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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Elko Field Office
3900 East Idaho Street
Elko, Nevada 89801-4611
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~~Owyhee~~ Goshute HMA
Sheep Allotment complex Evaluation

In Reply Refer To:

4130/4400.4 (NV-012)

JUL 31 2000

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Dear Permittees:

On March 23, 1999, the interested public was informed that the Elko Field Office was beginning the process of evaluating the monitoring data for the Leppy Hills North and South Pastures of the UT/NV #1 Allotment, Lead Hills, White Horse, Sugarloaf, Ferber Flat, West White Horse and Boone Springs Allotments hereafter referred as the Sheep Allotment Complex. The Elko Field Office has completed an evaluation of monitoring data to determine whether changes in existing grazing management are necessary to ensure significant progress toward attainment of multiple use objectives and Standards for Rangeland Health.

I have enclosed a copy of the allotment evaluation for your review. Please provide any written comments presented as clearly and concisely as possible, by September 1, 2000.

Sincerely yours,

Kathy McKinstry, acting for

CLINTON R. OKE
Assistant Field Office Manager
Renewable Resources

Enclosures: as stated above

cc: Stephen Richins
Thousand Peaks Ranches, Inc.
Darrel Kippens and Sons
Nevada Division of Environmental Protection (NDEP)
Nevada Division of Wildlife (NDOW)
Nevada Commission for the Preservation of Wild Horses
Natural Resource Conservation Service (NRCS)
Nevada State Division of Agriculture
Nevada State Clearinghouse Dept. Of Administration
Board of County Commissioners Elko County
U.S. Fish and Wildlife Service
Friends of Nevada Wilderness
Wild Horse Organized Assistance
Resource Concepts, Inc.
First Nations Bank
U.S.D.A. Service Center
Farm Credit Service
Von L. Sorenson
Sierra Club
Fund for Animals
Colorado Wild Horse and Burro Coalition
HTT Resource Advisors
M. Jeanne Hermann
Ely Field Office, Bureau of Land Management

SHEEP ALLOTMENT COMPLEX EVALUATION

Prepared by: Renewable Resources Staff

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I. INTRODUCTION

Background Information

The Elko Field Office is conducting an evaluation of the eight allotments that make up a large portion of the Antelope Valley and Goshute Herd Management Areas (HMAs). The allotments to be evaluated are: Leppy Hills, UT/NV #1 (North and South pastures), Lead Hills, White Horse, West White Horse, Sugarloaf, Ferber Flat, and Boone Springs. The UT/NV #1 Allotment consists of three pastures: the North, South and Silver Island pastures. The Silver Island Pasture is part of the UT/NV #1 Allotment Management Plan (AMP), which was signed in 1972 and is located in Box Elder and Tooele Counties in Utah. In May 2000, the Elko Field Office returned administration of the Silver Island Pasture to the Salt Lake District of the Bureau of Land Management (BLM).

The Leppy Hills Allotment recently underwent two major land exchanges. In the Simplot Land Exchange the BLM acquired 14,889 acres and relinquished 16,626.4 acres. For more information on the Simplot Land Exchange, please review Environmental Assessment EA BLM/EK/PL/95/014, which is available upon request at the Elko Field Office.

The Big Springs Ranch (BSR) Land Exchange involved both the Leppy Hills Allotment and the North Pasture of the UT/NV #1 Allotment. In the BSR Land Exchange, the BLM acquired approximately 70,000 acres and relinquished approximately 7,000 acres south of Wendover, Nevada. For more information on the BSR Land Exchange, please review EA BLM/EK/PL/97/011, which is available upon request at the Elko Field Office.

In 1999 the Leppy Hills and White Horse Allotments were impacted by large wildfires. The Pilot Fire (Leppy Hills Allotment) burned approximately 3,000 acres. The Ferguson Fire (White Horse Allotment) burned approximately 1,700 acres.

Seven of the allotments being evaluated in this evaluation make up the east side of the Goshute Mountain Range and the east side of the Goshute HMA. The Boone Springs Allotment is completely contained within the Antelope Valley HMA. In accordance with the Wild Free-Roaming Horse and Burro Act (Public Law 92-195, as amended), the Elko Field Office determined that wild horses ranged within the Goshute Mountains and the Antelope Valley area at the time of the passage of the Act and thus the two herd areas and later the two HMAs were established. This allotment evaluation and subsequent multiple use decision will establish an appropriate management level (AML) for wild horses.

This evaluation will determine if the current grazing practices are consistent with the objectives of the Land Use Plans (LUP's) and the Standards for the Northeastern Great Basin Resource Advisory Council area. This Sheep Allotment Complex evaluation is a comprehensive assessment of existing monitoring data to determine the appropriate management levels (AML) for the Antelope Valley and Goshute HMAs and determine the effectiveness of livestock grazing management in meeting the multiple use objectives and standards for rangeland health. The allotment evaluation process will culminate in multiple use decisions that will set appropriate management levels (AML's) for the Antelope Valley

and Goshute HMAs and modify where necessary terms and conditions for the livestock grazing permits.

Although some fences exist within the Sheep Allotment Complex, wild horses within the Antelope Valley and Goshute HMAs are able to move from one grazing allotment to another; thus it was determined that the eight allotments will be evaluated through an ecosystem approach to improve rangeland health.

The Sheep Allotment evaluation covers the period from 1983 to 2000. Map 3 shows the two HMAs and grazing allotments. General information for each allotment is shown in Table 1.

Table 1. General Information for Allotments within the Sheep Allotment Complex Evaluation Area.

Allotment Name and Number	Selective Management Category	Acres of Public Land	
		Total Acres	Acres within HMA
Leppy Hills (4322)	Maintain (M)	65,551	37,555 (Goshute)
UT/NV #1 (4327)	Maintain (M)	116,594	53,483 (Goshute)
Lead Hills (4321)	Maintain (M)	80,603	44,924 (Goshute)
White Horse (4353)	Maintain (M)	61,571	18,689 (Goshute)
West White Horse (4352)	Maintain (M)	7,208	7,208 (Antelope Valley)
Boone Springs (4307)	Maintain (M)	78,936	78,936 (Antelope Valley)
Sugarloaf (4314)	Maintain (M)	23,170	23,170 (Antelope Valley)
Ferber Flat (4314)	Maintain (M)	20,433	20,433 (Antelope Valley)

II. INITIAL STOCKING LEVEL

A. Livestock Use

Table 2 shows the initial levels of livestock use by allotment and periods of use for the Sheep Allotment Complex. The total authorized use by livestock kind, identified in Table 2, for the Sheep Allotment Complex is 39,104 AUMs for sheep. Period of use, and percent federal range are also shown.

1. Livestock Management Strategies

An AMP was developed and signed for the UT/NV #1 Allotment in 1972. The AMP implemented a deferred rotation system for the North, South, and Silver Island pastures designed to improve salt desert shrub communities within the allotment. The North and South pastures are located in Nevada and the Silver Island pasture is located in Utah. In 1992, transfer applications for the UT/NV #1 Allotment were received at the Elko Field Office, which transferred the grazing privileges in the Silver Island and South Pastures from Darrel Kippens and Sons to Sherie R. Goring and the North Pasture from Darrel Kippens and Son to Stephen Richins. The allotment was not split at the time of these transfers. The UT/NV #1 Allotment has remained one allotment with common permittees; Goring having the Silver Island and South Pastures as a designated use area and Richins having the North Pasture as a designated use area.

The amount of grazing privileges transferred to each was based upon the respective pasture carrying capacities for each pasture as designated by the 1972 AMP.

The UT/NV #1 Allotment AMP outlined a deferred rotation grazing system in which one pasture in three would receive spring use (4/1 to 5/10) each year. The AMP further stated that winter use would be divided evenly between the pastures to be used. Spring use would be an average of 2,500 head from 4/1 to 5/10 (the UT/NV #1 AMP is available upon request at the Elko Field Office). The permits authorized as a result of the 1992 transfer of grazing privileges did not incorporate the 1972 UT/NV #1 AMP grazing system. Currently the Silver Island Pasture receives use to 5/10 annually, while the South Pasture receives use from 4/24-5/1 annually, and the North Pasture receives use to 4/30 annually.

In 1995, the Elko Field Office received a request from the permittees to cancel the AMP for the allotment. The permittees were informed that their request would be evaluated in the upcoming allotment evaluation.

The Sugarloaf and White Horse Allotments have grazing agreements which allow for deferment of salt desert shrub communities after April 1.

Table 2. Authorized Use, Historical Suspended Use (HSU), Voluntary Non Use (VNU), Periods of Use, Kind of Livestock, and Percent Federal Range.						
Allotment and Permittee	**Authorized Use (AUMs)**	**HSU**	**VNU**	**Period of Use**	**Kind of Livestock**	**% Fed Range**
Leppy Hills H&R Livestock	3,807[1]	867	0	11/16 to 4/30	sheep	100
UT/NV #1 Robert and Jon Child (North Pasture)	3,410[2]	643	976	11/10 to 4/30	sheep	100
Sherie R. Goring (South Pasture)	6,599	3,249	0	11/10 to 5/10	sheep	100
Lead Hills Jeffrey Roche	7,930	0	0	11/15 to 4/15	sheep	100
White Horse L.W. Pertersen, Inc.	7,500	0	0	11/15 to 4/15	sheep	100
West White Horse Sherie R. Goring	670	330	0	11/15 to 3/31	sheep	100
Boone Springs Dave Morris	3,244	0	0	11/15 to 3/31	sheep	100
Sugarloaf Charles and John Young	3,105	0	0	11/15 to 4/20	sheep	100
Ferber Flat Bingham Family	2,735	0	0	11/20 to 4/20	sheep	100
TOTAL	39,061	5,089	976			

[1] On January 28, 2000, the Elko Field office issued a decision closing a portion of the Leppy Hills Allotment that burned in the 1999 Pilot Fire. This resulted in 260 AUMs placed in suspension for the period of the closure.

[2] On June 15, 1999 the Elko Field Office issued a decision cancelling 61 AUMs in the North Pasture of the UT/NV #1 Allotment. The AUMs were cancelled as a result of the BSR Land Exchange.

B. Wild Horse Use

1. Herd Management Areas

Refer to Map 3 for the location of each allotment in relation to the Sheep Allotment Complex Evaluation Area, which includes the Antelope Valley HMA and the Goshute HMA.

2. Appropriate Management Level

The initial management level for wild horses, as specified in the Rangeland Program Summary (RPS), was to provide forage to sustain 648 AUMs for wild horse use (54 horses for 12 months) within the Sheep Allotment Complex. This was implemented by the Wells Record of Decision dated July 16, 1985. Under the preferred alternative of the Resource Management Plan (RMP), wild horses were to be managed at existing numbers (March 11, 1981) as a starting point for monitoring purposes.

In Nevada, the management levels identified in the RMPs are not considered AMLs, based upon an interpretation of Interior Board of Land Appeals (IBLA) Decisions 88-591, 638, 648, and 679, decided June 7, 1989. These IBLA decisions required that AMLs be established through the analysis and evaluation of monitoring data to determine a thriving natural ecological balance for wild horses and burros with all other resource uses as specified in the Act. Therefore, the objective for managing wild horses has been reworded as follows:

> "Manage for a wild horse herd size which will maintain a thriving ecological balance consistent with other multiple uses while remaining within the wild horse herd management area."

As the Wells Resource Area began collecting data to establish thriving natural ecological balances within the Herd Areas (HAs), it became apparent that an RMP Amendment was needed to establish HMAs, clarify boundaries and to set initial herd sizes. The Wells RMP Wild Horse Amendment became final on August 2, 1993, and established initial herd sizes for the Goshute, Maverick-Medicine, Antelope Valley and Spruce-Pequop HMAs at 160, 389, 240 and 82 wild horses respectively. The Amendment goes on to say that in the long-term, adjustments to herd size will be based on monitoring and grazing allotment evaluations. The AML for wild horses in the Sheep Allotment Complex will be determined through this allotment evaluation process.

3. Use Patterns within the Sheep Allotment Complex

Wild horses within the Goshute HMA are found throughout the mountain range during the summer months. Much of their use is concentrated around the springs on the east side of the range. Springs which receive heavy wild horse use include Sidehill, Rock, Rosebud, Morris Basin, Upper and Lower Morgan. Mud Spring, Felt and Sheep Camp springs receive light horse use.

Horses can also be found down on the valley bottoms during the summer especially after thunderstorms. The playa in Goshute Valley (Big Springs and Spruce Allotment) often holds water for a period of time after a rainfall and this draws the horses into the area. Less commonly horses are found on the flats and benches of the east side of the Goshute Range during the summer.

During the winter months, horses inhabiting the Goshute Mountains usually come off the mountain to the west and winter in the Big Springs and Spruce Allotments. Significant numbers of wild horses have not been found in the Sheep Allotment Complex during the winter months.

The Boone Springs Allotment is within the Antelope Valley HMA and horses are found there in substantial numbers throughout the year. In the other allotments making up the Antelope Valley HMA, horse use is very light to incidental (Ferber Flat, Sugarloaf, Utah-Nevada #1 South, White Horse and West White Horse). When horses are in this area, it is usually during the winter or early spring when there is water available in natural catchments.

Table 3. Number of Horses Counted in Each Allotment by Year.										
Allotment	**1985**	**1989**	**1990-91**	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**
Ferber Flat	0	12	0	0	0	0	0	n/d	0	n/d
Sugarloaf	0	0	0	0	1	0	0	n/d	0	n/d
UT/NV#1										
North	77	n/d	n/d	50	57	31	18	52	0	0
South	70	20	11	0	4	5	7	n/d	0	n/d
Boone Springs	22	261	100	117	123	82	101	n/d	95	n/d
White Horse	0	0	0	0	0	0	0	0	0	0
W. White Horse	0	0	0	0	0	0	0	n/d	0	0
Lead Hills	12	n/d	n/d	2	6	7	10	5	2	2
Leppy Hills	46	n/d	n/d	39	50	48	11	53	0	0
Total	226	293	111	208	240	173	147	107	97	2

[1] When several census flights occurred during one year, the results were averaged for this table.

C. WILDLIFE USE

1. Mule Deer

Table 4 portrays the existing and reasonable numbers by allotment within the Sheep Allotment Complex. Habitat use areas include year-long, winter and crucial winter ranges. See Map 5 for mule deer seasonal use areas.

Table 4. Sheep Allotment Complex, Reasonable and Existing Numbers of Mule Deer Specified in the Wells RMP Rangeland Program Summary (1986)

Allotment	Reasonable Numbers	Reasonable AUM's	Existing Numbers	Existing AUM's
Boone Springs	821	1665	445	595
Lead Hills	45	101	30	64
Leppy Hills	58	131	39	88
UT-NV#1 (North and South)	417	665	232	386
TOTAL	1,341	2,562	746	1,133

2. Pronghorn

As per the 1986 Rangeland Program Summary, existing pronghorn numbers are 55 (131 AUMs) and reasonable pronghorn numbers are 135 (324 AUMs). Existing and reasonable numbers were identified in the Wells RMP for the allotments shown in table 5, however, pronghorn may exist in suitable habitat in the Leppy Hills Allotment as well. Habitat use areas include pronghorn year-long, winter and crucial winter ranges within the Sheep Allotment Complex. See Map 6 for pronghorn seasonal use areas.

Table 5. Reasonable and Existing Numbers of Pronghorn Antelope for each Allotment as Specified in the Wells RMP Rangeland Program Summary (1986).				
Allotment	**Reasonable Numbers**	**Reasonable AUMs**	**Existing Numbers**	**Existing AUMs**
UT/NV #1 (North and South)	35	84	17	41
Lead Hills	30	72	15	36
White Horse	25	60	9	21
West White Horse	4	10	1	2
Boone Springs	28	67	6	14
Sugarloaf	6	14	3	7
Ferber Flat	7	17	4	10
Total	135	324	55	131

3. Elk

The Wells RMP did not identify elk habitat objectives or elk management areas within the Sheep Allotment Complex. In recent years, elk have pioneered into adjacent suitable habitats within the Wells Resource Area from the Pilot Peak herd area and from adjacent herd areas in Utah and Idaho. The Wells Resource Management Plan Approved Elk Amendment and Decision Record, dated 2/14/96, addressed the issue of pioneering elk by establishing target elk population levels for specific herd areas within the Wells Resource Area. The Sheep Allotment Complex is located within the "Spruce/Pequops" herd area for which a target elk population of 340 was approved. Elk releases are approved only for moderate-high potential habitats within the "Spruce/Pequops" herd area which are located on Spruce Mountain. The Sheep Allotment Complex is classified as low-moderate potential elk habitat. Because perennial water is the most limiting factor, elk use within the Sheep Allotment Complex has been minimal.

4. Bighorn Sheep

The Wells RMP identified the Goshute Mountains as potential bighorn sheep habitat which includes portions of two allotments within the Sheep Allotment Complex, Lead Hills and Whitehorse. Table 6 portrays reasonable and existing AUMs for these two allotments. Although potential big horn habitat exists, no reintroduction efforts have been pursued due to potential conflicts with domestic sheep operations.

Table 6. Reasonable and Existing AUMs of Big Horn Sheep for each Allotment as Specified in the Rangeland Program Summary of the Original Wells RMP.		
Allotment	**Reasonable AUMs**	**Existing AUMs**
Whitehorse	14	0
Lead Hills	25	0
Total	39	0

5. Sage Grouse

No data is available for existing or reasonable numbers. There is only one sage grouse strutting ground known to exist within or adjacent to allotments within the Sheep Allotment Complex (strutting ground located within Boone Springs Allotment). Field observations indicate that sage grouse are known to use portions of the Sheep Allotment Complex as winter habitat; However, specific information on wintering areas is limited.

6. Endangered, Threatened, Candidate and Sensitive Species

Several special status species have either been documented or are considered likely to be present within the Sheep Allotment Complex (Table 7). The bald eagle is listed as threatened or endangered by the U.S. Fish and Wildlife Service. While BLM has legal obligations to manage habitat for the benefit of listed species under the Endangered Species Act of 1973, it is also BLM policy to ensure its management actions conserve candidate and sensitive species and their habitats.

Table 7. Threatened, Endangered, Candidate and BLM State Sensitive Plant and Animal Species Identified for the Sheep Allotment Complex.		
COMMON NAME	**SCIENTIFIC NAME**	**LIKELIHOOD OF OCCURRENCE**
Endangered		
None		
Federal Threatened		
Bald Eagle	*Haliaeetus leucocephalus*	winter resident, spring-fall migrant
Nevada- BLM Sensitive		
Mammals		
Spotted bat	*Euderma maculatum*	Not Likely
Small-footed myotis	*Myotis ciliolabrum*	Likely

Table 7. Threatened, Endangered, Candidate and BLM State Sensitive Plant and Animal Species Identified for the Sheep Allotment Complex.		
COMMON NAME	**SCIENTIFIC NAME**	**LIKELIHOOD OF OCCURRENCE**
Long-eared myotis	*Myotis evotis*	Likely
Fringed myotis	*Myotis thysanodes*	Likely
Long-legged myotis	*Myotis volans*	Likely
Pale Townsend's big- eared bat	*Plecotus townsendii pallescens*	Likely
Pacific Townsend's big-eared bat	*Plecotus townsendii townsendii*	Likely
Birds		
Goshawk	*Accipiter gentilis*	Documented
Golden eagle	Aquila chrysaetos	Documented
Burrowing owl	*Speotyto cunicularia*	Documented
Ferruginous hawk	*Buteo regalis*	Documented
Swainson's hawk	*Buteo swainsoni*	Documented
Sage grouse	*Centrocercus urophasianus*	Documented
Plants		
None		

7. Other Wildlife

Numerous species of songbirds, raptors, mammals, amphibians, and reptiles inhabit the complex on a seasonal or year-long basis.

The Goshute Mountains are designated a "Globally Important Bird Area". Since 1979, volunteers and staff of Hawkwatch International have conducted an autumn census and banding of the largest concentration of migrating birds of prey (raptors) in the western U.S. along the crest of the Goshute Mountains. To date, over 254,000 raptors of 18 species have been observed and 39,000+ banded. The Goshute project implements several important congressional or Bureau-wide initiatives: Fish and Wildlife 2000 (especially Objective #5 in Goal #4 which states "maintain an awareness of the condition and trend of raptor resources on the public lands by participating in monitoring activities with other agencies and organizations"), Recreation 2000, Watchable Wildlife, Challenge Cost Share, and Volunteerism. The Goshute Project also fits the nationwide "Partners in Flight" initiative, since most raptor populations that use the Goshute flyway are neotropical migrants, spending the nonbreeding season in Mexico, and/or Central and South America. The Goshute Project has been designated a Watchable Wildlife site which receives over five hundred visitor-use days each fall by nature-oriented recreationists, educators, and students.

D. FORESTRY USE

The forest resources have been divided into two categories: 1) Upland Forest (not associated with surface water) and 2) Riparian Forest (associated with surface water, i.e. seeps, springs and streams).

1. Upland Forest

The Upland Forest is the dominant forest cover type within the allotments. The prevalent species within this type is the single leaf pinyon (pinus monophylla), Utah juniper (Juniperus osteosperma), curlleaf mountain mahogany (Cercocarpus ledifolius), white fir (Abies concolor), limber pine (Pinus flexilus), quaking aspen (Populus tremuloides), bristlecone pine (Pinus flexilus), and Engelmann spruce (Picea engelmannii).

The pinyon/juniper woodlands are currently managed for commercial and noncommercial sustained yield production of woodland products. This includes the harvest of Christmas trees, firewood, pinenuts, and posts, and wildlings (live transplants).

2. Riparian Forest

This forest type occupies areas of higher moisture content such as seeps, springs, and streams. The tree species known to exist within this type are quaking aspen (Populus tremuloides), cottonwood (Populus spp.), alder (Alnus spp.), chokecherry (Prunus spp.) and several varieties of willow (Salix spp.).

E. RIPARIAN HABITAT

1. Stream riparian habitat.

There are no perennial streams within the Sheep Allotment Complex. The snowmelt and summer thunderstorms provide the only seasonal surface runoff for this area. Precipitation averages 6-7 inches in this semi-arid area with 6-10 feet of snow possible in the mountains. Also, the higher elevation geology is mostly limestone which allows water to percolate into the ground easily.

2. Non-stream riparian habitat.

In general, the springs and seeps located in the Goshute Mountains are characterized by limited flows and narrow zones of dry and wet meadow vegetation. There are more springs at the higher elevations compared to the other allotments. Vegetation is predominately sedges, rushes, chokecherry, and Kentucky bluegrass. Several sites support quaking aspen groves and some willow.

F. NOXIOUS WEEDS

Elko-BLM conducted a survey in 1998 for invasive and non-native weed species in the complex. These species can replace native plant communities with an unproductive monoculture that severely depresses biological diversity and other values (including forage). Several noxious weeds were found during the survey. In the North Pasture of the UT/NV #1 Allotment, houndstongue (*Cynoglossum officinale*) was found at Spring Gulch spring and salt cedar (*Tamarix ramosissima*) was found along Alternate Highway 93. In the Lead Hills Allotment, canada thistle (*Cirsium arvense*) was found in the area and hoary cress (*Cardaria cardaria*) was found in the Ferguson Springs area. No invasive and non-native weeds were found in the remaining portions of the Sheep Allotment Complex.

G. WILDERNESS STUDY AREAS

The eastern slopes of the Bluebell and Goshute Peak Wilderness Study Areas (WSA's) are within the Leppy Hills, Utah-Nevada #1 North, Lead Hills, and White Horse Allotments. The Bureau's WSAs are managed under the *Interim Management Policy for Lands Under Wilderness Review, Update Document, H-8550-1, Rel. 8-67, 7/5/95* (IMP). The objective of the IMP is "to continue resource uses on lands under wilderness review in a manner that maintains the area's suitability for preservation as wilderness". The IMP remains in effect, regardless of whether the area is recommended as suitable or not suitable as wilderness, until Congress designates an area as wilderness or releases the area to multiple use management. The IMP allows the "continuation of grazing, ... in the same manner and degree in which these uses were being done on October 21, 1976, as long as they do not cause unnecessary or undue degradation of the lands."

Any proposed actions in WSAs will be evaluated according to the policies and procedures detailed in the IMP. The policies detailed in Instruction Memorandum (IM) No. NV-96-008, New, Permanent Livestock Developments in Wilderness Study Areas, and IM No. 97-169,

Alternatives to Fencing Riparian Zones within Wilderness Areas, will also be followed. If an environmental analysis finds that an action would enhance wilderness values, cause no surface disturbance, be substantially unnoticeable, and not require motorized access, the action may be approved. The cumulative effects of multiple actions or proposals must be evaluated (IM No. NV-89-313).

The Bluebell and Goshute Peak WSAs were evaluated in the Wells Final Wilderness Environmental Impact Statement (1987). The Bureau has recommended all of the Bluebell WSA as not suitable for wilderness. 61,004 acres of the Goshute Peak WSA have been recommended as suitable for wilderness while the remaining 8,766 acres are recommended as not suitable. No legislative action as been take on this recommendation. IMP management will continue until a Congressional decision has been made.

H. RECREATION

The Sheep Allotment Complex allotments are located within the Wells Extensive Recreation Management Area (ERMA). Wells ERMA management objectives are to provide a wide spectrum of dispersed recreation opportunities, to develop an information and interpretation program, and to provide legal access to public lands. The Wells RMP designated the former Wells Resource Area as "open" to vehicle use. Vehicle use in the WSAs is "limited" to those routes that were identified during the wilderness inventory.

The portions of the Leppy Hills, Utah-Nevada #1 (north pasture), Lead Hills, and White Horse Allotments outside the WSAs are used extensively for off-highway vehicle (OHV) motorized recreation. The Spring Gulch area currently receives the heaviest use. Competitive OHV events have occurred throughout the area since the late 1970s (map showing competitive routes). An effort is currently underway to identify competitive OHV routes and to more intensively manage this use. Outfitters and guides, primarily lion hunters, also use the Sheep Allotment Complex allotments during the fall and winter. The area also receives considerable use from mountain bikers; deer, antelope, and chukar hunters; bird watchers and researchers; firewood and Christmas tree cutters; pinenut gatherers; and others. Most of this use occurs within 30 miles of Wendover. Season of use varies widely with the type of recreation - lion hunting during the winter, big game and bird hunting during the fall, while the lower elevations are accessible for year-round recreation. The most heavily used areas include Morgan Basin, Ferguson Mountain, Ferguson Spring, and Blue Lakes. In addition to Wendover area residents, a significant portion of the recreation users are from the Salt Lake City, Utah, area.

I. FIRE AND FUELS MANAGEMENT

1. Fire Occurrence

The Sheep Allotment Complex has had a moderate number of wildland fires. In the period from 1980 to 1996 (for all fires) and 1997-1999 (for large fires only) there were 61 documented wildland fires. There is no easily accessible data for small fires from 1997 to 1999, but based on prior history, there were probably an additional 10 to15 wildland fires. Surprisingly, approximately 50 percent of the fires occurred in the low sage/desert shrub

community. The two WSAs in the complex, Goshute Peak and Bluebell accounted for 33 percent of the wildland fires. The remainder of the wildland fires were spread among the pinyon-juniper woodlands, cheatgrass areas and the urban interface surrounding the Pilot Valley exchange. Most of the wildland fires were small, averaging less than ½ acre; However, there were a large number of fires ranging from 300 to over 3,000 acres in the low sagebrush/desert shrub community (this type of vegetation is not normally associated with a high occurrence of fire). The probable explanation for this is that these areas have been invaded by cheatgrass, which has altered the fire regime in this vegetation type, leading to more frequent and larger acreage wildland fires. Normally, this vegetation type has low fire occurrence. The native plant spacing and fuel loadings are discontinuous and light, and the native vegetation developed with little if any adaptation to fire.

a. Fire Management Plan

Five different fire management polygons from the 1998 Elko Field Office Fire Management Plan occur within this allotment complex (Fire Management Polygon Appendix). These polygons include urban interface, low sagebrush/desert shrub, pinyon-juniper woodlands, cheatgrass areas, and WSA areas. The WSAs have a moderately complex fire suppression and prescribed fire/fuels management objectives and goals. The rest of the vegetation types have relatively simple objectives and goals.

1. Fire Suppression Objectives: Depending on the area fire suppression strategies range from full suppression with minimal acreage loss to areas that natural ignitions could be allowed to burn to meet management goals.

2. Prescribed Fire/Fuels Management Objectives: The goals and objectives range from no prescribed fire in the low sagebrush/desert shrub and cheatgrass to mixed conifer areas in the WSAs where prescribed fire is the primary tool available to meet management objectives (Fire Management Polygon Appendix).

J. AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

The area delineated as the Salt Lake ACEC in the Wells Land Use Plan (Wells RMP 1984), was identified as a historical peregrine falcon use area which supported a population of nesting falcons as late as 1960. The essential habitat, both in quality and quantity, are still present.

The area is significant because of the history of use and it is unique in that it is one of only five historical sites identified in Nevada. The site is distinctive in its proximity to suitable hunting territory.

The area encompassed the ACEC is located approximately 16 miles south of Wendover, NV. The site lies on the eastern fringe of a major migrating raptor migration route, the Goshute Mountain migration corridor. The topography of the area generally provides for an easterly aspect and faces the Great Salt Lake Basin and desert.

As per October 25, 1999, Federal Register, peregrine falcon is not longer listed as a threatened species, and in effect, is no longer listed.

III. SHEEP ALLOTMENT COMPLEX PROFILE

A. Description

The Sheep Allotment Complex Evaluation Area encompasses approximately 454,066 acres of public land within Elko County. The Complex area is located in the eastern and southeastern portion of the Elko District. The crest of the Goshute Mountains make up the western boundary and the eastern boundary is the Utah state line and the Kingsley Mountains. The southern boundary is the Elko/White Pine County line and the northern boundary is generally Interstate 80 and the Dolly Varden Mountains. Elevation extends from approximately 4,300 feet near Wendover, NV to approximately 9,610 feet on top of the Goshute Mountains.

Most of the allotments within the complex are not fenced. There are few developed waters within the complex.

B. Acreage

There are a total of 466,524 acres in the Sheep Allotment Complex. 454,066 are public acres, 12,458 are private acres. There is approximately 6,000 acres in the northeast portion of the complex that is controlled by the Department of Defense.

Table 8. Allotment Acreage by Public Land, Private Land and Total Acres			
Allotment	**Public Acres**	**Private Acres**	**Total**
Leppy Hills	65,551	7,444	72,995
UT/NV #1	116,594	4,023	120,617
Lead Hills	80,603	194	80,797
White Horse	61,571	0	61,571
West White Horse	7,208	0	7,208
Boone Springs	78,936	797	79,733
Sugarloaf	23,170	0	23,170
Ferber Flat	20,433	0	20,433
Total	**454,066**	**12,458**	**466,524**

C. Sheep Allotment Complex Objectives

The Wells RMP is a land use plan that provides BLM direction to manage its resources on a planning area basis. The land use plan provides guidance for making sound decisions for the variety of land uses within the planning area. Objectives for the Sheep Allotment Complex including RPS, allotment specific, wildlife, wild horse, and wilderness study area, ACEC and the standards for rangeland health are listed in the conclusions section of this evaluation (see pg 43).

D. Key Species Identification

Table 9. Key species for Livestock and Wild Horses within the Sheep Allotment Complex

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
ORHY	Indian ricegrass	*Oryzopsis hymenoides*
POSE	Sandberg bluegrass	*Poa secunda*
SIHY	bottlebrush squirreltail	*Sitanion histrix*
AGSP	bluebunch wheatgrass	*Agropyron spicatum*
STCO4	needle and thread	*Stipa comata*
STTH2	Thurber's needlegrass	*Stipa thurberiana*
EULA5	whitesage or winterfat	*Eurotia lanata*
ATNU2	Nuttal's Saltbush	*Atriplex nuttallii*
ATCO	shadscale	*Atriplex confertifilia*
ARARN	black sagebrush	*Artemisia arbuscula nova*
ARSP5	bud sagebrush	*Artemisia spinescens*
KOAM	green molly kochia	*Kochia americana*

IV. MANAGEMENT EVALUATION

A. Purpose

The purpose of this evaluation is to determine whether or not present grazing management is achieving or effectively moving towards achievement of the multiple use objectives established for the Sheep Allotment Complex and the standards for rangeland health. This evaluation includes technical recommendations proposing either changes in management when needed to achieve the multiple use objectives (including recommendations on proper stocking rates), or a recommendation for no change.

B. Summary of Studies Data

Rangeland monitoring studies were conducted during the evaluation period to monitor livestock, wild horse, and wildlife use. Actual use, utilization, use pattern maps (UPM's), production, frequency, and ecological status were analyzed by key area. Additional studies consisted of wild horse census data, wild horse utilization data, lentic riparian proper

functioning condition assessments, and wildlife habitat studies. These monitoring studies were conducted in accordance with approved BLM technical references and the Nevada Rangeland Monitoring Handbook.

Key areas established in the complex were selected based on their location, use, or grazing value as a monitoring point for measuring change in soil and vegetation and the impacts of grazing. See Appendix 1 for a summary of the data referred to in this document.

1. Livestock Grazing Use

a. Actual Use

Actual use data was collected to determine the amount of AUM's used by livestock during each grazing year. The permittees are required to submit actual use reports on an annual basis. This information reflects the actual numbers of livestock and the period of use on each allotment. Table 10 outlines the average actual use in the complex during the evaluation period. Based on the information, actual use for the complex has averaged 45% of the total permitted or allowable use for the evaluation period.

Table 10. Sheep Allotment Complex, Average Actual Use by Livestock during the evaluation period.

Allotment	Average Actual Use (AUMs)	Permitted Use (AUMs)
Leppy Hills	2,257	3,807
UT/NV #1- North Pasture	2,115	3,471
UT/NV #1- South Pasture	1,690	6,599
Lead Hills	3,314	7,930
White Horse	2,154	7,500
Sugar Loaf	1,979	3,105
Ferber Flat	1,498	2,735
West White Horse	564	670
Boone Springs	2,002	3,244
Complex Average	**17,573**	**39,043**

b. Key Area Utilization

Utilization data has been recorded at the established key areas in the Sheep Allotment Complex since 1986. Refer to the key area studies summary in Appendix 1 for utilization results.

c. Use Pattern Maps

Use pattern maps have been prepared on the Sheep Allotment Complex that indicate the degree and pattern of use on key forage species by all grazing animals on the pasture or allotment. The percent of each allotment mapped in each use category by year can be found in Appendix 1.

Use pattern mapping data for the complex shows that the heaviest use has historically occurred near water sources (such as troughs and wells). Significant use has also occurred on white sage and black sage flats. Many areas in the complex are not suitable for livestock grazing due to topography or lack of water and have shown slight to no use.

d. Long Term Trend/Ecological Status

Frequency studies have been conducted on the Sheep Allotment Complex since 1986 to determine long term trend. Ecological status data has been collected since 1986. Frequency measures the change in the presence or absence of a plant species in the community over time. Ecological status refers to the condition of a plant community in relation to its potential. The following tables illustrate the long term trend and ecological status for each key area within the complex.

Table 11. Key Area Ecological Status and Long Term Trend Results for the Leppy Hills Allotment.

Allotment	Key Area	Key Species	Percent Frequency		Ecological Status (percent of PNC*)		Trend
			1988	1999	1988	1999	
Leppy Hills	KA-1007	ORHY	33.0	**5.0**	76%	45%	downward
		EULA5	39.5	**23.0**			
		ATCO	23.5	26.5			
	KA-1008	ORHY	64.5	**45.5**	34%	52%	stable
		ARARN	33.0	**24.0**			

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 12. Key Area Ecological Status and Long Term Trend Results for the UT/NV #1 Allotment.

Allotment	Key Area	Key Species (frame)	Percent Frequency				Ecological Status (percent of PNC*)				Trend
			1986	1989	1993	1997	1986	1989	1993	1997	
UT/NV #1	KA 1000 South	ORHY	58.5	51.5	57.5	58.5	54	49	51	75	upward
		ARARN (10)	N/D	26.0	32.5	35.5					
		ARARN (30)	66.5	82.0	88.0	**83.5**					
		ATCO	11.0	9.0	**6.5**	**4.5**					
	KA 1001 North	ORHY	74.5	70.0	**65.0**	N/D	52	49	47	N/D	stable to downward
		ARARN (10)	N/D	25.0	25.5	N/D					
		ARARN (30)	83.0	77.0	81.5	N/D					
		ATCO	40.5	40.5	**22.5**	N/D					

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 13. Key Area Ecological Status and Long Term Trend Results for the Lead Hills Allotment.

Allotment	Key Area	Key Species (frame)	Percent Frequency		Ecological Status (percent of PNC*)		Trend
			1988	1999	1988	1999	
Lead Hills	KA-1013	ORHY	23.0	22.5	36%	55%	stable
		ARARN	50.5	**35.5**			
	KA-1014	ORHY (10)	18.0	13.0	47%	10%*	downward
		ORHY (30)	75.5	**54.5**			
		EULA5	45.0	**29.5**			
		ATCO	61.0	**48.5**			
		ARSP5	34.0	38.0			
	* Reflective in substantial increase in cheatgrass production.						

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 14. Key Area Ecological Status and Long Term Trend Results for the White Horse Allotment.

Allotment	Key Area	Key Species (frame)	Percent Frequency				Ecological Status (percent of PNC*)				Trend
			1987	1990	1992	1997	1987	1990	1992	1997	
White Horse	KA 1003	ORHY	21.5	19.5	17.5	**30.5**	60%	53%	56%	59%	stable
		ARARN (10)	35.0	22.5	21.5	**33.0**					
		ARARN (30)	56.5	54.5	67.5	76.5					
		ATCO	16.0	15.5	11.5	13.0					
	KA 1004	ORHY (10)	9.5	15.5	16.0	**17.5**	45%	27%	59%	29%	downward
		ORHY (30)	73.5	52.0	60.5	**84.0**					
		EULA5	36.5	28.0	9.5	**10.0**					
		ATCO	45.0	32.0	33.0	**47.5**					

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 15. Key Area Ecological Status and Long Term Trend Results for the Sugarloaf Allotment.

Allotment	Key Area	Key Species (frame)	Percent Frequency				Ecological Status (percent of PNC*)				Trend
			1987	1990	1993	1997	1987	1990	1993	1997	
Sugarloaf	KA 1005	ORHY	29.5	24.5	29.0	27.0	47%	43%	23%	71%	stable to upward
		ARARN	63.5	48.0	54.5	**78.5**					
	KA 1006	ORHY	25.0	24.0	29.5	29.5	66%	75%	61%	54%	stable to downward
		EULA5	58.0	44.0	51.0	**43.0**					
		ATCO	72.5	66.0	68.5	**78.5**					

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 16. Key Area Ecological Status and Long Term Trend Results for the Ferber Flat Allotment.

Allotment	Key Area	Key Species and frame size	Percent Frequency			Ecological Status (percent of PNC*)			Trend
			1989	1993	1997	1989	1993	1997	
Ferber Flat	FF-01	ORHY (10)	23.0	20.5	N/D	35%	62%	44%	stable to downward
		ORHY (30)	77.5	81.0	78.0				
		ARARN (10)	18.5	22.0	15.5				
		ARARN (30)	80.0	74.5	80.0				

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 17. Key Area Ecological Status and Long Term Trend Results for the West White Horse Allotment.

Allotment	Key Area	Key Species (frame)	Percent Frequency			Ecological Status (percent of PNC*)			Trend
			1989	1993	1997	1989	1993	1997	
West White Horse	WW-01	ORHY	26.5	12.5	**14.5**	55%	52%	48%	downward
		EULA5	63.5	86.5	69.0				
	WW-02	ORHY	45.5	79.0	51.0	51%	48%	52%	stable
		STCO4	41.5	41.0	42.5				
		EULA5	43.0	59.5	**47.0**				
		ARARN	19.5	20.5	20.0				

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

Table 18. Key Area Ecological Status and Long Term Trend Results for the Boone Springs Allotment

Allotment	Key Area	Key Species (frame)	Percent Frequency			Ecological Status (percent of PNC*)			Trend
			1989	1994	1997	1989	1994	1997	
Boone Springs	BO-01	ORHY	no frequency read			49%	70%	68%	stable
		ARARN	no frequency read						
	BO-02	ORHY	24.5	25.5	**63.0**	70%	80%	76%	stable to downward
		EULA5	65.5	97.5	**77.0**				
	BO-03	ORHY	22.5	33.0	32.0	47%	72%	56%	stable to downward
		ARARN	36.5	43.5	**46.5**				

Bolded values indicate statistical significance at the 90% confidence level.

* 0-25 - early seal
26-50 - mid seral
51-75 - late seral
76-100 - Potential Natural Community (PNC)

e. Weight-Estimate Production Data

Weight-estimate studies have been conducted on the Sheep Allotment Complex to determine production on key areas in relation to their site potential. Refer to the studies summary in Appendix 1 for production data by key area.

f. Ecological Site Inventory

Ecological Site Inventory was conducted in the Sheep Allotment Complex between 1991 and 1994. See Appendix 1 for a summary of the ecological status inventory (ESI) by allotment completed during the evaluation period.

g. Utilization Based Adjustments

Actual use and key area utilization data were compared to the desired utilization level for each allotment. The formula used was taken from Rangeland Monitoring: Analysis, Interpretation, and Evaluation (TR 4400-7).

$$\frac{\text{Actual Use (AUMs)} \times \text{Desired Utilization}}{\text{Measured Utilization}} = \text{Estimated Carrying Capacity}$$

Carrying capacity for each allotment in the Sheep Allotment Complex is summarized in Technical Recommendation A in Section VI of this evaluation.

h. Vegetative Cover

Point cover data was collected key areas in the Leppy Hills, North and South Pastures of the UT/NV #1 Allotment, Lead Hills, White Horse, Sugarloaf, Ferber Flat, West White Horse and Boone Springs Allotments. A summary of the cover studies conducted in 1999-2000 is presented in the following table.

Table 19. Summary of Cover Data

ALLOTMENT Key Area(s)	Total Vegetative Cover	BARE GROUND	LITTER	ROCK
Leppy Hills Allotment				
1007	44	15	31	10
1008	54	8	26	12
Utah/Nevada #1 Allotment				
1000 (South)	37	30	13	20
1001 (North)	27	23	22	28
Lead Hills Allotment				
1013	48	7	28	17
1014	52	8	29	11
White Horse Allotment				
1003	47	15	6	32
1004	35	13	19	33
Sugarloaf Allotment				
1005	47	21	9	23
1006	47	24	12	17
Ferber Flat Allotment				
FF-01	41	18	16	25
West White Horse Allotment				
WW-01	45	41	14	0

Table 19. Summary of Cover Data				
ALLOTMENT Key Area(s)	Total Vegetative Cover	BARE GROUND	LITTER	ROCK
WW-02	41	7	31	21
Boone Springs Allotment				
BO-01	42	11	15	32
BO-02	49	18	33	0
BO-03	47	16	16	21

2. Wild Horse Use

a. Wild Horse Actual Use Data

Prior to the intensive seasonal flights, which began in 1992, the BLM conducted aerial censuses of the HMAs approximately once per year. The best available data for the years prior to 1992 on actual use by horses within the Sheep Allotment Complex is the total number of wild horses observed within the allotments on one flight multiplied by 12 months. Actual use data (i.e., number of AUMs of wild horse use) for the Sheep Allotment Complex from 1992 to 1999 is derived from the total number of horses (adults and foals, foals included in counts as per IBLA 92-241) observed in the allotments from 4/1 to 3/31using wild horse numbers from census flight to census flight. Wild horse numbers for 1996 are projected from the latest 1995 census. Table 20 displays the use in AUMs by wild horses.

Table 20. Sheep Allotment Complex, Average Estimated Use by Wild Horses		
Allotment	Average Estimated Use (AUMs)	Average Number of Wild Horses[1]
Leppy Hills	323	37
UT/NV #1- South Pasture	87	12
UT/NV #1- North Pasture	417	36
Lead Hills	42	5
White Horse	0	0
Sugar Loaf	0	0
Ferber Flat	6	1
West White Horse	0	0
Boone Springs	1,070	99
Sheep Allotment Complex Total	1,947	190

[1] Average number of wild horses in this table differs from Table 3 because calculating actual use made by wild horses is different from simply counting horses.

b. Wild Horse Utilization Data

Wild horse utilization data has been collected prior to the winter turnout of livestock in the Boone Springs Allotment. This data was collected to determine if wild horses were exceeding the 10% utilization level prior to the entry by livestock in combined winter use areas (Wells RMP Wild Horse Amendment). This data can be found in Appendix 3.

3. Mule Deer Habitat

The majority of the Goshute Mountain Range, much of which is within the Sheep Allotment Complex, consists of mule deer year-long habitat and is used by wintering and summering deer. One key area study has been established for deer within the Sheep Allotment Complex. Although other key area studies established for rangeland monitoring are within the perimeter of the deer use area, they were not used to evaluate mule deer habitat. The key areas were determined not to be representative of the deer use area due to their locations which were in the lower foothills while the deer use areas are at higher elevations.

a. Leppy Hills Allotment

The allotment contains roughly eight square miles of crucial winter mule deer habitat associated with the foothills in the northwest part of the allotment. It also contains approximately ten square miles of deer winter range in the west-central part of the allotment. The remaining deer use area on the allotment consists of about twenty-seven square miles of deer year-long range associated with higher elevations in the southwest portion of the allotment. No studies have been established in this allotment to evaluate mule deer habitat condition.

b. UT/NV #1- North Pasture

The western side (approximately one-third) of this allotment consists of mule deer year-long habitat associated with higher elevations of the Goshute Mountain Range. One habitat study (DS-4-T-01) has been established to evaluate condition and represents 100% of the deer use area in the allotment. Based upon 1989 data, mule deer year-long habitat conditions are excellent (Table 21).

Table 21. Sheep Allotment Complex, Mule Deer Year-long Habitat Condition

Key Area	Year	Habitat Condition*	Habitat Rating	% of Area**
DS-4-T-01***	1980 1989	Excellent Excellent	82 85	100

* Condition based on 10-50 = Poor; 51-60 = Fair; 61-80 = Good; 81-100 = Excellent
** % of Area = Percent of herd use area within the UT/NV #1 North Pasture Allotment represented by the key area.
*** Due to habitat re-delineation, this key area currently falls into Mule Deer year-long habitat.

Although the overall mule deer habitat condition is rated as excellent, the age class structure for serviceberry, an important forage plant for deer in the area, and overall forage diversity are the most limiting factors.

Utilization data has not been collected at this key area study. It is believed that deer use is too dispersed along the eastern foothills of the Goshute Mountains to measure significant utilization levels by deer and that sheep grazing occurs in lower elevation portions of the allotment away from this deer use area.

c. UT/NV #1- South Pasture

Approximately 90-95% of this allotment consists of mule deer year-long range. One range key area study (KA-1000) is located within the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

d. Lead Hills

The western side (approximately one-third) of this allotment consists of mule deer year-long habitat associated with higher elevations of the Goshute Mountain Range. No key area studies have been established in this allotment to evaluate and monitor mule deer habitat condition.

e. White Horse

Approximately 28 square miles located centrally within this allotment are designated as mule deer year-long habitat and are associated with higher elevations. One key area study (KA-1003) is located within the perimeter of the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

f. Sugarloaf

The western portion of this allotment contains approximately ten square miles of mule deer year-long habitat associated with higher elevations. One key area study (KA-1005) is located within the perimeter of the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

g. Ferber Flat

Approximately 14 square miles of mule deer year-long habitat exists within this allotment and are associated with higher elevations. One key area study (FF-01) is located within the perimeter of the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

h. West White Horse

Mule deer use in this allotment occurs on approximately three square miles of a west facing slope in the eastern portion of the allotment. One key area study (WW-02) is located within the perimeter of the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

i. Boone Springs

The central portion of this allotment contains approximately 62 square miles of mule deer year-long habitat located as an irregular shape associated with higher elevations. One key area study (BO-03) is located within the perimeter of the deer use area but has not been used to evaluate habitat condition because it does not represent the majority of habitat types within the deer use area. No other studies have been established in this allotment to evaluate mule deer habitat condition.

4. Pronghorn Habitat

a. Leppy Hills

Two key area studies (KA-1007 and KA-1008) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. The key area studies represent approximately 66 square miles of pronghorn year-long habitat that exists within this allotment. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. The prevalent limiting factors at both key areas are poor forage diversity and availability of water. Data from the key study areas show that habitat condition is fair with a generally stable trend. Available data indicate the percent composition of cheatgrass measured at the key area has risen sharply since 1988.

b. UT/NV #1- North Pasture

Approximately 84 square miles located centrally in this allotment are considered pronghorn year-long range. Some non-use areas exist to the east (salt flats) and west (higher elevations in the Goshute Mountains). One key area study representing 100% of the pronghorn use area within the allotment (KA-1000) has been established to monitor range conditions and is used evaluate pronghorn habitat conditions. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study area show that habitat condition is fair with a generally stable trend. Limiting factors at the key area are poor forage diversity and availability of water.

c. UT/NV #1- South Pasture

This entire allotment is considered pronghorn year-long range. One key area study representing 100% of the allotment (KA-1000) has been established to monitor range conditions and is used evaluate pronghorn habitat conditions. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study area show that habitat condition is fair with an upward trend. The prevalent limiting factors at the key area are poor forage diversity and availability of water. However, data indicate that forage diversity has improved somewhat with the percent composition of grass, forbs, and shrubs approaching desired proportions.

d. Lead Hills

Two key area studies (KA-1013 and KA-1014) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. The key area studies represent approximately 107 square miles of pronghorn year-long habitat that exists within this allotment. The western side of the allotment consists of higher elevations in the Goshute Mountains and receives no use by pronghorn. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study areas show that habitat condition is fair with a generally stable trend. Limiting factors at the key area are poor forage diversity and availability of water. Data indicate that forage diversity has improved somewhat with percent compositions between plant classes moving toward desired proportions.

However, data from 1999 indicate the area produced an unusually high amount of cheatgrass (three crops).

e. White Horse

Two key area studies (KA-1003 and KA-1004) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. The key area studies represent approximately 87 square miles of pronghorn year-long habitat that exists within this allotment. A small portion in the north-central part of the allotment consists of higher elevations in the Goshute Mountains and is not utilized by pronghorn. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study areas indicate that the current habitat condition ratings are fair. Primary limiting factors at both key areas are poor forage diversity and availability of water. Data from KA-1004 depicts an increase in percent composition of cheatgrass.

f. Sugarloaf

Two key area studies (KA-1005 and KA-1006) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. The key area studies represent approximately 34 square miles of pronghorn year-long habitat that exists within this allotment. A small portion on the western side of the allotment consists of higher elevations and receives little or no use by pronghorn. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study area show that habitat condition is fair with a slight upward trend. Primary limiting factors at both key areas are poor forage diversity and availability of water.

g. Ferber Flat

Approximately 27 square miles located within this allotment are considered pronghorn year-long range. A small portion on the western side of the allotment consists of higher elevations and receives little or no use by pronghorn. One key area study representing 100% of the pronghorn use area within the allotment (FF-01) has been established to monitor range conditions and is used evaluate pronghorn habitat conditions. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class. Data from the key study area show that habitat condition is fair with a generally static trend. Limiting factors at the key area study are poor forage diversity and availability of water. Data indicate that forage diversity has improved somewhat with grass, forb, and shrub composition beginning to approach desired proportions.

h. West White Horse

This allotment contains approximately nine square miles of pronghorn year-long habitat. Two key area studies (WW-01 and WW-02) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class.

Data from both key areas indicate habitat conditions are fair with an upward trend. Limiting factors at both key areas are poor forage diversity and availability of water. Data from both key areas indicate forage diversity has improved slightly.

i. Boone Springs.

The allotment contains approximately 71 square miles of pronghorn year-long habitat, approximately 34 square miles of pronghorn winter habitat, and approximately 6 square miles of pronghorn crucial winter habitat. Three key area studies (BO-01, BO-02 and BO-03) have been established in this allotment to monitor range conditions and are used to evaluate pronghorn habitat condition. There are no key area studies established to represent the pronghorn crucial winter habitat. Data from one key area (BO-01) representing pronghorn winter habitat, indicate fair habitat conditions with an upward trend. Data from BO-02 and BO-03 represent pronghorn year-long habitat. Data from both key study areas show that habitat conditions are poor. Limiting factors at both key areas are poor forage diversity and availability of water. Table 22 depicts pronghorn habitat conditions within the allotment. Table 23 portrays forage composition by vegetation class.

Table 22. Sheep Allotment Complex, Pronghorn Habitat Condition Summary					
Season of Use	**Allotment**	**Key Area**	**Habitat Condition***	**Habitat Rating**	**% of Area****
Pronghorn Antelope Winter	Boone Springs	BO-01	1989-Poor 1994-Fair 1997-Fair	21 48 51	100%
Pronghorn Antelope Year Long	Boone Springs	BO-02	1989-Poor 1994-Fair 1997-Poor	22 35 20	50%
		BO-03	1989-Poor 1994-Fair 1997-Poor	23 45 23	50%
	Ferber Flat	FF-01	1989-Poor 1993-Fair 1997-Fair	30 44 38	100%
	Lead Hills	KA-1013	1988-Fair 1999-Fair	51 46	50%
		KA-1014	1988-Fair 1999-Fair	54 50	50%
	Leppy Hills	KA-1007	1988-Fair 1999-Fair	47 45	50%
		KA-1008	1988-Fair 1999-Fair	36 41	50%
	Sugarloaf	KA-1005	1987-Poor 1990-Poor 1993-Poor 1997-Fair	24 18 27 46	50%
		KA-1006	1987-Fair 1990-Poor 1993-Fair 1997-Fair	40 29 41 43	50%

*Pronghorn: 5-30=Poor; 31-60=Fair; 61-105=Good
**% of Area=Percent of herd use area within the allotment represented by the key area.

Table 22. Sheep Allotment Complex, Pronghorn Habitat Condition Summary (Continued)					
Season of Use	**Allotment**	**Key Area**	**Habitat Condition**	**Habitat Rating***	**% of Area****
Pronghorn Antelope Year Long	Utah-Nevada #1 North	KA-1001	1986-Fair 1989-Fair 1993-Fair	43 34 39	100%
	Utah-Nevada #1 South	KA-1000	1986-Poor 1989-Poor 1993-Poor 1997-Fair	29 25 20 40	100%
	West Whitehorse	WW-01	1989-Poor 1993-Fair 1997-Fair	16 33 45	50%
		WW-02	1989-Fair 1993-Fair 1997-Fair	40 41 44	50%
	Whitehorse	KA-1003	1987-Fair 1990-Poor 1992-Fair 1997-Fair	43 28 31 40	50%
		KA-1004	1987-Fair 1990-Poor 1992-Fair 1997-Fair	45 23 33 48	50%

* 5-30=Poor; 31-60=Fair; 61-105=Good
**% of Area=Percent of herd use area within the allotment represented by the key area.

Table 23. Sheep Allotment Complex, Forage Composition on Pronghorn Range							
Key Area	Year	Grasses *		Forbs *		Shrubs *	
		% Comp	# Spp	% Comp	# Spp	% Comp	# Spp
Boone Springs BO-01	1989	4	4	0	4	96	2
	1994	23	4	28	6	49	2
	1997	44	4	17	7	39	2
Boone Springs BO-02	1989	0	1	0	0	100	1
	1994	11	2	13	4	76	1
	1997	6	3	0	2	94	1
Boone Springs BO-03	1989	2	3	0	1	98	4
	1994	26	3	14	5	60	2
	1997	10	4	1	4	89	4
Ferber Flat FF-01	1989	2	4	1	5	97	4
	1993	33	4	6	2	61	2
	1997	23	5	12	4	65	4
Lead Hills KA-1013	1988	15	3	18	4	67	7
	1999	14	4	10	8	76	6
Lead Hills KA-1014	1988	39	6	8	3	53	5
	1999	96	7	0	5	4	4
Leppy Hills KA-1007	1988	31	4	20	4	49	4
	1999	68	4	0	3	32	4
Leppy Hills KA-1008	1988	7	4	0	4	93	6
	1999	15	4	0	6	85	5
Sugarloaf KA-1005	1987	8	5	1	6	91	4
	1990	7	4	0	0	93	3
	1993	12	4	0	2	88	3
	1997	37	5	3	6	60	4
Sugarloaf KA-1006	1987	41	4	0	6	59	5
	1990	17	4	0	1	83	5
	1993	22	4	3	3	74	5
	1997	32	4	2	3	66	3

*A zero percent composition with a number of species can occur when there are trace amounts of one or more species but not enough to account for one percent.
Optimum forage diversity for pronghorn habitat is as follows:
40-60% grasses with 5-10 species
10-30% forbs with 20-40 species
5-20% shrubs with 5-10 species

Table 23. Sheep Allotment Complex, Forage Composition on Pronghorn Range (Continued)							
Key Area	Year	Grasses*		Forbs*		Shrubs*	
		% Comp	# Spp	% Comp	# Spp	% Comp	# Spp
Utah-Nevada #1 North KA-1001	1986 1989 1993	15 9 11	5 5 5	0 0 3	2 3 2	85 91 86	3 5 2
Utah-Nevada #1 South KA-1000	1986 1989 1993 1997	14 1 8 35	1 2 2 3	7 0 1 8	4 2 2 3	79 99 91 57	3 5 5 4
West Whitehorse WW-01	1989 1993 1997	2 12 55	2 2 3	0 2 0	3 3 0	98 86 45	1 1 1
West Whitehorse WW-02	1989 1993 1997	56 37 36	4 5 5	0 2 5	0 4 7	44 61 59	4 4 4
Whitehorse KA-1003	1987 1990 1992 1997	8 1 14 14	5 3 2 4	6 0 1 5	13 1 1 6	86 99 85 81	6 7 3 3
Whitehorse KA-1004	1987 1990 1992 1997	54 13 20 37	5 4 3 3	0 1 7 4	6 1 2 4	46 86 73 59	4 4 5 5

*A zero percent composition with a number of species can occur when there are trace amounts of one or more species but not enough to account for one percent.
Optimum forage diversity for pronghorn habitat is as follows:
40-60% grasses with 5-10 species
10-30% forbs with 20-40 species
5-20% shrubs with 5-10 species

5. Elk Habitat

No studies have been established to monitor elk habitat conditions within the Sheep Allotment Complex at this time.

6. Bighorn Habitat

No studies have been established to monitor bighorn habitat conditions within the Sheep Allotment Complex at this time.

7. Precipitation

Annual spring runoff and summer thunderstorms provide the only seasonal surface moisture for this area. Precipitation averages 5-10 inches in this semi-arid area with 6-10 feet of snow possible in the mountains. Also, the higher elevation geology is mostly limestone which allows water to percolate into the ground easily.

Table 24. Average precipitation at the Montello, Nevada Weather Station

Year	Total Precipitation (in.)
1987	9.83
1988	4.68
1989	7.94
1990	5.68
1991	6.25
1992	6.06
1993	8.68
1994	7.97
1995	9.95
1996	8.35
1997	10.54
Average Precipitation	7.76

Table 24A. Average precipitation at the Ibapah, Utah Weather Station	
Year	**Total Precipitation (in.)**
1987	13.55
1988	7.74
1989	10.60
1990	7.57
1991	11.08
1992	9.65
1993	9.45
1994	9.40
1995	10.76
1996	7.99
1997	12.27
Average Precipitation	10.19

8. Riparian/Stream Habitat

a. Stream riparian habitat.

There are no perennial streams within the Sheep Allotment Complex.

b. Non-stream riparian habitat.

Information on more than 26 springs and seeps has been collected for the allotments in the Sheep Allotment Complex area as a part of a district water resource inventory. Although most of the data collected was limited to flow rates and water chemistry, notes and photographs provide some insight into habitat conditions at these sites. Proper functioning condition (PFC)assessments were conducted on several representative springs and seeps within the complex in 1999 by the Elko Field Office.

Available information from the inventories and PFC assessments show many of the springs and seeps in these drier allotments to be heavily impacted by wild horses in the form of trampling and heavy utilization of riparian vegetation. Riparian plants common to most of the water sources are sedges, rushes, and watercress with occasional willow and quaking aspen.

Drier vegetation such as cheatgrass, thistle, dandelion, Kentucky bluegrass, burdock, and rabbitbrush are encroaching into the restricted riparian zones indicating a drying out and overuse of the wet environment.

See Appendix (4) for a PFC assessment summary, and Map (8) shows the PFC site locations.

Leppy Hills, Utah-Nevada #1 North, and Lead Hills Allotments. In general, the springs and seeps located in the Goshute Mountains are characterized by limited flows and narrow zones of dry and wet meadow vegetation. There are more springs at the higher elevations compared to the other allotments. Vegetation is predominately sedges, rushes, chokecherry, and Kentucky bluegrass. Several sites support quaking aspen groves and some willow.

Leppy Hills. Two of the four springs in the allotment were visited for PFC assessment. Tunnel Springs rated as functional at risk (no trend) having little riparian vegetation and flow. Rock Springs was considered nonfunctional as the spring source has been severely disturbed by human and wild horse impacts. Little water flows onto a bare, compacted bench although a grove of various woody vegetation has survived on the hillside above the disturbances.

Utah-Nevada #1 North Pasture. Two of the thirteen springs in this allotment were surveyed. Sidehill Spring is representative of the upper Morgan Basin waters with bare ground and weeds near the source then some sedges, rushes, and watercress farther down the hill as the water flows through transitional vegetation like wild rose. It was rated as functional at risk with a downward trend. Spring Gulch Spring was in very good condition and assessed at proper functioning condition. It appeared to have some wildlife use. The wetland area is within a narrow bedrock draw with chokecherry trees and sedges as well as old corral structures protecting the habitat. Houndstongue a noxious weed was found at the site.

Utah-Nevada #1 South Pasture. No springs exist within the South Pasture.

Lead Hills The three springs visited in this allotment were in fair condition with Felt Spring rating functional at risk (upward trend) with a head cut situation; Little Mud Spring (seep) rated PFC although there was little water to support much riparian growth; and Blue Lakes Pond on the Nevada-Utah state line which was assessed at PFC (no grazing use).

White Horse, West White Horse, Sugarloaf, and Ferber Flat Allotments. The water sources for these allotments are wells and reservoirs with no riparian habitat.

Boone Springs. Perkins Spring is one of two springs in this large allotment. It rated as functional at risk with a downward trend as the old exclosure fence is down and there is heavy trampling as well as over grazed riparian vegetation. Wild horses are the major

causal factor of this condition; sheep use this water only in the winter. The spring should recover quickly with repair of the fence due to the abundance of sedge and rush and other riparian forbes present. There is one spring located on private land and three wells located on public land in the Boone Springs allotment.

V. CONCLUSIONS

A. Sheep Allotment Complex Objectives

1. Resource Management Plan (RMP) Objectives

a. Provide for livestock grazing consistent with other resource uses.
b. Conserve and enhance wildlife habitat to the maximum extent possible.
c. Eliminate all fencing hazards within big game habitat; most of the fencing hazards in non-crucial big game habitat.
d. Eliminate all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other uses.
e. Prevent undue degradation of all riparian/stream habitat due to other uses.
f. Improve high and medium priority riparian/stream habitat to at least good condition.

Attainment or non-attainment of these objectives is included under conclusions for RPS and key area objectives. The Wells RMP Wild Horse Amendment modified the RMP objectives; these are presented in number four of this section.

2. General Land Use Plan (LUP) Objectives and Rangeland Program Summary (RPS) Objectives.

Leppy Hills Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has improved at KA-1008. Ecological status has decreased at KA-1007. Trend is stable to upward at KA-1008, while trend is downward at KA-1007.

b. Provide forage to sustain 3,746 AUMs for livestock grazing. (This objective has been modified to 3,807 AUMs by the Simplot and BSR Land Exchanges).

Not met. The active grazing preference for this allotment is 3,807 AUMs; however the average actual use in the allotment is 2,257 AUMs. Existing monitoring data indicates that 3,807 AUMs are not available for livestock grazing.

c. Periodically evaluate the monitoring data to reinstate 876 AUMs of suspended non-use when they become permanently available.

Not met. Since the RPS was issued there has been no evaluation of monitoring data until the allotment evaluation. This evaluation will determine if suspended non-use AUMs will become available.

d. Consider allotment boundary adjustment between the Pilot Allotment because of Interstate-80.

Met. This objective has been met through adjustment of the allotment boundaries by range line agreement dated 2/16/88 and construction of the Pilot-Stateline fence.

e. If necessary adjust season of use on white sage areas.

Met. Little use occurs on white sage areas after 4/01. The permittee has cooperated with the BLM in deferring use of salt desert shrub communities after 4/01 since 1991. No formal grazing system has been approved for the Leppy Hills Allotment.

f. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

g. Coordinate sheep trail use with Utah BLM.

Met. Communication with the Utah BLM has been necessary for obtaining information and orderly administration of the sheep trail in the Elko District.

h. Manage rangeland habitat to provide forage for wildlife.

131 (AUMs) Deer

Not evaluated. This allotment contains some crucial winter habitat, winter and year-long habitat in the Goshute Mountains. No crucial deer habitat or habitat condition studies exist for the Leppy Hills Allotment.

i. Facilitate big game movements by fence modifications (4 miles).

Not evaluated. No fences in the Leppy Hills Allotment have been identified for modification.

j. Improve 2 springs to good or better condition.

Not Met. No springs in the Leppy Hills Allotment have been improved.

k. Implement a grazing system.

Partially Met. The permittee has cooperated with the BLM in deferring use of salt desert shrub communities after 4/01 since 1991. No formal grazing system has been approved for the Leppy Hills Allotment.

Utah/Nevada #1 Allotment (North and South Pastures)

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has improved at KA-1000 (South Pasture). Ecological status has decreased at KA-1001 (North Pasture). Trend is stable to upward at KA-1000, while trend is downward at KA-1001.

b. Provide forage to sustain 13,766* AUMs for livestock grazing. (* includes 2,750 AUMs in the Silver Island Pasture in Utah).

Not met. The active grazing preference for the North and South Pastures is 11,016 AUMs; This has been further modified by the 1997 grazing agreement for the North pasture and the 1999 decision canceling 61 AUMs from the North Pasture as a result of the BSR Land Exchange. The average actual use in the allotment is 3,805 AUMs. Existing monitoring data indicates that 11,016 AUMs are not available for livestock grazing.

c. Periodically evaluate the monitoring data for the allotment to reinstate 4,448 AUMs of suspended non-use when they become permanently available.

Not met. Since the RPS was issued there has been no evaluation of monitoring data until the allotment evaluation. This evaluation will determine if suspended non-use AUMs will become available.

d. If necessary adjust season of use on white sage areas.

Partially met. The current season of use ends on 4/30. The North Pasture grazing agreement allows for deferment of salt dessert shrub communities after 4/01. The current season of use for the South Pasture ends 5/10. There is no deferment of white sage areas after 4/01. However most of the pasture is comprised of ARARN dominated sites.

e. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

f. Coordinate sheep trail use with Utah BLM.

Not evaluated.
The sheep trail in the North Pasture of the UT/NV #1 Allotment was incorporated into the North Pasture in 1997 (i.e. there is no more sheep trail in the North Pasture). This objective does not apply to the South Pasture of the UT/NV #1.

g. Evaluate AMP for incorporation of riparian issues in FY 87.

Not met. The AMP has not been evaluated for incorporation of riparian issues.

h. Manage rangeland habitat to provide forage for wildlife.

665 (AUMs) Deer
84 (AUMs) Antelope

Mule Deer
Met. The allotment consist of mule deer year-long habitat. One key area (DS-4-T-01) has been established (North Pasture UT/NV #1 Allotment) within mule deer year-long range. The data indicates habitat condition is excellent with static trend.

Antelope
Partially met. Available data from key area 1000 (South Pasture) for the antelope year-long habitat is fair with an upward trend. Limiting factors within the allotment are poor forage diversity and lack of water.

Available data from key area 1001 (North Pasture) for the antelope year-long habitat is fair with a static trend. Limiting factors within the allotment are poor forage diversity and lack of water

i. Facilitate big game movements by fence modifications (6.7 miles).

Not evaluated. There are no fences in the UT/NV #1 Allotment (North and South)

j. Improve 5 springs to good or better condition.

Partially met. Two springs in the North Pasture have been enhanced by spring exclosure fences. No other springs in the UT/NV #1 Allotment have been improved.

k. Maintain existing AMP ,monitor, and make adjustments accordingly.

Not met. In 1993 the permittee for the UT/NV #1 transferred the individual pastures of the allotment to different individuals who have requested that the AMP be vacated. The AMP grazing system has been changed as a result of the transfers.

Lead Hills Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has improved at KA-1013. Ecological status has decreased at KA-1014. The ecological status at KA-1014 is reflective of excessive BRTE production in 1999. Trend is stable to upward at KA-1013, while trend is downward at KA-1014.

b. Provide forage to sustain 7,930 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 7,930 AUMs; however the average actual use in the allotment is 3,314 AUMs. Existing monitoring data indicates that 7,930 AUMs are not available for livestock grazing.

c. If necessary, adjust season of use on white sage areas.

Partially met. Current season of use ends 4/15. Little use occurs on white sage areas after 4/01.

d. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

e. Coordinate sheep trail use with Utah BLM.

Met. Communication with the Utah BLM has been necessary for obtaining information and orderly administration of the sheep trail in the Elko District.

h. Manage rangeland habitat to provide forage for wildlife.

101(AUMs) Deer
72 (AUMs) Antelope
128 (AUMs) Bighorn Sheep

Mule Deer
Not evaluated. This allotment contains some year-long habitat in the Goshute Mountains. No crucial deer habitat or habitat condition studies exist for the Lead Hills Allotment.

Antelope
Partially met. Available data from key areas 1013 and 1014 for the antelope year-long habitat is fair with a static trend. Limiting factors within the allotment are poor forage diversity and lack of water.

Bighorn Sheep

Not evaluated. This allotment contains some habitat for Bighorn Sheep in the Goshute Mountains. No habitat or habitat condition studies exist for the Lead Hills Allotment for Bighorn Sheep habitat.

i. Reintroduce bighorn sheep in the Goshute Mountains.

Not met. There has been no bighorn sheep reintroduction in the Goshute Mountains.

j. Facilitate big game movements by fence modifications (4.7 miles).

Not evaluated. There are no fences in the Lead Hills Allotment.

k. Improve 5 springs to good or better condition.

Not met. No springs in the Lead Allotment have been improved.

l. Implement a grazing system.

Not met. No grazing system has been implemented for the Lead Hills Allotment.

White Horse Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status been maintained at KA-1003. Ecological status has decreased at KA-1004. The ecological status at KA-1004 is reflective of excessive BRTE production in 1999 and an abundance of CHVI8. Trend is stable to at KA-1003, while trend is downward at KA-1004.

b. Provide forage to sustain 7,500 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 7,500 AUMs; however the average actual use in the allotment is 2,154 AUMs. Existing monitoring data indicates that 7,500 AUMs are not available for livestock grazing.

c. If necessary adjust season of use on white sage areas.

Met. The current season of use ends on 4/15. The White Horse grazing agreement allows for deferment of white sage areas after 4/01.

d. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

e. Coordinate sheep trail use with Utah BLM.

Met. Communication with the Utah BLM has been necessary for obtaining necessary information and orderly administration of the sheep trail in the Elko District.

f. Manage rangeland habitat to provide forage for wildlife.

60 (AUMs) Antelope
14 (AUMs) Bighorn Sheep

Antelope
Partially met. Available data from key areas 1003 and 1004 for the antelope year-long habitat is fair with a static trend. Limiting factors within the allotment are poor forage diversity and lack of water.

Bighorn Sheep
Not evaluated. This allotment contains some habitat for Bighorn Sheep in the Goshute Mountains. No habitat condition studies exist for Bighorn Sheep in the White Horse Allotment.

g. Reintroduce bighorn sheep to the Goshute Mountains.

Not met. There has been no bighorn sheep reintroduction in the Goshute Mountains.

h. Facilitate big game movements by fence modifications (3.8 miles).

Not evaluated. No fences have been identified for modifications in the White Horse Allotment.

i. Implement a grazing system.

Met. The grazing system for the White Horse allotment was signed and implemented in 1987.

Sugarloaf Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has improved at KA-1005. Ecological status has decreased at KA-1006. Trend is stable to upward at KA-1005, while trend is stable to downward at KA-1006.

b. Provide forage to sustain 3,105 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 3,105 AUMs; however the average actual use in the allotment is 1,979 AUMs. Existing monitoring data indicates that 3,105 AUMs are not available for livestock grazing.

c. If necessary adjust season of use on white sage areas.

Met. The current season of use ends on 4/20. The Sugarloaf grazing agreement allows for deferment of white sage areas after 4/20.

d. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

e. Coordinate sheep trail use with Utah BLM.

Met. Communication with the Utah BLM has been necessary for obtaining necessary information and orderly administration of the sheep trail in the Elko District.

f. Manage rangeland habitat to provide forage for wildlife.

14 (AUMs) Antelope

Met. Available data from key areas 1005 and 1006 for the antelope year-long habitat is fair with a slight upward trend. Limiting factors within the allotment are poor forage diversity and lack of water.

g. Facilitate big game movements by fence modifications (1.3 miles).

Not evaluated. There are no fences in the Sugarloaf Allotment

j. Implement a grazing system.

Met. The Sugarloaf Grazing system was signed and implemented in 1986.

Ferber Flat Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has decreased at FF-01. Trend is stable to downward at FF-01.

b. Provide forage to sustain 2,735 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 2,735 AUMs; however the average actual use in the allotment is 2,154 AUMs. Existing monitoring data indicates that 2,735 AUMs are not available for livestock grazing.

c. If necessary adjust season of use on white sage areas.

Not Met. The season of use in the Ferber Flat Allotment ends on 4/20. There is no grazing agreement that allows for deferment of white sage areas after 4/01. However most of the allotment is comprised of ARARN dominated range sites.

d. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

e. Coordinate sheep trail use with Utah BLM.

Met. Communication with the Utah BLM has been necessary for obtaining information and orderly administration of the sheep trail in the Elko District.

f. Manage rangeland habitat to provide forage for wildlife.

17 (AUMs) Antelope

Met. Available data from key area FF-01 for the antelope year-long habitat is fair with a static trend. Limiting factors within the allotment are poor forage diversity and lack of water.

g. Facilitate big game movements by fence modifications (1.2 miles).

Not evaluated. There are no fences in the Ferber Flat Allotment

h. Implement a grazing system.

Not met. No grazing system has been implemented on the Ferber Flat Allotment.

West White Horse Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has decreased at WW-01. Ecological status has increased at WW-02. Trend is downward at WW-01, while trend is stable to downward at WW-02.

b. Provide forage to sustain 670 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 670 AUMs; however the average actual use in the allotment is 564 AUMs. Existing monitoring data indicates that 670 AUMs are not available for livestock grazing.

c. Periodically evaluate the monitoring data for the allotment to reinstate 330 AUMs of suspended non-use AUMs when they become permanently available.

Not met. Since the RPS was issued there has been no evaluation of monitoring data until the allotment evaluation. This evaluation will determine if suspended non-use AUMs will become available.

d. If necessary adjust season of use on white sage areas.

Met. Current livestock use on the allotment terminates in February, which is prior to the start of the growing season for white sage.

e. Maintain roads for access.

Met. Roads within the winter sheep allotments are currently maintained by the BLM on a priority-rotation basis.

f. Coordinate sheep trail use with Utah BLM.

Not evaluated. There is no sheep trail in or near the allotment.

g. Manage rangeland habitat to provide forage for wildlife.

10 (AUMs) Antelope

Met. Available data from key areas WW-01 and WW-02 for the antelope year-long habitat is fair with an upward trend. Limiting factors at the key areas are poor forage diversity and lack of water.

h. Facilitate big game movements by fence modifications (0.4 miles).

Not evaluated. No fences in the West White Horse Allotment have been identified for modification.

i. Implement a grazing system.

Not met. No grazing system has been implemented for the West White Horse Allotment.

Boone Springs Allotment

a. Manage livestock to maintain present ecological status and trend.

Partially met. Evaluation of existing data indicates that ecological status has remained stable at BO-01 and BO-02. Ecological status has decreased at BO-03. Trend is stable at BO-01 and BO-02, while trend is downward at BO-03.

b. Provide forage to sustain 3,199 AUMs for livestock grazing.

Not met. The active grazing preference for this allotment 3,244 AUMs; however the average actual use in the allotment is 2,002 AUMs. Existing monitoring data indicates that 3,244 AUMs are not available for livestock grazing.

c. Manage rangeland habitat to provide forage for wildlife.

1,065 (AUMs) Deer
67 (AUMs) Antelope

Mule Deer
Not evaluated. This allotment contains some year-long habitat within the Boone Springs Allotment. No habitat condition studies for deer exist for the Boone Springs Allotment.

Antelope
Partially met. Available data from key area BO-01 for the antelope winter habitat is fair with an upward trend. Data for antelope year-long habitat from key areas BO-02 and BO-03 show that habitat conditions are poor. Limiting factors at the key areas are poor forage diversity and lack of water.

d. Facilitate big game movements by fence modifications (4.6 miles).

Partially met. Evaluation of existing data indicates that some progress has been made toward this objective. One mile of the Kingsley fence has been modified for wild horses. No other fences have been identified for modification in the Boone Springs Allotment.

e. Improve 1 spring to good or better condition.

Not met. No springs in the Boone Springs Allotment have been improved.

3. Key Area Objectives

Table 25. Sheep Allotment Complex Key Area Utilization Objectives			
Key Area & Allotment	Key Species	Utilization Objective	Conclusion/Rationale
KA-1007 Leppy Hills	ORHY EULA5 ATCO	60% 50% 50%	**Not Met.** Utilization was exceeded on ORHY one year, while utilization was exceeded on EULA5 three years during the evaluation period. The objective has been achieved during the last four years.
KA-1008 Leppy Hills	ORHY ARARN	60% 50%	**Not Met.** Utilization on ARARN exceeded utilization objective six years during the evaluation period.
KA-1000 UT/NV #1 South	ORHY ARARN ATCO	60%* 50%* 50%*	**Partially met.** Utilization on ARARN exceeded utilization objective one year during the evaluation period.
KA-1001 UT/NV #1 North	ORHY ARARN ATCO	60%* 50%* 50%*	**Not met.** Utilization on ARARN exceeded utilization objective three years and utilization exceeded objective level on ATCO one year during the evaluation period.
KA-1013 Lead Hills	ORHY ARARN	60% 50%	**Not met.** Utilization on ORHY exceeded utilization objective two years and utilization exceeded objective on ARARN one year during the evaluation period. The objective has been met for the last nine years.
KA-1014 Lead Hills	ORHY ARSP5 ATCO EULA5	60% 50% 50% 50%	**Not met.** Utilization on EULA5 exceeded utilization objective three years, utilization exceeded objective on ARSP5 two years, and utilization exceeded objective level on ATCO one year during the evaluation period. The objective has been met for the last nine years.
KA-1003 White Horse	ORHY ARARN ATCO	60% 60% 60%	**Met.** Utilization objectives on key species were achieved each year during the evaluation period.
KA-1004 White Horse	ORHY EULA5 ATCO	60% 60% 60%	**Partially Met.** Utilization on EULA5 exceeded utilization objective one year and utilization exceeded objective on ATCO one year during the evaluation period. The objective has been met for the last ten years.
WW-01 West White Horse	ORHY EULA5	60% 50%	**Partially Met.** Utilization on EULA5 exceeded utilization objective six years and utilization exceeded objective level on ORHY one year during the evaluation period. The objective has been met on ORHY for the last ten years.

Table 25. Sheep Allotment Complex Key Area Utilization Objectives			
Key Area & Allotment	Key Species	Utilization Objective	Conclusion/Rationale
WW-02 West White Horse	ORHY STCO4 EULA5 ARARN	60% 60% 50% 50%	**Not met.** Utilization on ARARN exceeded utilization objective nine years, utilization exceeded objective level on EULA5 seven years during the evaluation period. The objective has been met on ORHY for the each year.
BO-01 Boone Springs	ORHY ARARN	60% 50%	**Met.** Utilization did not exceed objective levels during the evaluation period.
BO-02 Boone Springs	ORHY EULA5	60% 50%	**Not met.** Utilization on EULA5 exceeded utilization objective six years during the evaluation period. The objective has been met for ORHY.
BO-03 Boone Springs	ORHY ARARN	60% 50%	**Partially Met.** Utilization on ARARN exceeded utilization objective two years during the evaluation period. The objective has been met for ORHY.
KA-1005 Sugarloaf	ORHY ARARN	60%* 50%*	**Not met.** Utilization on ARARN exceeded utilization objective six years during the evaluation period. The objective has been met for ORHY.
KA-1006 Sugarloaf	ORHY EULA5 ATCO	60%* 50%* 50%*	**Not met.** Utilization on EULA5 exceeded utilization objective four years, utilization exceeded objective on ATCO one year, and utilization exceeded objective on ORHY one year during the evaluation period.
FF-01 Feber Flat	ORHY ARARN	60% 50%	**Not Met.** Utilization on ARARN exceeded utilization objective five years during the evaluation period. The objective has been met for ORHY.
* as outlined in the Nevada Rangeland Monitoring Handbook.			

Table 26. Sheep Allotment Complex Key Area Ecological Status & Trend Objectives		
Key Area	Objective	Conclusion/Rationale
KA-1000 UT/NV #1 South	1. Improve trend by 1991.	1. **Met.** Ecological status has improved from 54% (late seral) in 1986 to 75% (PNC) in 1997. Frequency of ARARN increased from 66.5% in 1986 to 83.5% in 1997.
	2. Improve from early to mid seral	2. **Met.** Ecological status has improved from 54% (late seral) in 1986 to 75% (PNC) in 1997.

Table 26. Sheep Allotment Complex Key Area Ecological Status & Trend Objectives		
Key Area	Objective	Conclusion/Rationale
KA-1001 UT/NV #1 North	1. Improve trend by 1991.	1. **Not Met.** Data indicates that overall trend at the key area is stable to downward. Ecological status has declined from 52% (late seral) in 1986 to 47% (mid-seral) in 1993. Frequency of ARARN remains static while ORHY and ATCO decreased during the evaluation period.
	2. Improve from early to mid seral	2. **Partially Met.** Ecological status has declined from 52% (late seral) in 1986 to 47% (mid-seral) in 1993.
KA-1003 White Horse	1. Improve trend by 1992.	1. **Not Met.** Data indicates that overall trend at the key area is stable. Ecological status has declined from 60% (late seral) in 1987 to 56% (late seral) in 1992, and increased to 59% (late seral) in 1997. Frequency of all key species has remained static during the evaluation period.
	2. Improve from early to mid seral.	2. **Met.** Ecological status remains in late seral (59%).
KA-1004 White Horse	1. Improve trend by 1992.	1. **Not Met.** Data indicates that overall trend at the key area is downward. Ecological status has declined from 45% (mid- seral) in 1987 to 29% (early mid-seral) in 1997. Although frequency of ORHY and ATCO have increased, 55% of the total production in 1997 was comprised of BRTE and CHVI8. The reduction in ecological status and trend is due to the increase of these species in the plant community.
	2. Improve from early to mid seral.	2. **Not met.** Ecological status has declined from 45% (mid-seral) in 1987 to 29% (early mid-seral) in 1997.
WW-01 West White Horse	Maintain late seral.	**Not met.** Ecological status declined from 55% (late seral) in 1989 to 48% (mid-seral) in 1997.
WW-02 West White Horse	Maintain late seral.	**Met.** Ecological status has increased from 51% (late seral) in 1989 to 52% (late seral) in 1997.
KA-1005 Sugarloaf	1. Improve trend by 1992.	**Met.** Ecological status has improved from 47% (mid-seral) in 1987 to 71% (PNC) in 1997. Frequency of ARARN increased from 63.5% in 1986 to 78.5% in 1997.

Table 26. Sheep Allotment Complex Key Area Ecological Status & Trend Objectives		
Key Area	Objective	Conclusion/Rationale
	2. Improve from early to mid seral.	**Met.** Ecological status has improved from 47% (mid-seral) in 1987 to 71% (PNC) in 1997. Frequency of ARARN increased from 63.5% in 1986 to 78.5% in 1997.
KA-1006 Sugarloaf	1. Improve trend by 1992.	**Not Met.** Data indicates that overall trend at the key area is stable to downward. Ecological status has declined from 66% (late seral) in 1987 to 54% (late seral) in 1997. Frequency of EULA5 declined from 58% in 1987 to 43% in 1987. Percent frequency on ORHY and ATCO increased during the evaluation period.
	2. Improve from early to mid seral.	**Met.** Data indicates that overall trend at the key area is stable to downward. Ecological status has declined from 66% (late seral) in 1987 to 54% (late seral) in 1997. Frequency of EULA5 declined from 58% in 1987 to 43% in 1987. Percent frequency on ORHY and ATCO increased during the evaluation period.

4. Wild Horse Management Objectives

A. Wells Resource Management Plan Wild Horse Amendment Objectives

1. To manage wild horses outside of checkerboard areas where land ownership patterns are not a problem for management.

Partially met. The Wells Resource Management Plan Wild Horse Amendment deleted the checkerboard areas from wild horse management. The Amendment identified approximately 18 miles of new fence to prevent the return of wild horses to checkerboard land patterns. Approximately three miles of fence have been built to date. Currently wild horses inhabit most of the checkerboard land patterns found in the Goshute herd area.

2. Manage wild horses within HMAs and to maintain a thriving, natural ecological balance consistent with other resource needs.

Partially met. Census data indicates that wild horses are being maintained within designated herd management area boundaries. Gathers have taken place in fall 1993, fall 1996, and winter 1998-1999 in the Goshute HMA and in winter 1992, fall 1994, and winter 1998-99 in the Antelope Valley HMA in an attempt to reach initial herd sizes as per the Wells RMP Wild Horse Amendment. However, the most recent census data indicates that the HMAs are well over initial herd size. Wild horses are currently found inhabiting areas outside the designated Goshute HMA in the checkerboard land patterns.

The conclusions of utilization and ecological status objectives for the complex indicate that desirable conditions associated with a thriving natural ecological balance are not being achieved throughout the complex. Utilization objectives for wild horses are not being achieved in the winter use area in the Boone Springs Allotment. Throughout the remainder of the complex, proper functioning condition at many springs and seeps is not being maintained due to heavy use by wild horses.

The establishment of an AML within the HMAs through this allotment evaluation process, should improve historic wild horse distribution problems and associated areas of over-utilization.

3. Combine portions of the wild horse herd areas where horses intermix between herd areas.

Met. Four HMAs have been delineated as per the Wells RMP Wild Horse Amendment and horses are managed in each HMA. The Cherry Creek Herd Area was combined into the Antelope Valley and Maverick-Medicine HMAs.

4. Delineate and manage wild horses in four HMAs as follows: Antelope Valley Herd Area (includes 44 percent of the former Cherry Creek herd area); Goshute Herd Area; Maverick-Medicine Herd Area (includes 56 percent of the former Cherry Creek herd area); and Spruce-Pequop Herd Area.

Met. Four HMAs have been delineated as per the Final Wells RMP Wild Horse Amendment and horses are managed in each HMA. Management currently consists of the reduction of horse numbers to initial herd size in each HMA and the maintenance of initial herd size until AML is established within the HMAs.

5. Remove wild horses from checkerboard areas, which include all of the Toano Herd Area and portions of the Goshute and Spruce-Pequop Herd Areas and manage them as wild horse free areas.

Partially met. Gathers have taken place as outlined above in the Toano, Goshute and Spruce-Pequop HAs to remove wild horses from the checkerboard areas. Recent census data indicates that horses have returned to these areas.

6. Remove sufficient wild horses to attain the initial herd size and maintain populations at a level which will maintain a thriving natural ecological balance consistent with other resource values.

Partially met. Evaluation of existing data indicates that some progress has been made toward the attainment of this objective. The Antelope Valley and Goshute HMAs were gathered down to near initial herd size in fall 1994, summer 1997, and winter 1998-1999. The most recent data indicates that the HMAs are over initial herd size.

This evaluation process will analyze monitoring data and make a technical recommendation to establish an AML. A thriving natural ecological balance should be attained within the Sheep Allotment Complex with the maintenance of an AML; however, AML may be adjusted if future monitoring data shows a need.

7. Develop eight water sources to improve wild horse distribution, modify approximately one mile of existing fence so as not to impede wild-free roaming behavior, and construct approximately eighteen miles of new fence to prevent the return of wild horses to checkerboard land patterns.

Partially met. This objective has three separate parts and can be broken down into: Water Developments, Fence Construction, and Fence Modification.

Water Developments:

Not Met. The Wells RMP Wild Horse Amendment identified eight water sources to be developed. While the Wells RMP Amendment did not specifically identify the location of these water sources, it did indicate that additional water was needed in the Antelope Valley HMA summer range and the Goshute summer range.

The development and protection of critical springs to provide reliable year-long water is a high priority, but will be restricted by the presence of the WSA's.

In conducting an inventory to either develop springs or construct other water sources for wild horses, an inventory of existing wire hazards around springs should be conducted. These wire hazards, especially old spring exclosures and wild horse traps, can cause extensive injuries and result in having to destroy animals that become entangled.

Fence Construction:

Not met. The approximately 15 miles of fence identified to prevent horses from inhabiting the checkerboard land patterns in the Goshute Mountains has not been completed.

Fence Modification:

Does not apply.

8. The 1971 Wild Horse Herd Areas will continue to be maintained.

Met. The areas designated as herd areas in 1971 will continue to keep their status.

9. In areas grazed in common by wild horses and livestock, manage for an average of 10% use on key forage species by wild horses prior to entry by livestock on winter range (pre-livestock use).

Not met. In the Boone Springs Allotment, pre-livestock turn out utilization has exceeded the 10% objective four of the five years monitoring data was collected.

Note: The Wells RPS identified allotment specific objectives for wild horses (i.e., the number of AUMs to be available to wild horses). These objectives were modified by the Wells RMP Wild Horse Amendment. The modified objectives are listed above.

B. Antelope Valley Herd Management Area Plan Objectives (applies to the Boone Springs, West White Horse, White Horse, Sugarloaf, Ferber Flat Allotments and Utah/Nevada #1 South Pasture)

1. Habitat Objectives

a. Vegetation

Manage for the most appropriate seral stages to provide for desired quantity, quality, and density of forage in order to meet the requirements of the wild horses and other foraging animals. In general, utilization levels will be maintained at approximately 45% on shrubs and 55% on grasses, in accordance with the recommended utilization levels in the Nevada Rangeland Monitoring Handbook (1984).

Partially Met. Evaluation of existing data indicates that some progress has been made towards the attainment of the ecological and utilization objectives. A detailed discussion of this objective can be found in range key area objectives conclusions. The key areas in the Boone Springs and South Pasture of the Utah/Nevada #1 Allotments represent combined livestock and wild horse use.

b. Distribution and Water Availability

Improve distribution and provide water year-long for wild horses throughout the HMA where possible.

Not Met. To date no waters have been developed to improve the distribution of horses.

2. Wild Horse Objectives

a. Multiple Use

The objective in the Antelope Valley HMA is to maintain a healthy, viable population of wild horses in a thriving natural ecological balance with all other resources and users.

Not Met. While the data shows that the Antelope Valley HMA currently supports a healthy, viable population of wild horses, numbers are well over the initial herd size as outlined in the

Wells RMP Wild Horse Amendment. This is not resulting in a thriving, natural, ecological balance with all other resources and users. When AML is established and achieved for each allotment within the Antelope Valley HMA, this objective will have been attained.

b. Appropriate Management Level (AML)

When the allotment evaluations are complete, total AML for the HMA will be determined. The number of horses will then be maintained within a range of ± 15% of AML. As per the Strategic Plan for Management of Wild Horses and Burros, removals will be scheduled so that each HMA is gathered once every three years. AML will be maintained using one or more of the following options: periodic removals with no selectivity, selective removals targeting specific age groups, or fertility control.

Partially Met. Evaluation of existing data indicates that some progress has been made toward attainment of this objective. AML is set through the evaluation process and to date, three allotments have been evaluated and AML established. Current Nevada policy is to set a range of AML with the high end of the range representing the maximum number of horses the habitat can support. The low end of the range represents the number horses that should remain after a gather in order to not exceed the maximum AML within a four-year gather cycle.

There are ten allotments partially or completely within the Antelope Valley HMA. By the end of FY2000, AML will be determined for all of the allotments in the HMA.

c. Free-Roaming Characteristics

The wild horses within the Antelope Valley HMA will be managed in a manner that maintains their wild free-roaming characteristics.

Met. Wild horses within the Antelope Valley HMA are managed in a manner that maintains their wild free-roaming characteristics.

5. Wilderness Objectives

1. Manage as wilderness those portions of the Wilderness Study Areas (WSAs) which are manageable as a wilderness area and for which wilderness values is considered the best use of the lands (Wells RMP objective).

2. Manage and protect those public lands which are under wilderness review, in such a manner so as not to impair their suitability for preservation as wilderness, until they are designated by Congress as wilderness, or until they are released from further wilderness consideration (IMP objective).

Partially Met. Evaluation of WSA surveillance records, IMP Proposed Action Notices, and the Goshute Raptor Project Management Plan indicates that progress is being made towards achieving these objectives. Uses that continue to affect the lands under wilderness review (the Bluebell and Goshute Peak WSAs) include firewood and Christmas tree cutting, OHV activities, the Goshute Raptor Research Project, illegal dumping and wild horses. Range activities that have affected the WSAs include spring exclosures and emergency feeding of sheep.

6. Recreation

1. Provide a wide range of recreation opportunities (Wells RMP objective).

Met. The area provides a wide range of recreation activities as described in section II above.

7. Area of Critical Environmental Concern

1. Protect and maintain the existing habitat in its present condition, to ensure the area's continued occasional use and future suitability to support the reestablishment of falcons, either by natural expansion of the peregrine population that may frequent the area or by artificial releases conducted in cooperation with the Peregrine Fund.

Met. Little or no livestock use has occurred in the ACEC during the evaluation period. Existing habitat within the ACEC has been maintained in its present condition.

8. Standards for Rangeland Health Developed for the Northeastern Great Basin Area of Nevada.

The attainment of these standards has been based on the analysis of available monitoring data within each allotment. Those areas not meeting the standard are identified in the following sections. All other areas not mentioned are currently meeting the standards.

Where the standard is not being met, significant progress and the causal factor for the non-attainment of the standard is discussed.

a. Standard 1. Upland Sites:

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

Leppy Hills Allotment
Some progress is being made toward attainment of this standard. The analysis of cover (refer to table 19) data indicate that sufficient ground cover and adequate vegetation is present to ensure proper soil infiltration and permeability rates. Utilization and ecological

status objectives have either not been met or partially met in this allotment. Utilization and ecological status data indicate that this standard is not being met, however, cover studies show that sufficient ground cover is present to at least meet the minimum criteria needed to meet this standard.

Utilization data indicates that livestock grazing is a causal factor in the non-attainment of this standard. Utilization of key forage plants exceeded objective levels during the evaluation period.

Utah/Nevada #1 Allotment

North Pasture
Some progress is being made toward attainment of this standard. The analysis of cover data indicate that sufficient ground cover and adequate vegetation is present to ensure proper soil infiltration and permeability rates. Utilization and ecological status objectives have either not been met or partially met in this allotment. Utilization and ecological status data indicate that this standard is not being met, however, cover studies show that sufficient ground cover is present to at least meet the minimum criteria needed to meet this standard.

Utilization data indicates that livestock grazing is a causal factor in the non-attainment of this standard. Utilization of key forage plants exceeded objective levels during the evaluation period.

South Pasture
Met. The analysis of cover, utilization and ecological status data indicates that sufficient ground cover and vegetation are present to ensure proper soil infiltration and permeability rates appropriate to this ecological site.

Lead Hills Allotment
Some progress is being made toward attainment of this standard. The analysis of cover data indicate that sufficient ground cover and adequate vegetation is present to ensure proper soil infiltration and permeability rates. Utilization and ecological status objectives have either not been met or partially met in this allotment. Utilization and ecological status data indicate that this standard is not being met, however, cover studies show that sufficient ground cover is present to at least meet the minimum criteria needed to meet this standard.

Although utilization objectives have not been met. They have been met for the last nine years. Data indicates that livestock grazing is not a causal factor in the non-attainment of this standard. Much of key area 1014 (Ferguson Flat) is dominated by cheatgrass (BRTE) causing the ecological status to decline.

White Horse Allotment
Some progress is being made toward attainment of this standard. The analysis of cover data indicate that sufficient ground cover and adequate vegetation is present to ensure proper soil infiltration and permeability rates. Utilization and ecological status objectives have either not been met or partially met in this allotment. Utilization and ecological status data indicate that this standard is not being met, however, cover studies show that sufficient ground cover is present to at least meet the minimum criteria needed to meet this standard.

Utilization data indicates that livestock grazing is not a causal factor in the non-attainment of this standard. Much of key area 1004 is dominated by rabbitbrush (CHVI8) and cheatgrass (BRTE) and has achieved a steady state.

Sugarloaf Allotment
Met. Data indicates that this standard is being met. Cover and ecological status shows that sufficient ground cover and vegetation are present to ensure proper soil infiltration and permeability rates appropriate to ecological sites within the allotment.

Ferber Flat Allotment
Met. Data indicates that this standard is being met. Cover and ecological status shows that sufficient ground cover and vegetation are present to ensure proper soil infiltration and permeability rates appropriate to ecological sites within the allotment.

West White Horse Allotment
Some progress is being made toward attainment of this standard. The analysis of cover data indicate that sufficient ground cover and adequate vegetation is present to ensure proper soil infiltration and permeability rates. Utilization and ecological status objectives have either not been met or partially met in this allotment. Utilization and ecological status data indicate that this standard is not being met, however, cover studies show that sufficient ground cover is present to at least meet the minimum criteria needed to meet this standard.

Utilization data indicates that livestock grazing is a causal factor of the non-attainment of this standard.

Boone Springs Allotment
Met. Data indicates that this standard is being met. Cover and ecological status shows that sufficient ground cover and vegetation are present to ensure proper soil infiltration and permeability rates appropriate to ecological sites within the allotment.

b. Standard 2. Riparian and Wetland Sites:

Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

The waters of the Sheep Allotment Complex meet state water quality criteria as unclassified waters. Ocular assessments made during routine monitoring of the allotments satisfied the minimum water quality standards applicable to all waters of the State of Nevada. The minimum standards can be found under the NRS 445A.121 "Standards Applicable to All Waters".

Leppy Hills Allotment

Not Met. It has been determined that this standard is not being met for the riparian areas (springs/seeps) in this allotment. Monitoring data shows two of these sites (Tunnel and Rock Springs) as nonfunctional or functioning-at-risk with a static trend. There are two other springs (Rosebud and West Morris Basin Springs) located in this allotment with similar topography and uses that were not surveyed.

Wild horses have been determined to be the causal factor in the non-attainment of this standard.

Utah-Nevada #1 Allotment

North Pasture
Some progress is being made toward attainment of this standard. It has been determined that this standard may not be met for several of the lentic riparian areas in the upper Morgan Basin area. A recent PFC assessment shows that one spring in the Morgan Basin area is functioning-at-risk with a downward trend which indicates that several of the springs may be in poor condition. Spring Gulch spring was assessed as being at PFC. There are fourteen other springs (of which two are enclosed by fences) in this allotment in similar topography and with the same uses that were not surveyed.

Wild horses have been determined to be the causal factor in the non-attainment of this standard.

South Pasture
N/A. This standard does not apply because there are no riparian areas within this pasture.

Lead Hills Allotment
Met. It has been determined that this standard has been met as one spring was assessed to be functioning at risk with an upward trend and another two springs have dried up. The standard is being met on a spring feed pond in a dispersed recreational area where no grazing exists and on a hillside seep which produces little water. This allotment only has four springs on public lands.

White Horse, West White Horse, Sugarloaf and Ferber Flat Allotments.

N/A. This standard does not apply because there are no riparian areas within these allotments.

Boone Springs Allotment
Not Met. It has been determined that this standard is not being met as Perkins Spring was assessed to be functioning at risk with a downward trend. This allotment only has one spring on public lands.

Wild horses have been determined to be a casual factor in the non-attainment of this standard.

c. Standard 3. Habitat:

Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover, and living space for animal species and maintain ecological processes. Habitat conditions meet life cycle requirements of threatened and endangered species.

Leppy Hills Allotment
Some progress is being made toward attainment of this standard. It has been determined that in the Standard #2 assessment that the springs in this allotment are functional at risk with downward trend. Riparian data indicates that site characteristics at the springs are not adequate to provide the minimum requirements for this standard. Ecological status, ESI and trend data indicate that this standard is being met at one of the two key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing and wild horse use are a causal factor of the non-attainment of this standard.

Utah/NV #1 Allotment

North Pasture
Some progress is being made toward attainment of this standard. It has been determined that in the Standard #2 assessment that the springs in this pasture are functional at risk with downward trend. Riparian data indicates that site characteristics at the springs are not adequate to provide the minimum requirements for this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing and wild horse use are a causal factor of the non-attainment of this standard.

South Pasture
Some progress is being made toward attainment of this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing is not a causal factor of the non-attainment of this standard.

Lead Hills Allotment
Some progress is being made toward attainment of this standard. It has been determined that in the Standard #2 assessment that the one spring in this allotment is rated at functional at risk with upward trend. Riparian data indicates that site characteristics at this spring are not adequate to provide the minimum requirements for this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing and wild horse use are a causal factor of the non-attainment of this standard.

White Horse Allotment
Some progress is being made toward attainment of this standard. Data indicates that this standard is not being met at key area 1004. Ecological status at this key area is in low mid-seral (29%). The plant community is dominated by rabbitbrush (CHVI8) and cheatgrass (BRTE). This standard is being met at key area 1003.

Utilization data indicates that livestock grazing is not a causal factor in the non-attainment of this standard. Much of key area 1004 is dominated by rabbitbrush (CHVI8) and cheatgrass (BRTE) and has achieved a steady state.

Sugarloaf Allotment
Some progress is being made toward attainment of this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing is a causal factor of the non-attainment of this standard.

Ferber Flat Allotment
Some progress is being made toward attainment of this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing is a causal factor of the non-attainment of this standard.

West White Horse Allotment
Some progress is being made toward attainment of this standard. Ecological status, ESI and trend data indicate that this standard is being met at the key areas, however utilization objectives have not been met for this allotment. Poor forage diversity is a limiting factor for antelope habitat, however the shrub component is satisfactory for sustaining use by antelope.

Utilization data indicates that livestock grazing is a causal factor of the non-attainment of this standard.

Boone Springs Allotment
Some progress is being made toward attainment of this standard. It has been determined that in the Standard #2 assessment that the springs in this allotment are functional at risk with downward trend. Riparian data indicates that site characteristics at Perkins Spring are not adequate to provide the minimum requirements for this standard. Ecological status and ecological site inventory indicate that this standard is being met in the uplands. Ecological status at the key areas is in late seral to PNC.

Utilization by livestock and wild horses in the allotment is a causal factor in the non-attainment of this standard.

d. Standard 4. Cultural Resources:

Land use plans will recognize cultural resources within the context of multiple use.

Based on evaluation of actions taken within the Sheep Allotment Complex, this standard has been met. All range improvements that cause surface disturbance, have been subject to cultural resources review and modification by BLM or contract archeologists, as required by standard operating procedure specified in the Wells RMP Record of Decision.

VI. Technical Recommendations

1. Establish the total number of AUMs of permitted use and appropriate management level for wild horses for the Sheep Allotment Complex as follows:

a. Leppy Hills Allotment

Incorporate the administrative sheep trail into the Leppy Hills Allotment.

Leppy Hills Allotment - Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)[2]**	**Livestock permitted use[1]**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
3,807	320	3,351	174	3,525

[1] Includes 268 AUMs from the administrative sheep trail and 450 AUMs in the Morris Basin Spring Use area.
[2] The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 15% of the Goshute herd used the Leppy Hills Allotment. 178 x 12 months = 2,136 AUMs. 15% of 2,136 AUMs = 320 AUMs.

Rationale: The carrying capacity for the Leppy Hills Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The carrying capacity for the Leppy Hills Allotment was determined to be 2,633 AUMs. The evaluation of existing data indicates that utilization objectives are not being met. Frequency of key forage species has declined over the evaluation period.

Incorporation of the administrative sheep trail into the Leppy Hills Allotment would add an additional 268 AUMs to the Lead Hills Allotment. An additional 450 AUMs can be found in the Morris Basin area of the Leppy Hills Allotment. The AUMs were derived from an adjudication map in the Elko Field Office. These AUMs would be available for late fall or early spring grazing. Therefore the carrying capacity would change from 2,633 to 3,351 AUMs.

During the evaluation period 20% of the allotment showed the highest significant use. The highest significant use has occurred in northeastern portion of the allotment. Light use has occurred in the eastern, northern, and western portions of the allotment. With the exception of the Morris Basin area the western two thirds of the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Wild horse use in the Leppy Hills Allotment is independent of livestock use. Wild horse use occurs in the upper elevations during the summer months (23% of the Goshute HMA herd

can be found in the Leppy Hills Allotment during the summer months) and wild horses winter on the west side of the Goshute Mountains in the Big Springs Allotment (1% of the Goshute HMA herd can be found in the Leppy Hills Allotment during the winter months). It was determined that the most important limiting factor in the Goshute HMA is the combined winter use areas on the west bench of the Goshute Mountains and in Goshute Valley. The AML for the winter use areas have been set through the Final Multiple Use Decision for the Spruce Allotment and the draft Big Springs Allotment Evaluation. Because the same horses use the winter areas and then migrate to the summer areas, AML for the Leppy Hills Allotment was based on the AML set for the Big Springs (Shafter Pasture) and Spruce Allotments (Subunits J and C-3). The AML for the Goshute HMA based on the winter use limiting factor is 127 horses or 1524 AUMS. Because data has shown that 23% of the Goshute HMA herd can be found in the Leppy Hills Allotment during the summer months, AML has been set at 29 horses (23% of 127 h = 29 h) for 6 months or 174 AUMS.

The Leppy Hills Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography within the allotment.

Livestock carrying capacity would be adjusted from 3,807 AUMs to 3,351 AUMs while the wild horse AML would be established at 174 AUMs.

b. North Pasture UT/NV #1 Allotment

UT/NV #1 - North Pasture - Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)[1]**	**Livestock permitted use and Use Areas**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
3,410	363	2,932 (A & B)	198	2,932
976 (cp)		976 (Morgan Basin[2])		1,174
Total - 4,386		3,908	198	4,106

Non-Use (cp) is voluntary non-use for conversation purposes as outlined in the 1997 grazing agreement for the North Pasture of the UT/NV #1 Allotment.

[1] The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 17% of the Goshute herd used the North Pasture of the UT/NV #1 Allotment. 178 x 12 months = 2,136 AUMs. 17% of 2,136 AUMs = 363 AUMs.

[2] The Morgan Basin area carrying capacity would be established at 976 AUMs. These AUMs were derived from an adjudication map in the Elko Field Office. The Morgan Basin area would be available for late fall and early spring grazing.

Rationale: The carrying capacity for North Pasture of the UT/NV #1 Allotment was evaluated in 1997. In the review of carrying capacity the Elko Field Office said that it would conduct necessary monitoring studies and re-evaluate the effects of grazing in 1999.

The carrying capacity for the North Pasture of the UT/NV #1 Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The carrying capacity for the North Pasture of the UT/NV #1 Allotment was determined to be 2,932 AUMs.

The evaluation of existing data indicates that utilization objectives are not being met. Frequency of most key forage species have remained stable over the evaluation period. Trend is stable at KA-1001, and standards for rangeland health are being met for cover, but are not being met for habitat. Further adjustments in grazing use levels are deemed necessary.

The carrying capacity for the North Pasture use areas A & B (see map 2 UT/NV North use areas) would adjusted to 2,932 AUMs. The Morgan Basin area carrying capacity would be established at 976 AUMs. These AUMs were derived from an adjudication map in the Elko Field Office. The Morgan Basin area would be available for late fall and early spring grazing.

During the evaluation period 8% of the North Pasture showed the highest significant use. The highest significant use has occurred in eastern portion of the pasture. Light use has occurred in the western portions of the pasture. With the exception of the Morgan Basin area the western two thirds of the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Wild horse use in the North Pasture of the Utah/Nevada #1 Allotment is independent of livestock use. Wild horse use occurs in the upper elevations during the summer months (26% of the Goshute HMA herd can be found in the North Pasture of the Utah/Nevada #1 Allotment during the summer months) and wild horses winter on the west side of the Goshute Mountains in the Big Springs Allotment (3% of the Goshute HMA herd can be found in the North Pasture of the Utah/Nevada #1 during the winter months). It was determined that the most important limiting factor in the Goshute HMA is the combined winter use areas on the west bench of the Goshute Mountains and in Goshute Valley. The AML for the winter use areas have been set through the Final Multiple Use Decision for the Spruce Allotment and the draft Big Springs Allotment Evaluation. Because the same horses use the winter areas and then migrate to the summer areas, AML for the North Pasture of the Utah/Nevada #1 Allotment was based on the AML set for the Big Springs (Shafter Pasture) and Spruce Allotments (Subunits J and C-3). The AML for the Goshute HMA based on the winter use limiting factor is 127 horses or 1524 AUMS. Because data has shown that 26% of the Goshute HMA herd can be found in the North Pasture of the Utah/Nevada #1 during the summer months, AML has been set at 33 horses (26% of 127 h = 33 h) for 6 months or 198 AUMS.

The North Pasture of the UT/NV #1 Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 4,386 AUMs to 3,908 AUMs while the wild horse AML would be established at 198 AUMs.

c. South Pasture UT/NV #1 Allotment

UT/NV #1 - South Pasture - Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)**	**Livestock permitted use**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
6,599	107	2,857	87	2,944
[1] The Well RMP Wild Horse Amendment established an initial herd size of 299 horses for the Antelope Valley HMA, as modified by the Spruce FMUD. Aerial census data indicates that 3% of the Antelope Valley herd use the South Pasture of the UT/NV #1 Allotment. 299 x 12 months = 3,588 AUMs. 3% of 3,588 AUMs = 107 AUMs				

Rationale: The carrying capacity for the South Pasture of the UT/NV #1 Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1985-1999. The carrying capacity for the South Pasture of the UT/NV #1 Allotment using key area utilization was determined to be 2,857 AUMs.

The evaluation of existing data indicates that utilization objectives are not being met. Frequency of key forage species has declined over the evaluation period. Trend is stable and the standards for rangeland health are being met or progress is being made toward attainment. The increase in ecological status can be attributed to an increase in key forage species.

During the evaluation period 55% of the allotment showed the highest significant use. The highest significant use has occurred in eastern, central and western portions of the allotment. Light use has occurred in the southern and northern portions of the allotment.

Wild horse use within the South Pasture of the UT/NV #1 Allotment has been estimated from censuses conducted during the past several years. Data indicates that the South Pasture receives only incidental use by wild horses, with use averaging 50 to100 AUMS, which is 8 to 16 horses for 6 winter/spring months. Due to the complete lack of water within the allotment, wild horses are only found inhabiting the area when there is snow cover or frequent rain showers to fill up potholes and troughs. AML has been established at the average actual use by wild horses at 87 AUMs or 15 horses for 6 months.

The South Pasture of the UT/NV #1 Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 6,599 AUMs to 2,857 AUMs. Wild horse AML would be established at 87 AUMs.

d. Lead Hills Allotment

Incorporate the administrative sheep trail into the Lead Hills Allotment.

Lead Hills Allotment - Potential Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)[2]**	**Livestock permitted use[1]**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
7,930	43	5,609	24	5,633

[1] Includes 1,126 AUMs from the administrative sheep trail.
[2] The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 2% of the Goshute herd uses the Lead Hills Allotment: 178 x 12 months = 2,136 AUMs. 2% of 2,136 AUMs = 43 AUMs.

Rationale: The carrying capacity for the Lead Hills Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The potential carrying capacity for livestock in the Lead Hills Allotment was determined to be 4,483 AUMs.

The evaluation of existing data indicates that utilization objectives are not being met, however they have been met for the last nine years. During the same period actual use has also decreased in the allotment. Frequency of key forage species has declined over the evaluation period. The evaluation of existing data indicates utilization objectives are not being met. Frequency of key forage species has declined over the evaluation period. Trend is upward at KA-1013 while trend is down at KA-1014, and standards for rangeland health are being met for cover, but are not being met for riparian and habitat. Adjustments in grazing use levels are deemed necessary.

Incorporation of the administrative sheep trail into the Lead Hills Allotment would add an additional 1,126 AUMs to the Lead Hills Allotment. The AUMs were derived from an adjudication map of the administrative sheep trail. Therefore the carrying capacity would be adjusted from 4,483 to 5,609 AUMs.

During the evaluation period 30%of the allotment showed the highest significant use. The highest significant use has occurred in northern portion (east of the Goshute Peak WSA and north of Ferguson Mountain), and eastern portion (west of the administrative sheep trail). Light use has occurred in the eastern, northern, and western portions of the allotment.

Wild horse use in the Lead Hills Allotment is independent of livestock use. Wild horse use occurs in the upper elevations during the summer months (3% of the Goshute HMA herd can be found in the Lead Hills Allotment during the summer months) and wild horses winter on the west side of the Goshute Mountains in the Big Springs Allotment (0% of the Goshute HMA herd can be found in the Lead Hills during the winter months). It was determined that the most important limiting factor in the Goshute HMA is the combined winter use areas on the west bench of the Goshute Mountains and in Goshute Valley. The AML for the winter use areas have been set through the Final Multiple Use Decision for the Spruce Allotment and the draft Big Springs Allotment Evaluation. Because the same horses use the winter areas and then migrate to the summer areas, AML for the Lead Hills Allotment was based on the AML set for the Big Springs (Shafter Pasture) and Spruce Allotments (Subunits J and C-3). The AML for the Goshute HMA based on the winter use limiting factor is 127 horses or 1,524 AUMS. Because data has shown that 3% of the Goshute HMA herd can be found in the Lead Hills Allotment during the summer months, AML has been set at 4 horses (3% of 127 h = 4 h) for 6 months or 24 AUMS.

With changes in management the livestock carrying capacity would be adjusted from 7,930 AUMs to 5,609 AUMs while the wild horse AML would be established at 24 AUMs.

e. White Horse Allotment

Incorporate the administrative sheep trail into the White Horse Allotment.

White Horse Allotment Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)**	**Livestock permitted use[1]**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
7,500	incidental use	4,458	incidental use	4,458
[1] Includes 417 AUMs from the administrative sheep trail.				

Rationale: The carrying capacity for the White Horse Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The carrying capacity for the White Horse Allotment was determined to be 4,041 AUMs.

The evaluation of existing data indicates that utilization objectives are not being met. Frequency of most key forage species have remained stable over the evaluation period. Trend is stable at KA-1003 while trend is down at KA-1004, and standards for rangeland health are being met for cover, but are not being met for habitat. Adjustments in grazing use levels are deemed necessary.

Incorporation of the administrative sheep trail into the White Horse Allotment would add an additional 417 AUMs to the White Horse Allotment. The AUMs were derived from an adjudication map of the administrative sheep trail. Therefore the carrying capacity would be adjusted from 4,041 to 4,458 AUMs.

During the evaluation period 23% of the allotment showed the highest significant use. The highest significant use has occurred in western portion of the allotment (south of the WSA and west of White Horse Pass) and central portion of the allotment (from Dead Cedar Wash south to the allotment boundary). Light use has occurred in the eastern, northern, southern (south of White Horse Pass), and western portions of the allotment. The western and southern one thirds of the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Census data from the past 15 years has shown that wild horses do not use the White Horse Allotment for winter or summer habitat. If horses are found within the allotment, they are usually just passing through. For this reason, AML is set at incidental use.

The White Horse Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 7,500 AUMs to 4,458 AUMs while the wild horse AML would be established at incidental use.

f. West White Horse Allotment

West White Horse Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)**	**Livestock permitted use**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
670	incidental use	465	incidental use	465

Rationale: The carrying capacity for the West White Horse Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The carrying capacity for livestock in the West White Horse Allotment was determined to be 465 AUMs.

The evaluation of existing data indicates that utilization objectives are not being met. Frequency of key forage species have remained stable over the evaluation period. Trend is downward at WW-01 and WW-02, and standards for rangeland health are being met for

cover, but are not being met for habitat. Adjustments in grazing use levels are deemed necessary.

During the evaluation period 46% of the allotment showed the highest significant use. The highest significant use has occurred in eastern (on the upper benches), central and western portion of the allotment. Light use has occurred in the northern, and extreme southwestern portions of the allotment. The eastern one third of the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Census data from the past 15 years has shown that wild horses do not use the West White Horse Allotment for winter or summer habitat. If horses are found within the allotment, they are usually just passing through. For this reason, AML is set at incidental use.

The West White Horse Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 670 AUMs to 465 AUMs while the wild horse AML would be established at incidental use.

g. Sugarloaf Allotment

Incorporate the administrative sheep trail into the Sugarloaf Allotment.

Sugarloaf Allotment Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)**	**Livestock permitted use[1]**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
3,105	incidental use	2,512	incidental use	2,512
[1] Includes 169 AUMs from the administrative sheep trail.				

Rationale: The carrying capacity for the Sugarloaf Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1987-1999. The carrying capacity for the Sugarloaf Allotment was determined to be 2,343 AUMs.

The evaluation of existing data indicates utilization objectives are not being met. Frequency of key forage grass species have remained stable over the evaluation period while shrub species have increased. Trend is upward at KA-1005 and stable to downward at KA-1006, and standards for rangeland health are being met for cover, but are not being met for

habitat. Adjustments in grazing use levels are deemed necessary.

During the evaluation period 54% of the allotment showed the highest significant use. The highest significant use has occurred in east from the Goshute Mountains in the west and west from the Ferber Hills in the east. Light use has occurred in the western portion (Goshute Mountains) and eastern portion (Ferber Hills east to the sheep trail). The western one third of the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Incorporation of the administrative sheep trail into the Sugarloaf Allotment would add an additional 169 AUMs to the Sugarloaf Allotment. The AUMs were derived from an adjudication map of the administrative sheep trail. Therefore the carrying capacity would be adjusted from 2,343 AUMs to 2,512 AUMs.

Census data from the past 15 years has shown that wild horses do not use the Sugarloaf Allotment for winter or summer habitat; this is most likely due to the complete lack of water within the allotment. If horses are found within the allotment, they are usually just passing through. For this reason, AML is set at incidental use.

The Sugarloaf Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 3,105 AUMs to 2,512 AUMs while the wild horse AML would be established at incidental use.

h. Ferber Flat Allotment

Incorporate the administrative sheep trail into the Ferber Flat Allotment.

Ferber Flat Allotment Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)**	**Livestock permitted use[1]**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
2,735	incidental use	2,013	incidental use	2,013
[1] Includes 224 AUMs from the administrative sheep trail.				

Rationale: The carrying capacity for the Ferber Flat Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1986-1999. The carrying capacity for the Ferber Flat Allotment was determined to be 1,789 AUMs.

The evaluation of existing data indicates utilization objectives are not being met. Frequency of key forage grass species has declined over the evaluation period while shrub species have increased. Trend is stable to downward at FF-01 and standards for rangeland health are being met for cover, but are not being met for habitat. Adjustments in grazing use levels are deemed necessary.

During the evaluation period 40% of the allotment showed the highest significant use. The highest significant use has occurred from the Upper Bench road east to the Ferber. Light use has occurred in the eastern and extreme western portions of the allotment. The western one third above the Upper Bench road (Goshute Mountains) the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability.

Incorporation of the administrative sheep trail into the Ferber Flat Allotment would add an additional 224 AUMs to the Ferber Flat Allotment. The AUMs were derived from an adjudication map of the administrative sheep trail. Therefore the carrying capacity would be adjusted from 1,789 AUMs to 2,013 AUMs.

Census data from the past 15 years has shown that wild horses do not use the Ferber Flat Allotment for winter or summer habitat; this is most likely due to the complete lack of water within the allotment. If horses are found within the allotment, they are usually just passing through. For this reason, AML is set at incidental use.

The Ferber Flat Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 2,735 AUMs to 2,013 AUMs while the wild horse AML would be established at incidental use.

i. Boone Springs Allotment

Boone Springs Allotment Proposed Livestock AUMs and Wild Horse AML				
Pre-Evaluation Carrying Capacity		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs)[1]**	**Livestock permitted use and Use Areas**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs) (LVST & WH)**
3,244	897	2,000 (A use area)	274	3,224
		947 (B use area)		
		2,947	274[2]	

[1] The Well RMP Wild Horse Amendment established an initial herd size of 299 horses for the Antelope Valley HMA, as modified by the Spruce FMUD. Aerial census data indicates that 25% of the Antelope Valley herd use the Boone Springs Allotment. 299 x 12 months = 3,588 AUMs. 25% of 3,588 AUMs = 897 AUMs.
[2] This was determined by averaging the carrying capacity at three key areas in the Boone Springs Allotment.

Rationale: The carrying capacity for the Boone Springs Allotment was derived by evaluating utilization-actual use data and weighted average utilization data from 1985-1999. The carrying capacity for the Boone Springs Allotment was determined to be 2,943 AUMs.

The evaluation of existing data indicates utilization objectives are not being met. Frequency of key forage species has increased or remained stable over the evaluation period while shrub species have increased. The frequency of EULA5 at BO-02 has decreased from 97.5 in 1994 to 77.0 in 1997. Trend is stable at BO-01 and BO-02 while trend is downward at BO-03. Standards for rangeland health are being met for cover, but are not being met for riparian and habitat. Adjustments in grazing use levels are deemed necessary.

During the evaluation period 17% of the allotment showed the highest significant use. The highest significant use has occurred in eastern portion of the allotment (east of Alternative Highway 93). The western one third the allotment is unsuitable for winter sheep grazing, due to topography and vegetation suitability. With management 60% of the allotment would be available for livestock grazing.

The Boone Springs Allotment was identified as being a combined winter use area for wild horses and livestock. As per the Wells RMP Wild Horse Amendment, the carrying capacity AUMs were based on 10% use by wild horses prior to livestock turnout. See Appendix 3 for wild horse data and the summary of AML for the Boone Springs Allotment.

The Boone Springs Allotment was historically over adjudicated. The AUMs adjudicated were based on vegetation whether it was available or not and did not consider the topography.

Livestock carrying capacity would be adjusted from 3,244 AUMs to 2,947 AUMs while the wild horse AML would be established at 274 AUMs.

j. Sheep Allotment Complex Summary

Sheep Allotment Complex - Proposed Livestock AUMs and Wild Horse AML, and Total AUMs					
Allotment	**Pre-Evaluation Carrying Capacity**		**Post-Evaluation Desired Carrying Capacity (CC)**		**Total Post-Evaluation CC**
	Livestock permitted use (AUMs)	**Wild Horse Initial Stocking Level (AUMs) as per the Wells Amendment[1]**	**Livestock permitted use**	**Wild Horse AML (AUMs)**	**Total Post-Eval. Carrying Capacity (AUMs)**
Leppy Hills 268*	3,807	320	3,351	174	3,525
UT/NV #1 - North Pasture	4,386	363	3,908	198	4,106
UT/NV #1 - South Pasture	6,599	107	2,975	87[2]	3,062
Lead Hills *1,126	7,930	43	5,609	24	5,633
White Horse *417	7,500	incidental use	4,458	incidental use	4,458
West White Horse	670	incidental use	465	incidental use	465
Sugarloaf *169	3,105	incidental use	2,512	incidental use	2,512
Ferber Flat *224	2,735	incidental use	2,013	incidental use	2,013
Boone Springs	3,244	897	2,947	265[3]	3,212
Total	39,061	1,535	28,238	748	29,986

[1] As per the Wells RMP Wild Horse Amendment.
[2] Average actual use.
[3] 10% use prior to livestock turnout was used to determined AML/AUMs
* Sheep trail AUMs incorporated.

Rationale: The desired carrying capacity and rationale for each allotment in the Sheep Allotment Complex are presented above. The analysis of utilization, actual use, use pattern

maps, and wild horse census data as well as the attainment or non-attainment of objectives and standards for rangeland health were used to determine the desired carrying capacity for the Sheep Allotment Complex.

The carrying capacities listed above reflect the proper stocking levels for livestock and the appropriate management levels for wild horses within each allotment. The derived carrying capacity, along with other technical recommendation objectives, will encourage attainment of land use plan objectives and the standards for rangeland health. Maintaining wild horses at the appropriate management level will result in a thriving, natural, ecological balance between horses and other resource values. Continued monitoring within the allotments will show if any adjustment in the AML or permitted levels of livestock grazing is needed.

This evaluation indicates that a decrease of 10,823 AUMs of livestock permitted use is deemed necessary to meet multiple use objectives and attainment of standards for rangeland health.

Wild horses within the complex move freely between administrative and allotment boundaries. Census data was used to derive an average percent of the Antelope Valley and Goshute herd that use each allotment. The AUMs of wild horse use which have been established for each allotment is not a future prediction of what the actual wild horse use in each allotment will be.

HMA	Recruitment Rate	AML - Range to be Managed
Antelope Valley	18%	131-259[1]
Goshute	17%	85-161[2]

[1] To calculate the range of AML, the following mathematical equation was used: Maximum AML/1+recruitment rate.

[2] The AML was established for the Goshute HMA based on the limiting factor of the winter use areas in the Spruce and Big Springs Allotments. The winter areas were determined to be able to support 127 horses for 12 months, but the majority of these horses leave the winter areas and migrate into the mountains in the summer. This allows the winter areas some rest, therefore the AML does not need to be lower than 127 horses; however to establish a four-year gather cycle, the HMA would have to be gathered down to 85 horses. The AUMs allocated to wild horses through this evaluation process, add up to a total of 161 horses for 12 months. This will be the high end of the AML.

The maximum AML is the upper threshold, in numbers of adult animals, the range can sustain before deterioration of the thriving natural ecological balance begins. The minimum AML is lowest number of adult animals allowed to graze on the range and considers genetics (herd viability), gather/removal cycles, and minimum disturbance to the herd by using as long a gather cycle as possible. Removals would never remove animals below this level except in extreme emergency.

This technical recommendation would implement Guidelines 1.1, 2.1, 2.4, 3.1, 3.2, and 3.3, which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress toward conformance with the Standards for Rangeland Health for Upland Sites, Riparian and Wetland Sites, and Habitat.

3. Implement the following grazing management systems and/or establish the season of use for each allotment in the Sheep Allotment Complex:

a. Leppy Hills Allotment

Leppy Hills Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
H&R Livestock	**11/01 to 2/28 3/01 to 4/30**	**2,816 2,816**	**100**	**3,351**

Rationale: Implement the spring grazing system outlined below for the Leppy Hills Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Three spring use areas in the Leppy Hills Allotment are identified as follows:

Morris Basin Use Area. (see Leppy Hills Spring Use areas map 10#). Use from 11/01 to 12/01 and 3/01 to 4/30.

A. From the Playa reservoirs south to the allotment boundary to the west of (BLM #1050) road.

B. The season of use in Area B would be from 11/1 to 3/31.

The permittee would be allowed to trail down to their corral to shear and ship.

Grazing use from 4/01 to 4/30 each year will be made on a rotational basis as follows:

Leppy Hills Allotment Spring Use Areas	
Year	**Use Area**
2001	Morris Basin
2002	A
2003	Morris Basin
2004	A

2005	Repeat cycle

The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

b. Utah/Nevada North

Utah/Nevada North Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Robert and Jon Child	**11/01 to 2/28** **3/01 to 4/30**	**3,284** **3,284**	**100**	**3,410**

Rationale: Modify the grazing system outlined below for the UT/NV North Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Three spring use areas in the UT/NV North Allotment are identified as follows:

A. All land to the east of Alt. Highway 93 and south of BLM road 1574 (see UT/NV North Allotment Spring Use areas map #11) and the Oana corral located in section 9.

B. All land to the west of Alt. Highway 93 and north of BLM road 1574 and the Oana corral located in section 9.

C. Within the Bluebell and Goshute Peak WSA's including Morgan Basin (976 AUMs can be found in this use area). Use in C would be from 11/01 to 12/01 and from 4/01 to 4/30.

The Oana corral is located in both A and B use areas. The permittee will be allowed to utilize the corrals each year for loading and handling in the spring.

Grazing use from 4/01 to 4/30 each year will be made on a rotational basis as follows:

UT/NV North Allotment Spring Use Areas	
Year	**Use Area**
2001	B
2002	A
2003	A
2004	B
2005	Repeat cycle

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

c. Utah/Nevada South

Utah/Nevada South Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Sherie R. Goring	**11/15 to 2/28** **3/01 to 4/30**	**2,709** **2,709**	**100**	**3,189**

Rationale: Implement the following grazing system for the UT/NV South Allotment (see map 12#) showing spring use area in the UT/NV South Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

A. Grazing in use area A will be from 11/1 to 3/31. No grazing would be allowed after 4/1.

Sheep would be allowed in and around the Ferber Corral during shearing and loading times. A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

d. Lead Hills Allotment

Lead Hills Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Jeffrey Roche	**11/01 to 2/28** **3/01 to 4/15**	**5,649** **5,649**	**100**	**5,609**

Rationale: Implement the following grazing agreement outlined below for the Lead Hills Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Three spring use areas are identified below:

A. All land to the west of Alternate Highway 93 and south of Felt Wash to the allotment boundary (see Lead Hills Spring use areas map13#).

B. All land west of Alternate Highway 93 and north of Felt Wash to the allotment boundary.

C. All land on the east of Alternate Highway 93 to the Ferguson Flat Road (#1118) Due to its close proximity to EULA5 this spring use area would be used one year out of three. No grazing will be allowed in the ACEC after 3/1.

Grazing use from 4/01 to 4/15 each year will be made on a rotational basis as follows:

Lead Hills Allotment Spring Use Areas	
Year	**Use Area**
2001	A
2002	B
2003	C
2004	Repeat cycle

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

e. White Horse Allotment

White Horse Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
L.W. Petersen, Inc.	**11/15 to 2/28 3/01 to 4/15**	**4,460 4,460**	**100**	**4,458**

Rationale: Continue the grazing system outlined below for the White Horse Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Four spring use areas are identified below:

A. All land to the west of Alternate Highway 93 from the north boundary of the allotment south to White Horse Pass (see White Horse Spring use areas map14#).

B. From the West White Horse Allotment boundary in the south north to 1 mile south of the Ibapah Road.

C. All land on the west side of the Goshute Mountains to the east of Antelope valley on the upper foothills. Due to its close proximity to EULA5 this spring use area would be used as a last resort.

D. All land east of Alternate Highway 93 and north of the Ibapah Road to the Ferguson Flat Road (31118) on its south and eastern boundary.

Grazing use from 4/01 to 4/15 each year will be made on a rotational basis as follows:

White Horse Allotment Spring Use Areas	
Year	**Use Area**
2001	A
2002	B
2003	D
2004	Repeat cycle

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

f. Sugarloaf Allotment

Sugarloaf Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Charles and John Young	**11/01 to 2/28** **3/01 to 4/20**	**2,433** **2,433**	**100**	**2,512**

Rationale: Continue the spring grazing system outlined below for the Sugarloaf Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Two spring use areas are identified below (see map 15#)

A. All land to the west of the Ferber Flat Road. (#1025)

B. All land from the northern extent of the Ferber Hills south to the allotment boundary.

C. use in C would occur from 11/01 to 3/31.

Grazing use from 4/01 to 4/20 each year will be made on a rotational basis as follows:

Sugarloaf Allotment Spring Use Areas	
Year	**Use Area**
2001	B
2002	A
2003	B
2004	A
2005	Repeat cycle

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

g. Ferber Flat Allotment

Ferber Flat Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Bingham Family Ranch	**11/01 to 02/28** **3/01 to 4/20**	**1,950** **1,950**	**100**	**2,013**

Rationale: Implement the following grazing spring system for the Ferber Flat Allotment. The grazing system would allow for rest of salt desert shrub communities during the growing season (after 4/01).

Three spring use areas (see map 16#) are identified below:

A. All land from the Ferber Flat Road (#1025) west to the Upper Bench Road (#1026).

B. All land to the east of the Ferber Flat Road.

C. All land from the Upper Bench Road (#1026) west to Little White Horse Pass and south to the allotment boundary.

Grazing use from 4/01 to 4/20 each year will be made on a rotational basis as follows:

Ferber Flat Allotment Spring Use Areas	
Year	**Use Area**
2001	A
2002	B
2003	C
2004	Repeat cycle

A maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas. When utilization objective has been reached livestock would be removed within 5 days.

h. West White Horse Allotment

West White Horse Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Sherie R. Goring	**12/01 to 2/28**	**786**	**100**	**465**

Rationale: Due to the small size of the West White Horse allotment grazing would be unit wide from 12/01 to 2/28. Once 50% utilization objective has been reached on key forage species sheep will be removed from the allotment. Utilization on ARARN has averaged 75% over the last 5 years. Use of 50% will help maintain the health of the salt desert shrub communities within the allotment. Additional monitoring will be conducted to determine if progress towards attainment of multiple use objectives and standards for rangeland health and make any further changes in grazing management.

i. Boone Springs Allotment

Boone Springs Allotment				
Permittee	**Period of Use**	**Livestock #'s**	**PPL**	**AUMs**
Dave **Morris**	**11/01 to 2/28** **3/01 to 3/31**	**2,968** **2,968**	**100**	**2,943**

Rationale: Implement the following grazing system for the Boone Springs Allotment. The grazing system outlined below would allow for deferment of areas that have historically received the most significant use and allow for grazing in areas that have historically received light use.

Two use areas are identified below:

A. North and west of Alternate Highway 93. This area has the capacity to support 943 AUMs.(see map 17#)

B. South and east of Alternate Highway 93. The area has the capacity to support 2,000 AUMs.

The permittee would submit an application to graze in each use area.

3. Annual utilization on current years growth in spring use areas will not exceed 30% on salt desert shrubs and 50% on key herbaceous species. If utilization is exceeded in consecutive years, the scheduled off date would be adjusted to 4/01.

Rationale: Light utilization on current years growth will help maintain the health of the salt desert shrub communities within the complex. Additional monitoring will be conducted to

determine if progress towards attainment of multiple use objectives and standards for rangeland health and make any further changes in grazing management.

Rationale: This technical recommendation would implement Guidelines 1.1, 3.1, 3.2, and 3.3, which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress towards conformance with the Standards for Rangeland Health for Upland Sites, and Habitat.

3. Establish a separate allotment for each permittee in the UT/NV #1 Allotment. The two pastures in the UT/NV #1 Allotment are separated by over 30 miles. Robert and Jon Child would have grazing privileges in the North Pasture which would be known as the UT/NV North Allotment.

Sherie R. Goring would have grazing privileges in the South Pasture which would be known as the UT/NV South Allotment.

Rationale: Establishing individual allotments would allow grazing systems to be implemented to meet each of the permittees individual needs and be compatible with implementation of grazing systems needed to meet multiple use objectives and attainment of standard for rangeland health.

4. Vacate the UT/NV #1 AMP.

Rationale: Grazing in the UT/NV #1 North and South Allotments would be in accordance with the Sheep Allotment Complex Final Multiple Use Decision.

5. The terms and conditions on each term grazing permit within the Sheep Allotment Complex should read as follows:

(1) Authorized grazing use will be in accordance with the Sheep Allotment Complex Evaluation and the Assistant Field Manager's Final Multiple Use Decision dated _____.

(2) Payment of grazing fees will be made prior to livestock turnout.

(3) Supplemental feeding is limited to salt, mineral, and/or protein supplements in block, granular or liquid form. Such supplements will be placed at least 1/4 mile from live waters (springs, streams, and troughs), wet or dry meadows, and aspen stands.

(4) An actual use report (Form 4130-5) showing use by allotment will be turned in within 15 days after completing annual use.

(5) No Sheep Camps will be located in Wilderness Study Areas (WSA's) and Area of Critical Environmental Concern (ACEC).

(6) All range improvements will be maintained/repaired by the permittee prior to livestock turn out and throughout the grazing season in accordance with range improvement authorization permits.

(7) All riparian exclosures, including spring development exclosures, are closed to livestock use unless specifically authorized in writing by the Assistant Field Manager for Renewable Resources.

(8) The numbers of livestock to be grazed will remain flexible according to the needs of the permittee. The grazing system is based on the number of AUMs that may be removed from each pasture. Livestock numbers and periods of use will be applied for on an annual basis. Deviations beyond the flexibility described above may be allowed to meet the needs of the resources and the permittee as long as these deviations are consistent with multiple use objectives. Deviations beyond the limits of the flexibility outlined above, including deviations in the turnout date, increases in livestock numbers and deviation from the grazing system, will require an application, and written authorization from the Assistant Field Manager for Renewable Resources prior to grazing use.

(9) All hay for the use in and around sheep camps must be certified weed free prior to livestock turnout.

(10) Pursuant 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer, by telephone with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects or objects of cultural patrimony. Further pursuant to 43 CFR 10.4 (c) and (d), you must stop activities in the immediate vicinity of the discovery and protect it from your activities for 30 days or until notified to proceed by the authorized officer.

Rationale: This technical recommendation would implement Guidelines 1.1, 2.1, 2.4, 3.1, 3.2, and 3.3, which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress towards conformance with the Standards for Rangeland Health for Upland Sites, Riparian and Wetland Sites, and Habitat.

6. Construct the following range improvement projects within the Sheep Allotment Complex:

Proposed Range Improvements for the Sheep Allotment Complex		
Project	**Allotment**	**Units**
Rock Spring exclosure and trough	Leppy Hills	1
Leppy Hills Well	Leppy Hills	1
Side Hill exclosure and trough	UT/NV North	1
Morgan Basin Spring exclosure and trough	UT/NV North	1
Spring Gulch Spring exclosure and trough	UT/NV North	1
Felt Spring exclosure and trough	Lead Hills	1
Perkins Spring exclosure and trough	Boone Springs	1

Rationale: Completion of these projects will help achieve multiple use objectives and standards for rangeland health in the Sheep Allotment Complex.

Required NEPA documentation would be completed prior to construction of the proposed projects.

The technical recommendation would implement Guidelines 3.4, and 3.6 which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress toward conformance with the Standards for Rangeland Health for Upland Sites, Riparian and Wetland Sites, and Habitat.

7. Construct the following wildlife water catchments projects within the Sheep Allotment Complex as outlined in EA BLM/EK/PL-97/018.

Rationale: Completion of these projects will enhance habitat for various wildlife species within the Sheep Allotment Complex and allow increased beneficial use of available habitat.

8. Implement the Sheep Allotment Complex Fire Management Plan (Appendix 5).

Rationale: The 1998 Elko Field Office Fire Management Plan identified fire and fuels management goals and objectives for the Elko District. The Sheep Allotment Complex Fire Management Plan is tiered off the Field Office Plan and identifies site specific fire suppression, prescribed fire and fuels management goals and objectives for the public lands within this complex. The Sheep Allotment Complex Fire Management Plan is required to effectively implement the goals and objectives of the Elko Field Office Fire Management Plan within the Sheep Allotment Complex.

9. Modify and/or requantify the allotment specific and key area objectives for the Sheep Allotment Complex to read as described in Appendix 6. The objectives includes upland, riparian and wild horse objectives. The general land use plan objectives and Standards for rangeland health developed for the Northeastern Great Basin Area remain unchanged.

Rationale: The Record of Decision for the Wells Environmental Impact Statement (EIS) and the Resource Management plan (RMP) was issued on July 16, 1985. These documents established the multiple use goals and objectives which guide management of the public lands in the Sheep Allotment Complex. The Rangeland Program Summary (RPS) was issued on September 15, 1986. This document further identified the allotment specific objectives for these allotments.

Monitoring was established on the allotments within the Sheep Allotment Complex to determine if existing grazing uses were consistent with attainment of the multiple use objectives established by the Wells RMP and RPS. Monitoring data were analyzed through the allotment evaluation process, to determine progress in meeting multiple use objectives and to determine what changes in existing grazing management, if any, are required.

The Sheep Allotment Complex Allotment Evaluation summarized current grazing management, determined whether or not progress was being made toward attainment of the multiple use objectives, and provided recommendation for future management. The allotment specific objectives which were analyzed in the allotment evaluation were formulated based on management issues which existed in 1986 when the RPS was published. Based on monitoring data and conclusions presented in this allotment evaluation, it is necessary to modify and/or requantify the allotment specific objectives to address the following resource issues:

-upland range conditions
-lentic riparian conditions
-wildlife habitat conditions
-wild horse management

This technical recommendation would also implement Guidelines 1.1, 2.1, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, and 3.6 which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress toward conformance with the Standards for Rangeland Health for Upland Sites, Riparian and Wetland Sites, and Habitat.

10. Inventory, identify and eliminate existing wire hazards. Clean up and dispose of old wire, especially where it creates a significant hazard to wild horses.

Rationale: Wild horses have become tangled in old barbed wire particularly in old spring exclosures and wild horse traps. Entanglement in barbed wire causes extensive injuries and in some cases the need for the animal to be destroyed.

11. Continue to collect combined use utilization data and collect wild horse use only utilization data.

Rationale: Collection of utilization data is necessary to determine if management practices are meeting objectives and will indicate management changes needed in response to climatological changes, such as drought, etc.

12. Continue to collect seasonal distribution data on the Antelope Valley and Goshute HMAs.

Rationale: In 1991, intensive seasonal distribution flights were begun within the Elko District. These census flights have provided valuable information on horse movements and should continue until monitoring data indicates that the appropriate management level has been attained in all HMAs.

13. Establish new key areas in the Sheep Allotment Complex in the following locations.

Leppy Hills Allotment - Within the Pilot Burn

White Horse Allotment - Within the Ferguson Burn

UT/NV South Allotment - On the white sage flats near Ferber.

UT/NV South Allotment - Northwest portion of the allotment.

Boone Springs Allotment - Within crucial antelope winter habitat.

Future locations will be determined on an as needed basis.

Rationale: This technical recommendation would implement Guidelines 1.1, 3.2, and 3.3, which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress toward conformance with the Standards for Rangeland Health for Upland Sites, and Habitat.

14. Administer all grazing and any developments or projects within the Goshute Peak and Bluebell Wilderness Study Areas in full compliance with the Interim Management Policy for Lands Under Wilderness Review.

Rationale: The BLM is mandated by FLPMA to manage Wiilderness Study Areas until Congressional decsions are made so as not to impair the suitablility of each area for preservation as wilderness. This is generally referred to as the "nonimpairment criteria." General policies and specific guidance, which need to be followed are detailed in the Interim Management Policy for Lands Under Wilderness Review (IMP), BLM Manual Handbook H-8850-1.

15. Within the Sheep Allotment Complex, treat invasive and noxious weeds in a manner that is most appropriate to the weed species and degree of infestation. Treatment would be in accordance with the Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States and the Elko District Programmatic Environmental Assessment of for the Treatment of Noxious Weeds. See Appendix 7 for a list of weed species, their potential habitat and proposed treatment.

Rationale: The BLM is mandated to manage vegetation on public lands. The BLM must control noxious weeds and undesirable plants to maintain or improve the quality of forests and rangeland for all multiple resources. Controlling noxious weeds within the Sheep Allotment Complex would result in a more diverse plant community and therefore would improve wildlife habitat, soil stability and forage plant diversity.

This technical recommendation would implement Guidelines 1.2 and 3.4, which have been developed by the Northeastern Great Basin Resource Advisory Council of Nevada to establish significant progress toward conformance with the Standards for Rangeland Health for Upland Sites, and Habitat.

16. Manage sage grouse habitat (i.e. leks, nesting, brooding, and summer and winter habitats) consistent with the Western States Sage Grouse Guidelines, as adapted for use in Nevada.

Rationale: Sage grouse is a BLM sensitive species with a high probability of becoming a nationally threatened and endangered species. Maintaining and improving sage grouse habitat will assist in maintaining or increasing populations within the Sheep Allotment Complex and may form a basis for future habitat conservation plans.

17. Continue to conduct necessary monitoring studies and periodically evaluate the effects of grazing to determine if progress is being made in meeting the multiple use objectives. The Sheep Allotment Complex will be re-evaluated in accordance with priorities established in the Elko Field Office Monitoring and Evaluation schedule. If monitoring studies indicate a need to bring grazing use in line with capacity, necessary adjustments will be made. Studies will be conducted in accordance with BLM policy manual guidance as outlined in the Nevada Rangeland Monitoring Handbook and will include, but are not limited, to the following:

Uplands:

forage production
ecological condition
trend frequency
utilization
actual use
Upland Proper Functioning Condition Assessment
Ecological Site Inventory
Cover

Riparian:

Proper Function Condition Assessments (BLM TR 1737-16, 1999)

Wildlife Habitat:

habitat condition studies, Cole browse, utilization, condition studies, (BLM Manual 6630)
wildlife population census/updated maps (NDOW)

Wild Horses:

wild horse population census
wild horse utilization data

Rationale: Additional monitoring and analysis will be required to determine whether objectives are being met and determine any necessary changes in grazing management.

VII. CONSULTATIONS

Elko Field Office BLM

Bruce W.C. Thompson, Rangeland Management Specialist, Team Leader
Doug Furtado, Rangeland Management Specialist, Allotment Evaluation Team
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Nancy Whicker, Hydrology Technician
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Permittees

H&R Livestock
Robert and Jon Child

Jeffrey Roche
L.W. Petersen, Inc.
Charles and John Young
Bingham Family Ranch
Sherie R. Goring
Dave Morris

Other Interested Publics
Stephen Richins
Thousand Peaks Ranches, Inc.
Darrel Kippens and Sons
Nevada Division of Environmental Protection (NDEP)
Nevada Division of Wildlife (NDOW)
Nevada Commission for the Preservation of Wild Horses
Natural Resource Conservation Service (NRCS)
Nevada State Division of Agriculture
Nevada State Clearinghouse Dept. Of Administration
Board of County Commissioners Elko County
U.S. Fish and Wildlife Service
Friends of Nevada Wilderness
Wild Horse Organized Assistance
Resource Concepts, Inc.
First Nations Bank
U.S.D.A. Service Center
Farm Credit Service
Von L. Sorenson
Sierra Club
Fund for Animals
Colorado Wild Horse and Burro Coalition
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Appendix 1: Summary of Studies Data

I. Allotment key area utilization summary Sheep Allotment Complex.

Leppy Hills Allotment Key Area Utilization Summary															
Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
KA 1007	ORHY EULA5 ATCO			33% 44% 55%	44% 47% 35%	56% 57% 50%	72% 53% 44%	35% 31% 8%	not read	51% 54% 38%	12% 9% 9%	33% 37%	40% 42% 15%	15% 50% 11%	39% 42% 29%
KA 1008	ORHY ARARN ATCO		26% 36%	58% 44%	63% 45%	55% 41% 43%	57% 53%	14% 3%	not read	51% 61%	34% 53%	40% 57%	44% 55%	27% 72%	43% 47% 43%
T-1	ORHY- ARARN		26% 12%												26% 12%
T-2	ORHY EULA5		4% 2%												4% 2%
T-3	ORHY EULA5		88% 76%												88% 76%
T-4	ORHY EULA5		46% 40%												46% 40%

Utah/Nevada #1 Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
South Pasture KA 1000	ORHY ARARN ATCO EULA5	28% 16%	24% 21% 36%	19% 18%	40% 39% 30%	54% 48% 50%	54% 44% 34%	not read	not read	29% 60%	25% 50%	26% 61%	13% 25% 8%	6% 10%	30% 36% 31% 36%
South Pasture T-1	ORHY ARARN	24% 18%	11% 14%	1% 2%											12% 11%
South Pasture T-2	ORHY ARARN EULA5	34% 18%	32% 14%	34% 17%											33% 16% 17%
South Pasture T-3	ORHY EULA5 ARARN	40% 22%	42% 42%	37% 34%											40% 32% 34%
South Pasture T-4	ORHY ARARN STCO4	18% 10% 10%	10% 4% 5%	22% 34%											17% 16% 8%
South Pasture T-5	ORHY ARARN ARTRT		26% 62% 80%												26% 62% 80%
North Pasture KA 1001	ORHY ARARN ATCO STCO4	24% 14%	36% 24% 26%	47% 40% 58%	44% 30% 28%	36% 31% 25%	47% 38% 26%	not read	not read	47% 58% 35%	39% 57% 36%	50% 67%	15% 45%	8% 34%	36% 40% 35% 26%
North Pasture T-1	ORHY ARARN EULA5		12% 7% 14%	1% 2%											7% 5% 14%
North Pasture T-2	ORHY ARARN EULA5		24% 30%	34% 17%											29% 30% 17%
Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization

North Pasture T-3	ORHY ARARN		44%												44%
North Pasture T-4	ORHY ARARN		38% 30%												38% 30%
North Pasture T-5	ORHY ARARN		54%												54%
North Pasture N-1	ORHY ATCO KOAM												18% 12% 18%		18% 12% 18%
North Pasture N-2	ORHY EULA5 ATCO												12% 50% 15%	10%	12% 30% 15%
North Pasture N-3	EULA5													28%	28%

Lead Hills Allotment Key Area Utilization Summary															
Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
KA 1013	ORHY ARARN		14% 37%	91% 44%	61% 56%	43% 44%	34% 41%		13% 25%		13% 23%	12% 34%	9% 15%	7% 25%	30% 34%
KA 1014	ORHY EULA5 ARSP5- ATCO		46% 58%	41% 75% 53% 44%	56% 56% 59% 52%	43% 47% 34% 31%	35% 26% 18%		13% 23% 23% 13%		29% 22% 17% 14%		31% 44% 32% 22%	6% 44% 12% 6%	33% 44% 33% 25%
T-1	ORHY EULA5		70% 66%												70% 66%
T-2	ORHY		54%												54%

Whitehorse Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
KA 1003	ORHY ARARN ATCO		22% 21%	45% 42% 48%	41% 44% 37%	23% 22% 16%	32% 22% 19%	2% 2% 1%		8% 21% 11%	13% 25% 9%	19% 28% 15%	18% 33% 24%	4% 13% 3%	21% 25% 18%
KA 1004	ORHY EULA5 ATCO		22%	43% 68% 58%	43% 42% 47%	34% 50% 37%	22% 11% 6%	14% 15%	19% 22% 18%	no use	21% 35% 14%	23% 49% 19%	20% 35% 20%	5% 39% 6%	24% 37% 25%
T-1	ORHY EULA5	13% 4%	18% 11%												16% 8%
T-2	ORHY EULA5	24% 38%	10% 6%												17% 22%
T-3	ORHY ARARN	38% 30%	30% 16%												34% 23%
T-4	ORHY ARARN	56% 52%	46% 44%												51% 48%
T-5	ORHY EULA5	27% 26%													27% 26%
T-6	ORHY EULA5 ARARN	54% 47% 54%													54% 47% 54%

1 Heavy snow year.

Sugarloaf Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
KA 1005	ORHY ARARN		13% 44%	50% 51%	52% 54%	46% 48%	50% 32%	13% 14%	41% 47%	34% 51%	29% 56%	42% 76%	20% 36%	29% 75%	35% 49%
KA 1006	ORHY EULA5 ATCO		28% 12%	73% 57% 58%	51% 54% 44%	47% 54% 37%	34% 21% 20%	no use	29% 44% 30%	28% 45% 14%	29% 46% 22%	30% 40% 19%	16% 41% 26%	20% 55% 34%	35% 43% 30%
T-1	ORHY EULA5	52% 54%	42% 38%												47% 46%
T-2	ORHY EULA5	64% 66%	62% 50%												63% 58%
T-3	ORHY	48%	44%												46%
T-4	ORHY	32%	46%												39%

Ferber Flat Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
FF-01	ORHY ARARN			55% 54%	66% 62%	45% 42%	42% 42%	no use	28% 41%	29% 52%	19% 54%	30% 52%	30% 50%	28% 42%	37% 49%
T-1	ORHY ARARN AGSP	24%	38%	37% 35%											33% 35%
T-2	ORHY ARARN AGSP	7% 5% 4%	22% 30% 18%	55% 42%											28% 26% 11%
T-3	ORHY ARARN AGSP	16% 18% 6%	38% 26% 18%	58% 41%											37% 28% 12%
T-4	ORHY ARARN AGSP	52% 56% 26%	22% 26% 3%												37% 41% 15%

West Whitehorse Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	Average Utilization
WW-01	ORHY EULA5				64% 63%	57% 46%	47% 32%	3% 3%	40% 39%	48% 58%	 58%	27% 56%	24% 49%	17% 64%	22% 52%	35% 47%
WW-02	ORHY ARARN EULA5 STCO4				59% 65% 59% 57%	55% 53% 49%	49% 37% 29% 39%	2% 4% 5% 5%	47% 53% 50%	52% 66% 60%	30% 74% 67% 33%	34% 76% 58% 43%	33% 67% 59% 31%	20% 84% 78% 26%	22% 83% 51% 25%	37% 60% 51% 32%
T-1	ORHY EULA5 STIPA	12%	18%	27% 23% 24%												27% 18% 24%
T-2	ORHY ARARN EULA5 STCO4	16% 14% 16%	52% 70% 50%	 25%												34% 70% 30% 16%
T-3	ORHY AGSP EULA5	44% 40%	60% 49%	44% 44%												49% 40% 47%
T-4	ORHY ARARN EULA5	41% 36%	32% 34%	50% 58%												41% 47% 34%
T-5	ORHY EULA5 ARSP5	48% 16%	38% 26%	61% 63% 50%												49% 35% 50%
T-6	ATFA	46%	51%													49%

Boone Springs Allotment Key Area Utilization Summary

Key Area	Key Species	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	Average Utilization
Pre-livestock BO-01	ORHY ARARN POA FEID						56% 6% 47%	5% 5%				25% 3%		28% 22% 20%	29% 9% 47% 20%
Pre-livestock BO-02	ORHY EULA5 ARARN						52% 22%	5% 5%				35% 3%		31% 59%	31% 28% 5%
Pre-livestock BO-03	ORHY ARARN POA						66% 8% 9%	17% 6%				54% 2%		22% 6%	40% 6% 9%
Post livestock BO-01	ORHY ARARN				35% 45%	50% 37%	38% 13%	no use	26% 16%	17% 14%	30% 10%		28% 9%		32% 21%
Post livestock BO-02	ORHY EULA5				52% 53%	38% 51%		60% 55%	30% 43%	18% 34%	28% 58%	37% 75%	31% 46%	30% 56%	36% 52%
Post livestock BO-03	ORHY ARARN				48% 57%	46% 43%		3% 2%	48% 22%	19% 26%	22% 15%	50% 59%	34% 32%	27% 28%	33% 32%

II. Frequency Results for the Sheep Allotment Complex

Leppy Hills Allotment Frequency				
KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1988)	SECOND READING (1999)	CHANGE
1007	ORHY (10)	33.0	5.0	-,S
	ATCO (30)	23.5	26.5	+,NSC
	EULA5 (30)	39.5	23.0	-,S
1008	ORHY (30)	64.5	45.5	-,S
	ARARN (10)	33.0	24.0	-,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Utah/Nevada #1 Allotment Frequency

PASTURE	KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1986)	SECOND READING (1989)	THIRD READING (1993)	FOURTH READING (1997)	CHANGE
SOUTH	1000	ORHY (30)	58.5	51.5	57.5	58.5	=,NSC
		ARARN (10)	no data	26.0	32.5	35.5	+,NSC
		ARARN (30)	66.5	82.0	88.0	83.5	+,S
		ATCO (30)	11.0	9.0	6.5	4.5	-,S
NORTH	1001	ORHY (30)	74.5	70.0	65.0	no data	-,S
		ARARN (10)	no data	25.0	25.5	no data	=,NSC
		ARARN (30)	83.0	77.0	81.5	no data	=,NSC
		ATCO (30)	40.5	40.5	22.5	no data	-,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Lead Hills Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1988)	SECOND READING (1999)	CHANGE
1013	ORHY (10)	23.0	22.5	=,NSC
	ARARN (30)	50.5	35.5	-,S
1014	ORHY (10)	18.0	13.0	-,NSC
	ORHY (30)	75.5	54.5	-,S
	ARSP5 (30)	34.0	38.0	+,NSC
	ATCO (30)	61.0	48.5	-,S
	EULA5 (30)	45.0	29.5	-,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Whitehorse Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1987)	SECOND READING (1990)	THIRD READING (1992)	FOURTH READING (1997)	CHANGE
1003	ORHY (30)	21.5	19.5	17.5	30.5	+,S
	ARARN (10)	35.0	22.5	21.5	33.0	=,NSC
	ARARN (30)	56.5	54.5	67.5	76.5	+,S
	ATCO (30)	16.0	15.5	11.5	13.0	=,NSC
1004	ORHY (10)	9.5	15.5	16.0	17.5	+,S
	ORHY (30)	73.5	52.0	60.5	84.0	+,S
	ATCO (30)	45.0	32.0	33.0	47.5	+,S
	EULA5 (30)	36.5	28.0	9.5	10.0	-,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Sugarloaf Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1987)	SECOND READING (1990)	THIRD READING (1993)	FOURTH READING (1997)	CHANGE
1005	ORHY (10)	29.5	24.5	29.0	27.0	=,NSC
	ARARN (30)	63.5	48.0	54.5	78.5	+,S
1006	ORHY (10)	25.0	24.0	29.5	29.5	+,NSC
	ATCO (30)	72.5	66.0	68.5	78.5	+,S
	EULA5 (30)	58.0	44.0	51.0	43.0	-,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Ferber Flat Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1989)	SECOND READING (1993)	THIRD READING (1997)	CHANGE
FF-01	ORHY (10)	23.0	20.5	no data	-,NSC
	ORHY (30)	77.5	81.0	78.0	=,NSC
	ARARN (10)	18.5	22.0	15.5	=,NSC
	ARARN (30)	80.0	74.5	80.0	=,NSC

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

West Whitehorse Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1989)	SECOND READING (1993)	THIRD READING (1997)	CHANGE
WW-01	ORHY (30)	26.5	12.5	14.5	-,S
	EULA5 (10)	63.5	86.5	69.0	+,S
WW-02	ORHY (30)	45.5	79.0	51.0	+,S
	STCO4 (10)	41.5	41.0	42.5	+,NSC
	ARARN (30)	19.5	20.5	20.0	=,NSC
	EULA5 (30)	43.0	59.5	47.0	+,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

Boone Springs Allotment Frequency

KEY AREA	KEY SPECIES (frame size in inches)	FIRST READING (1989)	SECOND READING (1994)	THIRD READING (1997)	CHANGE
BO-02	ORHY (30)	24.5	25.5	63.0	+,S
	EULA5 (10)	65.5	97.5	77.0	+,S
BO-03	ORHY (30)	22.5	33.0	32.0	+,NSC
	ARARN (10)	36.5	43.5	46.5	+,S

(-) decrease
(+) increase
(=) no change

(S) Significant Change
(NSC) No Significant Change

Example: (-,NSC) This implies that there was a slight decrease in the frequency of occurrence of the key species, however, it was not a significant change.

(-,S) This implies that there was a significant decrease in the frequency of occurrence of the key species.

III. Ecological Site Inventory Results for the Sheep Allotment Complex.

Utah/Nevada #1 Allotment South Pasture ESI			
Total Acres Surveyed and Classified			
Seral Stage	**Acres**	**% of Total Acres Surveyed**	**% of Total Acres in Allotment**
Early Seral	56	.2%	.1%
Mid Seral	2,263	7.7%	6%
Late Seral	24,572	83.7%	65.3%
PNC	2,456	8.4%	6.5%
Total	29,347	100%	
Total Acres Unclassified			
Description	**Acres**	**% of Total Acres Unclassified**	
Woodland	1,961	25.6%	5.2%
Inclusions	5,553	72.4%	14.8%
Seedings			
Rock Outcrop	157	2%	.4%%
Water			
Fenced Private			
Hwy/Road			
Total	7,671	100%	98.3%
Total Classified and Unclassified	37,018		

Sugarloaf Allotment ESI			
Total Acres Surveyed and Classified			
Seral Stage	**Acres**	**% of Total Acres Surveyed**	**% of Total Acres in Allotment**
Early Seral	366	2.1%	1.6%
Mid Seral	12,036	68.1%	51.9%
Late Seral	5,275	29.8%	22.8%
PNC	0	0%	0%
Total	17,677	100%	
Total Acres Unclassified			
Description	**Acres**	**% of Total Acres Unclassified**	
Woodland	1,954	35.3%	8.4%
Inclusions	3,258	59%	14.1%
Seedings			
Rock Outcrop	314	5.7%	1.3%
Water			
Fenced Private			
Hwy/Road			
Total	5,526	100%	100.1%
Total Classified and Unclassified	23,203		

Boone Springs Allotment ESI			
Total Acres Surveyed and Classified			
Seral Stage	**Acres**	**% of Total Acres Surveyed**	**% of Total Acres in Allotment**
Early Seral	1,047	1.7%	1.3%
Mid Seral	25,690	43%	32.2%
Late Seral	33,097	55.3%	41.5%
PNC	0	0%	0%
Total	59,834	100%	
Total Acres Unclassified			
Description	**Acres**	**% of Total Acres Unclassified**	
Woodland	7,029	37%	8.8%
Inclusions	11,408	60%	14.3%
Seedings			
Rock Outcrop	584	3%	.7%
Water			
Fenced Private			
Hwy/Road			
Total	19,021	100%	98.8%
Total Classified and Unclassified	78,855		

West Whitehorse Allotment ESI			
Total Acres Surveyed and Classified			
Seral Stage	**Acres**	**% of Total Acres Surveyed**	**% of Total Acres in Allotment**
Early Seral	659	13.4%	9.1%
Mid Seral	2,410	49.1%	33.4%
Late Seral	1,126	23%	15.6%
PNC	710	14.5	9.9%
Total	4,905	100%	
Total Acres Unclassified			
Description	**Acres**	**% of Total Acres Unclassified**	
Woodland	733	31.3%	10.2%
Inclusions	1,449	62%	20.1%
Seedings			
Rock Outcrop	157	6.7	2.2%
Water			
Fenced Private			
Hwy/Road			
Total	2,339	100%	100.5%
Total Classified and Unclassified	7,244		

Ferber Flat Allotment ESI			
Total Acres Surveyed and Classified			
Seral Stage	**Acres**	**% of Total Acres Surveyed**	**% of Total Acres in Allotment**
Early Seral	0	0%	0%
Mid Seral	15,472	97.6%	75.7%
Late Seral	374	2.4%	1.8%
PNC	0	0%	0%
Total	15,846	100%	
Total Acres Unclassified			
Description	**Acres**	**% of Total Acres Unclassified**	
Woodland	1,206	26.9%	5.9%
Inclusions	3,045	68%	14.9%
Seedings			
Rock Outcrop	228	5.1%	1.1%
Water			
Fenced Private			
Hwy/Road			
Total	4,479	100%	99.4%
Total Classified and Unclassified	20,325		

IV. Ecological Status Results for the Sheep Allotment Complex.

Leppy Hills Allotment Key Area Ecological Status		
KEY AREA	1988	1999
1007	76% PNC 378 lbs/ac	45% Mid-Seral 583 lbs/ac
1008	34% Mid-Seral 1,700 lbs/ac	52% Late-Seral 2,149 lbs/ac

Utah/Nevada Allotment Key Area Ecological Status					
KEY AREA	1986	1989	1990	1993	1997
1000 South	54% Late-Seral 774 lbs/ac	49% Mid-Seral 2,607 lbs/ac	no data	51% Late-Seral 440 lbs/ac	75% Late-Seral 229 lbs/ac
1001 North	52% Late-Seral 1,496 lbs/ac	49% Mid-Seral 964 lbs/ac	no data	47% Mid-Seral 548 lbs/ac	no data

Lead Hills Allotment Key Area Ecological Status		
KEY AREA	1988	1999
1013	36% Mid-Seral 1,246 lbs/ac	55% Late-Seral 2,098 lbs/ac
1014	47% Mid-Seral 1,065 lbs/ac	10% Early-Seral 2,689 lbs/ac

Whitehorse Allotment Key Area Ecological Status				
KEY AREA	1987	1990	1992	1997
1003	60% Late-Seral 2,782 lbs/ac	53% Late-Seral 571 lbs/ac	56% Late-Seral 226 lbs/ac	59% Late-Seral 902 lbs/ac
1004	45% Mid-Seral 901 lbs/ac	27% Mid-Seral 427 lbs/ac	59% Late-Seral 667 lbs/ac	29% Mid-Seral 1,122 lbs/ac

West Whitehorse Allotment Key Area Ecological Status			
KEY AREA	1989	1993	1997
WW-01	55% Late-Seral 288 lbs/ac	52% Late-Seral 1,799 lbs/ac	48% Mid-Seral 871 lbs/ac
WW-02	51% Late-Seral 240 lbs/ac	48% Mid-Seral 851 lbs/ac	52% Late-Seral 544 lbs/ac

Boone Springs Allotment Key Area Ecological Status			
KEY AREA	1989	1994	1997
BO-01	49% Mid-Seral 570 lbs/ac	70% Late-Seral 225 lbs/ac	68% Late-Seral 280 lbs/ac
BO-02	70% Late-Seral 646 lbs/ac	80% PNC 327 lbs/ac	76% PNC 326 lbs/ac
BO-03	47% Mid-Seral 831 lbs/ac	72% Late-Seral 278 lbs/ac	56% Late-Seral 486 lbs/ac

Sugarloaf Allotment Key Area Ecological Status				
KEY AREA	1987	1990	1993	1997
1005	47% Mid-Seral 671 lbs/ac	43% Mid-Seral 296 lbs/ac	23% Early-Seral 728 lbs/ac	71% Late-Seral 1,070 lbs/ac
1006	66% Late-Seral 674 lbs/ac	75% Late-Seral 825 lbs/ac	61% Late-Seral 1,195 lbs/ac	54% Late-Seral 1,387 lbs/ac

Ferber Flat Allotment Key Area Ecological Status			
KEY AREA	1989	1993	1997
FF-01	35% Mid-Seral 889 lbs/ac	62% Late-Seral 531 lbs/ac	44% Mid-Seral 451 lbs/ac

V. Use Pattern Map Data for the Sheep Allotment Complex.

Leppy Hills Use Pattern Map Data

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	5,657	10%
Slight (1% - 20%)	32,282	57.1%
Light (21% - 40%)	10,521	18.6%
Moderate (41% – 60%)	6,711	11.9%
Heavy (61% - 80%)	1,385	2.4%
Severe (81% - 100%)	0	0%
Total	56,556	100%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	17,769	31.4%
Slight (1% - 20%)	15,011	26.5%
Light (21% - 40%)	16,506	29.2%
Moderate (41% – 60%)	6,933	12.3%
Heavy (61% - 80%)	337	.6%
Severe (81% - 100%)	0	0%
Total	56,556	100%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	29,087	51.4%
Light (21% - 40%)	10,069	17.8%
Moderate (41% – 60%)	16,657	29.5%
Heavy (61% - 80%)	462	.8%
Severe (81% - 100%)	0	0%
Total	56,275	99.5%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	18,765	33.2%
Light (21% - 40%)	14,144	25%
Moderate (41% – 60%)	22,332	39.5%
Heavy (61% - 80%)	510	.9%
Severe (81% - 100%)	527	.9%
Total	56,278	99.5%

1994/95 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	20,684	36.6%
Slight (1% - 20%)	25,628	45.3%
Light (21% - 40%)	10,244	18.1%
Moderate (41% – 60%)	0	0%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	56,556	100%

Utah/Nevada #1 Use Pattern Map Data: **North**

1985/86 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1 - 20%)	0	0%
Light (21 - 40%)	38,165	53.9%
Moderate (41 - 60%)	25,521	36.1%
Heavy (61 - 80%)	7,105	10%
Severe (81 - 100%)	0	0%
Total	70,791	100%

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	16,943	23.9%
Slight (1 - 20%)	33,320	47.1%
Light (21 - 40%)	17,906	25.3%
Moderate (41 - 60%)	2,491	3.5%
Heavy (61 - 80%)	131	.2%
Severe (81 - 100%)	0	0%
Total	70,791	100%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	18,580	26.2%
Slight (1 - 20%)	32,251	45.6%
Light (21 - 40%)	16,993	24%
Moderate (41 - 60%)	2,730	3.9%
Heavy (61 - 80%)	237	.3%
Severe (81 - 100%)	0	0%
Total	70,791	100%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	44,020	62.2%
Slight (1 - 20%)	9,612	13.6%
Light (21 - 40%)	9,469	13.4%
Moderate (41 - 60%)	7,418	10.5%
Heavy (61 - 80%)	272	.4%
Severe (81 - 100%)	0	0%
Total	70,791	100.1%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	16,706	23.6%
Slight (1 - 20%)	50,715	71.6%
Light (21 - 40%)		
Moderate (41 - 60%)	2,778	3.9%
Heavy (61 - 80%)	592	.8%
Severe (81 - 100%)	0	0%
Total	70,791	99.9%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	25,261	35.7%
Slight (1 - 20%)	3,761	5.3%
Light (21 - 40%)	28,074	39.7%
Moderate (41 - 60%)	12,734	18%
Heavy (61 - 80%)	795	1.1%
Severe (81 - 100%)	166	.2%
Total	70,791	100%

Utah/Nevada #1 Use Pattern Map Data: **South**

1985/86 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	956	2.5%
Slight (1 - 20%)	0	0%
Light (21 - 40%)	12,515	33.3%
Moderate (41 - 60%)	23,697	63%
Heavy (61 - 80%)	439	1.2%
Severe (81 - 100%)	0	0%
Total	37,607	100%

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1 - 20%)	2,322	6.2%
Light (21 - 40%)	24,386	64.8%
Moderate (41 - 60%)	9,755	25.9%
Heavy (61 - 80%)	2,037	5.4%
Severe (81 - 100%)	0	0%
Total	38,500	102.3%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1 - 20%)	15,977	42.5%
Light (21 - 40%)	16,503	43.9%
Moderate (41 - 60%)	4,470	11.9%
Heavy (61 - 80%)	1,506	4%
Severe (81 - 100%)	0	0%
Total	38,456	102.3%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	4,473	11.9%
Slight (1 - 20%)	7,432	19.8%
Light (21 - 40%)	17,186	45.7%
Moderate (41 - 60%)	7,412	19.7%
Heavy (61 - 80%)	1,104	2.9%
Severe (81 - 100%)	0	0%
Total	37,607	100%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	2,621	7%
Slight (1 - 20%)	10,797	28.7%
Light (21 - 40%)	2,997	8%
Moderate (41 - 60%)	19,570	52%
Heavy (61 - 80%)	1,622	4.3%
Severe (81 - 100%)	0	0%
Total	37,607	100%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,485	3.9%
Slight (1 - 20%)	6,758	18%
Light (21 - 40%)	5,642	15%
Moderate (41 - 60%)	22,625	60.2%
Heavy (61 - 80%)	875	2.3%
Severe (81 - 100%)	222	.6%
Total	37,607	100%

1996/97 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	6,606	17.6%
Slight (1 - 20%)	6,946	18.5%
Light (21 - 40%)	5,903	15.7%
Moderate (41 - 60%)	17,418	46.3%
Heavy (61 - 80%)	652	1.7%
Severe (81 - 100%)	82	.2%
Total	37,607	100%

1997/98 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	9,238	24.6%
Slight (1 - 20%)	5,748	15.3%
Light (21 - 40%)	18,166	48.3%
Moderate (41 - 60%)	4,368	11.6%
Heavy (61 - 80%)	87	.2%
Severe (81 - 100%)	0	0%
Total	37,607	100%

Lead Hills Use Pattern Map Data

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	3,821	5.6%
Slight (1% - 20%)	26,448	38.9%
Light (21% - 40%)	21,932	32.3%
Moderate (41% – 60%)	13,379	19.7%
Heavy (61% - 80%)	2,296	3.4%
Severe (81% - 100%)	39	.1%
Total	67,915	100%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	3,899	5.7%
Slight (1% - 20%)	25,522	37.6%
Light (21% - 40%)	19,884	29.3%
Moderate (41% – 60%)	16,564	24.4%
Heavy (61% - 80%)	2,046	3%
Severe (81% - 100%)	0	0%
Total	67,915	100%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	25,346	37.3%
Slight (1% - 20%)	8,650	12.7%
Light (21% - 40%)	9,787	14.4%
Moderate (41% – 60%)	21,447	31.6%
Heavy (61% - 80%)	2,337	3.4%
Severe (81% - 100%)	348	.5%
Total	67,915	99.9%

1989/90 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	4,562	6.7%
Slight (1% - 20%)	14,305	21.1%
Light (21% - 40%)	12,079	17.8%
Moderate (41% – 60%)	34,342	50.6%
Heavy (61% - 80%)	2,549	3.8%
Severe (81% - 100%)	78	.1%
Total	67,915	100.1%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	20,134	29.6%
Slight (1% - 20%)	1,487	2.2%
Light (21% - 40%)	6,930	10.2%
Moderate (41% – 60%)	34,999	51.5%
Heavy (61% - 80%)	3,631	5.3%
Severe (81% - 100%)	734	1.1%
Total	67,915	99.9%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	3,416	5%
Slight (1% - 20%)	9,381	13.8%
Light (21% - 40%)	16,969	25%
Moderate (41% – 60%)	33,342	49.1%
Heavy (61% - 80%)	3,842	5.7%
Severe (81% - 100%)	965	1.4%
Total	67,915	100%

1996/97 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	22,567	33.2%
Slight (1% - 20%)	12,259	18.1%
Light (21% - 40%)	20,829	30.7%
Moderate (41% – 60%)	10,695	15.7%
Heavy (61% - 80%)	1,101	1.6%
Severe (81% - 100%)	464	.7%
Total	67,915	100%

1997/98 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	25,191	37.1%
Slight (1% - 20%)	5,490	8.1%
Light (21% - 40%)	27,798	40.9%
Moderate (41% – 60%)	9,436	13.9%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	67,915	100%

Whitehorse Use Pattern Map Data

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	7,870	12.8%
Slight (1% - 20%)	25,258	41%
Light (21% - 40%)	22,191	36%
Moderate (41% – 60%)	5,413	8.8%
Heavy (61% - 80%)	600	1%
Severe (81% - 100%)	0	0%
Total	61,332	99.6%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	7,943	12.9%
Slight (1% - 20%)	31,451	51.1%
Light (21% - 40%)	18,649	30.3%
Moderate (41% – 60%)	3,754	6.1%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	61,797	100.4%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	28,385	46.1
Slight (1% - 20%)	13,591	22.1%
Light (21% - 40%)	11,505	18.7%
Moderate (41% – 60%)	7,549	12.3%
Heavy (61% - 80%)	502	.8%
Severe (81% - 100%)	39	.1%
Total	61,571	100.1%

1989/90 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	8,017	13%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	44,569	72.4%
Moderate (41% – 60%)	8,343	13.6%
Heavy (61% - 80%)	715	1.2%
Severe (81% - 100%)	0	0%
Total	61,644	100.2%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	7,943	12.9%
Slight (1% - 20%)	9,320	15.1%
Light (21% - 40%)	19,787	32.1%
Moderate (41% – 60%)	23,101	37.5%
Heavy (61% - 80%)	772	1.3%
Severe (81% - 100%)	376	.6%
Total	61,299	99.5%

1992/93 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	8,017	13%
Slight (1% - 20%)	13,279	21.6%
Light (21% - 40%)	5,703	9.3%
Moderate (41% – 60%)	30,888	50.2%
Heavy (61% - 80%)	3,431	5.6%
Severe (81% - 100%)	0	0%
Total	61,318	99.7%

Sugarloaf Use Pattern Map Data

1984/85 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	2,052	9.7%
Light (21% - 40%)	7,666	36.2%
Moderate (41% – 60%)	7,938	37.5%
Heavy (61% - 80%)	3,518	16.6%
Severe (81% - 100%)	0	0%
Total	21,174	100%

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	2,973	14%
Light (21% - 40%)	3,036	14.3%
Moderate (41% – 60%)	11,466	54.2%
Heavy (61% - 80%)	3,604	17%
Severe (81% - 100%)	0	0%
Total	21,079	99.5%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	3,526	16.7%
Light (21% - 40%)	6,322	29.9%
Moderate (41% – 60%)	10,803	51%
Heavy (61% - 80%)	581	2.7%
Severe (81% - 100%)	0	0%
Total	21,232	100.3%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	2,899	13.7%
Slight (1% - 20%)	1,217	5.7%
Light (21% - 40%)	2,539	12%
Moderate (41% – 60%)	14,205	67.1%
Heavy (61% - 80%)	310	1.5%
Severe (81% - 100%)	0	0%
Total	21,170	100%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	2,628	12.4%
Light (21% - 40%)	6,630	31.3%
Moderate (41% – 60%)	11,336	53.5%
Heavy (61% - 80%)	632	3%
Severe (81% - 100%)	0	0%
Total	21,226	100.2%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	2,482	11.7%
Light (21% - 40%)	4,364	20.6%
Moderate (41% – 60%)	13,375	63.2%
Heavy (61% - 80%)	942	4.4%
Severe (81% - 100%)	97	.5%
Total	21,260	100.4%

1996/97 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	2,733	12.9%
Slight (1% - 20%)	1,631	7.7%
Light (21% - 40%)	4,369	20.6%
Moderate (41% – 60%)	11,987	56.6%
Heavy (61% - 80%)	450	2.1%
Severe (81% - 100%)	0	0%
Total	21,170	99.9%

1997/98 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	3,062	14.5%
Slight (1% - 20%)	3,921	18.5%
Light (21% - 40%)	5,283	25%
Moderate (41% – 60%)	7,951	37.6%
Heavy (61% - 80%)	953	4.5%
Severe (81% - 100%)	0	0%
Total	21,170	100.1

Ferber Flat Use Pattern Map Data

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	4,596	24.8%
Light (21% - 40%)	8,183	44.2%
Moderate (41% – 60%)	4,294	23.2%
Heavy (61% - 80%)	1,424	7.7%
Severe (81% - 100%)	0	0%
Total	18,497	99.9%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	5,198	28.1%
Light (21% - 40%)	12,382	66.9%
Moderate (41% – 60%)	942	5.1%
Heavy (61% - 80%)	77	.4%
Severe (81% - 100%)	0	0%
Total	18,599	100.5%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	5,532	29.9%
Light (21% - 40%)	10,193	55.1%
Moderate (41% – 60%)	2,280	12.3%
Heavy (61% - 80%)	517	2.8%
Severe (81% - 100%)	0	0%
Total	18,522	100.1%

1989/90 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	3,990	21.6%
Light (21% - 40%)	5,459	29.5%
Moderate (41% – 60%)	7,478	40.4%
Heavy (61% - 80%)	1,417	7.7%
Severe (81% - 100%)	219	1.2%
Total	18,563	100.4%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	10,527	56.9%
Moderate (41% – 60%)	7,388	39.9%
Heavy (61% - 80%)	552	3%
Severe (81% - 100%)	0	0%
Total	18,467	99.8%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	0	0%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	2,689	14.5%
Moderate (41% – 60%)	15,363	83%
Heavy (61% - 80%)	378	2%
Severe (81% - 100%)	56	.3%
Total	18,486	99.8%

1996/97 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	427	2.3%
Slight (1% - 20%)	3,897	21.1%
Light (21% - 40%)	2,034	11%
Moderate (41% – 60%)	11,855	64%
Heavy (61% - 80%)	168	.9%
Severe (81% - 100%)	53	.3%
Total	18,434	99.6%

1997/98 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	3,485	18.8%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	4,174	22.5%
Moderate (41% – 60%)	9,783	52.8%
Heavy (61% - 80%)	1,149	6.2%
Severe (81% - 100%)	0	0%
Total	18,591	100.3%

West Whitehorse Use Pattern Map Data

1986/87 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,951	27.1%
Slight (1% - 20%)	2,248	31.2%
Light (21% - 40%)	1,410	19.6%
Moderate (41% - 60%)	1,579	21.9%
Heavy (61% - 80%)	15	.2%
Severe (81% - 100%)	0	0%
Total	7203	100%

1987/88 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,951	27.1%
Slight (1% - 20%)	219	3%
Light (21% - 40%)	2,391	33.2%
Moderate (41% - 60%)	1,795	24.9%
Heavy (61% - 80%)	837	11.6%
Severe (81% - 100%)	0	0%
Total	7,193	99.8%

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,747	24.2%
Slight (1% - 20%)	1,219	16.9%
Light (21% - 40%)	1,418	19.7%
Moderate (41% - 60%)	2,136	29.6%
Heavy (61% - 80%)	688	9.5%
Severe (81% - 100%)	0	0%
Total	7,208	99.9%

1989/90 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,330	18.5%
Slight (1% - 20%)	1,001	13.9%
Light (21% - 40%)	1,864	25.9%
Moderate (41% - 60%)	2,551	35.4%
Heavy (61% - 80%)	453	6.3%
Severe (81% - 100%)	9	.1%
Total	7,208	100.1%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	2,024	28.1%
Slight (1% - 20%)	36	.5%
Light (21% - 40%)	601	8.3%
Moderate (41% - 60%)	3,756	52.1%
Heavy (61% - 80%)	755	10.5%
Severe (81% - 100%)	0	0%
Total	7,172	99.5%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	2,042	28.3%
Slight (1% - 20%)	407	5.6%
Light (21% - 40%)	1,697	23.5%
Moderate (41% - 60%)	2,810	40%
Heavy (61% - 80%)	262	3.6%
Severe (81% - 100%)	0	0%
Total	7,218	101%

1992/93 Grazing Year - incomplete
heavy snow

Use Zone	Acres Mapped	% Acres Used
Non Use	1,823	25.3%
Slight (1% - 20%)	1,477	20.5%
Light (21% - 40%)	90	1.2%
Moderate (41% - 60%)	0	0%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	3,390	47%

1993/94 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,701	23.7%
Slight (1% - 20%)	281	3.9%
Light (21% - 40%)	1,250	17.3%
Moderate (41% - 60%)	3,647	50.6%
Heavy (61% - 80%)	317	4.4%
Severe (81% - 100%)	12	.2%
Total	7,208	100.1%

1994/95 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,864	25.9%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	1,189	16.5%
Moderate (41% - 60%)	3,828	53.1%
Heavy (61% - 80%)	307	4.3%
Severe (81% - 100%)	20	.3%
Total	7,208	100.1%

1995/96 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,928	26.7%
Slight (1% - 20%)	368	5.1%
Light (21% - 40%)	933	12.9%
Moderate (41% - 60%)	3,507	48.7%
Heavy (61% - 80%)	456	6.3%
Severe (81% - 100%)	16	.2%
Total	7,208	99.9%

1998/99 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	1,799	25%
Slight (1% - 20%)	1,028	14.3%
Light (21% - 40%)	1,418	19.7%
Moderate (41% - 60%)	1,294	18%
Heavy (61% - 80%)	1,566	21.7%
Severe (81% - 100%)	103	1.4%
Total	7,208	100.1%

Boone Springs Use Pattern Map Data

1988/89 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	12,173	15.3%
Slight (1% - 20%)	10,550	13.2%
Light (21% - 40%)	41,542	52.1%
Moderate (41% – 60%)	12,416	15.6%
Heavy (61% - 80%)	3,052	3.8%
Severe (81% - 100%)	0	0%
Total	79,733	100%

1990/91 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	4,763	6%
Slight (1% - 20%)	0	0%
Light (21% - 40%)	56,708	71.1%
Moderate (41% – 60%)	17,408	21.8%
Heavy (61% - 80%)	736	.9%
Severe (81% - 100%)	118	.1%
Total	79,733	99.9%

1991/92 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	51,350	64.4%
Slight (1% - 20%)	4,485	5.6%
Light (21% - 40%)	5,826	7.3%
Moderate (41% – 60%)	18,072	22.7%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	79,733	100%

1992/93 Grazing Year - incomplete

Use Zone	Acres Mapped	% Acres Used
Non Use	50,313	63.1%
Slight (1% - 20%)	25,430	31.9%
Light (21% - 40%)	166	.2%
Moderate (41% – 60%)	2,576	3.2%
Heavy (61% - 80%)	1,000	1.3%
Severe (81% - 100%)	248	.3%
Total	79,733	100%

1993/94 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	17,034	21.4%
Slight (1% - 20%)	16,885	21.1%
Light (21% - 40%)	22,308	28%
Moderate (41% – 60%)	23,506	29.5%
Heavy (61% - 80%)	0	0%
Severe (81% - 100%)	0	0%
Total	79,733	100%

1994/95 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	27,855	34.9%
Slight (1% - 20%)	22,332	28%
Light (21% - 40%)	19,615	24.6%
Moderate (41% – 60%)	9,279	11.6%
Heavy (61% - 80%)	652	.8%
Severe (81% - 100%)	0	0%
Total	79,733	99.9%

1997/98 Grazing Year - complete

Use Zone	Acres Mapped	% Acres Used
Non Use	25,871	32.4%
Slight (1% - 20%)	2,742	3.4%
Light (21% - 40%)	35,539	44.6%
Moderate (41% – 60%)	14,536	18.2%
Heavy (61% - 80%)	1,045	1.3%
Severe (81% - 100%)	0	0%
Total	79,733	99.9%

Appendix 2: Livestock Carrying Capacity Tables

APPENDIX 2

ESTIMATED CARRYING CAPACITY CALCULATIONS FOR THE SHEEP COMPLEX AND SETTING APPROPRIATE MANAGEMENT LEVEL FOR WILD HORSES

The following is a summary of the carrying capacity calculations for livestock and wild horses by allotment. Utilization and actual use data were used along with the objective or desired utilization level. Actual use data includes use by cattle and wild horses wild horses are applicable. The carrying capacity for the UT/NV South, White Horse, Sugarloaf, Ferber Flat, and West White Horse Allotments was calculated using the following formula:

$$C.C. = \frac{\text{Actual Use (Livestock and Wild horses) x KA Util. Obj.}}{\text{Utilization recorded at the KA}}$$

Desired capacity was determined for each year in each key area that utilization data was collected. An average of those years (minus the high and low readings) were used to calculate the carrying capacity for each pasture.

If more than one key area exists within a pasture, the key area which best represents the highest level of significant use was selected to determine the carrying capacity for the pasture.

The carrying capacity for the Leppy Hills, and Lead Hills Allotments was calculated using the following formula:

$$C.C. = \frac{\text{Actual Use (Livestock) x Util. Obj (limiting factor).}}{\text{Weighted avg.}}$$

The carrying capacity for the Boone Springs Allotment was calculated using the following formula:

$$C.C. = \frac{\text{Actual Use (Livestock and Wild Horses) x Util. Obj (limiting factor).}}{\text{Potential Weighted avg.}}$$

Leppy Hills Allotment Carrying Capacity Weighted Average Analysis					
YEAR	**Actual Use Livestock (AUMS)**	**Wild Horse AUMs[2]**	**Weighted Average Utilization**	**Utilization Objective**	**Livestock Desired Carrying Capacity**
1986/87		n/d		50%	
1987/88	3,200	n/d	53%	50%	3,019
1988/89	2,735	n/d	51%	50%	2,681
1989/90	2,652	192		50%	
1990/91	2,675	216	50%	50%	2,675
1991/92	2,199	494	51%	50%	2,156
1992/93	2,016	581		50%	
1993/94	1,775	697		50%	
1994/95	1,677	112		50%	
1995/96	1,537	383		50%	
1996/97	1,681	551		50%	
1997/98	2,684	0		50%	
1998/99	542	0		50%	
Avg.	2,257	307			2,633 + 718[1] = 3,351(Livestock) 174 (Wild Horses)

[1] Includes 268 AUMs from the administrative sheep trail and 450 AUMs in the Morris Basin Spring Use area. The AUMs were derived from an adjudication map at the Elko Field Office.
The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 15% of the Goshute herd used the Leppy Hills Allotment. 178 x 12 months = 2,136 AUMs. 15% of 2,136 AUMs = 307 AUMs.
[2] Wild horse use is independent of livestock use in the Leppy Hills Allotment..

CARRYING CAPACITY ANALYSIS
UTAH/NEVADA #1 ALLOTMENT
KEY AREA 1001 NORTH

Key species: Indian ricegrass (ORHY) black sagebrush (ARARN) shadscale (ATCO)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's[1]	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses[2]	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87	125*	3/24/87 - 3/31/87	n/d	125	ORHY 24%	313*
1987/88	2,116	4/1/87 - 4/22/87 11/9/87 - 3/16/88	n/d	2,116	ORHY 36%	3,527
1988/89	314*	3/22/89 - 3/31/89	n/d	314	ATCO 58%	325*
1989/90	2,793	4/1/89 - 4/22/89 11/9/89 - 3/17/90	228	3,021	ORHY 44%	3,809
1990/91	172*	3/21/91 - 3/31/91	262	434	ORHY 36%	287*
1991/92	2,336	4/1/91 - 4/21/91 11/12/91 - 3/17/92	691	3,027	ORHY 47%	2,982
1992/93	1,421	11/28/92 - 3/31/93	662	2,083	not read	
1993/94	1,521	4/1/93 - 4/27/93 11/26/93 - 3/31/94	393	1,914	not read	
1994/95	1,337	4/1/94 - 4/30/94 11/13/94 - 3/31/95	150	1,487	ARARN 58%	1,383*
1995/96	3,159	4/1/95 - 4/30/95 11/15/95 - 3/31/96	474	3,633	ARARN 57%	3,325
1996/97	2,800	4/1/96 - 4/29/96 11/6/96 - 3/31/97	540	3,340	ARARN 67%	2,507
1997/98	1,080	4/1/97 - 4/30/97 11/15/97 - 3/31/98	0	1,080	ARARN 45%	1,440
1998/99	2,583	4/1/98 - 4/14/98 11/18/98 - 3/31/99	0	2,583	ARARN 34%	4,558*
1999/00	417*	4/1/99 - 4/28/99	0	417		
Average	2,115		363	1,827		
Total Carrying Capacity for the Utah/Nevada #1 Allotment North Pasture						2,932

[1] The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 17% of the Goshute herd used the North Pasture of the UT/NV #1 Allotment. 178 x 12 months = 2,136 AUMs. 17% of 2,136 AUMs = 363 AUMs.

[2] Sheep use is independent of wild horse use.

* Data was not used in the calculation.

CARRYING CAPACITY ANALYSIS
SOUTH PASTURE UTAH/NEVADA #1 ALLOTMENT
KEY AREA 1000 SOUTH

Key species: Indian ricegrass (ORHY) black sagebrush (ARARN) shadscale (ATCO)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87	932	11/8/86 - 3/19/87	Average Actual Use by wild horses is 87 AUMs	1,019	ORHY 28%	2,184
1987/88	1,505	11/7/87 - 2/6/88		1,592	EULA5 36%	2,653
1988/89	2,110	11/8/88 - 3/21/89		2,197	ORHY 19%	6,938*
1989/90	1,968	11/5/89 - 3/25/90		2,055	ORHY 40%	3,083
1990/91	1,459	11/9/90 - 3/21/91		1,546	ORHY 54%	1,718
1991/92	2,947	3/21/91 - 4/22/91 11/10/91 - 3/14/92		3,034	ORHY 54%	3,371
1992/93					not read	
1993/94					noy read	
1994/95	2,021	1/7/95 - 3/31/95		2,108	ARARN 60%	2,108
1995/96	2,207	4/1/95 - 4/14/95 1/12/96 - 3/31/96		2,294	ARARN 50%	2,753
1996/97	1,245	4/1/96 - 4/11/96 2/6/97 - 3/31/97		1,332	ARARN 61%	1,310*
1997/98	1,469	4/2/97 - 4/24/97 1/28/98 - 3/31/98		1,556	ARARN 25%	3,734
1998/99	728	4/1/98 - 4/17/98 2/14/99 - 3/31/99		815	ARARN 10%	4,890
1999/00	136*	4/1/99 - 4/17/99				
Average	1,690		87	1,777		2,944
Total Carrying Capacity for the Utah/Nevada #1 Allotment South Pasture					2,944 (Livestock and Wild Horses) 2,857 (Livestock) 87 (WH)	

[1] The Well RMP Wild Horse Amendment established an initial herd size of 299 horses for the Anetlope Valley HMA, as modified by the Spruce FMUD. Aerial census data indicates that 3% of the Antelope Valley herd use the South Pasture of the UT/NV #1 Allotment. 299 x 12 months = 3,588 AUMs. 3% of 3,588 AUMs = 107 AUMs.

* Data was not used in the calculation.

Lead Hills Allotment Weighted Average Carrying Capacity					
YEAR	**Actual Use Livestock (AUMS)**	**Wild Horse AUMs[12]**	**Potential Average Utilization**	**Utilization Objective**	**Potential Carrying Capacity**
1986/87	3,528	Average Actual Use by wild horses is 43 AUMs	40%	50%	4,410
1987/88	3,910		41%	50%	4,768
1988/89	4,146		46%	50%	4,507
1989/90	4,788		46%	50%	5,204
1990/91	4,776		49%	50%	4,873
1991/92	3,672		46%	50%	3,991
1992/93	4,717			50%	
1993/94	2,486			50%	
1994/95	3,098			50%	
1995/96	1,979			50%	
1996/97	2,273		39%	50%	2,914
1997/98	2,289		22%	50%	5,202
1998/99	1,421			50%	
Avg.	3,314	43			
Total Carrying Capacity for the Lead Hills Allotment					4,483 + 1,126 + 24 = 5,633 4,483(Livestock) 1,126 (administrative sheep trail) 24 (Wild Horses)

1,126 AUMs from the administrative sheep trail. The AUMs were derived from an adjudication map of the administrative sheep trail.

[1] The Wells RMP Wild Horse Amendment established an initial herd size of 178 horses for the Goshute HMA, as modified by the Spruce FMUD. Aerial census data indicates the 2% of the Goshute herd uses the Lead Hills Allotment. 178 x 12 months = 2,136 AUMs. 2% of 2,136 AUMs = 43 AUMs.

[2]Wild horse use is independent of livestock use in the Lead Hills Allotment.

CARRYING CAPACITY ANALYSIS
WHITEHORSE ALLOTMENT
KEY AREAS 1003, 1004

Key species: winterfat (EULA5) Indian ricegrass (ORHY) black sagebrush (ARARN) shadscale (ATCO)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87	2,187	11/1/86 - 3/31/87	incidental use by wild horses	2,187	not read	
1987/88	2,423	4/1/87 - 4/14/87 11/1/87 - 3/31/88		2,423	KA 1003 ORHY 22%	6,608*
1988/89	1,946	4/1/88 - 4/12/88 11/15/88 - 3/31/89		1,946	KA 1004 EULA5 68%	1,692*
1989/90	2,253	4/1/89 - 4/14/89 11/12/89 - 3/31/90		2,253	KA 1004 ATCO 47%	2,876
1990/91	2,101	4/1/90 - 4/12/90 11/15/90 - 3/31/91		2,101	KA 1004 EULA5 50%	2,521
1991/92	2,312	4/1/91 - 4/12/91 11/7/91 - 3/31/92		2,312	KA 1003 ORHY 32%	4,335
1992/93[1]	1,190	4/1/92 - 4/13/92 11/10/92 - 1/17/93		1,190	KA 1004 EULA5 15%	4,760*
1993/94	2,143	11/12/93 - 3/31/94		2,143	KA 1004 EULA5 22%	5,845
1994/95	2,346	4/1/94 - 4/12/94 11/10/94 - 3/31/95		2,346	KA 1003 ARARN 21%	6,703
1995/96	2,240	4/1/95 - 4/12/95 11/14/95 - 3/31/96		2,240	KA 1004 EULA5 35%	3,840
1996/97	2,289	4/1/96 - 4/13/96 11/12/96 - 3/31/97		2,289	KA 1004 EULA5 49%	2,803
1997/98	2,317	4/1/97 - 4/13/97 11/12/97 - 3/31/98		2,317	KA 1004 EULA5 35%	3,972
1998/99	2,256	4/1/98 - 4/15/98 11/15/98 - 3/31/99		2,256	KA 1004 EULA5 39%	3,471
Average	2,154		incidental use	2,154		
Total Carrying Capacity for the Whitehorse Allotment					4,041+ 417 = 4,458(Livestock) incidental use (Wild Horses)	

Includes 417 AUMs from the administrative sheep trail. The AUMs were derived from an adjudication map of the administrative sheep trail.

[1]Heavy snow year. Not used in calculating carrying capacity.

* Data was not used in the calculation.

CARRYING CAPACITY ANALYSIS
SUGARLOAF ALLOTMENT
KEY AREAS 1005, 1006

Key species: Indian ricegrass (ORHY) black sagebrush (ARARN) shadscale (ATCO) winterfat (EULA5)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87	2,254	11/19/86 - 3/31/87	incidental use by wild horses	2,254	not read	
1987/88	2,348	4/1/87 - 4/12/87 11/19/87 - 3/31/88		2,348	KA 1005 ARARN 44%	3,202*
1988/89	2,090	4/1/88 - 4/4/88 11/26/88 - 3/31/89		2,090	KA 1006 ATCO 58%	2,162
1989/90	2,028	4/1/89 - 4/15/89 12/11/89 - 3/31/90		2,028	KA 1006 EULA5 54%	2,253
1990/91	2,086	4/1/90 - 4/11/90 12/13/90 - 3/31/91		2,086	KA 1006 EULA5 54%	2,318
1991/92	1,365	4/1/91 - 4/10/91 12/9/91 - 2/28/92		1,365	KA 1005 ORHY 50%	1,638
1992/93					N/A	
1993/94	1,816	12/7/93 - 3/31/94		1,816	KA 1005 ARARN 47%	2,318
1994/95	2,253	4/1/94 - 4/10/94 11/21/94 - 3/31/95		2,253	KA 1005 ARARN 51%	2,651
1995/96	2,032	4/1/95 - 4/16/95 12/11/95 - 3/31/96		2,032	KA 1005 ARARN 56%	2,177
1996/97	1,939	4/1/96 - 4/13/96 12/19/96 - 3/31/97		1,939	KA 1005 ARARN 76%	1,531
1997/98	1,645	4/1/97 - 4/17/97 12/11/97 - 3/1/98		1,645	KA 1006 EULA5 41%	2,407
1998/99	1,890	12/16/98 - 3/31/99		1,890	KA 1005 ARARN 75%	1,512*
1999/00	248*	4/1/99 - 4/14/99				
Average	1,979		incidental use	1,979		
Total Carrying Capacity for the Sugarloaf Allotment					2,061+ 169 = 2,512(Livestock) incidental use (Wild Horses)	

Includes 169 AUMs from the administrative sheep trail. The AUMs were derived from an adjudication map of the administrative sheep trail.

* Data was not used in the calculation.

CARRYING CAPACITY ANALYSIS
FERBER FLAT ALLOTMENT
KEY AREA FF01

Key species: winterfat (EULA5) Indian ricegrass (ORHY) black sagebrush (ARARN) shadscale (ATCO)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87	965	12/7/86 - 3/31/87	incidental use by wild horses	965	not read	
1987/88	1,132	4/1/87 - 4/5/87 12/5/87 - 3/31/88		1,132	not read	
1988/89	44*	4/1/88 - 4/5/88			ORHY 55%	48*
1989/90	1,175	12/11/89 - 3/31/90		1,175	ORHY 66%	1,068*
1990/91	1,761	4/1/90 - 4/23/90 11/15/90 - 3/31/91		1,761	ORHY 45%	2,348
1991/92	1,545	4/1/91 - 4/20/91 11/15/91 - 3/31/92		1,545	ARARN 42%	1,839
1992/93	997	4/1/92 - 4/20/92 11/15/92 - 1/15/93 3/12/93 - 3/31/93		997	N/A	
1993/94	1,535	4/1/93 - 4/22/93 11/10/93 - 3/31/94		1,535	ARARN 41%	1,872
1994/95	1,390	4/1/94 - 4/20/94 11/21/94 - 3/31/95		1,390	ARARN 52%	1,337
1995/96	1,569	4/1/95 - 4/19/95 11/11/95 - 3/31/96		1,569	ARARN 54%	1,453
1996/97	1,813	4/1/96 - 4/20/96 11/21/96 - 3/31/97		1,813	ARARN 52%	1,743
1997/98	1,933	4/1/97 - 4/29/97 11/20/97 - 3/31/98		1,933	ARARN 50%	1,933
1998/99	2,156	4/1/98 - 4/28/98 11/15/98 - 3/31/99		2,156	ARARN 42%	2,567*
1999/00	342*	4/1/99 - 4/26/99				
Average	1,498		incidental use	1,498		
Total Carrying Capacity for the Ferber Flat Allotment					1,789 + 224 = 2,013(Livestock) incidental use (Wild Horses)	

Includes 224 AUMs from the administrative sheep trail. The AUMs were derived from an adjudication map of the administrative sheep trail.

* Data was not used in the calculation.

CARRYING CAPACITY ANALYSIS
WEST WHITEHORSE ALLOTMENT
KEY AREA WW01, WW02

Key species: needle and thread (STCO4) Indian ricegrass (ORHY) black sagebrush (ARARN) winterfat (EULA5)

YEAR	ACTUAL USE Sheep AUM's	PERIODS OF USE	ACTUAL USE Wild horses AUM's	TOTAL ACTUAL USE (AUMS) Sheep & Wild horses	KMA UTILIZATION LIMITING FACTOR	TOTAL CARRYING CAPACITY AUM's
1986/87[1]	437	2/1/87 - 3/28/87	incidental use by wild horses	437	ORHY 48%	546
1987/88	583	1/24/88 - 3/27/88		583	ARARN 70%	416
1988/89	633	1/17/89 - 3/27/89		633	EULA5 63%	502
1989/90	523	1/31/90 - 3/31/90		523	WW-02 ARARN 65%	402
1990/91	593	4/1/90 - 4/6/90 1/30/91 - 3/31/91		593	WW-01 ORHY 57%	624*
1991/92	442	4/1/91 - 4/6/91 12/9/91 - 1/23/92		442	WW-02 ORHY 49%	541
1992/93[1]	337	12/6/92 - 1/14/93		337	WW-02 EULA5 5%	3,370[1]
1993/94	541	12/15/93 - 2/15/94		541	WW-02 ARARN 53%	510
1994/95	655	11/23/94 - 1/17/95		655	WW-02 ARARN 66%	496
1995/96	629	11/24/95 - 1/10/96		629	WW-02 ARARN 74%	425
1996/97	613	2/11/96 - 2/5/97		613	WW-02 ARARN 76%	403
1997/98	663	11/26/97 - 1/27/98		663	WW-02 ARARN 67%	495
1998/99	642	11/25/98 - 2/12/99		642	WW-02 ARARN 84%	382
1999/00	603	12/21/99 - 2/28/00		603	WW-02 ARARN 83%	363*
Average	564		incidental use	564		
Total Carrying Capacity for the West Whitehorse Allotment					465(Livestock) incidental use (Wild Horses)	

[1]Heavy snow year. Not used in calculating carrying capacity.
* Data was not used in the calculation

Boone Springs Allotment Carrying Capacity Weighted Average Analysis.				
Year	**Actual Use Livestock (AUMs)**	**Actual Use Wild Horse (AUMs)**	**Weighted Average Utilization**	**Livestock Desired Carrying Capacity**
1988/89	456	1,048	36%	2,088
1990/91	561	1,190	35%	2,501
1991/92[1]	non-use	1,099	45%	1,221
1992/93	2,269	1,713	N/A	N/A
1993/94	2,586	1,012	40%	4,497
1994/95	1,556	1,118	37%	3,613
1997/98	1,214	1,308	37%	3,408
Avg.	1,440	1,216		3,212
Total Carrying Capacity for the Boone Springs Allotment				2,947 (Livestock) 265 (Wild Horses)

The Well RMP Wild Horse Amendment established an initial herd size of 299 horses for the Antelope Valley HMA, as modified by the Spruce FMUD. Aerial census data indicates that 25% of the Antelope Valley herd use the Boone Springs Allotment. 299 x 12 months = 3,588 AUMs. 25% of 3,588 AUMs = 897 AUMs.
[1]Pre-livestock use. Wild horse use only.
AML was calculated each year with pre-livestock utilization at key areas. Pre-livestock wild horse numbers were collected. The limiting factor method was used to determine desired utilization.
Total carrying capacity was calculated using weighted avg. and total livestock avg. and annual year-long horse use.
Livestock carrying capacity was calculated by subtracting AML for each year that was used use pattern maps. (UPM)

The carrying capacity for each key area was determined and then the three key areas were averaged for a total carrying capacity for the allotment. This carrying capacity is the wild horse appropriate management level and was determined to be 265 AUMs or 22 wild horses for 12 months.

Appendix 3: Wild Horse Data Tables

Wild Horse Use for Grazing Year 4/1-3/31

Year	Allotment	Census Date	Horse #s	Actual Use/AUMs	Use Period
1983	Ferber Flat	5/25/83	0	0	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		0	0	Winter
	BooneSprings		43	516	Yearlong
	Whitehorse		0	0	Winter
	W.Whitehorse	7/1/83	0	0	Winter
	Lead Hills		6	72	Yearlong
	Ut-Nv#1 No		16	192	Yearlong
	Leppy Hills		81	972	Yearlong
1985	Ferber Flat	6/20/85	0	0	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		70	420	Winter
	BooneSprings		22	264	Yearlong
	Whitehorse	6/28/85	0	0	Winter
	W.Whitehorse		0	0	Winter
	Lead Hills		12	108	Yearlong
	Ut-Nv#1 No		77	960	Yearlong
	Leppy Hills		46	252	Yearlong
1988-1989	Ferber Flat	1/15/89	12	72	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		20	120	Winter
	BooneSprings		261	1048	Yearlong
	Whitehorse		0	0	Winter
	W.Whitehorse		0	0	Winter
	Lead Hills	No census		n/d	Yearlong
	Ut-Nv#1 No	"		"	Yearlong
	Leppy Hills	"		"	Yearlong
1989-90	Ferber Flat	3/8/90	0	0	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		71	142	Winter
	BooneSprings		99	3013	Yearlong
	Whitehorse		0	0	Winter
	W.Whitehorse	3/8/90	0	0	Winter
	Lead Hills		0	0	Yearlong
	Ut-Nv#1 No		19	228	Yearlong
	Leppy Hills		16	192	Yearlong

Year	Allotment	Census Date	Horse #s	Actual Use/AUMs	Use Period
1990-91	Ferber Flat	2/8/91	0	0	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		11	66	Winter
	BooneSprings		100	1190	Yearlong
	Whitehorse		0	0	Winter
	W.Whitehorse		0	0	Winter
	Lead Hills	No census		0	Yearlong
	Ut-Nv#1 No	"	"	262	Yearlong
	Leppy Hills	"	"	216	Yearlong
1991-92	Ferber Flat	9/4/91 &	0,0	0	Winter
	Sugarloaf	2/27/92	0,0	0	Winter
	Ut-Nv#1 So		0,0	0	Winter
	BooneSprings		72,162	1099	Yearlong
	Whitehorse	9/5/91 &	0,0	0	Winter
	W.Whitehorse	3/4/92	0,0	0	Winter
	Lead Hills		0,4	4	Yearlong
	Ut-Nv#1 No		94,5	691	Yearlong
	Leppy Hills		63,14	494	Yearlong
1992-93	Ferber Flat	5/30/92,9/2/92	n/d,0,0	0	Winter
	Sugarloaf	1/29/93	n/d,0,1	0	Winter
	Ut-Nv#1 So		n/d,7,0	42	Winter
	BooneSprings		95,190,84	1713	Yearlong
	Whitehorse		0,0,0	0	Winter
	W.Whitehorse		n/d,0,0	0	Winter
	Lead Hills		0,18,0	94	Yearlong
	Ut-Nv#1 No		106,66, 0	662	Yearlong
	Leppy Hills		68,61,22	581	Yearlong
1993-94	Ferber Flat	5/15/938/5/93,	0,0,0,0	0	Winter
	Sugarloaf	1/24/94,3/3/94	0,0,0,0	0	Winter
	Ut-Nv#1 So		3,2,14,0	53	Winter
	BooneSprings		97,68,103,58	1012	Yearlong
	Whitehorse		0,0,0,0	0	Winter
	W.Whitehorse		0,0,0,0	0	Winter
	Lead Hills	5/14/93,8/4/93,	7,7,0	59	Yearlong
	Ut-Nv#1 No	12/3/93,3/4/94	28,51,15	393	Yearlong
	Leppy Hills		49,93,3	697	Yearlong

Year	Allotment	Census Date	Horse #s	Actual Use/AUMs	Use Period
1994-95	Ferber Flat	8/28/94,3/14/95	0,0	0	Winter
	Sugarloaf		0,0	0	Winter
	Ut-Nv#1 So		0,13	8	Winter
	BooneSprings	5/12/94,8/28/94,	114,89,99	1118	Yearlong
	Whitehorse	3/14/95	0,0,0	0	Winter
	W.Whitehorse		0,0,0	0	Winter
	Lead Hills	8/25/94,3/20/95	6,14	47	Yearlong
	Ut-Nv#1 No		10,25	150	Yearlong
	Leppy Hills		14,7	112	Yearlong
1995-96	Ferber Flat	no census		0	Winter
	Sugarloaf	"		0	Winter
	Ut-Nv#1 So	"		incidental	Winter
	BooneSprings	"		1366	Yearlong
	Whitehorse	9/15/95	0	0	Winter
	W.Whitehorse	no census		0	Winter
	Lead Hills	9/15/95	5	110	Yearlong
	Ut-Nv#1 No		52	474	Yearlong
	Leppy Hills		53	383	Yearlong
1996-97	Ferber Flat	2/20/97	0	0	Winter
	Sugarloaf		0	0	Winter
	Ut-Nv#1 So		0	0	Winter
	BooneSprings		95	1140	Yearlong
	Whitehorse	2/11/97	0	0	Winter
	W.Whitehorse		0	0	Winter
	Lead Hills		2	55	Yearlong
	Ut-Nv#1 No		0	540	Yearlong
	Leppy Hills		0	551	Yearlong
1997-98	Ferber Flat	no census	n/d	0	Winter
	Sugarloaf	"	n/d	0	Winter
	Ut-Nv#1 So	"	n/d	0	Winter
	BooneSprings	"	n/d	1308	Yearlong
	Whitehorse	2/9/98	0	0	Winter
	W.Whitehorse		0	0	Winter
	Lead Hills		2	24	Yearlong
	Ut-Nv#1 No		0	0	Yearlong
	Leppy Hills		0	0	Yearlong

Year	Allotment	Census Date	Horse #s	Actual Use/AUMs	Use Period
1998-99	Ferber Flat	7/15/98	0	0	Winter
	Sugarloaf	"	0	0	Winter
	Ut-Nv#1 So	"	0	0	Winter
	BooneSprings	"	91	1154	Yearlong
	Whitehorse	"	0	0	Winter
	W.Whitehorse	"	0	0	Winter
	Lead Hills	no census	n/d	24	Yearlong
	Ut-Nv#1 No	"	n/d	0	Yearlong
	Leppy Hills	"	n/d	0	Yearlong

Pre-Livestock Use by Wild Horses/AML Determination - Boone Springs Allotment

BOONE SPRINGS KEY AREA BO-01				
YEAR	KEY SPECIES	UTILIZATION/ DATE READ	HORSE AUMS	CARRYING CAPACITY
1992-93	ORHY	56% 11/9/92	1036	185[1]
1995-96	ORHY	3% 10/24/95	776	2587[1]
1997-98	ORHY	25% 10/22/97	735	294
1999-00	ORHY	27.5% 11/12/99	780	284
AVERAGE				289

1 - The highest and lowest values were not used in determining carrying capacity.
This key falls within the winter combined use area, which has a wild horse prelivestock use objective of 10%. Carrying Capacity was calculated with the following formulat:

$$\frac{\text{Actual Use}}{\text{Average Utiliaztion}} = \frac{\text{Potential Actual Use}}{\text{Desired Avg. Utilization}}$$

BOONE SPRINGS KEY AREA BO-02					
YEAR	KEY SPECIES	UTILIZATION/ DATE READ	AVERAGE UTILIZATION	HORSE AUMS	CARRYING CAPACITY
1992-93	EULA5 ORHY	56% 11/12/92 22%	37%	1036	280
1995-96	ORHY EULA5	0% 10/24/95 1%	1%	776	7760[1]
1997-98	ORHY EULA5	34.5% 10/22/97 3%	19%	735	387
1998-99	ORHY EULA5	39% 10/6/98 25%	32%	627	196
1999-00	ORHY EULA5	31% 11/12/99 59%	45%	780	173[1]
AVERAGE					288

1 - The highest and lowest values were not used in determining carrying capacity.
This key falls within the winter combined use area, which has a wild horse prelivestock use objective of 10%. Carrying Capacity was calculated with the following formulat:

$$\frac{\text{Actual Use}}{\text{Average Utiliaztion}} = \frac{\text{Potential Actual Use}}{\text{Desired Avg. Utilization}}$$

BOONE SPRINGS KEY AREA BO-03				
YEAR	KEY SPECIES	UTILIZATION/ DATE READ	HORSE AUMS	CARRYING CAPACITY
1992-93	ORHY	66% 11/12/92	1036	157
1995-96	ORHY	4% 10/24/95	776	1940[1]
1997-98	ORHY	54% 10/22/97	735	136
1998-99	ORHY	55% 10/6/98	627	114[1]
1999-00	ORHY	21.5% 11/12/99	780	363
AVERAGE				217

1 - The highest and lowest values were not used in determining carrying capacity.
This key falls within the winter combined use area, which has a wild horse prelivestock use objective of 10%. Carrying Capacity was calculated with the following formulat:

$$\frac{\text{Actual Use}}{\text{Average Utiliaztion}} = \frac{\text{Potential Actual Use}}{\text{Desired Avg. Utilization}}$$

The carrying capacity for each key area was determined and then the three key areas were averaged for a total carrying capacity for the allotment. This carrying capacity is the wild horse appropriate management level and was determined to be 265 AUMs or 22 wild horses for 12 months.

Table 1. Wild Horse Census Results - Boone Springs			
Month/Year	**Number in Antelope Valley HMA**	**Number in Boone Springs Allotment**	**% in Boone Springs Allotment**
5/83	249	44	18%
6/85	349	22	6%
2/87	341	76	22%
6/88	131	nd	nd
1/89	533	264	50%
3/90	465	99	21%
2/91	366	100	27%
9/91	369	72	20%
3/92	583	162	28%
6/92	446	95	21%
9/92	576	190	33%
1/93	347	84	24%
5/93	312	97	31%
8/93	279	68	24%
12/93	427	103	24%
5/94	330	114	35%
3/94	392	58	15%
8/94	377	89	24%
3/95	310	99	32%
2/97	441	95	22%
7/98	524	91	17%
AVG.			**25%**

Table 2. Wild Horse Census Results - South Pasture Utah/NV #1			
Month/Year	**Number in Antelope Valley HMA**	**Number in South Pasture UT-NV #1 Allotment**	**% in South Pasture UT-NV #1 Allotment**
5/83	249	0	0%
6/85	349	70	20%
2/87	341	nd	nd
6/88	131	nd	nd
1/89	533	20	4%
3/90	465	71	15%
2/91	366	11	3%
9/91	369	0	0%
3/92	583	0	0%
6/92	446	nd	nd
9/92	576	7	1%
1/93	347	0	0%
5/93	312	3	1%
8/93	279	2	.7%
12/93	427	14	3%
3/94	392	0	0%
5/94	330	0	0%
8/94	377	0	0%
3/95	310	13	4%
2/97	441	0	0%
7/98	524	0	0%
AVG.			**3%**

Table 3. Wild Horse Census Results -Leppy Hills			
Month/Year	**Number in Goshute HMA**	**Number in Leppy Hills Allotment**	**% in Leppy Hills Allotment**
7/83	200	81	41%
6/85	257	46	18%
7/88	144	26	18%
3/90	229	15	7%
9/91	194	63	32%
3/92	303	5	2%
6/92	404	68	17%
9/92	201	61	30%
1/93	436	22	5%
5/93	330	49	15%
8/93	251	93	37%
1/94	256	3	1%
8/94	234	14	6%
3/95	281	7	2%
9/95	316	53	17%
2/97	382	0	0%
2/98	478	0	0%
AVG.			**15%**

Table 4. Wild Horse Census Results -Lead Hills			
Month/Year	**Number in Goshute HMA**	**Number in Lead Hills Allotment**	**% in Lead Hills Allotment**
7/83	200	6	3%
6/85	257	12	5%
7/88	144	9	6%
3/90	229	0	0%
9/91	194	0	0%
3/92	303	4	1%
6/92	404	0	0%
9/92	201	18	9%
1/93	436	0	0%
5/93	330	7	2%
8/93	251	7	3%
1/94	256	0	0%
8/94	234	6	3%
3/95	281	14	5%
9/95	316	5	2%
2/97	382	2	.5%
2/98	478	0	0%
AVG.			**2%**

Census tables were not included for the Ferber Flat, Sugarloaf, West Whitehorse and Whitehorse allotments because the majority of the census flights found 0 horses within the allotments.

Table 5. Wild Horse Census Results -North Pasture Utah/NV #1Allotment			
Month/Year	**Number in Goshute HMA**	**Number in North Pasture Utah/NV #1 Allotment**	**% in North Pasture Utah/NV #1 Allotment**
7/83	200	16	8%
6/85	257	77	30%
7/88	144	94	65%
3/90	229	19	8%
9/91	194	94	48%
3/92	303	5	2%
6/92	404	106	26%
9/92	201	66	33%
1/93	436	0	0%
5/93	330	28	8%
8/93	251	51	20%
1/94	256	15	6%
8/94	234	10	4%
3/95	281	25	9%
9/95	316	52	16%
2/97	382	0	0%
2/98	478	0	0%
AVG.			**17%**

Table 6. AML for the Goshute HMA			
HMA	**Allotment**	**Initial Herd Size[1] (number of horses)**	**AML[2] (number of horses)**
Goshute	Spruce	34	50h/12m
	Big Springs	84	77h/12m
	Leppy Hills	27	29h/6m or 15h/12m
	UT/NV #1 North	30	33h/6m or 17h/12m
	Lead Hills	4	4h/6m or 2h/12m
	Whitehorse	incidental	incidental
Total		**178**	**85-161**

[1] Initial herd size from the Wells RMP Wild Horse Amendment, as modified by the Spruce and West Cherry Creek FMUDs

[2] The AML was established for the Goshute HMA based on the limiting factor of the winter use areas in the Spruce and Big Springs Allotments. The winter areas were determined to be able to support 127 horses for 12 months, but the majority of these horses leave the winter areas and migrate into the mountains in the summer. This allows the winter areas some rest, therefore the AML does not need to be lower than 127 horses; however to establish a four-year gather cycle, the HMA would have to be gathered down to 85 horses. The AUMs allocated to wild horses through this evaluation process, add up to a total of 161 horses for 12 months. This will be the high end of the AML.

Table 7. AML for the Antelope Valley HMA			
HMA	**Allotment**	**Initial Herd Size[1] (number of horses)**	**AML (number of horses)**
Antelope Valley	UT/NV #1 South	9	15h/6m or 7h/12m
	West Whitehorse	incidental	incidental
	Whitehorse	incidental	incidental
	Sugarloaf	incidental	incidental
	Ferber Flat	incidental	incidental
	Boone Springs'	74	23 h/12m
	Spruce	143	181h/12m
	Currie	60	40h/12m
	Badlands	3	incidental
	Antelope Valley	10	8h/12m
Total		**299**	**131-259[2]**

[2] To calculate the range of AML, the following mathematical equation was used: Maximum AML/1+the recruitment rate. Horses would be gathered down to the low end of the AML and allowed to increase over a four year period to the maximum AML. Once at the maximum AML, a gather would occurr.

Appendix 4: Riparian Data

APPENDIX 4

Proper Functioning Condition Definition

Proper functioning condition (PFC). Lentic (springs/seeps/ponds) riparian-wetland areas are functioning properly when adequate vegetation , landform, or debris is present to:

- dissipate energies associated with wind action, wave action, and overland flow from adjacent sites. thereby reducing erosion and improving water quality;
- filter sediment and aid floodplain development;
- improve floodwater retention and groundwater recharge;
- develop root masses that stabilize islands and shoreline features against cutting action;
- restrict water percolation;
- develop diverse ponding characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and
- support greater biodiversity.

The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation. If a riparian-wetland area is not in PFC, it is placed into one of three other categories:

- Functional-at-risk. Riparian/wetland areas that are in functional condition, but an existing soil, water, or vegetation attribute makes them susceptible to degradation.
- Nonfunctional. Riparian/wetland areas that clearly are not providing adequate vegetation, landform, or debris to dissipate energies associated with wave action, wind action and overland flows, and thus are not reducing erosion, improving water quality, etc. as listed above.
- Unknown. Riparian-wetland areas that BLM lacks sufficient information on to make any form of determination.

Trend is reported for areas that are identified as functional-at-risk, and is a key consideration in interpreting the data. Areas identified as functional-at-risk with a downward trend are often the highest management priority because a decline in resource values is apparent. Yet these areas often retain much of the resiliency associated with a functioning area. There is usually an opportunity to reverse this trend through changes in management. Functional-at-risk areas with an upward trend are often a priority for monitoring efforts. These areas are improving but remain at risk. Monitoring these areas assures that upward trends continue.

From BLM Technical References TR 1737-9, 15 and 16, "Riparian Area Management,....Assessing Proper Functioning Condition...."

APPENDIX 4

Summary of Proper Functioning Condition Field Assessments for the Sheep Allotments Complex
Elko Field Office, BLM 1999

ALLOTMENT	SOURCE	ID	LEGAL	DATE	STATUS	TREND
LEPPY HILLS						
	Tunnel Spring	SA-99-01	N34 E68 28 DD	6/02/99	Functional at Risk	Not Apparent
	Rock Spring	SA-99-02	N33 E68 10 AC		Nonfunctional	
UT-NV #1 NORTH						
	Spring Gulch	SA-99-03	N32 E68 26 AD	6/02/99	PFC	
	Sidehill Spring	SA-99-04	N32 E68 14CB		Functional at Risk	Downward
LEAD HILLS						
	Blue Lakes (pond)	SA-99-05	N30 E70 02 BC	6/02/99	PFC	
	Little Mud Spring (seep)	SA-99-06	N30 E69 17 AD		PFC	
	Felt Spring	SA-99-07	N30 E68 12 CD		Functional at Risk	Upward
	Serviceberry Spring	SA-99-08	N32 E68 27 CD		Dry	
BOONE SPRINGS						
	Perkins Spring	SA-99-09	N26 E65 16 DA	36312	Functional at Risk	Downward

SUMMARY: -9 lentic (spring/seep) sources
- 3 at PFC
- 1 Functional at risk with upward trend
- 1 Functional at risk with trend not apparent
- 2 Functional at risk with downward trend
- 1 Nonfunctional
- 1 Unrated (dry)

[1]PFC is proper functioning condition as described in BLM Technical References 1737-9, 15 and 16. Also refer to Appendix (4).

Appendix 5: Fire Management Plan

Appendix 5

Sheep Allotment Complex
Fire Management Plan

Table of Contents

Introduction:

In 1998 the Elko Field Office prepared a new district-wide fire management plan, that encompasses all BLM administered public lands within the Elko District boundaries. This plan was prepared as per national direction and went through public review and internal review. This plan was approved at the national level in 1999. This plan defines the goals and general objectives for fire suppression, prescribed fire and fuels management for the District.

This site specific plan tiers off the Field Office plan and sets specific objectives for this area in the areas of prescribed fire fuels management. The wildland fire suppression objectives remain constant with the Field Office plan. The site specificity of this plan will assist in meeting the goals and objectives of Elko Field Office Plan.

Background Information:

The Field Office fire management plan differentiated fire management goals and objectives by area and vegetation type. These "polygons" are the basis for all fire management activity within the district. The Sheep Allotment Complex Fire Management Plan has five (5) of these polygons located within its scope.

These polygons (Map 1) and their descriptions are as follows:

B-3 District-wide Areas of Annual Vegetation Invasion

Current condition - Cheatgrass and other annuals dominate these polygons. Isolated areas of sagebrush in early to mid seral condition and native perennial grasses are also present.

Future Desired Condition - Resource management objectives for these areas are to restrict the expansion of cheatgrass into surrounding native plant communities and to increase the amount of native vegetation available for livestock grazing and wildlife habitat, and for improving watershed conditions.

Constraints - None, unless archaeological sites are present. Primary emphasis is on preventing the spread of fire into areas of native vegetation.

Appropriate Fire Management Repsonse - Hold unplanned ignitions to 300 acres at least 90 percent of the time. The Battle Mountain Field Office has their adjacent areas in a "C" category. They will prevent the spread of fire in their "C" polygon into this polygon. Fire history in these areas is dominated by large acreage fast- burning fires that often exceed 20,000 acres. They are dependent on the amount of winter/spring precipitation and the resultant amount of annual vegetation growth. These fires expand the annual vegetation areas by burning into native vegetation, which allows the annuals to

colonize the burned areas in the year after the fire. Fire history for this area shows an average of 21 fires per year burning 12,149 acres.

Prescribed Fire/Fuels Management Opportunities - Prescribed fire is to be used in a selective manner in these areas, usually in conjunction with mechanical or chemical treatments. Planned ignitions can be used in a limited way to accomplish specific management objectives within areas of native vegetation. Chainings and seedings within this polygon will be maintained through the use of planned ignitions. These ignitions will not be considered part of the decadal burn targets since they are maintenance of existing developments.

B-4 Woodlands

Current Condition - The primary vegetation type in these polygons is woody vegetation dominated by Utah juniper, pinyon pine, bitterbrush and mountain mahogany with associated perennial grasses and shrubs. Management objectives are for woodland products and big game habitat.

Future Desired Condition - Maintain woodlands.

Constraints - None, unless archaeological sites are present. The critical watershed in this polygon is Taylor Canyon in the Cherry Creek Mountains.

Appropriate Fire Management Response - Fire Management Direction - Hold unplanned ignitions to 300 acres at least 90 percent of the time. The Battle Mountain and Ely Field Offices adjacent pinyon-juniper areas are in "C" polygons that have much higher allowable acreage totals (ranging from 1,000 to 5,000 acres) to hold unplanned ignitions to. The Elko District will be responsible for suppression costs of fires occurring within two miles of the District boundary that will cross boundaries. Fire history in these polygons is that of isolated small (0-10 acres) fires. The vegetation type is conducive to large wind-driven or plume-dominated fires that can burn 500 to 5,000 acres in one to two burning periods. Fire history for these areas show an average of 4.5 fires per year burning 175 acres.

Prescribed Fire/Fuels Management Opportunities - Mechanical vegetation treatments are preferred to change the vegetation age structure and composition. Prescribed fire should be used in a limited role to accomplish wildlife habitat goals while maintaining the woodland resources. When mechanical treatments cannot meet wildlife habitat management goals, use prescribed fire to create openings of 10 to 50 acres.

B-6 Low Sagebrush & Desert Shrub

Current Condition - These areas are dominated by plant communities that do not have fire as part of their natural ecology. Vegetation types are dominated by desert shrub and low sage communities with varying degrees of perennial grasses and forb composition. Management objectives in these areas are to maintain the native community, to provide for livestock and wildlife forage. Some of the areas are important for winter antelope habitat.

Future Desired Condition - Prevent annual vegetation or non-native plant intrusions into this vegetation type resulting from disturbance of the existing community. Maintain native vegetation composition.

Constraints - Low vegetation response potential, limited precipitation and fragile soils mean that mechanized equipment will scar the land and make rehabilitation expensive. Engine usage should be the preferred alternative since most of the fires occur next to roads.

Appropriate Fire Management Response - Hold unplanned ignitions to 100 acres at least 90 percent of the time. All human caused fires will be fully suppressed using minimal impact suppression techniques (MIST). At low fire activity levels, natural ignitions may be monitored if this will cause less ecological impact than suppression. All fires will be fully suppressed using MIST. Ely Field Office has an acreage target for unplanned ignitions of 50 acres for adjacent areas (Steptoe Valley) in the same vegetative community. Elko Field Office will suppress all fires within two (2) miles of the boundary to the higher Ely standard. Fire history in these areas show an average of 6.5 fires per year burning 513 acres.

Prescribed Fire/Fuel Treatment Opportunities - Prescribed fire should be a very minor component in this vegetation type; and then only to achieve site specific resource objectives within the context of the larger area.

C-1 Wilderness Study Areas (WSA's)

Current Condition - The vegetation types in these areas vary from sagebrush and perennial grasses to pinyon-juniper woodlands to mixed conifer woodlands. Primary management objectives for these areas are to maintain their natural characteristics and to comply with the Interim Management Policy for Lands under Wilderness Review.

Future Desired Condition - Maintain the natural ecology of the areas including pre-settlement fire activity. Prevent the encroachment of annual and non-native vegetation into the areas.

Constraints - No mechanized equipment usage. All vehicular traffic must be on routes identified during the initial inventory (1979-1981). Use MIST and "light hand

on the land" techniques.

Appropriate Fire Management Response - Hold unplanned ignitions to 2,000 acres or less at least 90 percent of the time. The fire histories in these areas range from low to high with most being small (0-10 acres). Occasional large (10,000+ acres) fires have occurred in some areas. Both planned and unplanned ignitions can be managed to maintain fire as part of the natural ecology, to reduce fuel loadings and to meet specific management objectives. Fire history for these areas show an average of 3.2 fires per year burning 66 acres.

Prescribed Fire/Fuels Management Opportunities - Use planned ignitions to reintroduce fire into the ecology of the areas. Develop and apply fire prescription guidelines to allow for management of unplanned ignitions through monitoring and/or minimal suppression efforts in these areas if prescription guidelines are met. Planned ignitions will be curtailed if unplanned ignitions meet management objectives. Use MIST in all suppression actions.

U-1 Small Towns, Mining Operations and Recreation Sites - Urban Interface

Current Condition - The primary vegetation type around these areas is sagebrush and perennial grasses with intrusions of cheatgrass and other annual vegetation. The management objective for these areas is to preserve and protect the developed features, life and property. This area also includes the rapidly growing urban interface around Elko and Spring Creek Recreation sites may be developed or undeveloped, but are moderately to heavily used during the summer and fall months.

Future Desired Condition - Maintain or improve the native vegetation in the area. Use vegetation manipulation to create buffer areas around critical developed sites to provide for public safety.

Constraints - Construction of fire line within the recreation sites should be avoided. If necessary, the minimum line needed should be located outside of developed sites, areas of concentrated use or Special Recreation Management Areas. Efforts should be made to keep unplanned ignitions from reaching these areas. Powerlines, communication sites and other critical sites within the mining and oil/gas sites need full protection. Problems associated with these areas include powerlines and arcing and chemical and explosive storage areas. Fire history for these areas shows an average of 9.4 fires per year burning 2,901 acres.

Appropriate Fire Management Response - Hold unplanned ignitions to minimal acreage within this polygon. Fire history is minimal because of their size, however, many can be easily threatened by wildfire. In particular, the towns of Midas and Tuscarora have been threatened in the past.

Prescribed Fire/Fuels Management Opportunities - Use planned ignitions to reduce fuel loadings. Most of the mining areas (Carlin Trend) and urban interface are within Nevada Division of Forestry protection zones. Work with NDF and the mining companies to do hazard fuel reduction (either mechanical or planned ignitions) around critical sites. Area also has great potential for green stripping projects to create buffers around critical areas. The small towns in greatest risk from wildfire are Midas and Tuscorora and are priority for greenstripping or other fuels modification treatments.

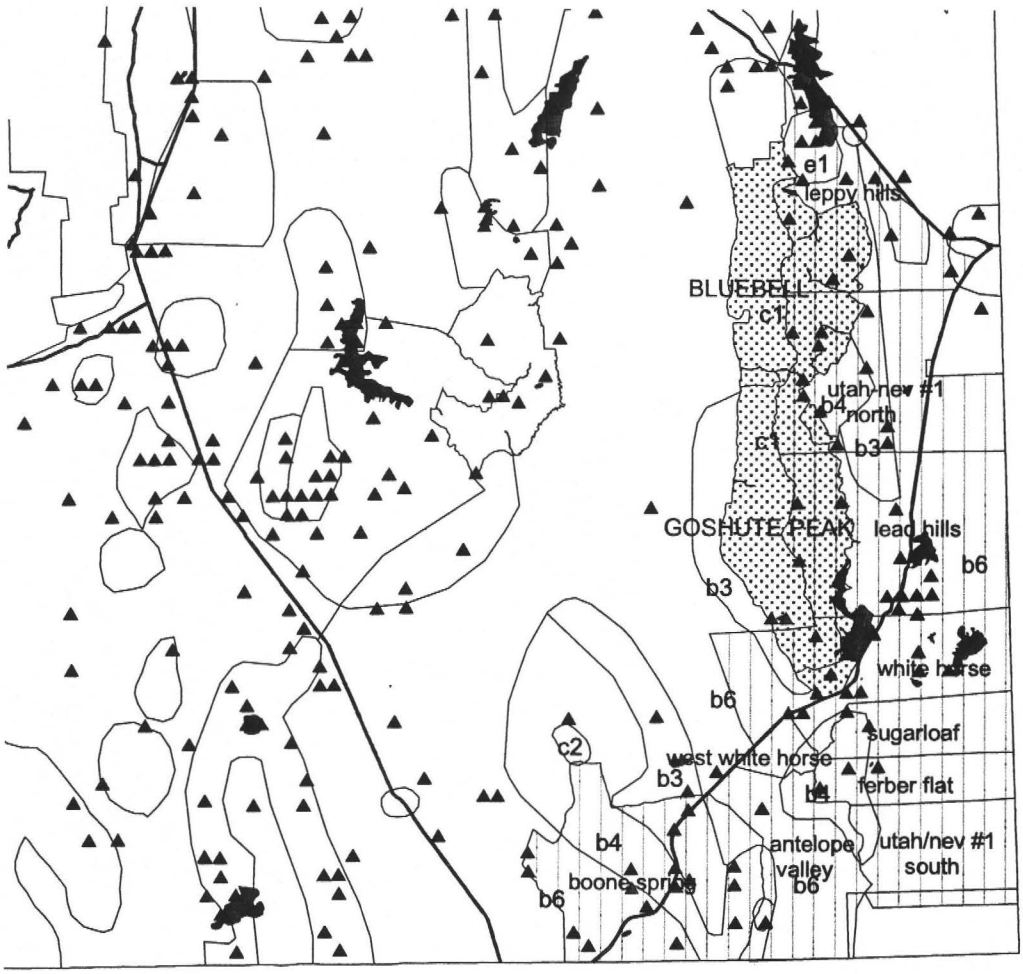
Fire History:

The Sheep Complex has a moderate number of wildland fires. In the period from 1980 to 1996 (for all fires) and 1997-1999 (for large fires only) there were 61 documented wildland fires. There is no easily accessible data for small fires from 1997 to 1999, but based on prior history, there were probably an additional 10 to 15 wildland fires. Surprisingly almost 50 percent of the fires occurred in the low sage/desert shrub community. The two WSAs in the complex, Goshute Peak and Bluebell accounted for 33 percent. The rest was spread among the pinyon-juniper woodlands, cheatgrass areas and the urban interface surrounding the Pilot Valley exchange. Most of the wildland fires were small, averaging less than ½ acre. However, there are a large number of fires ranging from 300 to over 3,000 acres in the low sagebrush/desert shrub community. The probable explanation for this is that these areas have been invaded by cheatgrass, which has altered the fire regime in this vegetation type, leading to more frequent and larger acreage wildland fires. Normally, this vegetation type has low fire occurrence. The native plant spacing and fuel loadings are discontinuous and light, *and the native vegetation developed with little if any adaptation to fire.* Recorded fire occurrences are found on Map 1.

Table 1. Sheep Complex Fire History Table

Polygon	Number of Fires	False Alarms	Largest Fire Size and Year	Total Acres
B3 Cheatgrass Areas	5	2	3 - 1995	3.5
B4 Pinyon-Juniper Woodlands	4	0	80 - 1996	93.1
B6 Low Sage and Desert Shrub	29	8	3,170 - 1983	10,941.1
C1 WSA - Goshute & Bluebell	20	1	106.7 - 1988	271.0
U1 Urban Interface	3	0	2 - 1988	2.3
Totals	61	11		11,311

Map 1
Fire History & Fire Polygons
Sheep Complex Evaluation



Fire Polygons
Highways
Wildland Fire Ignitions 1980-96
Large Wildfires 1980-96
Large Fires 1999
WSA Boundaries
Allotment

N

Wildland Fire Suppression Tactics:

A. **Recommendation:** Maintain the current suppression strategies as called for in the 1998 Elko Field Office Fire Management Plan for "polygons" B3, B4, B5, and U1.

Rationale: The fire management plan takes into account fire occurrence and size and location of suppression resources to achieve the "Most Effective Level" of fire suppression for the district in its entirety. The effectiveness of suppression is monitored through periodic evaluations.

B. **Recommendation:** Evaluate the B6 "polygon" for a possible change to B3 Cheatgrass "polygon" based on documented large fire occurrence. If the change is made, then redo Interagency Initial Attack Analysis (IIAA) to re-validate suppression requirements in the area.

C. **Recommendation:** Create Wildland Fire Use Areas on the Goshute Peak and Bluebell WSAs (entire areas), and Sugar Loaf, White Horse and Kinsley Mountains from 6,560 feet (2000 meters) up (Map 2). Allow fire to be re-introduced into the ecosystem to assist in maintaining the remnant mixed conifer forests and their associated aspen stands, grass and sage "balds" and associated brush species. This phase will include the cultural inventories necessary under the 1999 State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office.

Wildland Fire Use Areas will follow the guidelines described in Wildland and Prescribed Fire Management Policy, Implementation Procedures Guide of August 1998 and future revisions. This includes:

1. Stage I: Initial Fire Assessment and Go-No-Go decision within two (2) hours of discovery.
2. Stage II: Short-Term Implementation Actions within 24 hours (currently under revision)
3. Stage III: Long Term Implementation Actions if periodic Fire Assessment indicates need.

Fires occurring in these areas may go through one or more of the above stages dependent on fire size, complexity and longevity. Stage 1 is the initial Go-No-Go decision. Stages II and III represent tactical implementation plans which include fire behavior, risk assessment, overall objectives and mitigation plans (holding, limited suppression actions, closures, etc.).

Prescriptive Parameters:

1. Remote Area Weather Station (RAWS) to be used is Spruce Mountain for National Fire Danger Rating System (NFDRS) fuel models F (pinyon-juniper) and G (mixed Conifer).

2. Local Fire Preparedness Levels: 1 to 5

3. Great Basin and/or National Preparedness Levels : 1 to 5. At levels 4 and 5 State and/or National Concurrence is needed.

4. Energy Release Component (ERC) of appropriate fuel model (F or G) as calculated as a seven day average of a maximum of 80%.

Rationale: Goshute Peak and Bluebell WSAs - The Interim Management Policy and Guidelines for Lands Under Wilderness Review states that fire is a natural component of many wildernesses and that the natural role of fire and fire history be considered in fire management planning. The WSAs' vegetation , especially the pinyon-juniper, mixed conifer and higher elevation sagebrush meadows and "balds" had fire as a natural part of their ecology. Due to fire suppression and other management decisions, these areas have missed one to two fire cycles. Wildland fire use areas with the defined prescription parameters would allow fire be reintroduced as part of the natural landscape. The wildland fire use areas will cover the entire WSAs, not just the portions in the Sheep Complex. They will also be covered in allotment specific fire management plans for the Big Springs and the Spruce allotments.

Sugar Loaf, White Horse and Kinsley Mountains - These mountains are an extension of the Goshute Mountains which contain the WSAs. Wildland fire use areas in these mountain ranges above 6560 feet (2000 meter) would allow for the natural re-introduction of fire into the mixed conifer and pinyon-juniper areas on these mountains. This is based on the following reasons: 1- The steep slopes on this range pose definite safety hazards to the firefighter, 2- The fuels on the slopes are very broken and discontinuous, 3- There is visual evidence that naturally ignited fires only burn one or two trees per ignition, 4- The cost of suppressing a fire in the steep rocky slopes far exceeds any resource damage done by occasional one tree fires, 5- The natural fire regime in this area is that of infrequent single tree fires with little potential to become large, and 6- the areas exhibit the same vegetative and topographical conditions, including mixed conifer stands and pinyon-juniper stands with minimal shrub and herbaceous understory as the WSAs.

Table 2. Dispatch Run Card for Wildland Fire Use Areas

Unit Priority	Staffing Class	#Units
E-1W*	1-5	1 engine for monitoring purposes or aerial recon Based on Duty Officer Decision. Immediately start WFIP process.

NOTE : USE SPRUCE MOUNTAIN RAWS SITE FOR ERC CALCULATIONS

****

Table 3. Goshute Peak, Bluebell WSAs, Sugar Loaf, White Horse and Kinsley Mountains Wildland Fire Implementation Plan Flow Chart

Local Fire Preparedness Level 1-5

|

Yes - Stage I time frame 2 hours

|

Great Basin/National Preparedness Level 1-3

| |

Yes No----- NSO/National Approval –No---- Suppress

| |

|----------Yes

|

ERC (7 Day Average) 80% or less

| |

Yes No------ Suppress

|

Implement Stage I

|

Ignition still burning after 24 hours (or proposed time frame revision in National Policy)

| |

Yes No----- confirm out and fire report

|

Implement Stage II

|

Need Assessment Indicates Maintaining Stage II Implementation Actions

| |

Yes No

| |

Continue Stage II Implement Stage III Actions

Prescribed Fire and Fuels Management Objectives (See Map 2 for locations):

For an in-depth discussion of fire effects on fire dependent vegetation types, see "Vegetation Treatment by Fire" Environmental Assessment BLM/EK/PL-98/026.

This fire management plan establishes baseline/minimum prescribed fire and fuels management goals for this complex. Other projects may be incorporated into this plan at a future date depending on additional resource needs.

A. Goshute and Bluebell WSAs

Recommendation: Institute an aggressive prescribed fire program in the mixed conifer within these WSAs.

Rationale: The mixed conifer areas within these WSA's are remnant forests where the lack of fire and extended drought periods have decreased the health of the forests and increased fuel loadings. Using prescribed fire in these areas would create a mosaic of uneven aged stands, reduce fuel loadings and reduce the incidence of diseased trees. These actions would lead to the increased health of the forest and reduce the chances of large stand replacement fires that may eliminate these remnants from the ecosystem. Opening up the stands would increase the numbers of pine trees while reducing white fir composition. Forest health in these stands is of great importance so that the mixed conifer forests can be retained. These areas are managed as wilderness, so mechanical treatments are not possible.

B. White Horse Mountain/Sugar Loaf Peak

Recommendation: Use prescribed fire on limited basis on the east foothills North of Little White Horse Pass to improve grass and forb diversity and to prevent the encroachment of juniper.

Rationale: There are intrusions of Wyoming big sagebrush in the draws. There is little cheatgrass in this area and most of the area is comprised of open woodlands with perennial grass/ low sagebrush/big sagebrush understory. Some areas can be burned to keep the open woodland aspect of this area, remove decadent sagebrush, and promote forb and grass growth. It is estimated that approximately 300 acres could be burnt in this area.

C. Kinsley Mountains

Recommendation: Use prescribed fire on the alluvial fans coming off the mountain.

Rationale: There is pinyon-juniper encroachment on the alluvial fans. In areas where cheatgrass is limited, prescribed fire could be used to open up these areas and re-establish the grass forb and shrub components to increase the forage diversity for wildlife and livestock. It is estimated that from 300 to 600 acres could be treated with prescribed fire in this range. The lack of road accessibility greatly limits the possibility of mechanical or fuel wood cutting options to reduce pinyon-juniper encroachment.

D. Antelope Range

Recommendation: Use prescribed fire and/or mechanical thinning from the 6500 foot elevation level up to re-create the natural fire occurrence by creating openings of from 1 to 50 acres in the pinyon-juniper.

Rationale: From the 6500 foot elevation up the area is dominated by closed canopy pinyon-juniper. In the rocky soils this is probably the climax community. In the deeper soils, the fire seral community should be dominated by sagebrush and perennial grasses. The use of prescribed fire would re-create the natural fire occurrence in this vegetation type and create openings for wildlife species and wild horses to utilize for forage. Vegetative species diversity would increase within the burned areas, improving forage for deer, antelope, wild horses and non-game species while maintaining more than adequate thermal and hiding cover. It is estimated that 300 to 500+ acres could be treated by prescribed fire in this area. The lack of road access seriously limits the possibility of mechanical or fuel wood cutting options to open up these stands.

E. Dolly Varden Mountains

Recommendation: Use prescribed fire and/or mechanical thinning from the 6500 foot elevation level up to re-create the natural fire occurrence by creating openings of from 1 to 50 acres in the pinyon-juniper.

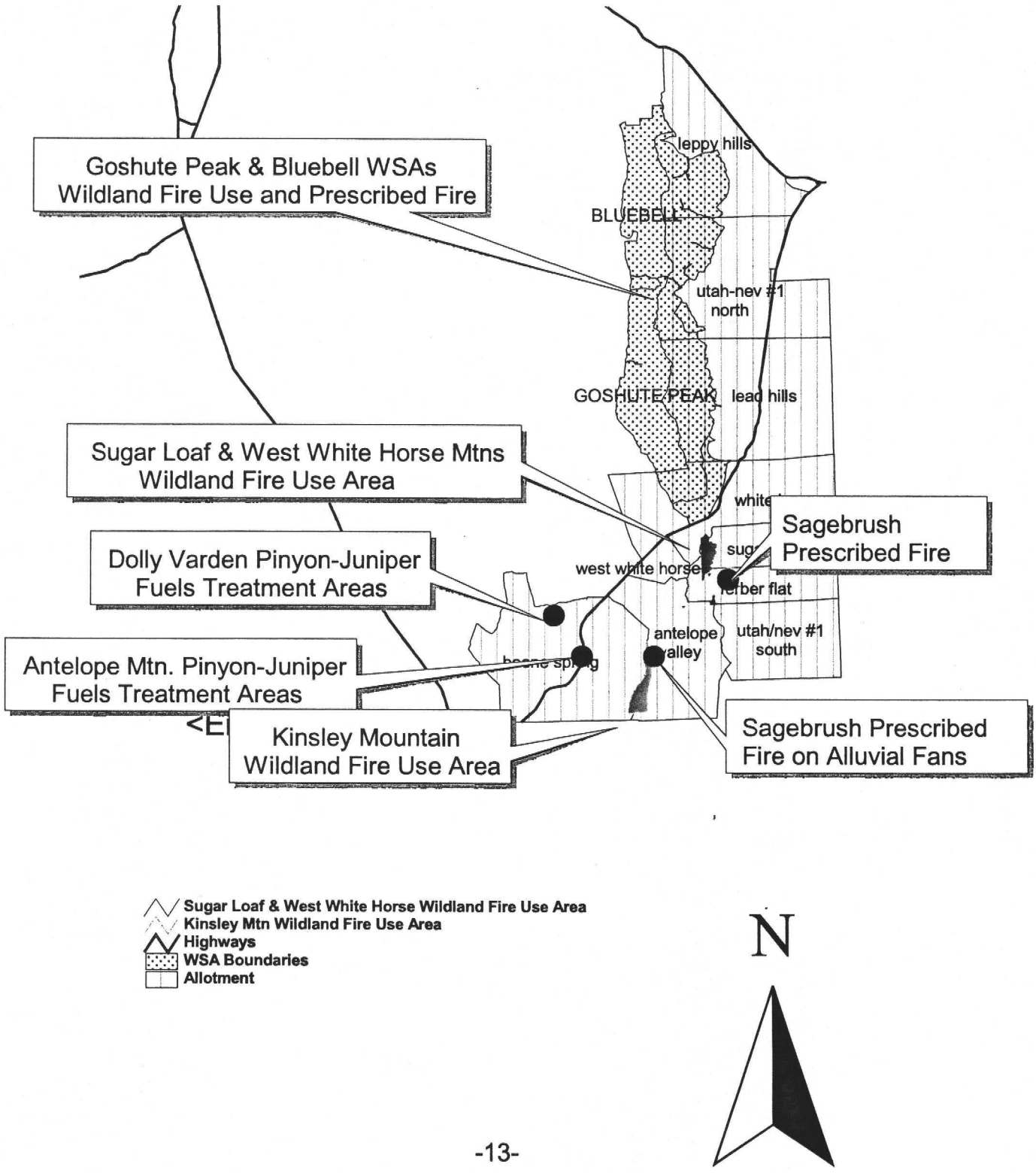
Rationale: Only a small part of these mountains is within the Sheep Complex Allotment Evaluation. Most of the area covered is within the pinyon-juniper vegetation type. There are areas from the 6500 feet elevation and above that could benefit from the same prescribed fire treatment as detailed in the Antelope Range discussion. It is estimated that approximately 5-100 acres within this area could be treated by prescribed fire. The area above 6500 feet is dominated by closed canopy pinyon-juniper. In rocky soils this is probably the climax community. In the deeper soils, the fire seral community should be dominated by sagebrush, perennial grasses and forbs. Prescribed fire would re-create the natural fire occurrence; create openings for wildlife species and wild horses, maintain the important tree thermal and hiding cover; and increase grass and forb diversity. The lack of road access in these areas reduce the viability of mechanical fuels projects such as woodcutting and thinning to create these openings for wildlife.

Monitoring and Evaluation

All management ignited prescribed fires and fuels treatment projects will be monitored. Plots will be established prior to the treatment. The plots will be read pre-treatment and post-treatment to ascertain if project objectives were met. Wildland fire suppression activity will be evaluated periodically to ensure that suppression objectives are being met. This information will be used in modifying future objectives.

Sites with mechanical thinning and/or wildfire implementation plans will have a cultural inventory meeting the standards as outlined in the 1999 State Protocol Agreement between the Nevada State Historic Preservation Office (SHPO) and the BLM. Mixed conifer and aspen sites will be inventoried to obtain accurate data on stand size, composition, age structure, location and fire history.

Map 2.
Sheep Complex Fire Management Plan
Wildland Fire Use and Fuels Treatments



Appendix 6: Sheep Allotment Complex Objectives

Sheep Allotment Complex Upland Objectives

A. Short term objectives:

1. Maximum utilization of 60% of previous year's growth on key herbaceous species by the end of the grazing season.

2. Maximum utilization of 50% of previous year's growth on salt desert shrub species by the end of the grazing season.

3. Maximum utilization of 30% on of current year's growth on salt desert shrub species and 50% on key herbaceous species in spring use areas.

4. Allow for a maximum of 10% utilization by wild horses prior to livestock turnout in the winter combined use areas.

B. Long term objectives: Desired Plant Community (DPC):

Key Area/Allotment	Current Status (% allowable composition)	Desired Plant Community (% allowable composition)
1007/Leppy Hills Allotment Course Gravelly Loam 5-8"p.z.	Perennial Grasses : 18 Perennial Forbs : T Perennial Shrubs : 27	Perennial Grasses : 35-55 Perennial Forbs : T-5 Perennial Shrubs : 30-40
1008/Leppy Hills Allotment Shallow Calcareous Loam 8-10"p.z.	Perennial Grasses : 7 Perennial Forbs : T Perennial Shrubs : 42	Perennial Grasses : 35-45 Perennial Forbs : 5-10 Perennial Shrubs : 35-45
1000/UT/NV South Allotment Shallow Calcareous Loam 8-10"p.z.	Perennial Grasses : 31 Perennial Forbs : 2 Perennial Shrubs : 42	Perennial Grasses : 30-40 Perennial Forbs : 3-5 Perennial Shrubs : 30-50
1001/UT/NV North Allotment Shallow Calcareous Slope 8-10"p.z.	Perennial Grasses : 12 Perennial Forbs : 0 Perennial Shrubs : 35	Perennial Grasses : 30-40 Perennial Forbs : 3-5 Perennial Shrubs : 45-55
1013/Lead Hills Allotment Shallow Calcareous Slope 8-10"	Perennial Grasses : 9 Perennial Forbs : 4 Perennial Shrubs : 42	Perennial Grasses : 30-40 Perennial Forbs : 3-5 Perennial Shrubs : 45-55
1014/Lead Hills Allotment Course Gravelly Loam 5-8"	Perennial Grasses : 6 Perennial Forbs : T Perennial Shrubs : 4	Perennial Grasses : 35-55 Perennial Forbs : T-5 Perennial Shrubs : 30-40
1003/White Horse Allotment Shallow Calcareous Loam 8-10"p.z.	Perennial Grasses : 13 Perennial Forbs : 3 Perennial Shrubs : 43	Perennial Grasses : 30-40 Perennial Forbs : 3-5 Perennial Shrubs : 45-55
1004/White Horse Allotment Course Gravelly Loam 5-8"	Perennial Grasses : 9 Perennial Forbs : 3 Perennial Shrubs : 17	Perennial Grasses : 35-55 Perennial Forbs : 3-5 Perennial Shrubs : 30-40
1005/Sugarloaf Allotment Shallow Calcareous Loam 8-10"p.z.	Perennial Grasses : 31 Perennial Forbs : 3 Perennial Shrubs : 33	Perennial Grasses : 40-45 Perennial Forbs : 3-5 Perennial Shrubs : 30-50

1006/Sugarloaf Allotment Course Gravelly Loam 5-8"	Perennial Grasses : 20 Perennial Forbs : 2 Perennial Shrubs : 32	Perennial Grasses : 35-55 Perennial Forbs : 3-5 Perennial Shrubs : 30-40

Key Area/Allotment	Current Status (% allowable composition)	Desired Plant Community (% allowable composition)
FF-01/Ferber Flat Allotment Shallow Calcareous Slope 8-10"	Perennial Grasses : 19 Perennial Forbs : 5 Perennial Shrubs : 20	Perennial Grasses : 30-40 Perennial Forbs : T-5 Perennial Shrubs: : 35-55
WW-01/West White Horse Allotment Silty Clay 8-10"	Perennial Grasses : 3 Perennial Forbs : 0 Perennial Shrubs : 45	Perennial Grasses : 25-45 Perennial Forbs : T-5 Perennial Shrubs : 45-55
WW-02/West White Horse Allotment Shallow Calcareous Slope 8-10"	Perennial Grasses : 24 Perennial Forbs : 4 Perennial Shrubs : 24	Perennial Grasses : 30-50 Perennial Forbs : 5-10 Perennial Shrubs : 25-45
BO-01/Boone Springs Allotment Shallow Calcareous Slope 8-10"	Perennial Grasses : 14 Perennial Forbs : 8 Perennial Shrubs : 39	Perennial Grasses : 20-40 Perennial Forbs : 5-10 Perennial Shrubs : 40-50
BO-02 /Boone Springs Allotment Silty 5-8" p.z.	Perennial Grasses : 6 Perennial Forbs : 0 Perennial Shrubs : 70	Perennial Grasses : 5-15 Perennial Forbs : T-5 Perennial Shrubs : 70-80
BO-03 /Boone Springs Allotment Shallow Calcareous Loam 8-10" p.z.	Perennial Grasses : 13 Perennial Forbs : 3 Perennial Shrubs : 40	Perennial Grasses : 40-50 Perennial Forbs : 5-10 Perennial Shrubs : 40-50

Sheep Allotment Complex Wild Horse Objectives

1. Remove sufficient wild horses to attain the appropriate management level and maintain populations at a level which maintain a thriving natural ecological balance consistent with other resource values.

2. Maintain a healthy, viable population of wild horses within the Sheep Allotment Complex.

3. Adjust the appropriate management level if continued monitoring and evaluation of data shows a need.

4. Manage the wild horses within the Sheep Complex in a manner that maintains their wild free-roaming characteristics.

5. Improve the distribution of wild horses within the Sheep Complex by developing reliable water sources. Emphasis and priority should be given to the Boone Springs Allotment. Ensure the year-long habitat requirements of wild horses.

6. Allow for a maximum of 10% utilization by wild horses prior to livestock turnout in the winter combined use areas.

SHEEP ALLOTMENT COMPLEX,
RIPARIAN HABITAT AND OBJECTIVES

Data will be collected using methodology outlined in BLM Technical Reference 1737-16, 1998, "A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas" for seeps/springs. Functional condition assessment is relative to capability and potential. Measurements and objectives are for public land only.

Location	Allotment	Baseline Data	Trend	Long Term Objectives
Tunnel Spring	Leppy Hills	Functional at Risk	Not Apparent	PFC
Rock Spring	Leppy Hills	Non-Functional		PFC
Spring Gulch	UT/NV North	PFC		PFC
Sidehill Spring	UT/NV North	Functional at Risk	Downward	PFC
Blue Lakes (pond)	Lead Hills	PFC		PFC
Little Mud Spring	Lead Hills	PFC		PFC
Felt Spring	Lead Hills	Functional at Risk	Upward	PFC
Serviceberry Spring	Lead Hills	Dry		
Perkins Springs	Boone Springs	Functional at Risk	Downward	PFC

Appendix 7: Noxious Weed Information

Weed Species of the Sheep Allotment Complex. Their potential habitat and proposed treatments.		
Common Name	**Habitat ***	**Herbicide**
Canada thistle	Occurs in cropland, riparian areas, pastures, rangelands, rights-of-way and other disturbed areas.	Banvel at .25 to .5 pt. ai/A plus 2,4-D at .23 to .5 lb. ae/A. Tordon at 1 to 2 pt. ai/A plus 2, 4D at 1 lb. ae/A. Curtail at 1 to 5 qts product/A Stinger at .13 to .19 ae/A Telar at 1.5 oz. ai/A Escort at .6 oz. ai/A
Hoary cress	Occurs in disturbed areas and in croplands, rangelands and riparian areas. Prefers alkaline soils.	Banvel at .25 to .5 pt/A plus 2,4-D at .25 to .5 ae/A Escort at .3 to .6 oz. ai/A Telar at .37 to .75 oz. ai/A 2,4-D at 2 to 3 lb ae/A Amitrole at 3.0 lb ai per 50 gallons of water
Houndstongue	Occurs in disturbed areas such as rights-of-way, rangeland and abandoned cropland.	2,4-D at 2.0 lb ae/A Escort at .75oz. product/A Tordon at .5lb. ae/A
Tamarisk	Occurs along riparian areas.	Arsenal + Roundup Ultra at 3 pints Arsenal + 1 quart roundup per/A

* Habitats for listed weed species are not inclusive.

Appendix 8: Glossary

Actual Use - a report of the actual livestock grazing use certified to be accurate by the permittee or lessee.

ACEC - Area of Critical Environmental Concern. The area delineated as the Salt Lake ACEC in the Wells Land Use Plan (Wells RMP 1984), was identified as a historical peregrine falcon use area which supported a population of nesting falcons as late as 1960. The essential habitat, both in quality and quantity, are still present.

Allotment - an area of land designated and managed for grazing of livestock. Such an area may include intermingled private, State, or Federal lands used for grazing in conjunction with the public lands.

AMP - Allotment Management Plan. A documented program which applies to livestock grazing on the public lands, prepared in consultation, cooperation, and coordination with the permittee(s).

AML - Appropriate Management Level. The number of wild horses within a given area, usually an HMA, which will result in a thriving, natural ecological balance between wild horses and other resource uses.

AUM - Animal Unit Month. The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

Browse - the part of shrubs, half shrubs, woody vines and trees available for animal consumption.

Canopy Cover - the percentage of ground covered by a vertical projection downward of the outermost perimeter of the natural spread of foliage of plants.

CFR - Code of Federal Regulation.

Estimated use - the use made of forage on an area by wildlife, wild horses, wild burros, and/or livestock where actual use data are not available.

Ecological status - the present state of vegetation of a range site in relation to the potential natural community for the site. Ecological status is use independent. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential natural community. The four ecological status classes correspond to 0-25, 26-50, 51-75, or 76-100 percent similarity to the potential natural community and are called early seral, mid seral, late seral, and potential natural community, respectively.

ESI - Ecological Status Inventory. The methodical collection of data to determine ecological status of a range site.

FMUD - Final Multiple Use Decision. Subsequent to the protest period following a

PMUD, a FMUD is issued.

Forage Production - the weight of forage that is produced within a designated period of time or a given area. Production may be expressed as green, air dry, or oven weight.

Forb - any herbaceous plant other than those in the Gramineae (true grass), Cyperaceae (sedges), and Juncaceae (rushes) families, i.e., any broad-leafed flowering plant whose stem, above ground, does not become woody and persistent.

Frequency - a quantitative expression of the presence or absence of individuals of a species in a population. It is defined as the percentage of occurrence of a species in a series of samples of uniform size.

HA - Herd Area - that area used by wild horses in 1971.

HMA - Herd Management Area. Designated areas established for the management of wild horses. HMAs are constrained to the boundaries of herd areas or smaller.

HMAP - Herd management area plan. A single use activity plan that guides the management of wild horses in one or more HMAs.

HMP - herd management plan. A wildlife activity plan.

Hedging - the appearance of browse plants that have been browsed so as to appear artificially clipped; or consistent browsing of terminal buds of browse species causing excessive lateral branching and a reduction in upward and outward growth.

Key area - a relatively small portion of a rangeland selected because of it location, use, or grazing value as an area on which to monitor the effects of grazing use. It is assumed that key areas, if properly selected, will reflect allotment, or other grazing unit.

Key species - those species which must, because of their importance, be considered in a management program; or forage species whose use serves a s an indicator to the degree of use of associated species.

LUP - Land Use Plan. - 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 provision of the Federal Land Policy and Management Act (FLPMA) of 1976 and establish management direction for resource uses of public lands.

Noxious Weed - a plant that interferes with management objectives for a given area of land at a given point in time.

Monitoring - the orderly collection, analysis, and interpretation of resource data to

evaluate progress toward meeting management objectives.

MUD - multiple use decision. A MUD establishes the terms and conditions of the grazing permit and implements changes to grazing use and or active preference. A MUD consolidates those resource decisions which are a direct result of using and interpreting monitoring data. MUDs may include a livestock decision, wild horse decision and a wildlife decision. MUDs establish an appropriate management level for wild horses and burros that occur within the allotment.

Objective - planned results to be achieved within a stated time period. Objectives are subordinate to goals, are narrower and shorter in range, and have increased possibility of attainment.

PFC - Proper Functioning Condition. A term used to explain riparian-wetland areas when adequate vegetation, land-form, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid flood plain development.

Plant Cover - or cover. The plants or plant parts, living or dead, on the surface of the ground. Vegetative cover or herbage cover is composed of living plants and litter cover of dead parts of plants.; the area of ground cover by plants of one or more species.

PMUD - Proposed multiple use decision. At the conclusion of the evaluation process, a PMUD is issued when the use objectives are not being met and a change in current management is needed.

PNC - Potential natural community. The biotic community that would become established if all successional sequences were completed without interferences by man under the present environmental condition.

Proper Use - a degree of utilization of current year's growth which, if continued, will achieve management objectives and maintain or improve the long-term productivity of the site.

Range site - a kind of rangeland with a specific potential natural community and specific physical site characteristics, differing from other kinds of rangeland in its ability to produce vegetation and to respond to management.

RMP - Resource Management Plan. A more specific land use plan which guides management of multiple resources in resource areas.

RPS - Rangeland Program Summary. The RPS is used to identify and inform the public of grazing allotment management objectives in three major categories which are: Livestock, wildlife and wild horses. Additionally, the RPS identifies the specific kinds of monitoring studies used to measure management goals. Proposed range

improvements are identified by allotment indicating the goals directed toward accomplishing the objectives of the land use plan.

Seep - wet areas, normally not flowing, arising from an underground water source.

Succession - the orderly process of community change; it is the sequence of communities which replace on another in a given area.

Selective Management Category - Selective management classifies allotments into three categories "M" (Maintain), "I" (Improve), or "C" (Custodial). Allotments were grouped into these categories according to their management needs, potential for improvement, and Bureau funding/manpower constraints.

On "M" category allotments the objectives is to maintain current satisfactory conditions. On "I" category allotments, the objective is to improve current unsatisfactory conditions. On "C" category allotments, the objective is to manage custodial while protecting existing resource values.

Trend - the direction of change in ecological status or in resource value ratings observed over time. Trend in ecological status is described as *toward* or *away from* the potential natural community or as *not apparent*. Trend in a resource value rating for a specific use should be described as *up*, *down* or *not apparen*t.

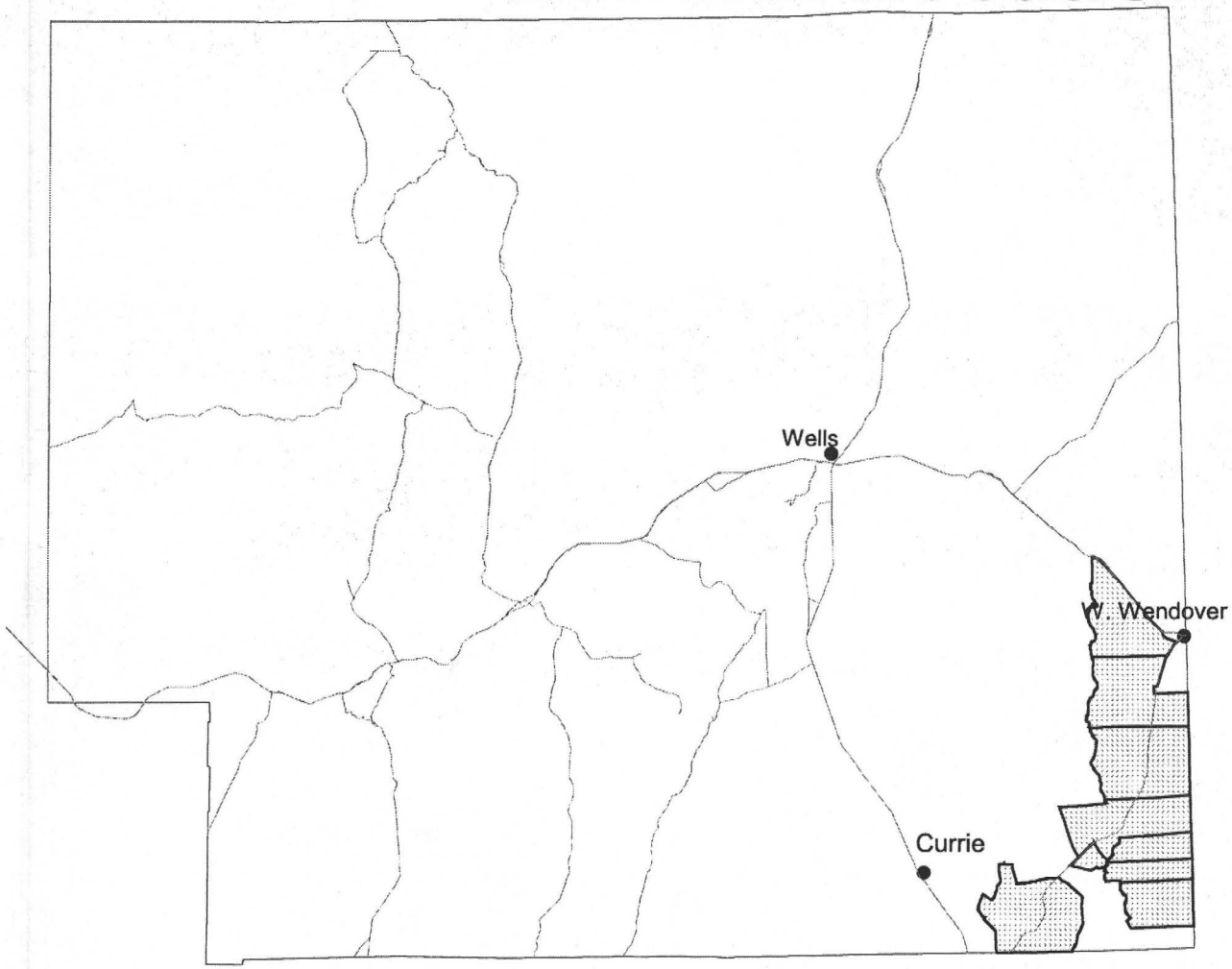
Utilization - the proportion or degree of current year's forage production that is consumed or destroyed by animals (including insects).

Watershed - a total area of land above a given point on a waterway that contributes runoff water to the flow at that point. A major subdivision of a drainage basin.

WSA - Wilderness Study Area. The Bluebell and Goshute Peak WSA's are located within the Sheep Allotment Complex.

Vigor - relates to the relative robustness of a plant in comparison to other individuals of the same species. It is reflected primarily by the size of a plant and its parts in relation to its age and the environment in which it is growing.

Map 1
Sheep Complex
General Location

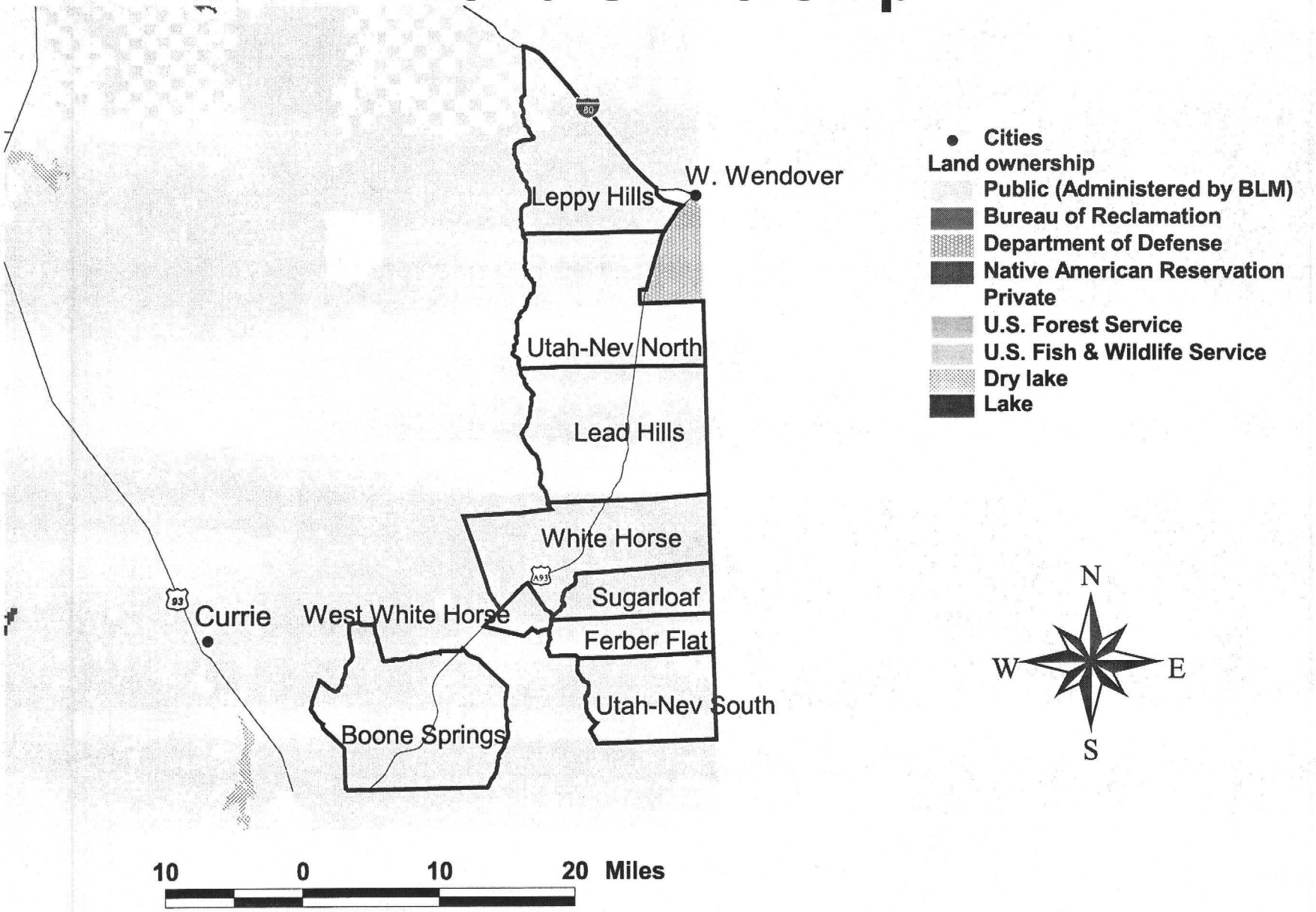


Major roads
Cities

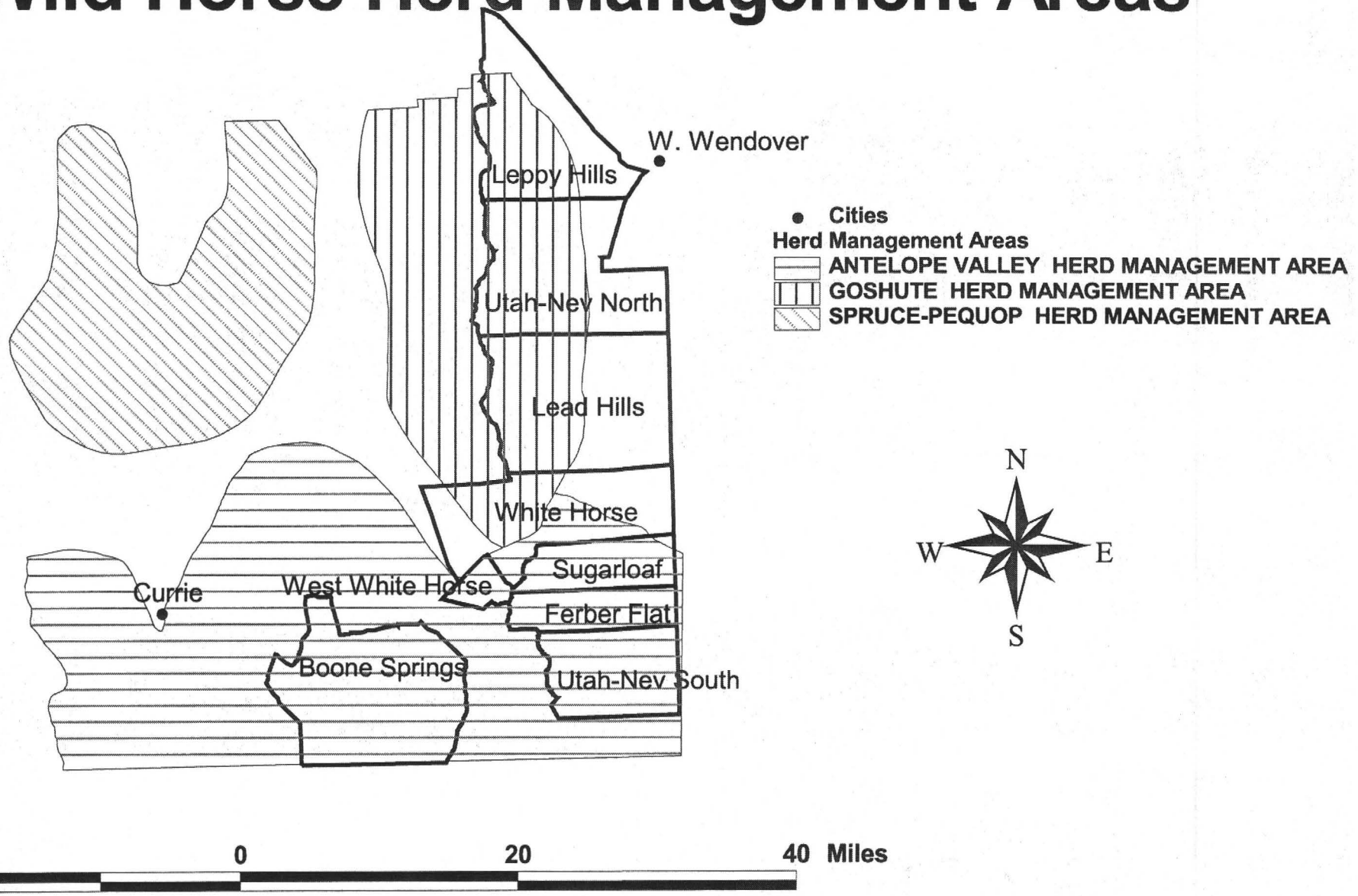
N
W
E
S

50 0 50 100 Miles

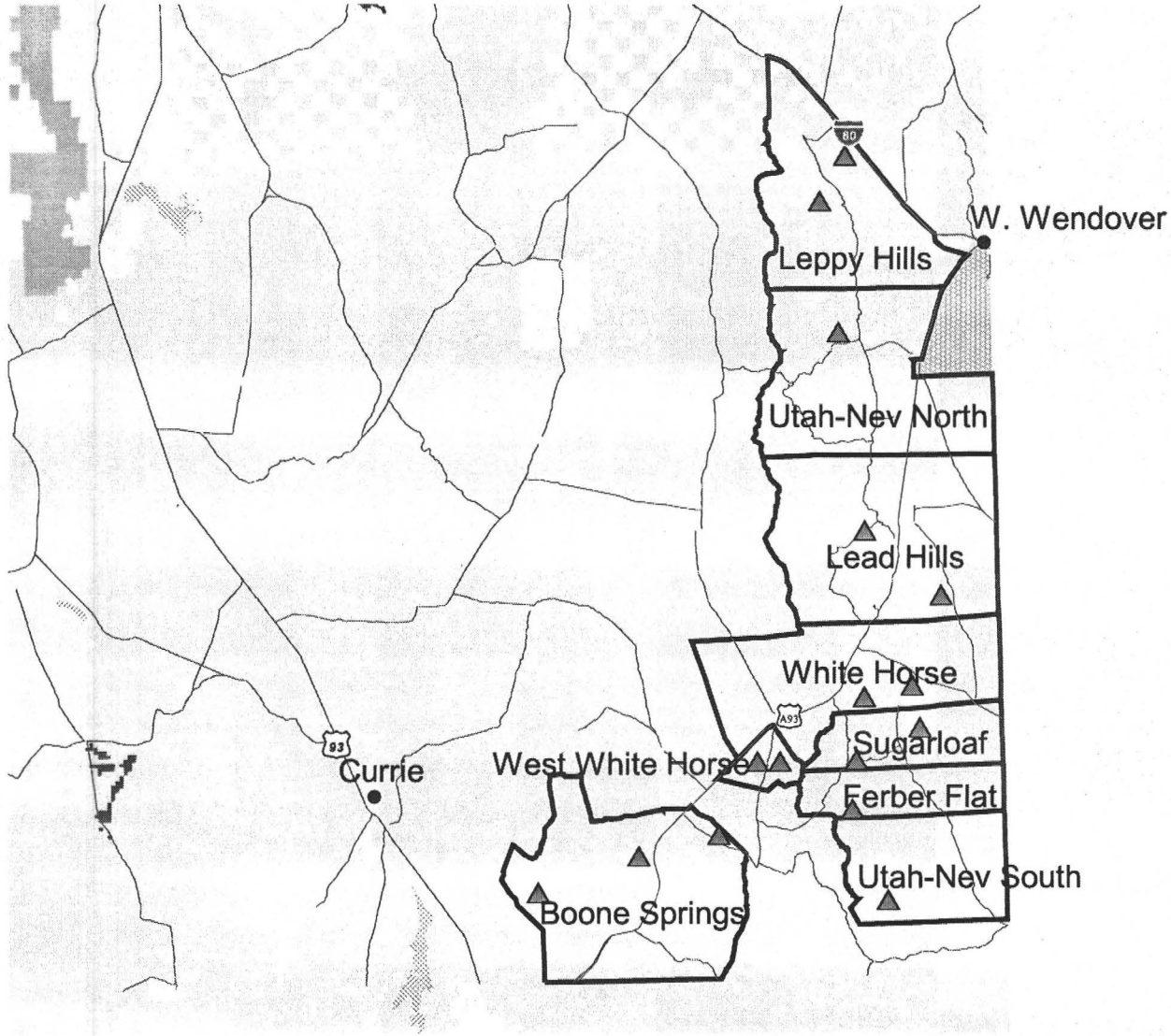
Map 2
Sheep Complex
Land Ownership



Map 3
Sheep Complex
Wild Horse Herd Management Areas



Map 4
Sheep Complex
Approximate Key Area Locations



- Key Area Location
- Cities
- All Roads

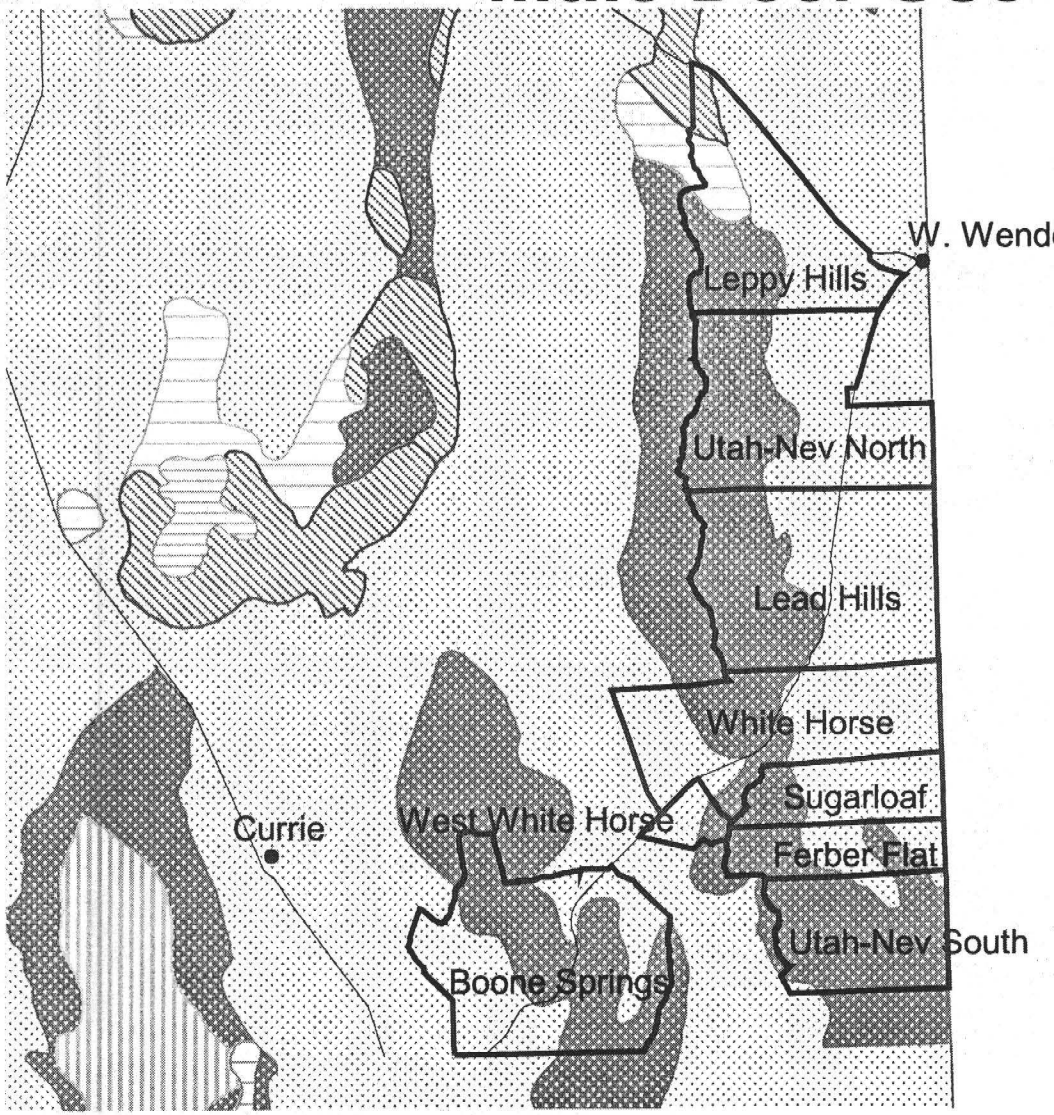
Land ownership

- Public (Administered by BLM)
- Bureau of Reclamation
- Department of Defense
- Native American Reservation
- Private
- U.S. Forest Service
- U.S. Fish & Wildlife Service
- Dry lake
- Lake

N
W E
S

20 0 20 40 Miles

Map 5
Sheep Complex
Mule Deer Use Patterns



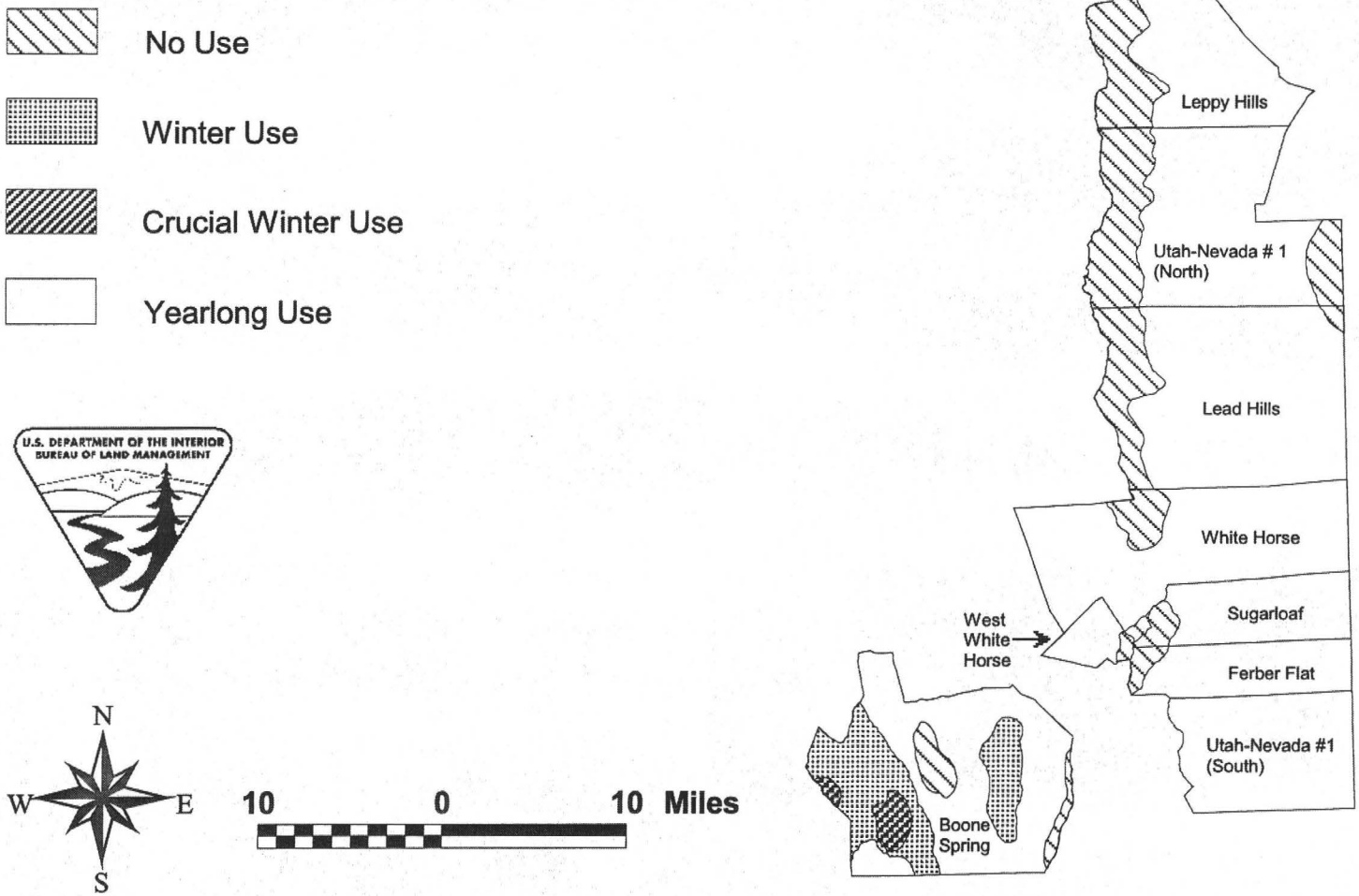
- Cities
- Major roads

Mule Deer Use Patterns

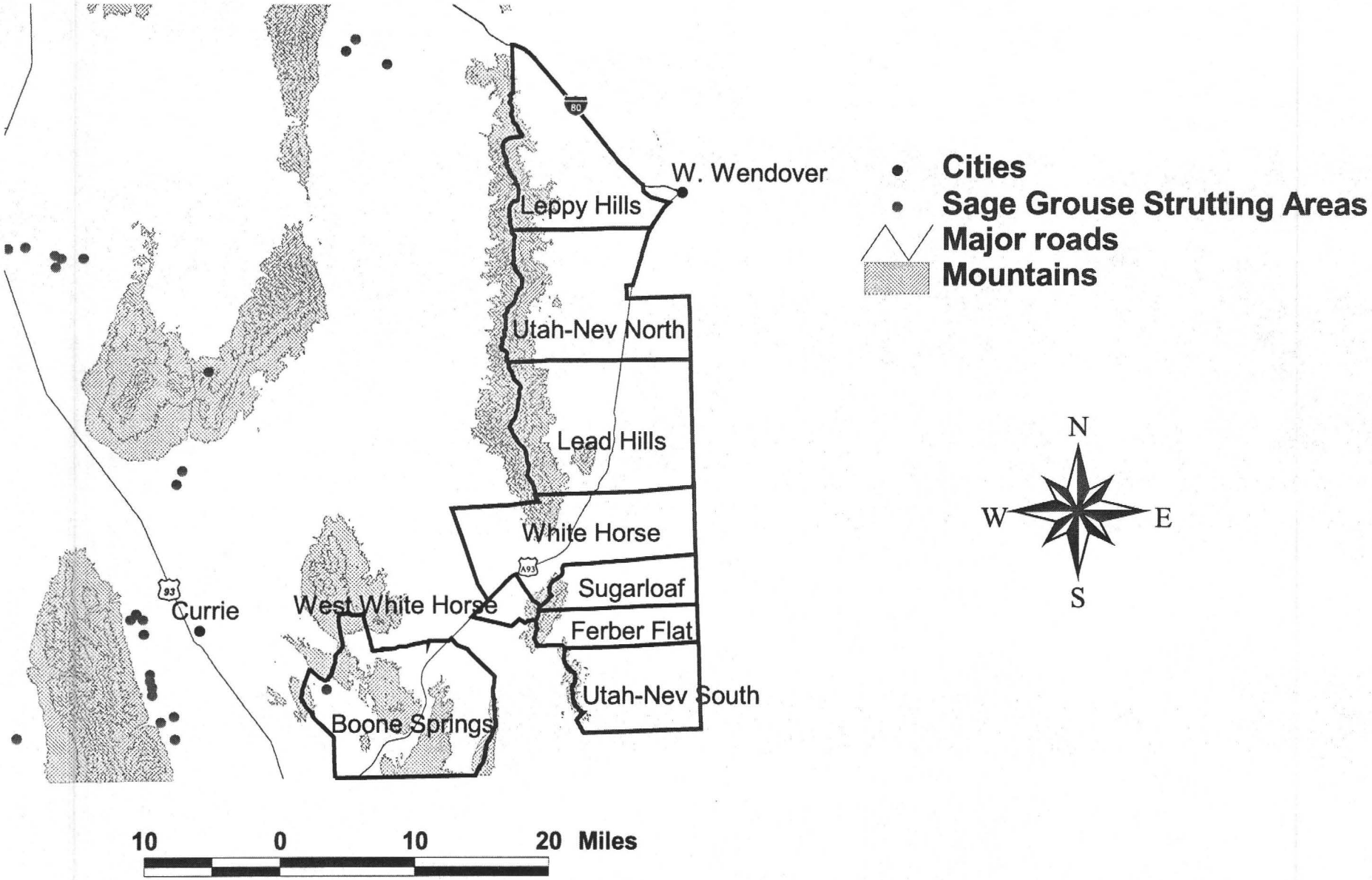
- CRUCIAL/CRITICAL SUMMER
- CRUCIAL/CRITICAL WINTER
- LITTLE USE
- SPRING
- SUMMER
- SUMMER/WINTER
- WINTER
- YEAR-LONG

N
W E
S

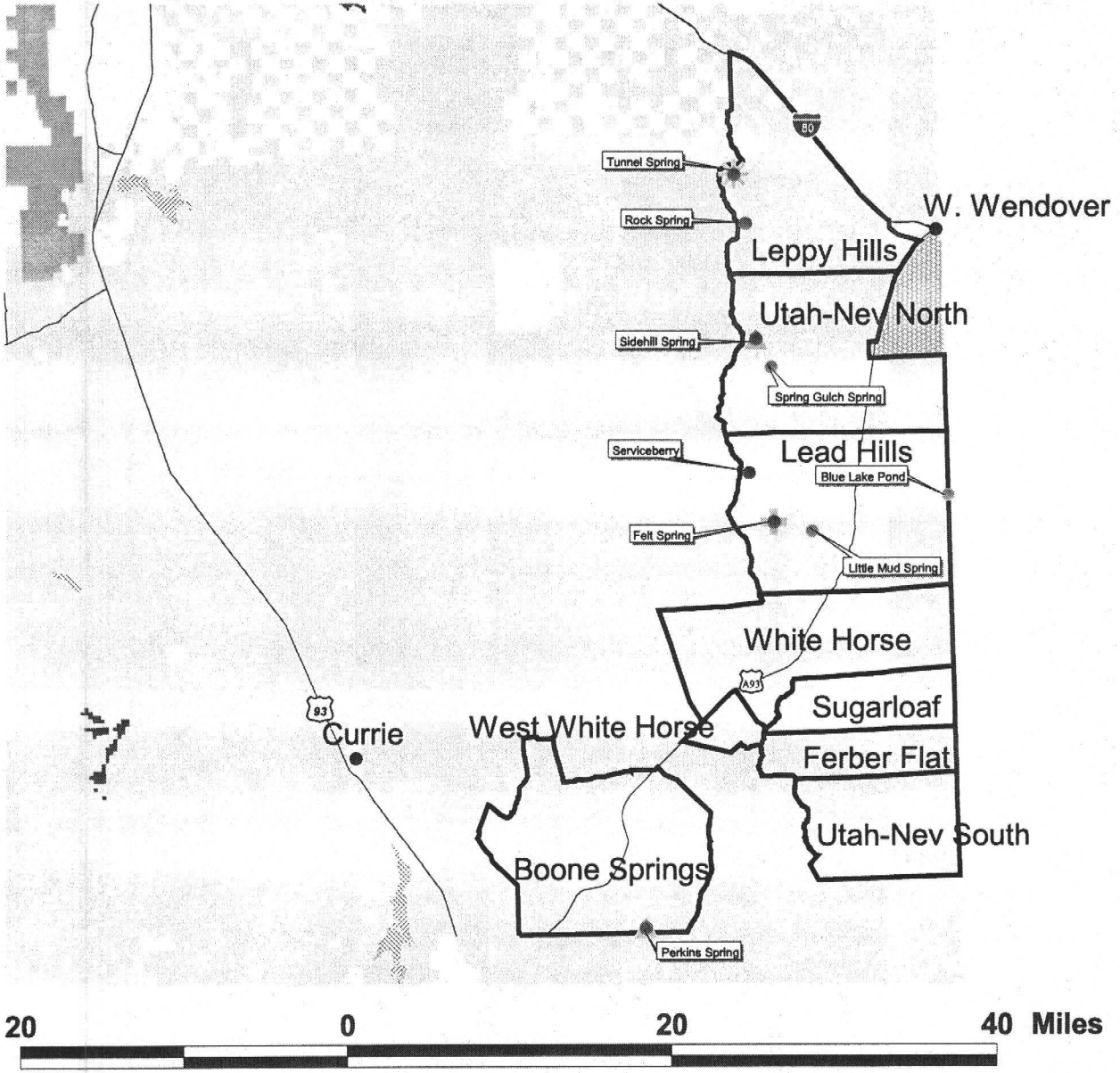
Map 6
Pronghorn Habitat Use Ranges



Map 7
Sheep Complex
Sage Grouse Strutting Areas



Map 8
Proper Functioning Condition (PFC) Assessment Locations



- Cities

Spring PFC

- PFC
- dry
- func at risk
- non-functional

Spring PFC Trend

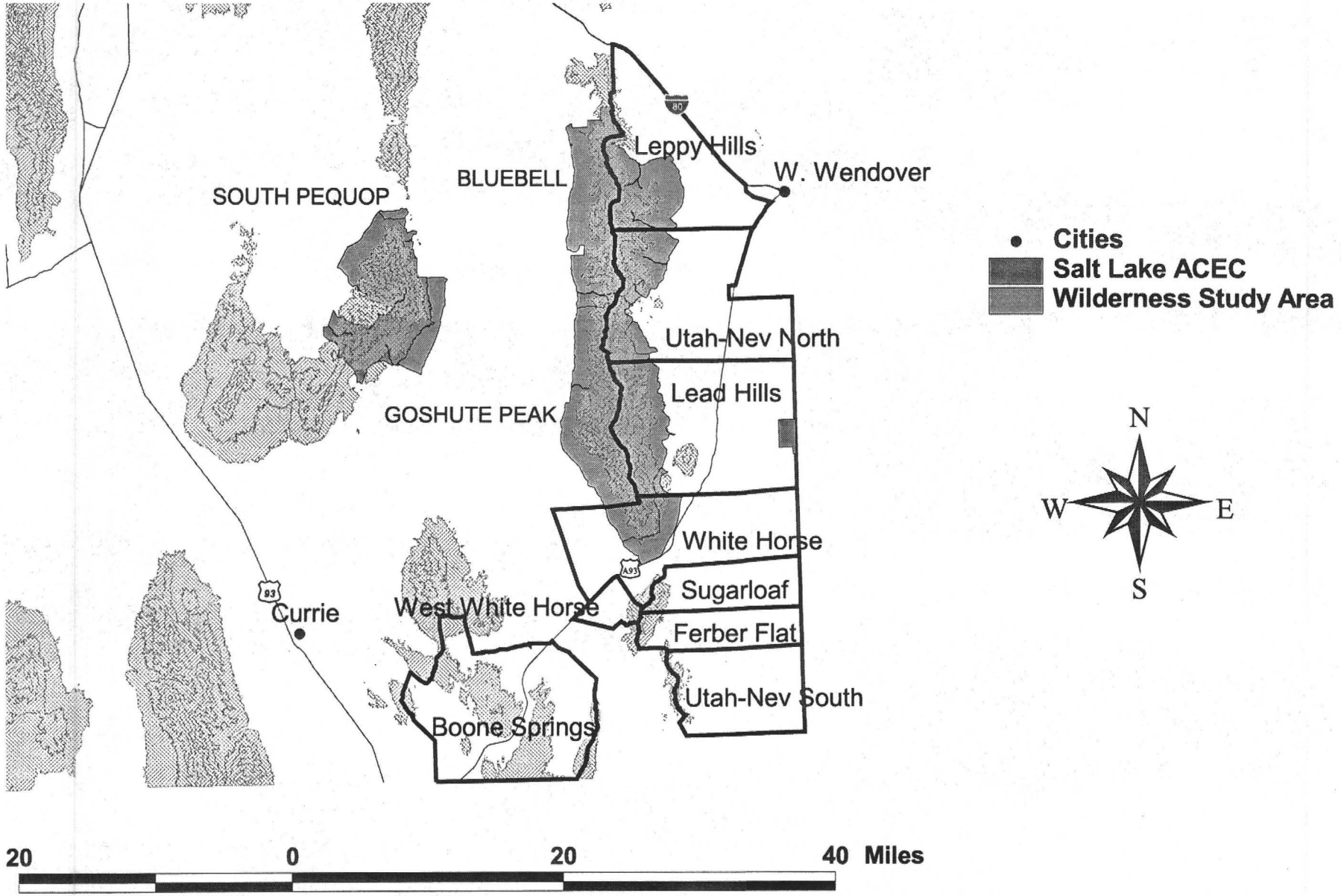
- downward
- upward
- not apparent
- Major roads

Land ownership

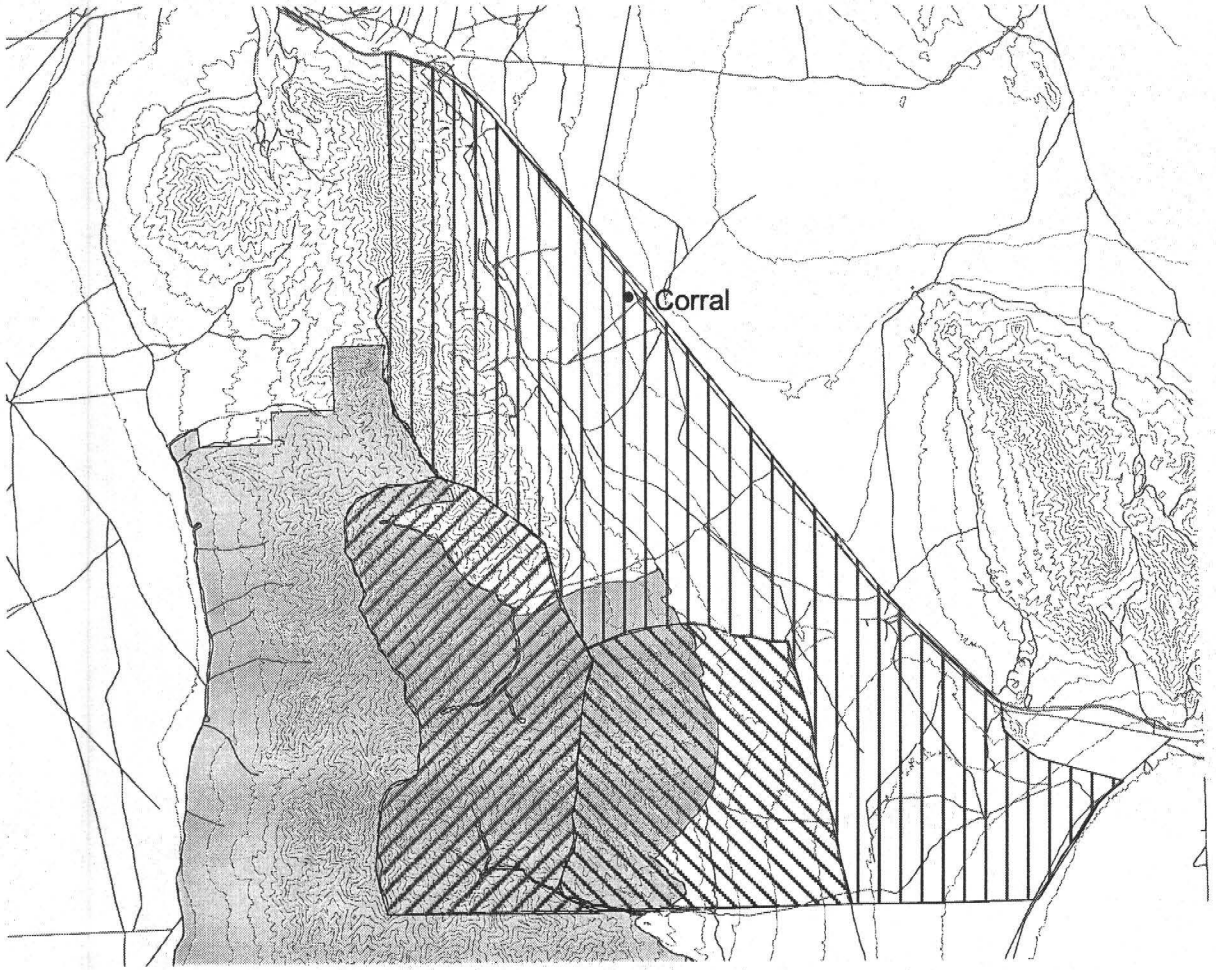
- Public (Administered by BLM)
- Bureau of Reclamation
- Department of Defense
- Native American Reservation
- Private
- U.S. Forest Service
- U.S. Fish & Wildlife Service
- Dry lake
- Lake

N
W
E
S

Map 9
Wilderness Study Areas and Salt Lake ACEC



Map 10
Leppy Hills Allotment Use Areas



Roads
Morris Basin Use Area
Use Area A
Use Area B
WSA

N
W
E
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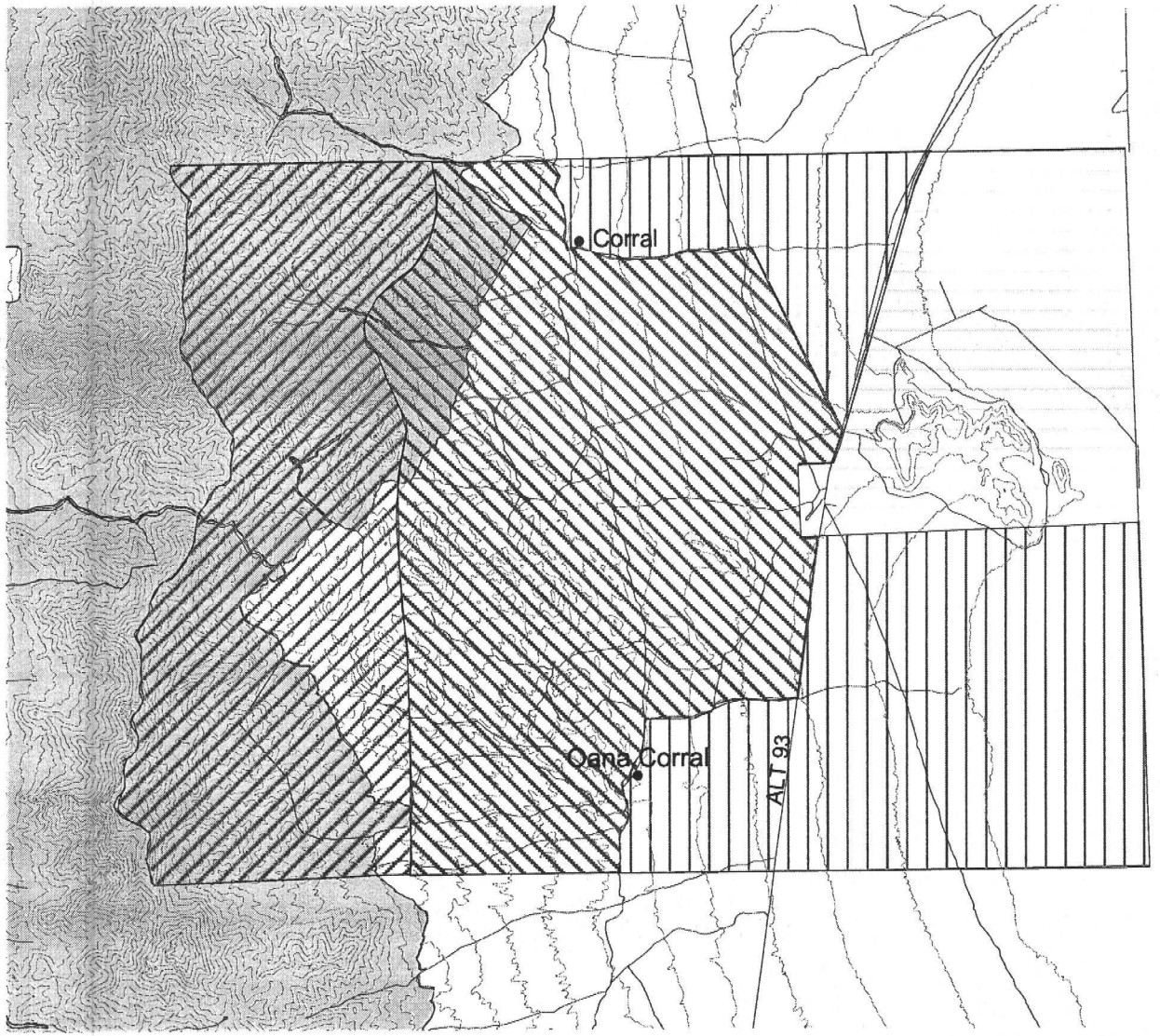
6 0 6 12 Miles

Map 11
UT/NV North Allotment Use Areas

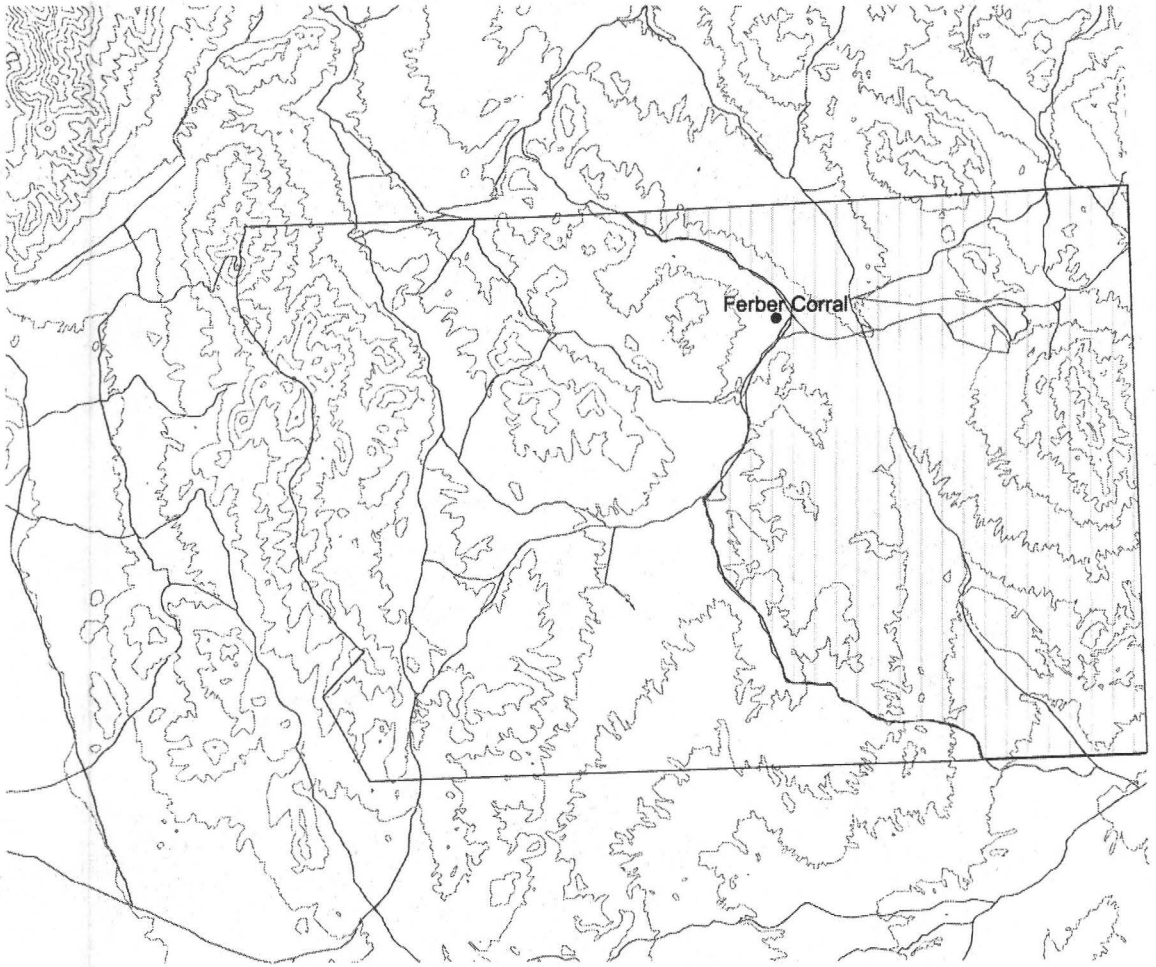


Roads
Department of Defense
Use Area A
Use Area B
Use Area C
WSA

N
W
E
S

5 0 5 10 Miles

Map 12
UT/NV South Allotment Use Areas

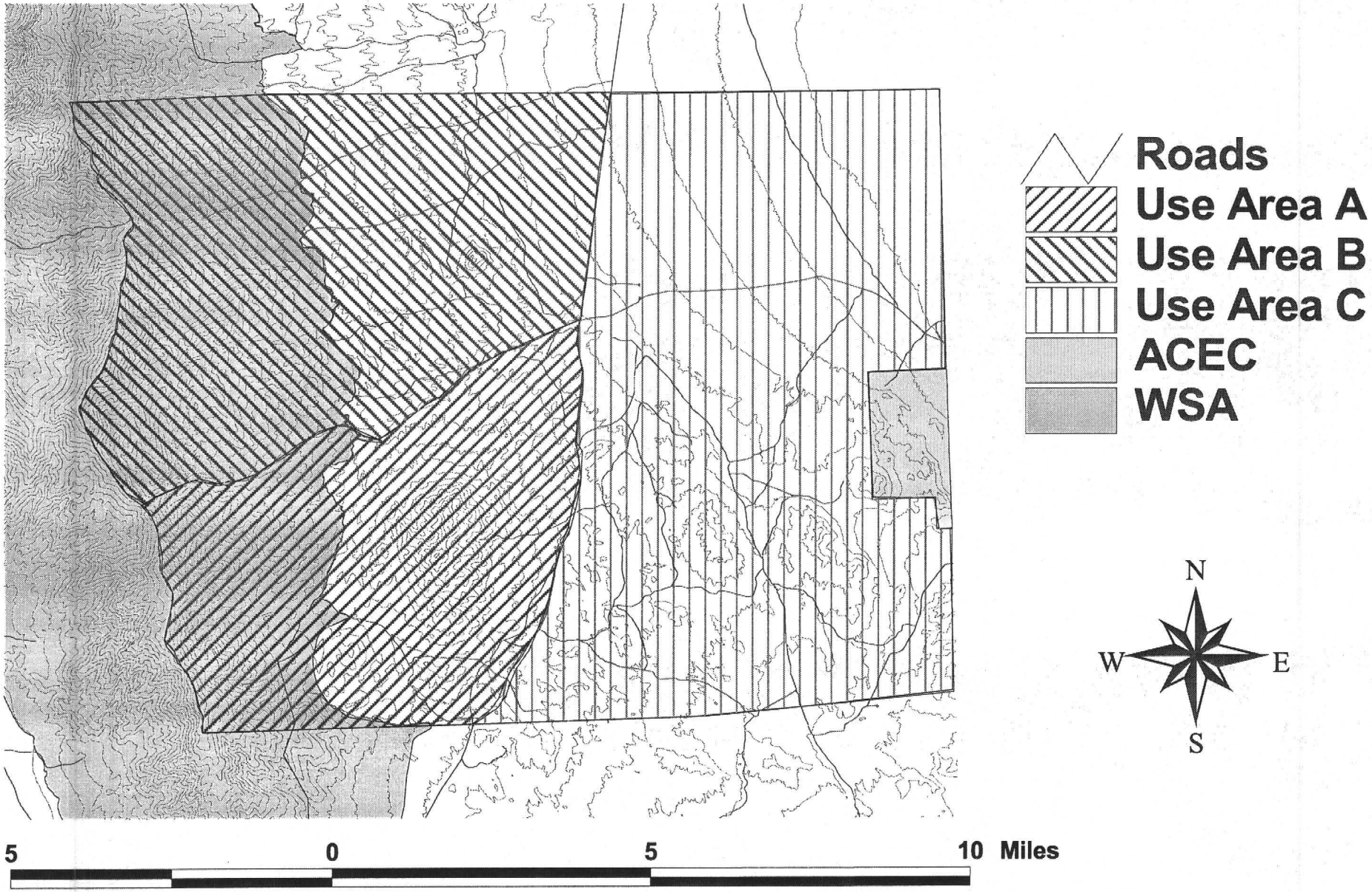


Roads
Winter Use

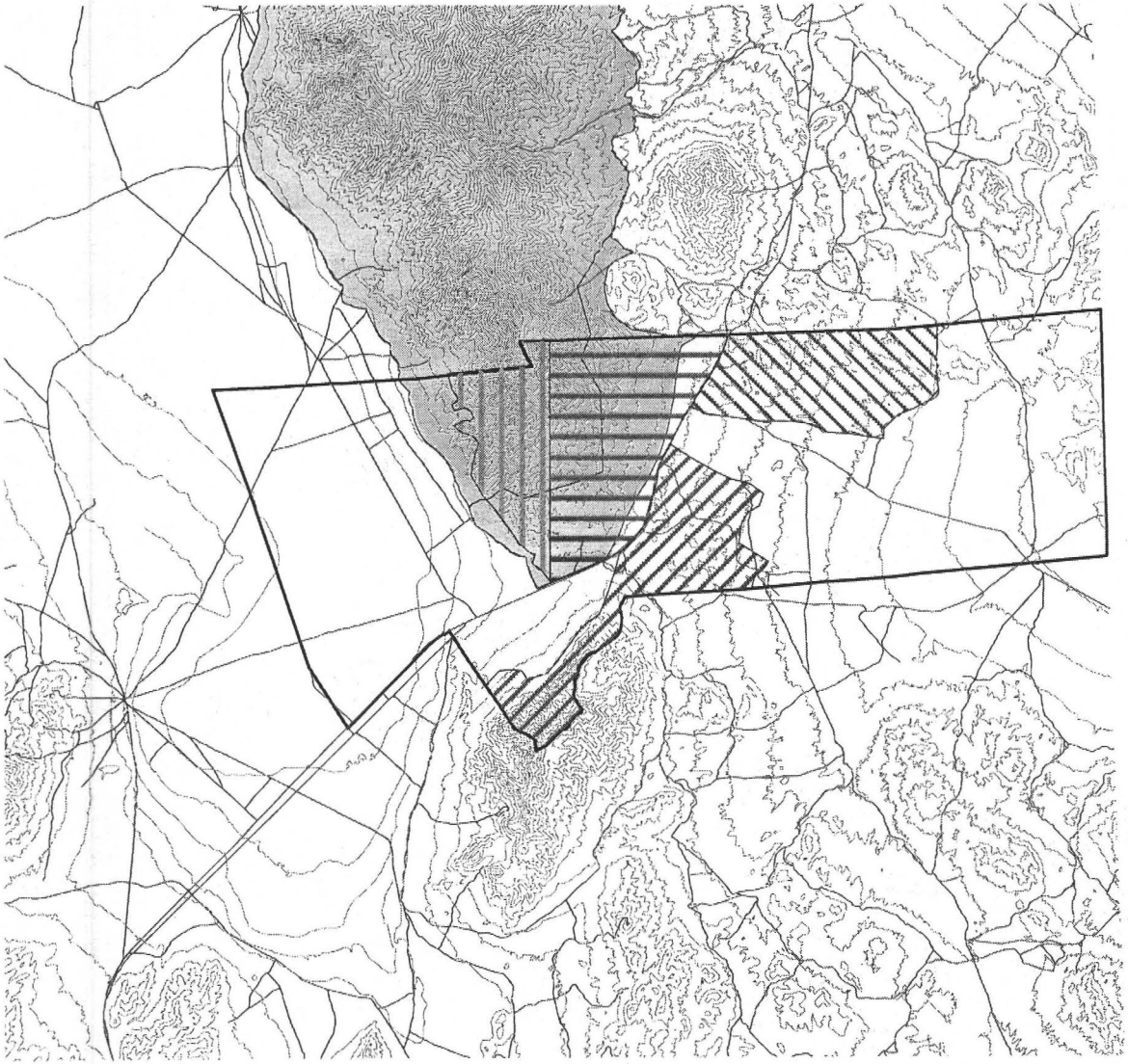
N
W
E
S

3 0 3 6 Miles

Map 13
Lead Hills Allotment Use Areas



Map 14
Whitehorse Allotment Use Areas

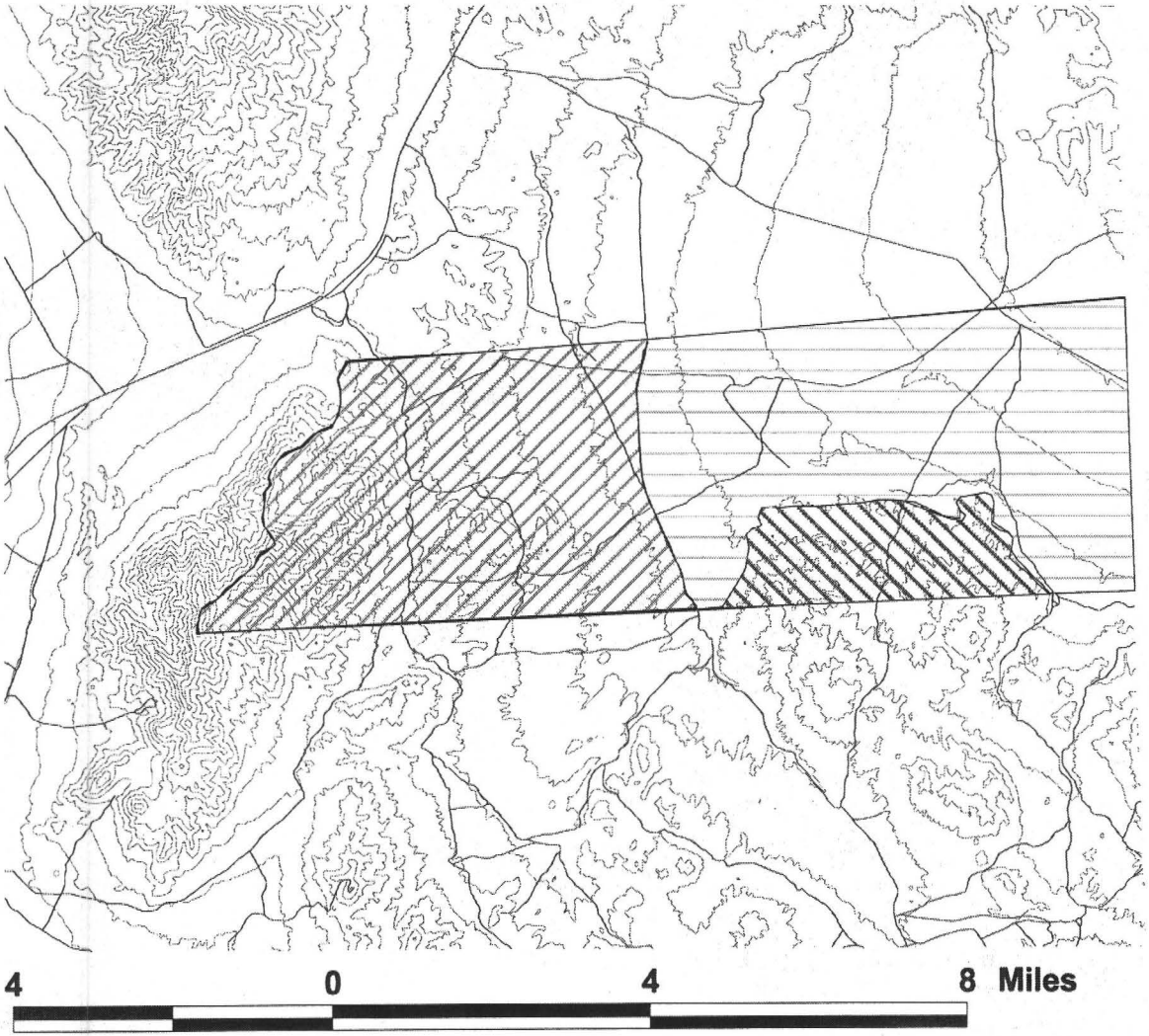


Roads
Use Area A
Use Area B
Use Area C
Use Area D
WSA

N
W
E
S

6 0 6 12 Miles

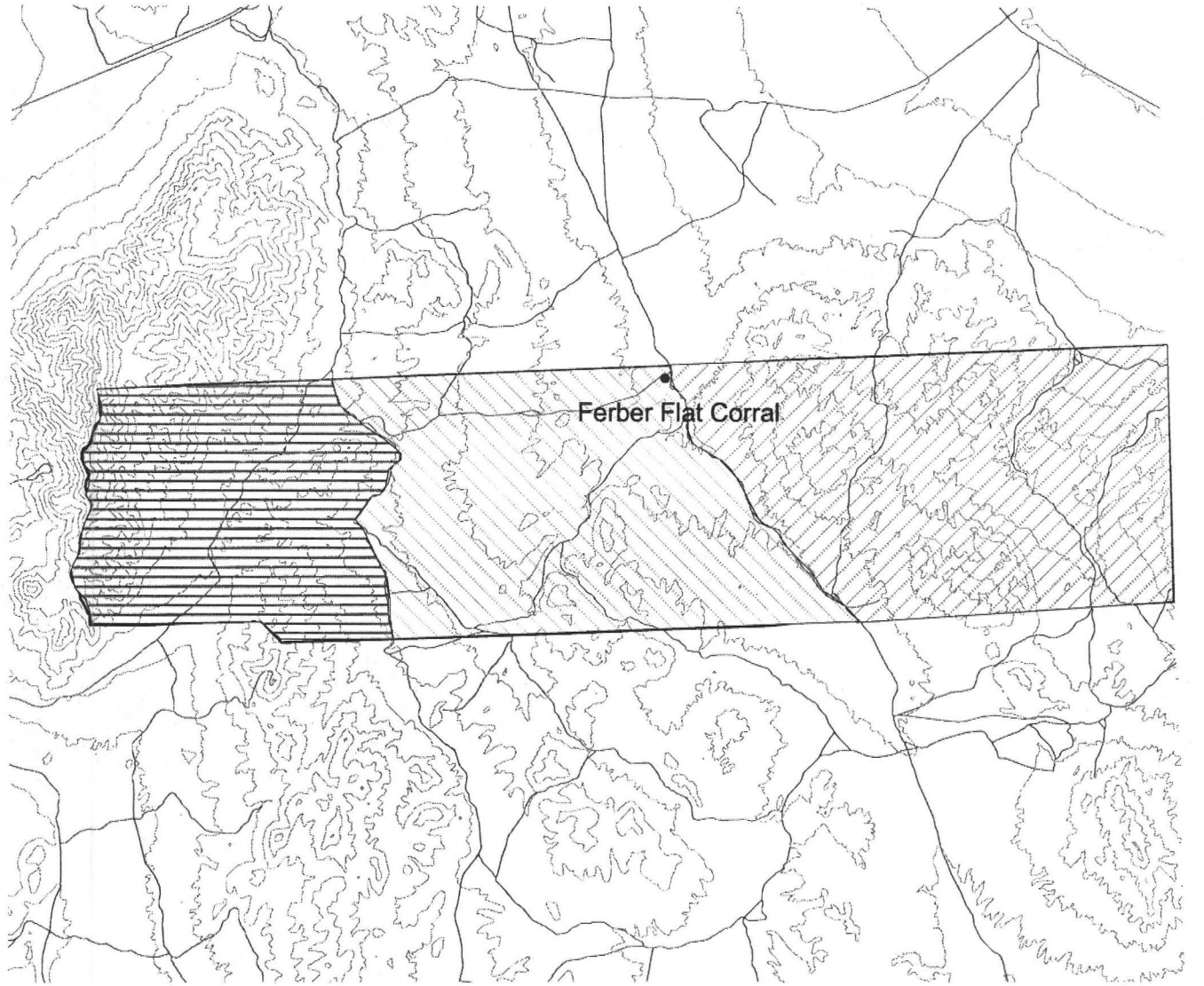
Map 15
Sugarloaf Use Areas



Roads
Use Area A
Use Area B
Use Area C

N
W
E
S

Map 16
Ferber Flat Use Areas



Roads
Use Area A
Use Area B
Use Area C

N
W
E
S

4 0 4 8 Miles

Map 17
Boone Springs Use Areas

Roads
Use Area A
Use Area B

N
W E
S

6 0 6 12 Miles