18,674	3,684	1,595	1,449	1,562	2,175	0

* See text under Section V(A)(2)(b).

5. Trend

Trend data was gathered at all of the key areas except OW-#1 which was newly established in 1997. A statistical analysis using a two way analysis of variance (ANOVA) between means at the .10 confidence interval was applied to all key areas.

Table 9 shows the trend at the various key areas, while tables 10 through 14 illustrate the percent frequency of key species by year.

Table 9. Trend at the Key Areas.

Key Area	Trend		
	Up	Down	Static
R-1C			X
S-1			X
U-1		X	
U-2 *			
U-3			X
OW-1 **			

* Recommend that data be collected again, in 10 years, due to suspected multiple species identification error in 1985.

** Newly established Key Area in 1997, because of proximity to water of existing key area.

Table 10. Percent Frequency of Key Species by Year.

Allotment	Key Area	Key Species	1985	1997
Rabbit Spring	R-1C	STCO4	10	6.5
		ORHY	9.5	8
		HIJA	21	19.5

Table 11. Percent Frequency of Key Species by Year.

Allotment	Key Area	Key Species	1987	1997
Sheep Spring	S-1	STCO4	27.5	28.5
		ORHY		*

* Data only for year indicated

Table 12. Percent Frequency of Key Species by Year.

Allotment	Key Area	Key Species	1985	1997
Uvada	U-1	AGCR**	79	69.5

** Indicates a significant difference between the years for this species.

Table 13. Percent Frequency of Key Species by Year.

Allotment	Key Area	Key Species	1985	1997
Uvada	U-2	STCO4**	65.5	24.5
		SIHY**	33.5	18
		ORHY**	.5	3.5

** Indicates a significant difference between the years for this species.

Table 14. Percent Frequency of Key Species by Year.

Allotment	Key Area	Key Species	1985	1997
Uvada	U-3	POFE	38	24.5
		KOCR**	34	14
		SIHY**	38	12
		COMES	4	3

** Indicates a significant difference between the years for this species.

Trend is static for key area R-1C as indicated by the lack of a statistically significant difference between the means of the two years (Tables 9 and 10).

Key area S-1 was also considered to be static, because needleandthread (STCO4), which potentially may compose up to 30% of the total grass species composition of the Potential Natural Community (PNC), shows no statistically significant difference between the years compared. Contrastingly, bottlebrush squirreltail (SIHY) and western wheatgrass (AGSM) each may only compose up to 2% of PNC and, thus, were not considered as important when determining trend for this key area (Tables 9 and 11).

Key area U-1 shows a downward trend (Tables 9 and 12), while U-3 shows a static to downward trend, because two of the four key species show a statistically significant difference between the means of the two years (Tables 9 and 14). Key area U-2, a woodland site, showed a dramatic difference in percent

frequency between the years for the key species (Tables 9 and 13). After reviewing the statistical analysis and actual field data for both years for U-2, it is suspected that there was a multiple species identification error in 1985. It is recommended that data be collected again in 10 years for comparison.

6. Range Survey

The range survey information, appearing in the following three tables, was obtained from the 1977 Range Survey as contained in the Caliente Environmental Statement (INT FES 79-44).

Table 15. Acreage of the most Predominant Natural Vegetation Types Found within the Rabbit Spring, Sheep Spring, Oak Wells and Uvada Allotments.

Allotment	Vegetative Type	Acres	% of Total By Allotment
Rabbit Spring	big sage pinyon juniper	935 7,089 12,855	4 34 62
Sheep Spring	black sage pinyon juniper	318 2,400 28,359	1 8 91
*Uvada	big sage pinyon juniper	2,040 2,940 6,281	18 26 56
Oak Wells	big sage pinyon juniper	282 2,554 26,309	1 9 90

* Approximately 1,500 acres within the allotment have had site preparation and were subsequently seeded to crested wheatgrass during the mid-1950s. Approximately 1060 acres involved sagebrush eradication and 440 acres involved chaining of pinyon-juniper.

Table 16. Proposed Forage Allocation (AUMs) for Livestock, Deer and Wild Horses within the Rabbit Spring, Sheep Spring, Oak Wells and Uvada Allotments.

Allotment Name	AUMs Per Class of Animal		
	Livestock	Deer	Wild Horses
Rabbit Spring	242	77	240
Sheep Spring	840	262	720
Uvada	521	95	0
Oak Wells	278	247	240

Range condition information, in Table 16, was determined in conjunction with the 1977 forage (range) surveys. Range condition does not refer to ecological condition or productivity, but refers only to quality of forage (livestock forage condition) of each vegetative type for the kind and class of livestock authorized to graze on each allotment. Condition class was determined from the percentage of plants in each of three classes (desirable, intermediate, or undesirable for livestock) which make up the total composition of all plants in the vegetative type. Therefore, in using this system an area may have sparse plant density and still be considered in good condition if the plants present are either in the desirable or intermediate classification. Table 16 displays the acreages occurring within each condition class for each of the four allotments.

Table 17. Acreages Occurring in Each Condition Class within the Rabbit Spring, Sheep Spring, Oak Wells and Uvada Allotments.

Allotment Name	Acreage Within Each Condition Class			
	Good	Fair	Poor	Unsuitable
Rabbit Spring	0	16,824	1,896	1,542
Sheep Spring	23,172	4,402	1,219	1,788
Uvada	10,878	15,281	277	2,709
Oak Wells	7,861	2,801	0	5,639

7. Ecological Status

Ecological condition was completed on all key areas in 1997 (with the exception of the wildlife key areas) using the double sampling methods described in the Soil Conservation Service National Range Handbook (July 13, 1976) and the Bureau of Land Management National Range Handbook H-4410-1 (1984) (Appendix I and Map #3). Key areas U-2 and U-3 are located within woodland habitat in which case ecological ratings are not assigned. Key areas R-2 and S-2 are wildlife key areas on which ESI was not conducted, however a mule deer habitat condition rating was determined in 1988 (Appendix II). Consequently, the following is a summary of ecological status at the remaining key areas:

Key area R-1C (Rabbit Spring Allotment) is located in a Loamy 8-10" P.Z. (029XY006NV) and had an ecological numerical rating of 55% (late-seral stage) of Potential Natural Community (PNC) by air dry weight. However, seral stage is determined by considering not only ecological numerical rating, but also plant community composition. This key area was lowered from late to mid-seral stage, because it lacked the sufficient grass composition required to warrant the numerical rating determined.

Key area S-1 (Sheep Spring Allotment) is located in a Loamy 10-12" P.Z. (029XY029NV) with an ecological numerical rating of 42% (mid-seral stage) of PNC by air dry weight. It maintains its mid-seral rating, even though some of the main component grasses occur in very low amounts.

Key area U-1 (Uvada Allotment) is located within a crested wheatgrass (*Agropyron cristatum*) seeding to which Forage Value Ratings (condition ratings of excellent, good, fair and poor) are assigned. It was first seeded in 1955, but considered a failure and reseeded in 1956. The seeding was inspected in February 1982 and rated in fair condition. Upon completion of ESI in 1997, at the key area, the seeding was rated at 36% (fair condition).

Key area OW-1 (Oak Wells Allotment) is located in a Loamy 10-12" P.Z. (029XY029NV). Upon its establishment in 1997, an ocular estimation of species composition determined the site to have an ecological numerical rating of 33% (mid-seral stage).

8. Wildlife Habitat

The habitat condition for the crucial deer winter range (Map #2) was determined in 1988. Although the habitat is classified to be in good condition (Appendix II), the area is being encroached by pinyon-juniper, which is reducing species diversity. In addition, the existing shrub species component (particularly cliffrose, desert bitterbrush, and antelope bitterbrush) is primarily made up of mature and decadent plants. These larger shrub species have grown out of the affective browsing height for mule deer thus are not being utilized.

The Draft Lincoln County Elk Management Plan has identified the HMA as potential elk habitat. The plan identified the areas as yearlong moderate habitat except for the northern tip of the HMAs in the Rabbit Spring and Sheep Spring Allotments. Management actions and strategies outlined in the plan will be followed to manage elk within the HMAs.

9. Riparian/Fisheries Habitat

Nine springs are located within the Miller Flat HMA. However, only the five following springs are located on public land: Dow Spring, Miser Spring, Chokecherry Spring #1, Chokecherry Spring #2 and Horse Spring. Although there are six allotments within the HMA, these five springs are located within two of the allotments. Dow, Miser, and Chokecherry #1 are located within the Sheep Springs Allotment, while Horse and Chokecherry #2 are located within the Clover Creek Allotment.

The five springs on public lands were evaluated to determine whether they were

functioning properly using Technical Reference 1737-11, *Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas.* Three of the springs, Dow, Miser, and Chokecherry #1 were rated as Functional at Risk while Chokecherry #2 and Horse Springs were rated as non-functional. These springs were rated low due to the excessive amount of wild horse use at the sources. Each of the five springs flow approximately 1/4 to 1/2 gallon per minute.

Clover Creek was also evaluated to determine whether it was functioning properly using Technical Reference 1737-9, *Process for Assessing Proper Functioning Condition.* It was determined that Clover Creek was non-functional.

The approximate seven miles of aquatic habitat and associated riparian zone along Clover Creek was inventoried in 1976, 1987, and 1995, using BLM Manual 6671 - Stream Survey Methodology. This methodology evaluates most of the common environmental conditions that limit aquatic habitat and fish production and a habitat condition rating for trout expressed as a "percent of optimum" can be computed. The percent of habitat optimum for Clover Creek was 53% in 1976, dropped 15% to 38% in 1987 and decreased slightly again to 35% in 1995. On an allotment basis, the percent of habitat optimum for Clover Creek Allotment was 69% in 1976, 52% in 1987, and 48% in 1995. Within the Sheep Flat Allotment the percent of habitat optimum was 60% in 1976, 44% in 1987 and 41% in 1995.

10. Wild Horse Habitat

In general, there appears to be adequate cover and living space for wild horses within the Miller Flat HMA, however, the limiting factor is perennial water distribution. As a consequence of limited perennial water distribution, wild horse distribution potential has decreased and has resulted in perennial forage being severely impacted on an annual basis over large portions of the principal use areas. This is particularly true in Rabbit Spring Allotment where repeated overgrazing by horses has contributed to a decrease in the grass component and an increase in pinyon-juniper (P/J) and sagebrush, which are either encroaching upon or have taken over areas, thereby decreasing foraging potential and, resultingly, horse distribution over time. Consequently, P/J and sagebrush eradication would enhance production of existing grasses and result in a better distribution of horses while decreasing impacts on the resources.

Additionally, the three perennial water sources (Rabbit, Oak Well, and Miller Springs), which are currently producing the most reliable and available water within the HMA, occur on private property with the property being owned by the permittees. If either permittee decides to fence their private property, horses will not have access to these waters unless the permittees provide for it. With no access to these spring sources, the horse population within this use area would be

severely impacted by having to use the remaining water sources which produce very little water and can support only a small horse population. The private property on which Oak Well Spring has been fenced and the only way wild horses have access to the water is through an open gate or via a pipeline and trough system that originates at the source. The permittee does not provide water to the troughs when grazing his cattle in areas of the allotment not serviced by the pipeline, thus, the wild horses have to seek water elsewhere.

V. CONCLUSIONS

Refer to by number and letter from section III.B. (Allotment Specific Objectives), and also see Appendix I.

A. Rabbit Spring and Sheep Spring Allotments

1. Livestock

a. Objective Attainment Determination

Attainment of this objective, regarding livestock, cannot be determined at this time due to non-use taken by the permittees of both allotments.

b. Rationale: Available records indicate that livestock have not been grazed in the Sheep Spring Allotment since 1974 or in the Rabbit Spring Allotment since 1984, leaving wild horses as the primary forage consumer within both allotments. It should be noted that the permittees of both allotments have expressed intent to graze in recent years, however wild horses were attaining population numbers sufficient to cause over grazing within the allotments (note appropriate Use Pattern Maps in Appendix VI)

2. Wild Horses

a. Objective Attainment Determination

Short Term: Not Met

Long Term: Not Met

b. Rationale: Use pattern mapping indicates that Rabbit Spring Allotment received moderate use throughout most of the allotment in 1991 (Map #4). However, utilization data and use pattern mapping show that AULs on grasses were exceeded and showing extensive heavy and severe use on plant growth by 1995 (Map #5).

Drought occurred during 1996 (Appendix V - Precipitation Graph) which resulted in a lack of significant plant growth. As a result, grazing use on the plant growth which occurred during the 1995 growing season continued to take place during 1996 and resulted in the severe and heavy use categories becoming more extensive within the Rabbit Spring Allotment (Map #6). Correspondingly, this severe use extended southward into the northwest section of Sheep Spring Allotment during 1995 (Map #8) and, subsequently, also became more extensive during 1996 (Map #9).

However, as a result of a severe drought situation, a horse gather was conducted in late 1996, which resulted in slight use throughout all of Sheep Spring and nearly all of Rabbit Spring Allotments during 1997 (Maps #10 and #7, respectively).

The present seral stage is lower than desired at key areas R-1C and S-1, because of the low amounts of desirable grass species (Appendix I). Frequency trend studies also indicate a static trend at these key areas (Tables 8, 9 and 10).

3. Mule Deer (Key Areas R-2 and S-2)

   a. Objective Attainment Determination

      Short Term: Met

      Long Term: Met

   b. Rationale: Allowable use levels for key browse species (COMES) has not been exceeded at either key area (Table 5). In addition, crucial deer winter range is in good condition for both wildlife key areas, R-2 and S-2, with condition ratings of 62% and 72%, respectively (Appendix II).

4. Riparian - spring sources (Sheep Spring Allotment only)

   1. Objective Attainment Determination

      Short Term: Not Met

      Long Term: Not Met

   2. Rationale: The condition of the riparian systems are Non-Functional to

Functional at Risk.

B. Uvada Allotment

1. Livestock

a. Objective Attainment Determination

Short Term: Met

Long Term: Met

b. Rationale: Most of the grazing use occurs within the crested wheatgrass seedings in the north half of the allotment. These seeding projects, as conducted in the mid-1950s, are shown on Map #22. For this reason U-1 is considered the key management area. Allowable use levels, per Final Decision dated April 30, 1996, stated that AULs on AGCR shall not exceed 50% during spring and summer.

Utilization data obtained at key area U-1, in November 1997 (Map #15), indicated that the AUL was exceeded (72% utilization). The AULs were also exceeded away from the key area in 1989, the most arid year on record from 1987 through 1997 (Map #13, Table IV and precipitation graph in Appendix V).

Allowable Use Levels were not exceeded in 1985, 1989 (Maps #11 and #13, respectively), 1990 (no use pattern map constructed) and 1995 (Map #14), at key management area U-1 within the north pasture. They were also not exceeded within the south pasture, where cattle were grazed during 1987 (Map #12).

Ecological Site Inventory data collected at key area #1 indicated that the seeding is in fair condition (Forage Value Rating of 36%) (Appendix I), while frequency trend studies showed a downward trend from 1985 to 1997 (Tables 9 and 12). It is believed that the downward trend is contributed mostly to sagebrush and P/J encroachment, indicating that seeding maintenance is necessary.

2. Wild Horses

   a. Objective Attainment Determination

      Short Term: Met

      Long Term: Met

   b. Rationale: Same rationale as for livestock.

3. Mule Deer

   a. Objective Attainment Determination

      Short Term: Met

      Long Term: Met

   b. Rationale: Utilization on the key browse species, Stansbury cliffrose, has not been exceeded at key area #3 (Table 6).

C. Oak Wells Allotment

1. Livestock

   a. Objective Attainment Determination

      Short Term: Not Met

      Long Term: Not Met

   b. Rationale: According to licensed use, no cattle were grazed within the allotment from 1982 through 1985 and from 1989 through 1993 (Appendix IV).

      Allowable use levels were met three out of the six years cattle were grazed during the period 1986-1997. Use pattern mapping indicates that AULs were met in 1986, 1987 and 1995 (Maps #16, #17, #19, respectively).

      Allowable use levels were exceeded in 1989 during which time livestock were not grazed within the allotment. Records state that although no fresh cattle sign was observed in the allotment, horse droppings and stud piles were seen along the length of the portion

of the allotment which was mapped and that the overuse was contribute to wild horses (Map #18). It should be noted that 1989 was the driest year on record from 1987 through 1997 (Table 4 and precipitation graph in Appendix V). Correspondingly, AULs were also exceeded during 1996 and 1997 (Maps #20 and #21, respectively).

There is no distribution of livestock within the allotment as indicated by the use pattern maps in Appendix VI (Maps #16-21). Cattle are either strongly attracted to the drainage served by the pipeline or the route along which the Oak Wells road is located.

2. Wild Horses

   a. Objective Attainment Determination

      Short Term: Not Met

      Long Term: Not Met

   b. Rationale: Same rationale as for livestock.

3. Mule Deer

   a. Objective Attainment Determination

      Short Term: Met

      Long Term: Met

   b. Rationale: Although utilization data indicates that AULs were exceeded on key browse species (PUTR2) in 1996 and 1997 (Maps #20 and #21, respectively), this can be attributed mostly to livestock.

D. Beaver Dam HMP

1. Objective Attainment Determination

   Met <u>except</u> for riparian objectives which apply only to Sheep Spring Allotment.

   Note: Of the four allotments being evaluated in this document Sheep Spring Allotment is the only one which has spring sources located on public lands within its boundaries.

Rationale: There were no short or long term objectives outlined in this HMP. The overall goal of the HMP is to document ways of increasing the carrying capacity of the terrestrial habitat in the region for the widest variety of wildlife species.

Woodcuts have been implemented on Oak Wells and Sheep Spring Allotments. However, natural springs in the Sheep Spring Allotment are Non-Functional to Functional at Risk..

E. Mojave-Southern Great Basin Area Standards Conformance

The following is a summary of the analysis of monitoring data, by allotment, which evaluates the management practices applied during the evaluation period to determine if those management practices are in conformance with the Mojave - Southern Great Basin Standards.

Forage utilization, ecological condition, use pattern mapping and frequency/trend data were used to determine the attainment of the standards.

1. Standard 1 *SOILS:*

"Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle."

a. Rabbit and Sheep Spring Allotments

Monitoring Data

Use pattern mapping was conducted which reflected grazing use during the years 1990, 1995, 1996 and 1997 for Rabbit Spring Allotment and 1995, 1996 and 1997 for Sheep Spring Allotment (Table 7). Ecological condition (ESI) was conducted in 1997 at key areas R-1C (Rabbit Spring Allotment) and S-1 (Sheep Spring Allotment) (Appendix I). Frequency trend data was collected in 1985 and 1987 on Rabbit and Sheep Spring Allotments, respectively, and in 1997 on both allotments (Tables 10 and 11).

Findings:

The following two vegetation sites are predominant within the Rabbit Spring Allotment and are described in the Major Land Resource Area range site descriptions (MLRA 29) published by the Soil Conservation Service: mature pinyon-juniper woodland site (029XY065NV - PIMO-JUOS/ARTRW/POFE) which occurs in the eastern third of the allotment south of Highway 319 and throughout the portion of the allotment north of Highway 319 and a Loamy 8-10" P.Z. (precipitation zone) (029XY006) site which occurs in the western

two-thirds of the allotment south of Highway 319.

The Loamy 8-10" P.Z. site is described as having soils which are moderately deep to deep and are moderately well to well-drained. Surface soils are moderately fine to medium textured and are normally more than 10" thick to the subsoil or underlying material. The available water capacity is low to moderate and some soils are modified with high volumes of rock fragments through the soil profile. Soils having a high percentage of rock fragments on the surface are less subject to soil erosion losses. Runnoff is slow to moderate and the potential for sheet and rill erosion varies with slope gradient.

Soils within the pinyon-juniper woodland site are described as being shallow to moderately deep and are well drained. These soils are skeletal with 35 to over 50 percent gravels, cobbles or stones, by volume, distributed throughout their profile. Available water capacity is low, but trees and shrubs extend their roots into fractures in the bedrock allowing them to utilize deep moisture. There are high amounts of rock fragments at the soil surface which occupy plant growing space, yet help to reduce evaporation and conserve soil moisture. Runnoff is medium to rapid and potential for sheet and rill erosion is moderate to severe depending on slope. Coarse fragments on the soil surface provide a stabilizing affect on surface erosion conditions.

Most of the Sheep Spring Allotment is composed of the mature pinyon-juniper woodland site described above.

See text under section V(A)(2)(b).

Available records indicate that livestock have not been grazed in the Sheep Spring Allotment since 1974 or in the Rabbit Spring Allotment since 1984, leaving mule deer and wild horses as the primary forage consumers within both allotments. Use pattern mapping showed that severe utilization occurred in both allotments during 1995 (Maps #5 and #8) and became more extensive during 1996 (Maps #6 and #9) with drought playing an important roll. An emergency horse gather was conducted in 1996 (Table 3), in an attempt to correct the grazing problem, and resulted in slight use throughout both allotments as indicated by use pattern mapping in 1997 (Maps #7 and #10).

Key area R-1C is located in a Loamy 8-10" P.Z. (029XY006) site, while key area S-1 is located in a Loamy 10-12" P.Z. (029XY029NV - ARTR2/STCO4-ORHY) site. The latter site has been described as having soils which are moderately drained to well drained with surface soils being moderately fine to medium textured and normally more than 10 inches thick to the subsoil or underlying material. The available water capacity is low to

moderate and some soils are modified with high volumes of rock fragments through the soil profile. Runnoff is slow to moderate with the potential for sheet and rill erosion being moderate to high, depending on slope.

Frequency trend studies show trend to be static at both key areas, therefore no progress toward PNC is evident. Both key areas, fall within the mid-seral stage (Appendix I) which indicates that the plant communities in each area are lacking in perennial grass composition and overall grass production. This indicates that inter-shrub ground cover (vegetation and litter) is reduced compared to what would otherwise be available if the site was either in a late seral or Potential Natural Community (PNC) stage, as defined in the MLRA 29, and the potential cover which would protect watershed soils and maintain ecological processes is lacking.

Conclusion: Standard not achieved.

Rising horse numbers and resultant use within both allotments are the significant factors in failing to achieve this standard. An emergency wild horse gather was conducted in 1996 in attempt to relieve grazing pressure on the area due extreme drought conditions and lack of annual growth of forage. Use pattern mapping, conducted in 1997, shows that grazing use did not exceed the slight use category within either of the allotments. Once the AML has been set, future horse gathers will keep horse numbers in check.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

b. Uvada Allotment

Monitoring Data

Use pattern mapping was conducted which reflected grazing use during the years 1985, 1987, 1989, 1995 and 1997 (Table 7). Although use pattern mapping wasn't conducted in 1990, use at the key areas was documented. Ecological Site Inventory (ESI) was conducted in 1997 at key areas U-1, U-2 and U-3 with a forage value condition rating determined for key area U-1 (Appendix I). Frequency trend data was collected in 1985 and 1997 on all three key areas (Tables 12, 13 and 14).

Findings:

Except for those portions of the allotment which were converted to crested wheatgrass seedings, the allotment is predominantly composed of the pinyon-juniper woodland site (029XY065NV). The soil and hydrologic characteristics of this site have been described above under (V)(E)(1)(a).

See text under section V(B)(1)(b).

Seedings within the allotment are illustrated on Map #22. Key area U-1 occurs within a crested wheatgrass seeding. This seeding, since it was first established in the mid-1950s, has never received maintenance resulting in an encroachment of sagebrush. The forage value condition rating was determined to be 36% (Fair) (Appendix I) at this key area indicating that maintenance should be considered.

Use within the allotment occurs predominantly within these seedings. Use pattern mapping indicates that use within the seedings was heavy to severe for two (1989 and 1997) out of the five years the allotment was use pattern mapped (Maps #13 and #15). It should be noted that 1989 was the most arid year on record from 1987 through 1997 (Map #13 and precipitation graph in Appendix V). During the other three years (1985, 1987 and 1995), use within the seedings ranged from slight to moderate, except near water sources (Maps #11, #12 and #14). It should be noted that in 1987 (Map #12) only the south half of the allotment (south of the railroad tracks) was grazed. The allotment wasn't use pattern mapped in 1990. However, utilization was still conducted at the key areas and documentation stated that use patterns were similar to those of 1989 with use in the north half of the allotment not exceeding the light use category as indicated at key area #1. Data collected at key area #2 showed slight use, while no use was observed at key area #3.

Conclusion: Standard achieved.

Use within the allotment never exceeded the moderate use category for four out of six years, as indicated by key area readings and use pattern mapping. During one of the two years it was exceeded (1989) precipitation equalled 5.2 inches making it the most arid year on record from 1985 through 1997 (Table 4 and Appendices V and XI). Overall, this indicates that grazing has not exceeded levels which would have negatively impacted the criteria necessary to achieve Standard 1.

c. Oak Wells Allotment

Monitoring Data

Use pattern mapping was conducted which reflected grazing use during the years 1986, 1987, 1989, 1995, 1996 and 1997 (Table 7). Ecological condition was conducted in 1997 at key area OW-1 (Appendix I). This key area was newly established in 1997, because of the proximity to water of the existing key area, therefore trend analysis was not conducted.

Findings:

The allotment is composed predominantly of the pinyon-juniper woodland site (029XY065NV). The soil and hydrologic characteristics of this site have been described above under (V)(E)(1)(a). In addition, according to the MLRA 29, an overstory canopy cover of 20 to 35 percent is assumed to be representative of tree dominance on this site in a pristine environment, whereby grasses average approximately 5% of the understory. A portion of Oak Well Hollow, located in the east-central section of the allotment, is composed of a Loamy 10-12" P.Z. site which has been described under V(E)(1)(a).

See text under section V(C)(1)(b).

The key area falls within the mid-seral stage (Appendix I) which indicates that the plant community is lacking in perennial grass composition and overall grass production. This indicates that inter-shrub ground cover (vegetation and litter) is reduced compared to what would be available if the site was either in a late seral or Potential Natural Community (PNC) stage as defined in the MLRA 29.

The allotment receives use from cattle, deer, and horses. Within the pinyon-juniper woodland site cattle primarily use the antelope bitterbrush which exists and any existing grasses and are, therefore, in direct competition with deer for browse and horses for grasses. This is especially true along the length of the pipeline which provides the only reliable water source within the allotment and promotes a livestock distribution problem as evidenced by the use pattern maps (Maps #16-21). Because grasses typically average less than 5% of the understory, within the woodland sites of the allotment, they are easily depleted in the vicinity of the pipeline leaving shrubs as the remaining food source. Allowable use levels were exceeded three out of the six years cattle were grazed on the allotment during the period 1986-1997 with two out of these three years being 1996 and 1997. Antelope bitterbrush along the vicinity of the pipeline has a cropped appearance indicating repeated heavy to severe use. Continuous heavy to severe grazing at the current scale, especially during the critical spring growth period, will not improve vegetative composition, understory cover or upland watershed conditions. Furthermore, a deterioration of habitat conditions can result which can eventually lead to an undesirable ecological condition (stage).

Conclusion: Standard not achieved.

Repeated excessive use on grasses and shrubs along the route of the pipeline has resulted in a lack in the amounts of live vegetative material as compared to what would otherwise exist with lighter grazing. Because cattle, horses

and deer use this allotment year-round (except when snow restricts such use), grazing may be contributed to all three classes of animals. However, livestock may be considered the predominant contributor, because of their lack of long distance movement and consequential concentration as a result of their reliance on the water supplied by the pipeline, especially during summer months.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

2. Standard 2 *ECOSYSTEM COMPONENTS:*

"Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses."

"Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function)."

a. Rabbit and Sheep Spring Allotments

Findings:

See discussion under V(E)(1)(a).

The current inter-shrub ground cover (litter and live vegetation) is not appropriate to the potential of each of the ecological sites represented by either key area R-1C in Rabbit Spring Allotment or key area S-2 in Sheep Spring Allotment. Frequency trend studies show trend to be static at both key areas, therefore no progress toward PNC is evident. Both key areas, fall within the mid-seral stage (Appendix I) which indicates that the plant communities in each area are lacking in perennial grass composition and overall grass production. This indicates that inter-shrub ground cover (vegetation and litter) is reduced compared to what would otherwise be available if the site was either in a late seral or Potential Natural Community (PNC) stage, as defined in the MLRA 29, and the potential cover which would protect watershed soils and maintain ecological processes is lacking.

Springs on public lands within the Sheep Spring Allotment, which include Dow Spring, Miser Spring and Chokecherry Spring (#1), have not been fenced for protection from trampling and overutilization by wild horses. These riparian areas are Non-Functional to Functional at Risk [see text under

V(D)].

Conclusion: Standard not achieved.

Rising horse numbers and resultant use within both allotments are the significant factors in failing to achieve this standard. An emergency wild horse gather was conducted in 1996 in attempt to relieve grazing pressure on the area due extreme drought conditions and lack of annual growth of forage. Use pattern mapping, conducted in 1997, shows that grazing use did not exceed the slight use category within either of the allotments (Maps #7 and #10). Once the AML has been set, future horse gathers will keep horse numbers in check.

Riparian damage caused by trampling and overutilization from wild horses is occurring at all springs on public lands and are the significant factors in failing to achieve this standard.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

b. Uvada Allotment

Findings:

See discussion under V(E)(1)(b).

Conclusion: Standard achieved.

Use within the allotment never exceeded the moderate use category for four out of six years, as indicated by key area readings and use pattern mapping. During one of the two years it was exceeded (1989) precipitation equalled 5.2 inches making it the most arid year on record from 1987 through 1997 (Table IV and Appendices V and XII). Overall, this indicates that grazing has not exceeded levels which would have negatively impacted the criteria necessary to achieve Standard 2.

c. Oak Wells Allotment

Findings:

See discussion under V(E)(1)(c).

The current inter-shrub ground cover (litter and live vegetation) is not appropriate to the potential of the ecological site represented by key area

OW-1. The key area, falls within the mid-seral stage (Appendix I) which indicates that the plant community is lacking in perennial grass composition and overall grass production. This indicates that inter-shrub ground cover (vegetation and litter) is reduced compared to what would otherwise be available if the site was either in a late seral or Potential Natural Community (PNC) stage, as defined in the MLRA 29, and the potential cover which would protect watershed soils and maintain ecological processes is lacking.

Conclusion: Standard not achieved.

Repeated excessive use on grasses and shrubs along the route of the pipeline has resulted in a lack in the amounts of live vegetative material as compared to what would otherwise exist with lighter grazing. Because cattle, horses and deer use this allotment year-round (except when snow restricts such use), grazing may be contributed to all three classes of animals. However, livestock may be considered the predominant contributor, because of their lack of long distance movement and consequential concentration as a result of their reliance on the water supplied by the pipeline.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

3. Standard 3 *HABITAT AND BIOTA:*

"Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species."

a. Rabbit and Sheep Spring Allotments

Findings:

See discussion under V(E)(1)(a).

Key areas within both allotments fall within the mid-seral stage (Appendix I). This indicates that the plant communities in each area are lacking in perennial grass composition and overall grass production while shrubs comprise a higher percentage of the vegetative composition, compared to what would otherwise be available if the site was either in a late seral or Potential Natural Community (PNC) stage as defined in the MLRA 29. This indicates that biodiversity is lacking. Consequently, this results in a lower level of carrying capacity for grazing animals (horses and cattle). Frequency trend studies show trend to be static on both key areas, therefore no progress toward PNC is evident.

Springs on public lands within the Sheep Spring Allotment, which include Dow Spring, Miser Spring and Chokecherry Spring (#1), have not been fenced for protection from trampling and overutilization by wild horses. These riparian areas are Non-Functional to Functional at Risk [see text under V(D)].

Conclusion: Standard not achieved.

Rising horse numbers and resultant use within both allotments are the significant factors in failing to achieve this standard. An emergency wild horse gather was conducted in 1996 in attempt to relieve grazing pressure on the area due extreme drought conditions and lack of annual growth of forage. Use pattern mapping, conducted in 1997, shows that grazing use did not exceed the slight use category within either of the allotments (Maps #7 and #10). Once the AML has been set, future horse gathers will keep horse numbers in check.

Riparian damage caused by trampling and overutilization from wild horses is occurring at all springs on public lands and are the significant factors in failing to achieve this standard.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

b. Uvada Allotment

Findings:

Grazing occurs predominantly within the crested wheatgrass seedings which are essentially a monoculture, therefore this standard cannot be applied to the seedings.

Grazing outside the seedings occurs predominantly within pinyon-juniper woodland sites to which MLRA range site descriptions do not apply, therefore seral stages cannot be determined and used as an aid in determining satisfaction of the standard. Nevertheless, productivity ratings can be assessed using the MLRA woodland suitability descriptions which contain a list of the major understory species which occur in the understory of a given woodland site. Productivity ratings provide an index to the relative importance of species in the understory community as affected by the overstory canopy cover. Because variability exists from location to location among understory species for a given canopy class, regarding their presence or absence, it is difficult to render a determination as to whether or not sufficient diversity exists to meet Standard 3. Some of the species listed in

the MLRA may not be present in the understory of a particular woodland site, however other species not listed may be present instead.

To determine if Standard 3 was satisfied, a list of species occurring within the site represented by the key area was determined. This list was compared to the aforementioned species list in the MLRA and professional judgement exercised to help determine whether or not sufficient diversity exists within the sites represented by each key area.

Conclusion: Standard achieved.

Both of the key areas, which represent woodland sites, were deemed to have sufficient diversity appropriate for the area and conducive to appropriate uses.

c. Oak Wells Allotment

Findings:

The key area falls within the mid-seral stage (Appendix I). This indicates that the plant community is lacking in perennial grass composition and overall grass production while shrubs comprise a higher percentage of the vegetative composition, compared to what would otherwise be available if the site was either in a late seral or Potential Natural Community (PNC) stage as defined in the MLRA 29. This indicates that biodiversity is lacking. Consequently, this results in a lower level of carrying capacity for grazing animals (horses and cattle).

Conclusion:

Key area: Standard not achieved.

Because cattle, horses and deer use this allotment year-round (except when snow restricts such use), grazing may be contributed to all three classes of animals. However, livestock may be considered the predominant contributor, because of their lack of long distance movement and consequential concentration as a result of their reliance on the water supplied by the pipeline.

However, another situation must also be noted. Most of the allotment is dominated by mature pinyon-juniper woodlands. Characteristics of this site (029XY065NV - PIMO-JUOS/ARTRW/POFE) have been described under G(1)(a).

Generally, the overstory canopy within the allotment ranges from the medium to dense canopy class (21-35% and 36-60%, respectively). Grasses and forbs within these areas are lacking not only in diversity, but in appreciable amounts with high amounts of rock fragments at the soil surface which occupies plant growing space. Such expectations have been described in the MLRA 29. Therefore, a lack of understory plant diversity may also be attributed to inherent characteristics of the existing pinyon-juniper woodlands.

Refer to the Technical Recommendation sections of the evaluation for those proposed actions or practices to be applied to ensure progress toward fulfillment of the standards and conformance with the guidelines.

VI. TECHNICAL RECOMMENDATIONS

A. Issues

Issues Common to all Allotments

- Considerable acreage is either being encroached upon or is dominated by pinyon-juniper (P/J) resulting in a reduction of species diversity.
- The lack of water availability and animal distribution within the allotments.
- No Appropriate Management Level for wild horses.
- The Miller Flat HMA borders the Little Mountain HMA involving the same population of horses, which results in significant movement between the HMAs.
- The Draft Lincoln County Elk Management Plan has identified the Miller Flat Evaluation area as potential elk habitat.

Allotment Specific Issues

1. Rabbit Spring Allotment

   - No fencing exists along the Condor Canyon Allotment/Rabbit Spring Allotment boundary.

2. Sheep Spring Allotment

   - Miser, Chokecherry (#1), and Dow Spring riparian areas receive trampling and overutilization by wild horses.

- Crucial winter mule deer habitat is being encroached upon or is dominated by P/J resulting in reduced key species diversity, particularly bitterbrush and cliffrose.

3. Issues common to Rabbit and Sheep Spring Allotments

   - The principal water sources (Rabbit Spring, Sheep Spring and Miller Spring) for the wild horse herd within these allotments are located on private property.

   - The lack of fencing between Rabbit and Sheep Spring Allotments.

   - Existing fences require maintenance.

   - Due to lack of fencing along State Highway 319, vehicular accidents with wild horses are a problem. Potential accidents with livestock may become a problem, also.

   - Livestock grazing has not occurred within the Rabbit Spring Allotment since 1984 and the Sheep Spring Allotment since 1974.

4. Uvada Allotment

   - Significant sagebrush and P/J encroachment is occurring on the seedings within the allotment resulting in a lowered forage condition class.

   - No grazing management system exists for this allotment. Grazing has been mostly reliant upon the stewardship of the permittee.

5. Oak Wells Allotment

   - Livestock distribution problem occurs within the allotment.

   - The principal water source (Oak Well Spring) is located on private property.

   - There is neither a cattleguard at the Oak Wells/Sheep Spring Allotment boundary on the Oak Wells road nor a fence between the allotments west of the road.

   - Crucial winter mule deer habitat is being encroached upon or is dominated by P/J resulting in reduced key species diversity, particularly bitterbrush and cliffrose.

B. Short Term Recommendations

1. Rabbit Spring Allotment

Note: The following two recommendations were supported by the permittee.

a. Maintain stocking level of 884 AUMs within the Rabbit Spring Allotment.

Guideline(s): This management action is related to 1.1 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Available records indicate that livestock have not been grazed in the Rabbit Spring Allotment since 1984, therefore all grazing can be attributed to wild horses. It should be noted that the permittee has expressed intent to graze in recent years, however wild horses were attaining population numbers sufficient to cause over grazing within the allotment (note appropriate Use Pattern Maps in Appendix VI). An emergency wild horse gather was conducted in 1996 in attempt to relieve grazing pressure on the area due extreme drought conditions and lack of annual growth of forage. Use pattern mapping, conducted in 1997, shows that grazing use did not exceed the slight use category within the allotment (Map #7) following the gather operation. After cattle grazing resumes, continued monitoring within the allotment through key area readings and use pattern mapping, especially after new water developments are established, would be conducted to determine if grazing management practices and stocking levels are appropriate.

b. Change the current season of use from 10/16 - 4/15 to 10/1 - 3/30 for sheep to coincide with spring growth requirements of perennial plants. Change the current season of use from 10/16 - 4/15 to yearlong for cattle.

Guideline(s): This management action is related to 1.1, 3.3 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: The current season of use of 10/16 - 4/15 was designed for sheep winter use prior to the livestock conversion from sheep to cattle/sheep in the early 1980s. Livestock have not been grazed within the allotment since early 1984 when sheep were the kind of livestock graze. Consequently, current records indicate that no monitoring data exists pertaining to cattle grazing in the

allotment. Therefore, changing and maintaining the authorized grazing period for cattle from 10/16 - 4/15 to yearlong will depend on continued monitoring, particularly after water developments are constructed and cattle are grazed. Cattle are not generally herded cross-country with a portable water supply like sheep, but are tied to stationary watering locations. They also maintain a diet dominated by grasses, whereas, sheep have no particular preference for either grasses, forbs or shrubs and will readily use all three depending on availability (Holechek et. al. 1989). Continued monitoring will not only help determine potential adjustments in season of use, but also in cattle stocking levels if necessary. Yearlong grazing for cattle will also be dependent upon on the following: that grazing during the critical spring growing period will not exceed 50% on perennial grasses and forbs (Nevada Rangeland Monitoring Handbook) (key forage plant utilization method) at established key areas and cattle will be moved around the allotment by rotating waterhaul locations throughout the year. Salting and herding may be used in addition.

The current grazing period for sheep extends into the spring growing season when forage plants are emerging from winter dormancy and carbohydrate reserves are in demand to initiate leaf growth and photosynthesis which will replenish the used carbohydrate reserves, promote subsequent seed development, and provide forage for consumption. Changing the grazing period for sheep to reflect use beginning and ending two weeks earlier during the year will not change the current grazing time interval, however it will provide more positive benefits to plants. This change in season of use for sheep is also supported in the proposed action in the Caliente EIS.

If cattle and sheep are grazing simultaneously, the combined total may not exceed 884 AUMs during the grazing year for the allotment.

2. Sheep Spring Allotment

Note: The following two recommendations were supported by the permittee.

a. Maintain stocking level of 409 AUMs within the Sheep Spring Allotment.

Guideline(s): This management action is related to 1.1 and 3.4. These guidelines will be applied to achieve the standards for multiple

use.

Rationale: Available records indicate that livestock have not been grazed in the Sheep Spring Allotment since 1974, therefore all grazing can be attributed to wild horses. It should be noted that the permittee has expressed intent to graze in recent years, however wild horses were attaining population numbers sufficient to cause over grazing within the allotment (note appropriate Use Pattern Maps in Appendix VI). An emergency wild horse gather was conducted in 1996 in attempt to relieve grazing pressure on the area due extreme drought conditions and lack of annual growth of forage. Use pattern mapping, conducted in 1997, shows that grazing use did not exceed the slight use category within the allotments (Map #10) following the gather operations. After cattle grazing resumes, continued monitoring within the allotment through key area readings and use pattern mapping, especially after new water developments are established, would be conducted to determine if grazing management practices and stocking levels are appropriate.

b. Maintain yearlong season of use.

Guideline(s): This management action is related to 1.1, 3.3 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Livestock have not been grazed within the allotment since 1974. Current records indicate that no monitoring data exists pertaining to cattle grazing in the allotment. Therefore, yearlong grazing will depend on continued monitoring particularly after water developments are constructed and cattle are grazed. Monitoring will not only help determine potential adjustments in season of use, but also in cattle stocking levels if necessary. Yearlong grazing for cattle will also be dependent upon on the following: that grazing during the critical spring growing period will not exceed 50% on perennial grasses and forbs (Nevada Rangeland Monitoring Handbook's key forage plant utilization method) at established key areas and the cattle will be distributed within the allotment by using rotating waterhaul locations. Salting and herding may be used in addition.

3. Uvada Allotment

a. Increase Active Use from 355 AUMs to 463 AUMs.

Guideline(s): This management action is related to 1.1 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Based on the Desired stocking Rate calculations for Uvada Allotment (Appendix X), the average Desired AUMs for the five years of use pattern mapping shown in the table equals 678 AUMs. However, precipitation in 1995 was nearly twice and May precipitation nearly 2.4 times the 30 year average (Appendix X). Such above normal precipitation caused a flourishing of annual grasses. Field observations indicated that cattle, consequently, were passing over perennial grasses in favor of the more desirable annual grasses. This resulted in use at the key area being very atypical and causing extreme data skewing, while yielding a grossly inflated Desired Stocking Level and misrepresented the carrying capacity of the allotment regarding the seedings.

The average stocking rate calculated on the remaining four years of use pattern maps (excluding 1995) was 447 AUMs. Based on the available monitoring data, this level of AUMs is supportable through the current allotment management.

For each of the years shown (except 1989) in the stocking rate calculations for Uvada Allotment, Temporary Non-Renewable (TNR) use was issued without exceeding the desired utilization level (50%) at the key area #1, which is located within a crested wheatgrass seeding. It should be noted that TNR use has been issued, according to Title 43 of the Code of Federal Regulations (CFR) §4130.6-2, for 10 of the 13 years from 1985-1997 (Appendix IV).

Using the current active use of 355 AUMs plus the average Temporary Non-Renewable use from 1985-1997, which equals 108 AUMs, yields a total of 463 AUMs as a desired stocking rate for the Uvada Allotment.

b. Establish a season of use from yearlong to 5/1 - 10/31 to coincide with spring growth requirements of crested wheatgrass plants within the seedings.

Guideline(s): This management action is related to 1.1, 3.3 and 3.4.

Rationale: Most of the grazing use occurs within the crested wheatgrass seedings in the northern portions of the allotment and on a small seeding south of the Union Pacific Railroad (UPRR) line (Map #22) within the south pasture.

The proposed grazing period for cattle is based on the spring growth requirements for crested wheatgrass. Currently, the term grazing permit allows for year-round grazing. This would allow no resting period for these plants to recover from grazing influences, especially with regard to carbohydrate reserves and its influence on spring growth and subsequent seed development. Establishing this grazing period in combination with the proposed deferred rotation grazing system would allow plants to recover from such grazing influences.

According to grazing records for the Uvada Allotment, the current permittee has always grazed his cattle between May 1 and October 31, therefore, the proposed change will not affect his current operation.

c. Establish a grazing system.

Guideline(s): This management action is related to 1.1, 3.3 and 3.4.

Rationale: No grazing management system currently exists and grazing has been mostly reliant upon the stewardship of the permittee. Implement a deferred rotation grazing system. This system would ensure that one seeding would be rested each year, until after seed set, on a rotational basis. The allotment is essentially divided into a north and south pasture by the UPRR line and has fencing and gates to control movement of cattle between the two areas. Cattle can begin grazing in "year 1" in the north pasture until crested wheatgrass in the south pasture has reached the seed drop stage. Then cattle can be removed from the north pasture and put in the south pasture. In "year 2" the opposite would occur. The current permittee is presently managing the allotment in a manner similar to this proposed system.

Note: The above recommendations were supported by the permittee.

4. Oak Wells Allotment

Option 1:

Note: The following recommendation was supported by the permittee.

a. Maintain stocking level of 511 AUMs for cattle. Maintain year-round season of use.

Guideline(s): This management action is related to 1.1, 3.3 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: The overgrazing which occurs along the existing pipeline is due to an animal distribution problem (rather than overstocking) strongly related to a lack of water distribution within the allotment. This has resulted in portions of the allotment receiving insignificant use. The establishment of additional water sources within the allotment should help to alleviate animal concentrations along the pipeline route, particularly during summer months, and distribute grazing use within the allotment. Furthermore, the use of such water developments could be rotated to promote resting periods for vegetation to recover from grazing influences, especially with regard to carbohydrate reserves and its influence on spring growth and subsequent seed development. Also see (b) under the Long Term Recommendations for Oak Wells Allotment regarding permittees recommendations for water developments.

Option 2:

a. In the absence of water developments, resulting in a lack of livestock distribution, maintain year-round season of use and initially decrease active use by 25% (from 511 AUMs to 384 AUMs).

Guideline(s): This management action is related to 1.1, 3.3 and 3.4. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Currently, the term grazing permit allows for year-round grazing. In the absence of water developments, to promote livestock distribution, concentration of livestock grazing will continue to occur along the existing pipeline, especially during hot weather.

According to the water development recommendation submitted by the permittee (See [b] under the Long Term Recommendations for Oak Wells Allotment), the permittee supports the BLM's recommendation regarding additional water developments. However, should initiative for water developments by the permittee become lacking, an alternative measure will need to occur. The 25% reduction would be a temporary situation lasting until recommended watering areas become established and sufficient to relieve the current grazing problem noted along the pipeline.

Continued monitoring would be conducted to determine additional necessary adjustments in either season of use, cattle stocking levels, or both.

5. Miller Flat HMA

   a. Establish a wild horse Appropriate Management Level (AML) for the Miller Flat HMA. Potential stocking rate calculations for each allotment contained within the HMA are located in Appendix X. Three options exist for the establishment of an AML for the Miller Flat HMA.

      Guideline(s): This management action is related to Guidelines 1.1, 2.3, and 3.4. These guidelines will be applied to achieve the standards for multiple use.

      Option 1:

      Establish the overall AML for the HMA at the level of horses of 30 wild horses based on the potential stocking rate calculations (Appendix X). The AML for the Sheep Flat and Clover Creek Allotments' portions of the HMA will be formally set within the Clover Creek and Clover Mountain HMA Evaluation, which is currently being developed.

      Rationale: Based on intensive monitoring within the HMA over the last several years, a supportable AML for the Miller Flat HMA is managing for 30 wild horses. Prior to the 1996 drought gathers, in which 101 horses were removed from the Miller Flat and Little Mountain HMAs, utilization objectives were being exceeded on an annual basis over the majority of Rabbit Spring Allotment (Maps #5 and #6) and on portions of Sheep Spring Allotment (Maps #8 and #9) due to wild horse use. These are allotments that have not been grazed by livestock since 1984 and 1974, respectively, so no action will be taken towards the Active Use. These use levels occurred during years of above and below

normal precipitation. Following the gather
objectives were not exceeded within these a
identified within the 1997 use pattern mapp
and #10).

As identified in earlier portions of the eval
availability on public lands is extremely lir
spring sources (Rabbit Spring, Sheep Spring, Oak Wells Spring, and Miller Spring) are located on private property. Allocating wild horse numbers based on these sources is not possible due to the potential of losing access to these sources if the private lands are fenced. Based on the estimated flows of the small spring sources found on public lands (Table 18), these sources should support the identified AML during below average flow years.

The management of the Miller Flat HMA for 30 horses will also aid in the relief of wild horse use along Highway 319. This stretch of highway has long history of vehicle and horse accidents and near misses. On the average, at least two accidents per year are reported due to vehicles striking wild horses on the highway.

Option 2: YES recommend

Establish the overall AML for the HMA at the level of 27 wild horses based on spring source flow calculations (Table 18). The AML for the Sheep Flat and Clover Creek Allotments' portions of the HMA will be formally set within the Clover Creek and Clover Mountain HMA Evaluation, which is currently being developed.

Rationale: Based on intensive monitoring within the HMA over the last several years, a supportable AML for the Miller Flat HMA is managing for 27 horses.

As identified in earlier portions of the evaluation, water availability on public lands is extremely limited. The larger spring sources (Rabbit Spring, Sheep Spring, Oak Wells Spring, and Miller Spring) are located on private property. Allocating wild horse numbers based on these sources is not possible due to the potential of losing access to these sources if the private lands are fenced. Based on estimates of flows of the spring sources found on public lands, these sources have the potential to support the following identified AML during an average flow year.

normal precipitation. Following the gather in 1996, utilization objectives were not exceeded within these allotments as identified within the 1997 use pattern mapping results (Maps #7 and #10).

As identified in earlier portions of the evaluation, water availability on public lands is extremely limited. The larger spring sources (Rabbit Spring, Sheep Spring, Oak Wells Spring, and Miller Spring) are located on private property. Allocating wild horse numbers based on these sources is not possible due to the potential of losing access to these sources if the private lands are fenced. Based on the estimated flows of the small spring sources found on public lands (Table 18), these sources should support the identified AML during below average flow years.

The management of the Miller Flat HMA for 30 horses will also aid in the relief of wild horse use along Highway 319. This stretch of highway has long history of vehicle and horse accidents and near misses. On the average, at least two accidents per year are reported due to vehicles striking wild horses on the highway.

Option 2: YES recommended

Establish the overall AML for the HMA at the level of 27 wild horses based on spring source flow calculations (Table 18). The AML for the Sheep Flat and Clover Creek Allotments' portions of the HMA will be formally set within the Clover Creek and Clover Mountain HMA Evaluation, which is currently being developed.

Rationale: Based on intensive monitoring within the HMA over the last several years, a supportable AML for the Miller Flat HMA is managing for 27 horses.

As identified in earlier portions of the evaluation, water availability on public lands is extremely limited. The larger spring sources (Rabbit Spring, Sheep Spring, Oak Wells Spring, and Miller Spring) are located on private property. Allocating wild horse numbers based on these sources is not possible due to the potential of losing access to these sources if the private lands are fenced. Based on estimates of flows of the spring sources found on public lands, these sources have the potential to support the following identified AML during an average flow year.

Table 18. Average Flow Estimates of Spring Sources Located on Public Lands and their Support Potential for Wild Horses (AML).

Spring Source	Avg. Flow/Minute	Potential Flow/Year	Allocation of 50% of Potential Flow to livestock and wild horses	Allocation of 25% of Potential Flow to wild horses
Dow Spring	1/4 gallon	131,400 gallons	65,700 gallons	32,850 gallons
Miser Spring	1/4 gallon	131,400 gallons	65,700 gallons	32,850 gallons
Chokecherry #1	1/4 gallon	131,400 gallons	65,700 gallons	32,850 gallons
TOTALS	**3/4 gallon**	**394,200 gallons**	**197,100 gallons**	**98,550 gallons**

Avg. horse's water consumption per day = 10 gallons per day = **3,650 gallons per year.**
Horse allocation of potential flow divided by yearly water requirement = potential wild horse AML.
98,550 / 3,650 = 27 horses

The Sheep Spring Allotment is the only allotment within the evaluation area that has spring sources located on public lands. These springs; Dow, Miser, and Chokecherry #1, have estimated flow rates of approximately 1/4 to 1/2 gallon per minute depending on the season of the year and past moisture levels (Table 18). Dow and Chokecherry #1 springs have been developed, but need significant repair in order to be a functioning water project. Miser spring has not been developed due to it originating out of bedrock and flows over bedrock until it goes subsurface again.

The Oak Well Spring (Oak Well Allotment) originates on private property and then is piped out of the private for approximately 3 miles. Wild horses do have access to this water when the permittee's livestock are using the pipeline, but otherwise need to travel to other areas to get water.

The Rabbit Spring Allotment has no known spring sources located on public lands. The only source contained within its boundaries is Rabbit Spring and it is located on private property. Though this source is currently being heavily used by wild horses from within the Miller Flat HMA and the Little Mountain HMA, no allocation of numbers can be made based on this source due to no public control of the water. The current property owner and recognized permittee has informed the BLM that he has intentions to fence the private property and develop a home base for his livestock operation within the next year.

The Uvada Allotment has no known spring sources. The only water sources are two small reservoirs and a well. The well is located outside the HMA boundary, thus no horse numbers will be allocated to this source. The small reservoirs are located within the HMA, but tend to hold water for only a short period of time. By mid-summer, the permittee's livestock have to travel to the well in the center of the allotment. Though no horses are usually counted in the censuses, it is believed that less than 5 horses use the allotment at various times of the year. The horses that do use the allotment have to leave the allotment once the reservoirs dry up as the well is located outside of the HMA and the horses do use the bridge underpass as the livestock do.

A factor affecting further management of wild horses is that the spring sources that are located on public lands are found within the Sheep Spring Allotment. As stated above, no other allotment within the Miller Flat HMA contains reliable perennial spring sources that could provide water to a population of wild horses. Once access to water is eliminated at the larger water sources on private property, the distribution of horses will be limited to the areas surrounding the small springs on public lands. This decreased distribution would lead to increased resource damage to the spring source, which are already degraded due to horse use, and to the surrounding upland vegetation.

The management of the Miller Flat HMA for 27 horses will also aid in the relief of wild horse use along Highway 319. This stretch of highway has long history of vehicle and horse accidents and near misses. On the average, at least two accidents per year are reported due to vehicles striking wild horses on the highway.

Option 3:

Establish the AML at zero (0) horses for the Miller Flat HMA based on limited water sources on public lands in regards to water volume and distribution as well as a concern for overall public safety dealing with wild horse/vehicle accidents along Highway 319.

Rationale: As identified in earlier portions of the evaluation, water availability on Public lands is extremely limited. The large spring sources (Rabbit Spring, Sheep Spring, Oak Wells Spring, and Miller Spring) are located on private property. Allocating wild horse numbers based on these sources is not possible due to the potential of losing access to these sources if the private lands

are fenced. The private property around Oak Wells Spring is currently fenced though horses do have access to the water at the source as well as along a pipeline that supplies water to livestock within the central portion of the allotment. The permittee shuts off the pipeline when his livestock are not using the area serviced by the pipeline.

Based on estimates of flows of the spring sources found on public lands, these sources have the potential to support approximately 27 wild horse during an average flow year (Table 18).

A second factor affecting further management of wild horses is that the remaining three spring sources that are located on public lands are found within the Sheep Spring Allotment. No other allotment within the Miller Flat HMA contains reliable perennial spring sources that could provide water to a population of wild horses. Once access to water is eliminated at the larger water sources on private property, the distribution of horses will be limited to the areas surrounding the small springs on public lands. This decreased distribution would lead to increased resource damage to the spring source, which are already degraded due to horse use, and to the surrounding upland vegetation.

The management of the Miller Flat HMA for zero horses will also aid in the relief of wild horse use along Highway 319. This stretch of highway has long history of vehicle and horse accidents and near misses. On the average, at least two accidents per year are reported due to vehicles striking wild horses on the highway. The majority of the accidents and near-misses occur within 3 miles on either side of Panaca Summit. This strip of the highway is located within the Rabbit Spring and Sheep Spring Allotment portions of the HMA. The horses are attracted to the Summit area by the salt used on the highway for snow and ice abatement. This stretch also appears to be a traditional path to Deer Lodge Canyon HMA, which borders the Miller Flat HMA on the north side of Highway 319 (Map #1).

Though the Miller Flat HMA will be managed for zero wild horses, under this option, the likelihood of horses using the HMA still remains. The Miller Flat HMA is bordered on three sides by HMAs (Little Mountain to the west, Deer Lodge Canyon to the north, and Clover Creek and Clover Mountain to

the south). The degree of movement between the HMAs is not completely clear, but there is definite movement patterns between Miller Flat, Deer Lodge Canyon and Little Mountain HMAs based on foraging and watering habits.

The following recommendation was submitted by the Oak Wells permittee:
An official copy of the "Comments and Recommendations" submitted by the permittee of the Oak Wells Allotment is on file at the Caliente Field Station.

d. Set an AML within the Oak Wells Allotment of 12 wild horses.

Rationale submitted: In accordance with the Rangeland Program Study, initial stocking rates for wild horses would be set at 50 animals in the Miller Flat HMA. The Oak Wells Allotment constitutes 31% of the HMA. Multiplying these two figures yields approximately 16 horses. However 12 horses should be the target stocking rate on the allotment. When numbers exceed this amount removal of wild horses should occur. This would provide the first major step in managing for a thriving natural ecological balance on the allotment.

C. Long Term Recommendations

1. Rabbit Spring Allotment

a. Construct fencing along the Condor Canyon/Rabbit Spring Allotment boundaries.

Guideline(s): This management action is related to 3.3, 3.4 and 3.7. These guidelines will be applied to achieve standards for multiple use.

Rationale: No fencing exists along this boundary. Should the permittee wish to construct water developments in the northern portion of this allotment, to promote better cattle distribution and more fully utilize the allotment, potential trespassing into Condor Canyon Allotment could occur.

2. Sheep Spring Allotment

   a. Fence the riparian areas around Dow, Chokecherry (#1) and Miser Springs to prevent trampling and overutilization by wild horses. Conduct maintenance on the spring collection box and associated pipeline for Dow and Chokecherry #1 in order to supply a more reliable flow of water. Evaluate the potential of Miser Spring for development to supply water away from the source.

      Guideline(s): This management action is related to 1.1, 1.3, 2.3, 2.6, 2.7, 3.6 and 3.7. These guidelines will be applied to achieve the standards for multiple use.

      Rationale: Riparian areas are being trampled and overutilized by wild horses, thereby degrading or destroying surface vegetation while compacting soils in the immediate area surrounding each spring. This does not promote the physical and biological conditions necessary for achieving the desired natural riparian plant community.

      Maintenance on the existing spring developments at Dow and Chokecherry #1 would help to distribute the water away from the source locations. Additional pipeline and troughs would be beneficial to all users.

      The development of Miser Spring would add another watering source as well as helping to reduce the impact at the source by livestock and wild horses.

      Fencing would protect these riparian areas from overutilization by wild horses as well as livestock. Fencing would promote riparian vegetation growth and maintenance of the areas.

3. Rabbit and Sheep Spring Allotments

   a. Construct fencing along Highway 319 to prevent vehicular collisions with wild horses and, potentially, livestock.

      Guideline(s): This management action is related to 3.3, 3.4 and 3.7. This guideline will be applied to achieve the standards for multiple use.

      Rationale: Movement between the Miller Flat and Deer Lodge Canyon HMAs along their common boundary at Highway 319 has been documented through visual observation (routine sightings along

the roadside, trailing, and locations of horses during census flights), communications with the public, and documented through traffic reports due to vehicular accidents with horses. There is a public concern about the horses travelling across the highway between the two HMAs. At least two accidents per year are reported due to vehicles striking horses on the road. There would be an effort to obtain Lincoln County and Nevada Department of Transportation (NDOT) participation regarding labor and materials for fencing projects.

Livestock drifting onto Highway 319 may also become a potential problem if either permittee constructs water developments in the northern portions of their allotments to improve cattle distribution and more fully utilize their allotments.

b. Encourage permittees of both allotments to make grazing use, per 43 CFR §4140.1 (a)(2), after sufficient range improvements are implemented (i.e., fencing and/or water developments) which would decrease the probability of potential livestock distribution problems in Rabbit Spring Allotment and Sheep Spring Allotment.

Guideline(s): This management action is not related to any of the Guidelines.

Rationale: According to 43 CFR §4140.1 (a)(2), the following is prohibited on public lands: "Failing to make substantial grazing use as authorized for 2 consecutive fee years, but not including approved temporary nonuse, conservation use, or use temporarily suspended by the authorized officer."

4. Uvada Allotment

a. Conduct maintenance within the crested wheatgrass seeding in the northern portion of the allotment.

Guideline(s): This management action is related to 1.1, 3.1, 3.2, 3.3, 3.4, 3.7 and 3.8. These guidelines will be applied to achieve the standards for multiple use.

Rationale: The crested wheatgrass seedings in the northern portion of the Uvada Allotment were developed in the 1950's through chaining of P/J and plowing of sagebrush. The areas were seeded with crested wheatgrass. Ecological Site Inventory data collected at key area #1 indicated that the seeding is in fair condition (Forage Value Rating of 36%) (Appendix I), while frequency

trend studies showed a downward trend from 1985 to 1997 (Tables 9 and 12). It is believed that the downward trend is contributed mostly to sagebrush and P/J encroachment, indicating that seeding maintenance is necessary.

b. Conduct pinyon-juniper woodland treatments within the south pasture to increase key species diversity for all users.

Guideline(s): This management action is related to 1.1, 3.1, 3.2, 3.3, 3.4, 3.7 and 3.8. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Pinyon-juniper woodlands dominate the landscape in the south pasture outside the seeding. Grasses and key shrub species exist in sufficient amounts to warrant pinyon-juniper treatments which may elicit a favorable response.

c. Develop plans to construct water projects (reservoirs, pipelines, and/or waterhauls) within the allotment.

Guideline(s): This management action is related to 1.1, 1.3, 3.3, 3.4 and 3.7. These guidelines will be applied to achieve the standards for multiple use.

Rationale: Water within the Uvada Allotment is provided by a well and trough in the center of the allotment and two reservoirs: one in the northwest corner and one in the northeast corner of the allotment (Maps #11 - #15). Additional water locations would facilitate improved livestock distribution in the southern portion of the allotment as well as within the crested wheatgrass seedings in the north half of the allotment. This is particularly needed during hot summer months when the reservoirs do not contain water and the animals are concentrated at the well trough.

5. Oak Wells Allotment

a. Install a fence along the Oak Wells/Sheep Spring boundary west of the Oak Wells road. Install a corresponding cattleguard on the Oak Wells road inline with this fence.

Guideline(s): This management action is related to 3.3, 3.4 and 3.7. These guidelines will be applied to achieve the standards for multiple use.

Rationale: A swath of vegetation has already been cut, apparently in preparation for such fence construction, however construction never occurred. Cattle sign noted on the Oak Wells road, in previous years and during 1997, have indicated that cattle have drifted from the Oak Wells Allotment into the Sheep Spring Allotment. The likelihood of such occurrences may increase when pipeline spurs and waterhauls are developed within the Oak Wells Allotment.

Note: All of the above long term recommendations were supported by the respective permittees.

The following recommendations were submitted by the Oak Wells permittee:
An official copy of the "Comments and Recommendations" submitted by the permittee of the Oak Wells Allotment is on file at the Caliente Field Station.

a. Fence Oak Wells Allotment into 3-4 pastures if new water developments in the western portion of the allotment mentioned in VI (B)(5)(Option #1)(c) prove inadequate and use a rest rotation grazing system.

b. Develop new sources of water in the western portions of the allotment (i.e., reservoir construction and small seep developments).

Rationale submitted: Currently, Oak Wells Spring and its associated pipeline is the major source of water on the Oak Wells Allotment. Because of this, most grazing use (horse, livestock and wildlife) on the allotment occurs and tends to be concentrated along the Oak Wells pipeline corridor. Therefore, new sources of water need to be developed in the western portions of the allotment. With reliable water sources in this part of the allotment grazing would be more evenly distributed across the allotment. The usage of new water developments in combination with existing ones could be rotated, thereby resulting in a rotation of the area which would receive grazing during the critical growing season.

6. Long Term Wildlife Habitat Recommendations Common to Oak Wells and Sheep Spring Allotments

   a. Increase key species diversity, particularly bitterbrush and cliffrose, on 25% of the crucial mule deer winter range (Map #2) through vegetation manipulation.

      Guideline(s): This management action is related to 1.1, 3.1, 3.2, 3.3, 3.4, 3.7 and 3.8. These guidelines will be applied to achieve the standards for multiple use.

      Rationale: The crucial mule deer winter range is being encroached by pinyon-juniper overstory which is reducing species diversity. In addition, the existing shrub species component (particularly cliffrose, desert bitterbrush, and antelope bitterbrush) is primarily made up of mature and decadent plants. These larger shrubs have grown out of the affective browsing height for mule deer and, thus, are not being utilized. These species respond favorably to overstory removal and stimulation resulting in a diverse age class, which is more beneficial to browsing animals. Specific treatment locations would be determined over time by an interdisciplinary team in association with Nevada Department of Wildlife (NDOW) and the permittee.

7. Long Term Recommendations Common to Rabbit Spring, Sheep Spring and Oak Wells Allotments

   a. Conduct pinyon-juniper conversion on 25% of the existing area (Map #23) to increase species diversity and to provide for economic development potential for Lincoln County. These conversion treatments could be completed through a variety of methods (i.e. chaining, natural and prescribed fire, chemical, and/or wood cuts).

      Guideline(s): This management action is related to 1.1, 3.1, 3.2, 3.3, 3.4, 3.7 and 3.8. These guidelines will be applied to achieve the standards for multiple use.

      Rationale: The majority of the Miller Flat HMA area, approximately 90%, is dominated by pinyon-juniper overstory with very little grass and shrub understory. Based on previous treatments within the area, cliffrose, desert bitterbrush, antelope bitterbrush and perennial grasses have responded favorably to overstory removal.

      A large portion of the proposed treatment area has been identified by Lincoln County for development of a wood

products industry.

Map #23 in Appendix VI shows the potential treatment area. Specific treatment locations would be determined over time by an interdisciplinary team in association with Lincoln County, NDOW and the associated permittees.

Note: This long term recommendation was strongly supported through recommendations by the affected permittees and Lincoln County.

b. Improve water distribution through the improvement of existing or development of additional watering sites.

Guideline(s): This management action is related to Guidelines 1.3, 3.3, 3.4 and 3.7. These guidelines will be applied to achieve the standards for multiple use.

Rationale: The improvement of existing waters and development of other watering sources on public lands would improve animal distribution and availability of reliable watering locations to the benefit of all users. The improvement/development of these locations would also reduce the current dependance of wild horses on water sources located on private property. Strategically placed watering locations may also be used as an aid to permittees to help prevent cattle drift across allotment boundaries.

Potential developments include waterhauls, spring developments, reservoirs, pipelines and/or pipeline extensions, big game guzzlers, and wells along with needed maintenance of existing water developments.

The permittees of all three allotments agree that watering areas need to be developed within in their allotments and are willing to work with the BLM to do so.

8. Miller Flat and Little Mountain HMAs

a. Combine both HMAs into one HMA.

Rationale: The most observable movement of wild horses is between the Miller Flat and Little Mountain HMAs. The horse population existing within the Little Mountain HMA is composed of the same horses that are using the Miller Flat HMA. Horses are

routinely observed along the boundary separating the HMAs. The movement is a daily occurrence due to extremely limited water availability within the Little Mountain HMA. The horses have a home range that covers both HMAs, but have to travel into the Miller Flat to find a reliable water supply. A noticeable movement occurs during the late fall and early winter when accumulating snowfall at higher elevations forces the horses to move to the open sagebrush associated with the Little Mountain HMA in the lower elevations to the west. However, during the warmer months the reverse occurs when the horses move to take advantage of the available water and trees for shade associated with Miller Flat HMA. This relative ease of movement, between the two areas, identifies the need to manage this area as one HMA instead of two HMAs.

D. Additional Monitoring Required

Monitoring studies will continue to be read, evaluated, and new studies established as necessary to measure the effectiveness of management actions in meeting objectives to resolve resource issues. The following studies are recommended depending on resource conflicts:

1. Utilization
2. Actual Use
3. Climatological
4. Trend
5. Ecological Status
6. Establishment of additional key areas to facilitate subsequent evaluations.
7. Wild Horse Aerial Census

Literature Cited:

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APPENDIX I

Livestock and Wild Horse Objectives

Livestock and Wild Horse Objectives

				PRESENT SITUATION		LONG TERM OBJECTIVES			SHORT TERM OBJECTIVES			
Allotment & Study Area	Key Area Location	3/ Ecological Site No.	Key Species	Key Species & Total Comp. By Weight	Seral Stage (% of PNC)	Maintain or Improve	Key Species % Comp. By Weight	4/ Seral Stage (% of PNC)	5/ Allowable Use Levels	Season of Use (Cattle/Wildlife/Horses)	Met or Not Met	Rationale
RABBIT SPRING R-1C	MDBM, T.2 S., R.69 E., sec. 21	029XY006NV (Loamy 8-10" P.Z.)	STCO4, ORHY, HIJA	STCO4 - T ORHY - 1% HIJA - 1% Grasses - 5% Forbs - 2% Shrubs - 91% Trees - 2%	1/ Mid (55%)	Improve	STCO4 - 1-3 ORHY - 3-5 HIJA - 1-3 Grass > 5 Forbs > 2 Shrubs < 91	> 55	Grasses - 50% Forbs - 50% Shrubs - 50%	10/16 - 04/15	Met	Utiilization data indicates AULs were not exceeded in 1991, but were exceeded in 1995 and 1996 by Wild Horses (Severe Use Both Years). AULs were not exceeded in 1997*.
SHEEP SPRING S-1	MDBM, T.3S., R.70 E., sec. 23, SW¼ SW¼ NE¼	029XY029NV (Loamy 10-12" P.Z.)	STCO4, ORHY	STCO4 - 2% ORHY - 2% Grasses - 18% Forbs - 30% Shrubs - 52%	Mid (42%)	Improve	STCO4 - 3-5 ORHY - 3-5 Grasses > 18% Forbs < 30% Shrubs < 52%	> 42	Grasses - 50% Forbs - 50% Shrubs - 50%	03/01 - 02/28	Met	Utilization data indicates that AULs were not exceeded in 1982, 1985, 1988, 1995, 1996 and 1997* at key area, but were exceeded away from key area in 1995 & 1996.
UVADA U-1	MDMB, T.3S., R.71 E., sec. 5, NW¼	AGCR seeding	AGCR	AGCR - 36%	7/ Fair Cond. (36%)	Improve	AGCR > 36%	> 36%	6/ Spg/Summer Fall/Winter AGCR 50% 60%	03/01 - 02/28	Met	Utilization data indicates that AULs were not exceeded in 1985, 1989, 1990 (no UPM) & 1995 at key area or in 1987 in south pasture (only south pasture grazed that year). AULs were exceeded during 1997, in both north & south pastures, according to Final Decision (6/), and away from key area in 1989.
UVADA U-2	MDMB, T.3S., R.70 E., sec. 12, NE¼	029XY065NV (Woodland Site)	STCO4, SIHY, ORHY	STCO4 - 2% ORHY - 6% SIHY - T Grasses - 9% Forbs - 24% Shrubs - 67%	-------	Maintain or Improve	STCO4 - 2-5 ORHY - 6-9 SIHY - 1-3 Grass > 9 % Forbs < 24 % Shrubs < 67 %	------	6/ Spg/Summer Fall/Winter Grasses 50% 60% Forbs 50% 60% Shrubs 50% 60%	03/01 - 02/28	Met	Utilization data indicates that AULs were not exceeded in 1985, 1989 1990 & 1997.
UVADA U-3	MDMB, T.3S., R.71 E., sec. 7, SE¼	029XY065NV (Woodland Site)	KOCR, POFE, SIHY, COMES	KOCR - 3% POFE - 7% SIHY - 2% Grasses - 22% Forbs - 17% Shrubs - 61%	-------	Maintain or Improve	KOCR - 3-5 POFE - 7-10 SIHY - 2-5 Grass > 22 Forbs < 17 Shrubs < 61	------	6/ Spg/Summer Fall/Winter Grasses 50% 60% Forbs 50% 60% Shrubs 50% 60%	03/01 - 02/28	Met	Utilization data indicates that AULs were not exceeded in 1985, 1989 1990 & 1997.
2/ OAK WELLS OW-1	MDMB, T.4S., R.70 E., sec.5., SE¼NW¼ SE¼	029XY029NV (Loamy 10-12" P.Z.)	ORHY, SIHY, STCO4	ORHY - T SIHY - T STCO4 - 1% Grasses - 2% Forbs - 2% Shrubs - 76% Trees - 20%	Mid (33%)	-------	ORHY - 1-3 SIHY - 1-3 STCO4 - 2-4 Grass > 2 % Forbs > 2 % Shrubs < 76 %		Grasses - 50% Forbs - 50% Shrubs - 50%	03/01 - 02/28	Not Met	Note: NO CATTLE GRAZING OCCURRED IN ALLOTMENT from 1982-1985 and 1989-1993 with Only 304 AUMs authorized in 1994. Utilization data indicates that AULs were exceeded in 1989 (horse use only), 1996 & 1997, but were met in 1986 (after four years of non use), 1987 (south pasture grazed only) & 1995. - -See text - -

1/ Seral stage is based not only on the ecological numerical rating (percentage of PNC), but also on plant community composition. This key area lacks the forage species required to equal the numerical rating, so the seral stage is lower than the the numerical rating indicates.

2/ This key area was newly established during the time this allotment evaluation was being conducted, therefore the seral stage was ocularly estimated. Trend and utilization data at this key area will start being collected during 1998.

3/ Ecolocical Sites listed here may be found in the Major Land Resource Area (MLRA) range site descriptions published by the Soil Conservation Service.

4/ This is the seral stage that would have the greatest value for all resource users (livestock, horses & wildlife).

5/ Allowable use levels for utilization are the objectives established to meet the long term composition objectives.

6/ Per Final Decision Dated April 30, 1996.

7/ This rating is not base on seral stage, but on condition classes of Excellent, Good, Fair, and Poor.

* Horse gather occurred in late 1996.

APPENDIX II

Wildlife Objectives

Wildlife Objectives

			PRESENT SITUATION		LONG TERM OBJECTIVES		SHORT TERM OBJECTIVES			
Allotment & Study Area	Key Area Location	Ecological Site No. 1/	Key Species	Habitat Condition Rating 2/	Maintain or Improve	Habitat Condition Rating 2/	Allowable Use Levels 3/	Season of Use	Met or Not Met	Rationale
RABBIT SPRING R-2	MDBM, T.2 S., R.69 E., sec.34, SE¼ SW¼	029XY006NV (Loamy 8-10" P.Z.)	COMES	62%	Maintain	≥ 60%	45%	Yearlong	Met	Utilization data indicates that AULs were not exceeded.
SHEEP SPRING S-2	MDBM, T.3 S., R.69 E., sec. 10, SW¼ SW¼	029XY065NV (Woodland Site)	COMES PUTR2	72%	Maintain	≥ 60%	45%	Yearlong	Met	Utilization data indicates that AULs were not exceeded.

1/ Ecological Sites listed here may be found in the Major Land Resource Area (MLRA) range site descriptions published by the Soil Conservation Service.
2/ For mule deer, habitat condition is based on browse vigor rating and forage quality rating.
3/ Allowable use levels for utilization are the objectives established to meet the long term composition objectives.

APPENDIX III

Standards and Guidelines

STANDARDS AND GUIDELINES

MOJAVE-SOUTHERN GREAT BASIN AREA RESOURCE ADVISORY COUNCIL (RAC)

STANDARDS:

STANDARD 1. SOILS:

Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.

Soil indicators:

- Ground cover (vegetation, litter, rock, bare ground);
- Surfaces (e.g., biological crusts, pavement); and
- Compaction/infiltration.

Riparian soil indicators:

- Stream bank stability.

All of the above indicators are appropriate to the potential of the ecological site.

STANDARD 2. ECOSYSTEM COMPONENTS;

Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses.

Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function).

Upland indicators:

- Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
- Ecological processes are adequate for the vegetative communities.

Riparian indicators:

- Stream side riparian area are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.

- Elements indicating proper functioning condition such as avoiding acceleration erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

  Width/Depth ratio;

  Channel roughness;

  Sinuosity of stream channel;

  Bank stability;

  Vegetative cover (amount, spacing, life form); and

  Other cover (large woody debris, rock).

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Water quality indicators:

- Chemical, physical and biological constituents do not exceed the stat water quality standards.

The above indicators shall be applied to the potential of the ecological site.

STANDARD 3. HABITAT AND BIOTA:

Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species.

Habitat indicators:

- Vegetation composition (relative abundance of species);

- Vegetation structure (life forms, cover, height, and age classes);

- Vegetation distribution (patchiness, corridors);

- Vegetation productivity; and

- Vegetation nutritional value.

Wildlife indicators:

- Escape terrain;

- Relative abundance;

- Composition;

- Distribution;

- Nutritional value; and

- Edge-patch snags.

The above indicators shall be applied to the potential of the ecological site.
Mojave-Southern RAC Guidelines:

GUIDELINES:

1.1 Upland management practices should maintain or promote adequate vegetative ground cover to achieve the standard.

1.2 Riparian-wetland management practices should maintain or promote sufficient residual vegetation to maintain, improve, or restore functions such as stream flow energy dissipation, sediment capture, groundwater recharge, and streambank stability.

1.3 When proper grazing practices alone are not likely to restore areas, land management practices may be designed and implemented where appropriate.

1.4 Rangeland management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

GUIDELINES:

2.1 Management practices should maintain or promote appropriate stream channel morphology and structure consistent with the watershed.

2.2 Watershed management practices should maintain, restore or enhance water quality and flow rate to support desired ecological conditions.

2.3 Management practices should maintain or promote the physical and biological conditions necessary for achieving surface characteristics and desired natural plant community.

2.4 Grazing management practices will consider both the economic and physical environment, and will address all multiple uses including, but not limited to, (i) recreation, (ii) minerals, (iii) cultural resources and values, and (iv) designated wilderness and wilderness study areas.

2.5 New livestock facilities will be located away from riparian and wetland areas if they conflict with achieving or maintaining riparian and wetland functions. Existing facilities will be used in a way that does not conflict with achieving or maintaining riparian and wetland functions, or they will be relocated or modified when necessary to mitigate adverse impacts on riparian and wetland functions. The location, relocation, design and use of livestock facilities will consider economic feasibility and benefits to be gained for management of lands outside the riparian area along with the effects on riparian functions.

2.6 Subject to all valid existing rights, the design of spring and seep developments shall include provisions to protect ecological functions and processes.

2.7 When proper grazing practices alone are not likely to restore areas of low infiltration or permeability, land management practices may be designed and implemented where appropriate. Grazing on designated ephemeral rangeland watersheds should be allowed only if (i) reliable estimates of production have been made, (ii) an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and (iii) adverse effects on perennial species and ecosystem processes are avoided.

2.8 Rangeland management practices should address improvement beyond these standards, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

GUIDELINES:

3.1 Mosaics of plant and animal communities that foster diverse and productive ecosystems should be maintained or achieved.

3.2 Management practices should emphasized native species except when others would serve better, for attaining desired communities.

3.3 Intensity, frequency, season of use and distribution of grazing use should provide for growth, reproduction, and, when environmental conditions permit, seeding establishment of those plant species needed to reach long-term land use plan objectives. Measurements of ecological condition, trend, and utilization will be in

accordance with techniques identified in the Nevada Rangeland Handbook.

3.4 Grazing management practices should be planned and implemented to provide for integrated use by domestic livestock and wildlife, as well as wild horses and burros inside Herd Management Areas.

3.5 Management practices will promote the conservation, restoration and maintenance of habitat for special status species.

3.6 Livestock grazing practices will be designed to protect fragile ecosystems of limited distribution and size that support unique sensitive/endemic species or communities. Where these practices are not successful, grazing will be excluded from these areas.

3.7 Where grazing practices alone are not likely to achieve habitat objectives, land management practices may be designed and implemented as appropriate.

3.8 Vegetation manipulation treatments may be implemented to improve native plant communities, consistent with appropriate land use plans, in areas where identified Standards cannot be achieved through proper grazing management practices alone. Fire is the preferred vegetation manipulation practice on areas historically adapted to fire; treatment of native vegetation with herbicides or through mechanical means will be used only when other management techniques are not effective.

3.9 Rangeland management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

APPENDIX IV

Licensed Use (AUMs) by Allotment

APPENDIX IV

**** Licensed AUMs and Use Period During Each Year by Allotment from 1985-1997

ALLOTMENT & PERMITTEE	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Sheep Spring - H. Bruce & Marvyn K. Cox	----	----	----	----	----	----	----	----	----	----	----	----	----
Oak Wells - George Andrus											*	516 (3/1-2/28)	516 (3/1-2/28)
Oak Wells - Joy Peterson	*** --- -	500 (6/16-10/15)	500 (6/1-9/30)	172 (6/1-9/30)	----	----	----	----	----	304 (5/1-10/1)	*534 (4/1-10/20)	Transfer to G. Andrus	
Uvada - Kenny Lee **	509 (5/11-10/13)	437 (5/10-8/27) & (9/28-10/20)	507 (5/16-10/17)	515 (5/7-10/8)	355 (5/6-8/21)	352 (6/1-9/27)	352 (5/18-9/13)	459 (5/16-10/17)	459 (5/8-10/9)	438 (5/7-10/8)	466 (5/6-10/14)	407 (5/4-10/8)	436 (5/6-10/10)
Rabbit Spring - Kimner Jenson	----	----	----	----	----	----	----	----	----	----	----	----	----

* Per lease agreement with George Andrus while transfer of grazing privileges from J. Peterson to G. Andrus was in progress.
** Aums exceeding the permitted use of 355 were Temporary Non-renewable (TNR).
*** Non-use taken beginning in 1982 through 1985.
**** From grazing billings.
---- Indicates Non-use taken.

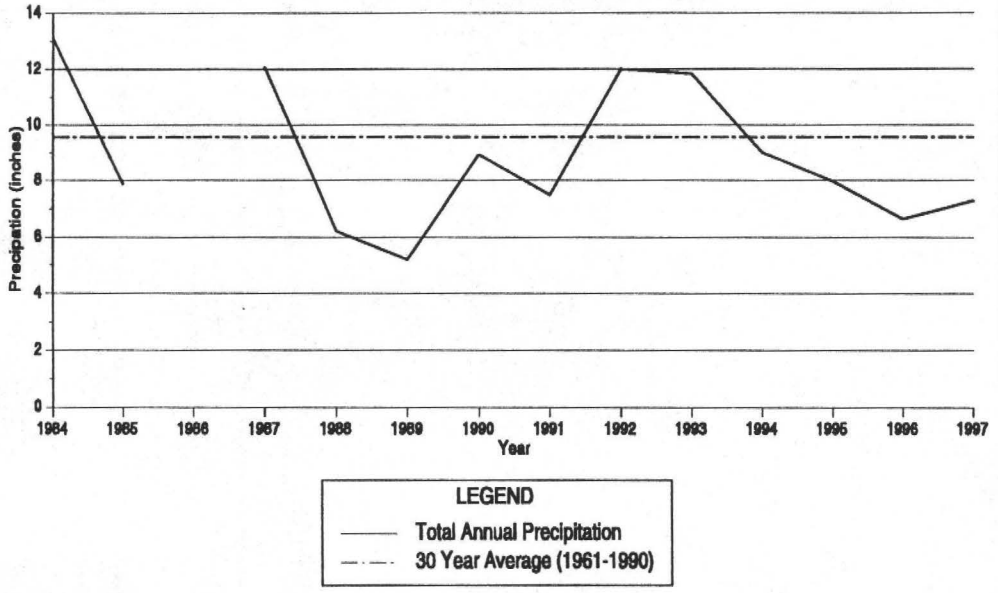
APPENDIX V

Key Management Area Evaluation Summary

KEY AREA R-1C

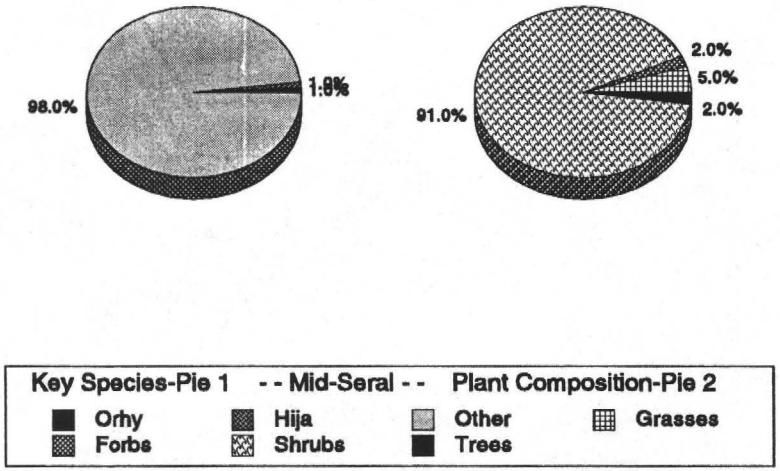
Precipitation Data

Caliente NOAA Station



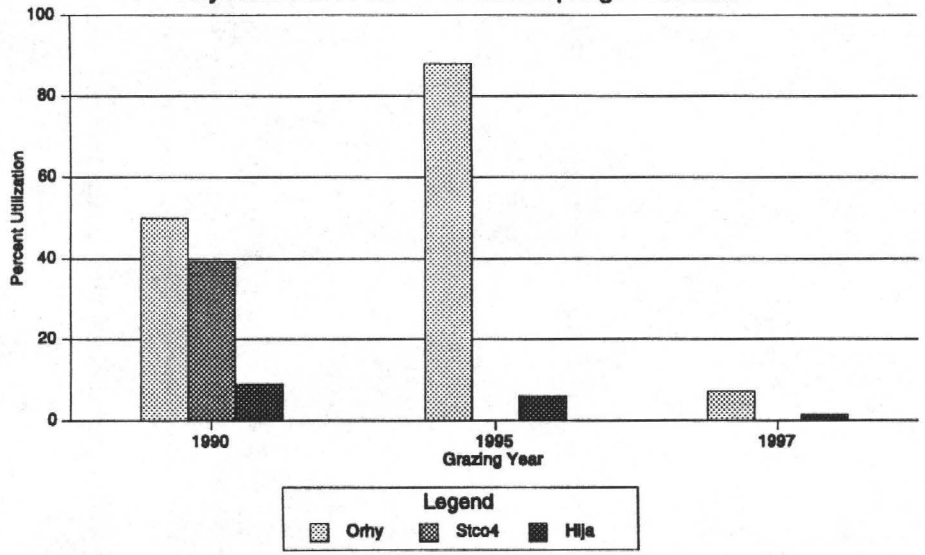
Ecological Status

Key Area : R-1C Ecological Site: 029XY006NV (Loamy 8-10" P.Z.)



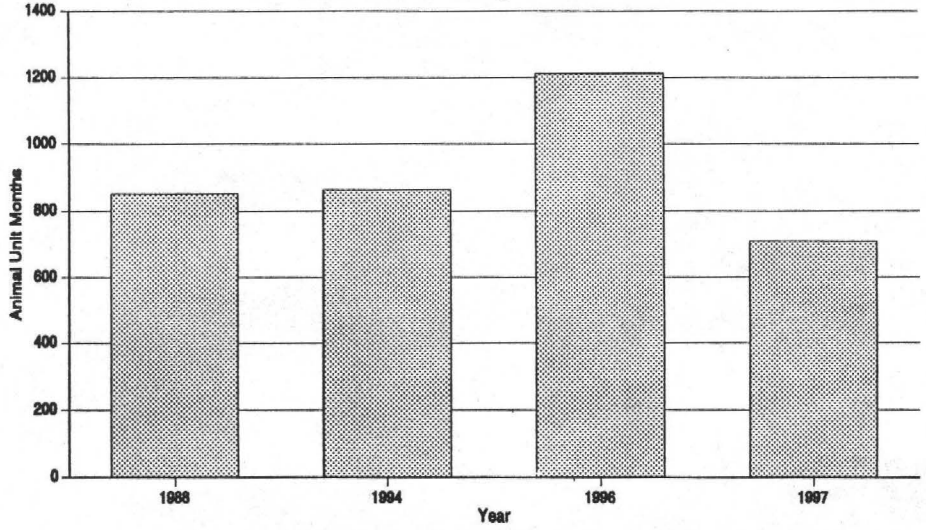
Utilization

Key Area No. R-1C Rabbit Springs Allotment



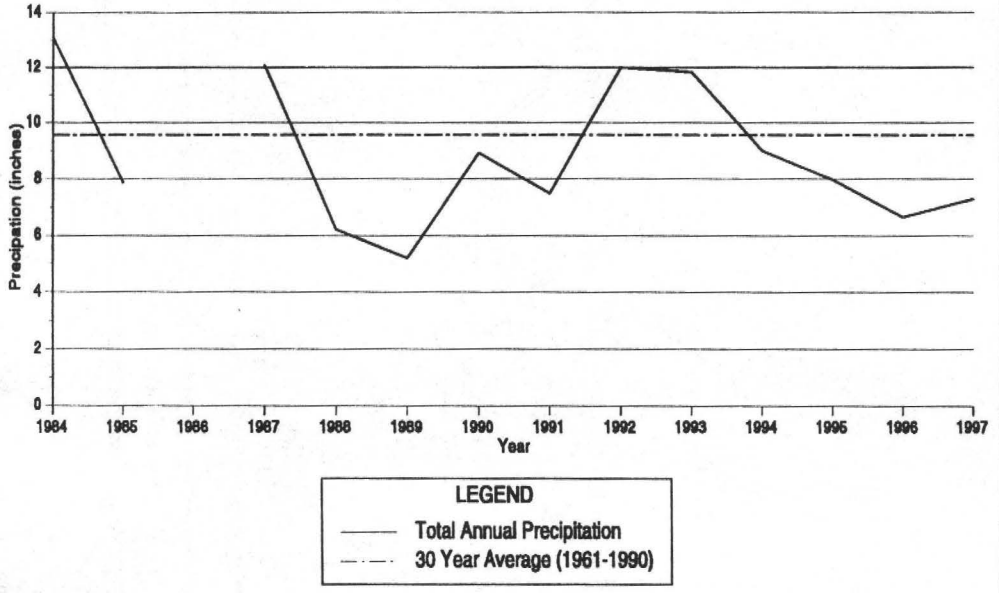
Wild Horse Actual Use

Miller Flat Herd Management Area

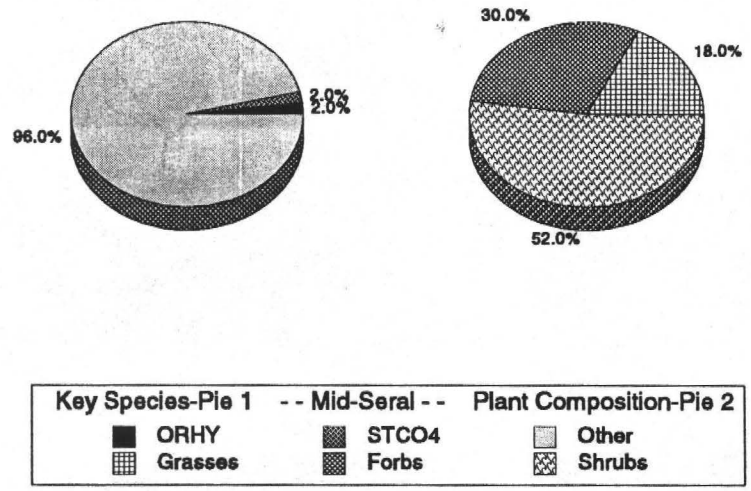


KEY AREA S-1

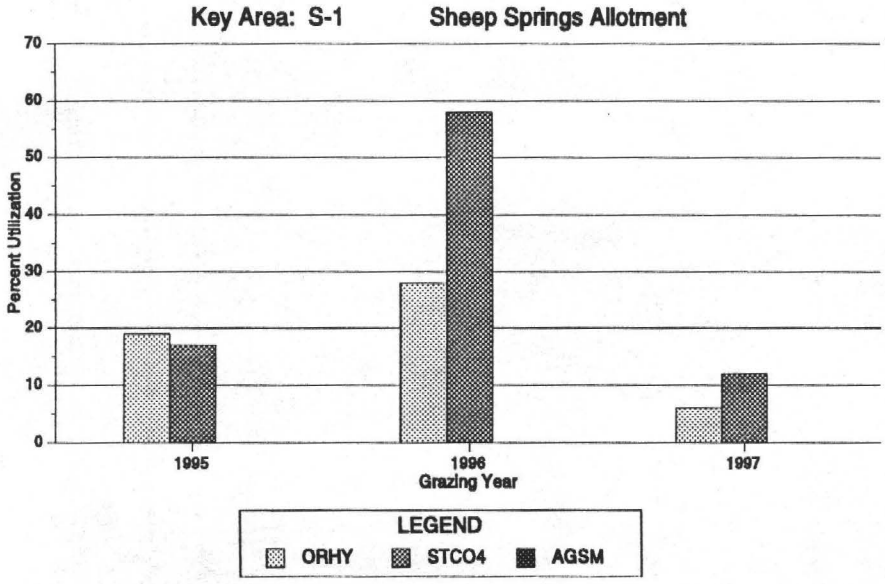
Precipitation Data



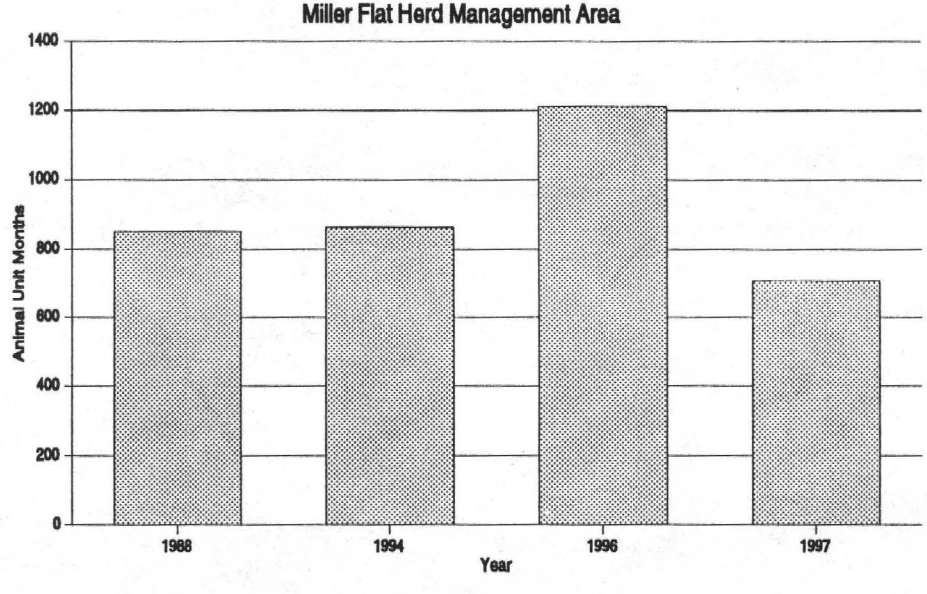
Ecological Status



Utilization



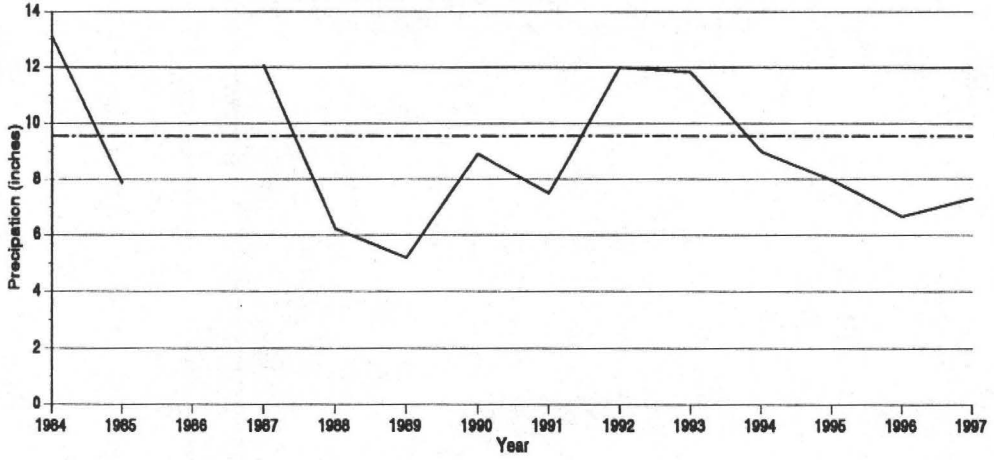
Wild Horse Actual Use



KEY AREA U-1

Precipitation Data

Caliente NOAA Station



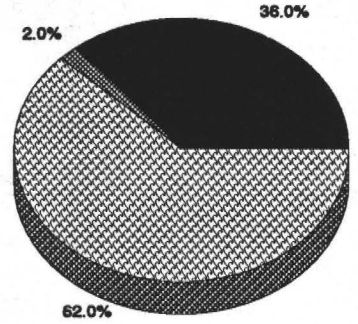
LEGEND

Total Annual Precipitation

30 Year Average (1961-1990)

Ecological Status

Key Area: U-1 AGCR (Crested Wheatgrass Seeding)

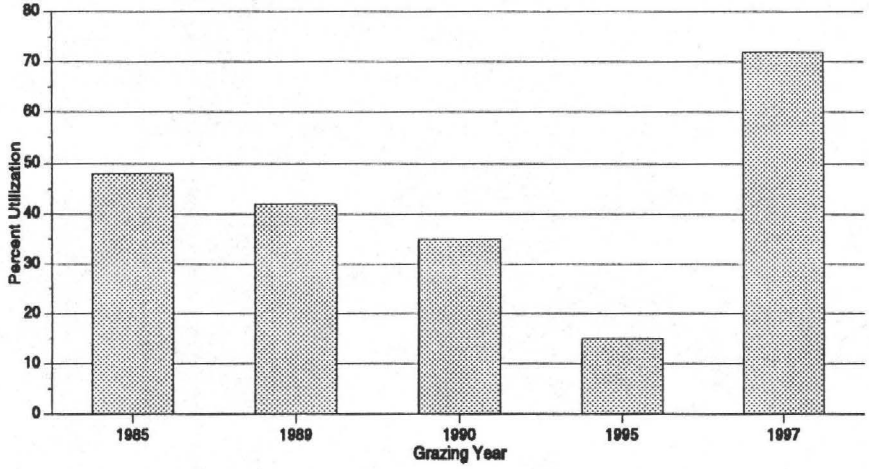


Key Species-Pie 1 - - Fair Condition - - Plant Composition-Pie 2

AGCR Forbs ARTRW

Utilization

Key Area: U-1 Uvada Allotment

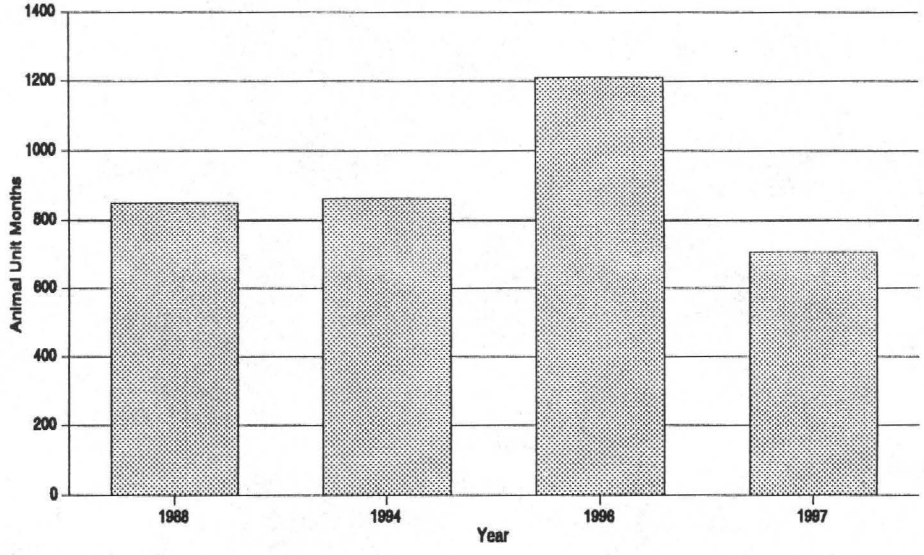


LEGEND

AGCR

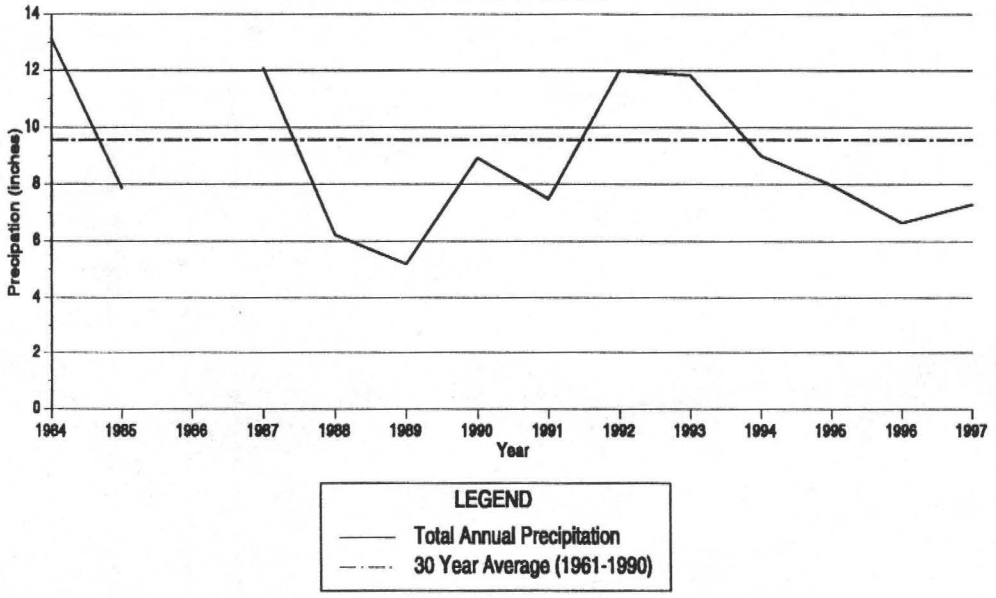
Wild Horse Actual Use

Miller Flat Herd Management Area

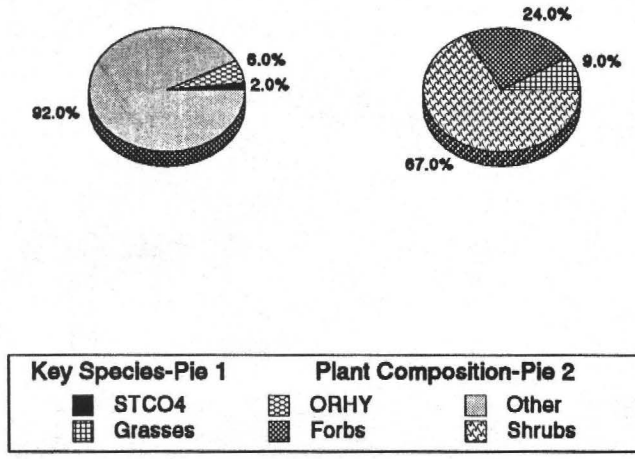


KEY AREA U-2

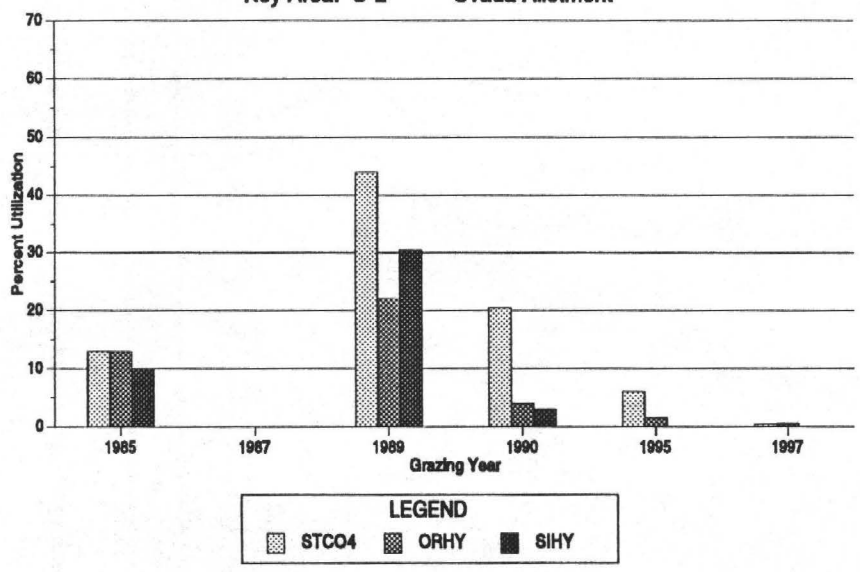
Precipitation Data



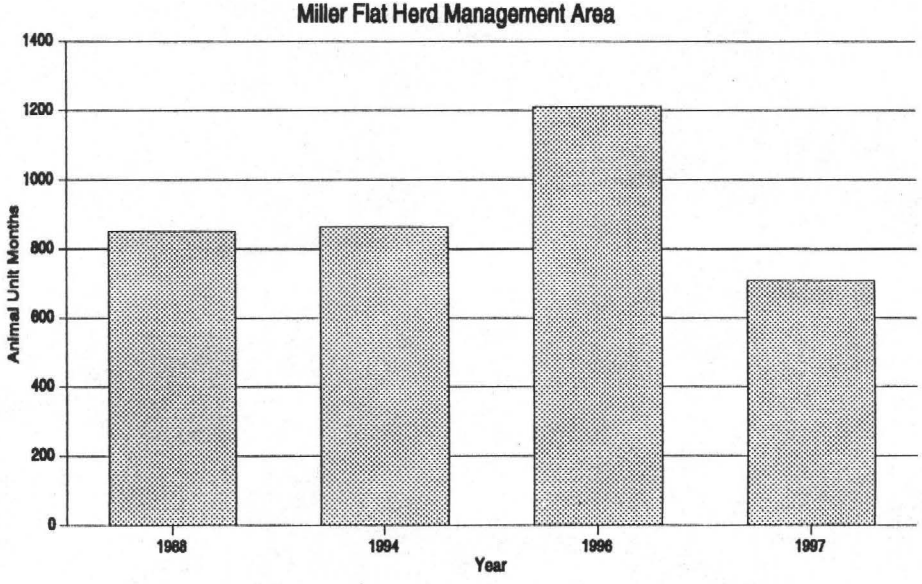
Ecological Status



Utilization

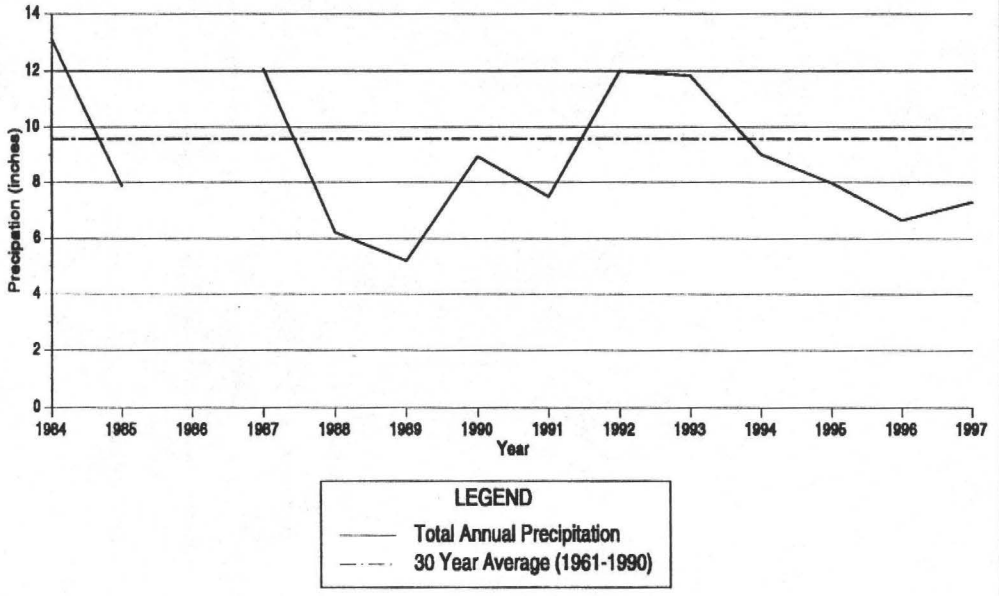


Wild Horse Actual Use



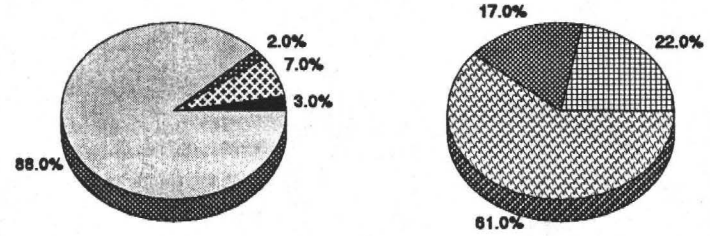
KEY AREA U-3

Precipitation Data

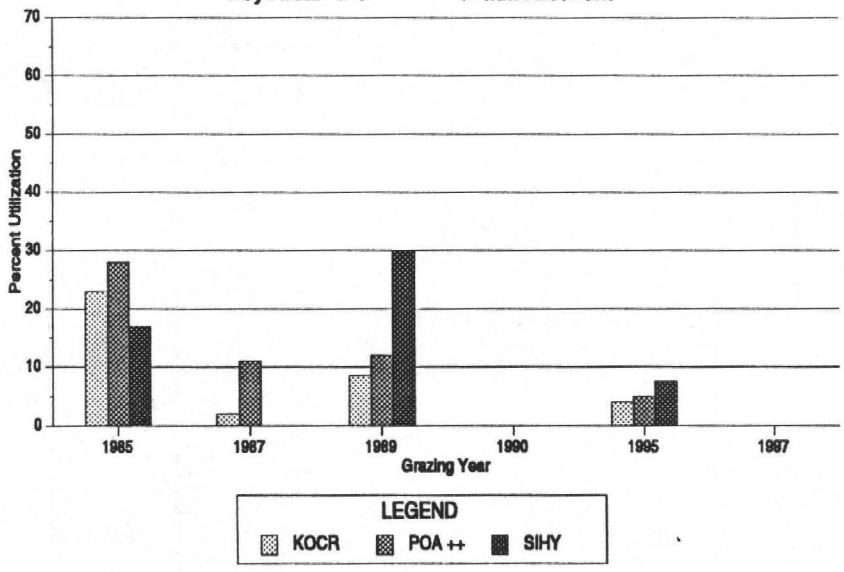


Ecological Status

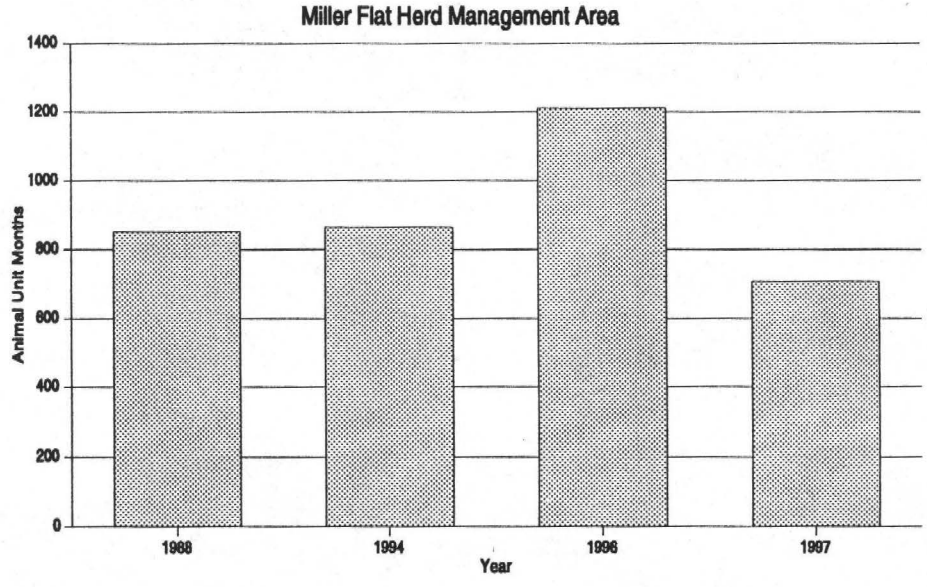
Key Area: U-3 Ecological Site: 029XY065NV (Woodland Site 10-14" ppt.)

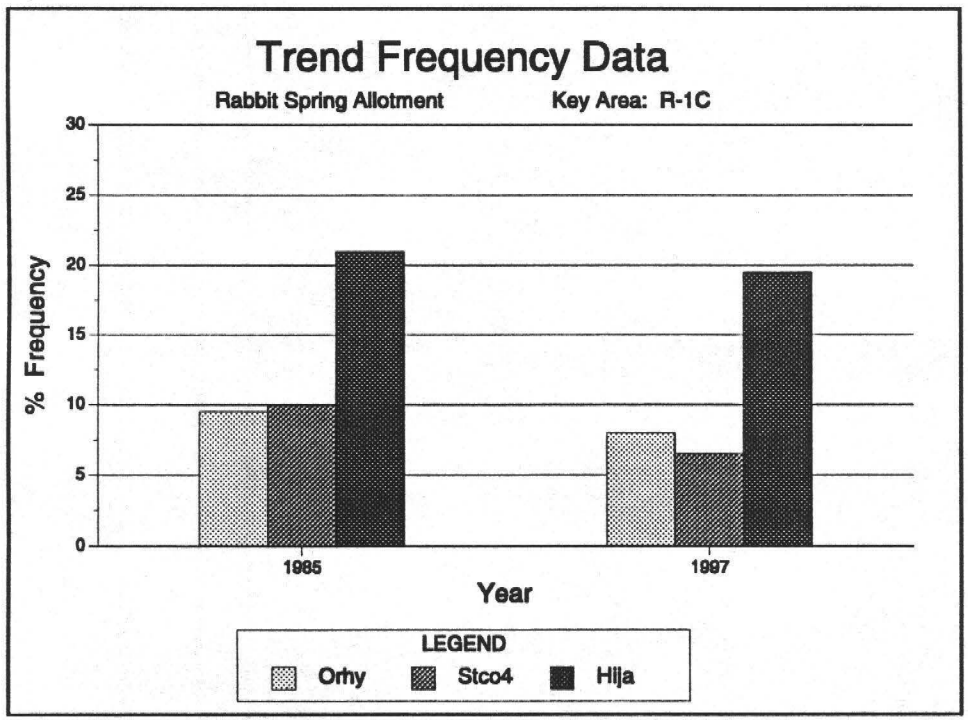


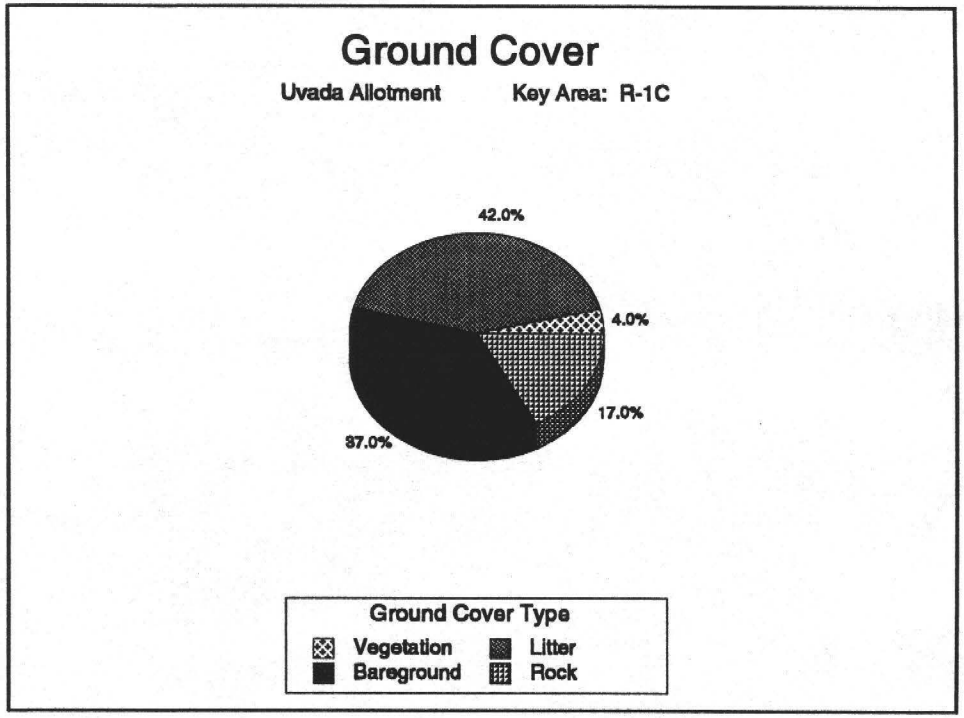
Utilization

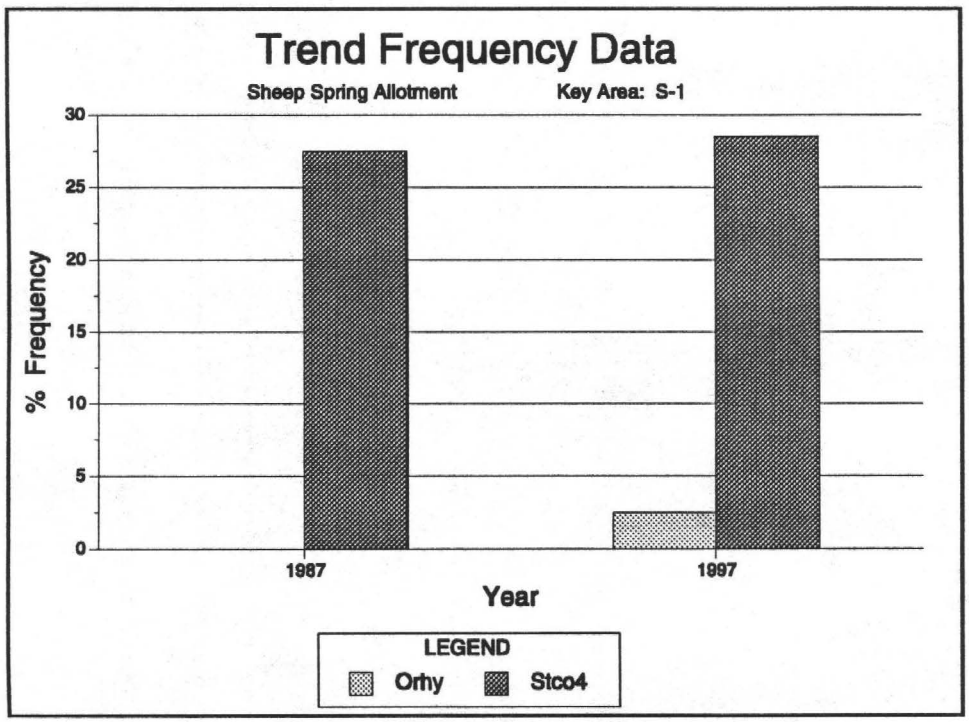


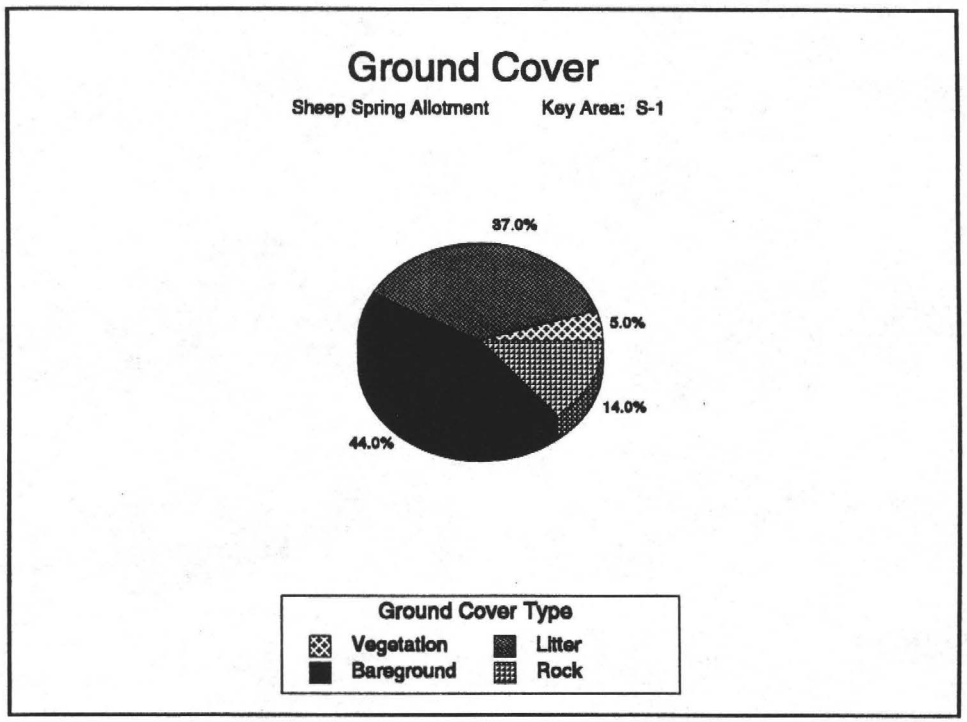
Wild Horse Actual Use




Trend Frequency Data
Rabbit Spring Allotment
Key Area: R-1C
30
25
20
15
10
5
0
% Frequency
1985
1997
Year
LEGEND
Orhy
Stco4
Hija

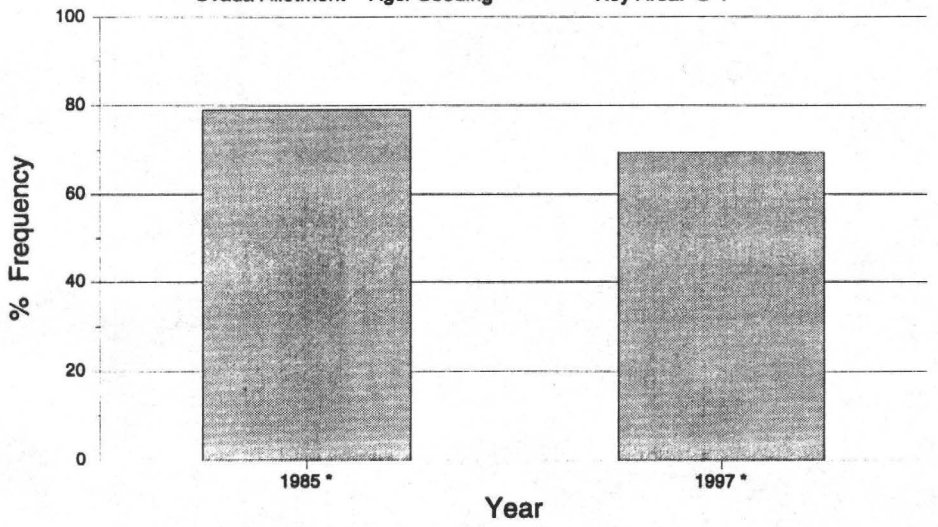

Ground Cover
Uvada Allotment
Key Area: R-1C
42.0%
4.0%
17.0%
37.0%
Ground Cover Type
Vegetation
Litter
Bareground
Rock


Trend Frequency Data
Sheep Spring Allotment
Key Area: S-1
30
25
20
15
10
5
0
% Frequency
1987
1997
Year
LEGEND
Orhy
Stco4


Ground Cover
Sheep Spring Allotment
Key Area: S-1
37.0%
5.0%
14.0%
44.0%
Ground Cover Type
Vegetation
Litter
Bareground
Rock

Trend Frequency Data

Uvada Allotment - Agcr Seeding Key Area: U-1

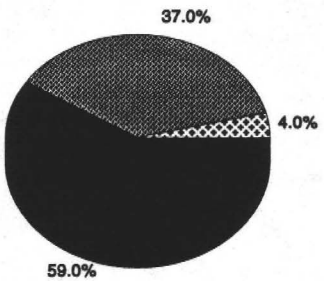


LEGEND * Indicates Statistically Significant Difference Between Years

Agcr

Ground Cover

Uvada Allotment Key Area: U-1



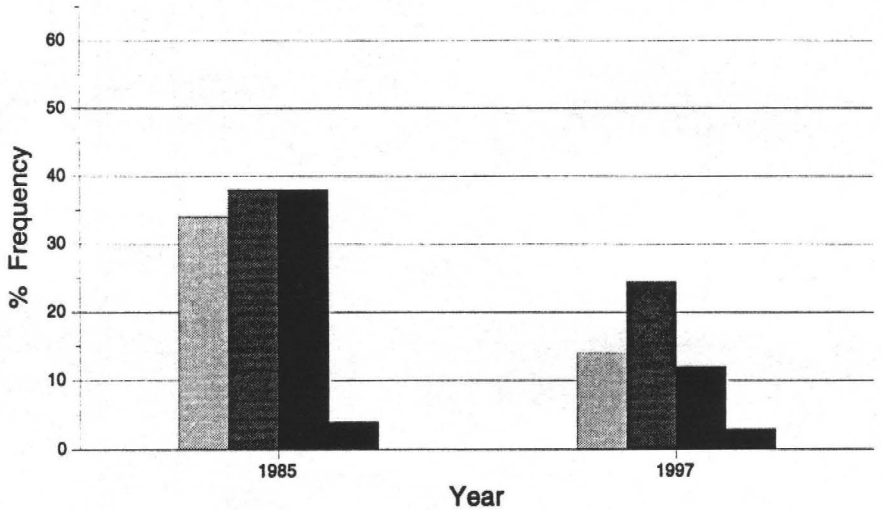
Ground Cover Type

Vegetation Litter

Bareground Rock

Trend Frequency Data

Uvada Allotment Key Area: U-3

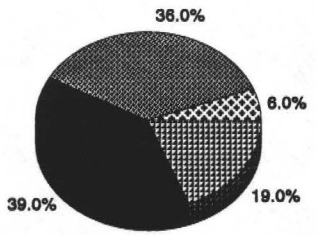


LEGEND * Indicates Statistically Significant Difference Between Years For This Species

Kocr * Pofe Sihy * Comes

Ground Cover

Uvada Allotment Key Area: U-3



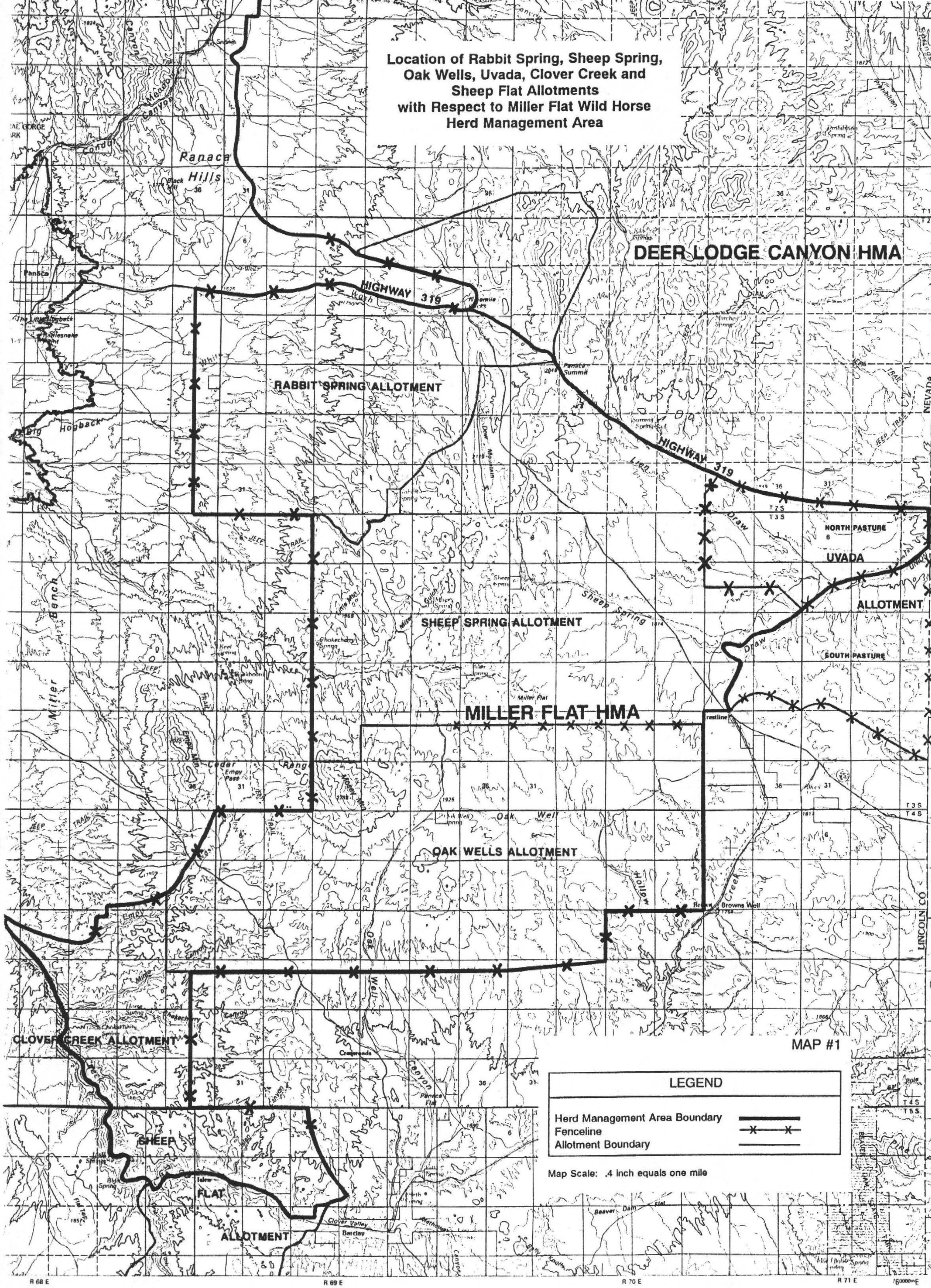
Ground Cover Type

Vegetation Litter

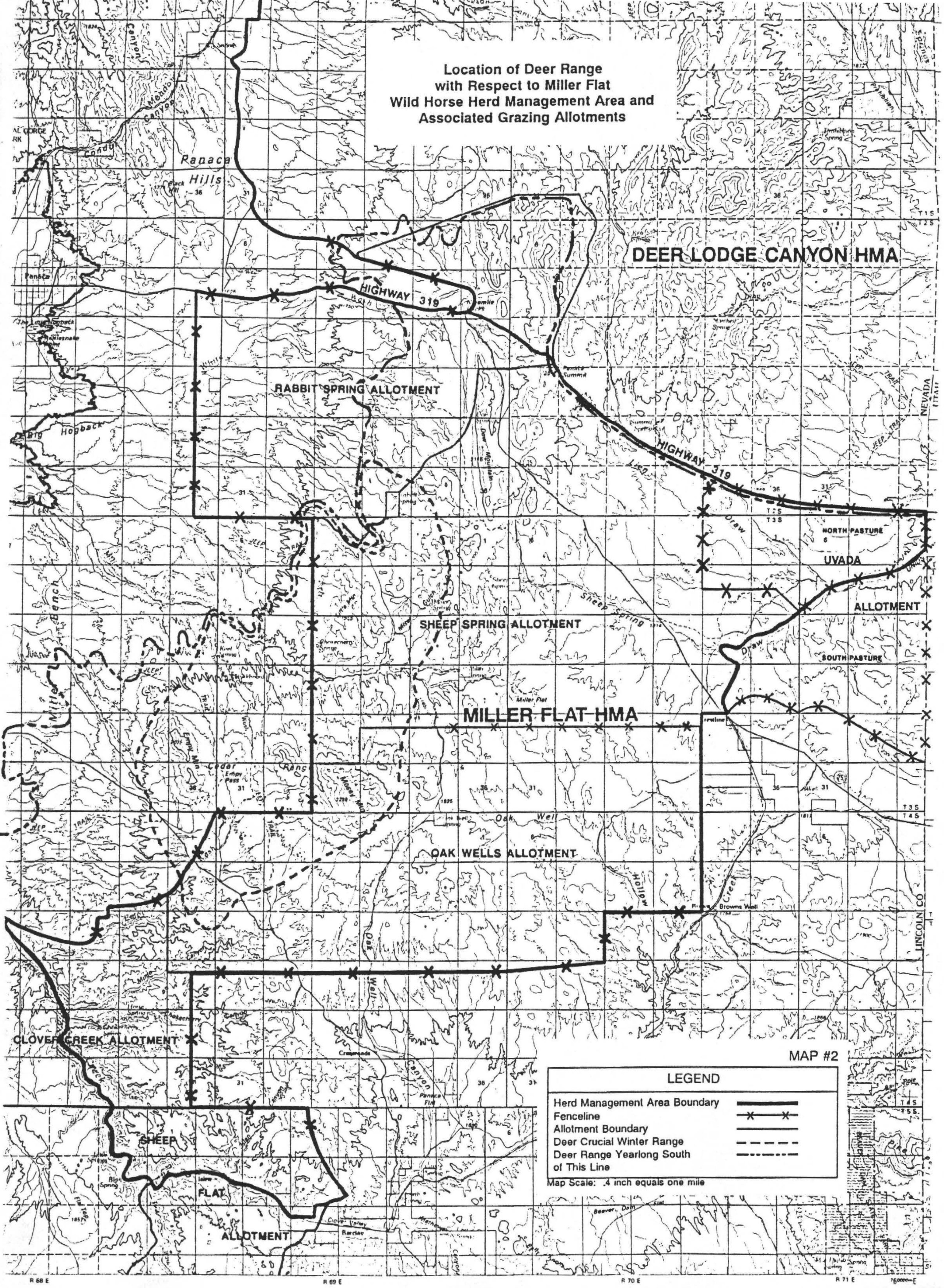
Bareground Rock

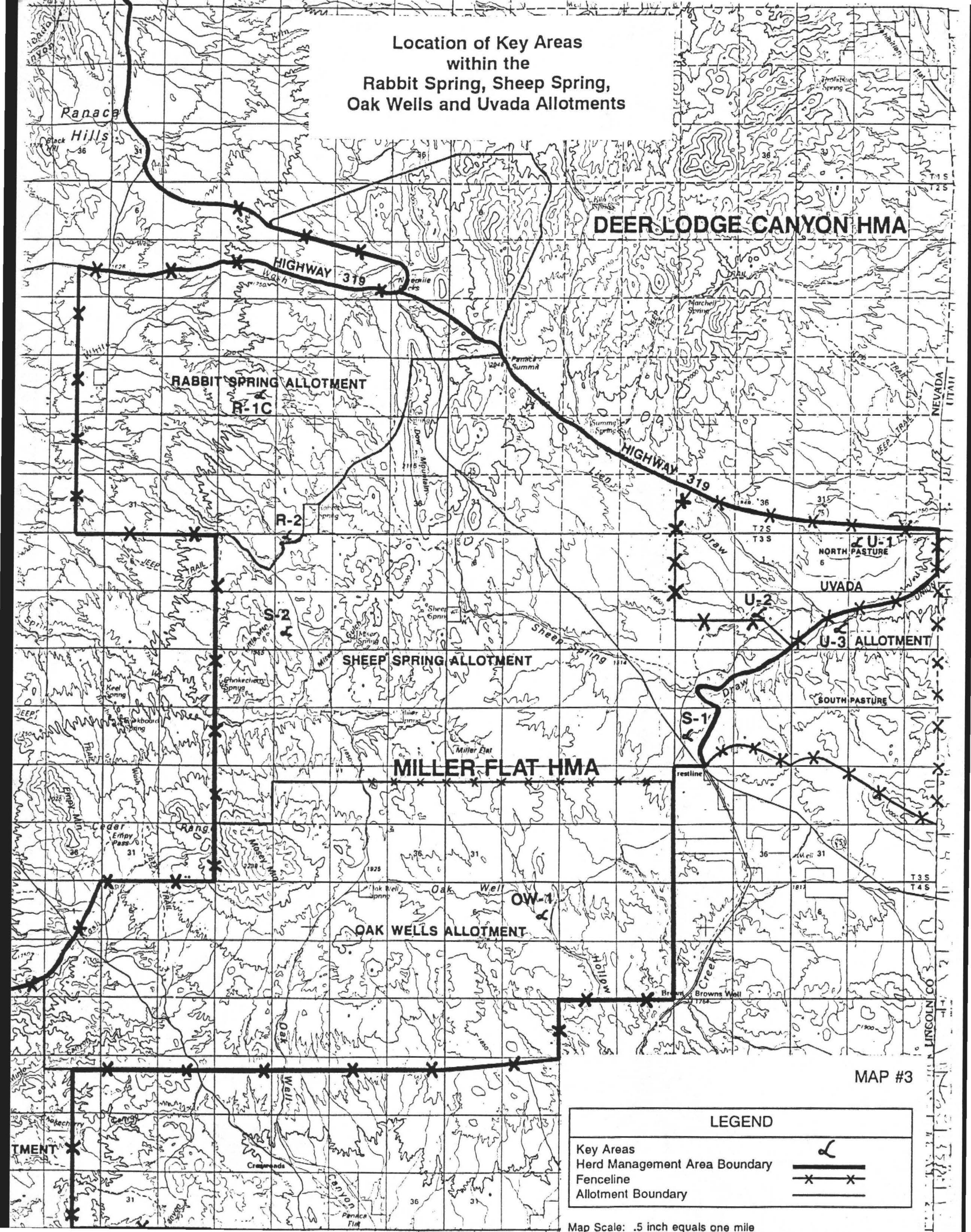
APPENDIX VI

Maps



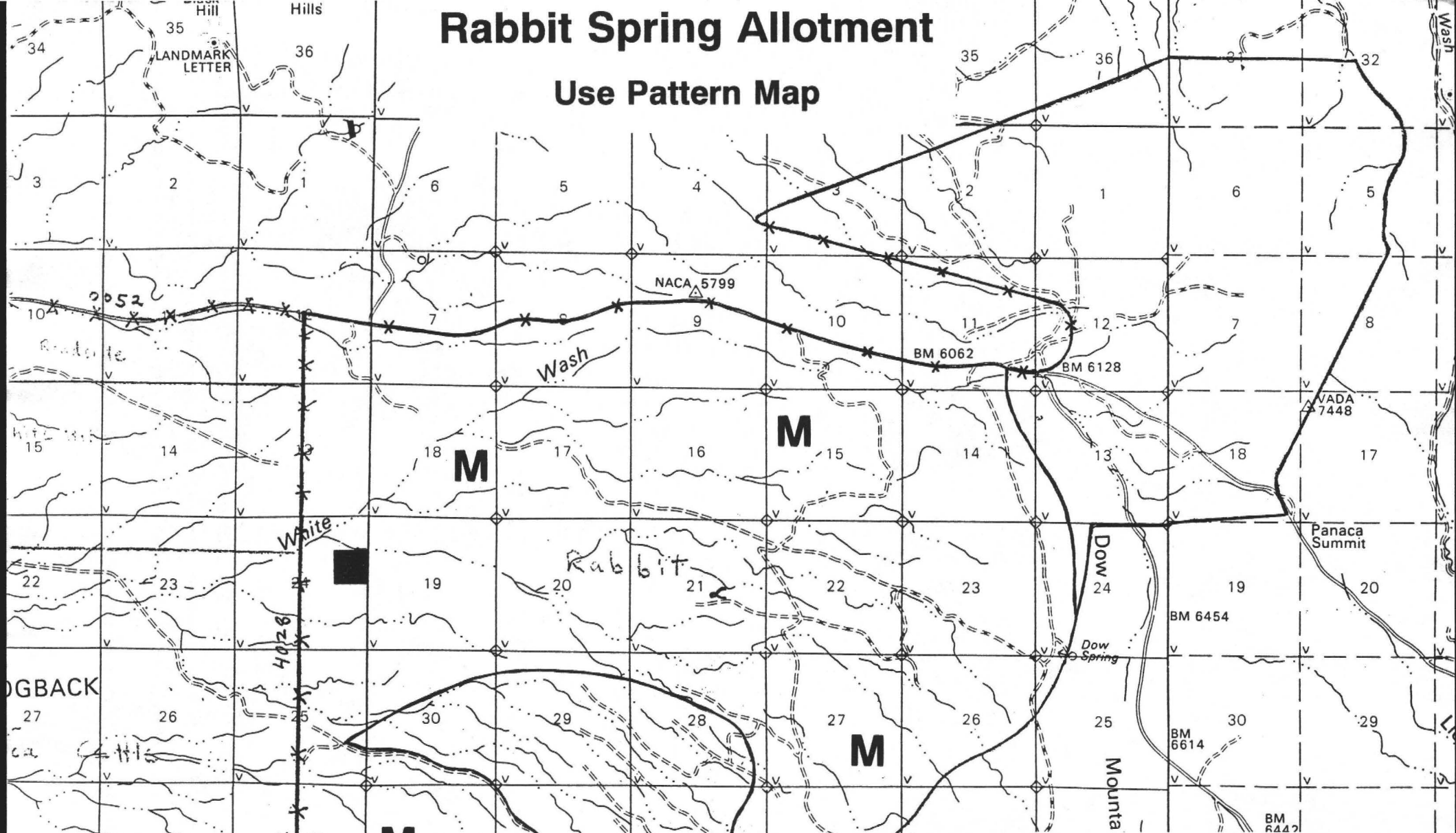
Location of Rabbit Spring, Sheep Spring, Oak Wells, Uvada, Clover Creek and Sheep Flat Allotments with Respect to Miller Flat Wild Horse Herd Management Area
DEER LODGE CANYON HMA
RABBIT SPRING ALLOTMENT
SHEEP SPRING ALLOTMENT
MILLER FLAT HMA
OAK WELLS ALLOTMENT
CLOVER CREEK ALLOTMENT
SHEEP FLAT ALLOTMENT
NORTH PASTURE
UVADA ALLOTMENT
SOUTH PASTURE
HIGHWAY 319
Panaca Hills
Panaca
Panaca Summit
Browns Well
NEVADA
UTAH
LINCOLN CO
MAP #1
LEGEND
Herd Management Area Boundary
Fenceline
Allotment Boundary
Map Scale: .4 inch equals one mile
R 68 E
R 69 E
R 70 E
R 71 E


Location of Deer Range
with Respect to Miller Flat
Wild Horse Herd Management Area and
Associated Grazing Allotments
Panaca
Hills
DEER LODGE CANYON HMA
HIGHWAY 319
RABBIT SPRING ALLOTMENT
HIGHWAY 319
NEVADA
UTAH
NORTH PASTURE
UVADA
ALLOTMENT
SOUTH PASTURE
SHEEP SPRING ALLOTMENT
MILLER FLAT HMA
OAK WELLS ALLOTMENT
LINCOLN CO
CLOVER CREEK ALLOTMENT
SHEEP
FLAT
ALLOTMENT
MAP #2
LEGEND
Herd Management Area Boundary
Fenceline
Allotment Boundary
Deer Crucial Winter Range
Deer Range Yearlong South
of This Line
Map Scale: .4 inch equals one mile
T 1 S
T 2 S
T 3 S
T 4 S
R 68 E
R 69 E
R 70 E
R 71 E


Location of Key Areas
within the
Rabbit Spring, Sheep Spring,
Oak Wells and Uvada Allotments
DEER LODGE CANYON HMA
HIGHWAY 319
HIGHWAY 319
RABBIT SPRING ALLOTMENT
R-1C
R-2
S-2
SHEEP SPRING ALLOTMENT
MILLER FLAT HMA
S-1
U-1
NORTH PASTURE
UVADA
U-2
U-3
ALLOTMENT
SOUTH PASTURE
OW-1
OAK WELLS ALLOTMENT
Panaca Hills
Panaca Summit
NEVADA
UTAH
LINCOLN CO
T1S
T2S
T3S
T4S
TMENT
MAP #3
LEGEND
Key Areas
Herd Management Area Boundary
Fenceline
Allotment Boundary
Map Scale: .5 inch equals one mile

Rabbit Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area

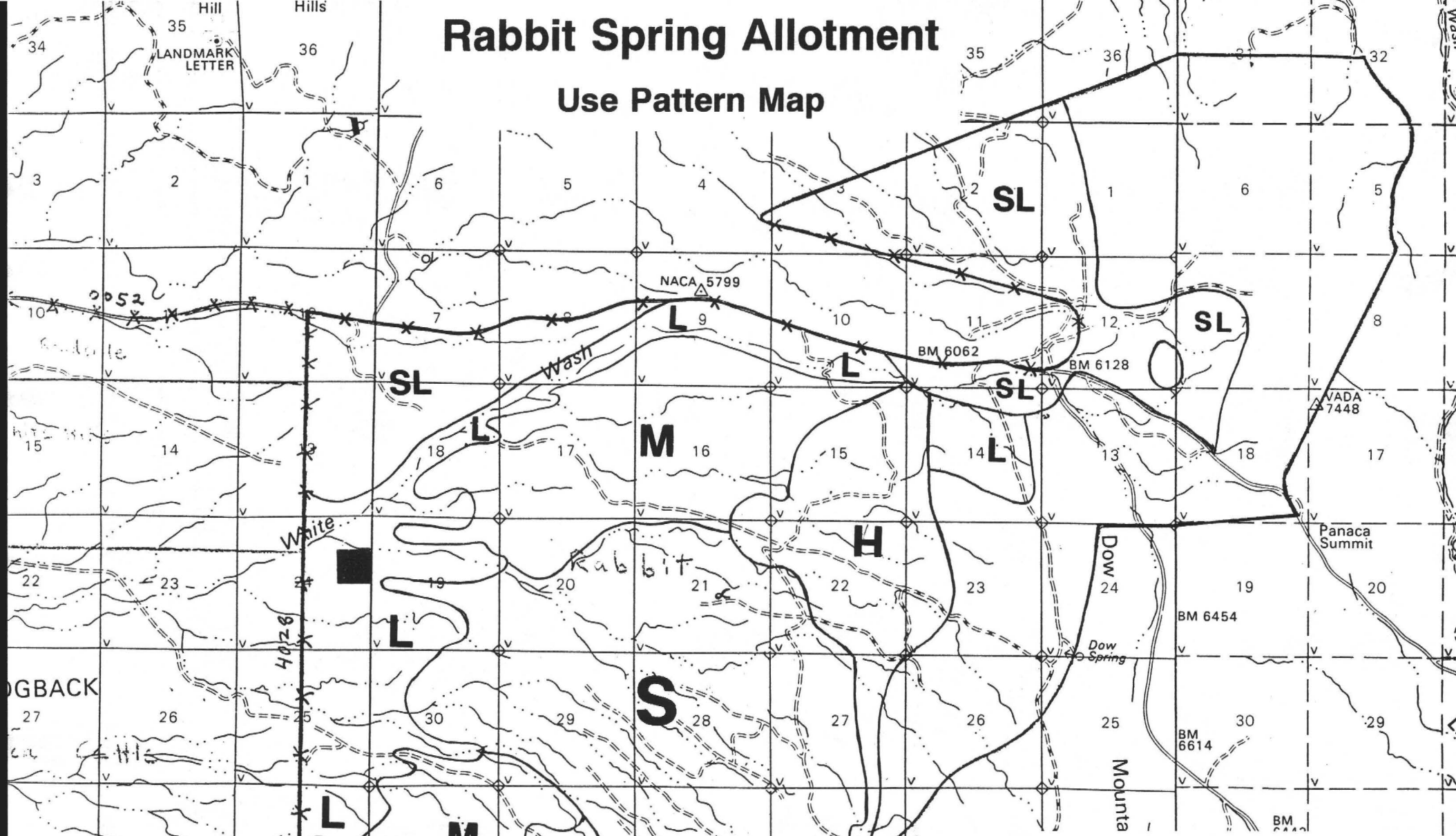
MAP #4

Date Data was Collected: 2/26/91

Growing Season Represented by Map: 1990 **Scale:** 1:62,500

Rabbit Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area

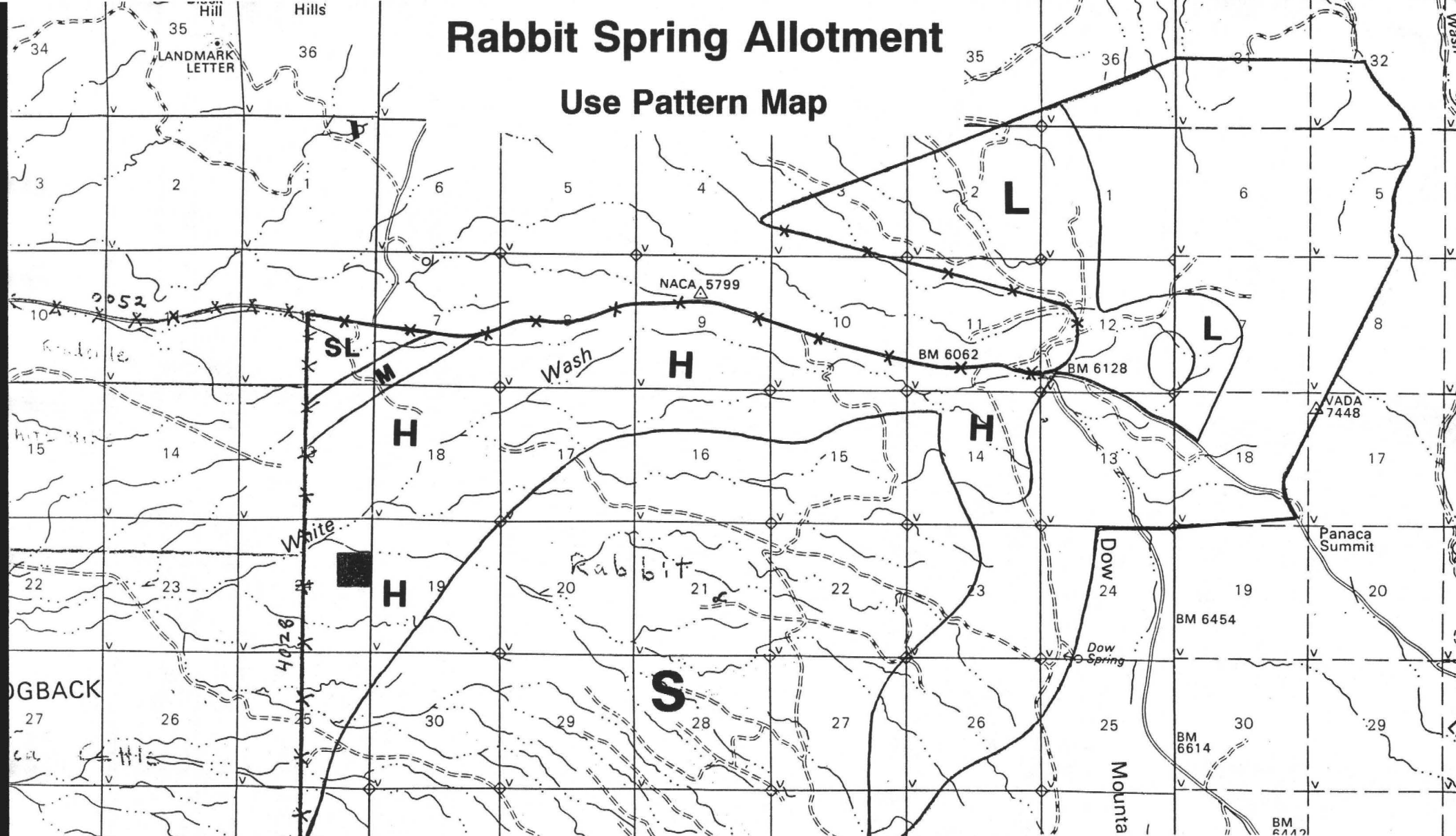
MAP #5

Date Data was Collected: 4/30/96

Growing Season Represented by Map: 1995 **Scale:** 1:62,500

Rabbit Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area ∝

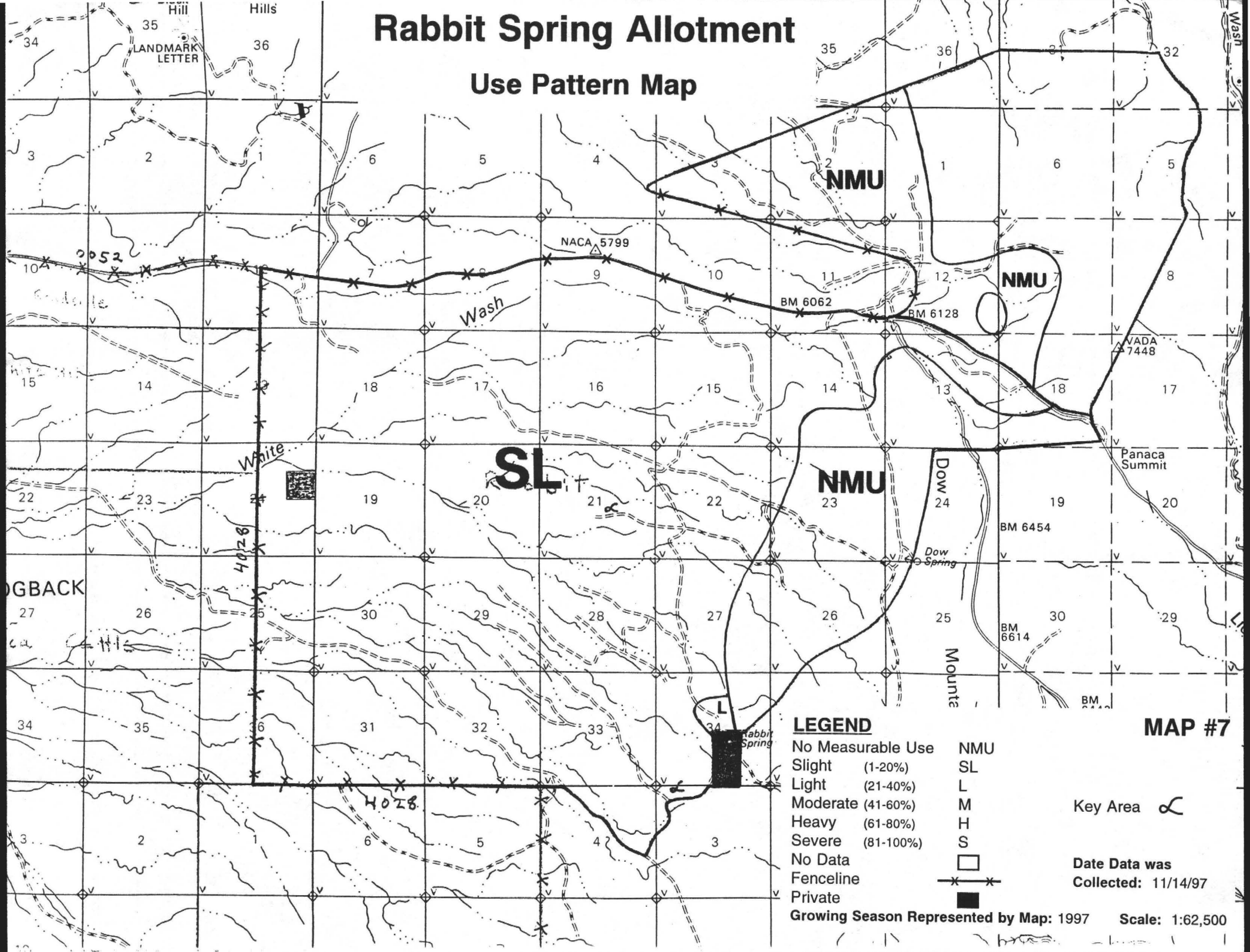
MAP #6

Date Data was Collected: 2/19/97

Growing Season Represented by Map: 1995 **Scale:** 1:62,500

Rabbit Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area

MAP #7

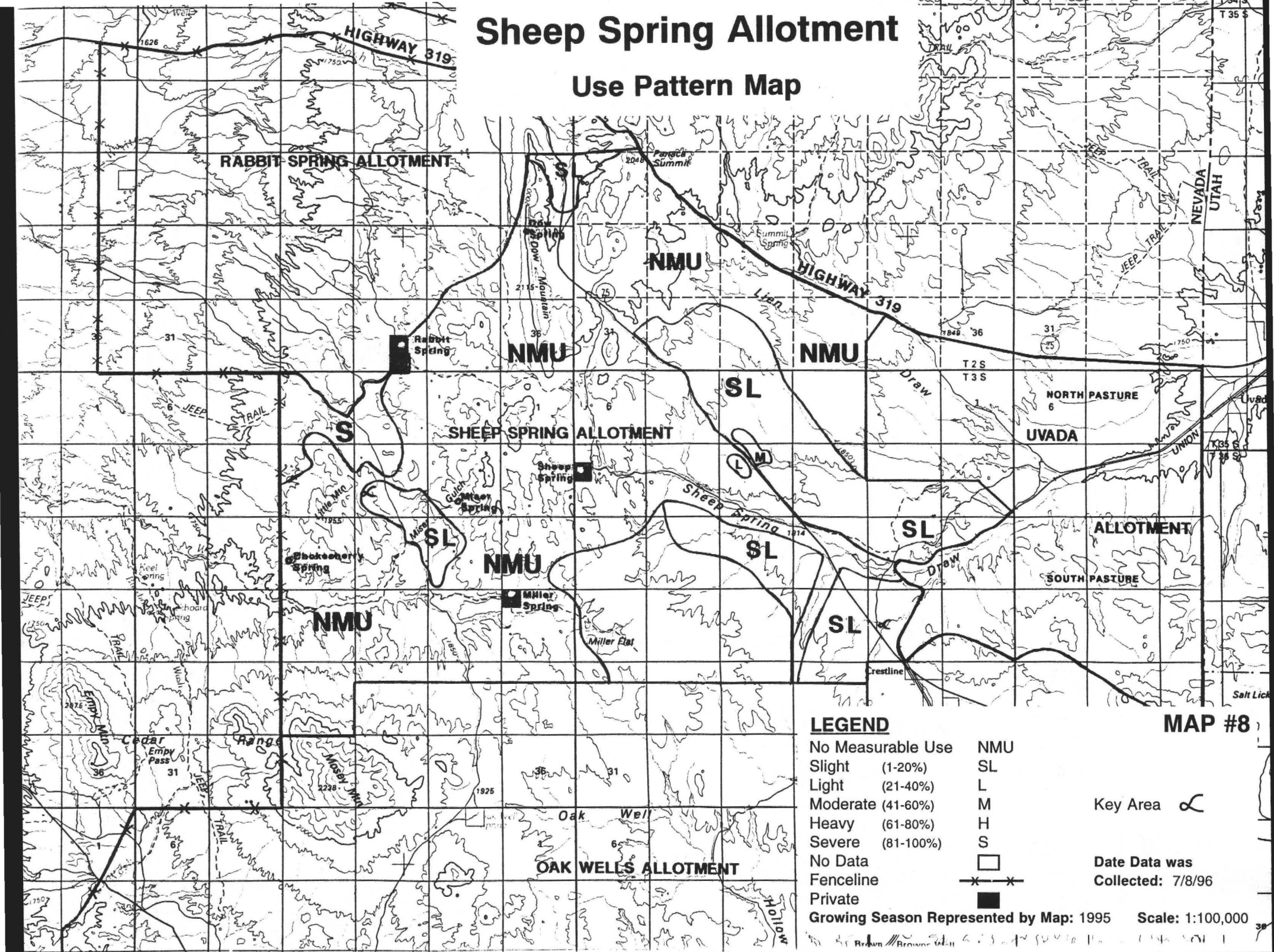
Date Data was Collected: 11/14/97

Growing Season Represented by Map: 1997

Scale: 1:62,500

Sheep Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area

Date Data was Collected: 7/8/96

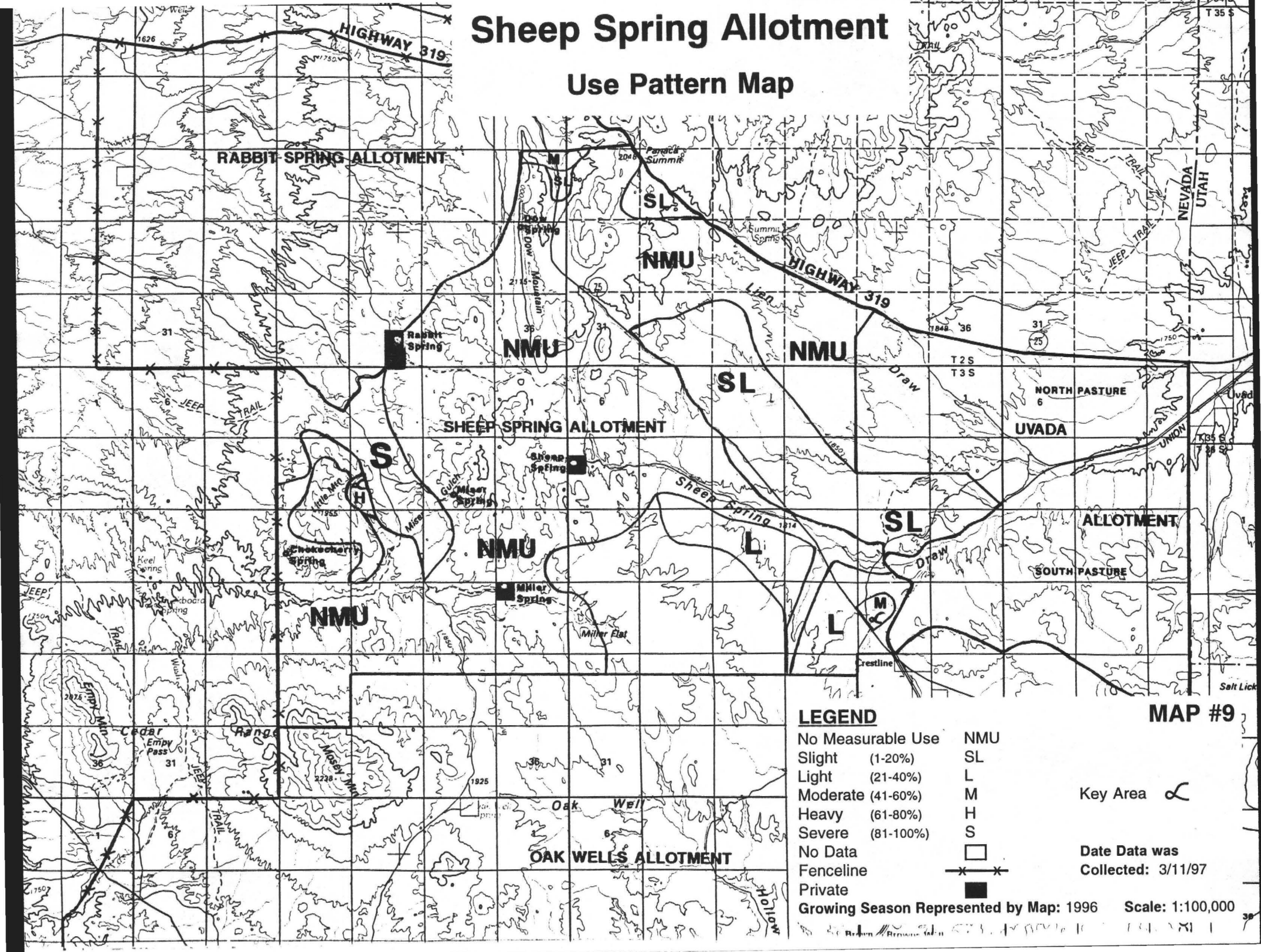
Growing Season Represented by Map: 1995

Scale: 1:100,000

MAP #8

Sheep Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area ∝

Date Data was Collected: 3/11/97

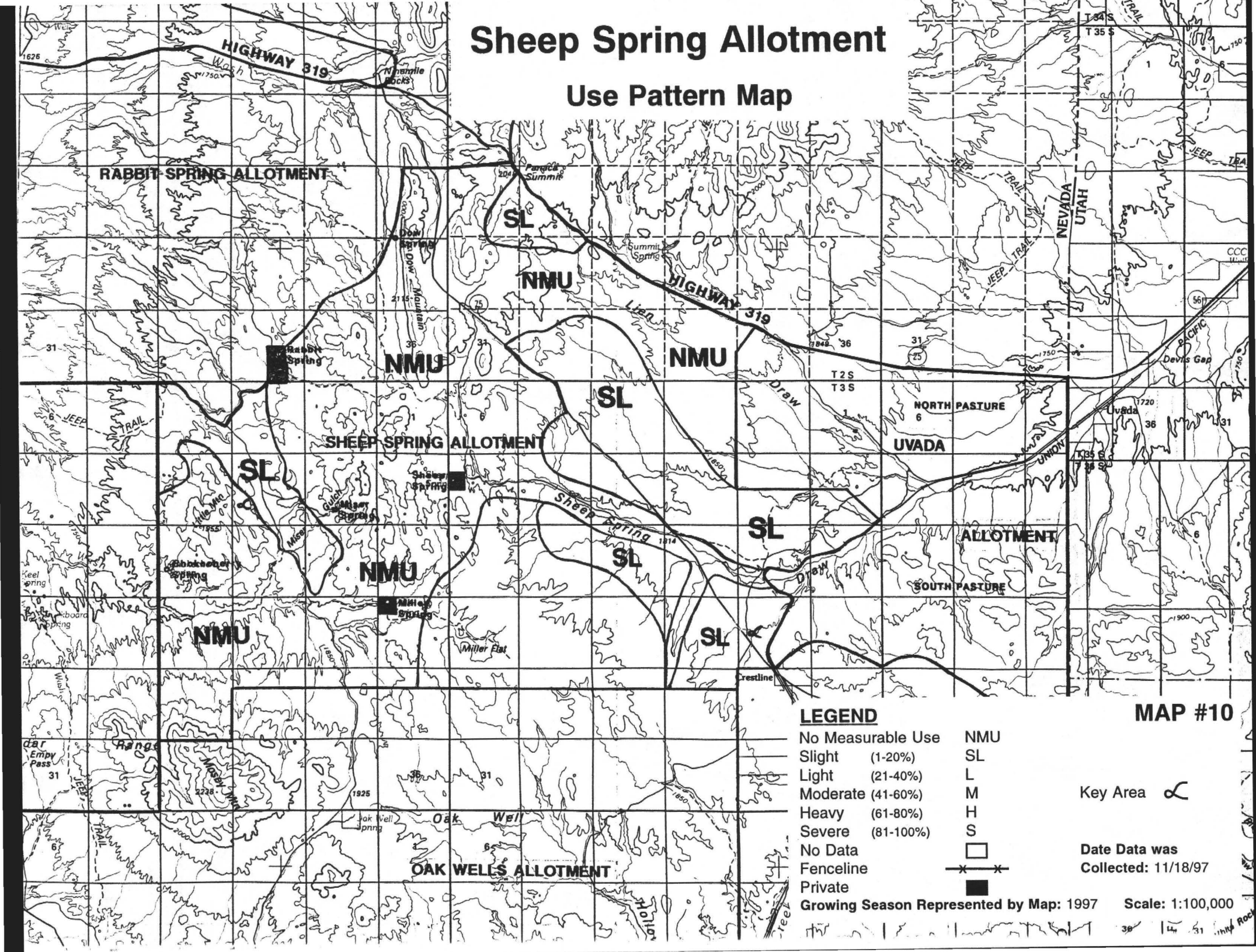
Growing Season Represented by Map: 1996

Scale: 1:100,000

MAP #9

Sheep Spring Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		

Key Area

Growing Season Represented by Map: 1997

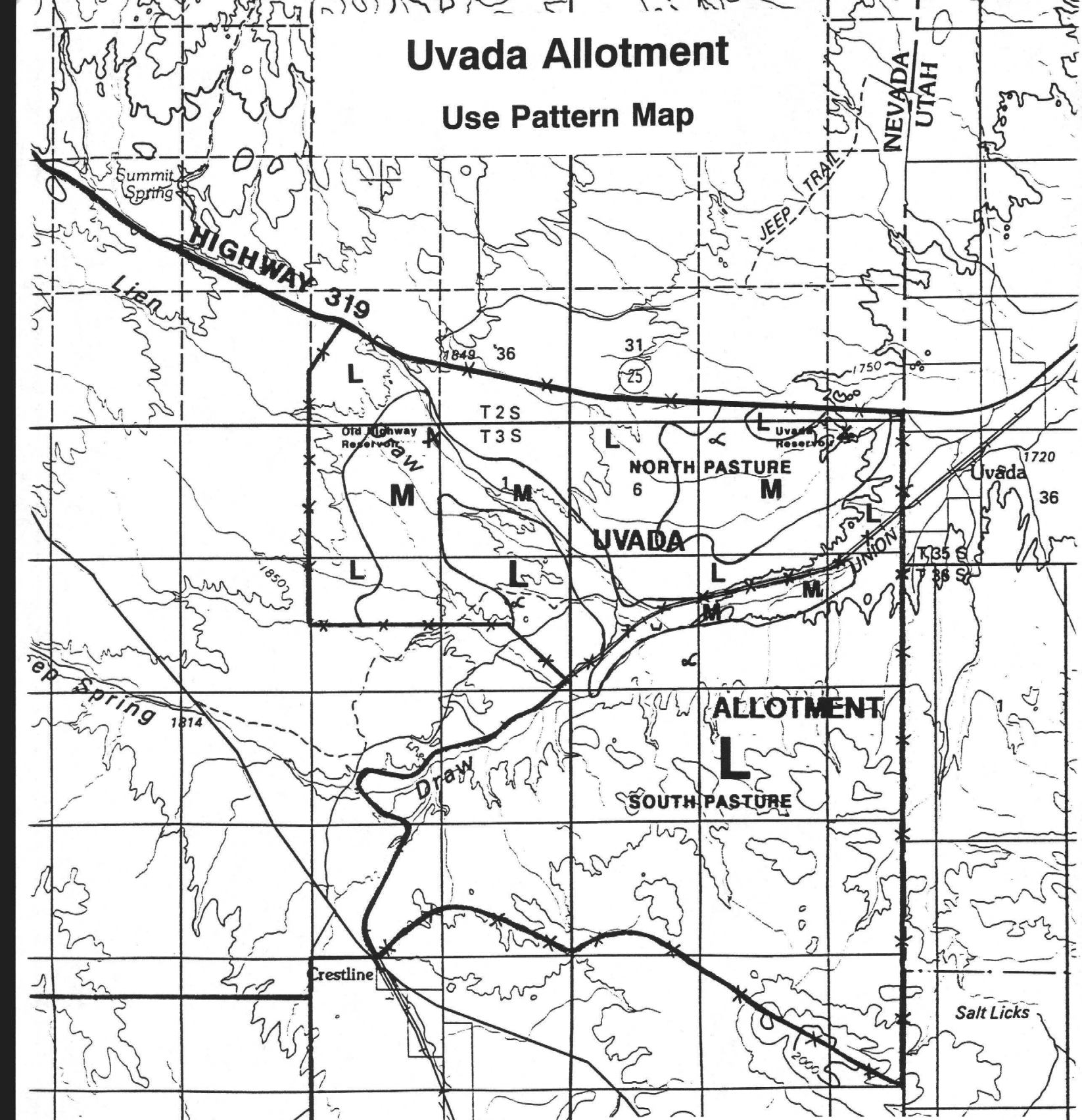
Date Data was Collected: 11/18/97

Scale: 1:100,000

MAP #10

Uvada Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Water Trough with Well		

Key Area

MAP #11

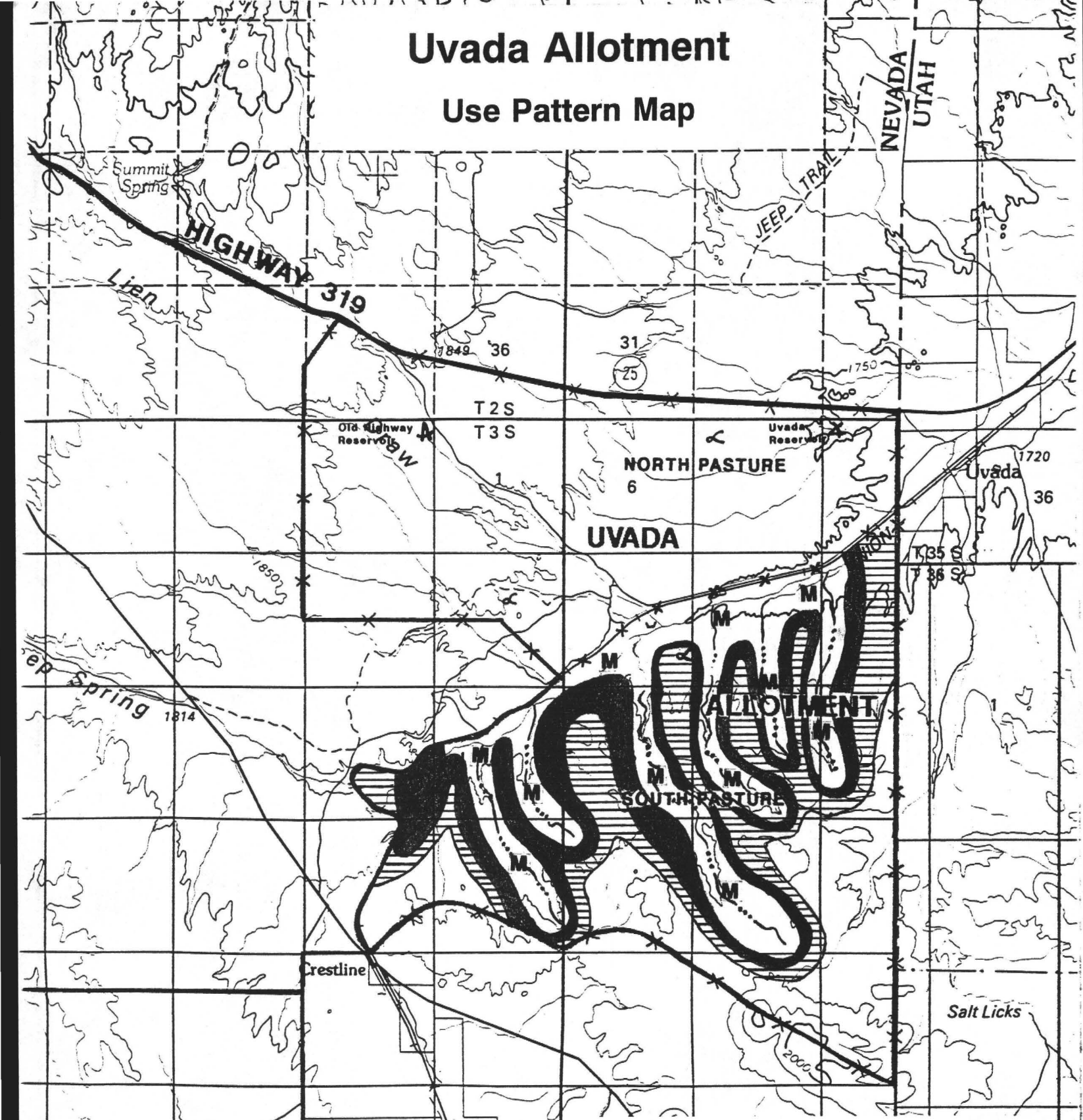
Date Data was Collected: 10/28/85

Growing Season Represented by Map: 1985

Scale: 1:62,500

Uvada Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	
Light	(21-40%)	
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Water Trough with Well		

Key Area

Date Data was Collected: 4/6/88

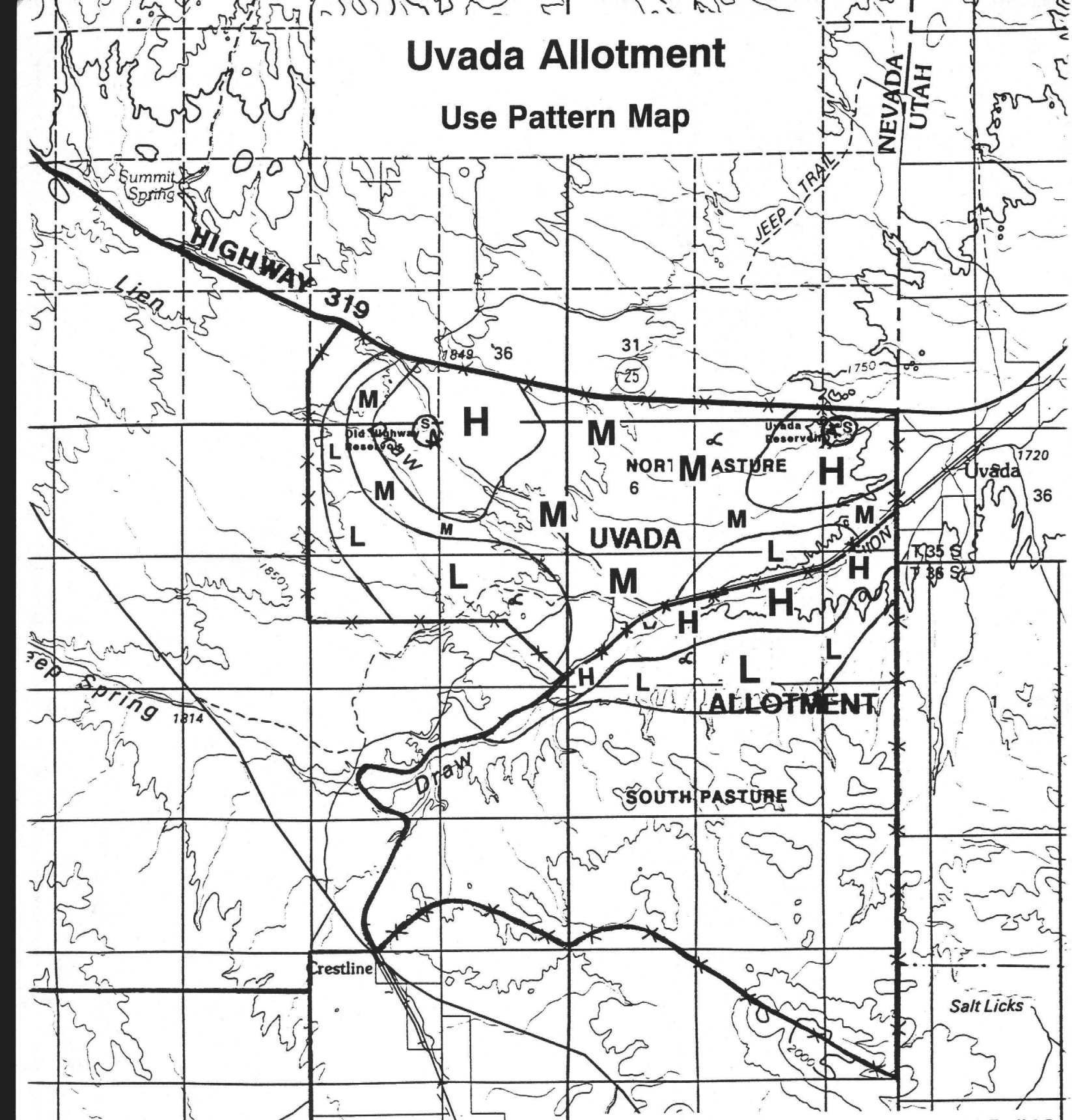
Growing Season Represented by Map: 1987

Scale: 1:62,500

MAP #12

Uvada Allotment

Use Pattern Map



MAP #13

LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Water Trough with Well		

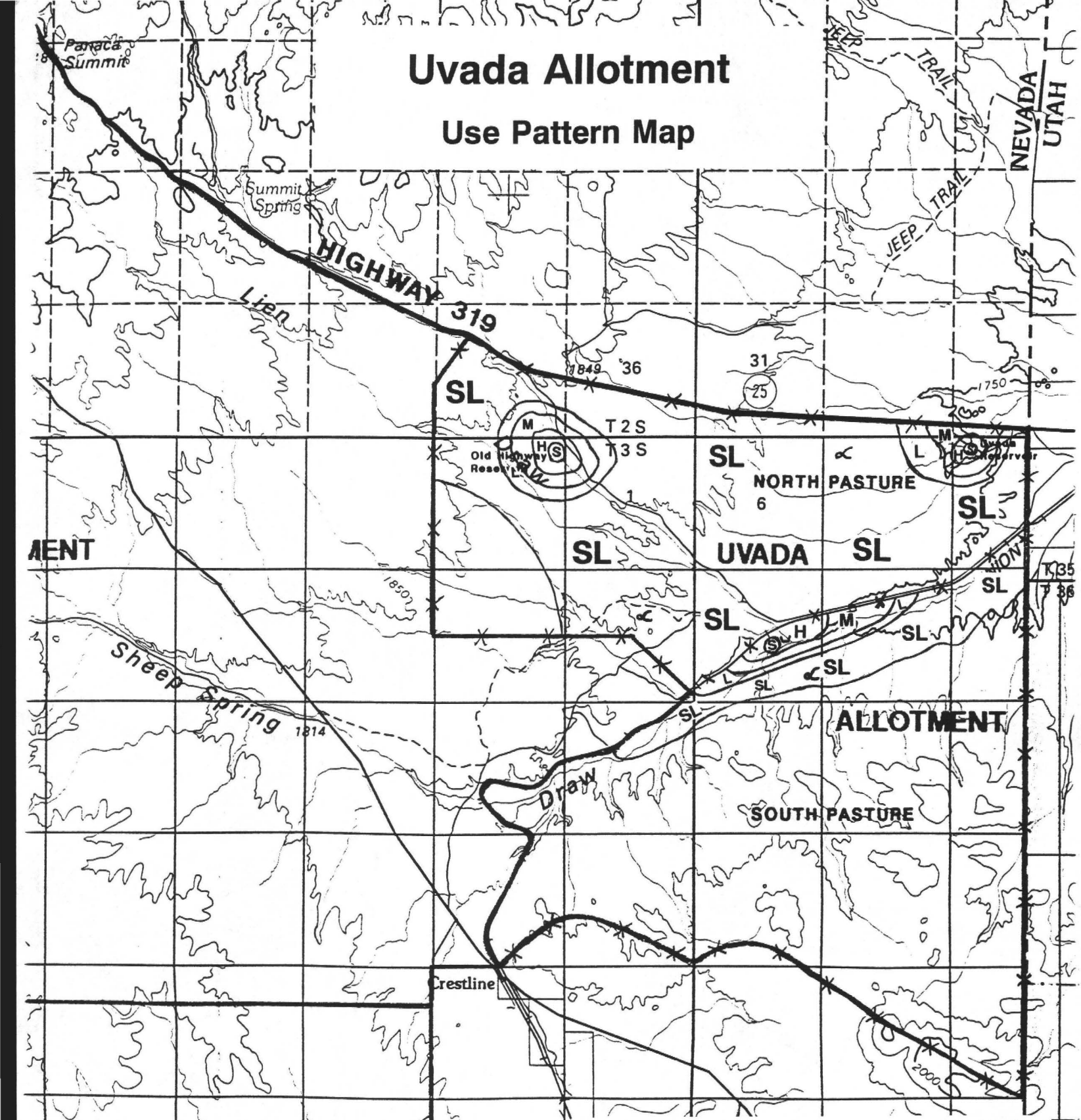
Key Area

Date Data was Collected: 11/6/89

Growing Season Represented by Map: 1989 **Scale:** 1:62,500

Uvada Allotment

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Water Trough with Well		

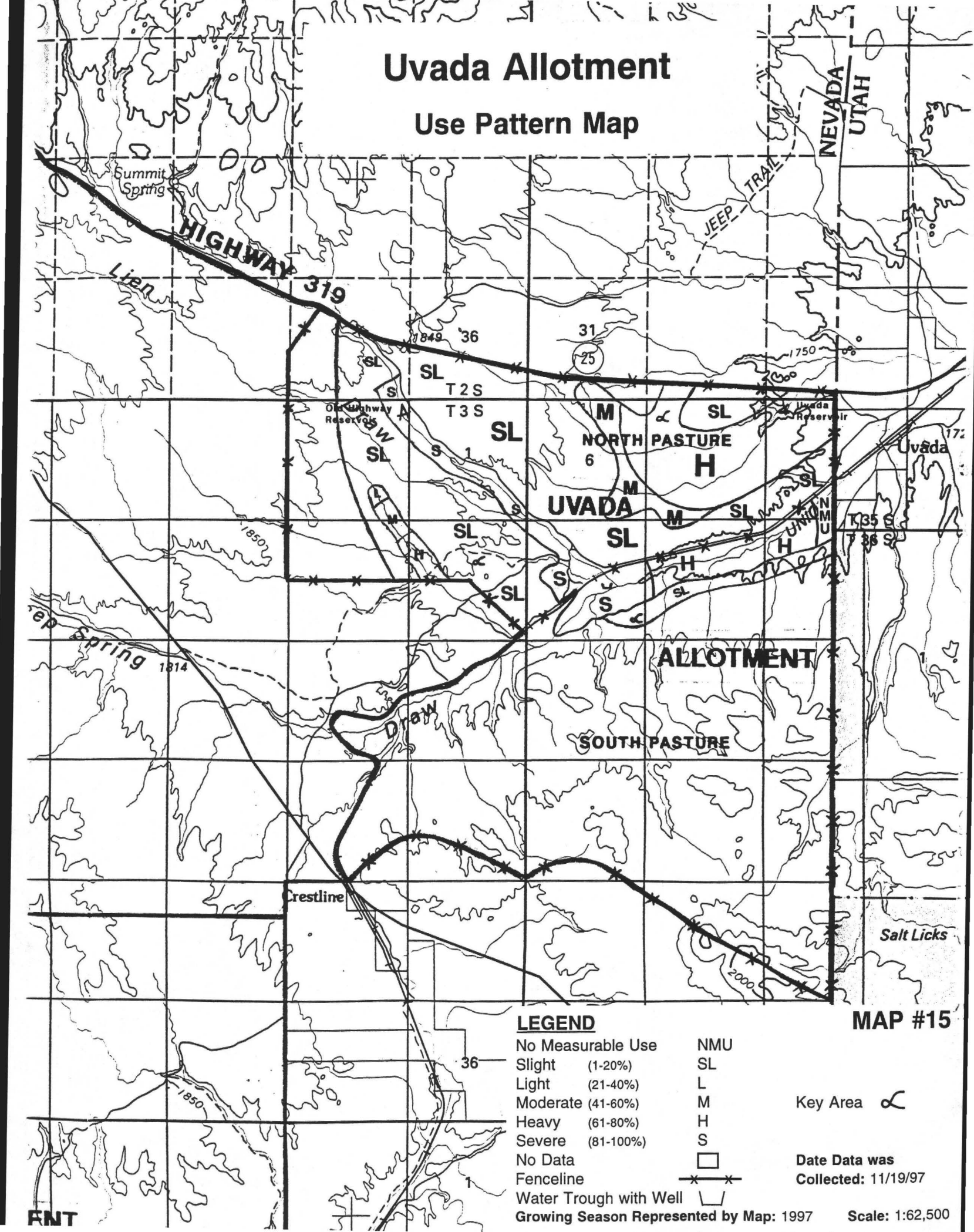
Key Area

Date Data was Collected: 12/4/95

Growing Season Represented by Map: 1995

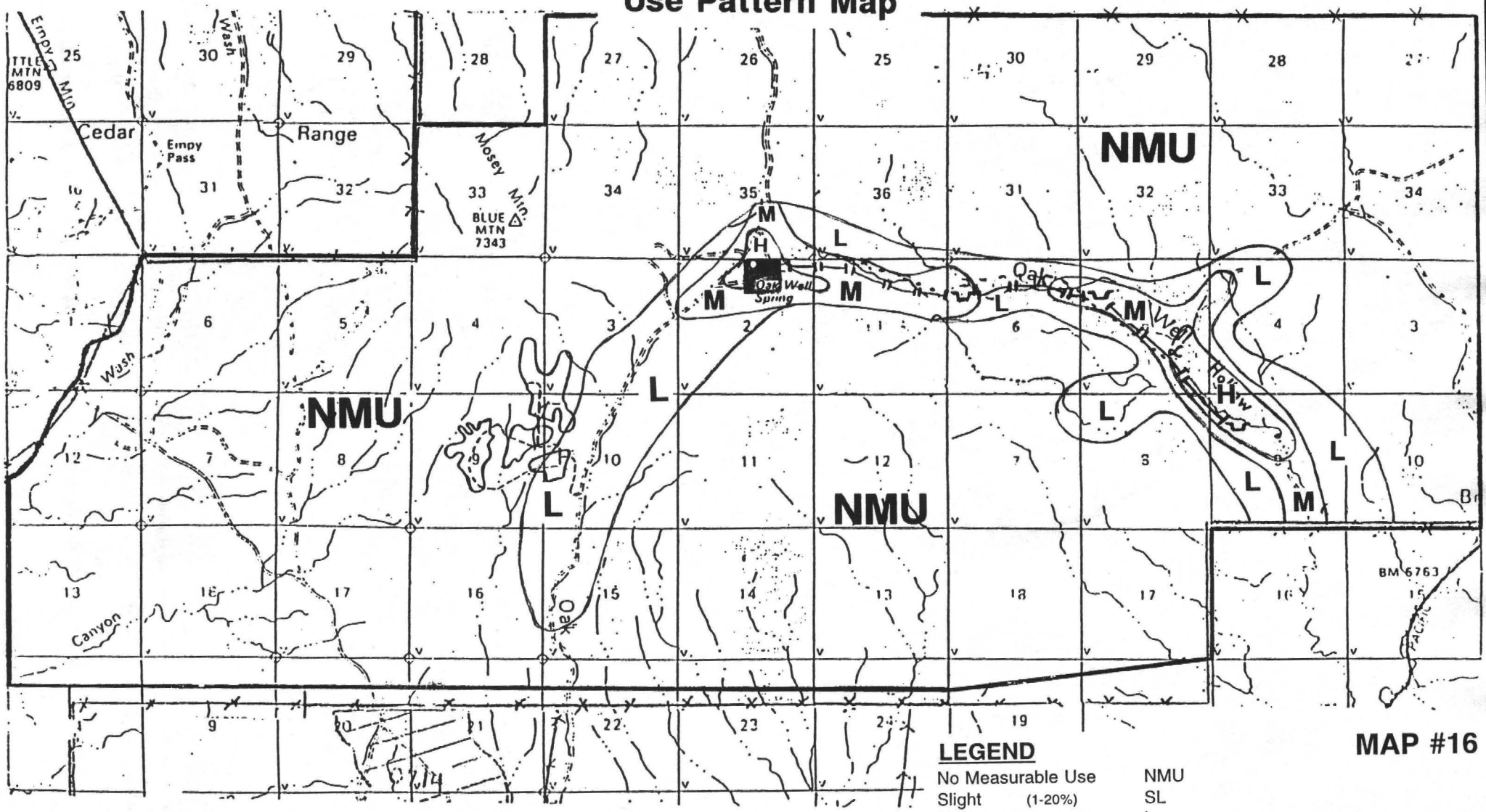
Scale: 1:62,500

MAP #14


Uvada Allotment
Use Pattern Map
NEVADA
UTAH
Summit Spring
HIGHWAY 319
JEEP TRAIL
Lien
Old Highway Reservoir
Uvada Reservoir
NORTH PASTURE
UVADA
SOUTH PASTURE
ALLOTMENT
Uvada
Crestline
Draw
Salt Licks
T 35 S
T 36 S
T 2 S
T 3 S
LEGEND
No Measurable Use NMU
Slight (1-20%) SL
Light (21-40%) L
Moderate (41-60%) M
Heavy (61-80%) H
Severe (81-100%) S
No Data
Fenceline
Water Trough with Well
Key Area
Date Data was Collected: 11/19/97
Growing Season Represented by Map: 1997
Scale: 1:62,500
MAP #15

OAK WELLS ALLOTMENT

Use Pattern Map



MAP #16

LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

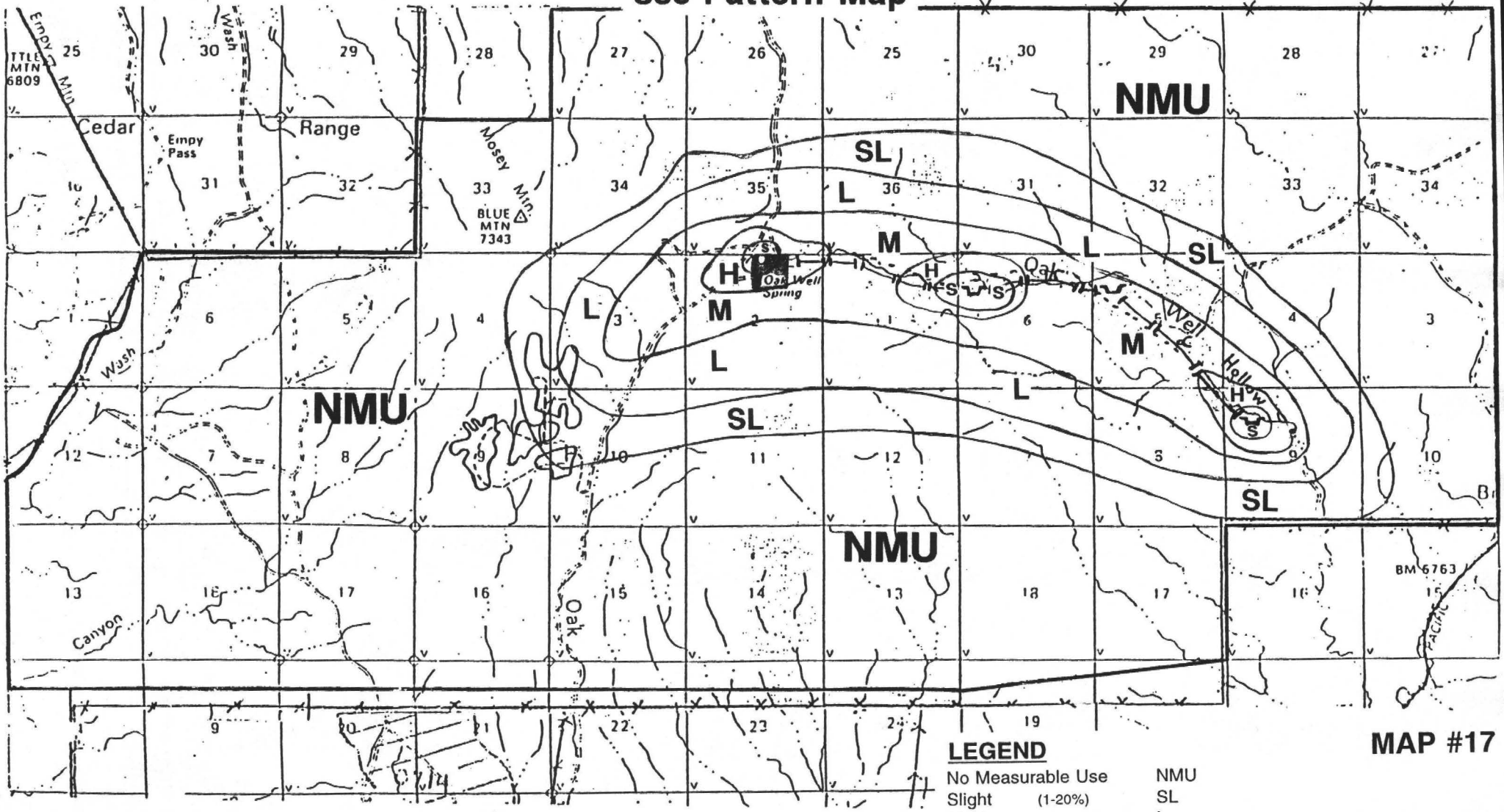
Date Data was Collected: 11/4/86

Growing Season Represented by Map: 1986

Scale: 1:66,000

OAK WELLS ALLOTMENT

Use Pattern Map



MAP #17

LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

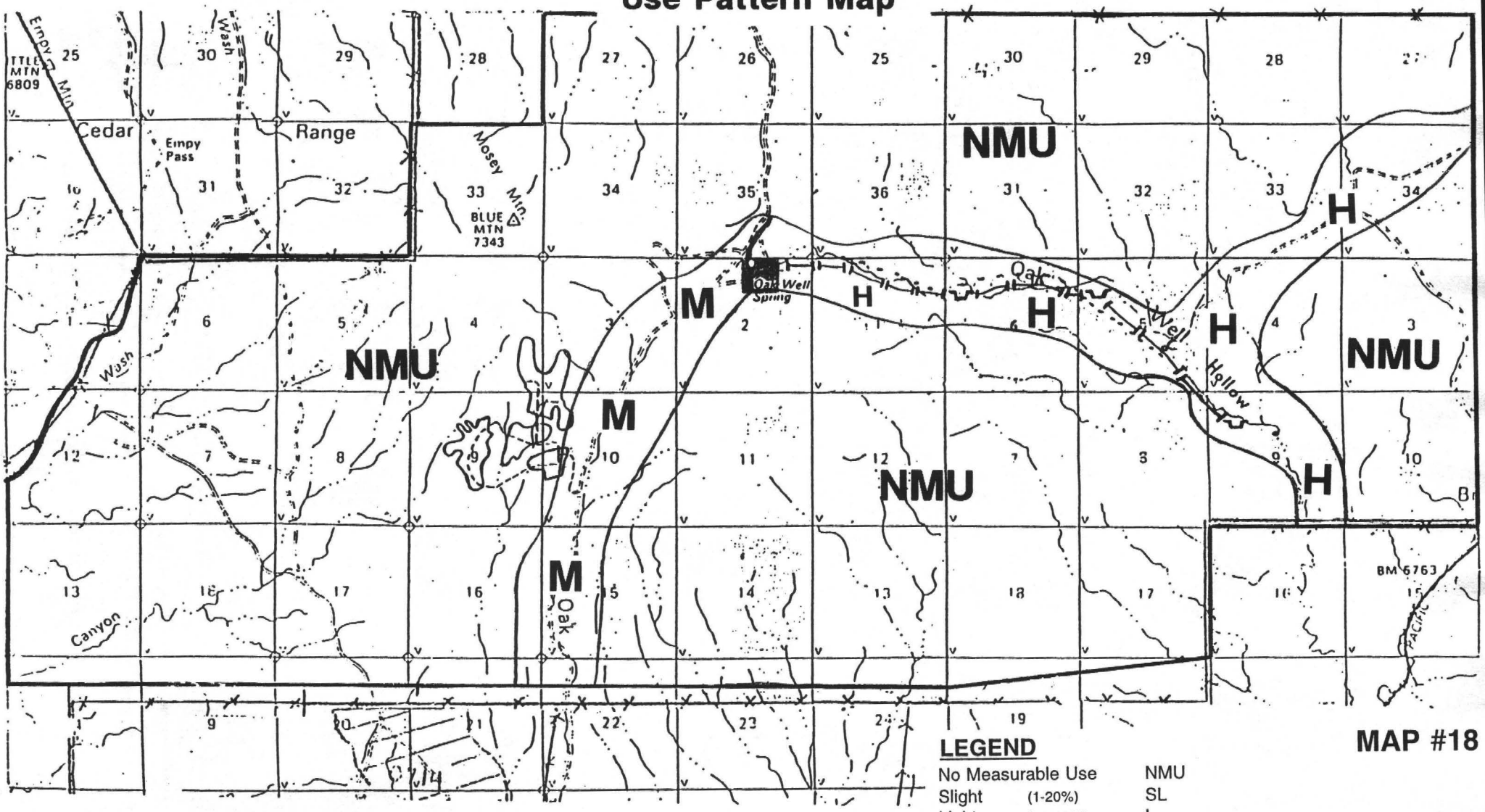
Date Data was Collected: 4/12/88

Growing Season Represented by Map: 1987

Scale: 1:66,000

OAK WELLS ALLOTMENT

Use Pattern Map



MAP #18

LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

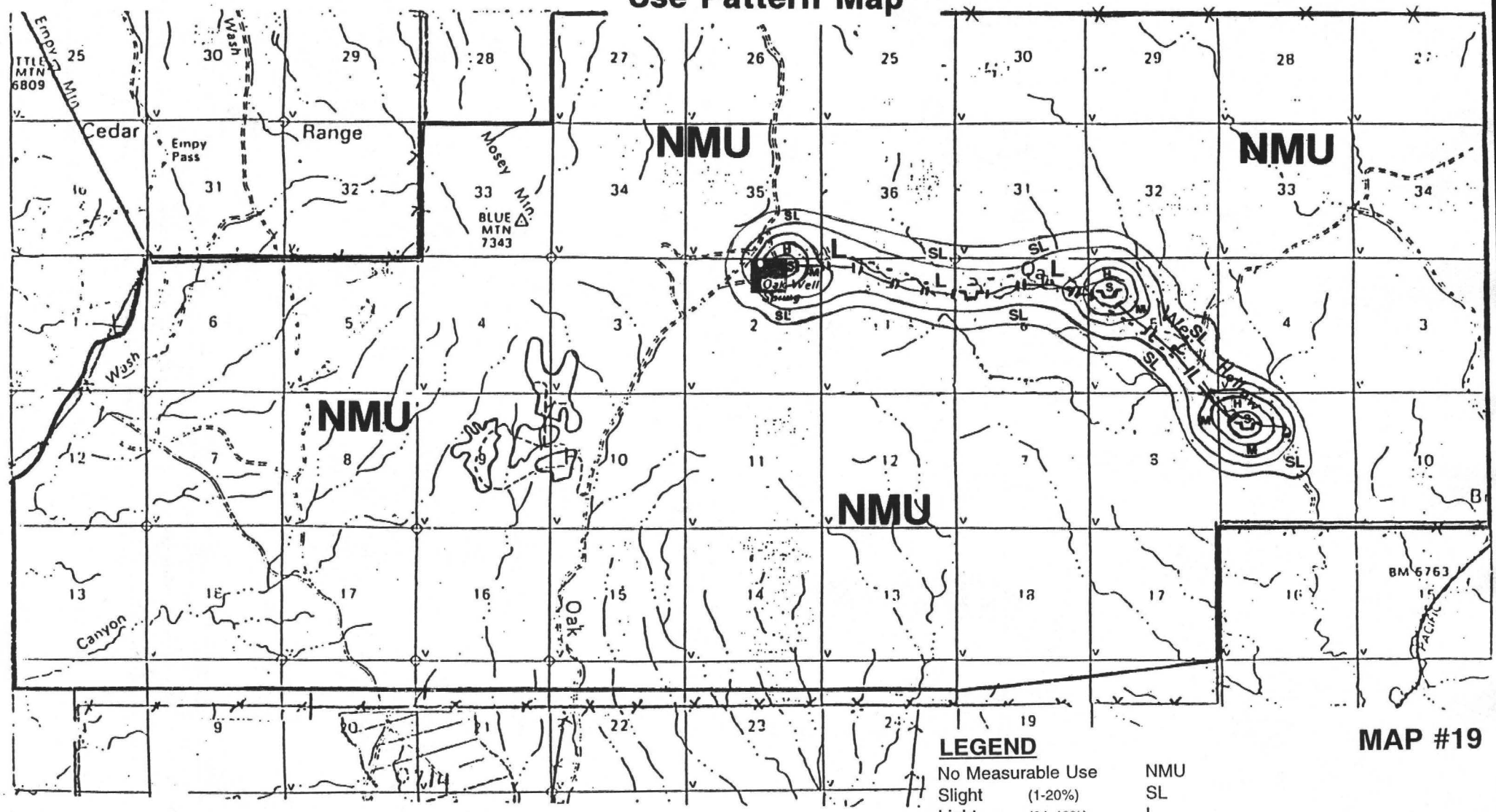
Date Data was Collected: 9/5/89

Growing Season Represented by Map: 1989

Scale: 1:66,000

OAK WELLS ALLOTMENT

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

Date Data was Collected: 12/11/95

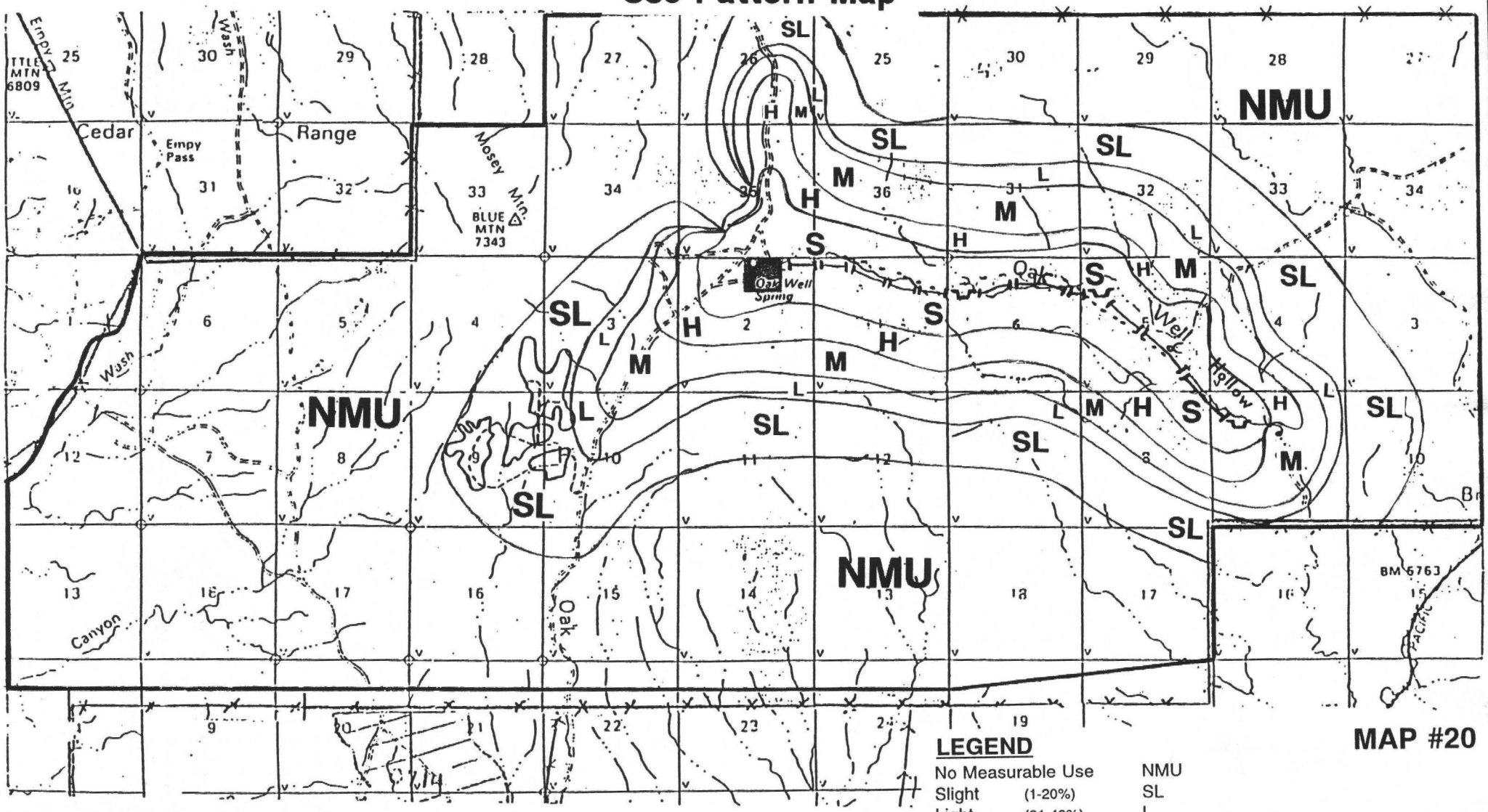
Growing Season Represented by Map: 1995

Scale: 1:66,000

MAP #19

OAK WELLS ALLOTMENT

Use Pattern Map



MAP #20

LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

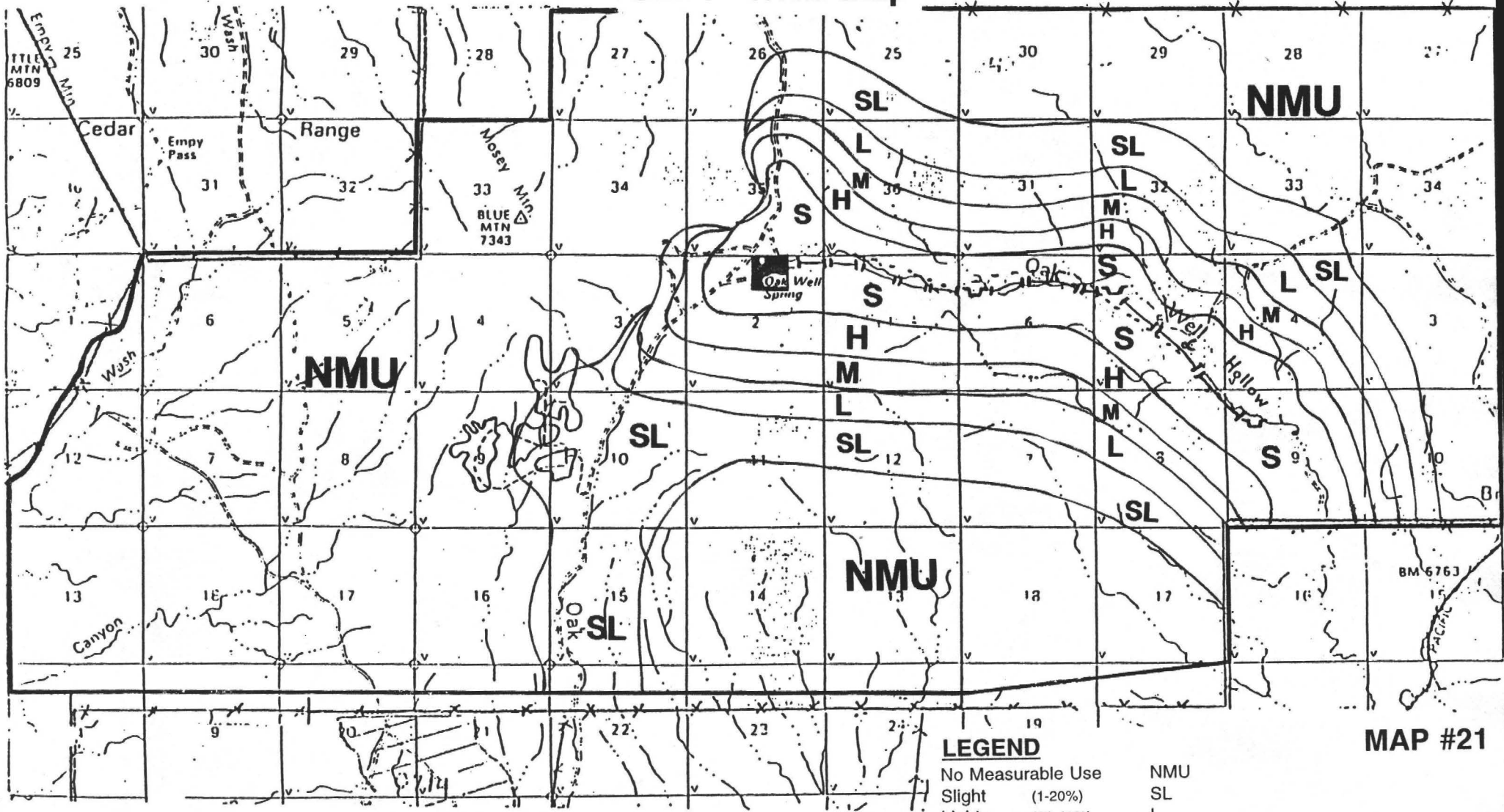
Date Data was Collected: 3/26/97

Growing Season Represented by Map: 1996

Scale: 1:66,000

OAK WELLS ALLOTMENT

Use Pattern Map



LEGEND

No Measurable Use		NMU
Slight	(1-20%)	SL
Light	(21-40%)	L
Moderate	(41-60%)	M
Heavy	(61-80%)	H
Severe	(81-100%)	S
No Data		
Fenceline		
Private		
Pipeline & Water Trough		

Woodcuts

Key Area

Growing Season Represented by Map: 1997

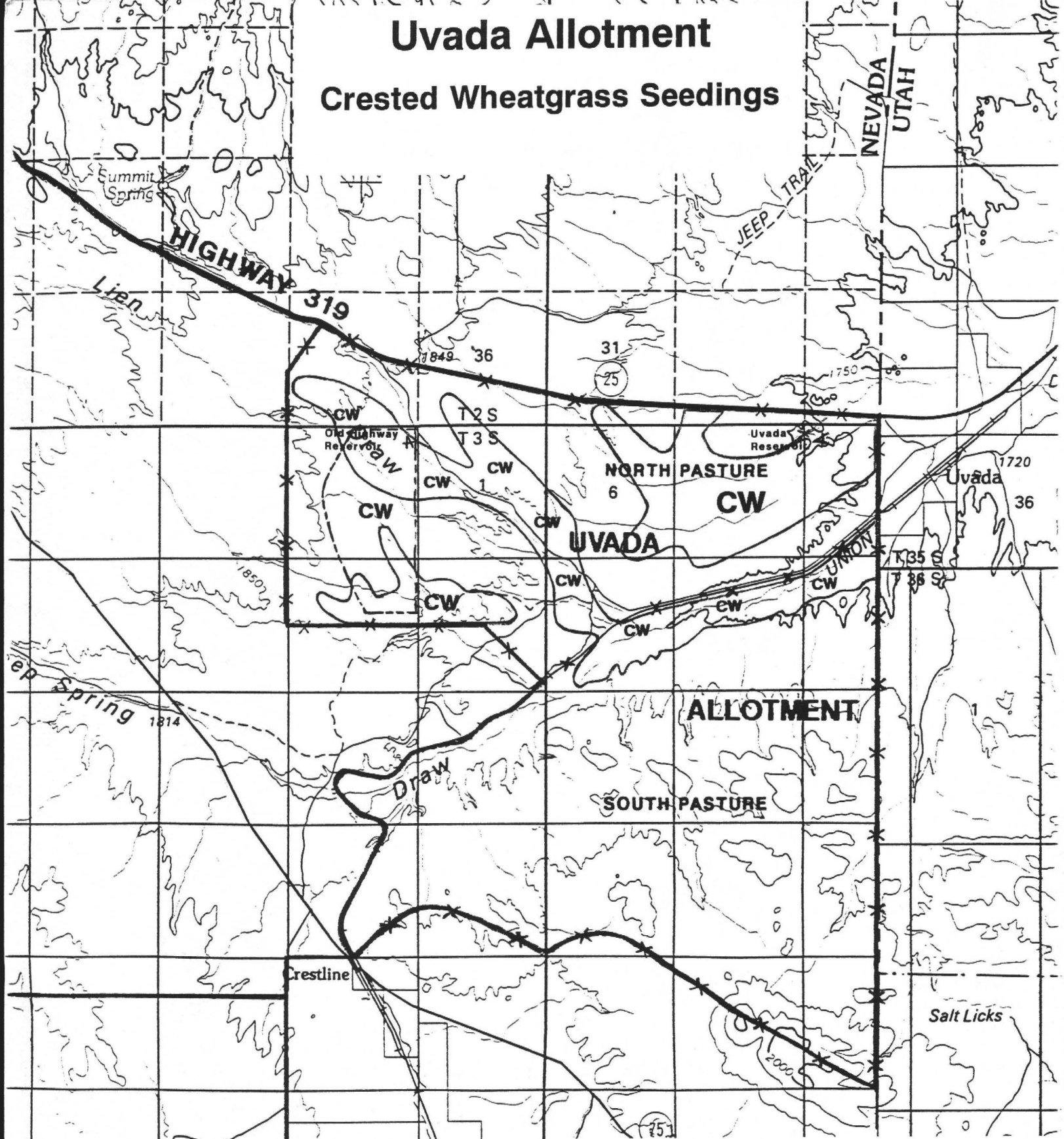
Date Data was Collected: 11/20/97

Scale: 1:66,000

MAP #21

Uvada Allotment

Crested Wheatgrass Seedings

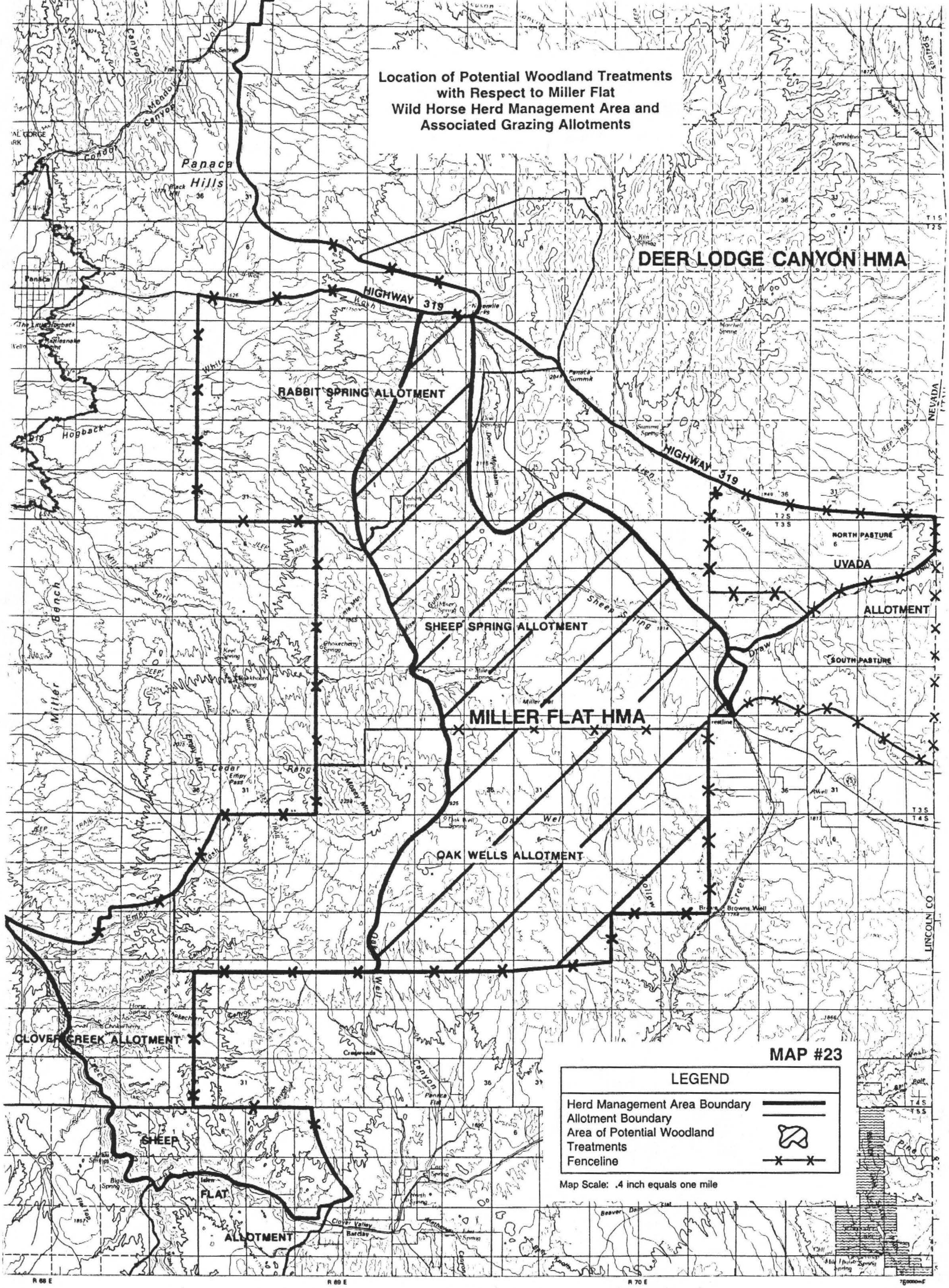


LEGEND

Crested Wheatgrass Seedings	CW
Disked/Plowed and Seeded	———
Chained (P/J) and Seeded	— - — - —
Fenceline	—x—x—

MAP #22

Scale: 1:62,500
by D. Bolognani


Location of Potential Woodland Treatments
with Respect to Miller Flat
Wild Horse Herd Management Area and
Associated Grazing Allotments
DEER LODGE CANYON HMA
RABBIT SPRING ALLOTMENT
SHEEP SPRING ALLOTMENT
MILLER FLAT HMA
OAK WELLS ALLOTMENT
UVADA
ALLOTMENT
NORTH PASTURE
SOUTH PASTURE
CLOVER CREEK ALLOTMENT
SHEEP
FLAT
ALLOTMENT
HIGHWAY 319
Panaca Hills
Panaca
NEVADA
LINCOLN CO
MAP #23
LEGEND
Herd Management Area Boundary
Allotment Boundary
Area of Potential Woodland Treatments
Fenceline
Map Scale: .4 inch equals one mile
R 68 E
R 69 E
R 70 E

APPENDIX VII

Changes in Authorized Grazing Use
-- A Discussion --

CHANGES IN AUTHORIZED GRAZING USE

The amount of grazing use authorized by the BLM is based on the amount of available forage as established in the land use plans, activity plans or decision by the Bureau of Land Management (BLM) and is expressed in animal unit months (AUMS). This is referred to as Permitted Use 1/. Permitted use is specified in grazing permits or grazing leases. It includes all authorized use, including livestock use, and any suspended use. Active use or authorized grazing use made by a permittee annually may include a portion or all of permitted use. Active use may also vary by grazing year and could be less than the permitted use. Any changes required to the amount of grazing use are made from permitted use. Changes could include an increase or decrease in permitted use and/or modification to management practices. The BLM periodically reviews the permitted use specified in a grazing permit or lease to determine if permitted use is in conformance with the land use plan. In Nevada, the evaluation process is the process used to determine if existing muitiple uses for allotments including livestock grazing are meeting or making progress towards meeting land use plan objectives, Rangeland Program Summay objectives and land use plan decisions, in addition to the standards and guidelines for grazing administration. (Refer to Appendix IX - Allotment Objective Flow Chart). If changes are needed to permitted use or management practices they are made based on consistency with multiple use management objectives and the standards for grazing administration. The allotment evaluation presents the standards and land use plan objectives which are evaluated. The Technical Recommendations section of the allotment evaluation presents management practices which if implemented could assist in meeting or making progress towards the land use plan objectives in addition to the standards for grazing administration. The guideline(s) that apply to each recommendation are also identified for each technical recommendation.

Changes to permitted use are implemented through a documented agreement or by decision. BLM consults with the affected permittee, and the interested publics prior to making changes to permitted use. (Refer to Appendix X - Public Consultation Process).

There permitted use is reduced it is no longer held in suspended use. Any reduction in permitted use is no longer reflected on the grazing permit or grazing billing. Suspended use will only be shown on grazing permits and decisions for the purpose of representing historical suspended use and active use which is temporarily withheld. Historical suspended use is the suspended use which was shown on term permits and grazing billings prior to August 21, 1995. Any changes made to permitted use where permitted use has been reduced will be based on meeting or making progress toward meeting land use plan objectives and the standards for grazing administration.

Monitoring information is used to determine if allotment specific objectives and standards are being met. Any changes in permitted use and/or the terms and conditions of the grazing permit are supported by monitoring, field observations, ecological site inventory or other data acceptable to the authorized officer. Monitoring is conducted in accordance with procedures and methodologies identified in BLM and Interagency Technical References and the Nevada

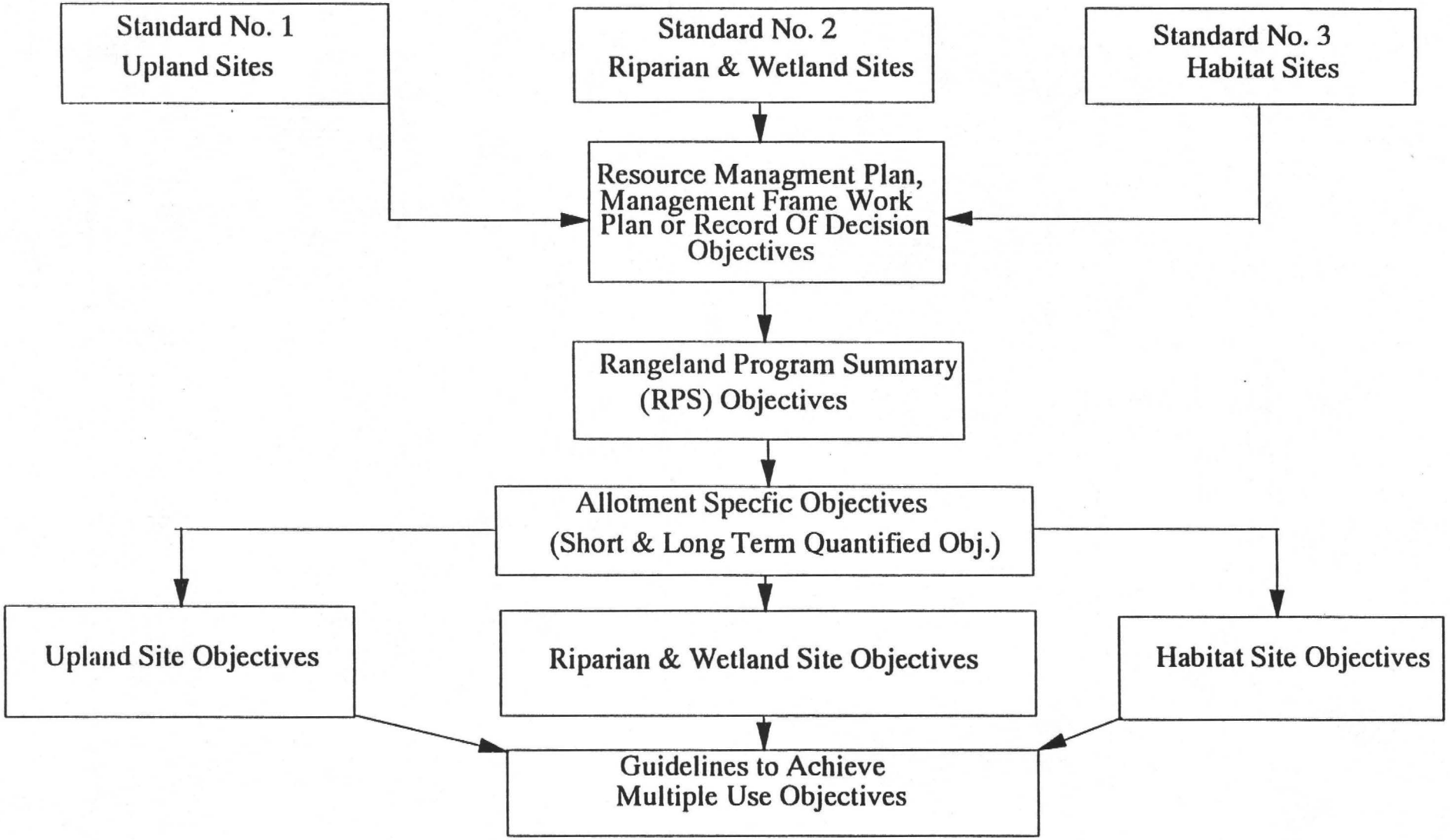
Rangeland Monitoring Handbook.

1/ The phrase "the total number of animal unit months of specified livestock grazing" is used in lieu of "permitted use" and "preference". This is associated with the Interim Guidance for Implementation of the Wyoming District Court Ruling on Grazing Regulations (Public Lands Council v. Babbitt No. 95-CV-165-BD. WYO. June 12, 1996)

APPENDIX VIII

Allotment Objective Flow Chart

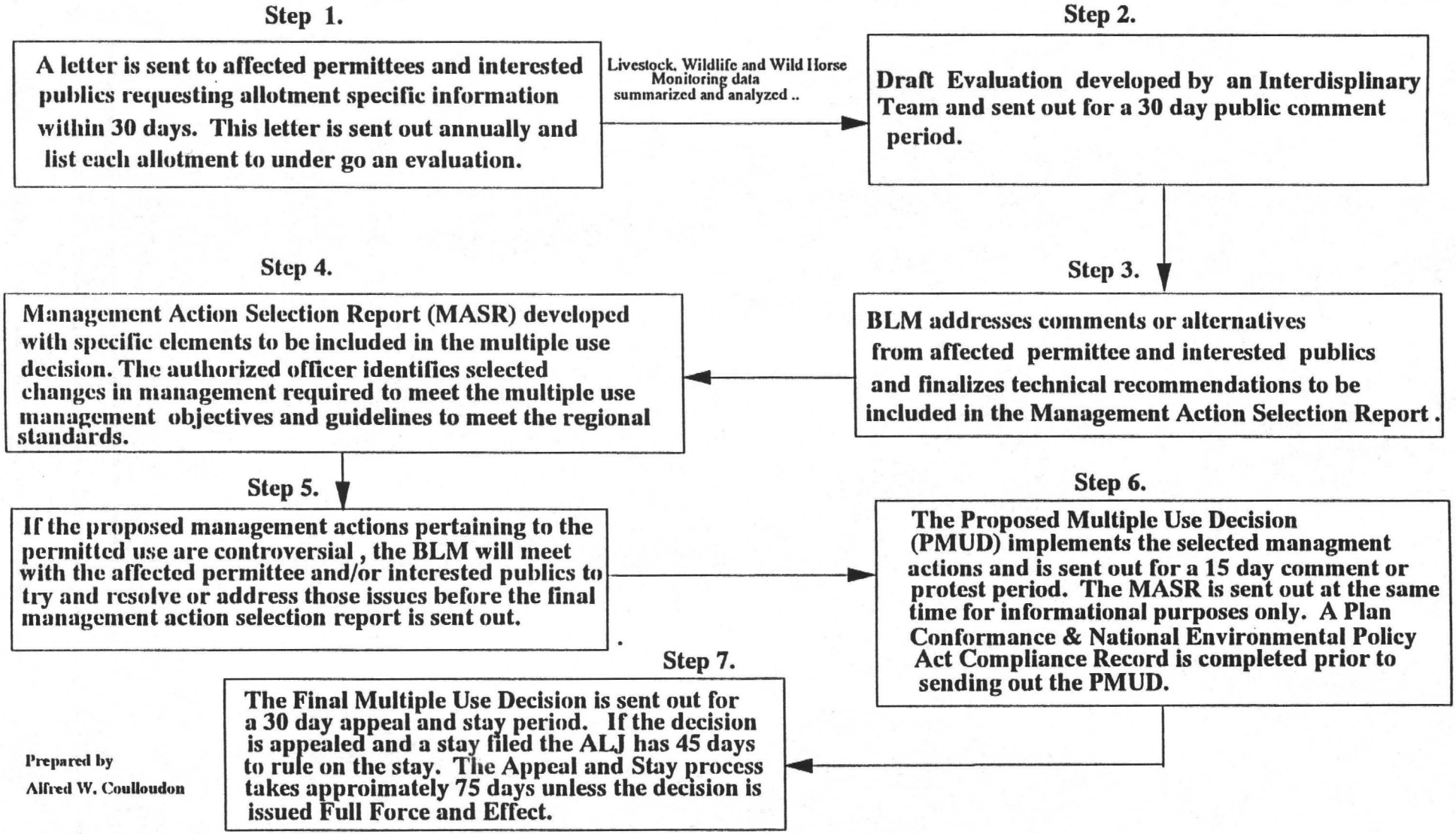
ALLOTMENT OBJECTIVE FLOW CHART



APPENDIX IX

Public Consultation Flow Chart

Public Consultation Process For Ely District Allotment Evaluations



Prepared by
Alfred W. Coulloudon

APPENDIX X

Desired Stocking Rate Calculations

STOCKING RATE CALCULATIONS

1. The desired stocking level for each allotment was determined using the following formula (BLM Technical Reference 4400-7, Appendix 2, pages 54-56)

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

Actual Use data for livestock and wild horses was used in the desired stocking rate equation. Wild horse use was estimated from aerial census data and field observations. A desired stocking rate was calculated for each year that had both use pattern mapping data and corresponding key area readings. The desired stocking rates (Desired AUMs) for each year for a given allotment were then averaged to come up with the desired stocking level for the allotment.

Rabbit Spring Allotment

Grazing Year	Cattle AUMs	1/ Horse AUMs	Total AUMs	Desired Util.	Actual Util.%	Desired AUMs
1990	0	2/ 624	624	.50	.50	624
1995	0	3/ 336	336	.50	.88	191
1997	0	144	144	.50	.07	1,029
					Average	615

1/ Horse AUMs are calculated using the determined population number multiplied by 12 months.

2/ The 1990 total horse population estimate was calculated using the 1988 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

3/ The 1995 total horse population estimate was calculated using the 1994 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

Sheep Spring Allotment

Grazing Year	Cattle AUMs	1/ Horse AUMs	Total AUMs	Desired Util.	Actual Util.%	Desired AUMs
1995	0	2/ 300	300	.50	.19	789
1996	0	3/ 360	360	.50	.58	310
1997	0	336	336	.50	.12	1,400
					Average	833

1/ Horse AUMs are calculated using the determined population number multiplied by 12 months.

2/ The 1995 total horse population estimate was calculated using the 1994 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

3/ The 1996 total horse population estimate was calculated using the 1994 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

Uvada Allotment

Grazing Year	Cattle AUMs	1/ Horse AUMs	Total AUMs	Desired Util.	Actual Util.%	Desired AUMs
1985	509	24	533	.50	.48	555
1987	507	0	507	.50	4/ .50	507
1989	355	2/ 0	355	.50	.42	423
1995	466	3/ 24	481	.50	.15	1,603
1997	436	0	436	.50	.72	303
					Average	678

1/ Horse AUMs are calculated using the determined population number multiplied by 12 months.

2/ There were no horses counted within the Uvada Allotment during the 1988 census, thereby yielding no number with which to project an estimate for 1989.

3/ The 1995 total horse population estimate, within the allotment, was calculated using the 1994 actual horse census data and applying a national standard of an 18% annual population increase and does not account for death loss.

4/ Total precipitation during 1987, equalling 12.08 inches, was 26% above the 30 year average with 4.65 inches falling within the four month period of February - May (Table 4 and Appendix XII). It is speculated that this resulted in above average forage production (particularly within the seeding) giving little reason for cattle to traverse the rocky hills (uplands) between drainages, but rather to spend a majority of their time within the seeding and drainages where forage was more than ample. Because the key area is located in the uplands between drainages, very little use at the key area occurred, thereby skewing utilization data and misrepresenting use within the south pasture. This can be noted on the use pattern map (Map #12) which indicates moderate use occurring throughout the seeding and within the drainages. Therefore, it was determined that using utilization data at the key area would be a misrepresentation of grazing use and was not used in determining stocking levels. Therefore, using an actual utilization percentage of 50% (that which occurred within the seeding and drainages) along with the data from 1985, 1989, 1995 and 1997, then, produced a Desired Stocking Level of 678 AUMs.

Oak Wells Allotment

Grazing Year	Cattle AUMs	1/ Horse AUMs	Total AUMs	Desired Util.	2/ Actual Util.%	Desired AUMs
1989	172	3/ 0	172	.50	.70	123
1995	534	4/ 192	726	.50	.30	1210
1996	516	5/ 228	744	.50	.90	413
1997	516	72	588	.50	.90	327
					Average	518

1/ Horse AUMs are calculated using the determined population number multiplied by 12 months.

2/ Actual utilization at KA OW-1 prior to its installation in 1997 was determined by super-imposing the graphic location of KA OW-1 onto each use pattern map represented by each of the grazing years 1989, 1995 and 1996 and determining the midpoint of the grazing use category in which it fell.

3/ There were no horses counted within the Oak Wells Allotment during the 1988 census, thereby yielding no number with which to project an estimate for 1989.

4/ The 1995 total horse population estimate was calculated using the 1994 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

5/ The 1996 total horse population estimate was calculated using the 1994 actual horse census and applying a national standard of an 18% annual population increase and does not account for death loss.

Appropriate Management Level (AML) Calculations for Miller Flat Wild Horse Herd Management Area (by Allotment)

Appropriate Management Level (AML) Calculation based on Allotment Stocking Rate Caculations			
Allotment Name	Avg. Desired AUMs From Stocking Rate Calculations	AUMs Required for Allotment Active Preference	AUMs Remaining for Allocation to Wild Horses
Rabbit Spring	615	884	-269
Sheep Spring	833	409	424
Uvada	678	463	215
Oak Well	518	511	7
Total	2,644	2,267	377
377 AUMs / 12 = 31 horses yearlong			

APPENDIX XI

Monthly Precipitation Data
for the
Caliente NOAA Weather Station
for years
1985-1997

Caliente NOAA Weather Station
Monthly Precipitation Data from 1985-1997

MONTH	YEAR 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	30 Year Average (1961-1990)
January	0.83	0.35	1.28	M 0.00	0.45	1.30	0.59	M 1.41	M 3.47	0.30	1.31	0.62	1.40	0.80
February	0.35	0.50	1.43	M 0.65	0.82	0.91	0.25	1.25	M 3.15	0.69	0.36	0.78	0.28	0.84
March	M 0.48	1.20	1.55	0.05	0.65	0.84	1.30	4.59	1.28	1.01	2.28	0.64	T	1.15
April	0.44	0.99	0.52	2.11	0.10	1.05	0.00	0.22	0.25	1.06	0.73	0.14	0.45	0.81
May	0.29	0.47	1.15	0.04	0.67	0.45	1.13	0.87	0.07	0.81	1.52	0.59	0.20	0.64
June	0.25	0.16	0.09	0.41	0.41	0.32	0.44	0.07	1.11	0.07	0.92	0.00	0.02	0.27
July	0.92	0.98	0.28	0.41	0.32	0.20	0.33	0.30	0.03	0.03	(T) 0.00	0.70	0.51	0.97
August	0.00	1.58	1.36	0.72	1.28	0.60	0.72	0.20	1.13	0.41	0.61	0.02	0.11	1.09
September	1.54	1.29	0.10	0.69	0.08	2.02	0.10	0.40	0.00	0.59	0.07	0.25	3.12	0.85
October	0.73	0.05	0.82	0.04	0.32	0.01	0.71	1.57	0.49	0.77	0.00	0.86	0.17	0.77
November	1.52	M	3.38	0.63	0.10	0.87	0.83	0.00	0.64	2.27	(T) 0.00	1.24	0.85	0.80
December	0.54	0.37	M 0.12	0.47	0.00	0.36	M 1.09	1.12	0.21	0.99	.18	0.81	0.19	0.58
TOTAL	7.89 M	* M	12.08 M	6.22 M	5.2	8.93	7.49 M	12 M	11.83 M	9	7.98	6.65	7.3	9.57

M - M with value; insufficient or partial data. M is appended to average and/or total values computed with 1-9 daily values missing during a particular month.
M - Appears alone if 10 or more daily values are missing during a particular month.
* - Annual total could not be computed, because 10 or more daily values were missing during the month of November. However, totaling up the remaining 11 months yielded a total of 7.94 inches.

APPENDIX XII

Glossary

GLOSSARY

The following definitions are taken from Title 43 of the Code of Federal Regulations (Revised as of October 1, 1996), Subchapter D - Range Management, Subpart 4100-Grazing Administration-Exclusive of Alaska; General, Sec. 4100.0-5 Definitions.

The "Act" refers to the Taylor Grazing Act of June 28, 1934, as amended (43 U.S.C. 315, 315a-315r).

"Active use" means the current authorized use, including livestock grazing and conservation use. Active use may constitute a portion, or all, of permitted use. Active use does not include temporary nonuse or suspended use of forage within all or a portion of an allotment.

"Activity plan" means a plan for managing a resource use or value to achieve specific objectives. For example, an allotment management plan is an activity plan for managing livestock grazing use to improve or maintain rangeland conditions.

"Actual use" means where, how many, what kind or class of livestock, and how long livestock graze on an allotment, or on a portion or pasture of an allotment.

"Actual use report" means a report of the actual livestock grazing use submitted by the permittee or lessee.

"Affiliate" means an entity or person that controls, is controlled by, or is under common control with, an applicant, permittee or lessee. The term ***"control"*** means having any relationship which gives an entity or person authority directly or indirectly to determine the manner in which the an applicant, permittee or lessee conducts grazing operations.

"Allotment" means an area of land designated and managed for grazing of livestock.

"Allotment management plan (AMP)" means a documented program developed as an activity plan, consistent with the definition at 43 U.S.C. 1702(k), that focuses on, and contains the necessary instructions for, the management of livestock grazing on specified public lands to meet resource condition, sustained yield, multiple use, economic and other objectives.

"Animal unit month (AUM)" means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of 1 month.

"Annual rangelands" means those designated areas in which livestock forage production is primarily attributable to annual plants and varies greatly from year to year.

"Authorized officer" means any person authorized by the Secretary to administer regulations in this part.

"Base property" means: (1) Land that has the capability to produce crops or forage that can

be used to support authorized livestock for a specified period of the year, or (2) water that is suitable for consumption by livestock and is available and accessible, to the authorized livestock when the public lands are used for livestock grazing.

"Cancelled or cancellation" means a permanent termination of a grazing permit or grazing lease and grazing preference, or free-use grazing permit or other grazing authorization, in whole or in part.

"Class of livestock" means ages and/or sex groups of a kind of livestock.

"Conservation use" means an activity, excluding livestock grazing, on all or a portion of an allotment for purposes of--

(1) Protecting the land and its resources from destruction or unnecessary injury;
(2) Improving rangeland conditions; or
(3) Enhancing resource values, uses, or functions.

"Consultation, cooperation, and coordination" means interaction for the purpose of obtaining advice, or exchanging opinions on issues, plans, or management actions.

"Control" means being responsible for and providing care and management of base property and/or livestock.

"District" means the specific area of public lands administered by a District Manager.

"Ephemeral rangelands" means areas of the Hot Desert Biome (Region) that do not consistently produce enough forage to sustain a livestock operation but may briefly produce unusual volumes of forage to accommodate livestock grazing.

"Grazing district" means the specific area within which the public lands are administered under section 3 of the Act. Public lands outside grazing district boundaries are administered under section 15 of the Act.

"Grazing fee year" means the year, used for billing purposes, which begins on March 1, of a given year and ends on the last day of February of the following year.

"Grazing lease" means a document authorizing use of the public lands outside an established grazing district. Grazing leases specify all authorized use including livestock grazing, suspended use, and conservation use. Leases specify the total number of AUMs apportioned, the area authorized for grazing use, or both.

"Grazing permit" means a document authorizing use of the public lands within an established grazing district. Grazing permits specify all authorized use including livestock grazing, suspended use, and conservation use. Permits specify the total number of AUMs apportioned, the area authorized for grazing use, or both.

"Grazing preference" or ***"preference"*** means a superior or priority position against others

for the purpose of receiving a grazing permit or lease. This priority is attached to base property owned or controlled by a permittee or lessee.

"Interested public" means an individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decisionmaking process for the management of livestock grazing on specific grazing allotments or has submitted written comments to the authorized officer regarding the management of livestock grazing on a specific allotment.

"Land use plan" means a resource management plan, developed under the provisions of 43 CFR part 1600, or management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 and establish management direction for resource uses of public lands.

"Livestock" or ***"kind of livestock"*** means species of domestic livestock -- cattle, sheep, horses, burros, and goats.

"Livestock Carrying Capacity" means the maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from)ear to year on the same area due to fluctuating forage production.

"Monitoring" means the periodic observation and orderly collection of data to evaluate:
(1) Effects of management actions; and
(2) Effectiveness of actions in meeting management objectives.

"Permitted use" means the forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease and is expressed in AUMs.

"Public lands" means any land and interest in land outside of Alaska owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, except lands held for the benefit of Indians.

"Range improvement" means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means.

"Rangeland studies" means any study methods accepted by the authorized officer for collecting data on actual use, utilization, climatic conditions, other special events, and trend to determine if management objectives are being met.

"Secretary" means the Secretary of the Interior or his authorized officer.

"Service area" means the area that can be properly grazed by livestock watering at a certain water.

"State Director" means the State Director, Bureau of Land Management, or his or her authorized representative.

"Supplemental feed" means a feed which supplements the forage available from the public lands and is provided to improve livestock nutrition or rangeland management.

"Suspension" means the temporary withholding from active use, through a decision issued by the authorized officer or by agreement, of part or all of the permitted use in a grazing permit or lease.

"Temporary nonuse" means the authorized withholding, on an annual basis, of all or a portion of permitted livestock use in response to a request of the permittee or lessee.

"Trend" means the direction of change over time, either toward or away from desired management objectives.

"Unauthorized leasing" and ***"subleasing"*** means --
(1) The lease or sublease of a Federal grazing permit or lease, associated with the lease or sublease of base property, to another party without a required transfer approved by the authorized officer;
(2) The lease or sublease of a Federal grazing permit or lease to another party without the assignment of the associated base property;
(3) Allowing another party, other than sons and daughters of the grazing permittee or lessee meeting the requirements of ° 4130.7(f), to graze on public lands livestock that are not owned or controlled by the permittee or lessee; or
(4) Allowing another party, other than sons and daughters of the grazing permittee or lessee meeting the requirements of ° 4130.7(f), to graze livestock on public lands under a pasturing agreement without the approval of the authorized officer.

"Utilization" means the percentage of forage that has been consumed by livestock, wild horses and burros, wildlife and insects during a specified period. The term is also used to refer to the pattern of such use.

KENNY C. GUINN
Governor

STATE OF NEVADA

CATHERINE BARCOMB
Administrator

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
COMMISSION FOR THE PRESERVATION OF WILD HORSES
123 W. Nye Lane, Room 230
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June 28, 1999

James M. Perkins
Renewable Resources
Bureau of Land Management
PO Box 237
Caliente, NV 89008

RE: Miller Flat Wild Horse Herd

Dear Mr. Perkins,

I realize these comments have exceeded the comment period but hope they still can be considered for input on the evaluation. The Commission embraces the Bureau's efforts to evaluate a herd management area to determine the appropriate management level. In our review of the draft evaluation we find that the Sheep Flat and Clover Creek Allotments must be included to complete your efforts for the Miller Flat Wild Horse Herd. In addition, we suggest you amend your evaluation to include all the allotments within the Little Mountain HMA. It would be more efficient to manage a complex or one real wild horse herd rather than to maintain the integrity of livestock allotments for administrative purposes.

It would be appropriate to include an environmental assessment to evaluate new rangeland monitoring data and wild horse population data and wild horse population data collected since the original land use plan. Dramatic reductions were implemented under adoption policies in 1990's, census data could be evaluated to predict herd viability and longevity.

Stocking level evaluations do not include the preferrred alternative of the original land use plan. To sustain historical or active use is arbitrary to rangeland monitoring data analysis.

Data suggests that rangeland suitability analysis would assist in determining an appropriate management level for Miller Flat. Water availability appears to be the limiting factor for a

majority of the present herd management area.

We are concerned with the arbitrary transplanting of wild horses within this herd management area or complex. It is our understanding that the Las Vegas District moved horses into this complex.

The immigration or introduction of elk into Lincoln County is an issue of land use planning. If forage is going to be absolutely allocated to elk, then it appears to be premature to issue a multiple use decision affecting wild horse numbers.

Presently, the federal fire policy encourages Districts to reduce wild fire suppression and introduce prescribed burning. It would appear appropriate to express your present fire plan into this evaluation. It is obvious that type conversions from pinion forest to seedings has increased elk and wild horse habitats in Lincoln County.

The Commission is pleased to see the District only consider adult wildhorses as animal unit months. After years of debate and contentions of plicies, the data portrayed in Table 3 are accurate and consistent with federal regulations and land use plan definitions.

Since most of the critical waters are privately owned or surrounded by private lands, it would appear that the owners are in control of the appropriate management level for the herd management area. Prior to any further investments in wild horse gathers or improvements, we encourage the District to reach formal agreements for an appropriate management level.

Option One for an appropriate management level of 30 wild horses was determined in Appendix X. The Commission is pleased to find that the District did not weight average use pattern mapping data as done in the past. After years of debated and confusion over the District's discretion of technical manuals and Resource Area policies, we support this practice. However, the allocation of forage to livestock based upon historical or permitted use is not acceptable. Arbitrary allocation of forage to elk further proposes uncertainty and lack of supportive rangeland data or rationale.

Option Two for an appropriate management level of 27 determined by the District's allocation of water. This practice is contrary to state water law. If wild horses are considered by the state as "wildlife", then they are allocated customary use of these waters. The Bureau of Land Management does not have this authority.

Option Three to "zero" out the herd management area is based upon the water dilema. It is our understanding that most of the waters are privately owned and the waters that are public are shared between horses and livestock but wild horses have limited access to private waters. It would appear that cooperative agreements should be established for shared waters based upon

livestock usage of the public waters. Studies have suggested that wild horses consume 10 gallons of water per day. Further documented studies have shown in severe areas that wild horses water every other day rather than daily to conserve on the energy necessary to travel between forage and water sources. To the other extreme, for biological reasons, livestock must consume 30 gallons per day for their systems to function.

In conclusion, as mentioned, this HMA is within traveling distance to we believe that this area should be combined with the evaluations for the Little Mountain, Deer Lodge Canyon, Clover Creek, and Clover Mountain HMA's. As noted in your document there is interaction between all of the above areas therefore it would be impossible to exclude horses from their historical area of use. We could not support the exclusion of horses from their historical area of use when other areas are contiguous to this area and migration would be impossible to stop. We can support either option 1 or 2, managing for those minimal number of 27 to 30 horses as their interaction with the other areas guarantees genetic diversity. We would recommend investigating cooperative agreements for water usage to insure that the minimal numbers of horses are assured the water necessary to survive under the multiple use concept.

We hope that these comments will be considered prior to the issuance of the proposed decision for this area and also coordinated with the evaluations for the other three HMA's. If you have any questions, please feel free to contact us.

Sincerely,

Cathy Barcomb

CATHERINE BARCOMB
Administrator