



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Elko Field Office
3900 E. Idaho Street
Elko, Nevada 89801

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In Reply Refer To:
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JUL 11 1997

Dear Interested Public:

The Elko and Ely Field Offices have been conducting monitoring to determine whether past and present grazing management has been adequate in meeting the allotment objectives as described in the Land Use Plans for the Badlands and Goshute Mountain Allotments. Enclosed is a copy of the allotment evaluation for the Badlands and Goshute Mountain Allotments for your review. Please provide me with your formal written comments, presented as clearly and concisely as possible, by August 14, 1997.

Sincerely yours,

Clayton Marchio, Acting

CLINTON R. OKE, Assistant District Manager
Renewable Resources

Enclosure: Badlands and Goshute Mountain Allotments Evaluation

cc: Ely District Office, BLM
DBA Need More Sheep Company
Reed B. Robison
Nevada Cattlemen's Association
Nevada Woolgrower's Association
Nevada Division of Wildlife
Nevada State Clearinghouse
U.S. Fish and Wildlife Service
Animal Protection Institute
Commission for the Preservation of Wild Horses
Nevada State Division of Agriculture
Elko County Board of Commissioners
Resource Concepts, Inc.
Charles and John Young
Paul Bottari

USDA Natural Resources Conservation Service
Wild Horse Spirit
Bob Wilson, UNR Cooperative Extension
L. Derral Christensen

July 1997
7/11/97

**BADLANDS AND GOSHUTE MOUNTAIN
ALLOTMENTS EVALUATION SUMMARY**

**Bureau of Land Management
Elko Field Office**

BADLANDS and GOSHUTE MOUNTAIN ALLOTMENTS EVALUATION SUMMARY
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BADLANDS and GOSHUTE MOUNTAIN ALLOTMENTS EVALUATION SUMMARY

I. INTRODUCTION

- A. Allotment Name/Number:** Badlands - 4302
Goshute Mountain - 0102
- B. Permittees:** DBA Need More Sheep Company
Reed B. Robison
- C. Evaluation Period:** 1981 to 1996
- D. Selective Management Category and Priority:**
Badlands: "M" - Priority 11 of 21 M category allotments.
Goshute Mountain: "C" - Priority 5 out of 29 C category allotments.

The Badlands Allotment, which lies within the former Wells Resource Area of the Elko District, adjoins the Goshute Mountain Allotment, which lies within the Ely District (Schell Resource Area). An administrative agreement signed in 1983 between the Ely and Elko Field Offices states that grazing administration for the Goshute Mountain Allotment will be the responsibility of the Elko Field Office. Grazing administration includes the responsibility of grazing supervision, range studies, project development, and the determination of grazing capacity.

II. INITIAL STOCKING LEVEL

- A. Land Use Plan Objective**
 - 1. Livestock Grazing use**

Table 1 below outlines the total number of AUMs of specified grazing in the Badlands and Goshute Mountain Allotments, as indicated by the land use plans for the Ely and Elko Districts. The Badlands Allotment is used in common by both Reed Robison and DBA Need More Sheep Company. The Goshute Mountain Allotment is used solely by DBA Need More Sheep Company.

Table 1. Total number of animal unit months (AUMs) of specified livestock grazing			
ALLOTMENT	ACTIVE	SUSPENDED	TOTAL
Badlands	DBA: 1,407 Reed B. Robison: 1,240	DBA: 0 Reed B. Robison: 0	DBA: 1,407 Reed B. Robison: 1,240
Goshute Mountain	DBA: 465	DBA: 0	DBA: 465

2. Season of Use/Grazing System:

The Badlands and Goshute Mountain Allotments make up a single pasture. The season of use is winter and early spring. In the Badlands Allotment, livestock are usually turned out 11/15 and taken off early February. At that time they are moved into the Goshute Mountain Allotment and taken off in early March. Use on both allotments has predominantly occurred from November to February in the past.

3. Kind and Class of Livestock: Sheep; ewes, lambs and rams.

4. Percent Federal Range: 100%

5. Other Information: Reed Robison has not used the Badlands Allotment for the entire evaluation period. He holds a grazing permit in the Antelope Valley Allotment as well as several allotments in the Ely District. Robison grazes cattle in his other allotments and thus has requested that his portion of authorized grazing use on the Badlands Allotment be converted from sheep to cattle use. Further, he would like the allotment divided to prevent the mixing of cattle and sheep.

DBA Need More Sheep Co. received grazing privileges in November of 1994 through a transfer from Holtz, Inc. Holtz, Inc. had grazed the Badlands and Goshute Mountain Allotments since December of 1989. Grazing privileges for both allotments belonged to Scott Moore from 1986 to 1989.

Metta Richins used the Badlands Allotment for trailing use from 1986 to 1989. She is no longer a permittee on the Elko District.

B. Wild Horse Use

1. Historical Wild Horse Use in Badlands and Goshute Mountain Allotments

The Wild and Free Roaming Horse and Burro Act became law on December 15, 1971. With the passage of this act, the authority to manage wild horses and burros on public land was assigned to the Bureau of Land Management (BLM) and U.S. Forest Service. The Act proclaims that wild and free roaming horses and burros are protected from capture, branding, harassment, or death. They are to be considered, in the area where they were found in 1971, as an integral part of the natural system.

Badlands Allotment

Wild horses are currently found in 4 herd management areas (HMAs) in the Wells Resource Area, established by the Wells Resource Management Plan (RMP) Wild Horse Amendment, which was approved on August 2, 1993. These HMAs encompass all or part of several grazing allotments. HMAs have been established based upon historical use areas and inventory data gathered from 1975 to 1981. No complete counts were made in the HMAs in 1971, the year the Act was passed. The first aerial census of wild horse occurred in 1975; however, this included numerous claimed horses that were gathered prior to 1978. The first true wild horse census, after the claiming period, occurred in March of 1978. See Table 2 for census years and corresponding horse numbers.

Table 2. Census Data for the Badlands Allotment

Date	# in Antelope Valley HMA	# in Badlands Allotment	% in Badlands Allotment
1/75	N/D	99 ¹	N/D
3/78	449	117 ²	N/D
5/83	249	0	0%
6/85	349	21	6%
7/88	131 ³	0	0%
1/89	533	26	5%
3/90	465	0	0%
2/91	366	5	1%
9/91	369	0	0%
6/92	446	N/D	N/D
9/92	576	0	0%
1/93	327 ³	0	0%
5/93	312	0	0%
8/93	279	16	6%
12/93	427	0	0%
3/94	392	1	0.25%
8/94	377 ⁴	0	0%
3/95	310	10	3%
2/97	441	0	0%
AVG.	378	4.9	1.3%

¹⁻ This includes both the Badlands and Utah-Nevada #1 South allotments. Because numbers from the Badlands Allotment cannot be determined, this data was not included in the average.

²⁻ This includes the Badlands, Utah-Nevada #1 South, Ferber Flats, Sugarloaf and Whitehorse Allotments. Because numbers from the Badlands Allotment cannot be determined, this data was not included in the average.

³⁻ Post gather census.

⁴⁻ 138 horses were removed in November 1994.

Goshute Mountain Allotment

The Antelope HMA is located within the Ely District. Seasonal census flights began in the Ely District in 1991.

Table 3 below summarizes the census years and corresponding horse numbers.

Table 3. Census Data for the Goshute Mountain Allotment			
Date	# in Antelope HMA	# in Goshute Mtn. Allotment	% in Goshute Mtn. Allotment
2/91	331	0	0%
2/92	468	0	0%
6/92	741	0	0%
12/92	187	0	0%
2/93	217	12	5.5%
5/93	278	0	0%
12/93	336	0	0%
8/94	346	0	0%
3/94	231	4	1.7%
12/94	250	0	0%
AVG.	339	1.6	0.72%

2. **Determination of Appropriate Management Level (AML)**

Badlands Allotment

The management objective for wild horses in the Badlands Allotment, as specified in the Rangeland Program Summary (RPS) issued September 15, 1986, was to provide forage to sustain incidental wild horse use. The RPS objective came from the Wells Record of Decision dated July 16, 1985, which approved the Wells RMP. Under the preferred alternative of the RMP, wild horses were to be managed at existing numbers (as of March 11, 1981) as a starting point for monitoring purposes.

Since the RPS was issued, the Interior Board of Land Appeals (IBLA) rendered a decision (IBLA 88-591, 88-638, 88-648, and 88-679) which clarified that a wild horse herd size is to be established based on the concept of maintaining a thriving ecological balance. 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 BLM has looked at the following options for setting AML in the Badlands Allotment.

Option 1 - RMP Amendment/RPS Proportions

Under this option, the carrying capacity based on percentages of AUMs outlined in the RMP/RPS would be divided between livestock and wild horses. The RMP numbers were originally 2,647 AUMs for livestock and incidental AUMs for wild horses, thus no proportion can be calculated. The Wells RMP Wild Horse Amendment established the initial herd size for wild horses in the Antelope Valley HMA at 240 horses. Census data has shown that approximately 1% of the Antelope Valley herd uses the Badlands Allotment. This equates to 2.4 horses for approximately 5 months, or 12 AUMs. This option would then give livestock 99.5% of the carrying capacity within the Badlands Allotment and wild horses .5%.

Option 2 - Average Actual Use Proportions

The carrying capacity under this option would be apportioned to livestock and wild horses based on percentages of AUMs of average actual use during the evaluation period. The average actual use for wild horses during the evaluation period is 24 AUMs (4.9 horses for 5 months) and the average actual use for livestock is 963 AUMs. This option would give livestock 98% and wild horses 2% of the calculated carrying capacity.

Option 3 - Authorized Livestock Grazing Use/Actual Wild Horse Use Proportions

Under this option, carrying capacity for wild horses and livestock would be apportioned based on average actual use for wild horses and authorized grazing for livestock. The average actual use for wild horses during the evaluation period is 24 AUMs and the pre-evaluation AUMs for livestock is 2,647 AUMs. A percentage of 99% of the calculated carrying capacity would be allocated to livestock and wild horses would be allocated 1%.

option 4
Goshute Mountain Allotment

As a result of the Schell Resource Area Decision Summary and Record of Decision, a Herd Management Area Plan (HMAP) was completed for the Antelope Herd Management Area on July 24, 1992. A wild horse objective for AML was outlined within the HMAP, stating that a total AML will be determined for the Antelope HMA once all of the allotments located within the Antelope HMA have been evaluated. Currently, four of the seven allotments within the Antelope HMA have been evaluated. An estimate of total AML is currently 274 wild horses, based on established AMLs and recent census data for allotments that have not been evaluated.

The AML for wild horses in the Badlands and Goshute Mountain Allotments will be determined through this allotment evaluation process.

3. Herd Management Area Within the Allotment

Approximately 4% of the Antelope Valley HMA acres fall within the Badlands Allotment boundary. The Goshute Mountain Allotment falls within the Antelope HMA. See Appendix 2 for a map of the relationship of the HMAs to both allotments.

C. Wildlife Use

Badlands Allotment

1. Pronghorn Antelope:

- a. Existing numbers: 2 pronghorn (5 AUMs)
- b. Reasonable numbers: 4 pronghorn (10 AUMs)
- c. Key/critical management areas: The Wells RMP and updated information from the Nevada Division of Wildlife identifies the area of and surrounding the Badlands Allotment as yearlong habitat for pronghorn (AY-3). This area encompasses the entire allotment.

2. Sage grouse:

- a. Existing numbers: no data available for numbers
- b. Reasonable numbers: no data available for numbers
- c. Key/critical management areas: There are no known historic or active sage grouse strutting grounds identified in the Badlands Allotment.

3. Threatened, Endangered, Candidate, or Sensitive Species:

The following threatened, endangered, candidate, or sensitive species occur or are likely to occur within the Badlands Allotment:

Threatened: Bald Eagle

Endangered: Peregrine falcon

Nevada State Sensitive:

Ferruginous hawk	Fringed myotis
Northern goshawk	Long-legged myotis
Western burrowing owl	Pale Townsend's big-eared bat
Pygmy rabbit	Pacific Townsend's big-eared bat
Spotted bat	
Small-footed myotis	
Long-eared myotis	

Goshute Mountain Allotment

4. Pronghorn Antelope:

- a. Existing numbers: Estimated use between 1981 and 1993 varies from 2 to 3 pronghorn (5 to 7 AUMs).
- b. Reasonable numbers: 18 pronghorn (44 AUMs).
- c. Key/critical management areas: The area is classified as yearlong pronghorn antelope range by the Nevada Division of Wildlife. A water catchment was constructed by the Nevada Division of Wildlife for pronghorn.

5. Endangered, Threatened, Candidate, or Sensitive Species:

The following endangered, threatened, candidate, or sensitive species occur or are likely to occur in the Goshute Mountain Allotment:

Nevada State Sensitive:

Ferruginous hawk	Fringed myotis
Northern goshawk	Long-legged myotis
Western burrowing owl	Pale Townsend's big-eared bat
Pygmy rabbit	Pacific Townsend's big-eared bat
Spotted bat	
Small-footed myotis	
Long-eared myotis	

D. Other

Various species of nongame mammals, birds and reptiles exist on both the Badlands and Goshute Mountain Allotments.

III. ALLOTMENT PROFILE

A. Description

The Badlands Allotment is located in southeastern Elko County, Nevada; east of Alternate Highway 93, south of the Ibapah Road, and approximately 45 miles south of Wendover, Nevada (see Appendix 1). The north boundary of the allotment borders the Utah/Nev. #1 South Allotment, and the White Pine County Line and Goshute Mountain Allotment serve as the south boundary. The Utah State Line lies to the east and the Antelope Valley Allotment to the west. The Badlands Allotment is in the extreme southeast corner of the Elko District.

The Goshute Mountain Allotment lies directly south of the White Pine County Line and west of the Utah State Line, bordering the south boundary of the Badlands Allotment. The allotment exists within the Ely District.

The elevation of the two allotments ranges from 5,280 to 6,300 feet. The topography consists of rolling hills and flat valley floors. See Appendix 1 for the location of the allotments within the Elko and Ely Districts.

B. Acreage

The Badlands Allotment has a total acreage of 19,812 public acres. The Goshute Mountain Allotment has a total area of 5,736 acres. Both allotments are 100 percent federal land.

C. Allotment Management Objectives

In 1984, the Elko District developed the Wells Resource Management Plan (RMP) for the Wells Resource Area to further define the management decisions and objectives of the Elko District's Land Use Plan (LUP). The Rangeland Program Summary (RPS) was completed in 1986, implementing the Wells RMP and defining allotment specific objectives for each of the two key areas in the Badlands Allotment (BA-01 and BA-02).

The Ely District developed a Management Framework Plan (MFP) in 1975 in which district activity objectives were outlined. A Grazing Environmental Impact Statement was completed for the Schell Resource Area in 1982 and outlined five Land Use Plan objectives. The Environmental Impact Statement was required prior to the completion of the Schell MFP III and RPS. The objectives from the Schell MFP and the RPS were joined together into Allotment Specific Objectives for livestock, wild horses, mule deer, pronghorn antelope, ferruginous hawks, riparian areas, and wilderness study areas in the Goshute Mountain Allotment. Site specific objectives have been developed for the key area KA-01 within the Goshute Mountain Allotment. These objectives have incorporated the idea of Desired Plant Community (DPC). DPC objectives outline species composition and combine the objectives of wildlife habitat and ecological status.

Standards and Guidelines, as required by the new grazing regulations, have been developed by the Northeastern Great Basin Resource Advisory Council region of Nevada, under the authority of the State Director of the BLM. These Standards and Guidelines were approved by the Secretary of the Interior on February 12, 1997. They reflect the stated goals of improving rangeland health while providing for the viability of the livestock industry in the northeastern Great Basin.

Within this evaluation the LUP, RPS, and Allotment Specific Objectives will be evaluated for the Badlands Allotment. The Land Use Plan, Allotment Specific, and Site Specific Objectives for livestock, wild horses, and pronghorn antelope will be evaluated for the Goshute Mountain Allotment. Objectives established for the Herd Management Area Plans and the Standards for rangeland health will also be discussed for both allotments.

1. **Standards for Rangeland Health.** Standards apply to both allotments. (See Appendix 11.)

Standard 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, and land form.

Standard 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

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 the life cycle requirements of threatened and endangered species.

Standard 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple use.

good

Badlands

2. General Land Use Plan (LUP) Objectives - former Wells Resource Area

a. Provide for livestock grazing consistent with other uses.

NOTE: LUP Objectives for wild horses were modified as a result of the Wells RMP Wild Horse Amendment. The original land use plan objective read, "Continue management of the six existing wild horse herds consistent with other resource uses." The objective has been modified as stated in b through d below:

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

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

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

e. Conserve and/or enhance wildlife habitat to the maximum extent possible.

f. Eliminate all of the fencing hazards in crucial big game habitat, most of the fencing hazards in non-crucial big game habitat.

g. Eliminate all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other resource uses.

h. Prevent undue degradation of all riparian habitat due to other uses.

i. Lands with woodland products will be managed under the principle of sustained yield, maintaining an allowable harvest to provide a permanent source of wood products for future generations.

3. Rangeland Program Summary (RPS) Objectives

- a. Manage livestock to maintain present ecological status and trend.
- b. Provide forage to sustain 2,647 AUMs for livestock grazing.
- c. If necessary, adjust season of use on white sage areas.
- d. Maintain roads for access.
- e. Coordinate sheep trail with Utah BLM.
- f. Manage rangeland habitat to provide forage for wildlife (pronghorn, 10 AUMs).
- g. Facilitate big game movements by fence modification (1.1 miles).

NOTE: Objective h. in the original RPS reads "Manage rangeland habitat to provide forage to sustain incidental wild horse use. Monitor use to determine actual use". The Interior Board of Land Appeals (IBLA) rendered a decision, however, which clarified that a wild horse herd size is to be established based on the concept of maintaining a thriving ecological balance, thus the objective was reworded.

The Wells RMP Wild Horse Amendment further modified the original RPS Objectives to include the following management determinations:

- h. 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.
- i. 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.

- j. 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.

4. Allotment Specific Objectives

a. Range Key Area Objectives

BA-01

1. Short term: Improve trend by 1992.

Long term: Show statistically significant upward trend by 1997.

2. Improve ecological condition from mid seral (25-50% of PNC) to early-late seral (51-58% of PNC) by 1997 and to mid-late seral (59-66%) by 2007.

3. Manage grazing for maximum utilization of 60% for key species ORHY and 50% for EULA5 for winter use (refer to Table 4, Section III. D. for identification of key species).

BA-02

1. Short term: Improve trend by 1992.

Long term: Show statistically significant upward trend by 1997.

2. Improve condition from mid to late seral by 1997 and to early PNC (76-83%) by 2007.

3. Manage grazing for maximum utilization of 60% for ORHY and 50% for ARARN.

Goshute Mountain Allotment

5. Land Use Plan Objectives

a. Manage the vegetation resource and its uses to attain utilization rates not to exceed those recommended by the Nevada Rangelands Monitoring Task Force for sustained yield.

b. Attain and maintain habitat for reasonable numbers of wildlife, re-establish bighorn, pronghorn antelope, and elk on historic ranges, and protect crucial wildlife habitat.

- c. Upgrade and maintain all riparian and wetland areas in good or better condition.
- d. Maximize livestock based on sustained yield of the forage resource.
- e. Maximize wild horse numbers based on sustained yield of the forage resource.

6. Allotment Specific Objectives

a. Livestock

- 1. The short term objective will be accomplished through managing the allowable use level (AUL) by season of use to improve or maintain the desired vegetation community.
- 2. The long term objective is to improve those acres in poor or fair livestock forage condition and maintain all acres presently in good livestock forage condition by managing for those seral stages which optimize livestock forage production.

b. Wild Horses

- 1. The short term objective will be accomplished through managing the allowable use level (AUL) by season of use to improve or maintain the desired vegetative community.
- 2. The long term objective is to manage for the most appropriate seral stage to provide desired quantity, quality, variety, and density of forage in order to meet the requirements of the wild horses.

c. Pronghorn Antelope

- 1. The short term objective is to limit use on key species listed for pronghorn antelope to 60% for perennial grasses, grass-like plants, and forbs, and to 50% for shrubs for winter season of use (refer to Table 5, Section III. D. for identification of key species).
- 2. The long term objective is to maintain vegetation quality rating and diversity index of forage species on pronghorn antelope range at over 30 points to achieve at least fair habitat condition.

7. Site Specific Objectives

a. KA-01

Short term: Limit utilization by livestock to an allowable use level of 60% on ORHY and 50% on ARARN for a winter season of use .

Long term: Establish a composition of 2-5% for the key species ORHY. Maintain a composition of ARARN at 30% or below. Improve the ecological condition from a mid to a late seral stage (51-75%).

8. Antelope Valley/Antelope Herd Management Area Plan (HMAP) Objectives

The Goshute Mountain Allotment is within the Ely District's Antelope HMA. The objectives are the same as those listed for the Antelope Valley HMA with the exception of the Appropriate Management Level.

a. Habitat Objectives

1. Vegetation

Provide forage adequate to carry wild horses and livestock through the winter use period without exceeding the utilization objectives of 60% on key grass species and 50% on shrub species. This is in accordance with the Nevada Rangeland Monitoring Handbook.

In the combined winter use areas (of which the entire Badlands Allotment is a part), the utilization objective for wild horses, prior to the entry of livestock which occurs between November 1 and December 31, has been established at 10%.

2. Distribution and Water Availability

Improve distribution and provide water yearlong for wild horses throughout each HMA where possible.

b. Wild Horse Objectives

1. Multiple Use

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

2. Appropriate Management Level

Badlands Allotment

When the evaluations for all allotments within the Antelope Valley HMA are completed, a total AML for the HMA will be determined. 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, and/or fertility control.

Goshute Mountain Allotment

The wild horses in the portions of the Antelope HMA that lie within the Chin Creek, Tippett, Sampson Creek and Becky Creek Allotments will be managed at a median level of 219 horses (see Table 4 of the Antelope HMAP). When the remaining allotments are complete (prior to 1994), a total AML for the HMA will be determined. An estimate of total AML is 274 animals based on the AMLs already established (219) and the numbers that were counted during the latest census on those allotments that do not have evaluations complete (55). The estimated AML of 274 may change once all evaluations are complete. The number of horses will be maintained within a range of $\pm 15\%$ of AML.

AML will be maintained using one or more of the following options: periodic removals with no selectivity, selective removals targeting specific age groups, and/or fertility control. The objective of the selective removals and fertility control is to decrease the reproductive rate in the wild horse population so that removals are not necessary more than once every four years. The reproductive rate is now 21% annually; the objective is to reduce the rate by at least 10%.

3. Free-roaming Characteristics

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

4. Color and Conformation

Wild horses within the Antelope Valley and Antelope HMAs which exhibit the Spanish Barb characteristics will be maintained within the population. Fertility control treatments and or removals in the future

will exclude those horses that obviously exhibit those traits. No other characteristics or conformations will be selected.

D. Key Species Identification

Table 4. Key species within the Badlands and Goshute Mountain Allotments		
SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
ORHY	Indian ricegrass	<i>Oryzopsis hymenoides</i>
ARARN	black sage	<i>Artemisia arbuscula nova</i>
EULA5	white sage	<i>Eurotia lanata</i>

Key species for pronghorn antelope have been developed for the Goshute Mountain Allotment. These are identified in Table 5.

Table 5. Key species for pronghorn within the Goshute Mountain Allotment		
SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
CHVI8	Douglas rabbitbrush	<i>Chrysothamnus viscidiflorus</i>
ATCO	shadscale	<i>Atriplex confertifolia</i>
ARARN	black sagebrush	<i>Artemisia arbuscula nova</i>
ARSP5	bud sagebrush	<i>Artemisia spinescens</i>

IV. MANAGEMENT EVALUATION

A. Purpose

The purpose of this evaluation is to 1) summarize current management in the allotments; 2) determine whether or not adequate progress is being made toward achieving the multiple use objectives, and 3) provide recommendations for future management of the allotments.

B. Summary of Studies Data

Two key areas, BA-01 and BA-02, were established in the Badlands Allotment in 1989 (see Appendix 4 for location of the key areas). Utilization, actual use, use pattern maps (UPMs), ecological status, weight-estimate production, and frequency

data will be summarized and analyzed by key area. Actual use, utilization, and UPMs are short-term indicators of long term objectives, and are recorded annually. Long term monitoring is measured through production, frequency, and ecological status. Production and frequency studies were read at both key areas in 1989 and 1994.

A key area (KA-01) was established in the Goshute Mountain Allotment in 1981. Frequency and range condition were recorded at this site in 1981 also. Frequency was also read in 1992. Use pattern mapping has been read on the allotment from 1986 to 1994. The data from these studies will be evaluated separately from those of the Badlands Allotment.

Summary matrices have been completed for each key area within the Badlands and Goshute Mountain Allotments (see Appendix 3A, 3B, and 3C). The matrices summarize actual use, utilization, UPM results, carrying capacity results, climatic adjustment factors (CAFs), ecological status, production, and frequency data.

1. Livestock Grazing Use

a. Actual Use

With the exception of the 1992-93 grazing year, actual use data for both allotments has been submitted annually since 1987 (which included data from the winter of 1986). Stock were not turned out in 1992-93 due to heavy snow conditions.

Actual use in the Badlands Allotment has mainly been by sheep and has occurred between 11/11 and 3/31 of each year within the evaluation period. Goshute Mountain received use between 12/1 and 3/31. The critical growing period in this area usually begins 4/1 but may begin as early as 3/1. The grazing season, therefore, may occur between the dormant season and the beginning of the growing season, depending on the year.

Reed Robison grazed cattle on the Badlands Allotment in the 1987-88 and 1988-89 grazing years. At that time, the Badlands Allotment and the adjoining Antelope Valley Allotment were licensed as one allotment by the Ely District. Since the AUMs were determined as a total for one allotment, actual use data cannot be separated for each allotment and Robison's use cannot be included in this evaluation.

Metta Richins' use on the Badlands Allotment is included in the allotment evaluation. She trailed through the allotment from 1986 to 1989, using 17 AUMs per year.

It has been documented throughout the evaluation period that problems have occurred with cattle from Utah crossing into the Badlands Allotment due to downed fence. The fence on the Nevada-Utah state line is the responsibility of the grazing permittee(s) in Utah. In 1984, 1989, and 1994 it was recorded that sections of the fence were down, however, numbers and utilization from livestock were not observed. Trespass cattle may have contributed to the high utilization numbers recorded some years.

In 1987, 1992, and 1994, actual use was not recorded separately for the Badlands and Goshute Mountain Allotments; only total use for both areas was submitted. In order to determine actual use for each allotment in 1987, 1992, and 1994, ratios of other years' allotment use/total use were calculated. The resulting percentages were 25% of total AUMs for Goshute Mountain and 75% for Badlands. Using these percentages, actual use by livestock on Badlands has averaged 963 AUMs and Goshute Mountain has averaged 321 AUMs from 1986 to 1996.

The current level of specified livestock grazing use on the Badlands and Goshute Mountain Allotments is 2,647 AUMs and 465 AUMs, respectively. The total allowable use by livestock for both allotments is 3,112 AUMs. The average actual use by livestock of 1,284 AUMs for both allotments is 41% of the total authorized grazing use. Appendices 3A, B, and C display actual use data for livestock and wild horses for the Badlands and Goshute Mountain Allotments.

b. Utilization

Badlands Allotment

Utilization data was collected at the key areas BA-01 and BA-02 in the Badlands Allotment from 1990 to 1996. Utilization was read at the key areas after the livestock were removed. Previous to 1990, utilization was recorded at multiple locations throughout the allotment. For the purpose of comparing the recent data with readings taken before 1990, utilization readings taken proximal to this key area location were considered.

Goshute Mountain Allotment

Utilization was recorded from 1982 to 1985 at KA-01 in the Goshute Mountain Allotment. The species recorded were varied from year to year. Use on ARARN was recorded all four years. Utilization on ORHY was recorded in 1982, 1984, and 1985.

Use pattern maps have been completed for the allotment during the evaluation period. An average utilization was calculated for each year that use pattern maps were created by using the weighted average method.

Utilization data for the Badlands and Goshute Mountain Allotments is summarized in the Studies Summary Matrices located in Appendices 3A, 3B, and 3C.

c. Use Pattern Mapping

Use pattern maps were created annually in the Badlands and the Goshute Mountain Allotments from 1986 to 1994. The maps are categorized into slight (1-20%), light (21-40%), moderate (41-60%), heavy (61-80%), and severe use (81-100%). See Appendices 5 and 6 for use pattern summaries representing each allotment.

Badlands Allotment

Use patterns have been somewhat variable from year to year. The majority of the Badlands Allotment received light and moderate use throughout the evaluation period. The heavily and severely utilized areas generally surrounded watering locations. Water is transported and placed at various locations throughout the grazing season; mainly near the roads that run through the center of the allotment (refer to Appendix 4). The portion of the allotment along the northern boundary has received light use throughout the evaluation period due to limited access for hauling water.

Approximately 41% of the allotment received light use throughout the evaluation period. Moderate use accounted for an average of 40% of the allotment. Heavy use accounted for 12% of the allotment. An average of 3% was slight and approximately 1% of the allotment received severe use during the evaluation period. Annual use pattern summaries and averages are located in Appendix 5.

The utilization data from key area BA-01 and information from the use pattern maps are consistent. The use pattern maps revealed that

the use category of each key area utilization reading was portrayed on the map to be in the same use category, therefore there were no discrepancies between the key area utilization data and the use pattern maps.

The average utilization recorded at BA-01 was moderate; 40% for EULA5, and 47% for ORHY. According to the use pattern map summaries in Appendix 5, the light and moderate use categories appear to be the dominant use categories. The average utilizations of both EULA5 and ORHY fall within these categories.

The average utilization recorded at BA-02 was on the border of the light and moderate categories; 36% for ARARN and 43% for ORHY. The average between these key species is 40%, which is slightly lower than the utilization received at key area BA-01, but near the average utilization presented by the use pattern maps. Overall, the data from the use pattern maps and the utilization recorded at key area BA-02 are compatible.

Goshute Mountain Allotment

Use patterns have been somewhat variable from year to year. The majority of the use on the allotment occurred in the north and southwest portions. Most of the allotment received light use during the evaluation period. Light use accounted for an average of 75% of the area. Approximately 24% of the Goshute Mountain Allotment received moderate use. The allotment received heavy use one year during the 1986-94 period. Neither slight nor severe use was ever recorded. For a summary of use patterns recorded on this allotment refer to Appendix 6.

Use pattern maps for both allotments are available for review in Section 4 of the Badlands Allotment monitoring file at the Elko Field Office.

d. Frequency and Production

Badlands Allotment

Frequency trend plots were established at both key areas in the Badlands Allotment in 1989. Trend was recorded in 1989 and in 1994. The frequency data is listed in the Studies Summary Matrices (Appendix 3A and 3B). Data from frequency studies indicates that no significant change took place in the either of the key species at BA-01. Production analysis shows an increase in white sage from 1989 to

1994. At BA-02, the key species black sage increased significantly in frequency, but Indian ricegrass did not. Production data from BA-02 reveals a decrease in black sage from 1989 to 1994, which contradicts the frequency results.

Goshute Mountain Allotment

Frequency data was collected in the Goshute Mountain Allotment in 1981 and 1992. Analysis of the data revealed that no significant difference occurred in the frequency of the key species from 1981 to 1992. Production has not been measured on this allotment.

e. Ecological Condition

Badlands Allotment

Ecological condition is expressed as a percent of the potential natural community (PNC). In 1989 and 1994, ecological condition in the Badlands Allotment was determined using production data collected at both key areas.

The production data collected at the key areas in the Badlands Allotment indicates that ecological status has remained static at BA-01. Condition has increased from a mid seral stage in 1989 to a late seral stage in 1994 at BA-02. Table 6 displays the ecological site and seral stage determined at each key area.

Table 6. Ecological Status for the Badlands Allotment			
Key Area	Ecological Site	Eco. Status (seral stage) 1989	Eco. Status (seral stage) 1994
BA-01	28AY030 - Silty 8-10"	mid - 42%	mid - 50% (late - 64%) ¹
BA-02	28AY004 - Shal Calc Slope 8-10"	mid - 37%	late - 63%

¹ Refer to Section V. A. 2. a. BA-01 for interpretation of condition ratings.

Goshute Mountain Allotment

In 1981, an ocular estimate of species composition was recorded. Based on this data, the ecological condition was determined be in a mid seral class of 42%. Ecological Site Inventory was read at KA-01

in 1993. The results from this study indicated that the condition class remained in a mid seral stage of ecological condition, as shown in Table 7.

Table 7. Ecological Status for the Goshute Mountain Allotment			
Key Area	Ecological Site	Eco. Status (seral stage) 1981	Eco. Status (seral stage) 1993
KA-01	28AY013 - Shal Calc Loam 8-10"	mid - 42%	mid - 50%

2. Wild Horse Use

a. Actual Use Data

Badlands

Actual use from wild horses in the Badlands Allotment is estimated from censuses conducted during the past several years. At the highest use levels, wild horses may use 30-100 AUMs, which is 6-20 horses for 5 winter/spring months. Due to the complete lack of water within the allotment, wild horses are found inhabiting the area when there is snow cover or frequent rain showers to fill up potholes and troughs.

As was depicted in Table 2, the Badlands Allotment receives incidental wild horse use only.

Goshute Mountain

Actual use data for the Goshute Mountain Allotment was also estimated from census data. The majority of census flights have found no horses within the Goshute Mountain Allotment. Two flights, 1/31/93 and 3/1/94, found 12 and 4 horses respectively. This allotment could also be considered to receive incidental horse use only.

b. Removals

Claiming Period

In February of 1974, the BLM opened the claiming period allowing those individuals with branded horses and offspring of branded horses to claim and gather their animals. Claimants were notified that any animals left on the range after the claiming period ended would be declared wild and free-roaming horses protected under the Wild and

Free-Roaming Wild Horse and Burro Act of 1971. The claiming period came to a close on February 28, 1978. A total of 3,936 claims were filed by various parties with the Elko Field Office; none being in the Badlands Allotment area.

In March of 1978, the first complete helicopter census after the closure of the claiming period was conducted. A figure of 117 horses remained in the Badlands, Utah-Nevada #1 (south), Ferber Flat and Sugarloaf Allotments, and 332 in the remaining allotments within the Antelope Valley Herd Area, totalling 449 horses in the Antelope Valley HA after the claiming period ended. These horses then became designated as wild and free-roaming horses under the Wild Horse and Burro Act of 1971. If a herd area was found to contain wild horses after the claiming period ended and had documented wild horse use in 1971, it retained its status as a herd area and was formally recognized in the Wells RMP in 1985. The Wells RMP Wild Horse Amendment took the management of wild horses one step further and designated herd management areas.

BLM Removals

Over the ensuing years, the BLM conducted periodic removals in the Antelope Valley Herd Area to maintain initial stocking levels as outlined in the Wells RMP. A total of 754 horses have been removed from the Antelope Valley HMA since 1987. It is possible that none of the horses gathered came from the Badlands Allotment, or only a very small percentage. Once the AML is established for the Antelope Valley HMA, policy states that removals will be conducted on a three-year rotational basis to keep the numbers at or below the maximum designated AML. AML is being determined through the allotment evaluation process and the issuance of multiple use decisions.

The Antelope Valley HMA was gathered in conjunction with the fertility control study in the winter of 1992-1993. During this gather, 100 foals were removed due to the extreme weather conditions encountered at the time. The next gather was conducted in the fall of 1994, during which 138 horses were removed. This gather was an effort to reach the initial herd size as specified in the Wells RMP Wild Horse Amendment.

c. Key Area Utilization Data

The key areas within both the Badlands and Goshute Mountain Allotments receive sporadic wild horse use. Neither key area in the

Badlands nor Goshute Mountain Allotments has been read prior to livestock turnout to determine utilization by wild horses.

3. Wildlife Habitat

a. Pronghorn Antelope

The entire Badlands Allotment (19,812 acres) is considered pronghorn antelope yearlong range. Two big game habitat studies (AY-3-T-(BA-01), AY-3-T-(BA-02)) have been established to determine habitat conditions.

Data from these studies rate this habitat in poor condition (see Table 8). A common limiting factor on this yearlong range is poor forage diversity. Forb and grass composition averages only 0.1% and 0.9% respectively (see Table 9).

Table 8. Pronghorn Habitat Condition Summary				
Key Area	Year	Habitat Condition	Habitat Rating	% of Area
AY-3-T-(BA-01)	1990	Poor	28	50%
AY-3-T-(BA-02)	1990	Poor	26	50%

Table 9. Forage Composition and Condition of Pronghorn Range within the Badlands Allotment							
		GRASSES		FORBS		SHRUBS	
		%Comp	# Spp.	%Comp	# Spp.	%Comp	# Spp.
Optimum %Comp and #Spp		40-60	5-10	10-30	20-40	5-20	5-10
AY-3-T- (BA-01)	1989	0.0	0	0.0	0	49.18	2
AY-3-T- (BA-02)	1989	1.88	2	0.17	2	97.95	2

Historic heavy sheep use may have contributed to low vegetative diversity. Voluntary and gradual reduction in sheep numbers by sheep operators began in the 1960's and has reduced competition for forage with pronghorn. Because of the low site potential of these areas,

improvement of range or habitat conditions has been slow or non-existent in some places. In addition to a lack of vegetation diversity, water is also a limiting factor within the Badlands Allotment.

The entire Goshute Mountain Allotment is considered pronghorn antelope range. Based on Ecological Site Inventory completed for the Goshute Mountain Allotment in 1993, pronghorn habitat is presently rated in poor condition. The limiting factor is the lack of vegetation diversity.

4. Ecological Site Inventory

Data from a 1993 site inventory reveals that 72.2% of the total acres in the Badlands Allotment were surveyed and classified into seral stages. The data reveals that 27.8% of the total acres in the allotment were unclassified. Table 10 provides a summary of the percentage of acres within each seral stage in the Badlands Allotment. Unclassified acres refer to areas that cannot be classified into range sites.

Table 10. Summary of Ecological Site Inventory - Badlands 1993		
Total Acres Surveyed and Classified		
Description	Acres	% of Total Acres Surveyed
Early Seral	5,360	27.1%
Mid Seral	8,941	45.1%
Late Seral	0	0%
PNC	0	0%
Total	14,301	72.2%
Total Acres Unclassified		
Woodland	1,892	9.5%
Inclusions	2,982	15.1%
Rock Outcrop	637	3.2%
Total	5,511	27.8%
Total Acres	19,812	100%

Ecological site inventory for the Goshute Mountain Allotment was also completed in 1993. The summary of the data indicates that 70% of the Goshute Mountain Allotment was classified into seral stages, and 30% unclassified, as displayed in the following table:

Table 11. Summary of Ecological Site Inventory - Goshute Mountain 1993		
Total Acres Surveyed and Classified		
Description	Acres	% of Total Acres Surveyed
Early Seral	1,876	32.7%
Mid Seral	2,024	35.3%
Late Seral	64	1.1%
PNC	0	0%
Total	3,964	69.1%
Total Acres Unclassified		
Woodland	827	14.4%
Inclusions	945	16.5%
Total	1,772	30.9%
Total Acres	5,736	100%

5. Precipitation

The normal growing season for this area is from early March to mid June. The "yield index" or climatic adjustment factor (CAF) is calculated using the precipitation data from September of one year to June of the next year. This information is used to adjust current year's production data to that which would be expected to occur during an average year. A "yield index" or CAF of 1 is considered to be an average precipitation year; above 1 is above average and below 1 is below average.

Precipitation data from two weather stations were considered in the calculation of the annual yield indices for the 1987-1994 period. One weather station is located in Wendover, Utah, and the other in Ibapah, Utah. The Wendover station is located on the west edge of the Great Salt Lake basin,

approximately 45 miles north of the Badlands Allotment. The Ibapah station is located approximately 10 miles east of the allotment and lies at the foot of the Deep Creek Mountains. Table 12 displays the comparison between the CAF calculated from Wendover data and the CAF calculated from the Ibapah data.

Year	1987	1988	1989	1990	1991	1992	1993	1994
CAFI	1.73	1.73	1.04	1.28	.95	1.26	1.15	1.31
CAFW	2.24	1.49	1.23	1.05	1.02	0.50	0.59	0.34

The Ibapah station is the closest station to the Badlands and Goshute Mountain Allotments. Data from this station, however, will not represent exactly the precipitation the allotments receive, due to its proximity to the Deep Creek Mountains. The Wendover station is a far distance from either allotment and possibly receives less moisture because of its location and the terrain of the area. Observations of the Badlands Allotment in 1994 by personnel reveal that the area appeared to be vigorous and highly productive due to above-average precipitation in the spring. The CAF for Wendover indicates that the 1993-94 season was less than half of the precipitation normally received. This indicates that data from the Wendover station is not an accurate representation of the Badlands and Goshute Mountain Allotments. The Ibapah weather station was determined to be representative of the climate in the area because of its relatively close proximity to the Badlands and Goshute Mountain Allotments.

V. CONCLUSIONS

A. Allotment Management Objectives

This section examines whether or not the objectives defined for the Badlands and Goshute Mountain Allotments have been met. The objectives for the Goshute Mountain Allotment and the Badlands Allotment are listed separately.

Badlands

1. General Land Use Plan (LUP) Objectives

Attainment or non-attainment of these objectives is included within the conclusions for RPS, HMAP, and allotment specific objectives (range and wildlife).

2. Rangeland Program Summary (RPS) Objectives

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

Met. Ecological status continues to be mid-seral at BA-01. Key area BA-02 has increased from mid-seral in 1989 to a late seral status in 1994.

BA-01

Production data from BA-01 indicates that ecological condition has remained in mid seral; from 42% in 1989 to 50% in 1994. From 1989 to 1994, there was an increase in the percent composition by weight for the key species white sage. Indian ricegrass was recorded as a trace in 1994. Halogeton, an introduced annual forb, decreased in production. The studies indicate that total production in 1989 was 615 pounds/acre and decreased to 292 pounds/acre in 1994.

The condition class formulated for 1994 by the inventory worksheet did not result in a 50% mid seral stage, but a late seral stage of 64%. The late seral rating was adjusted due to factors indicating that a late seral class was not representative of the condition of the site. The species diversity of a site is an indicator of condition class. The range site surrounding BA-01 has the potential of a 35% grass composition yet no grasses were found at this key area in 1989, and only a trace was recorded in 1994. The status of the site was lowered to a mid seral condition with reference to the lack of a grass component.

The reduced condition rating is supported by the frequency data, which indicates a static to downward trend. White sage has decreased from an occurrence of 61% in 1989 to 55% in 1994, though the difference was not significant. Indian ricegrass remained constant at a 7% frequency from 1989 to 1994. Halogeton has increased from 28% to 99% according to frequency data. These changes in frequency conflict with the results from the production studies. When a contradiction exists between production and frequency data, climate and utilization may be analyzed to further determine how conditions have changed.

Based on the CAF figures listed in Table 12, the year 1989 was an average precipitation year while 1994 was an above-average moisture year. In the 1994 frequency study, the individual halogeton plants were numerous in occurrence but did not make up a large percentage of the vegetative production, as indicated by the 1994 production study. Utilization read at BA-01 in 1989 and 1994 was light and moderate, respectively. The key area

was grazed heavily in 1990 and 1991. The two years of heavy grazing and the above-average precipitation of 1994 may have contributed to the increase in halogeton occurrence.

In the production study of 1989, halogeton was recorded as representing over 50% of the vegetative weight at BA-01 and in 5 years dropped to 15%. Although the production data was collected in August, near the end of the growing season, halogeton was recorded as being in its' earliest phenological stage (stage 1: start growth). This resulted in a high adjustment factor for green weight, therefore causing halogeton production to be inflated. The measured green weight of halogeton did not equal a third of the green weight of white sage, yet the 1989 study results represented halogeton as weighing more than white sage because of the adjustment factor. As a result, the compositions of the other species were low relative to halogeton, and therefore difficult to compare. In order to effectively evaluate the other species, the halogeton component was removed.

In Table 13, the species compositions of the 1989 and 1994 studies are compared both with and without the halogeton component (HAGL).

Table 13. Effects of halogeton on species composition at BA-01			
Halogeton		Halogeton removed	
1989	1994	1989	1994
HAGL - 52%	ORHY - 0% (T) ²	EULA5 - 78%	ORHY - 0%
EULA5 - 37%	HAGL - 15%	ATRIP - 22%	BRASS2 - 1%
ATRIP ¹ - 11%	BRASS2 ³ - 1%		EULA5 - 67%
	EULA5 - 58%		ATRIP - 32%
	ATRIP - 27%		

¹ ATRIP=Atriplex, a shrub; common name is shadscale or saltbush.
² A trace (T) of ORHY was recorded in 1994.
³ BRASS2=Brassica, a forb; common name is mustard.

When halogeton is eliminated from the species list, the composition of the other plants changes. This reduction is supported by the frequency study results.

Considering all factors discussed, the site appears to remain in mid seral condition and trend appears to be static to declining.

BA-02

The ecological condition at BA-02 increased from 37% in 1989 to 63% in 1994, changing ecological status from a mid to a late seral stage. Production data indicates that a decline in shrub species occurred while grass species showed a significant increase. Total vegetative production was 432 pounds/acre in 1989 and increased to 534 pounds/acre in 1994.

Data from the frequency studies shows that trend is upward. The frequency results show an increase of Indian ricegrass from 24% to 30%. A significant increase occurred in rabbitbrush; from 9% in 1989 to 21% in 1994. Plants including *Astragalus* (a forb) and *Opuntia* (cactus) have also increased in frequency. There is a contradiction between the production data and frequency data concerning changes that occurred in black sage. Frequency studies show black sage increased significantly; from 47% in 1989 to 65% in 1994. Production results indicate that a decrease in black sage occurred.

The year 1989 was an average precipitation year while 1994 was an above-average moisture year, according to the yield indices for these two periods. The two years prior to 1994 were also high precipitation years. Utilization on black sage was highest in 1994 (55%), but the allotment did not get grazed the previous year, and in 1992, it was recorded as light. Taking into account the precipitation and utilization that occurred over the evaluation period, the data from both the production and frequency studies indicate that trend is upward and ecological condition has increased to a late seral stage.

b. Provide forage to sustain 2,647 AUMs for livestock grazing.

Not met. Based on current monitoring data and the analysis of carrying capacity, a stocking rate of 2,647 AUMs would not result in attainment of the multiple use objectives for the allotment. (Refer to Appendix 8 of this evaluation for discussion on stocking rate.)

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

Met. Data from actual use, utilization, and use pattern maps indicate that the current season of use on the white sage areas is appropriate. Current livestock use on the allotment terminates in February, which is prior to the start of the growing season for white sage. As described previously in this evaluation, use by wild horses on the Badlands Allotment occurs mainly in the winter and early spring months. Utilization on white sage by wild horses is likely to drop in the spring, when the growth of grasses begins.

Distribution of livestock and stocking levels will be addressed in this evaluation in order to maintain or improve current conditions on white sage sites in the allotment.

d. Maintain roads for access.

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

e. Coordinate sheep trail with Utah BLM.

Met. During the evaluation period, the Salt Lake District has been contacted concerning downed fences and cattle crossing into Nevada. Communication with the BLM in Utah has been necessary for obtaining information and the orderly administration of the sheep trails in the Elko District.

f. Manage rangeland habitat to provide forage for wildlife (pronghorn, 10 AUMs).

Evaluation of existing data indicates progress has not been made.

Available data for yearlong pronghorn habitat in the Badlands Allotment indicates habitat conditions are poor. The common limiting factors are a lack of vegetation diversity and water availability.

g. Facilitate big game movements by fence modification (1.1 miles).

Not met. No fences have been modified in the Badlands Allotment.

h. 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.

Some progress has been made toward attainment of this objective. A gather took place in the fall of 1994 in the Antelope Valley HMA in an effort to reach initial herd size as per the Wells RMP Wild Horse Amendment. The most recent census data indicates, however, that horse numbers still exceed initial herd size.

The Antelope Valley HMA contains all or part of 10 grazing allotments. Evaluations are complete for one allotment and in progress for three others, which make up the majority of the HMA. With the completion of these evaluations, and the establishment of an AML within the entire HMA, historic wild horse distribution problems and associated areas of over-utilization

should improve. Although no significant problems by wild horses have been identified in the Badlands Allotment, establishing an AML for the allotment will lead to an overall attainment of this objective. (Refer to Section V. A. 3. b. 1. for status of allotment evaluations and establishment of AML.)

i. 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 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 HMA. Monitoring has been established within all HMAs in the form of collection of pre-livestock turnout utilization data, use pattern mapping data, and aerial census data. Because of the extremely small numbers of horses utilizing the Badlands Allotment, monitoring has been limited to maintenance of initial herd size and aerial census data.

j. 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.

Some progress has been made toward the attainment of this objective. The Antelope Valley HMA was gathered and was at the initial herd size in the fall of 1994. The most recent census data indicates that the HMA is currently 267 head (47%) over initial herd size (February 1997). Another gather is scheduled for the fall/winter of 1997 to remove a sufficient number of horses in order to attain this objective.

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 Badlands Allotment with the maintenance of an AML. The AML, however, may be adjusted up or down if future monitoring data indicates such an adjustment is appropriate to maintain a thriving ecological balance with existing uses.

3. Allotment Specific Objectives

a. Range Key Area Objectives

BA-01

1. Short term: Improve trend by 1992.

Long term: Show statistically significant upward trend by 1997.

Evaluation of existing data indicates progress has not been made.

Frequency data indicates that trend is static to declining. A significant change did not occur in either key species from 1989 to 1994: white sage decreased from 61% to 55%, and Indian ricegrass remained constant at 7%. A significant change did occur in the frequency of halogeton, an introduced forb; from 28% to 99%.

It is not possible to determine if the short term objective has been reached because the last study was read after 1992. It can be determined, however, that progress toward the long term objective of 1997 is not being made, based upon the decrease in white sage frequency and the dramatic increase in halogeton frequency.

2. Improve ecological condition from mid seral (25-50% of PNC) to early-late seral (51-58%) by 1997 and to mid-late seral (59-66%) by 2007.

Evaluation of existing data indicates progress has been made.

According to production studies from 1989 and 1994, progress is being made toward an early-late seral stage by 1997. Production data indicates that ecological status has remained in late-mid seral condition, but has increased from 42% to 50%.

White sage increased in production from 1989 to 1994. Halogeton decreased in production, contradicting the results of the frequency study. As was discussed in Section V. A. 2. BA-01, halogeton production in 1989 may have been directly correlated to the high precipitation received. The decrease in production weight of halogeton may have been caused by the below-average precipitation of 1992 and 1993. The lack of grass species was considered when evaluating this site and the condition rating was reduced from early-late seral to late-mid seral to accurately represent the ecological condition of this site.

3. Manage grazing for maximum utilization of 60% for key species ORHY and 50% for EULA5 for winter use.

Some progress has been made. Utilization exceeded desired utilization on both key species in 1990 and 1991. Desired utilization of EULA5 was exceeded in 1992. The average livestock utilization of EULA5 was 40% and for ORHY, 47%. The use on the majority of the allotment was in both the light and moderate categories. Heavy use that occurred during the evaluation period was equal to 12% of the allotment (refer to Appendix 5). The average utilization of 40% for EULA5 and 47% for ORHY at BA-01 accounted for the light, moderate, and heavy use that occurred on the allotment throughout the evaluation period. The key area BA-01 is representative of the use on the Badlands Allotment.

BA-02

1. Short term: Improve trend by 1992.

Long term: Show statistically significant upward trend by 1997.

Evaluation of existing data indicates that progress toward the long term objective has been made. Both key species have increased in frequency. Data indicates an increase in Indian ricegrass from 24% to 30%, though the change was not significant. A significant increase occurred in black sage; from 47% in 1989 to 65% in 1994.

Significant differences also occurred in *Astragalus*, a perennial forb, and rabbitbrush. *Astragalus* increased from 1% frequency to 31%. Rabbitbrush increased from 9% to 21%.

Because frequency was recorded in 1989 and 1994, it is impossible to determine whether or not the objective was reached in 1992. Progress toward the long term objective, however, has been made according to the results of the studies data.

2. Improve condition from mid to late seral by 1997 and to early PNC (76-80%) by 2007.

Met. Production data indicates that ecological condition has increased from mid seral (37%) in 1989 to late seral (63%) in 1994. Studies of species composition indicate a significant increase in forbs and grasses on the site. An increase occurred in the key species Indian ricegrass, from 1% in 1989 to 32% in 1994. Black sage decreased in production from 88% to 30%. The decrease in black sage contradicts the frequency study, which indicated that an increase occurred in the presence of black sage. The years 1992 through 1994 were above-average precipitation years, in which an average of light utilization

was received. These conditions would encourage the establishment of black sage seedlings and the productivity of forbs and perennial grasses to increase. The frequency study for black sage and the increase in the weight composition of grasses and forbs indicate that condition is improving.

3. Manage grazing for maximum utilization of 60% for ORHY and 50% for ARARN for winter use.

Some progress has been made. In the 1993/94 grazing year, utilization of black sage was recorded at 55% use. In all other years within the evaluation period both key species received use below the utilization objective. Utilization at this key area has averaged 36% for black sage and 43% for Indian ricegrass.

Utilization studies indicate mainly light and moderate use at BA-02. The allotment's use shown on the use pattern maps is dominated by both light and moderate use categories (refer to Appendix 5). The utilization recorded at this key area each year is consistent with the utilization category represented by use pattern maps. This indicates that key area BA-02 accurately represents the dominant use categories in the Badlands Allotment.

Goshute Mountain

4. Land Use Plan Objectives

Attainment or non-attainment of these objectives is included within the conclusions for Allotment and Site Specific objectives.

5. Allotment Specific Objectives

a. Livestock

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

Met. According to use pattern maps, the utilization levels recorded on Goshute Mountain Allotment never exceeded the allowable use level of 50% for shrubs and 60% for grass key species. Current livestock use on the Goshute Mountain Allotment terminates in mid-March, immediately before the start of the growing season for most shrubs and grasses. In mild winter years, the growing season may begin at

the same time that sheep are removed. The season of use is appropriate in order to maintain the desired vegetation community.

2. The long term objective is to improve those acres in poor or fair livestock forage condition and maintain all acres presently in good livestock forage condition by managing for those seral stages which optimize livestock forage production.

Some progress has been made. In 1981, the key area was observed to be in fair range condition at 42% of the potential climax community. Ecological site inventory was completed for the Goshute Mountain Allotment in 1993. The data from the inventory revealed that 32.7% of the allotment was in an early seral condition and 35.3% was in a mid-seral class (refer to Table 11 of Section IV. B. 4.). An inventory transect completed near the key area revealed that ecological condition was mid-seral at 50% of potential natural community.

Although the seral class has not changed, an improvement from 42% to 50% indicates that progress toward this objective has been made at the location of the key area.

b. Wild Horses

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

Met. The season of use by wild horses has been in the winter and spring seasons, when water is more likely to be available. The allowable use levels (AUL) of 60% use on grasses and 50% use on shrubs were not exceeded by the combined use of wild horses and livestock. Because wild horses use the Goshute Mountain Allotment on an incidental basis only, utilization by wild horses is difficult to determine. An AML (appropriate management level) will be established in the Technical Recommendation Section of this evaluation.

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

Some progress has been made. In 1981, the range condition at KA-01 was recorded as fair. In 1993, ecological site inventory was

completed in the Goshute Mountain Allotment (refer to Table 11 in Section IV. B. 4.). An inventory transect completed near the key area resulted in a mid-seral class of 50%. The data revealed that the grass component increased slightly and the shrub component decreased. The inventory revealed that 32.7% of the allotment was in an early seral class and 35.3% was in a mid-seral class. Although the ecological condition at the key area remained within a mid-seral stage from 1981 to 1993, an improvement was made from 42% to 50%, indicating progress toward this objective.

c. Pronghorn Antelope

1. The short term objective is to limit use on key species listed for pronghorn antelope to 60% for perennial grasses, grass-like plants, and forbs, and to 50% percent for shrubs yearlong.

Met. The key species listed for pronghorn have been developed recently and have not been monitored on the allotment. According to use pattern maps created for the Goshute Mountain Allotment, utilization has not exceeded 50% on ARARN or ORHY, the key species identified for KA-01.

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

Not met. Based on Ecological Site Inventory completed in 1993, ocular surveys and professional judgment, pronghorn habitat is presently rated in poor condition. The limiting factor is the lack of vegetation diversity.

6. Site Specific Objectives

a. KA-01

Short term: Limit utilization by livestock to an AUL of 60% on ORHY and 50% on ARARN for a winter season of use.

Met. Utilization on the Goshute Mountain Allotment has remained below the allowable use level for both key species throughout the evaluation period.

Long term: Establish a composition of 5% for the key species ORHY. Maintain a composition of ARARN at 30% or below. Improve the ecological condition from a mid- to a late seral stage (51-75%).

Some progress has been made. According to a range condition estimate of the key area in 1981, the area was in a mid-seral condition. Ecological site inventory completed in 1993 revealed that ecological condition has remained within a mid-seral stage. Indian ricegrass was observed as making up 2% of the species composition in 1993 and ARARN made up 75%. Species composition data has not been collected since 1993. Although the composition percentage objectives for the key species have not been met, an improvement was made in the ecological condition from 42% to 50%, indicating progress toward this objective.

7. Antelope Valley/Antelope Herd Management Area Plan (HMAP) Objectives

a. Habitat Objectives

1. Vegetation

Provide forage adequate to carry wild horses and livestock through the winter use period without exceeding the utilization objectives of 60% on key grass species and 50% on key shrub species. This is in accordance with the recommended utilization levels in the Nevada Rangeland Monitoring Handbook.

In the combined winter use areas, the utilization objective for wild horses, prior to the entry of livestock which occurs between November 1 and December 31, has been established at an average of 10%.

Progress has been made toward attainment of the ecological condition and utilization objectives. A detailed discussion of this objective can be found in Section V. A. 3. a.

2. Distribution and Water Availability

Improve distribution and provide water yearlong for wild horses throughout the HMA where possible.

Antelope Valley HMA - Not met. To date, no waters have been developed within the HMA to improve the distribution of wild horses.

A need for additional waters, however, has not been identified within the Badlands Allotment. Distribution problems due to fencing is not an issue with this allotment.

Antelope HMA - Met. Several waters have been developed and improved for the benefit of wild horses, livestock, and wildlife in the Antelope HMA. Water has not been developed specifically in the Goshute Mountain Allotment as it was not identified as a priority during the land use planning process. The need for additional water development has not been identified.

b. Wild Horse Objectives

1. Multiple Use

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

Some progress has been made toward attainment of this objective. The following table lists the allotments within each HMA, the status of the evaluation, and the establishment of an AML:

Table 14A. Allotment Evaluation Status within Antelope Valley HMA (Elko District)

Allotment	Evaluation Status	Established AML
Currie	Draft Evaluation	Preliminary
Spruce	Draft Evaluation to Public	Preliminary (67 Horses)
Antelope Valley	Final Decision	90 AUMs (10 Horses for 9 mos.)
Badlands	Draft Evaluation	Preliminary (Incidental Use)
White Horse	Scheduled	N/A
Sugarloaf	Scheduled	N/A
Ferber Flat	Scheduled	N/A
Utah/Nevada #1	Scheduled	N/A
West White Horse	Scheduled	N/A
Boone Springs	Scheduled	N/A
Initial Herd Size for Antelope Valley HMA =		240

Table 14B. Allotment Evaluation Status within the Antelope HMA (Ely District)

Becky Springs	Scheduled	N/A
Cherry Creek	Scheduled	N/A
Becky Creek	Final Decision	96 AUMs (8 horses)
N. Steptoe	Final Decision	77 AUMs (6 horses)
Lovell Peak	Final Decision	93 AUMs (8 horses)
Schell Bourne	Scheduled	N/A
Tippett	Final Decision	408 AUMs (34 horses)
Tippett Pass	Draft Evaluation	Preliminary
Chin Creek	Final Decision	1824 AUMs (152 horses)
Deep Creek	Proposed Decision	Preliminary
Samson Creek	Final Decision	300 AUMs (25 horses)
Goshute Mt.	Draft	Preliminary (Incidental Use)
Estimated AML for Antelope HMA =		274

2. Appropriate Management Level (AML)

When the allotment evaluations are complete, a total AML for the HMAs will be determined. 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, and/or fertility control.

Some progress has been made toward attainment of this objective.

AMLs are being set for each allotment within the HMAs. An estimate of total AML for the Antelope HMA is currently 274 animals but will change once the allotment evaluations within the HMA are complete. Although a total AML for either HMA has not yet been established, gathers may take place within those allotments with an AML established and where current data indicates an overpopulation of horses exists.

3. Free-Roaming Characteristics

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

Met. Monitoring data has not shown that existing fences within the Badlands and Goshute Mountain Allotments affect the wild and free-roaming characteristics of the horses that utilize the allotments.

4. Color and Conformation

The wild horses within the Antelope Valley and Antelope HMAs which exhibit the Spanish Barb characteristics will be maintained within the population. Fertility control treatments and/or removals in the future will exclude those horses that obviously exhibit those traits. No other characteristics or conformations will be selected.

Met. No Spanish Barb horses have been removed from the Antelope Valley and Antelope HMAs nor included in the pilot fertility control study.

8. **Standards for Rangeland Health.**

STANDARD 1. Upland Sites: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

Badlands Allotment. Based on the evaluation of RPS Objectives a, h, and j, and key area objectives 1, 2, and 3 for both BA-01 and BA-02, this standard has not been met and livestock grazing management practices have been determined to be a causal factor. However, progress has been made toward the attainment of this standard based on monitoring data presented in this evaluation.

Goshute Mountain Allotment. Based on the evaluation of the Goshute Mountain Allotment Specific Objectives a.1 and a.2 for livestock and the short and long term objectives for KA-01, this standard has not been met and livestock grazing management practices have contributed to its non-attainment. It has been determined, however, that significant progress has been made towards attaining this standard on the Goshute Mountain Allotment, based on the monitoring data presented in this evaluation.

STANDARD 2. Riparian and Wetland Sites: Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

This standard does not apply to the Badlands and Goshute Mountain Allotments because there are neither riparian nor wetland sites on either allotment.

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 the life cycle requirements of threatened and endangered species.

Badlands Allotment. Based on the evaluation of RPS Objectives a, b, f, h, and j, and key area objectives 1, 2, and 3 for both BA-01 and BA-02, it has been determined that this standard has not been met and that livestock grazing is a contributing factor. Monitoring data presented in this evaluation, however, shows that progress is being made toward the attainment of this objective.

Goshute Mountain Allotment. Based on the evaluation of the Allotment Specific Objectives, Site Specific Objectives for KA-01, and HMAP

objectives a.1 and 2 and b.1, this standard has not been met and livestock grazing has been determined to be a contributing factor. However, progress is being made toward the attainment of this objective.

STANDARD 4. Cultural Resources: Land use plans will recognize cultural resources within the context of multiple use.

Based on the evaluation of actions taken on the Badlands and Goshute Mountain Allotments, this standard has been met.

VI. TECHNICAL RECOMMENDATIONS

Analysis of the carrying capacity and a description of grazing system options are outlined in Appendix 8.

1. Establish and maintain an AML of 5 AUMs for wild horses within both the Badlands and Goshute Mountain Allotments.

Rationale (refer to Section II. B. 2): Option 1: RMP Amendment/RPS Proportions was chosen because the allotment receives only incidental use by wild horses. When the Antelope Valley HMA is reduced to the initial herd size of 240, only 1% of the herd may be using the allotment during a 5 month period according to census data. This equates to .5% of the allotment carrying capacity allocated to horses and is in keeping with the objective to manage for incidental use by wild horses.

Proportioning wild horse and domestic livestock use under Option 2: Average Actual Use would result in 98% of the carrying capacity apportioned to livestock and 2% apportioned to wild horses, or 1003 AUMs and 20 AUMs apportioned to livestock and wild horses respectively. This option is not recommended because actual use by domestic livestock has been less than total authorized use during the evaluation period due in part to the prolonged drought and non-use taken by the permittees. During this same time period, wild horse numbers have continually increased until gathers were conducted in 1992 and 1994. Using average actual use by livestock in the proportioning calculations would not recognize the efforts made by the permittee to reduce use during the drought period, which was encouraged by the BLM.

Option 3: Authorized livestock grazing use/Actual wild horse use would result in a proportion of 99% of the carrying capacity for livestock (1,013 AUMs) and 1%, or 10 AUMs, allocated to wild horses. This option is not recommended at this time. Although 1% of the total carrying capacity would result in only 10 AUMs for wild horses, multiple use objectives are currently not being met with the permittees running at 42% of their total authorized use. Wild horse numbers have been well above the initial herd size of 240

throughout the evaluation period (average numbers in the Antelope Valley HMA during the evaluation period were 369), resulting in a higher average actual use level by wild horses in the Badlands Allotment.

Realizing that the BLM has no way of limiting the number of horses nor the season of use by wild horses on the Badlands Allotment (for example, 25 wild horses may move into the allotment in July after a summer thunderstorm fills up potholes and ditches with water), pre-livestock monitoring data will continue to be collected as well as aerial census data. If monitoring shows that the AML can be higher for wild horses in the Badlands Allotment, it will be adjusted through the re-evaluation process. Maintaining wild horses at the appropriate management level should result in a thriving, natural, ecological balance between horses and other resource values. Census data has shown that approximately 1% of the wild horses within the Antelope Valley HMA may inhabit the Badlands Allotment for five winter/spring months. 1% of 240 (the initial herd size as per the Wells RMP Wild Horse Amendment) is 2.4 horses. 2.4 horses multiplied by 5 months = 12 AUMs.

This technical recommendation is consistent with 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.

2. Establish the total number of animal unit months of specified livestock grazing in the Badlands Allotment at 1,018 AUMs.

Rationale: It has been concluded within this evaluation that a reduction in the number of authorized AUMs is necessary in order for allotment management objectives to be met and ecological condition to improve. The post-evaluation carrying capacity of 1,018 AUMs is derived from 1,023 AUMs, the average of the pre-CAF capacities determined for each key area. The figure of 1,023 AUMs is the average of 961 AUMs for key area BA-01 and 1,085 AUMs for BA-02, which were calculated using actual use and key area utilization data (refer to Appendices 3A and 3B). 5 AUMs were allocated to wild horses, therefore 1,018 AUMs were allocated to livestock. The 1,018 AUMs figure is a 62% reduction in the pre-evaluation authorized use.

With the exception of the 1992-93 grazing year, utilization has been recorded at both key areas every year of the evaluation period. The weighted average method, which is based upon use pattern maps collected from 1987 to 1994, resulted in a carrying capacity figure very close in number to 1,023 AUMs (refer to the Carrying Capacity Analysis section of Appendix 8).

Management practices have changed during the past two years of the evaluation period, with sheep having been turned out on the west side of the allotment. Utilization data from these two years has revealed that this system has alleviated the heavier use occurring at BA-01,

located on the east side of the allotment, and has resulted in similar use at both key areas. A continuation of this practice would allow for utilization objectives at each key area to be met. The continuation of water-hauling would encourage even distribution of livestock use.

This technical recommendation is consistent with 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.

3. Re-locate the west boundary of the Badlands Allotment and transfer the total number of AUMs of specified livestock grazing in the Badlands Allotment to DBA Need More Sheep Company. Establish livestock grazing use in the newly adjusted Badlands Allotment as follows:

Operator	Animal Units	Kind	Period of Use	% Public Land	Total AUMs
DBA Need More Sheep Co.	1,025	sheep	11/1 - 3/31	100	1,018
TOTAL	1,025				1,018

Total AUMs of specified livestock grazing determined for the Badlands Allotment (1,018) would be authorized to DBA Need More Sheep Company. The west boundary of the allotment would be shifted toward the east approximately one mile and would change from a north-south direction to a northwest-southeast direction (refer to Appendix 10 for proposed location of west boundary).

The carrying capacity of 174 AUMs for cattle in the proposed West Pasture of Option 1, Alternative B of Appendix 8, would be added to the Antelope Valley Allotment, of which Reed Robison is the current permittee.

A rangeline agreement would be created and signed by DBA Need More Sheep Company, Reed Robison, and the BLM. The purpose of the agreement would be to document each operator's understanding and consent of the location of the allotment boundary between the two allotments.

Rationale: Reed Robison has requested to change his authorized use in the Badlands Allotment from sheep to cattle on his grazing permit for the Badlands Allotment. Based on his request, his cattle operation would be limited to the west half of the Badlands Allotment, within that area adjacent to and unfenced from the Antelope Valley Allotment (just west of the Badlands Allotment boundary), of which Robison has a grazing permit for cattle.

The 174 AUMs of authorized cattle use recommended for the proposed West Pasture would be transferred to the adjacent Antelope Valley Allotment. The figure of 174 AUMs for

cattle is based on 1) areas within the West Pasture that are suitable for cattle use, and 2) the factor of 55% for converting sheep AUMs to cattle AUMs (refer to Alternative B of Option 1 for Badlands Allotment, Appendix 8).

In a 1991 "Stipulation to Withdrawal Appeals" regarding the Final Multiple Use Decision for the Chin Creek Allotment (Ely District), the total use permitted in the Antelope Valley Allotment was specified as 3,564 AUMs, yet a deferred-rotation grazing system was also implemented in which the Antelope Valley Allotment would receive an approximate 1,700 AUMs of grazing use per year only. In 1994, an allotment evaluation was completed for the Antelope Valley Allotment. The Final Multiple Use Decision (FMUD) issued subsequent to the allotment evaluation identified the carrying capacity for the Antelope Valley Allotment to be 2,517 AUMs. The grazing system implemented in the 1991 "Stipulation to Withdrawal Appeals", however, was to continue, allowing 1,700 AUMs of authorized grazing annually until monitoring data could be collected to make a more accurate determination of carrying capacity. The grazing system also included one year of grazing rest for the Antelope Valley Allotment every three years. Therefore, flexibility exists to provide for the addition of 174 AUMs to be transferred from the Badlands Allotment to the Antelope Valley Allotment.

Although the acreage of the Badlands Allotment will be reduced due to the change in the boundary, the carrying capacity of 1,018 AUMs will remain the same. DBA Need More Sheep Company, who has grazed the Badlands Allotment since 1994, has initiated grazing practices in which utilization of key species remains within objective levels. Also, the unauthorized use that has occurred in the past by cattle from Utah was not recorded and is therefore not accounted for in the evaluation, but it is likely to have made an impact on utilization levels. The authorization of 1,018 AUMs to DBA Need More Sheep Company will allow for a continued viable sheep operation and would also allow DBA the opportunity to improve range condition with the potential for an increase in authorized AUMs as supported through monitoring.

The proposed west boundary would follow a set of low ridges that lie in a northwest-southeast direction, creating a natural barrier to cattle movement toward the east (see Appendix 10). The area between the ridges and the current west boundary of the Badlands Allotment has historically received use by cattle drifting east from the Antelope Valley Allotment. Because of the lack of water on the west end of the Badlands Allotment at the time that cattle are grazing the Antelope Valley Allotment, the cattle rarely drift farther than the aforementioned hills. The new location of the boundary would eliminate the problem of cattle crossing over into the Badlands Allotment.

Technical recommendation #3 is consistent with 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.

4. Establish the total number of AUMs of specified livestock grazing for the Goshute Mountain Allotment as follows:

Operator	Animal Units	Kind	Period of Use	% Public Land	Total AUMs
DBA Need More Sheep Co.	468	sheep	11/1 - 3/31	100	465
TOTAL	468				465

Rationale: The specified livestock grazing use of 465 AUMs is the pre-evaluation carrying capacity for the Goshute Mountain Allotment. The carrying capacity resulting from the weighted average method, 450 AUMs, was derived from use pattern maps from 1986 to 1994 and is close in number to the pre-evaluation specified livestock grazing use of 465 AUMs. According to use pattern maps completed during the evaluation period, the allowable use level outlined as a site specific objective was not exceeded. Data collected during the evaluation period supports the current level of 465 AUMs for livestock and wild horse use, therefore a reduction to account for wild horse AUMs is not recommended.

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.

6. The terms and conditions listed on the grazing permits of both DBA Need More Sheep Company and Reed Robison would include the following:

Authorized grazing use will be in accordance with the Badlands and Goshute Mountain Allotments Evaluation and Assistant District Manager's Final Multiple Use Decision dated _____.

An actual use report for the Badlands and Goshute Mountain Allotments, by pasture, must be submitted to this office annually within 15 days of completion of authorized use.

Supplemental feeding is limited to salt, mineral and/or protein supplements in block, granular or liquid form. Such supplements must be placed at least ¼ mile from live waters (springs, streams, and troughs), wet or dry meadows, and aspen stands.

All riparian exclosures, including spring development exclosures, are closed to livestock use unless specifically authorized in writing by the Assistant District Manager.

Rationale: Upon completion of the allotment evaluation, a Multiple Use Decision will be issued to implement changes in current grazing management practices as a result of multiple use objectives not being achieved. Supplemental feed and its location is important to proper livestock distribution and range management.

7. Flexibility will be allowed on the Badlands and Goshute Mountain Allotments as outlined in the following:

The number of livestock to be grazed will remain flexible according to the needs of the permittee. Livestock numbers listed in this permit are based on the maximum number of AUMs that may be removed from each allotment for the period specified. Livestock numbers and periods of use will be applied for on an annual basis.

Deviations in the terms and conditions outlined above will be allowed to meet the needs of the resources and the permittee as long as these deviations are consistent with multiple use objectives. Deviations, including any changes in licensed use or adjustments in the terms and conditions outlined above, will require the submission of a written application and written authorization from the Assistant District Manager prior to grazing use.

Rationale. The permittees are afforded flexibility in their operations in order to adjust to range readiness, climatic conditions, and annual fluctuations in their livestock operations.

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 towards conformance with the Standards for Rangeland Health for Upland Sites and Habitat.

9. Continue to collect seasonal distribution/actual use data for wild horses on the Antelope Valley HMA.

Rationale. In 1991, intensive seasonal distribution flights began 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.

10. Inventory and identify existing fence projects that do not meet BLM specifications. Modify those fences which create significant barriers to deer and pronghorn.

Rationale. The fences existing within the Badlands Allotment are located along the Nevada/Utah border and the White Pine County line. Fence modifications to BLM specifications would help facilitate big game movements and allow for more efficient use of available habitat while retaining the primary goal of restricting livestock movements.

11. 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 (refer to Section III. C. 2-8). The Badlands and Goshute Mountain Allotments 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 precipitation studies
Wildlife Habitat:	habitat condition studies (BLM Manual 6630) wildlife population census Cole Browse	
Wild Horses:	wild horse population census pre-livestock utilization	

Rationale: Additional monitoring and analysis will be required to determine progress toward attainment of multiple use objectives and to determine necessary changes in grazing management, if any.

12. Water hauling will occur on all existing roads within the Badlands and Goshute Mountain Allotments to improve livestock distribution.

Rationale: Use patterns mapped annually for both allotments during the evaluation period indicate that most of the grazing use occurs along roads where water was hauled that year. Water that is hauled to all accessible areas will improve the livestock distribution and lessen the occurrence of heavy use.

VII. CONSULTATIONS

Elko District BLM

Clint Oke, Assistant District Manager, Renewable Resources
Ray Lister, Team Leader, Range Team
Roy Price, Team Leader, Wildlife Team
Kent Undlin, Wildlife Biologist

Russ Findlay, Wildlife Biologist
Kathy McKinstry, Wild Horse Specialist
Leticia Lister, Rangeland Management Specialist
Bruce Thompson, Rangeland Management Specialist
Jennifer Petersen, Rangeland Management Specialist

Ely District BLM

Brett Covlin, Rangeland Management Specialist
Michael Main, Rangeland Management Specialist
Paul Podborny, Wildlife Biologist

Permittees

DBA Need More Sheep Company
Reed B. Robison

Other Interested Public

Ely District Office, BLM
Nevada Cattlemen's Association
Nevada Woolgrowers Association
Nevada Division of Wildlife
Nevada State Clearinghouse
U.S. Fish and Wildlife Service
Animal Protection Institute
Comm. for the Preservation of Wild Horses
Nevada State Division of Agriculture
Elko County Board of Commissioners
Resource Concepts, Inc.
Charles and John Young
Paul Bottari
Wild Horse Organized Assistance
Natural Resource Defense Council
Wells Resource Area Grazing Assoc.
Rutgers School of Law
Nevada Land Action Association
The Nature Conservancy
W. Shoshone Historic Preservation Society
Federal Land Bank
Sierra Club, Toiyabe Chapter
Kathryn Cushman

USDA Natural Resources Cons. Service
Wild Horse Spirit
Bob Wilson, UNR Cooperative Extension
L. Derral Christensen
White Pine Co. Board of Commissioners

APPENDICES

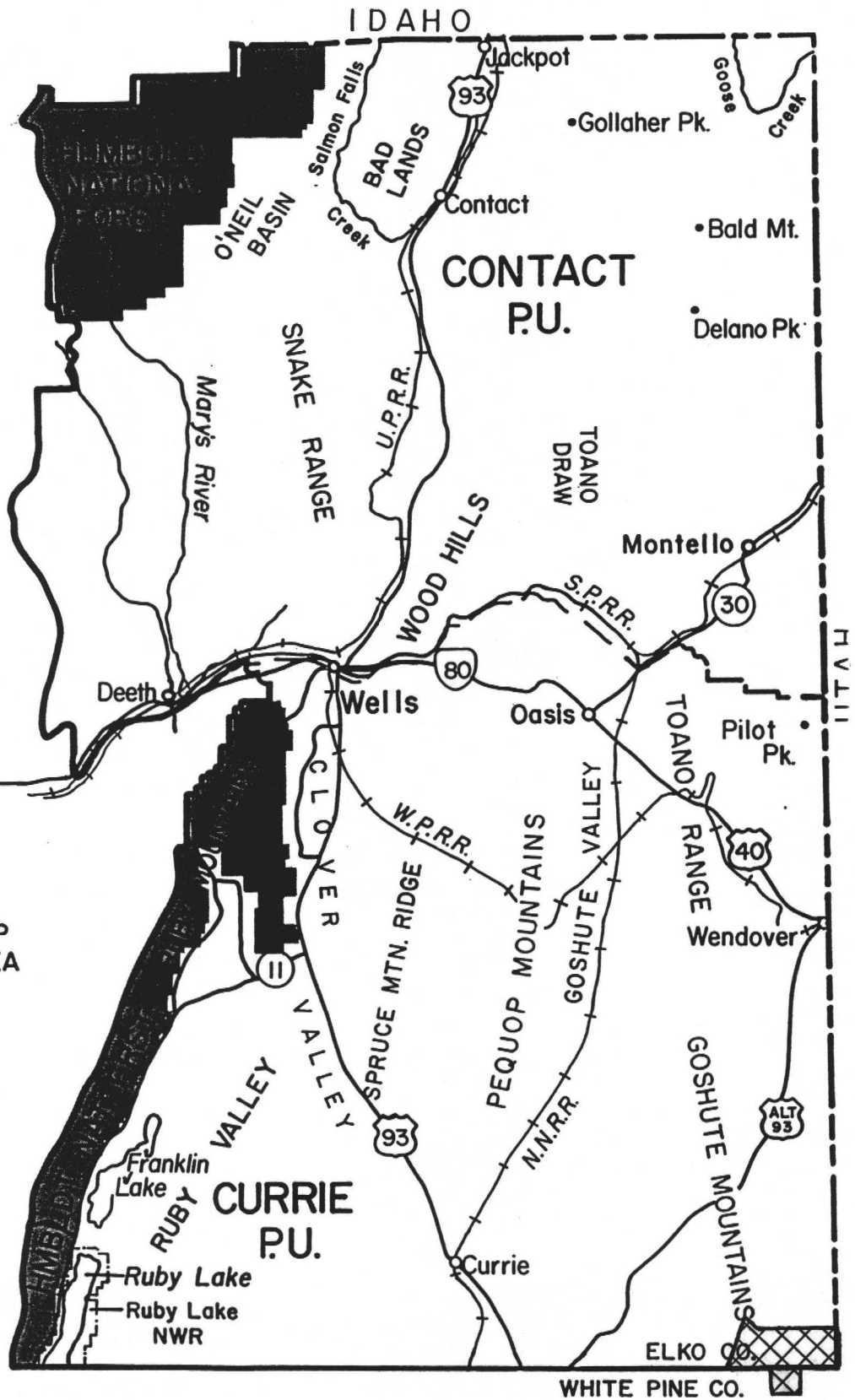
ELKO DISTRICT

Wells Resource Area

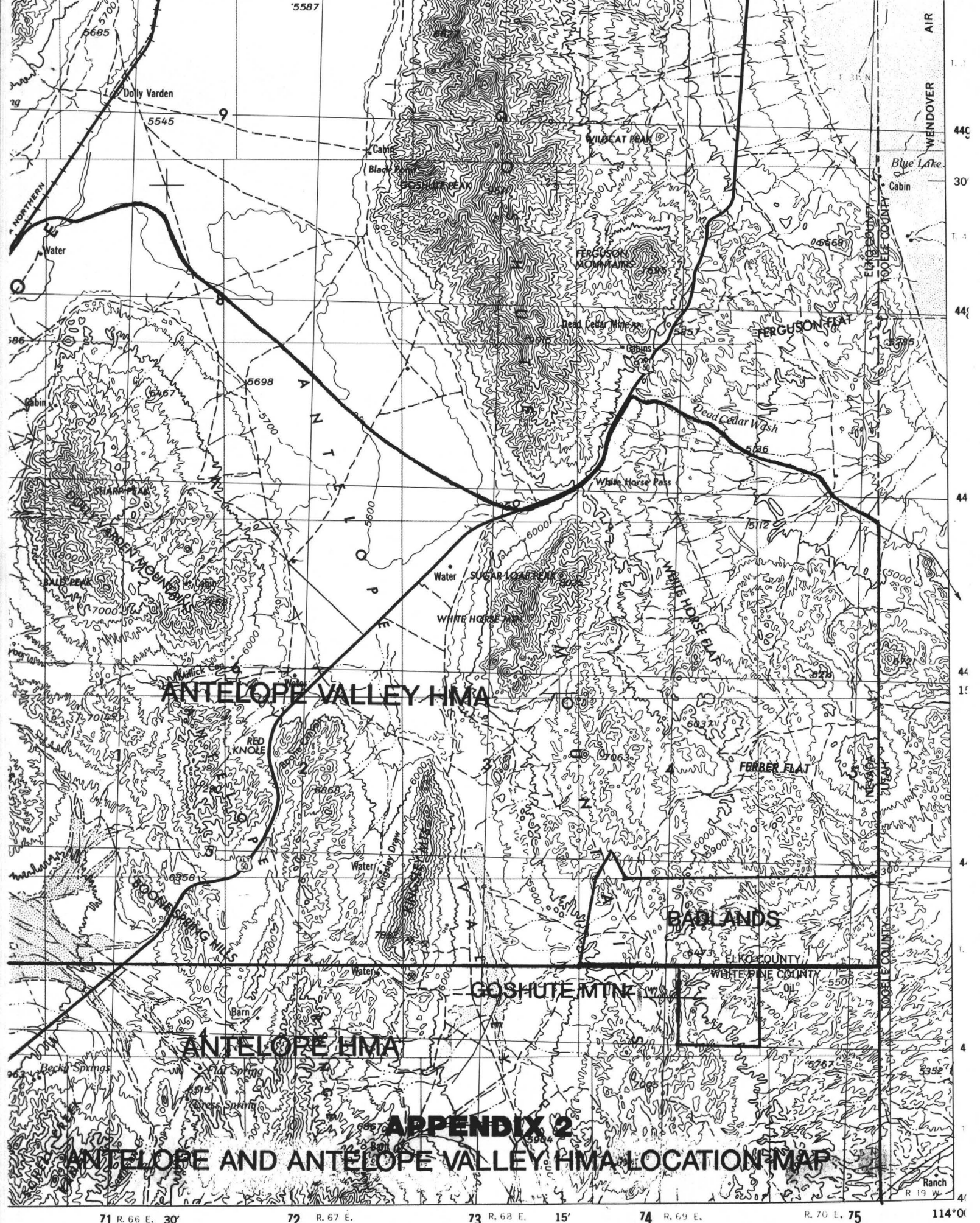
BADLANDS and
GOSHUTE MTN
ALLOTMENTS

LOCATION
MAP

5 0 5 10 Miles
Scale



APPENDIX 1



71 R. 66 E. 30' 72 R. 67 E. 73 R. 68 E. 15' 74 R. 69 E. R. 70 E. 75 114° 0'

APPENDIX 3A

BADLANDS ALLOTMENT STUDIES SUMMARY MATRIX KEY AREA BA-01											
DESIRED USE: EULAS - 50%, ORHY - 60%											
Year	Actual Use AUMs ¹	Periods of Use	KA Util. (Percent)	Dates Read	KMA Use-Pattern	Dates Mapped	Pre-CAF Cap.(AUMs)	CAF	Post-CAF Cap.(AUMs)	Ecological Stat./Prod.	Key Species Frequency
1986-87	514	12/10-2/20	EULAS - 44% ² ORHY - 58% ²	3/19/87	Moderate	3/19/87	532	1.73	308		
1987-88	687	11/17-3/15	EULAS - 48% ² ORHY - 58% ²	3/17/88	Slight ⁴	3/17/88	711	1.73	411		
1988-89	1093	11/11-2/15	EULAS - 15% ORHY - 39%	3/9/89	Light	3/9/89	1682	1.04	1617		
1989-90	1360	11/17-2/4	EULAS - 60% ORHY - 62%	5/15/90	Heavy	5/15/90	1133	1.28	885	Mid 42% 640 lbs/ac ³	EULAS - 61% ORHY - 7%
1990-91	1022	1/26-3/15	EULAS - 76% ORHY - 71%	4/25/91	Heavy	4/25/91	672	0.95	707		
1991-92	810	12/1-3/1	EULAS - 51% ORHY - 0%	3/11/92	Heavy	3/23/92	794	1.26	630		
1992-93 ⁴	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.15	n/a		
1993-94	972	12/21-3/10	EULAS - 44% ORHY - 45%	3/31/94	Moderate	3/31/94	1105	1.31	844	Mid 50% (Late-64%) 383 lbs/ac ³	EULAS - 55% ORHY - 7%
1994-95	1216	12/4-3/18	EULAS - 4% ORHY - 18%	4/12/95	not mapped	n/a	4053	2.45	1654		
1995-96	1203	12/18-2/29	EULAS - 16% ORHY - 68%	4/30/96	not mapped	n/a	1062	no data ⁷	n/a		
AVG.	986 ⁵		EULAS - 40% ORHY - 47%				961 ⁶		882		

- ¹ Actual use by wild horses was included for those years that horses were observed in the Badlands Allotment during winter census.
- ² Utilization was recorded at an area proximal to the location of BA-01. BA-01 was not an established key area until 1989. Prior to 1989, utilization may not coincide with use pattern results.
- ³ Refer to Section V. A. 2. a. BA-01 for interpretation of status rating and production total.
- ⁴ Livestock were not turned out in the 1992-93 grazing season due to snow conditions.
- ⁵ Average does not include the 1992-93 grazing season.
- ⁶ Average does not include the 1994-95 grazing season (refer to Carrying Capacity Analysis of Appendix 8).
- ⁷ Precipitation data is not available for the 1995-96 CAF.

APPENDIX 3B

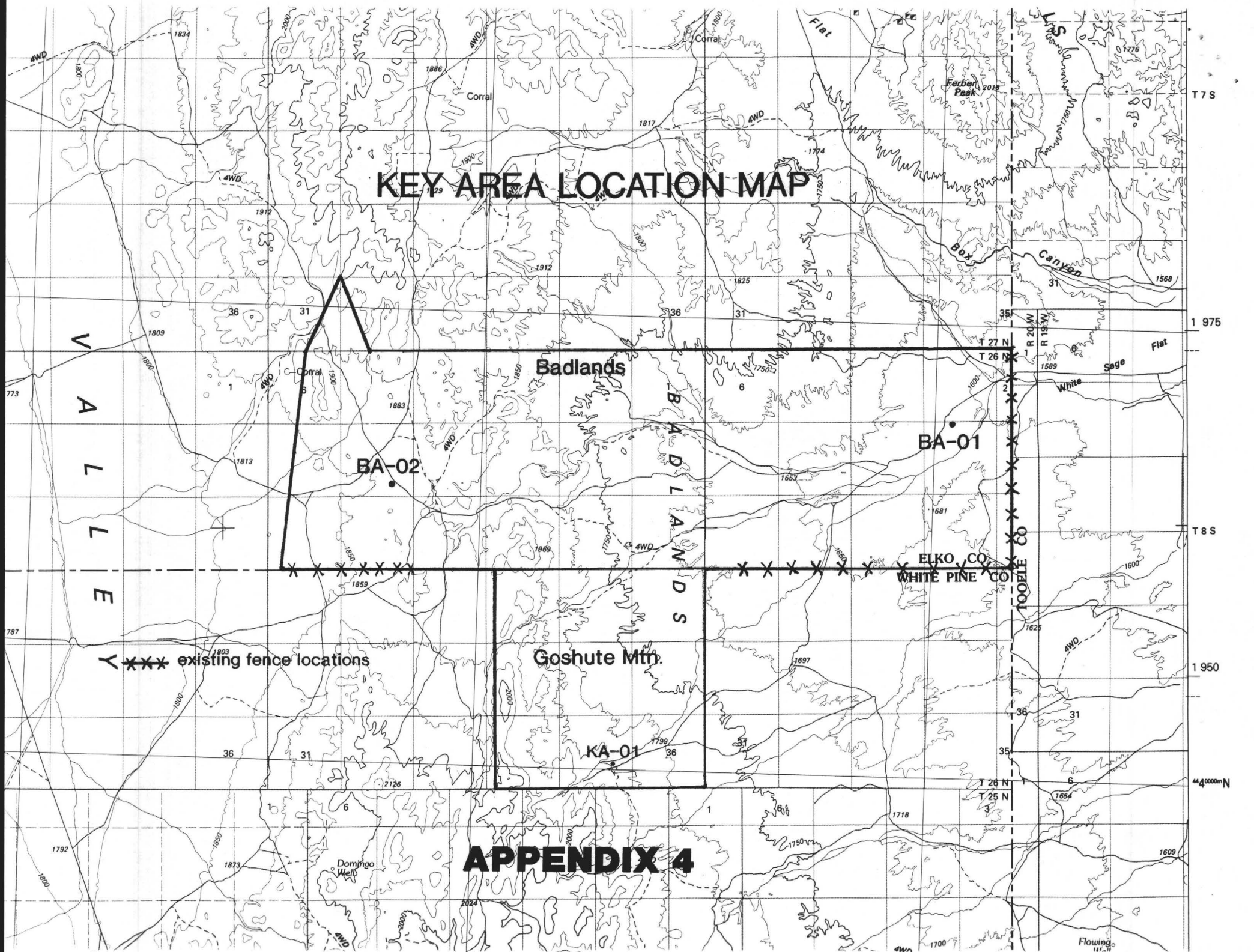
BADLANDS ALLOTMENT STUDIES SUMMARY MATRIX KEY AREA BA-02											
KEY SPECIES: black sage (ARARN), Indian ricegrass (ORHY)											
DESIRED UTILIZATION: ARARN - 50%, ORHY - 60%											
Year	Actual Use AUMs ¹	Periods of Use	KA Util. (Percent)	Dates Read	KMA Use- Pattern	Dates Mapped	Pre-CAF Cap.(AUMs)	CAF	Post-CAF Cap.(AUMs)	Ecological Stat./Prod.	Key Species Frequency
1986-87	514	12/10-2/20	ARARN - 32% ² ORHY - 46% ²	3/19/87	Heavy	3/19/87	670	1.73	387		
1987-88	687	11/17-3/15	ARARN - 16% ² ORHY - 30% ²	3/17/88	Light	3/17/88	1374	1.73	794		
1988-89	1093	11/11-2/15	ARARN - 49% ORHY - 49%	3/9/89	Moderate	3/9/89	1115	1.04	1072		
1989-90	1360	11/17-12/2	ARARN - 26% ORHY - 21%	5/15/90	Light	5/15/90	2615	1.28	2043	Mid 37% 449 lbs/ac ⁴	ARARN - 47% ORHY - 24%
1990-91	1022	1/26-3/15	ARARN - 45% ORHY - 46%	4/25/91	Moderate	4/25/91	1136	0.95	1196		
1991-92	810	12/1-3/1	ARARN - 33% ORHY - 54%	3/11/92	Moderate	3/23/92	900	1.26	714		
1992-93 ³	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.15	n/a		
1993-94	972	12/21-3/10	ARARN - 55% ORHY - 49%	3/31/94	Moderate	3/31/94	884	1.31	675	Late 63% 699 lbs/ac ⁴	ARARN - 65% ORHY - 30%
1994-95	1216	12/4-3/18	ARARN - 48% ORHY - 39%	4/12/95	not mapped	n/a	1267	2.45	517		
1995-96	1203	12/18-2/29	ARARN - 24% ORHY - 54%	4/30/96	not mapped	n/a	1337	no data ⁷	n/a		
AVG.	986 ⁵		ARARN - 36% ORHY - 43%				1085 ⁶		925		

- ¹ Actual use by wild horses was included for those years that horses were observed in the Badlands Allotment during winter census.
- ² Utilization was recorded at area proximal to the location of BA-02. BA-02 was not an established key area until 1989. Prior to 1989, utilization may not coincide with use pattern map results.
- ³ Livestock were not turned out in the 1992-93 grazing season due to snow conditions.
- ⁴ Refer to Section V.A.2.a. BA-02 for interpretation of status rating and production total.
- ⁵ Average does not include the 1992-93 grazing season.
- ⁶ Average does not include the 1989-90 grazing year (refer to Carrying Capacity Analysis of Appendix 8).
- ⁷ Precipitation data is not available for the 1995-96 CAF.

APPENDIX 3C

GOSHUTE MTN. ALLOTMENT STUDIES SUMMARY MATRIX KEY AREA KA-01											
KEY SPECIES: black sage (ARARN), Indian Ricegrass (ORHY)											
DESIRED UTILIZATION: ARARN - 50%, ORHY - 60%											
Year	Actual Use AUMs ¹	Periods of Use	Average Util. ² (Percent)	Dates Read	K.A. Use-Pattern ³	Dates Mapped	Pre-CAF Cap. (AUMs)	CAF	Post-CAF Cap. (AUMs)	Ecological Stat./Prod ⁴	Key Species Frequency
1981 ⁵										Mid 42%	ARARN - 42% ORHY - 1%
1986-87	166	12/10-2/20	31%		Light	3/19/87	268	1.73	155		
1987-88	268	2/1-3/5	40%		Light	3/17/88	335	1.73	194		
1988-89	314	12/15-1/7	31%		Light	3/9/89	506	1.04	487		
1989-90	457	2/5-3/3	33%		Moderate	5/15/90	692	1.28	541		
1990-91	329	3/16-3/31	33%		Moderate	4/25/91	498	0.95	524		
1991-92 ⁷	270	12/1-2/29	no data		not mapped	n/a	n/a	1.26	n/a		ARARN - 41% ORHY - 1%
1992-93 ⁶	60	n/a	no data		n/a	n/a	n/a	1.15	n/a		
1993-94	342	12/21-3/10	43%		Moderate	3/31/94	398	1.31	304		
1994-95 ⁷	379	2/5-3/26	no data		not mapped	n/a	n/a	2.45	n/a		
1995-96 ⁷	711	2/1-3/31	no data		not mapped	n/a	n/a	no data ⁸	n/a		
AVG. ⁸	330		35%				450		368		

- ¹ Actual use by wild horses was included for those years that horses were observed in the Goshute Mountain Allotment during winter census.
- ² Utilization was not read at the key area in the Goshute Mountain Allotment, therefore the utilization data presented in this column was calculated by weight averaging use pattern map data (Refer to Method B. of Appendix 8, Section II).
- ³ The average utilization may not equal the use pattern category displayed in this column because utilization at the key area was not recorded.
- ⁴ The production study completed in 1981 was an ocular study of species composition. Forage was not clipped and the pounds/acre were not measured.
- ⁵ Actual use was not collected until 1986. Production and frequency data, however, were collected in 1981.
- ⁶ Livestock were not turned out in the 1992-93 grazing season due to snow conditions. Actual use was by wild horses only.
- ⁷ Use pattern maps were not collected for the 1991-92, 1994-95, or 1995-96 grazing seasons.
- ⁸ Average includes all years within the evaluation period in which data was collected.
- ⁹ Precipitation data is not available for the 1995-96 CAF.



KEY AREA LOCATION MAP

Badlands

BA-02

BA-01

Goshute Mtn.

KA-01

ELKO CO.
WHITE PINE CO.

**** existing fence locations

APPENDIX 4

T 7 S

1 975

T 8 S

1 950

4400000N

APPENDIX 5

Use Pattern Summary - Badlands Allotment									
% area of allotment within each utilization category									
Utilization Category	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93 ¹	1993-94	AVG.
Slight	0%	10%	7%	0%	0%	0%	0%	3%	3%
Light	55%	54%	60%	40%	35%	15%	0%	30%	41%
Moderate	27%	28%	25%	42%	51%	50%	0%	59%	40%
Heavy	18%	8%	8%	15%	13%	12%	0%	7%	12%
Severe	0%	0%	0%	3%	1%	2%	0%	1%	1%
Not Mapped	0%	0%	0%	0%	0%	21%	100%	0%	3%
Total	100	100	100	100	100	100	100	100	100

¹ Livestock were not turned out during the 1992-93 grazing season.

APPENDIX 6

Use Pattern Summary - Goshute Mountain Allotment									
% area of allotment within each utilization category									
Utilization Category	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92 ¹	1992-93 ¹	1993-94	AVG.
Slight	0%	0%	0%	0%	0%	0%	0%	0%	0%
Light	93%	50%	95%	87%	84%	0%	0%	42%	75%
Moderate	7%	50%	5%	13%	16%	0%	0%	52%	24%
Heavy	0%	0%	0%	0%	0%	0%	0%	6%	1%
Severe	0%	0%	0%	0%	0%	0%	0%	0%	0%
Not Mapped	0%	0%	0%	0%	0%	100%	100%	0%	0%
Total	100	100	100	100	100	100	100	100	100

¹ Livestock were not turned out during the 1991-92 nor 1992-93 grazing seasons.

APPENDIX 7

Badlands Allotment

Carrying Capacity using the Weighted Average Method						
Year	Actual Use	Average Utilization ¹	Utilization Objective ²	Pre-CAF Capacity	CAF	Post-CAF Capacity
1986-87	514	43%	50%	598	1.73	346
1987-88	687	37%	50%	928	1.73	536
1988-89	1093	37%	50%	1477	1.04	1420
1989-90	1360	46%	50%	1478	1.28	1155
1990-91	1022	46%	50%	1111	0.95	1170
1991-92	810	51%	50%	794	1.26	630
1992-93 ³	n/a	no data	n/a	n/a	1.15	n/a
1993-94	972	45%	50%	1080	1.31	824
1994-95 ⁴	1216	no data	n/a	n/a	2.45	n/a
1995-96 ⁴	1203	no data	n/a	n/a	no data ⁵	n/a
Average ⁶	986	44%		1067		869

¹ The average utilization was calculated using all use categories on the annual use pattern maps. Refer to Appendix 8, Section II, Method B.

² The rationale for the utilization objective of 50% is explained within Section II of Appendix 8.

³ Livestock were not turned out in the 1992-93 grazing season due to snow conditions.

⁴ Use pattern maps were not completed for the 1994-95 and 1995-96 grazing seasons.

⁵ Precipitation data is not available for the 1995-96 CAF figure.

⁶ Average includes all years within the evaluation period in which data was collected (refer to Section II of Appendix 8).

APPENDIX 8

Analysis of Carrying Capacity, Grazing Options for the Badlands and Goshute Mountain Allotments

I. Introduction

Through the evaluation process it was determined that not all of the allotment specific objectives were met for the Badlands Allotment. Changes to grazing management are necessary in order to attain these objectives. The carrying capacity of each allotment was analyzed using different methods, as is described in Part II of this appendix, resulting in a number of grazing options.

II. Carrying Capacity Analysis

Method A: This method incorporates the actual use and key area utilization data to determine the appropriate grazing capacity which would allow for attainment of multiple use objectives. Because key area utilization data was not collected for the Goshute Mountain Allotment over the evaluation period, this method was not used to determine carrying capacity for that allotment. The following equation was used to determine carrying capacity:

$$\frac{\text{Actual use (AUMs)} \times \text{Key Area Utilization Objective}}{\text{Key Area Utilization}} = \frac{\text{Carrying Capacity}}{\text{AUMs}}$$

Actual use in this equation is by sheep and wild horses. The utilization objective for each key area is 50% for shrubs and 60% for grasses, as stated in Section III. C. 3. a. of this evaluation. The key area utilization included in this formula is the utilization of the key species that received the most use, in relation to its utilization objective, in each year during the evaluation period. This is called the limiting factor. In other words, if the lesser utilized key species was incorporated into the formula, the key species that received the heavier utilization would not be accounted for, and therefore the resulting carrying capacity may result in utilization that exceeds the objective level for that species.

A summary of results from this equation for carrying capacity is found in Appendices 3A and 3B.

Method B: The second method involves the weighted average utilization formula. The weighted average utilization formula is used to calculate the average utilization occurring on the allotment by incorporating use pattern map data (refer to Appendices 5 and 6 for Use Pattern Summaries). The following equation was used for the weighted average utilization calculation:

$$\frac{\text{Proportion of Use}}{\text{(allotment (\%))} \times \text{Category 1(\%)}} + \frac{\text{Proportion of Use}}{\text{(allotment (\%))} \times \text{Category 2(\%)}} = \text{Avg. Util.}$$

In this equation, the percentage of the allotment that was recorded within a specific use category is multiplied by the midpoint of that use category. The percentages are added to equal the weighted average utilization for the allotment. This weighted average utilization is then incorporated into the following equation to determine carrying capacity:

$$\frac{\text{Actual use (AUMs)} \times \text{Key Area Utilization Objective}}{\text{Average Utilization}} = \frac{\text{Carrying Capacity}}{\text{AUMs}}$$

As was described previously, actual use is by sheep and wild horses. Use pattern maps do not specify use on each species, therefore one objective level was incorporated into the carrying capacity calculation. Because shrubs have a lower utilization objective than grasses, and therefore become the limiting factor, the percentage of 50% was used as the utilization objective in each annual carrying capacity calculation. Carrying capacity by weighted average was determined for every year that use pattern maps were completed. The summary of results is displayed in Appendix 7 for the Badlands Allotment and in Appendix 3C for the Goshute Mountain Allotment.

The livestock carrying capacity estimates resulting from both methods are adjusted (divided) by a climatic adjustment factor to approximate an average year. In Appendices 3A, 3B, 3C, and 7, the carrying capacity data is compared with and without the annual climatic adjustment factors (CAF). The CAF, which is used to normalize the data from that year, was derived from the precipitation data recorded at the Ibapah weather station. The data from the Ibapah weather station appears to show a higher reading than what might actually be recorded at the Badlands and Goshute Mountain Allotments. The use of the post-CAF capacities, therefore, is not recommended.

The pre-CAF carrying capacities listed in Appendices 3A and 3B are based on annual actual use and key area utilization data from the Badlands Allotment. The pre-CAF carrying capacities displayed in Appendices 3C and 7 are based upon actual use and recorded use patterns from both the Badlands and the Goshute Mountain Allotments. The pre-CAF capacity figures indicate that a reduction in the AUMs of specified livestock grazing use on the Badlands Allotment is necessary in order for the utilization objective to be met and not exceeded, and for ecological condition to improve. The monitoring data does not support the further reduction in carrying capacity caused by the adjustment factors. The post-CAF carrying capacities, therefore, will not be relied upon in this evaluation.

A. Badlands Allotment

Current authorized grazing use on the Badlands Allotment is 2,647 AUMs. The AUMs removed annually, however, have not approached this level of grazing use. The highest actual use recorded was 1,360 AUMs of sheep use in 1990. The average for the evaluation period was 986 AUMs, which includes both sheep and wild horse use.

Using Method A, the carrying capacity of the Badlands Allotment is based upon the key species that received the highest utilization, in relation with its respective objective level, for that year. The key species used in each annual calculation is highlighted in the key area utilization column of Appendices 3A and 3B. The desired utilization of 50% was used for the key species EULA5 and ARARN and 60% is the desired utilization for ORHY.

The white sage communities within the Badlands Allotment are represented by key area BA-01, which is located in the east half of the allotment. White sage is considered to be highly palatable as a winter forage and early in the evaluation period, was receiving higher utilization than black sage at key area BA-02. Since the 1993 grazing year, use has been more evenly distributed between the two key areas as a result of a change in grazing practices.

Reed Robison has not grazed the allotment since 1989. He used the allotment from 1987 to 1989 but at that time, the Badlands and Antelope Valley Allotments were licensed as one allotment by the Ely District. Submitted actual use reports did not distinguish use on the Antelope Valley Allotment from the Badlands Allotment. Actual use for that period cannot be determined nor estimated, therefore it was not included in the carrying capacity analysis.

The actual use displayed in Appendices 3A and 3B is by both sheep and wild horses. Carrying capacity was calculated for each year that data from actual use, use pattern maps, and key area utilization was available. An average was then taken of the annual capacities resulting from a linear relationship between the actual use and utilization data.

As displayed in Appendix 3A, above-average actual use and slight utilization recorded for key area BA-01 in the 1994-95 year resulted in an inflated carrying capacity that did not correlate with the capacity figures of other years, therefore it was not included in the average pre-CAF capacity for key area BA-01. In the 1989-90 grazing year, livestock were prevented from moving to the west end of the allotment until later in the season because of a wash-out that occurred in the center of the allotment. This caused the utilization readings at BA-01 to be high and at BA-02 to be low. Based on data collected at BA-02, the carrying capacity for the 1989-90 year was inflated and was not included in

the average pre-CAF capacity because a linear relationship did not exist between the low utilization and the relatively high actual use (refer to Appendix 3B).

Using Method A, the carrying capacity for the Badlands Allotment is 1,023 AUMs. This figure is the average of the pre-CAF carrying capacities from both key areas; 961 AUMs from BA-01 and 1,085 AUMs from BA-02 (refer to Appendices 3A and 3B). Rather than using the limiting key area, or the key area that received the highest use, the pre-CAF carrying capacities were averaged based on the following criteria: 1) the carrying capacities determined for each key area in this evaluation are very close in number; 2) each key area represents a different range site with different key species; 3) prior to 1994, each key area received different levels of use due to the permittee's grazing system at that time; 4) recent changes in management practices have allowed for more uniform use between the two key areas.

Method B resulted in a carrying capacity of 1,067 AUMs. This figure is based upon use pattern map data and is the average pre-CAF carrying capacity stated in Appendix 7. All use categories recorded on the annual use pattern maps were included into the calculation to determine the 1,067 AUMs capacity, assuming that there is potential for even distribution and that all areas of the Badlands Allotment are available to sheep.

B. Goshute Mountain Allotment

The Goshute Mountain Allotment was allotted 465 AUMs in an Ocular Reconnaissance Forage Survey in 1978 and 1979. The average actual use on the allotment from 1986 to 1996 was 330 AUMs.

The actual use displayed in Appendix 3C is by sheep and wild horses. Because utilization data was not recorded at KA-01 during the evaluation period, the equation described as Method A was not used to determine carrying capacity for the Goshute Mountain Allotment (refer to Section IV. B. 1. b). An average utilization based on use pattern map data was determined for each year and was included in Appendix 3C. Because the utilization objective for shrubs is lower than for grasses, the objective of 50% becomes the limiting factor and is used in the weighted average carrying capacity calculation. All use categories of the use pattern maps were considered and were incorporated into the average utilization figure, assuming a potential for even livestock distribution and assuming that all areas of the Goshute Mountain Allotment are available for sheep use. Using the weighted average utilization equation (Method B), the grazing capacity for the Goshute Mountain Allotment is 450 AUMs. All of the years within the evaluation period in which data was collected were included into the carrying capacity average because the annual

capacities were closely related, reflecting a linear relationship between actual use and utilization. The figure of 450 AUMs is listed in Appendix 3C as the average pre-CAF capacity.

III. Grazing Capacity Options

The season of grazing use would be from 11/1 to 3/31 for the options listed below. The active physiological growth period of plants in the Badlands and Goshute Mountain Allotments normally begins 4/1. The time period of 11/1 to 3/31 is winter dormancy for most plants and occurs outside the critical season of plant growth, therefore there is less potential that the vegetation will be damaged by grazing.

The purpose of each option is to establish allowable AUMs by allotment or pasture. The one objective that was not attained for either key area during the evaluation period was the objective of 50% desired utilization for shrubs and 60% desired utilization for grasses. The options described below would encourage an appropriate utilization level due to a reduction in allowable AUMs. A more uniform placement of water on the allotment would also encourage desired use.

A. Badlands

Listed below are two options outlining alternatives to carrying capacity and grazing systems for sheep and cattle grazing on the Badlands Allotment.

OPTION 1. This option includes two alternatives to grazing management in the Badlands Allotment. Both alternatives represent the carrying capacity figure derived from actual use and key area utilization data (Method A in Carrying Capacity Analysis).

Alternative A: Authorize grazing use at 1,018 AUMs for the Badlands Allotment. Manage as a single pasture for sheep use only.

The carrying capacity of 1,018 AUMs is derived from the figure of 1,023 AUMs, the average of the pre-CAF capacities determined for each key area, based on key area utilization (refer to Appendices 3A and 3B). The figure of 1,018 AUMs includes the subtraction of 5 AUMs for wild horses.

Census data has shown that 1% of the initial herd size of 240 wild horses within the Antelope Valley HMA may inhabit the Badlands area, which is equal to 12 AUMs. The appropriate management level (AML) of 12 AUMs was added to the pre-evaluation authorized grazing use for livestock (2,647 AUMs) to equal a total of 2,659 AUMs for livestock and wild horse use in the Badlands Allotment. The 12 AUMs for the wild horse AML make up 0.5% of the total AUMs for the allotment. This

range site suitability (i.e., slope and available forage). The 53% conversion factor indicates that 53% of the original sheep AUMs within the cattle-suitability areas would be usable by cattle.

A change-in-kind of livestock was analyzed recently in the evaluation of the Spruce Allotment (1995). The Spruce Allotment is located approximately 10 miles northwest of the Badlands Allotment. The range sites within the winter grazing areas of the Spruce Allotment are similar to those within the Badlands Allotment. Data from utilization and actual use by cattle, which has been collected since 1986, was used to determine stocking levels for cattle in the winter grazing areas in which a change-in-kind of livestock was proposed. Based on the analysis of the data, it was determined that 55% of the sheep AUMs in the winter grazing areas would be available for cattle use. This percentage is very near the 53% conversion ratio determined for the Currie Allotment.

This alternative of Option 1 considers the factor of 55% for conversion from sheep to cattle because of the similarity in range sites and because it is based on the most current available monitoring data.

The following table summarizes the changes made in converting sheep AUMs to cattle AUMs.

Pasture	Carrying Capacity Alternative A (sheep AUMs)	AUMs suitable for cattle conversion Alternative B	Conversion Factor	Total AUMs usable by cattle
West	478	316	55%	174

Cattle use would be permitted in the West Pasture at 174 AUMs provided that water would be hauled uniformly throughout the pasture and fences would be constructed on the east, north, and south boundaries of the pasture. Robison would be authorized to graze in the West Pasture only. Grazing in the East Pasture would be authorized specifically to DBA Need More Sheep Company.

OPTION 2. The following two alternatives present grazing systems based on the weighted average carrying capacity of 1,067 AUMs for the Badlands Allotment.

Alternative A: Establish specified livestock grazing use at 1,062 AUMs and manage allotment as a single pasture for sheep use only.

The specified grazing use of 1,062 AUMs is the result of the weighted average pre-CAF carrying capacity with a reduction for wild horse AUMs (Appendix 7). The AML (12 AUMs) and the pre-evaluation authorized livestock use (2,647 AUMs) were added to equal 2,659 AUMs, the total number of AUMs for livestock and wild horse

capacities were closely related, reflecting a linear relationship between actual use and utilization. The figure of 450 AUMs is listed in Appendix 3C as the average pre-CAF capacity.

III. Grazing Capacity Options

The season of grazing use would be from 11/1 to 3/31 for the options listed below. The active physiological growth period of plants in the Badlands and Goshute Mountain Allotments normally begins 4/1. The time period of 11/1 to 3/31 is winter dormancy for most plants and occurs outside the critical season of plant growth, therefore there is less potential that the vegetation will be damaged by grazing.

The purpose of each option is to establish allowable AUMs by allotment or pasture. The one objective that was not attained for either key area during the evaluation period was the objective of 50% desired utilization for shrubs and 60% desired utilization for grasses. The options described below would encourage an appropriate utilization level due to a reduction in allowable AUMs. A more uniform placement of water on the allotment would also encourage desired use.

A. Badlands

Listed below are two options outlining alternatives to carrying capacity and grazing systems for sheep and cattle grazing on the Badlands Allotment.

OPTION 1. This option includes two alternatives to grazing management in the Badlands Allotment. Both alternatives represent the carrying capacity figure derived from actual use and key area utilization data (Method A in Carrying Capacity Analysis).

Alternative A: Authorize grazing use at 1,018 AUMs for the Badlands Allotment. Manage as a single pasture for sheep use only.

The carrying capacity of 1,018 AUMs is derived from the figure of 1,023 AUMs, the average of the pre-CAF capacities determined for each key area, based on key area utilization (refer to Appendices 3A and 3B). The figure of 1,018 AUMs includes the subtraction of 5 AUMs for wild horses.

Census data has shown that 1% of the initial herd size of 240 wild horses within the Antelope Valley HMA may inhabit the Badlands area, which is equal to 12 AUMs. The appropriate management level (AML) of 12 AUMs was added to the pre-evaluation authorized grazing use for livestock (2,647 AUMs) to equal a total of 2,659 AUMs for livestock and wild horse use in the Badlands Allotment. The 12 AUMs for the wild horse AML make up 0.5% of the total AUMs for the allotment. This

percentage was applied to the post-evaluation carrying capacity of 1,023 AUMs, resulting in 5 AUMs for wild horses in the Badlands Allotment. The calculations are summarized in the following table:

Pre-Evaluation Authorized Livestock Use	AML	Carrying Capacity + AML	Ratio of AML to total AUMs	Post-Evaluation Allotment Carrying Capacity	0.6% of Post-Evaluation Carrying Capacity
2,647 AUMs	12	2,659 AUMs	0.005	1,023 AUMs	5 AUMs

The percentage of ownership for the pre-evaluation specified livestock grazing use of 2,647 AUMs by both DBA Need More Sheep Company and Reed Robison was calculated and used to determine the percentage of the post-evaluation AUMs allotted to each permittee. DBA Need More Sheep Company would receive 53% of the specified grazing use and Reed Robison would receive 47%. The following table displays the change in authorized grazing use under this option:

Allotment	Permittees	AUMs	
		Pre-Evaluation	Post-Evaluation
Badlands	DBA Need More Sheep Co.	1,407	540
	Reed Robison	1,240	478
Total		2,647	1,018

Alternative B: Divide the allotment into two pastures. DBA Need More Sheep Company would be authorized 540 AUMs of sheep use within the East Pasture. Reed Robison would be permitted 174 AUMs of cattle use within the West Pasture.

All AUMs on the Badlands Allotment were originally adjudicated for sheep use only. Grazing by cattle did occur on this allotment in 1987 through 1989, but the number of AUMs cannot be determined for this period (refer to Section IV. B. 1. a.). In order to determine the number of AUMs available to cattle on the Badlands Allotment without previous monitoring data from cattle grazing, the following factors present on the allotment were analyzed: 1) vegetation types; 2) forage preference values; 3) seasons of use; 4) available livestock facilities (water, fences, etc.), and 5) range site suitability (i.e., slope and available forage).

Much of the Badlands Allotment is dominated by black sage (*Artemisia arbuscula nova*) and white sage (*Eurotia lanata*). Both species are considered to be palatable winter forage for sheep and cattle. Shadscale (*Atriplex confertifolia*) and bud sage (*Artemisia spinescens*) are shrubs present on the allotment that are utilized by sheep. Perennial grasses such as Indian ricegrass (*Oryzopsis hymenoides*), squirreltail

(*Sitanion hystrix*), and Sandberg's bluegrass (*Poa sandbergii*) make up a small percentage of the vegetation in the allotment and will provide winter forage for both cattle and sheep. The vegetation types that exist on the Badlands Allotment are more suitable as winter forage for sheep than for cattle.

The extreme northern and southeastern portions of the proposed West Pasture are predominantly composed of juniper and rabbitbrush and lack a productive perennial grass understory. The terrain in these parts of the allotment is steep and along with the vegetation, likely to discourage grazing by cattle. These areas were determined to be unsuitable for cattle grazing. The remaining portions of the West Pasture are considered to be suitable for cattle grazing with investments in fence and water sources. Appendix 9 outlines the portions that are suitable and unsuitable for cattle grazing.

To determine the number of AUMs suitable for cattle use in the West Pasture, the acreage of the suitable and unsuitable areas was tabulated. Total acreage within the proposed West Pasture is 9,708, with 6,407 acres suitable for grazing by cattle. The remaining acreage is unsuitable for cattle grazing. The number of acres suitable for cattle is 66% of the acreage within the West Pasture.

As described in Alternative A, Reed Robison's share of the post-evaluation total allowable use on the Badlands Allotment is 478 AUMs, which would be limited to the West Pasture under this alternative. The 0.66 percentage of area within the West Pasture that is suitable for cattle use was applied to the 478 sheep AUMs to equal 316 AUMs. These calculations are summarized in the following table:

Pasture	Total Acres	Acres suitable for cattle	% of total acres suitable for cattle	Carrying Capacity (sheep AUMs)	Total sheep AUMs suitable for conversion to cattle use
West	9,708	6,407	66%	478	316

The figure of 316 AUMs assumes that 100% of the original sheep AUMs within the cattle suitability areas are available to cattle. A conversion factor was then applied to the suitable AUMs to determine the number of AUMs usable by cattle in the suitability areas of the West Pasture.

An analysis of a change-in-kind of livestock was completed in 1971 for the Currie Allotment, located directly north of the Elko/Ely District boundary and 20 miles west of the Badlands Allotment. The Currie Allotment is composed of range sites with vegetation types that are similar to those found in the Badlands Allotment. A conversion ratio of 53% was developed for the native range in the Currie Allotment and was based on factors mentioned above: 1) vegetation types; 2) forage preference values; 3) seasons of use; 4) available livestock facilities (water, fences, etc.), and 5)

range site suitability (i.e., slope and available forage). The 53% conversion factor indicates that 53% of the original sheep AUMs within the cattle-suitability areas would be usable by cattle.

A change-in-kind of livestock was analyzed recently in the evaluation of the Spruce Allotment (1995). The Spruce Allotment is located approximately 10 miles northwest of the Badlands Allotment. The range sites within the winter grazing areas of the Spruce Allotment are similar to those within the Badlands Allotment. Data from utilization and actual use by cattle, which has been collected since 1986, was used to determine stocking levels for cattle in the winter grazing areas in which a change-in-kind of livestock was proposed. Based on the analysis of the data, it was determined that 55% of the sheep AUMs in the winter grazing areas would be available for cattle use. This percentage is very near the 53% conversion ratio determined for the Currie Allotment.

This alternative of Option 1 considers the factor of 55% for conversion from sheep to cattle because of the similarity in range sites and because it is based on the most current available monitoring data.

The following table summarizes the changes made in converting sheep AUMs to cattle AUMs.

Pasture	Carrying Capacity Alternative A (sheep AUMs)	AUMs suitable for cattle conversion Alternative B	Conversion Factor	Total AUMs usable by cattle
West	478	316	55%	174

Cattle use would be permitted in the West Pasture at 174 AUMs provided that water would be hauled uniformly throughout the pasture and fences would be constructed on the east, north, and south boundaries of the pasture. Robison would be authorized to graze in the West Pasture only. Grazing in the East Pasture would be authorized specifically to DBA Need More Sheep Company.

OPTION 2. The following two alternatives present grazing systems based on the weighted average carrying capacity of 1,067 AUMs for the Badlands Allotment.

Alternative A: Establish specified livestock grazing use at 1,062 AUMs and manage allotment as a single pasture for sheep use only.

The specified grazing use of 1,062 AUMs is the result of the weighted average pre-CAF carrying capacity with a reduction for wild horse AUMs (Appendix 7). The AML (12 AUMs) and the pre-evaluation authorized livestock use (2,647 AUMs) were added to equal 2,659 AUMs, the total number of AUMs for livestock and wild horse

use. The AML of 12 AUMs is 0.5% of 2,659 AUMs. The percentage of 0.5% was then applied to the post-evaluation capacity of 1,067 AUMs (Method B) to equal 5 AUMs. The livestock grazing use of 1,062 AUMs accounts for the 5 AUMs of wild horse use.

Reed Robison would receive 47% of the grazing use and DBA Need More Sheep Company would receive 53%. The following table displays the change in specified livestock grazing use under this option:

Allotment	Permittees	AUMs	
		Pre-Evaluation	Post-Evaluation
Badlands	DBA Need More Sheep Company	1,407	563
	Reed Robison	1,240	499
Total		2,647	1,062

Alternative B: Divide the allotment into two pastures. DBA Need More Sheep Company would be permitted 563 AUMs of sheep use in the East Pasture. Reed Robison would be authorized 181 AUMs of cattle use in the West Pasture.

As described within Option 1, areas suitable for cattle grazing were mapped and their acreage tabulated. The percentage of area within the West Pasture that was suitable for cattle grazing was measured to equal 66%. This percentage was then applied to the sheep carrying capacity of 499 AUMs for the West Pasture, which was calculated using the weighted average method. The following table summarizes the calculations used to determine the number of AUMs within the cattle-suitability areas of the West Pasture:

Pasture	Total Acres	Acres suitable for cattle	% of total acres suitable for cattle	Carrying Capacity (sheep AUMs)	Total sheep AUMs suitable for conversion to cattle use
West	9,708	6,407	66%	499	329

A 55% factor was then applied to the 329 AUMs figure based on current monitoring data from cattle use occurring on winter range similar to that in the Badlands Allotment. The conversion factor indicates that 55% of the original sheep AUMs within the cattle suitability areas would be usable by cattle. The calculations are summarized in the following table:

Pasture	Carrying Capacity Alternative A (sheep AUMs)	AUMs suitable for cattle conversion Alternative B	Conversion Factor	Total AUMs usable by cattle
West	499	329	55%	181

Cattle use would be permitted in the West Pasture at 181 AUMs provided that water would be hauled uniformly throughout the pasture and fences would be constructed on the east, north, and south boundaries of the pasture. Reed Robison would be authorized to graze in the West Pasture only and DBA Need More Sheep Company would be permitted use in the East Pasture only.

B. Goshute Mountain Allotment

OPTION 1. Continue to authorize total specified livestock grazing use at 465 AUMs and manage allotment as a single pasture for sheep use only.

The carrying capacity of 465 AUMs is the pre-evaluation carrying capacity for the Goshute Mountain Allotment. Data collected during the evaluation period supports the current level of livestock and incidental wild horse use, therefore the figure of 465 AUMs would not be reduced to account for wild horses.

OPTION 2. Establish specified livestock grazing use at 436 AUMs and manage allotment as a single pasture for sheep use only.

The grazing capacity based on use pattern map data is 450 AUMs and is listed as the pre-CAF carrying capacity within Appendix 3C. As described within Technical Recommendation #6 of this evaluation, an appropriate management level (AML) of 12 AUMs was established for wild horses in the Goshute Mountain Allotment. In order to account for wild horse use in the reduction of AUMs for livestock, the AML (12 AUMs) and the pre-evaluation authorized use (465 AUMs) were added to equal 477 AUMs, the total number of pre-evaluation AUMs. The AML of 12 AUMs is 3% of 477 AUMs. When 3% is applied to the post-evaluation carrying capacity of 450 AUMs, the result is 14 AUMs, as displayed in the following table.

Pre-evaluation authorized livestock use	AML	Carrying Cap. + AML	Ratio of AML to total AUMs	Post-Evaluation Allotment Carrying Capacity	0.3% of Post-Evaluation Carrying Cap.
465 AUMs	12 AUMs	477 AUMs	0.03	450 AUMs	14 AUMs

The total specified livestock grazing use of 436 AUMs is the result of the weighted average carrying capacity minus the 14 AUMs of horse use.

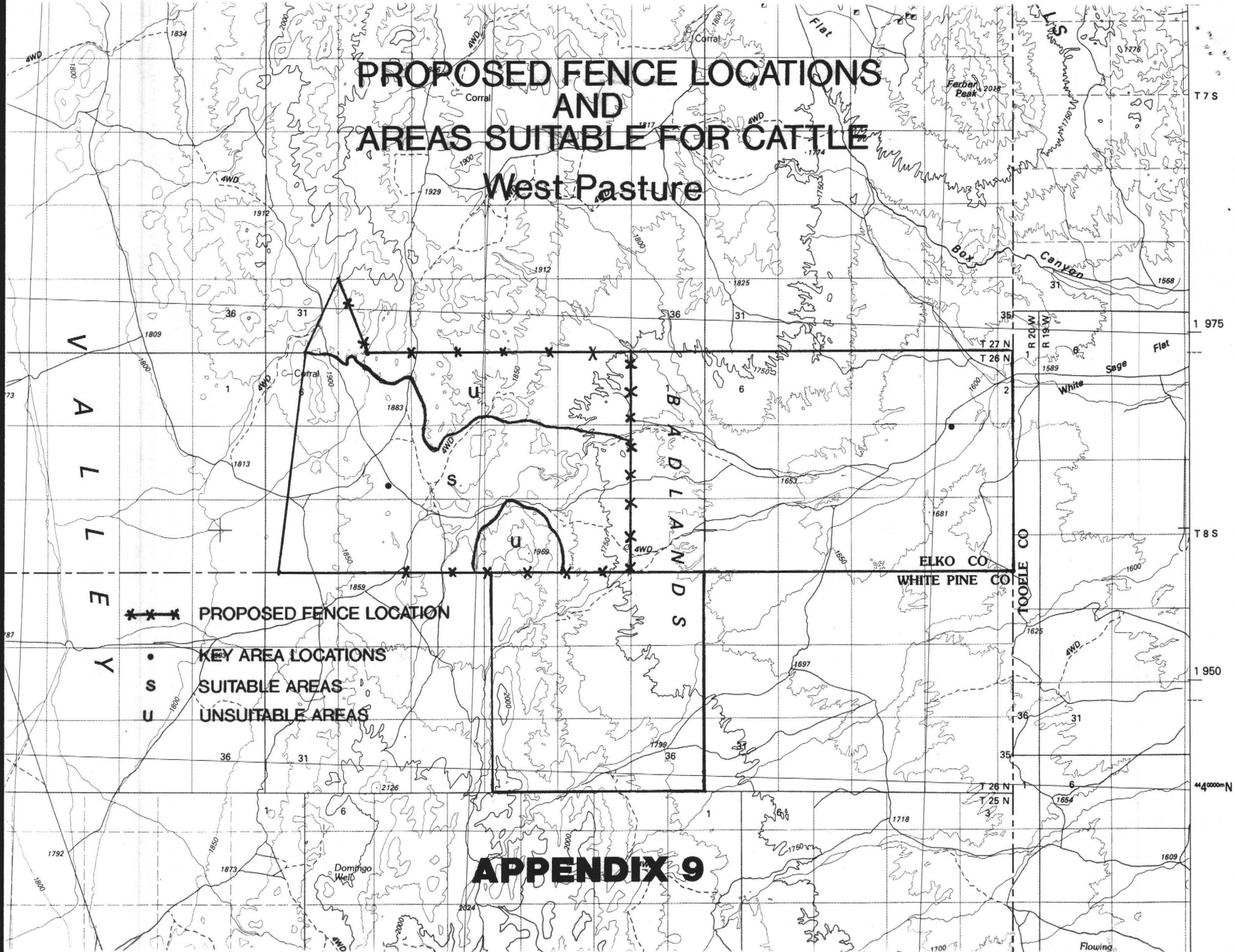
V. Summary of Proposed Range Improvements

The table below outlines the projects proposed for the Badlands Allotment in this evaluation.

Proposed Range Improvement Projects on the Badlands Allotment					
Allotment	Type of Improvement	Grazing Capacity Options			
		Option 1		Option 2	
		Alternative A	Alternative B	Alternative A	Alternative B
Badlands	Division Fence		X		X
	North Boundary Fence		X		X
	South Boundary Fence		X		X

The division fence and north and south boundary fences are essential for cattle control in the West Pasture.

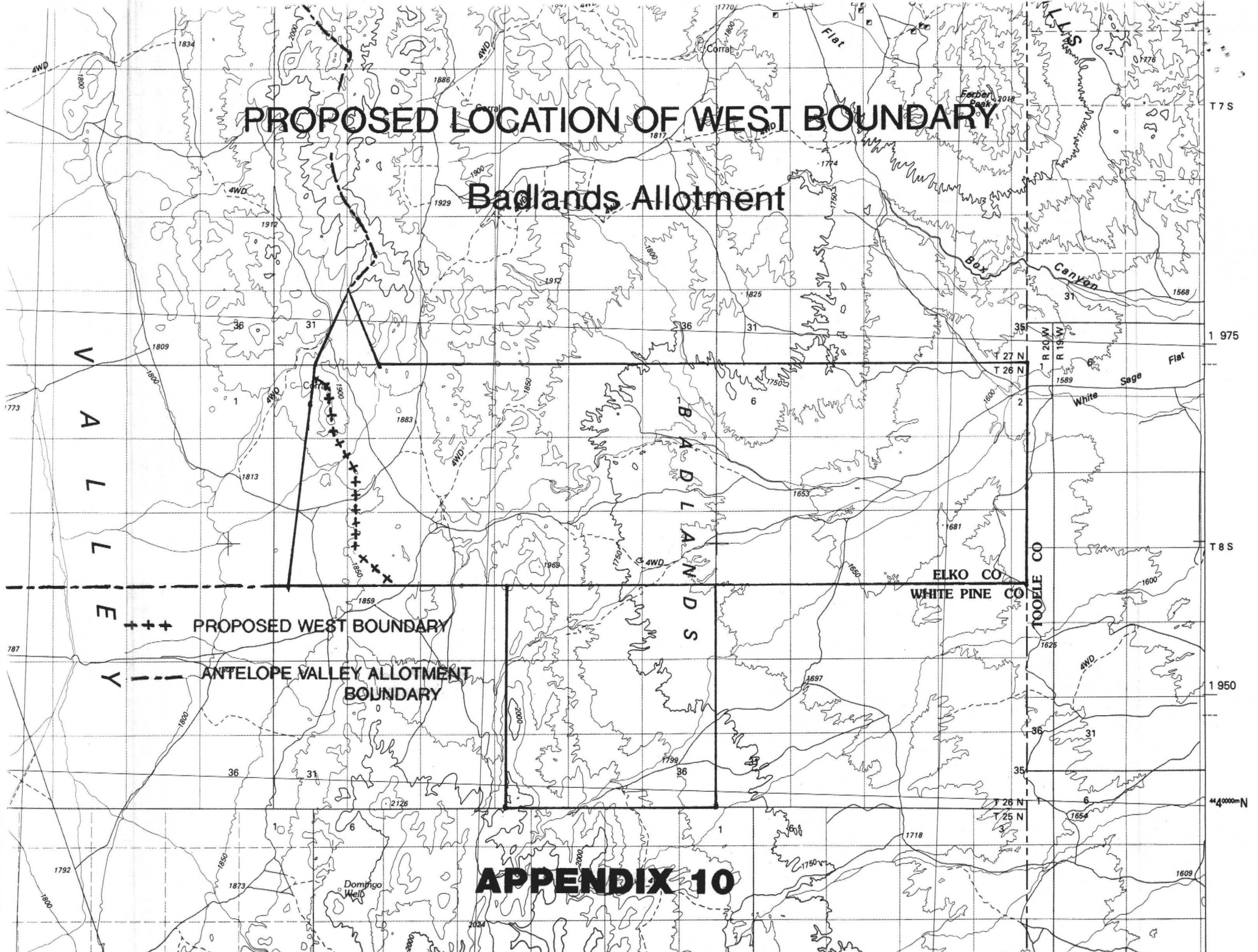
PROPOSED FENCE LOCATIONS AND AREAS SUITABLE FOR CATTLE West Pasture



APPENDIX 9

PROPOSED LOCATION OF WEST BOUNDARY

Badlands Allotment



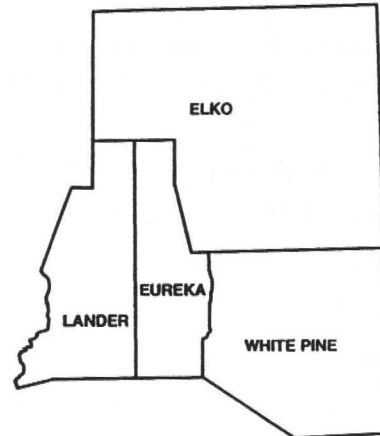
+++ PROPOSED WEST BOUNDARY

--- ANTELOPE VALLEY ALLOTMENT BOUNDARY

APPENDIX 10



NORTHEASTERN GREAT BASIN AREA



PREAMBLE

The Nevada Northeastern Great Basin Resource Advisory Council (RAC), as chartered by the Department of the Interior to promote healthy rangelands, has developed Standards and Guidelines for grazing administration on about 16.2 million acres of public lands administered by the Bureau of Land Management within the designated geographic area of the Northeastern Great Basin. The RAC in developing these Standards and Guidelines, understands and agrees that grazing is only one of the multiple uses recognized under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1739, 1740). These recommended Standards and Guidelines reflect the stated goals of improving rangeland health while providing for the viability of the livestock industry in the Northeastern Great Basin.

NE RAC'S INTENDED USE OF STANDARDS AND GUIDELINES

Standards and Guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.

The RAC anticipates that in most cases the Standards and Guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the Standards and Guidelines.

The RAC intends that the Standards and Guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands. For that reason, wording has been adopted in this final rule that will require the authorized officer to take appropriate action upon determining the existing grazing management practices are failing to ensure significant progress toward the fulfillment of the Standards and toward conformance with the guidelines.

The RAC intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.

STANDARD 4. CULTURAL RESOURCES:

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

GUIDELINES:

- 4.1 Rangeland management plans will consider listings of known sites that are National Historic Register eligible or considered to be of cultural significance and new eligible sites as they become known.

GLOSSARY

Most Definitions are taken from "A Glossary of Terms Used in Range Management" developed through the Society for Range Management. If a definition has been slightly modified it is marked with an *. Other definitions are from Grazing Administration Regulations Code of Federal Regulations, Chapter 43, Sec. 4100.0-5 or Bureau of Land Management Technical Reference. Definitions also include meanings that were developed by the Northeastern Great Basin Resource Advisory Council to understand their intent in the Standards and Guidelines.

B

Biotic - Refers to living components of an ecosystem, e.g., plants and animals.

C

Canopy - (1) The vertical projection downward of the aerial portion of vegetation, usually expressed as a percent of the ground so occupied. (2) The aerial portion of the overstory vegetation.

Canopy Cover - The percentage of ground covered by a vertical projection of the outermost perimeter of the natural spread of foliage of plants. Small openings within the canopy are included.

Climate - The average or prevailing weather conditions of a place over a period of years.

Conservation - The use and management of natural resources according to principles that assure their sustained economic and/or social benefits without impairment of environmental quality.

D

Distribution (Grazing) - Dispersion of grazing animals within a management unit or area.

E

Ecological Site - The kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management.

Edaphic - Refers to the soil.

Erosion - (v.) Detachment and movement of soil or rock fragments by water, wind, ice or gravity. (n) The land surface worn away by running water, wind, ice, or other geologic agents, including such processes as gravitational creep.

Exotic - An organism or species which is not native to the region in which it is found. Synonym *non-native*.

G

Ground Cover - The percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, litter, cobble, gravel, stones and bedrock. Ground cover plus bare ground would total 100 percent.

Ground Water - Subsurface water that is in the zone of saturation. The top surface of the ground water is the "water table". Source of water for wells, seepage, springs.

Guidelines: Guidelines are livestock management practices (e.g. tools, methods, strategies and techniques) designed to achieve healthy public lands as defined by Standards and portrayed by Indicators. Guidelines are designed to provide direction, yet offer flexibility for local implementation through activity plans and grazing permits. Activity plans may add specificity to the Guidelines based on local goals and objectives as provided for in adopted manuals, handbooks and policy. Not all Guidelines fit all circumstances. Monitoring or site specific evaluation will determine if significant progress is being made towards achieving the standards, and if the appropriate guidelines are being applied.

H

Habitat - The natural abode of a plant or animal, including all biotic, climatic, and edaphic factors affecting life.

I

Indicators: Indicators are observations or measurements of physical, chemical or biological factors used to evaluate site conditions or trends, appropriate to the potential of the site. Indicators will be used to determine whether or not Standards are being met.

Infiltration - The flow of a fluid into a substance through pores or small openings. It connotes flow into a substance in contradistinction to the word percolation.

Infiltration Rate - Maximum rate at which soil under specified conditions can absorb rain or shallow impounded water, expressed in quantity of water absorbed by the soil per unit of time, e.g., inches/hour.

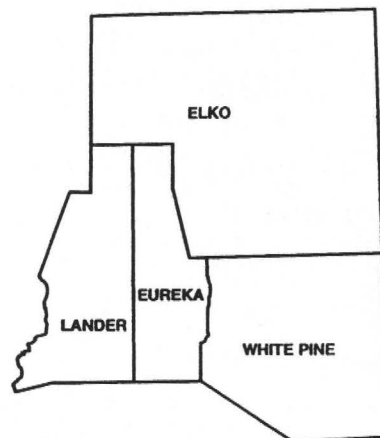
Intensity (Grazing) - A reference to grazing density per unit of time.

L

Land Use Plan - Land use plan means a resource management plan, developed under the provisions of 43 CFR part 1600, or management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management



NORTHEASTERN GREAT BASIN AREA



PREAMBLE

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Standards and Guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.

The RAC anticipates that in most cases the Standards and Guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the Standards and Guidelines.

The RAC intends that the Standards and Guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands. For that reason, wording has been adopted in this final rule that will require the authorized officer to take appropriate action upon determining the existing grazing management practices are failing to ensure significant progress toward the fulfillment of the Standards and toward conformance with the guidelines.

The RAC intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.

The BLM will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the "significant progress" determination. It is anticipated that in many cases it will take numerous grazing seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes in grazing practices.

STANDARDS AND GUIDELINES

STANDARD 1. UPLAND SITES:

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

As indicated by:

- Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to the potential of the site.

GUIDELINES:

- 1.1 Management practices will maintain or promote upland vegetation and other organisms and provide for infiltration and permeability rates, soil moisture storage, and soil stability appropriate to the ecological site within management units.
- 1.2 When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments should be designed and implemented where appropriate.
- 1.3 Management practices are adequate when significant progress is being made toward this Standard.

STANDARD 2. RIPARIAN AND WETLAND SITES:

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

As indicated by:

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

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

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
- Chemical, physical and biological water constituents are not exceeding the state water quality standards.

GUIDELINES:

- 2.1 Management practices will maintain or promote sufficient vegetation cover, large woody debris, or rock to achieve proper functioning condition in riparian and wetland areas. Supporting the processes of energy dissipation, sediment capture, groundwater recharge, and stream bank stability will thus promote stream channel morphology (e.g., width/depth ratio, channel roughness, and sinuosity) appropriate to climate, landform, gradient, and erosional history.
- 2.2 Where grazing management practices are not likely to restore riparian and wetland sites, land management treatments should be designed and implemented where appropriate to the site.
- 2.3 Management practices are adequate when significant progress is being made toward this Standard.
- 2.4 Grazing management practices will maintain, restore or enhance water quality and ensure the attainment of water quality that meets or exceeds state standards.

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 the life cycle requirements of threatened and endangered species.

As indicated by:

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

GUIDELINES:

- 3.1 Management practices will promote the conservation, restoration and maintenance of habitat for threatened and endangered species, and other special status species as may be appropriate.
- 3.2 Intensity, frequency, season of use and distribution of grazing should provide for growth and reproduction of those plant species needed to reach long-term land use plan objectives. Measurements of ecological condition and trend/utilization will be in accordance with techniques identified in the *Nevada Rangeland Monitoring Handbook*.
- 3.3 Grazing management practices should be planned and implemented to allow for integrated use by domestic livestock, wildlife, and wild horses consistent with land use plan objectives.
- 3.4 Where grazing practices alone are not likely to achieve habitat objectives, land treatments may be designed and implemented as appropriate.
- 3.5 When native plant species adapted to the site are available in sufficient quantities, and it is economically and biologically feasible to establish or increase them to meet management objectives, they will be emphasized over non-native species.
- 3.6 Management practices are adequate when significant progress is being made toward this Standard.

STANDARD 4. CULTURAL RESOURCES:

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

GUIDELINES:

- 4.1 Rangeland management plans will consider listings of known sites that are National Historic Register eligible or considered to be of cultural significance and new eligible sites as they become known.

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Distribution (Grazing) - Dispersion of grazing animals within a management unit or area.

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Intensity (Grazing) - A reference to grazing density per unit of time.

L

Land Use Plan - Land use plan means a resource management plan, developed under the provisions of 43 CFR part 1600, or management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management

Act of 1976 and establish management direction for resource uses of public lands. (43 CFR 4100.0.5)

Litter - The uppermost layer of organic debris on the soil surface; essentially the freshly fallen or slightly decomposed vegetal material.

M

Management Objective - The objectives for which rangeland and rangeland resources are managed which includes specified uses accompanied by a description of the desired vegetation and the expected products and/or values.

Management Plan - A program of action designed to reach a given set of objectives.

Marsh - Flat, wet, treeless areas usually covered by standing water and supporting a native growth of grasses and grasslike plants.

Monitoring - The orderly collection, analysis, and interpretation of resource data to evaluate progress toward meeting management objectives.

Morphology - The form and structure of an organism, with special emphasis on external features.

N

***Native Species** - A species which is a part of the indigenous fauna or flora of the area in question.

O

Overstory - The upper canopy or canopies of plants. Usually refers to trees, tall shrubs and vines.

P

Percolation - The flow of a liquid through a porous substance.

Plant Cover - (1) 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. (2) The area of ground cover by plants of one or more species.

Proper Functioning Condition - Riparian-Wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and ground-water recharge; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. (BLM Technical Reference 1737-9) -**R-Range Improvement** - Range improvement means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means.

R

Riparian - Referring to or relating to areas adjacent to water or influenced by free water associated with streams or rivers on geologic surfaces occupying the lowest position of a watershed.

S

Seep - Wet areas, normally not flowing, arising from an underground water source.

Soil - (1) The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (2) The unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of parent material, climate (including moisture and temperature effects), macro- and microorganisms, and topography, all acting over a period of time and producing a product - soil - that differs from the material it was derived in many physical, chemical, biological, and morphological properties and characteristics.

Species - A taxon or rank species; in the hierarchy or biological classification, the category below genus.

Species Composition - The proportions of various plant species in relation to the total on a given area. It may be expressed in terms of cover, density, weight, etc. Synonym *Vegetative composition*.

Spring - Flowing water originating from an underground source.

Standards: The goal to be strived for.

T

Trend - The direction of change in ecological status or resource value rating observed over time. Trend in ecological status should be 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 apparent*. Trends in resource value ratings for several uses on the same site at a given time may be in different directions, and there is no necessary correlation between trends in resource value ratings and trend in ecological status. Some agencies use trend only in the context of ecological status. Syn. range condition trend.

U

Utilization - The proportion of current year's forage production that is consumed or destroyed by grazing animals. May refer either to a single species or to the vegetation as a whole.

W

Watershed - (1) A total area of land above a given point on a waterway that contributes runoff water to the flow at that point. (2) A major subdivision of a drainage basin.

Wetlands - Areas characterized by soils that are usually saturated or ponded, i.e., hydric soils that support mostly water loving plants (hydrophytic plants).

STANDARD AND GUIDELINES IMPLEMENTATION PROCESS

It is a requirement that grazing permits and leases shall contain terms and conditions that ensure conformance with the approved Standards and Guidelines.

The implementation process for Standards and Guidelines will occur under two separate processes as described below:

1. During the supervision and/or monitoring of an allotment, if it is determined that the existing terms and conditions of a grazing permit are not in conformance with the approved Standards and Guidelines and that livestock grazing was determined to be a significant factor in the non-attainment of a standard, then as soon as possible, or no later than the start of the next grazing year, the terms and conditions of the permit/lease will be modified to ensure that the grazing management practices or the levels of the grazing use will be in conformance with the Standards and/or Guidelines.

The modification of the terms and conditions of the permit/lease will be implemented by agreement and/or by decision.

2. The allotment evaluation process will continue to be the process used to determine if existing multiple uses for allotments are meeting or making progress towards meeting land use plan objectives, allotment specific objectives, Range-land Program Summary objectives and land use plan decisions, in addition to the Standards and Guidelines for grazing administration.

Additionally, allotment specific objectives may have to be developed or amended, objectives in the land use plans further quantified at the allotment specific level, and terms and conditions of permits changed or revised to reflect the Standards and Guidelines. Allotment evaluations will continue to be completed based on district priorities.

a. The allotment evaluation consists of or involves:

- 1) The evaluation of current grazing use by all users (livestock, wild horses, wildlife) based on monitoring data analysis and interpretation;
- 2) Recommendations to change or adjust grazing systems;
- 3) Recommendations to change or adjust stocking levels; and
- 4) Establishment of stocking levels for wild horses.

b. The allotment evaluation also serves as the basis for either issuing multiple use decisions, agreements, or a no change determination. Multiple use decisions are prepared subsequent to completion of land use plans and are based on the attainment or non-attainment of objectives established in the land use plans and allotment evaluations.

During the evaluation process, the existing terms and conditions of a permit will be evaluated to determine if they are in conformance with the approved Standards and Guidelines. If it is determined that the existing terms and conditions are not in conformance and that livestock grazing was a significant factor in the non-attainment, then as soon as possible or no later than the start of the next grazing year, the terms and conditions of the permit/lease will be modified to ensure that the grazing management practices or the levels of grazing use will be in conformance.

At the conclusion of the evaluation process, the multiple use decision process will continue to be used to establish:

- 1) The terms and conditions of the grazing permits;

- 2) The appropriate management level for wild horses and burros that occur within the allotment; and
- 3) Any recommendations for wildlife populations or habitat management actions required if it is determined that these actions are necessary.

The preamble to the final regulations contains additional information regarding implementation. The following preamble language is found on page 9956 of the Federal Register notice:

“... The Department intends that failing to comply with a standard in an isolated area would not necessarily result in corrective action.

“The Department recognizes that it will sometimes be a long-term process to restore rangelands to proper functioning condition. The Department intends that Standards and Guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands. For that reason, wording has been adopted in the final rule that will require the authorized officer to take appropriate action upon determining that existing grazing management practices are failing to ensure appropriate progress toward the fulfillment of standards...”

“In some areas, it may take many years to achieve healthy rangelands, as evidenced by the fundamentals, established standards, and guidelines. The Department recognizes, that in some cases, trends may be hard to even document in

the first year. The Department will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the “significant progress” determination.”

The acceptance of progress toward reaching the desired end state is also addressed in the regulatory text in 43 CFR 4180.1 Fundamentals of Rangeland Health which includes the “making significant progress toward” language in each of the four fundamentals.

The concept of “making progress toward” is a specific consideration when determining a course of action during implementation. Determining whether a standard is being met is a distinctly different concept from determining whether progress is being made toward or away from the standard. Determining a course of action is then dependent on a variety of factors, one of which is whether progress is being made toward the standard.

With regard to actions, it is the BLM’s policy and intent to work in a collaborative manner to achieve or maintain the Standards necessary for healthy, productive rangelands. It is not the policy or intent of the BLM to arbitrarily and immediately remove all livestock from an entire allotment based solely on finding a range site that is not meeting a standard. As a practical matter the BLM has neither policy, intent, desire nor capability to arbitrarily remove all livestock where acceptable progress is being made toward meeting the Standards.

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COMMISSION FOR THE
PRESERVATION OF WILD HORSES

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July 21, 1997

Ms. Julie Butler
Clearinghouse Advocate
Nevada State Clearinghouse
Blasdel Bldg., Rm. 200
Carson City, Nevada

Subject: Badlands/Goshute AE - SAI# E1998-010

Dear Ms. Butler:

The Commission for the Preservation of Wild Horses has reviewed the Badlands and Goshute Mountain Allotment Evaluations Summary. Due to the limited numbers of wild horses on these allotments, we can only provide the following comments:

According to the Wells Resource Management Plan Wild Horse Amendment, future adjustments or appropriate management levels are to be established with specific rangeland monitoring data. These allotment evaluations do not represent a significant portion of the herd management areas to establish management numbers. Therefore, we encourage the District to complete the necessary evaluations and multiple use decisions to properly establish the appropriate management levels.

We do not support the use of weight averaging use pattern mapping data to establish a carrying capacity.

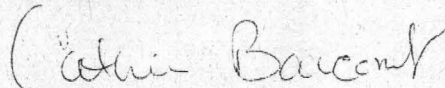
We recommend another option be considered which proportionally adjusts numbers based upon the difference between the carrying capacity and observed actual use. We do not support proportions based upon historical use.

We appreciate the addition of the present Standards and Guidelines in the document.

Ms. Julie Butler
July 21, 1997
Page 2

We hope the above comments will assist the District in completion of the evaluations to determine the appropriate management levels.

Sincerely,

A handwritten signature in cursive script that reads "Catherine Barcomb". The signature is written in dark ink and is positioned above the typed name.

CATHERINE BARCOMB
Executive Director