



United States Department of the Interior

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Dear Interested Public:

Enclosed for you review and comments is the ^{Jackson} 2nd Draft Bottle Creek Allotment Evaluation Summary. This document reflects changes to the original draft evaluation through public and Bureau review. These changes outline grazing management not previously discussed in the original draft. These changes are identified as follows:

- 1) Short term utilization objective was changed to 30% on Big Creek
- 2) Long term objective for stream habitat conditions changed to 60% optimum
- 3) Addition of proposal to fence the upper meadow of Big Creek
- 4) Addition of use areas by name and boundary
- 5) Addition of alternative 4 under recommendations for Mel Hummel
- 6) Addition of alternative 4 under recommendations for Harry and Joy Wilson

Also included with the draft evaluation is the Consultation Section (Section 7). This Consultation Section outlines the meetings and comments received to the original draft.

I ask that you review the 2nd draft document and provide your written comments to me by May 22, 2000. Please contact Lynnda Jackson, Bryan Fuell, or Gene Seidlitz at (775) 623-1500 if you have any Questions.

Sincerely Yours,

Colin P. Christensen
Assistant Field Manager
Renewable Resources

Enclosure: 2nd Draft Bottle Creek Allotment Evaluation Summary

Draft Bottle Creek
Allotment Evaluation Summary

I. Introduction

- A. Bottle Creek Allotment (00066)
- B. Permittees - DeLong Ranches, Inc. c/o John DeLong, Robert and Susan Hoenck, Mel Hummel, Harry and Joy Wilson
- C. Evaluation Period - October, 1983 to 1998
- D. Selective Management Category - M

II. Initial Stocking Level

A. Livestock Use

1. Grazing Preference (AUMs)

	<u>Delong</u>	<u>Hoenck</u>	<u>Hummel</u>	<u>Wilson</u>	<u>Total</u>
Permitted Use	227	300	1136	1771	3434
Historical					
Suspended Use	<u>117</u>	<u>103</u>	<u>0</u>	<u>945</u>	<u>1165</u>
	344	403	1136	2716	4599

2. Season of Use

- a. DeLong Ranches, Inc: 09/01 to 11/08
 - b. Robert and Susan Hoenck: 04/01 to 06/30, 09/01 to 12/01
 - c. Mel Hummel: 04/01 to 12/30
 - d. Harry and Joy Wilson: 04/01 to 12/15
- 3. Kind and Class of Livestock - Cattle (cow/calf)
 - 4. Percent Federal Range - 100%
 - 5. Grazing System

DeLong Ranches, Inc.

The Delong permit is as follows: 100 C 09/01 to 11/08 = 227 AUMs. Livestock use is made in the southeast portion of the allotment in the vicinity of Presnel Well.

Robert and Susan Hoenck

The Hoenck permit is as follows:

70 C 04/01 to 06/30 = 209 AUMs
30 C 09/01 to 12/01 = 91 AUMs

Livestock use is made south of Bottle Creek in the vicinity of the Alexander Ranch. During the spring/early use period, livestock are west of the ranch in the foothills of the Jackson Mountains. During the fall/early winter, livestock are east of the ranch in the flats.

Mel Hummel

The Hummel permit is as follows:

75 C 04/01 to 05/31 = 150 AUMs
160 C 06/01 to 11/30 = 963 AUMs
23 C 12/01 to 12/30 = 23 AUMs

Livestock use is south of Bottle Creek. During the spring, fall and winter months, the Hummel's livestock run in common with the Hoenck's livestock. In the summer, the Hummel's livestock are in the Jackson Mountains, south of Bottle Creek, in the vicinity of Big Creek and east of Iron King Mine.

Harry and Joy Wilson

The Wilson permit is as follows: 208 C 04/01 to 12/15 = 1771 AUMs. The Wilson's run livestock north of Bottle Creek during the spring and summer use periods. Fall use occurs in the vicinity of McAdoo Mine and winter use occurs in the flats in the vicinity of Bottle Creek Slough.

B. Wildlife Use

1. Reasonable Numbers

a. Mule Deer 70 AUMs

- b. Pronghorn 12 AUMs
- c. Bighorn Sheep 71 AUMs

2. Wildlife Use Area

Jackson Mountains DW-13		3,650 Acres
Jackson Mountains DY-18		6,528 Acres
Jackson Mountains DS-8		9,027 Acres
Jackson Mountains PY-13		17,274 Acres
Silver State	PY-12	5,847 Acres
Bottle Creek	PW-14	9,204 Acres
Bottle Creek	PS-13	2,171 Acres
Buff Creek	PS-12	4,402 Acres
Jackson Mountains DY-6		12,536 Acres

C. Wild Horse and Burro Use

The Bottle Creek Allotment lies in the northern portion of the Jackson Mountain Herd Management Area (HMA). The allotment contains 7% of the HMA within its boundaries. Wild horses occupied the Jackson Mountain area at the time of the passage of PL-92-195 (Wild Free-roaming Horse and Burro Act). As such, they will be managed as an integral component of the ecosystem. Pursuant to PL-92-195 as amended and in accordance with subsequent regulation and directions the Jackson Mountain Herd Management Area was identified and described. The intent of the law and regulations are interpreted to mean wild horses or burros may occupy any area within an HMA unless Land Use Plan Decisions provide other direction.

Two separate herds of wild horses occupy the Jackson Mountains HMA. The south herd; located within the Jackson Mountains Allotment and the north herd; located primarily with the Happy Creek Allotment with seasonal movement into adjacent allotments. Adjacent allotments are the Deer Creek, Wilder-Quinn and Jackson Mountains Allotments. Movement of wild horses into the Mary Sloan area of the Jackson Mountains Allotment has been reported but not verified.

Appropriate Management Levels (AML's) have been established in three allotments for the north herd, Happy Creek, Wilder-Quinn, and Deer Creek Allotment. An AML has not been established for this allotment. Once the evaluation is completed and Final Multiple Use Decisions is issued, an AML

will have been established in all allotments occupied by the Jackson Mountains North Wild Horse Herd. The sum of the AML's for Bottle Creek, Happy Creek, Deer Creek and Wilder-Quinn will be the AML for the North Herd. Even though the establishment of AML's is dispersed through several Allotment Evaluations, management of the North Herd will not be fragmented by allotment. When horse numbers reach or exceed the upper established management level for the Jackson Mountain HMA, they will be declared excess and gathered regardless of the allotment they may be occupying at any particular time.

DISTRIBUTION

The Happy Creek Allotment is considered the "core population" for the North Jackson Mountain Wild Horses. It appears, as population density increases wild horses move out into adjacent allotments. During 1995 the Bottle Creek Allotment was used by several bands of horses during the late fall, winter and early spring. At least 23 horses wintered in the Bottle Creek Allotment during the winter of 1995. Wild Horses were not observed in the Bottle Creek Allotment during June, July or August of 1995. The Bottle Creek Allotment was inhabited by horses during June and July of 1996. Thirty-eight horses were observed in this allotment on 3/1/96. This is the highest population level observed, documented and may be a function of the density of wild horses within the Happy Creek Allotment.

Wild horses primarily utilize the steeper slopes in the vicinity of Water Canyon for most of the year. They have not been observed in Bottle Creek proper nor was any evidence of wild horses located during field trips. During the winter months of December and January they may be found around White Peaks Mine, associated flats and drainage bottoms and on the lowest slopes east of White Peaks.

The boundary fence between Happy Creek is not continuous so wild horse movement is generally around the end of fences or through breaks in the fences. It appears that the horses have adapted to the fences and move easily around them to seasonal use areas. From available data, one could form the opinion that wild horses have not been present in the Bottle Creek Allotment since 1990. That is not the case. A distribution flight conducted on 9/22/95 did not locate wild horses in the Bottle Creek Allotment. A reliable observation on 9/27/95 documented in excess of twenty wild horses within the Bottle Creek Allotment. Either the horses are being missed on aerial flights or they have moved into adjacent allotments. It is probable that certain bands of horses have used the Bottle Creek Allotment on a sporadic

basis for years.

UTILIZATION

Wild horses had moved off their key wintering areas by 2/22/96. Utilization of the areas occupied by horses was estimated at 30% on key forage plants. Overlap in use areas between domestic livestock and wild horses is primarily limited to the area horses use in the winter and livestock use during the summer and fall. In establishing an AML in the Bottle Creek Allotment the critical question is as follows: Is there adequate winter forage available on the lower slopes and basin around White Peaks?

III. Allotment Profile

A. Description

The Bottle Creek Allotment is located in the Denio Planning Unit, approximately 50 miles northwest of Winnemucca. The northern portion of the allotment is 5 1/2 miles south of State Route 140 near the Quinn River Crossing. The western portion of the allotment is in the Jackson Mountains, east of the Iron King Mine and the head waters of Happy Creek. The eastern and southern portions of the allotment are in Desert Valley. Elevations varies from 4,000' to 8,900'. The lower elevations are dominated by greasewood and shadscale. The intermediate elevations contain big sagebrush, shadscale, and perennial bunchgrass such as great basin wildrye, bottlebrush squirreltail, and thurbers needlegrass. The higher elevations are dominated by mountain big sagebrush, low sagebrush, bluebunch wheatgrass, and Idaho fescue. In addition, upland meadows are a major component of portions of the allotment above 8000'. These sites are dominated by Carex and Juncus.

B. Acreage

1. Allotment Totals

a.	Total	137,276 Acres
b.	Public	129,982 Acres
c.	Private	7,294 Acres

C. Objectives

1. Land Use Plan

a. Objective RM-1

To provide forage on a sustained yield basis through natural regeneration. Reverse the downward deterioration of public grazing lands by improving 1,000,000 acres in poor condition, and 400,000 acres in fair condition to good condition within 30 years.

b. Objective RM-2

Increase existing allocatable livestock forage by artificial methods from the present 103,721 AUMs to approximately 193,472 AUMs (89,751 AUM increase) within 30 years.

c. Objective WLA-1

Improve and maintain the condition of all the aquatic habitat of each stream, lake, or reservoir having the potential to support a sport fishery as a level conducive to the establishment and maintenance of a healthy fish community.

c. Objective WL-1

Improvement and maintenance of a sufficient quantity, quality and diversity of habitats for all species of wildlife in the planning area.

d. Objective W-1

Preservation and improvement of quality water necessary to support current and future use.

e. Objective W-2

Provision of adequate water to support public land uses.

f. Objective W-3

Reduction of soil loss and associated flood and sediment damage

from public lands caused by accelerated erosion (man-induced) from wind and water.

g. Objective WH/B-1

Maintain wild horses and burros on public lands, where there were wild horses or burro use as of December 15, 1971, and maintain a natural ecological balance on the public lands.

2. Rangeland Program Summary

These objectives represent the RPS objectives identified while the Jackson Mountain and Bottle Creek allotment were run in common.

a. Range

1. Increase available forage for livestock to sustain an active preference of 12,266 AUMs.
2. Improve range condition from poor to fair on 475,523 acres and from fair to good condition on 9,684 acres.
3. Improve water quality for fisheries.
4. Develop a livestock grazing plan that will alleviate the following problems:
 - a. Improper season of use.
 - b. Inadequate livestock distribution.
 - c. Livestock drift.
 - d. Excessive stocking rate.

b. Wildlife

1. Manage rangeland habitat and forage to sustain reasonable numbers:

Deer: 448 AUMs
Bighorn Sheep: 346 AUMs

Antelope: 72 AUMs

2. Protect known sage grouse strutting grounds and associated breeding complexes and future grounds as identified.
3. Improve and maintain the condition of aquatic habitat having the potential to support a sport fishery on Jackson, North Fork of the Jackson, Trout, Bottle and Big Creeks.

c. Wild Horses and Burros

Graze 160 wild horses (1920 AUMs) in the Jackson Mountain Herd Management Area.¹

3. Habitat Management Plan (HMP) Objectives

These objectives represent the HMP objectives identified while the Jackson Mountain and Bottle Creek Allotments were run in common.

a. General Objectives of the Jackson Mountains Wildlife Habitat Management Plan in 1981

Current vegetative conditions found within the planning area are considerably different than what they were some 100 years ago. Some causes of the changes have been mining activity and wildfire, but the primary cause of the present disclimax vegetative state is the result of livestock management. An explanation on the successional changes of plants occurring as a result of livestock grazing is presented by Heady and Bartolome (1977).

While it may appear appropriate, for the most part, to revert the present existing habitat conditions to conditions similar to pristine situations, this approach may not be favored under current multiple use management objectives. It is probable that wildlife species have undergone some changes in habitat have been altered over the past centuries.

The overall objective of this plan is to manage the habitat toward optimum quality, quantity, and diversity of food, water, cover, and

¹ This objective pertains to the entire Jackson Mountain Herd Management Area (North Jackson and South Jackson).

space for all terrestrial wildlife species. This will be accomplished by managing habitat conditions toward those optimum standards essential to wildlife survival, while recognizing the needs required by other users of public lands.

b. Specific Objectives of the Jackson Mountains Wildlife Habitat Management Plan in 1981

Conversions (improvements) of habitat are directed at major vegetative communities, and it is expected that these specific improvements will benefit habitat for game and nongame species. The following outline will provide quantitative and qualitative objectives this plan is designed to achieve; however such data as range potential, soil potential, and plant composition by weight estimate are not presently available. Therefore the proposed objectives are based primarily on range vegetation and wildlife food studies in Nevada and in other western states. The average vegetative composition (presently existing) for all vegetative communities within each mountain range, is based upon the 1978 ocular reconnaissance survey, and is given below by percentage of grass, percentage of forbs, and percentage of shrubs next to each vegetative community.

1. Big sagebrush - Change the present vegetative composition to 16 percent grass, 20 percent forbs, and 64 percent shrubs. Key forb species shall be considered particularly in sage grouse and pronghorn antelope habitat.

Assure that palatable browse and forb species become a significant portion of the vegetation.

2. Juniper - Change the present vegetative composition to 22 percent grass, 10 percent forbs, and 68 percent shrubs.

Assure that palatable browse and forb species become a significant portion of the vegetation.

3. Low sagebrush - Change the present vegetative composition to 16 percent grass, 21 percent forbs, and 63 percent shrubs.

Assure that key palatable forbs become a significant part of the vegetation, particularly for sage grouse and pronghorn

antelope.

4. Shadscale - Change the present vegetative composition to 11 percent grass, 10 percent forbs, and 79 percent shrubs.
 5. Greasewood - Change the present vegetation composition to 11 percent grass, 10 percent forbs, and 79 percent shrubs.
 6. Aspen - Prevent further degradation of aspen habitat and promote successful rejuvenation of sucker and sapling growth.
 7. Meadows - Restore meadows in poor or degrading condition to the point where typical meadow grasses and forbs return.
 8. Riparian - Provide for the restoration of riparian habitat.
 9. Aquatic Habitat - Improve watershed conditions and protect the aquatic habitat for fish, aquatic invertebrates, birds, and mammals.
- c. Other Objectives of the Jackson Mountains Wildlife habitat Management Plan in 1981
1. Mitigate any present or potential adverse impacts placed upon wildlife habitat within the habitat area.
 2. Encourage range and other resource developments that will benefit wildlife and wildlife habitat.
 3. Provide additional cover for the major big game species within WHA-7.
 4. Create habitat diversity in selected areas having large monotypic shrub communities in order to reduce the monotonous shrub component and increase the forb and grass composition.
 5. Ensure that wildlife needs are coordinated during the design and implementation of all resource activity plans."

Jackson Mountain Aquatic Habitat Management Plan, 1991

a. General Objectives

Improve the condition of the aquatic habitat in the Jackson Mountain Allotment to a level at which a healthy and suitable sportfish population can again be maintained. This objective is consistent with those with those of step three of the Paradise-Denio Resource Area Management Framework Plan (MFP 3).

b. Specific Objectives

1. As per the BLM Riparian Wetland Manual 6740, improve and maintain the habitat condition of the aquatic habitat in Jackson Mountain Allotment to a rating of 60 and better (Class II or good, BLM Stream Survey Manual).
2. Improve streambank stability to 70 % of optimum.
3. Improve streambank vegetative cover to 70% of optimum.
4. Decrease maximum summer water temperature to below 70 degrees F (21 degrees C) (water quality criteria set by Nevada Department of Environmental Protection) by increasing streamside shading from 30% to at least 70%.
5. Improve the pool quality rating to 70% of optimum.
6. Reduce coliform bacteria in the stream water.
7. Reduce livestock damage to the riparian vegetation, streambanks, and wet meadows along the streams and certain springs from present to 70%.
8. Protect springs supplying water to the stream to assure good water quality and maximum flow.

4. Allotment Specific Objectives

The allotment specific objectives tie the Land Use Plan and RPS objectives together into quantified objectives for this allotment.

a. Short Term

1. Utilization of key streambank riparian plant species shall not exceed 50% on Big Creek, Bottle Creek and Burro Bill Creek.
2. Utilization of key plant species in wetland riparian habitats shall not exceed 50%.
3. Utilization of key plant species in upland habitats shall not exceed 50%.

b. Long Term

1. Manage, maintain, and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 70 AUMs for mule deer, 12 AUMs for pronghorn and 71 AUMs for bighorn sheep by: (WL-1, W-3)
 - a. Improve to and maintain 19,205 acres in good or excellent mule deer habitat condition.
 - b. Improve to and maintain 38,898 acres in fair to good pronghorn habitat condition.
 - c. Improve to and maintain 12,536 acres in good to excellent bighorn sheep habitat condition.
2. Manage, maintain, and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 3409 AUMs. (RM-1, RM-2, W-3; RPS 1-3)
3. Improve range condition from poor to fair on 120,298 acres and from fair to good on 9,684 acres. (RM-1, WL-3; RPS-a.1&2)
4. Maintain and improve free roaming behavior of wild horses by protecting and enhancing their home ranges. (RM-1, RPSb.3).
5. Improve or maintain 8 acres of ceanothus habitat types in good condition. (WL-1)

6. Improve or maintain 21 acres of mahogany habitat types in good condition. (WL-1, W-1)
 7. Improve or maintain 183 acres of aspen habitat types in good condition. (WL-1, W-1)
 8. Improve or maintain 162 acres of riparian and meadow habitat types in good condition (RM-1, WL-1, W-1, W-2, W-3, RPS a.3&b.2)
 9. Protect sage grouse strutting grounds and brooding areas. Maintain a minimum of 30% cover of sagebrush for nesting and winter use. (WL-1, RPS b.2)
 10. Improve or maintain state quality criteria of Bottle Creek from its point of origin to the first diversion to the Nevada Class A water standards. (W-1, W-2, W-3, RPS b.3)
 11. Improve the following stream habitat conditions, from 72% on Big Creek and 38% on Bottle Creek to an overall optimum to 60% or above. (W-1, W-2, W-3, RPS b.5)
 - a. Streambank cover 70% or above.
 - b. Streambank stability 70% or above.
 - c. Maximum summer water temperatures below 70°F.
5. The following are the standards for rangeland health as developed in consultation with the Sierra Front-Northwestern Great Basin Area Resource Advisory Council, other interested publics and approved by the Secretary of the Interior on February 12, 1997.
- a. Soil processes will be appropriate to soil types, climate and land form.
 - b. Riparian/wetland systems are in properly functioning condition.
 - c. Water quality criteria in Nevada or California State Law shall be achieved or maintained.
 - d. Populations and communities of native plant species and

habitats for native animal species are healthy, productive and diverse.

- e. Habitat conditions meet the life cycle requirements of special species.

D. Forage Species Monitored

1. Upland Habitat

<u>Code</u>	<u>Scientific Names</u>	<u>Common Name</u>
STTH ₂	<u>Stipa thurberiana</u>	Thurber's needlegrass
SIHY	<u>Sitanion hystrix</u>	bottlebrush squirreltail
POSE	<u>Poa secunda</u>	Sandberg bluegrass
EICI ₂	<u>Elymus cinereus</u>	basin wildrye
AGSP	<u>Agropyron spicatum</u>	bluebunch wheatgrass
FEID	<u>Festicia idahoensis</u>	Idaho fescue
PONE ₃	<u>Poa nevedensis</u>	Nevada bluegrass
ORHY	<u>Oryzopsis hymeniodes</u>	Indian ricegrass
HOJU	<u>Hordeum jubetum</u>	Foxtail barley
STCO ₄	<u>Stipa comata</u>	needle and thread
ARSP	<u>Artemisia spinescens</u>	bud sagebrush
RIBES	<u>Ribes spp.</u>	currant
AMELA	<u>Amalanchier spp.</u>	serviceberry
PUTR	<u>Purshia tridentata</u>	bitterbrush
SYMPH	<u>Symphoricarpus spp.</u>	snowberry
ATCO	<u>Atriplex confertifolia</u>	shadscale
SAVE	<u>Sarcobatus vermiculatus</u>	greasewood
ARSP	<u>Artemisia spinescens</u>	budsage
GRSP	<u>Grayia spinosa</u>	spiny hopsage
TEGL	<u>Tetradymia glabrata</u>	horsebrush
EULA	<u>Eurotia lanata</u>	winterfat
SHEPH	<u>Shepherdia spp</u>	Buffaloberry
PRAN	<u>Prunus andersonii</u>	Anderson peachbush

2. Riparian Habitat

<u>Code</u>	<u>Scientific Name</u>	<u>Common Name</u>
CAREX	<u>Carex spp.</u>	sedge
DISTI	<u>Distichlis spp.</u>	saltgrass
JUNCU	<u>Juncus spp.</u>	rush
SALIX	<u>Salix spp.</u>	willow

ROSA	<u>Rosa spp.</u>	rose
POPR	<u>Poa pratensis</u>	Kentucky bluegrass
POTR ₃	<u>Populus tremuloides</u>	Aspen
PRVI	<u>Prunus virginiana</u>	chokecherry
AGRE ₂	<u>Agropyron repens</u>	quackgrass

E. Other Information

1. In 1992, Delong Ranches, Inc acquired the grazing privileges for the Bottle Creek allotment from Tim Delong. During the same year, Delong Ranches, Inc. initiated the transfer of 1136 AUMs to Laura McKernan and in 1994, 300 AUMs to Robert and Susan Hoenck. The Hoenck's and McKernan's run in common south of Bottle Creek and in the winter use area. In 1995, Delong Ranch, Inc. transferred 1771 AUMs to Harry and Joy Wilson. The Wilson's run livestock north of Bottle Creek and in the winter use area. Delong Ranches, Inc. has maintained 227 AUMs in the vicinity of Presnel Well, which is north of Mormon Dan Butte.
2. In 1994, the landowner of private property along the lower portions of Bottle Creek fenced his property off. The fencing split the spring-fall grounds into two areas, north of Bottle Creek and south of Bottle Creek.
3. In January 1998, Mel Hummel initiated a transfer of grazing privileges from Laura McKernan to himself. This transfer was completed in March 1998.

IV. Management Evaluation

A. Purpose

The purpose of the management evaluation is to assess if current management practices are meeting the allotment specific, LUP objectives, and Standards of Rangeland Health and to identify management changes needed to meet objectives.

B. Summary of Study Data

1. Actual Use Data

a. Livestock AUMs

<u>Year</u>	<u>Tim Delong</u>
-------------	-------------------

1985	3011
1986	2939
1987	2757
1988	3063
1989	2986
1990	2579
1991	3441

<u>Year</u>	<u>Delong Ranches, Inc</u>	<u>Hummel/ McKernan</u>	<u>Hoенck</u>	<u>Wilson</u>	<u>Total</u>
1992	10	143	0	0	153
1993	0	534	0	0	534
1994	1927	577	300	0	2804
1995	227	744	299	1703	2973
1996	227	825	300	1771	3123
1997	227	1136	300	1771	3434
1998	227	1136	300	1771	3434

b. Wild Horses

The average number of horses within the Bottle Creek Allotment from May 1995 to April 1996 by month. These are estimates using ground counts.

May - 22	Sept - 22	Jan - 21
June - 0	Oct. - 22	Feb. - 27
July - 0	Nov. - 22	Mar. - 38
Aug - 0	Dec. - 21	Apr. - 29

Average number of horses = 19; high numbers = 38; low numbers = 0

c. Wildlife (existing numbers)

Mule Deer

Table 1. Mule Deer Population, Forage Demand, And Recruitment Numbers Extrapolated From NDOW Data.

YEAR	NUMBER/AUMS	SPRING FAWNS/100 DOES	OVERWINTER FAWN LOSS
1990	105/315	34	-30%
1991	101/303	35	-54%
1992	105/315	40	-38%
1993	80/240	11	-60%
1994	76/228	36	-28%
1995	107/322	43	-35%
1996	97/291	40	-36%
1997	86/258	40	-42%
1998	85/256	35	-26%
AVERAGE	94/281	35	-39%

This data indicates a fluctuating mule deer herd, however, the number of spring fawns per 100 does indicates a stable deer herd. The overwinter fawn loss is fluctuating most likely due to the varying weather patterns.

An apportioned population estimate for mule deer in the Bottle Creek Allotment was calculated using the following information.

1. Combined total population estimates for hunt units 031, 032, 034, and 035 published annually by the Nevada Division of Wildlife (NDOW).

² When the fawns per 100 adults is 35 the population remains stable and with less than 35 fawns the population will have a downward trend while over 35 fawns the population will have an upward trend.

2. Proportional factor to determine estimated use in a specific hunt unit (031 and 035) submitted by NDOW.
3. Proportion of total winter and yearlong habitat in hunt unit 035 that is within the allotment.

Pronghorn Antelope:

Table 2. Pronghorn Population, Forage Demand, and Recruitment Extrapolated from NDOW Data.

YEAR	NUMBER/AUMS	FAWNS/100 DOES ³
1990	65/156	54
1991	84/202	50
1992	99/238	45
1993	93/223	39
1994	93/223	60
1995	97/233	30
1996	93/223	43
1997	100/240	44
1998	104/250	38
AVERAGE	92/221	45

This data indicate an increasing pronghorn population which is supported by the fawn to 100 does ratio.

Pronghorn actual use was estimated by calculating the percentage of winter and yearlong habitat in the hunt unit, as compared to the allotment using the following information.

1. Combined total population estimates for hunt units 031, 032, 034, and 035 published annually by NDOW.

³ When the fawns per 100 adults is 35 the population remains stable and with less than 35 fawns the population will have a downward trend while over 35 fawns the population will have an upward trend.

2. Proportional factor to determine estimated use in a specific hunt unit (031 and 035) submitted by NDOW.
3. Proportion of total winter and yearlong habitat in hunt unit 035 that is within the allotment.

California Bighorn Sheep

The Bottle Creek Allotment also contains approximately 26% of the Jackson Mountains BY-6 habitat area. California bighorn sheep were established in the Parrot Peak area of the Jackson Mountain Range in 1983. The sheep were established as a result of the Jackson Mountains Bighorn Sheep Habitat Management Plan. While the initial release site was not within Bottle Creek Allotment, areas of suitable habitat do exist and bighorn use of these habitats has been increasing in recent years. Furthermore, the top of the Jackson Mountain Range is not fenced, thus would not impede bighorn sheep movements.

Table 3. Parrot Peak Bighorn Sheep Population And Forage Demand Extrapolated From NDOW Data.

YEAR	NUMBER/AUMS
1990	20/47
1991	29/69
1992	36/87
1993	39/94
1994	35/84
1995	35/83
1996	40/96
1997	36/86
1998	44/106
AVERAGE	35/84

This data indicate an increasing population and a healthy and viable herd.

Sage Grouse

Strutting ground aerial surveys by NDOW in the Jackson Mountains in April, 1994 identified the following:

6 strutting males	T40N, R32E, Section 28, SE ¼
40 strutting males	T40N, R32E, Section 11, NW ¼
12 strutting males	T40N, R32E, Section 1, SE ¼

A known sage grouse wintering ground is located in portions of T40N, R33E, Sections 19, 20, 29, 30, 31, and 32.

2. Climate

Precipitation For
Leonard Creek Ranch (NOAA Station 1983-1997)
Precipitation in Inches

<u>Year</u>	<u>*Growing Season</u>	<u>Annual Total</u>	<u>from Normal</u>	<u>Departure</u>
1983	6.94 M	17.74	M	
1984	3.0		8.50 M	M
1985	2.48		6.82 M	M
1986	4.85		9.60	M
1987	5.42		9.30	M
1988	2.94		8.11	M
1989	3.98		7.48	M
1990	5.06		8.87	M
1991	4.67		9.04	M
1992	4.22		7.82	M
1993	4.27		10.02	1.51
1994	2.14		8.31M	M
1995	6.7		11.49	2.98
1996	5.84		13.71M	M
1997	4.18		8.96	.45
1998	NA		NA	NA

* Growing season is defined as March through August.
NA Not Available
M Partial or Incomplete Data

3. Utilization

a. Utilization Studies

The Key Forage Plant Method (KFPM) was employed to collect utilization measurements. These transects are at random locations throughout the allotment. The utilization classes are as follows:

No Use	0%
Slight	1-20%
Light	21-40%
Moderate	41-60%
Heavy	61-80%
Severe	81-100%

1997

Big Creek -
Headwater Meadows

Transect # 1
Carex 68%
Juncus 67%

1996

Bottle Creek:

Mid-Bottle Creek

Transect # 1
SALIX 62%
POA 54%
POTR 54%

Upland Site

Transect # 2
POA 29%
SIHY 52%

Upper Bottle Creek

Transect # 3
POTR 57%
AMAL 15%
POA 38%

Big Creek:

Upland Site

Transect # 4
CELE3 50%

Upper Big Creek

Transect #5
JUNCUS 44%
POA 54%

Mid-Big Creek

Transect # 6
POTR 66%
PRVI 83%

1993

Water Canyon	<u>Transect # 1</u> POSE 6% SIHY 3%
Buff Peak	<u>Transect # 2</u> STTH2 12% POSE 7% SIHY 5%
N. of Bottle Creek	<u>Transect # 3</u> AGSP 7% POSE 6%
Halburg Canyon	<u>Transect # 4</u> POSE 5%
S. of Bottle Creek	<u>Transect # 5</u> POSE 7% SIHY 2%
Prospect Spring	<u>Transect # 6</u> AGSP 9% POSE 7% SIHY 3%

b. Use Pattern Mapping (UPM)

UPM (partial or complete) was completed in 1988, and 1989, 1993, 1995, 1996 and 1997. The following is a summary of this data.

The UPM is summarized below on a use area basis. Actual use and licensed use were utilized for AUM computations (see above for utilization classes).

1997

Data collected 10/30 and 11/4/97

Wilson's:

208 C 04/01 to 09/30 1251 AUMs

McKernans:

75 C 03/20 to 05/31 180 AUMs
150 C 06/01 to 08/16 380 AUMs
50 C 08/23 to 08/30 13 AUMs
300 C 09/01 to 09/30 296 AUMs
Total 869 AUMs

Hoencks:

70 C 04/01 to 06/30 209 AUMs

Approximately 30% of the spring/summer/fall use area was use pattern mapped. Of the area mapped, 20% received heavy use, 30% moderate, 20% light, and 30% slight. Heavy utilization was observed along the upper reaches of Bottle Creek and its associated meadows. Young aspen available to livestock in this area received moderate to severe use. Surrounding uplands had moderate use. Remaining portions of the Bottle Creek riparian area mapped had moderate use. However, young willow (\leq 4 feet that was available to livestock use received heavy utilization. Light use was observed in surrounding uplands. The uplands west of the upper reaches of Bottle Creek received light use and slight to light use was observed in Water Canyon.

The headwater meadows and the upper reaches of Big Creek and the Big South Fork of Bottle Creek received heavy utilization levels. An utilization transect conducted in the headwater meadows indicated 68% utilization on Carex and 67% utilization on Juncus. The mid level portions of Big Creek and Boulder Creek received moderate use. However, associated meadows along the mid reach of Big Creek received heavy use. Associated uplands along the upper and mid reaches of Big Creek received moderate use while uplands in the Boulder Creek drainage received slight and light use. Utilization levels in the flats near the Alexander Ranch were slight

1996

Data collected 11/5 and 11/6/96

Wilsons:

208 C 04/01 to 09/30 1251 AUMs

McKernans:

75 C	03/25 to 04/30	91 AUMs
78 C	05/01 to 05/31	79 AUMs
150 C	06/01 to 08/31	454 AUMs
50 C	09/01 to 09/30	<u>49 AUMs</u>
	Total	673 AUMs

Hoencs:

100 C 04/01 to 06/30 300 AUMs

Approximately 45% of the spring/summer/fall use area was use pattern mapped. 5% of the area mapped received heavy use, 10% moderate, 35% light, and 50% slight. Utilization transects conducted in the middle and upper portions of the Bottle Creek drainage indicated moderate utilization levels in the riparian areas and light in upland sites. Slight utilization was noted in the Buff Peak area and in the vicinity of Halburg Canyon. Light use was noted in Water Canyon and in the vicinity of a spring near McAdoo Mine. Moderate use was noted at a spring in Water Canyon.

Slight use was noted on the flats east of Alexander Ranch. Heavy use was noted adjacent to springs in the Big Creek riparian area with surrounding upland sites receiving moderate use. Utilization transects indicated moderate utilization levels in the upper portion of Big Creek and heavy in the mid portion of Big Creek. Light utilization was noted in upland sites between the Boulder Creek and Big Creek drainages. Use on upland browse species such as serviceberry was slight.

1995

Data collected 10/05, 10/15 and 10/18/96

Wilson's:

200 C 04/01 to 09/30 1203 AUMs

McKernans:

75 C	03/25 to 04/23	74 AUMs
78 C	04/24 to 05/31	97 AUMs

153 C 06/01 to 08/15 382 AUMs
128 C 08/16 to 08/31 67 AUMs
100 C 09/01 to 09/15 49 AUMs
50 C 09/16 to 09/30 25 AUMs
694 AUMs

Hoencs:

85 C 04/01 to 06/30 254 AUMs

Approximately 55% of the spring/summer/fall use area was use pattern mapped. 50% of the use area mapped received slight use, 20% light, 20% moderate and 10% heavy. Slight use was noted on the flats south of Bottle Hill, moderate in Water Canyon in the vicinity of the mines and near McAdoo Mine, which is south of Water Canyon. Light use was found in the upper elevations of Water Canyon leading to Buff Peak and in the Halburg Canyon which is between McAdoo Mine and Water Canyon. Fifteen to twenty horses were spotted at the base of Buff Peak.

Slight use occurred south of the Bottle Creek Farms on the flats, and moderate use in the vicinity of Burro Bill Spring. Heavy use was noted in the Big Creek riparian with moderate use in surrounding upland sites. Light utilization occurred in the upper portions of the Big Creek drainage. Heavy use occurred in meadows east of the Iron King Mine. These meadows are the headwaters for Big Creek and the Big South Fork of Bottle Creek. Utilization was noted at a key area established in the eastern portion of the meadow using height/weight curves developed by the U.S. Forest Service Intermountain Research Station (General Technical Report INT-GTR 308). Utilization was as follows: Juncus - 67%, Carex - 25%. Utilization levels further downslope from the key area in the meadows were heavy. Surrounding uplands received heavy use with moderate utilization levels occurring in outlying areas.

1993

Data Collected 10/27/93

McKernan's:

149 C 06/14 to 09/30 534 AUMs

Approximately 70% of the spring/summer/fall use area was use pattern

mapped. This includes areas north and south of Bottle Creek Ranches. Forty-five percent of the area mapped received non-use, 53% slight use and 2% light use. No-use occurred south of Bottle Hill, to the Bottle Creek Ranches, and west to the Jackson Mountain foothills. Slight use occurred in the Bottle Creek - Water Canyon drainages, south of Bottle Creek Ranches to the allotment boundary, and on portions of the Big Creek drainage. Light use occurred on Big Creek.

1989

Data Collected 07/05, 12, 13/89 and 01/29/90

Tim DeLong:

200 C	04/01 to 04/30	197 AUMs
650 C	05/01 to 07/04	1,389 AUMs
400 C	08/16 to 09/15	408 AUMs
150 C	09/16 to 12/29	<u>518 AUMs</u>
		2,104 AUMs

Spring Use:

Approximately 98% of the winter/spring use area was use pattern mapped. Sixty percent of the area mapped received no-use, 30% slight, 7% light, and 3% moderate. No-use was noted in the Desert Valley, in the wetlands and south towards Corbeal Butte. Slight use occurred south of Bottle Hill towards Bottle Creek Farms and south of the farms to the Desert Valley allotment boundary. Light use was observed adjacent to the ranches on the eastern boundary. Moderate use occurred in the Big Creek, Boulder Creek, and Burro Bill Spring drainages. Moderate use also was observed east of White Peak.

Winter Use:

Approximately 80% of the winter/spring use area was use pattern. Seventy percent of the area mapped received no-use, 10% slight, 15% light, and 5% moderate. No-use was noted in Desert Valley between the wetlands and Presnel Well. Moderate use occurred in the vicinity of Corbel Well and adjacent to the Bottle Creek Farms on the eastern boundary. Light use occurred at the wetlands, south of Bottle Hill to the farms, and north of Corbeal Butte to Gabica Butte. Slight use occurred west of Corbeal Butte - Gabica Butte and north and east of the Bottle Creek Farms.

1988

Data Collected 10/25, 27, 31, and 11/1-3/88

Tim Delong:

200 C	04/01 to 04/30	593 AUMs
650 C	05/01 to 08/15	2,275 AUMs
400 C	08/16 to 09/15	<u>400 AUMs</u>
	Total	3,268 AUMs

Spring/Summer/Fall

Approximately 60% of the spring/summer/fall use area was use pattern mapped. Fifteen percent of the area mapped received slight use, 45% light, 35% moderate, and 5% heavy. Slight use occurred in the steeper slopes of Water Canyon, in the Halburg Canyon, south of the lower reach of Bottle Creek, and west of the Alexander Ranch. Light use occurred south and west of Bottle Hill, south and east of Buff Peak in the upper reaches of Water Canyon, from the lower reaches of Water Canyon into Halburg Canyon and south to a spring 1 mile north of Bottle Creek, south of Bottle Creek Farms in the vicinity of the county road, and on the lower reach of Burro Bills and Big Creek's. Moderate use was noted in Water Canyon, south of Bottle Hill, south of the lower reaches of Bottle Creek, in upland sites in the Burro Bills and Big Creek drainages, and in two areas serviced by spring north of Burr Bills Creek. Heavy use was noted in riparian areas and springs in Water Canyon, several small springs located in the vicinity of Bottle Creek and Burro Bills Creek, the Burro Bills and Big Creek's riparian areas, and the spring which forms the headwaters for Boulder Creek.

Winter

Data Collected 03/23 & 04/04/89

150 C 09/16 to 12/31 528 AUMs

Approximately 60% of the winter/spring use area was use pattern mapped. 98% of the area mapped received slight use, 1% light, and 1% moderate. Slight use was found on the greasewood flats from Presnel Well north to Bottle Creek Farms, south of Bottle Hill to the farms and east into Water and Halburg Canyon's. Slight use was also found on Burro Bill Spring and its drainage. Light use was found in Water Canyon and at the base of Halburg

Canyon and moderate use at the south east end of the Bottle Creek Farms.

4. Trend Data

Trend data has not been collected to date on this allotment.

5. Range Survey Data

- a. In 1978, a range survey was conducted using the Ocular Reconnaissance Method to provide baseline data for analysis purposes in the Paradise-Denio EIS. The range survey, along with suitability criteria, indicated that 5,332 AUMs were available for livestock use in the Jackson Mountain allotment. In 1984, the Jackson Mountain allotment was divided into the Jackson Mountain and Bottle Creek allotments. The Bottle Creek allotment comprises 27% of the old Jackson Mountain allotment.
- b. A phase one watershed inventory was conducted in portions of the Paradise-Denio Resource Area from 1971-1974 for the Jackson Mountain allotment. Livestock forage condition was determined based upon data from this inventory which resulted in the following condition classifications:

<u>Good</u>	<u>Fair</u>	<u>Poor</u>
0 acres	7,069 acres	347,132 acres

Appendix G, pg 28, of the Paradise-Denio EIS provides more discussion on livestock forage condition.

6. Ecological Status Inventory (ESI)

The Order 3 soils survey and ESI have not been completed.

7. Wildlife Habitat Inventory

- a. Priority Species: mule deer, sage grouse, trout, pronghorn, bighorn sheep.
- b. Other Game Species: chukar and Hungarian partridge, California quail, and mountain lion.
- c. Special Habitat Features

A special habitat feature inventory was conducted in September and

October, 1977. This inventory identified the location and acres of special habitats, listed observed plant and wildlife species, and documented ocular observations of the condition and utilization of these habitats. This information was analyzed in the Paradise-Denio EIS.

1. Riparian and Meadow - 162 acres
2. Ceanothus - 8 acres
3. Serviceberry - 885 acres
4. Mountain browse - 6,106 acres
5. Aspen - 183 acres
6. Mountain Mahogany - 21 acres

The inventory recorded the following in 1977:

"The Bottle Creek drainage exhibited moderate to heavy cattle use throughout. Trampling and punching of spring sources was common. Reproduction of aspen was poor and livestock use heavy on what was occurring. Use on riparian habitats was generally heavy to severe. Salting on riparian areas was documented to be standard practice, adding to cattle concentration problems. Livestock utilization on serviceberry and the limited amount of bitterbrush was also heavy.

Big Creek had received light to moderate livestock use with the riparian habitat being in fair to good condition. Riparian habitat in the Burro Bill drainage received moderate use.

The Bottle Creek drainage has high potential for improvement, but continues to receive heavy cattle use and deteriorating riparian habitat. Mule deer winter range in the Bottle Creek area continues to receive heavy to severe cattle use.

d. Habitat Evaluation

Habitat evaluations were not conducted for mule deer or bighorn sheep. A habitat evaluation was conducted for pronghorn. The evaluation is summarized below:

Table 4. Bottle Creek Allotment Pronghorn Antelope Habitat Condition Rating Summaries.

DATE	TRANSECT	SEASON OF USE POINTS ⁴	TOTAL RATING	MOST LIMITING FACTOR	
6-98	1 ⁵ T39N,R33E,S6	Summer 52	Fair	Percent of forbs and shrubs found	
6-98	2 T39N,R32E,S12	Summer 63	Fair	Number of forb species noted	
6-98	3 T39N,R32E,S13	Summer 57	Fair	Number of forb and shrub species low	
		AVERAGE	57		
6-98	4 ⁶ T40N,R33E,S10	Summer/ Winter	58	Fair	Number of forb, grasses, and shrub species low
6-98	5 T40N,R33E,S8	Summer/ Winter	50	Fair	Number of forb species low and low productivity of forbs, grasses, and shrubs
6-98	6 T40N,R33E,S6	Summer/ Winter	59	Fair	Number of grass species low
		AVERAGE	56		
	7 ⁷ T40N,R32E,S33	Summer 77	Good	Number of species of shrub and grasses low	

7-98

This data indicates that the first six transects at the lower elevations had a fair rating and was at potential. Transect seven near the mountain top was

⁴ Excellent 91 and above, Good 71 to 90, Fair 41 to 70, and Poor 0-40.

⁵ Transects 1, 2, and 3 are the toe slopes of the Jackson Mountains on the south portion of the allotment.

⁶ Transects 4, 5, and 6 are the toe slopes of the Jackson Mountains on the north portion of the allotment.

⁷ Mountain top basin.

rated as good and was at potential.

Sage Grouse

Sage grouse has been observed in the following areas:

Strutting ground aerial surveys by NDOW in the Jackson Mountains in April, 1994 identified the following:

6 strutting males	T40N, R32E, Section 28, SE ¼
40 strutting males	T40N, R32E, Section 11, NW ¼
12 strutting males	T40N, R32E, Section 1, SE ¼

A known sage grouse wintering ground is located in portions of T40N, R33E, Sections 19, 20, 29, 30, 31, and 32

Livestock are known to have impacts on the condition of sage grouse summer habitat in meadows and riparian area which serve as crucial late summer brood rearing and foraging areas. These impacts include removal of hiding cover and competition for and reduction of forage due to heavy grazing.

Crucial habitat parameters were determined using several sources, particularly The Western States Sage Grouse Committee which presented a comprehensive guide to habitat requirements for sage grouse in their 1974 Guidelines for Habitat Protection in Sage Grouse Range (Report). In this report, habitat conditions which resulted in the highest reproductive success for sage grouse strutting, nesting, brood rearing, and wintering ranges in the west are summarized.

The following criteria were found to sustain the highest levels of use and resulted in the highest reproductive success by sage grouse:

Strutting Habitat

1. Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

Nesting Habitat

1. Sagebrush between 7 and 31 inches in height

- (optimum = 16 inches)
2. Sagebrush canopy cover of 15-30% (optimum = 27%)
 3. 25-35% basal ground cover
 4. Average understory height of 6-7 inches (grasses)

Brood Rearing Habitat

Early Season

1. Sagebrush canopy cover of 10-21% (optimum = 14%)

Late Season

1. Meadow areas that are in functioning condition
2. Residual meadow vegetation of no less than 3-6 inches in height

Winter Habitat

1. Greater than 20% sagebrush canopy cover

In addition NDOW personnel cited various literature sources which indicated the importance of good understory growth beneath and surrounding the nest bush. Understory cover helps to conceal the nests from predation from the air and creates a microclimate around the nest which is warmer than the ambient air temperature.

Specific sage grouse habitat condition studies have not been established. Forage condition and vigor, "edge", forage diversity (species richness), and forb composition are factors known to be of critical importance in habitat selection behaviors in sage grouse. Table 5 is a summary of sage grouse habitat conditions. These sites were rated for habitat conditions using data gathered from pronghorn production studies.

Table 5. Habitat evaluation for sage grouse near known observation sites.

		T40N, R32E, S33NE¼	T40N, R33E, S6SW¼
Strutting Habitat	20-50% SCC ⁸	Met	Not Met
Nesting Habitat	within 2 miles ⁹	Met	Met
	7-31 Height ¹⁰ 20-30% SCC	Met Met	Met Not Met
Brooding Habitat	10-21% SCC	Met	Marginal (9%)
	High forbs ¹¹	Met	Met
	Meadow ¹²	Met	Met
		T39N, R33E, S6SW¼	T40N, R33E, S8SE¼
Winter Habitat	> than 20% SCC	Not Met	Not Met
	Low snow depth	Met	Met

These data indicates that even though all parameters may not be met at each site sage grouse still occupy an area. Many variables exist (known and unknown) which determine whether an area is marginal, poor, fair, good, or excellent for sage grouse.

8. Riparian/Fisheries

⁸ Sagebrush Canopy Cover.

⁹ Within 2 miles of strutting grounds.

¹⁰ Sagebrush between 7 and 31 inches in height.

¹¹ High composition of forbs.

¹² Vigorous-available meadow vegetation in late summer/fall.

a. Stream Surveys:

Bottle Creek and Big(Alexander) Creek are the only creeks in the allotment that have the potential for supporting a cold water fishery. Bottle Creek supports a population of rainbow trout while Big Creek is barren of any fish species at present. Big Creek (Alexander) has been identified as a potential Lahontan cutthroat trout recovery stream in the Nevada Division of Wildlife's *Lahontan cutthroat trout fishery management plan for the Quinn River/Black Rock Basins and North Fork of the Little Humboldt River Sub-basin*(1999). This stream was not identified as a potential recovery stream, however, in the U.S.F.W.S.'s *Recovery Plan for the Lahontan cutthroat trout*(1995).

Two primary creeks and their associated riparian habitats were inventoried and/or monitored by stream surveys. These surveys are summarized below (Tables 6, 7, 8, and 9).

Table 6. Big (Alexander) Creek Stream Habitat Survey Summaries

<u>Parameters</u>	<u>Dates of Stream Survey</u>		
	<u>8-76¹³</u>	<u>7-90¹⁴</u>	<u>8 & 12-96¹⁵</u>
Pool to riffle ratio, % of optimum	88	65	80
Pool quality, % of optimum	29	17	36
Percent of stream bottom with desirable material	77	63	59
Bank cover, % of optimum	86	76	64
Bank stability, % of optimum	84	78	59
Percent of optimum habitat	83	60	60
Percent of riparian condition class	85	77	62

Overall pool to riffle ratio decreased from 1976 to 1990 and then indicated an increase during the 1996 survey. Pool quality showed a decrease from 1976 to 1990 and then an increase in 1996. However, overall pool quality is low. The percent of stream bottom with desirable material, bank cover and stability, and percent of riparian condition class all decreased from 1976 through 1996. The percent of optimum habitat decreased from 1976 to 1990 and remained at 60% in 1996. In addition, silt from the headwaters and upper reaches of Big Creek is unstable and moving in the watershed. Table 7 summarizes the 1996 stream survey station by station.

¹³ 3 stations

¹⁴ 6 stations

¹⁵ 4 stations

Table 7. Big (Alexander) Creek Stream Habitat Survey by Station for August 1996.

Parameters	<u>Station</u>			
	<u>1</u> ¹⁶	<u>2</u> ¹⁷	<u>3</u>	<u>4</u> ¹⁸
Pool to riffle ratio, % of optimum	91	82	44	98
Pool quality, % of optimum	44	27	24	36
Percent of stream bottom with desirable material	67	93	46	41
Bank cover, % of optimum	85	64	58	50
Bank stability, % of optimum	90	73	48	25
Percent of optimum habitat	75	68	44	50
Percent of riparian condition class	88	69	53	38

This stream survey indicates that as the creek gains in elevation, stream habitat conditions decrease. Pool to riffle ratio decreases from station 1 to station 3, but increases at station 4. Pool quality, percent of stream bottom with desirable materials, bank cover, bank stability, percent of optimum habitat, and percent riparian condition class all indicates a decrease from station 1 to station 4.

Big Creek

	Years			
	<u>1976</u>		<u>1990</u>	<u>1996</u>
Maximum water temperature ¹⁹		68	63	64
Minimum water temperature	54		57	46
Average water temperature	63		59	57

¹⁶This is the lowest portion of Big Creek

¹⁷Stations 2 and 3 are the mid-reaches of Big Creek

¹⁸Station 4 is the headwaters

¹⁹All water temperatures are reported as degrees Fahrenheit.

Table 8. Bottle Creek Stream Habitat Survey Summaries

<u>Parameters</u>	<u>Dates of Stream Survey</u>			
	<u>8-76</u> ²⁰	<u>9-89</u> ²¹	<u>7&9-92</u> ²²	<u>8-96</u> ²³
Pool to riffle ratio, % of optimum	68	55	81	94
Pool quality, % of optimum	17	9	16	57
Percent of stream bottom with desirable material		66	82	81
Bank cover, % of optimum	77	51	62	71
Bank stability, % of optimum	52	54	57	87
Percent of optimum habitat	56	50	59	75
Percent of riparian condition class	65	53	59	79

The stream survey data indicates that from 1976 to 1996, overall habitat conditions have increased with all variables showing a substantial increase in percent optimum. Pool quality indicated an increase from 1976 to 1996, however, overall quality is low. Percent of stream bottom with desirable material indicated an increase from 1976 to 1992 and then a decrease from 1992 to 1996.

²⁰ 3 stations

²¹ 7 stations

²² 3 stations

²³ 3 stations

Table 9. Bottle Creek Stream Habitat Survey by Station for August 1996.

Parameters	Station		
	<u>1</u> ²⁴	<u>2</u> ²⁵	<u>3</u> ²⁶
Pool to riffle ratio, % of optimum	76	82	60
Pool quality, % of optimum	49	46	38
Percent of stream bottom with desirable material	92	61	36
Bank cover, % of optimum	70	64	78
Bank stability, % of optimum	90	82	88
Percent of optimum habitat	75	67	60
Percent of riparian condition class	80	73	83

Pool to rifle ratio, pool quality, percent of stream bottom with desirable materials, and percent of optimum habitat all indicates a decrease from station 1 to 3. Station 1 being in the lower elevations reaches of the creek, station 2, the mid reaches and station 3, the upper reaches. Bank cover, bank stability, and percent of riparian condition class indicated a decrease in habitat conditions from station 1 to station 2 and then an increase from station 2 to station 3.

Bottle Creek

	Years			
	<u>1976</u>	<u>1989</u>	<u>1992</u>	<u>1996</u>
Maximum water temperature	57	60	70	53
Minimum water temperature	56	48	45	43
Average water temperature	57	53	57	47

b. Riparian Functionality Summary

Lentic and lotic riparian functionality was determined in accordance with BLM Technical Reference 1737-9 (1993) Process for Assessing Proper Functioning Condition.

1. Lentic Functionality

²⁴This is the lowest portion of Bottle Creek

²⁵Stations 2 is the mid-reach of Bottle Creek

²⁶Station 3 is the upper mid-reach of Bottle Creek

In October, 1995, lentic functionality was conducted in the meadows which form the headwaters of Big Creek and the Big South Fork of Bottle Creek. Functionality was assessed at two locations and the meadows were found to be functioning at risk with a downward trend. The size of the meadow where station 1 is located is 2-3 acres, and station 2, 20 acres with interconnected meadows (see appendix 2, Map 4 for location of stations). See Table 10 for a summary of the findings.

The primary limiting factors for Station 1 and Station 2 were as follows: fluctuation of water levels due to incised channels, meadows are not enlarging or have achieved potential extent, natural surface or subsurface flow is being altered by hoof action and trailing causing hummocking and compaction. Vegetative species present indicates riparian - wetland soil moisture characteristics are not being maintained nor is the vegetation comprised of plants or plant communities that have root masses capable of withstanding storm events or snow melt. Too many upland species are intermixed with riparian species such as *Juncus* and *Carex* and too much bare ground is present. The riparian-wetland area is not in balance with the water and sediment being supplied by the watershed. There is excessive erosion and deposition occurring in the meadows and upper reaches of Big Creek and the Big South Fork of Bottle Creek.

Table 10. Lentic²⁷ Functionality Summary for Big Creek and Big South Fork of Bottle Creek Headwater Meadows on October, 1995.

<u>Parameter</u>	<u>Functionality Station</u>	
	<u>1</u> ²⁸	<u>2</u> ²⁹
Station		
Functionality Rating	Functional at Risk ³⁰	Functional at Risk ³¹
Trend for Functionality-at Risk	Downward	Downward

2. Lotic Functionality

In June 1997, lotic functionality was conducted on Big Creek, Bottle Creek, and tributaries (see appendix 2, maps 3 and 4). Big Creek was separated into three reaches. Reach 1 on Big Creek is considered the upper portion of Big Creek below the headwater meadows and is 2.85 miles in length. This portion of the creek is considered functioning at risk with a downward trend. Primary limiting factors are lack of stream sinuosity, a poor width/depth ratio, narrow riparian zone, uplands contributing to riparian degradation, poor age structure and composition of riparian vegetation, poor structural diversity along the creek to withstand high water events, poor riparian plant vigor, and excessive erosion and deposition occurring with incised creek banks.

Reach 2 is the area upstream from the private grounds at the mouth of the canyon and is 2.01 miles in length. Reach 2 is at Proper Functioning Condition (PFC). The riparian zone is considered at or near potential. Limiting factors are poor age recruitment among cottonwood trees and

²⁷ Headwater meadows

²⁸ Estimated at 2-3 acres in size.

²⁹ Estimated 20 acres of interconnected.

18 & 19 Invasion of upland species, extensive bare ground and hoof action (causing hummocking), compacted soils, incised channel is lowering water table, and downcutting.

limited herbaceous riparian vegetation.

Reach 3 is the portion of the creek below the private grounds, not including the flats, and is .91 miles in length. The reach has good willow cover but lacks herbaceous riparian vegetation and large woody debris. Reach 3 is at PFC.

Reach 1 on Bottle Creek encompasses the headwaters and upper reaches and is 1.51 miles in length. This reach of the creek is considered non-functioning. Limiting factors are a narrow riparian zone and floodplain with an incised channel, poor sinuosity and width/depth ratio. There is a narrow riparian zone, poor age structure and composition of riparian vegetation with a lack of diversity of woody riparian vegetation. Poor age recruitment of aspen, lack of riparian vegetation, floodplain, and channel characteristics able to withstand flood events and protect banks and dissipate energy during high flow events, and poor plant vigor. Point bars are not re-vegetating, the creek is not vertically stable, and the stream has excessive erosion, deposition, and is limited by an incised channel.

Reach 2 is the area between the headwaters and where the canyon narrows, along with tributaries that run into this portion of the creek. The length of the reach is 5.14 miles. This area is functioning at risk with a downward trend. Primary limiting factors are the floodplains are not inundated in relatively frequent events, poor sinuosity and width/depth ratio, the riparian zone is not widening, there are some cutbanks and channel incising. There is poor diverse age structure, composition, and vigor of riparian vegetation. There is a lack of herbaceous riparian vegetation which would make the creek susceptible to high water events. However, there may be enough rock and course woody debris to dissipate high water flow energy. Point bars are not re-vegetating and there is some downcutting and channel incision occurring.

Reach 3 is in a steep, v-shaped canyon and is 1.53 miles in length. The floodplain is not inundated by frequent events nor is the floodplain widening. However, the channel is confined due to the gradient and topography of the canyon and is stable due to its location. Some cut banks are present. Reach 3 is at PFC.

Reach 4 is the upper portion of the Big South Fork of Bottle Creek below the headwater meadows and is 2.59 miles in length. Primary limiting factors are poor width to depth ratio, there is active bank erosion so the riparian zone is not widening, the uplands lack perennial grasses, the upland watershed is contributing to riparian degradation. There is poor age

structure, composition and vigor of riparian vegetation, this reach of the creeks lacks riparian vegetation capable of withstanding high water events, protect banks and dissipate energy during high flows. Excessive erosion and deposition is occurring so banks and bank storage needs to be improved. This portion of the creek is functional at risk with a downward trend.

Reach 5 is the lower portion of the Big South Fork of Bottle Creek and is 3.13 miles in length. Primary limiting factors are the riparian-wetland area is not widening or has achieved potential extent and there is a concern on diverse age-class distribution on willows and aspen, vegetative cover, and plant communities being an adequate source of coarse and/or woody material. Willows and aspen are decline with little recruitment occurring. This area of the creek is functional at risk with a static trend.

Reach 6 is the Little South Fork of Bottle Creek and is 2.72 miles in length. Limiting factors are riparian-wetland area is not widening or has achieved potential extent, there is a lack of age-class distribution of riparian-wetland vegetation, adequate riparian-wetland vegetative cover is present to protect banks and dissipate energy during high flow, and plant communities are an adequate source of coarse and/or large woody material. Willows and aspen are in decline and poor recruitment is occurring. In addition, points bars are not revegetating with riparian - wetland vegetation. This reach is functioning at risk with a static trend.

Table 8 summarizes functionality findings, air and water temperatures for both creeks and tributaries.

Table 11. Lotic Functionality Summary for Big Creek, Bottle Creek, Tributaries and Temperatures on June, 1997.

<u>Creek</u>	<u>Location</u>	<u>Functionality</u>		<u>Temperature</u>	
		<u>Rating</u>	<u>Trend</u>	<u>Air</u>	<u>Water</u>
Big Creek	Reach 1	Functional - at risk	Downward	59F	52F
	Reach 2	PFC		70F	50F
	Reach 3	PFC		72F	56F
Bottle Creek	Reach 1	Non- Functional		74F	62F
	Reach 2	Functional - at risk	Downward	NA	NA
	Reach 3	PFC		NA	NA
	Reach 4	Functional - at risk	Downward	48F	52F
	Reach 5	Functional - at risk	Static	NA	NA
	Reach 6	Functional - at risk	Static	NA	NA

9. Wild Horse and Burro

The following census has taking place:

08/06/97: 24 adults, 5 foals

10/17/95: 0 horses

10. Water Quality

Water quality data has not been collected during the evaluation period.

11. Threatened/Endangered/Candidate/Sensitive species

There are no known threatened, endangered, or sensitive plant or animal species occurring in the Bottle Creek Allotment. Bottle Creek and Big(Alexander) Creek are the only creeks in the allotment that have the potential for supporting a cold water fishery. Bottle Creek supports a population of rainbow trout while Big

Creek is barren of any fish species at present. Big Creek (Alexander) has been identified as a potential Lahontan cutthroat trout recovery stream in the Nevada Division of Wildlife's *Lahontan cutthroat trout fishery management plan for the Quinn River/Black Rock Basins and North Fork of the Little Humboldt River Sub-basin*(1999). This stream was not identified as a potential recovery stream, however, in the U.S.F.W.S.'s *Recovery Plan for the Lahontan cutthroat trout*(1995).

BLM State sensitive species and U.S. Fish and Wildlife Service species of concern that may occur in the area of the Bottle Creek Allotment are as follows:

Pygmy rabbit
Burrowing owl
Small footed myotis
Long eared myotis
Fringed myotis
Long legged myotis
California bighorn sheep
Pacific Townsend's bit eared bat
Pale Townsend's big eared bat
Northern Goshawk
Black tern
white faced ibis
windloving buckwheat
Nevada oryctes
cordelia beardtongue

12. Noxious Weeds

A complete noxious weed inventory has not been completed for this allotment.

13. Cultural Resources

Unevaluated cultural resources are known to be in the area. Presently, the concentrated use by cattle are known to be the Big Creek headwater meadows, the upper reaches of Big Creek and Bottle Creek, and tributaries of Bottle Creek. Although there has been no formal inventory, these are high potential areas for cultural resources.

The allotment specific objectives stated on pages 11 and 13 were developed to provide increased forage and improve and maintain conditions of forage, riparian

habitats, and water quality. No specific protection is provided for cultural resources. Overall, the objectives will provide more dispersed use by cattle. This in turn, will alleviate the pressures of concentrated use on areas where cultural resources are expected to be found.

Fences, wells and other range improvements will be examined on an individual basis. Project specific inventories and Section 106 compliance will be followed before construction as it is presently.

14. The following are the standards for rangeland health as developed in consultation with the Sierra Front-Northwestern Great Basin Area Resource Advisory Council, other interested publics and approved by the Secretary of the Interior on February 12, 1997.
 - a. Soil processes will be appropriate to soil types, climate and land form.
 - b. Riparian/wetland systems are in proper functioning condition.
 - c. Water quality criteria in Nevada or California State Law shall be achieved or maintained.
 - d. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.
 - e. Habitat conditions meet the life cycle requirements of special status species.

V. Conclusion

1. Short Term Objectives

- a. Utilization of key streambank riparian plant species shall not exceed 50% on Big Creek, Bottle Creek and Burro Bill Creek.

This objective was not met in 1988, 1995, 1996 and 1997 on Big Creek. Heavy use was noted during these years. The objective was met in 1993 and 1989 on Big Creek.

The objective was not met on Bottle Creek in 1997. Heavy use was noted on aspen and willows. The objective was met in 1996 overall utilization on the

creek being moderate. However, heavy utilization (62%) was noted on willows in the middle reaches of the creek and high moderate use (57%) was noted on aspen in the upper reaches of the creek. The objective was met in 1993.

- b. Utilization of key plant species in wetland riparian habitats shall not exceed 50%.

The objective was met in Water Canyon and on springs in the vicinity of Halburg Canyon in 1997, 1996, and 1995. The objective was not met on the meadows which form the headwaters of Big Creek and the South Fork of Bottle Creek in 1997, 1996, and 1995. In addition, heavy use was noted in associated meadows along Big Creek and Boulder Creek. The objective was met on the flats south of Bottle Creek in the vicinity of Burro Bill Creek and Boulder Creek in 1995. The objective was met in 1996 in Boulder Creek

The objective was not met in 1988. Heavy use was noted on meadows and other riparian areas, not including Big Creek and Bottle Creek. The objective was met in 1989 and 1993.

- c. Utilization of key plant species in upland habitats shall not exceed 50%.

The objective was not met in 1995 on uplands sites in the immediate vicinity of meadows which form the headwaters for Big Creek and the South Fork of Bottle Creek. Light and moderate use was noted in outlying areas near the meadows. The objective was met north of Bottle Creek. The objective was met in 1988, 1989, 1993, 1996, and 1997.

2. Long Term

- a. Manage, maintain, and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 70 AUMs for mule deer, 12 AUMs for pronghorn and 71 AUMs for bighorn sheep by:

- 1. Improve to and maintain 19,205 acres in good or excellent mule deer habitat condition.

No specific mule deer habitat data were collected during this evaluation period.

- 2. Improve to and maintain 38,898 acres in fair to good pronghorn

habitat condition.

This objective was met. Pronghorn habitat data indicate that conditions were fair on the flats near the Alexander and Bottle Creek Ranches and good in the vicinity of the Big Creek headwater meadows.

3. Improve to and maintain 12,536 acres in good to excellent bighorn sheep habitat condition.

No specific bighorn sheep habitat data were collected during this evaluation period.

- b. Manage, maintain, and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 3409 AUMs.

Baseline and current trend data has not been collected to evaluate the achievement of this objective. Monitoring data indicates short term utilization objectives are not being met in riparian/meadow type habitats in the summer use area. However, the objective is being met in upland sites.

- c. Improve range condition from poor to fair on 120,298 acres and from fair to good on 9,684 acres.

Baseline and current trend data has not been collected to evaluate the achievement of this objective. Monitoring data indicates short term utilization objectives for upland habitats are being met. This indicates the objective is being met.

- d. Maintain and improve free roaming behavior of wild horses by protecting and enhancing their home ranges.

This objective has been met. Utilization data collected during the evaluation period indicates that short term utilization objectives within the HMA are being met. In addition, horses are able to pass from Bottle Creek to other areas within the HMA.

- e. Improve or maintain 8 acres of ceanothus habitat types in good condition.

No specific ceanothus habitat data were collected during this evaluation period.

- f. Improve or maintain 21 acres of mahogany habitat types in good condition.

No specific mahogany habitat data were collected during this evaluation period.

- g. Improve or maintain 183 acres of aspen habitat types in good condition.

No specific aspen habitat trend data was collected during the evaluation period. Utilization data collected during the stream survey in 1992 indicates moderate to heavy use occurring on aspen saplings in the Bottle Creek drainage. These utilization levels resulted in poor aspen reproduction and recruitment. Utilization data collected in 1996 indicated moderate use in Bottle Creek and heavy use in Big Creek on aspens. Additional utilization collected in 1997 indicates heavy to severe use occurring on young aspen available to livestock in the upper reaches of Bottle Creek and moderate to heavy in the mid reaches. Lotic functionality data indicates that poor aspen recruitment is occurring along the upper reaches of Bottle Creek. This indicates the objective is not being met.

- h. Improve or maintain 162 acres of riparian and meadow habitat types in good condition.

Lentic functionality data collected in 1995 indicates the Big Creek and the Big South Fork of Bottle Creek headwater meadows are functioning at risk with a downward trend. The objective is not being met.

- i. Protect sage grouse strutting grounds and brooding areas. Maintain a minimum of 30% cover of sagebrush for nesting and winter use.

Strutting, brooding, and nesting habitat parameters were met in T.40N., R32E., Sec 33. Therefore, the objective was met on this site. Strutting and nesting habitat parameters were not met in T.40N., R33E., Sec. 6. In addition, nesting parameters were marginal. The objective was not met on this site.

Winter habitat parameters were not met in T.39E., R.33E. Sec 6 and T.40N., R33E., Sec 8.

- j. Improve or maintain state water quality criteria of Bottle Creek from its point of origin to the first diversion to the Nevada Class A water standards.

Water quality data has not been collected during the evaluation period.

- k. Improve the following stream habitat conditions, from 72% on Big Creek and 38% on Bottle Creek to an overall optimum to 60% or above.
1. Streambank cover 70% or above.
 2. Streambank stability 70% or above.
 3. Maximum summer water temperatures below 70°F.

This objective has not been met on Big Creek. Stream survey data collected from 1976 to 1996 on Big Creek has indicated parameters such as habitat condition, bank cover, and stability have been in a downward trend. Data collected in 1996 indicates the objective is below acceptable limits for all three parameters in the upper and headwater portions of Big Creek and are within acceptable limits in the lower and mid-portions of the creek.

Stream survey data collected from 1976 to 1992 on Bottle Creek indicates parameters such as habitat condition, bank cover, and stability were below acceptable limits. Stream survey data collected in 1996 indicates these same parameters are above acceptable limits. However, the 1996 data also indicates that as Bottle Creek gains in elevation towards the upper reaches and headwaters, the habitat condition rating decreases. Station 1 which represents the lower portions of the creek has a habitat condition rating of 75%, station 2, the mid reaches, has a rating of 67%, and station 3, the upper mid reaches, 60%. A station was not established in the upper reaches.

This downward trend is also reflected in the lotic functionality data gathered in 1997 and 1998. Lotic functionality data indicates the headwaters of Bottle Creek are non-functioning with channel incision and erosion occurring. The mid portion of the creek and tributaries are functioning at risk with a downward trend while the lower portion of the creek is at proper functioning condition. The Big and Little South Fork's of Bottle Creek are functioning at risk with either downward or static trends.

In addition, lotic functionality data indicates the upper portion of Big Creek below the meadows is functioning at risk with a downward trend while the mid and lower portions of the creek are at proper functioning condition.

Lotic functionality, along with utilization data, indicates the objective is being met in the lower to mid reaches of the creek and not being met in the upper reaches.

The maximum summer water temperatures for Bottle Creek and Big Creek were within acceptable limits during the evaluation period.

3. The following are the standards for rangeland health as developed in consultation with the Sierra Front-Northwestern Great Basin Area Resource Advisory Council, other interested publics and approved by the Secretary of the Interior on February 12, 1997.

a. Soil processes will be appropriate to soil types, climate and land form.

Utilization objectives for uplands are being met. These objectives provide for maintenance of soil processes.

b. Riparian/wetland systems are in properly functioning condition.

Lotic functionality data has been collected on Bottle and Big Creeks. The upper portions of Bottle Creek is non-functioning while the mid-reaches are functioning at risk with a downward trend. The lower portion of Bottle Creek is in proper functioning condition. The headwaters of the Big South Fork of Bottle Creek is functioning at risk with downward and static trend and the Little South Fork is functioning at risk with a static trend.

The upper reaches of Big Creek are functioning at risk with a downward trend. The mid and lower reaches are in proper functioning condition.

Lentic functionality data was collected in the meadows which forms the headwaters of Big Creek and the South Fork of Bottle Creek. The meadows were functioning at risk with a downward trend. Lentic functionality data has not been collected at other meadows, therefore, it is unknown whether this objective has been achieved at these sites.

The standard and guideline are not being met in the headwaters of Bottle Creek, Big Creek, South Big Fork, the Big Creek headwater meadows and the mid-reaches of Bottle Creek. Non-attainment of the standard and guideline for both lotic and lentic sites can be attributed to season long continuous livestock grazing that is occurring in the drainages. The lower portion of Bottle Creek and the mid to lower portion of Big Creek were in proper functioning condition, therefore, the standard and guideline was met in these areas.

c. Water quality criteria in Nevada or California State Law shall be achieved or maintained.

Water quality data has not been collected, therefore, it is unknown whether or not this standard is achieved.

- d. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.

Numerous ecological sites exist with varying plant communities within this allotment. Utilization objectives indicate that this standard is being met in upland habitats and not being met in riparian areas, specifically in the summer use areas.

Non-attainment of the standard and guideline in the riparian areas can be attributed to season long continuous livestock grazing that is occurring in the drainages.

- e. Habitat conditions meet the life cycle requirements of special status species.

Site specific data has not been collected. However, goshawks have been observed nesting in the upper reaches of the Bottle Creek riparian in aspen stands. Lotic functionality data indicates that these areas are either not functioning or functioning at risk with a downward trend with poor aspen recruitment. Based on this data, it is anticipated this standard is not being met.

VI. Technical Recommendations

1. Carrying Capacity

Desired stocking rate calculations were determined in accordance with BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7. Appendix I shows the calculations of the stocking rates by year.

Desired stocking rates were calculated for the summer use areas using riparian and/or meadow habitats as key management areas. The desired stocking rates calculated are the stocking rate at which both riparian and upland short-term utilization objectives are expected to be met under present management. The desired stocking rates for remaining areas are the stocking rates at which upland short-term utilization objectives are expected to be met under present management.

The years 1993 and 1989 were not considered in the stocking rate calculations. The use period in 1993 was from 06/14 to 09/30 and 534 AUMs were harvested. The normal use period and AUMs for spring/summer/fall is 04/01 to 09/30 and 2282 AUMs. This was a transition year in the transfer of grazing privileges and only the McKernans grazed livestock in the allotment that year. The year 1989 was not considered due to incomplete use pattern mapping. Data was gathered in June which

showed spring use only and in January which showed late fall/winter use.

Monitoring data was not collected in the winter use area in 1996 and 1995. Winter monitoring data collected prior to 1994 (1989 and 1988) indicates that short term utilization objectives are being met during the fall and winter months and no adjustments are required. Stocking levels and management practices before and after 1994 are similar in the winter use area.

A portion of the Bottle Creek Allotment is located within the North Jackson Herd Management Area. Wild horse use occurs in the Water Canyon and Halburg Mine area with an average of 19 to 20 horses. Utilization levels in Water Canyon have been slight to light with some moderate utilization levels occurring at springs. This indicates that short term utilization objectives are being met with present horse and cattle numbers in the Water Canyon - Halburg Mine area.

AUMs available:

Spring/Summer/Fall	1775 AUMs
Winter/Fall	1152 AUMs
Wild Horses (year round)	<u>240 AUMs</u>
Total	3147 AUMs

AUM's Available Per Permittee:

Hoencks:	300 AUMs
Hummel:	936 AUMs
Wilson:	1465 AUMs
Delong:	<u>227 AUMs</u>
Total	2907 AUMs

Rationale:

The Hoencks permit is for the vicinity of Alexander Ranch and south of the Bottle Creek Ranches in the flats from the periods of 04/01 to 06/30 and 09/01 to 12/01. Their livestock are run in common with the Hummels during this time period. Due to allotment specific objectives and standards and guidelines being met in this area, their AUMS will not be adjusted.

The Hummels permit is in the vicinity of Alexander Ranch, up into the Big Creek drainage, and in the Big Creek and Big South of Bottle Creek headwater meadows from 04/01 to 12/30. Allotment specific objectives and standards and guidelines are not being met in the Big Creek drainage and the Big Creek and Big South Fork of

Bottle Creek headwaters meadows, which are available for summer use. Therefore, the Hummels permit will be adjusted through either adjusting livestock management or reducing AUMs as per desired stocking rate calculations.

The Wilsons permit is north of Bottle Creek Farms, Water Canyon, and Bottle Creek drainage. The season of use is from 04/01 to 12/15. Allotment specific objectives and standards and guidelines for Bottle Creek and its associated meadows are not being met. However, the objectives are being met in Water Canyon and the flats. Therefore, the Wilsons permit will be adjusted through either adjusting livestock management or reducing AUMs as per desired stocking rate calculations.

John Delongs permit is in the southeast corner of the allotment in the flats for the period of 09/01 to 12/01. Allotment specific objectives and standards and guidelines have been met in this area. Therefore, the AUMs will not be adjusted.

2. Livestock Grazing:

A. Delong Ranches, Inc:

Maintain the Delong permit as follows: 100 C 09/01 to 11/08 227 AUMs. Livestock use is made in the southeast portion of the allotment in the vicinity of Presnel Well (Presnel use area).

Rationale:

The active preference and season of use will be maintained at 100 C 227 AUMs and 09/01 to 11/08, respectively. Monitoring data indicated short term utilization objectives will be met at these stocking levels and season of use.

B. Hummel:

During the summer months, the Hummels run livestock south of Bottle Creek and west into the Jackson Mountains towards the Iron King Mine. During the spring/fall/winter months, the livestock are on the flats in the vicinity of the Alexander Ranch, south of the fenced private land along Bottle Creek and in the winter grounds east of the Bottle Creek road. The following alternatives will be considered:

Alternative 1:

75 C 04/01 to 05/31 150 AUMs

160 C	06/01 to 08/23	442 AUMs
160 C	10/01 to 11/30	321 AUMs
23 C	12/01 to 12/30	<u>23 AUMs</u>
	Total	936 AUMs

The following term and condition will be implemented:

An allowable use level of 50% on herbaceous and/or woody riparian species will be enforced along Big Creek and the headwater meadows. This allowable use level will dictate livestock removal from the summer use area. To determine a removal date, the Bureau, in coordination and cooperation with the permittee and interested publics, shall inspect Big Creek and/or the meadows on or before July 31. Additional inspections may be required after the initial inspection date. When the utilization level of riparian vegetation reaches 45%, the livestock operator will be given a five day notice in which to remove livestock from the allotment. Livestock use will not be authorized in the summer use area past 08/23.

Rationale:

This alternative will reduce the AUMs from 1136 AUMs to 936 AUMs, or by 18%. The stocking rates selected were based on using the desired stocking rate formula as specified by BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7. Summer use AUMs and season of use will be reduced.

Allotment specific objectives and riparian standards and guidelines are not being met in the summer use area under the present grazing system due to lack of livestock control and season long grazing occurring in meadows and creeks. Under present conditions, livestock are following the "green" up the mountain as temperatures warm up and are concentrating in areas such as the Big Creek drainage and the meadows which form the headwaters of Big Creek and Big South Fork of Bottle Creek. Analysis of stream survey data indicates long term objectives for stream habitat conditions are not being met in the upper reaches and headwaters of Big Creek and are being met in the lower and mid reaches of the creek. This is also reflected in stream functionality data gathered. The lower and mid reaches of the creek are in proper functioning condition while the upper portion and the headwater meadows are functioning at risk with a downward trend. An allowable use level of 50% along Big Creek and the headwater meadows will ensure allotment specific objectives and standards and guidelines will be met by reducing hot season grazing and allowing for a period of regrowth in the

riparian areas and by reducing livestock impacts to willows and aspen seedlings during the month of August.

Available monitoring data indicates objectives have been met in the winter grounds.

Alternative 2:

Construct a drift fence from private properties along Big Creek to private properties along Bottle Creek, following the foothills of the Jackson Mountains .

Alternative 1 will be the interim grazing system until the fence is constructed.

The grazing permit will be as follows when the drift fence is completed:

75 C	04/01 to 05/31	150 AUMs
160 C	06/01 to 08/23	442 AUMs
160 C	10/01 to 11/30	321 AUMs
23 C	12/01 to 12/30	<u>23 AUMs</u>
	Total	936 AUMs

Livestock use will occur on the flats east of the drift fence in the spring/fall use area from 04/01 to 06/19. Livestock use will not be authorized in the summer use area during this period. The summer use area is west of the proposed drift fence and includes Big Creek, Boulder Creek, and the meadows which form the headwaters of these two creeks and the south fork of Bottle Creek. The summer use area will be available for livestock use from 06/20 to 08/05. However, the period of 07/31 to 08/05 will be used to trail livestock out of the summer use area. After 08/05, livestock use will occur in the flats east of the fence and in the winter grounds.

All livestock will be actively trailed from the summer use area into the spring/fall use area.

Rationale:

This alternative will reduce the AUMs from 1136 AUMs to 936 AUMs, or by 18%. The stocking rates selected were based on using the desired stocking rate formula as specified by BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7. Summer use AUMs and season of use will be reduced.

Allotment specific objectives and riparian standards and guidelines are not being met in the summer use area under the present grazing system due to lack of livestock control and season long grazing occurring in meadows and creeks. Under present conditions, livestock are following the "green" up the mountain as temperatures warm up and are concentrating in areas such as the Big Creek drainage and the meadows which form the headwaters of Big Creek and Big South Fork of Bottle Creek.

Analysis of stream survey data indicates long term objectives for stream habitat conditions are not being met in the upper reaches and headwaters of Big Creek and are being met in the lower and mid reaches of the creek. This is also reflected in stream functionality data gathered. The lower and mid reaches of the creek are in proper functioning condition while the upper portion and the headwater meadows are functioning at risk with a downward trend. The proposed drift fence would provide livestock control and prevent season long use from occurring. The fence will provide for a significant growth period of both herbaceous and woody riparian vegetation by delaying livestock use in the summer use area until 06/20. In addition, delaying livestock use will allow the headwater meadows to dry out before livestock use occurs in this area. The meadows are at 8200 feet in elevation and usually does not lose snow cover until May. This delay will reduce soil compaction and punching in the meadows that occurs as a result of livestock entering the meadows in late spring and early summer. This will give the permittee 45 days in the summer use area. Livestock will be actively removed from the summer pasture by 08/05 and moved onto the flats and brought home by 08/23.

In addition, an early removal date in the Big Creek drainage will help meet the allotment specific objectives and functionality and habitat standards and guidelines in the Big Creek drainage and headwater meadows by eliminating season long continuous grazing and reducing hot season grazing and allowing for a period of regrowth.

Available monitoring data indicates objectives have been met in the winter grounds.

Alternative 3:

Construct a drift fence from private properties along Big Creek to private properties along Bottle Creek, following the foothills of the Jackson Mountains .

The following grazing system along with the following term and condition

shall be implemented as the interim grazing system for this alternative until the drift fence is constructed:

75 C	04/01 to 05/31	150 AUMs
160 C	06/01 to 11/30	963 AUMs
23 C	12/01 to 12/30	<u>23 AUMs</u>

Total 1136 AUMs

An allowable use level of 50% on herbaceous and/or woody riparian species will be enforced along Big Creek and the headwater meadows. This allowable use level will dictate livestock removal from the summer use area. To determine a removal date, the Bureau, in coordination and cooperation with the permittee and interested publics, shall inspect Big Creek and/or the meadows on or before July 31. Additional inspections may be required after the initial inspection date. When the utilization level of riparian vegetation reaches 45%, the livestock operator will be given a five day notice in which to remove livestock from the summer use area and onto the flats. If riding and herding practices can not keep livestock out of the Big Creek drainage after 50% utilization is achieved, livestock shall be removed until 10/01.

Upon completion of the drift fence, the final grazing system will be as follows

75 C	04/01 to 05/31	150 AUMs
160 C	06/01 to 11/30	963 AUMs
23 C	12/01 to 12/30	<u>23 AUMs</u>

Total 1136 AUMs

The Big Creek drainage will be authorized for livestock from 06/20 to 08/05. All livestock will be removed and actively trailed from the Big Creek drainage by 08/05.

Rationale:

Allotment specific objectives and riparian standards and guidelines are not being met in the summer use area under the present grazing system due to lack of livestock control and season long grazing occurring in meadows and creeks. Under present conditions, livestock are following the "green" up the mountain as temperatures warm up and are concentrating in areas such as the Big Creek drainage and the meadows which form the headwaters of Big Creek and Big South Fork of Bottle Creek. Analysis of stream survey data

indicates long term objectives for stream habitat conditions are not being met in the upper reaches and headwaters of Big Creek and are being met in the lower and mid reaches of the creek. This is also reflected in stream functionality data gathered. The lower and mid reaches of the creek are in proper functioning condition while the upper portion and the headwater meadows are functioning at risk with a downward trend.

The proposed drift fence would provide livestock control and prevent season long use from occurring in the summer use area. The fence will provide for a significant growth period of both herbaceous and woody riparian vegetation by delaying livestock use in the summer use area until 06/20. In addition, delaying livestock use will allow the headwater meadows to dry out before livestock use occurs in this area. The meadows are at 8200 feet in elevation and usually do not lose snow cover until May. This delay will reduce soil compaction and punching in the meadows that occurs as a result of livestock entering the meadows during the spring. In addition, an early removal date in the Big Creek drainage will help meet the allotment specific objectives and functionality and habitat standards and guidelines in the Big Creek drainage and headwater meadows by eliminating season long continuous grazing and reducing hot season grazing. An allowable use level of 50% being enforced before the fence is constructed will allow for objectives and standards to be met during the interim period and allow for a period of regrowth in the summer use area.

Livestock will be actively removed from the summer use area during the period of 07/31 to 08/05. This removal date will provide a significant regrowth period for herbaceous riparian species and reduce hot season grazing impacts on woody riparian species which will aid in meeting allotment specific objectives and standards and guidelines.

The drift fence will shift more AUMs out onto the flats (east of the proposed fence and south of Bottle Creek Ranches) during the late summer and fall months. Monitoring data has shown that objectives have been met with slight and light utilization and this area can accept more AUMs.

Available monitoring data indicates objectives have been met in the winter grounds and no adjustments are required.

Alternative 4

Under this alternative, livestock grazing would be authorized as follows:

<u>Use Area</u>	<u>No.</u>	<u>Period of Use</u>	<u>AUMs</u>
Upper	125 c	06/01 to 07/31	251
Alexander	50 c	06/01 to 06/14	23
Little S. Fork	50 c	06/15 to 07/15	51
Alexander	50 c	07/16 to 07/31	26
	175 c	08/01 to 08/15	86
Common	231 c	11/01 to 01/31	<u>699</u>
		Total	1136

Under this alternative, the following additional terms and conditions would be included:

Upper use area includes the portion of Big Creek above private land located in Section 11, T39N, R32E; as well as the headwater areas of Big Creek and the Big South Fork of Bottle Creek.

Livestock use of the Upper use area and Little South Fork use area is not authorized outside of the scheduled dates or above the scheduled numbers. The permittee has the flexibility of later turn out, early removal and/or reduced numbers of livestock in those areas. That flexibility allows the permittee to place those cattle that would otherwise be on the Upper use area or Little South Fork use area, onto the Alexander use area, provided multiple use objectives will be met.

Rationale:

Allotment specific objectives and riparian standards are not being met in the Upper use area under the present grazing system due to lack of livestock control and season long grazing occurring in meadows and creeks. Under present conditions, livestock are following the "green" up the mountain as temperatures warm up and are concentrating in areas such as the Big Creek drainage and the meadows which form the headwaters of Big Creek and Big South Fork of Bottle Creek. Analysis of stream survey data indicates long term objectives for stream habitat conditions are not being met in the upper reaches and headwaters of Big Creek and are being met in the lower and mid reaches of the creek. This is also reflected in stream functionality data. The lower and mid reaches of the creek are in proper functioning condition while the upper portion and the headwater meadows are functioning at risk with a downward trend. The Little South Fork of Big Creek was also documented as functioning at risk with a downward trend.

Under this alternative livestock use would not be permitted in the upper

reaches of Big Creek, nor in the headwater areas of Big Creek and the Big South Fork, after July 31. Nor would use be permitted after July 15 in the Little South Fork, which is at a lower elevation. After these dates, drying of upland grasses and higher temperatures result in the tendency for cattle to concentrate in riparian areas and also in increased use of woody species. Removal of livestock by those dates is expected to result in improved livestock distribution and allow regrowth of herbaceous vegetation where adequate soil moisture is available. Because even small numbers of cattle can result in heavy utilization of riparian vegetation during the hot season, it is important that **all** cattle be removed by those dates. The permittee is also responsible for ensuring that cattle do not drift into these areas outside the scheduled period of use.

The grazing schedule is expected to allow utilization objectives to be met and allow progress toward meeting long term allotment specific objectives and standards. The grazing schedule allows the permittee the flexibility of further reducing the period of use and numbers of cattle in the at risk riparian areas, while maintaining the stability of his grazing operation. The permittee intends to control livestock by a combination of herding and of fence construction on private land on Big Creek.

Further fence construction to facilitate livestock management will be evaluated through the project planning process.

Under this grazing schedule, permitted use is reduced 197 AUMs the spring/summer, and increased 197 AUMs in the fall/winter. Water development to facilitate the shift in grazing will be evaluated through the project planning process.

C. Hoencks:

Livestock use will be made in the vicinity of the Alexander Ranch and south of the Bottle Creek Farms in the flats (Common use area). The Hoencks run in common with the Hummels in this portion of the allotment. The following alternatives will be considered:

Alternative 1:

Maintain the Hoencks permit as follows:

70 C 04/01 to 06/30 209 AUMs
30 C 09/01 to 12/01 91 AUMs

Rationale:

Monitoring data and desired stocking rate calculations indicates that short-term utilization objectives will be met with this alternative. Monitoring data collected in 1995 and 1996 indicates that short term utilization objectives are being met for both riparian and upland habitats during the spring, early summer and fall months in the flats in the vicinity of Alexander Ranch and south of the Bottle Creek along both sides of the Bottle Creek Road. Standard and Guidelines objectives for both uplands and riparian areas are being met in this area.

Alternative 2:

The permittees submitted the following proposal:

100 C 04/01 to 06/30 300 AUMs

Rationale:

The permittee requested this use for the 1996 grazing season. Utilization data gathered at the end of the 1996 grazing year indicated slight to light utilization in the vicinity of the Alexander Ranch and south of the Bottle Creek Ranches. In addition, livestock owned by the Hummels grazed this area into the fall. This indicates short term utilization objectives will be met with this use. Standard and Guideline objectives for both upland and riparian areas are being met in this area.

D. Wilson's:

The Wilsons run livestock on the flats north of the Bottle Creek Farms, Water Canyon, and in Bottle Creek during the spring/summer/fall months and in the winter grounds during the fall and winter months.

Alternative 1:

The grazing permit will be as follows:

208 C 04/01 to 08/16 945 AUMs
208 C 10/01 to 12/15 520 AUMs

The following term and condition will be implemented:

An allowable use level of 50% on herbaceous and/or woody riparian species will be enforced along Bottle Creek and its tributaries. This allowable use level will dictate livestock removal from the summer use area. To determine a removal date, the Bureau, in coordination and cooperation with the permittee and interested publics, shall inspect Bottle Creek and/or its tributaries on or before July 15. Additional inspections may be required after the initial inspection date. When the utilization level of riparian vegetation reaches 45%, the livestock operator will be given a five day notice in which to remove livestock from the summer use area and onto the flats. The permittee shall be required to ride the Bottle Creek drainage after livestock have been removed to prevent drift back into the area.

Rationale:

This alternative reduces the stocking rate from 1771 AUMs to 1465 AUMs, or by 17%. The stocking rates selected were based on using the desired stocking rate formula as specified by BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7.

An allowable use level of 50% on Bottle Creek will ensure the short term riparian utilization objective will be met and will provide a significant regrowth period for herbaceous riparian and reduce impacts to woody riparian vegetation such as aspen and willows by decreasing hot season use in these areas. Stream survey and functionality data indicates the long term objectives and standard and guidelines for stream and riparian habitats are not being met in the upper reaches of Bottle Creek, Big South Fork of Bottle Creek and are being met in the lower to mid reaches of Bottle Creek above the private lands. This is due to the upper reaches, along with tributaries, being accessible to livestock during the hot season while the lower portions of the creek are less accessible due to the steepness of the canyon and woody riparian species such as cottonwoods and willows protecting the creek. These observations from the stream surveys are also reflected in stream functionality data gathered. The upper reaches of Bottle Creek and the Little South Fork of Bottle Creeks were found to be non-functioning to functioning at risk with a static to downward trend while the lower and mid reaches of the creek were found to be at proper functioning condition.

In addition, the short term objective of 50% utilization on stream-side vegetation along Bottle Creek and in the headwater meadows for Big Creek and the Big South Fork of Bottle Creek are not being met with heavy

utilization levels being reached. An early removal date and an allowable use level will help meet the functionality and habitat standards and guidelines in the Bottle Creek drainage by eliminating season long continuous grazing and reducing hot season grazing and allowing for a period of regrowth in these areas.

Utilization data gathered in Water Canyon and the flats north of the Bottle Creek Farms indicates that short term utilization objectives for upland and riparian habitats are currently being met with both livestock and wild horses use in the area.

Monitoring data indicates that short term utilization objectives are being met in the winter use area.

Alternative 2:

Construct a gap fence from the edge of fenced private property along Bottle Creek.

Alternative 1 will be the interim grazing system until the gap fence and water projects are constructed.

The grazing permit will be as follows:

208 C 04/01 to 08/16 945 AUMs
208 C 10/01 to 12/15 520 AUMs

The Bottle Creek drainage will be authorized for livestock from 06/01 to 07/15. All livestock will be removed and actively trailed from the Bottle Creek drainage by 07/15.

Rationale:

This alternative reduces the stocking rate from 1771 AUMs to 1465 AUMs, or by 17%. The stocking rates selected were based on using the desired stocking rate formula as specified by BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7.

The construction of the gap fence will provide livestock control and prevent drift up into the headwater area of Bottle Creek and tributaries. The gap fence may be extended to the Bottle Creek - Happy Creek Allotments boundary should inspections and monitoring studies indicate the gap fence is

not adequate in keeping livestock out the Bottle Creek drainage after 07/15.

Stream survey and functionality data indicates the long term objectives, along with standard and guidelines, for stream and riparian habitats are not being met in the upper reaches of Bottle Creek and are being met in the lower to mid reaches above the private lands. This is due to the upper reaches, along with tributaries, being accessible to livestock season long while the lower portions of the creek are less accessible due to the steepness of the canyon and woody riparian species such as cottonwoods and willows protecting the creek. These observations from the stream surveys are also reflected in stream functionality data gathered. The upper reaches of Bottle Creek, its tributaries, and the Big and Little South Forks of Bottle Creeks, were found to be non-functioning to functioning at risk with a static to downward trend while the lower and mid reaches of the creek were found to be at proper functioning condition. The gap fence may be expanded to the Bottle Creek - Happy Creek boundary fence should monitoring data and inspections determine the fence is not adequate in preventing drift into the drainage.

The short term objective of 50% utilization on stream-side vegetation along Bottle Creek is not being met with heavy utilization levels being reached. Current livestock use in the drainage is from 07/01 to 08/15. Livestock use in the drainage will be pushed back one month and will be authorized from 06/01 to 07/15. The early removal date will prevent hot season grazing impacts to the creek and associated aspen stands. Drying of upland grasses and higher temperatures can result in the tendency for cattle to concentrate in riparian areas and increase grazing impacts to woody riparian vegetation species such as willows and aspen. An early removal date will aid in meeting the functionality and habitat standards and guidelines in the Bottle Creek drainage and the headwater meadows of Big Creek and the Big South Fork of Bottle Creek by reducing hot season grazing and allowing for a period of regrowth in these areas.

Utilization data gathered in Water Canyon and the flats north of the Bottle Creek Farms indicates that short term utilization objectives for upland and riparian habitats are currently being met with both livestock and wild horses use in the area. Monitoring data indicates that short term utilization objectives are being met in the winter use area. The proposed well in the AMEX wetlands will allow for the Wilsons livestock to be removed from the Water Canyon area and onto the flats after 10/30.

The decrease in streambank cover and stability ratings from 1976 to 1996

indicate a need for recovery of streambank conditions on Big Creek. Webster and Clary (1989) recommend a graminoid utilization rate of no more than 50% on stream side riparian areas where the condition of the riparian vegetation is to be maintained, but no more than 30% on stream side riparian areas with conditions that are in need of improvement. Platts(1981) found significant riparian habitat alterations at 65% utilization levels, but no detectable impacts at 25% utilization. Elmore(1988) suggested that use of willows begins when use on herbaceous plants reaches 45% and Kaufman and others (1983) that as shift to shrub use does not occur (except in the case of highly palatable shrubs) if 4 inches of herbaceous stubble remains. Clary (1988) found that 4" stubble height generally corresponds to a use level of 37 to 44%.

Alternative 3:

Construct a gap fence from the edge of fenced private property along Bottle Creek.

The following interim grazing system will be followed until the gap fence and water projects are completed:

208 C 04/01 to 12/15 1771 AUMs

The following term and condition will be implemented during the interim grazing system:

An allowable use level of 50% on herbaceous and/or woody riparian species will be enforced along Bottle Creek and its tributaries. This allowable use level will dictate livestock removal from the summer use area. To determine a removal date, the Bureau, in coordination and cooperation with the permittee and interested publics, shall inspect Bottle Creek on or before July 31. Additional inspections may be required after the initial inspection date. When the utilization level of riparian vegetation reaches 45%, the livestock operator will be given a five day notice in which to remove livestock from the summer use area and onto the flats. The permittee shall be required to ride the Bottle Creek drainage after livestock have been removed to prevent drift back into the area.

Upon completion of the gap fence and the water projects, the final grazing system will be as follows:

208 C 04/01 to 12/15 1771 AUMs

The Bottle Creek drainage will be authorized for livestock from 06/01 to 07/15. All livestock will be removed and actively trailed from the Bottle Creek drainage by 07/15. In addition, the Bottle Creek drainage will be rested once every three years.

Rationale:

The interim grazing system implements an allowable use level of 50% utilization on the Bottle Creek riparian area until the gap fence and the water projects are completed. An allowable use level will allow for allotment specific objectives to be met and make progress to meeting standards during the interim grazing period by reducing hot season grazing and allowing for a period of regrowth. After livestock are removed, the permittee will be required to ride the Bottle Creek drainage to ensure livestock have not drifted into the area by working around the fenced private lands surrounding Bottle Creek.

The final grazing system authorizes livestock to graze in the Bottle Creek drainage from 06/01 to 07/15 and will shift more grazing onto the flats. Monitoring data indicates that objectives are being met in the flats and the area can support more AUMs. This will eliminate hot season grazing and provide a significant regrowth period for herbaceous riparian species in the Bottle Creek riparian area. In addition, with the hot season use, aspen saplings are receiving heavy utilization and the aspen stands are having poor recruitment. Currently the Bottle Creek drainage is being used from 07/01 to 08/15. Livestock grazing will be pushed back by one month with a use period of 06/01 to 07/15.

Stream survey and functionality data indicates the longer term objectives for stream and riparian habitats are not being met in the upper reaches of Bottle Creek and are being met in the lower to mid reaches above the private lands. This is due to the upper reaches, along with tributaries, being accessible to livestock during the hot season while the lower portions of the creek are less accessible due to the steepness of the canyon and woody riparian species such as cottonwoods and willows protecting the creek. These observations from the stream surveys are also reflected in stream functionality data gathered. The upper reaches of Bottle Creek, its tributaries, and the Big and Little South Forks of Bottle Creeks, were found to be non-functioning to functioning at risk with a static to downward trend while the lower and mid reaches of the creek were found to be at proper functioning condition.

The short term objective of 50% utilization on stream-side vegetation along

Bottle Creek is not being met with heavy utilization levels being reached. Drying of upland grasses and higher temperatures can result in the tendency for cattle to concentrate in riparian areas and increase grazing impacts to woody riparian vegetation species such as willows and aspen. The early removal date will prevent hot season grazing impacts to the creek and associated aspen stands will maintain and will help meet the functionality and habitat standards and guidelines in the Bottle Creek drainage and the headwater meadows of Big Creek and the headwater meadows Big South Fork of Bottle Creek by eliminating season long continuous grazing and reducing hot season grazing and allowing for a period of regrowth in these areas.

The construction of the gap fence will prevent livestock from drifting from the flats west of the Bottle Creek, around fenced private lands and up into the Bottle Creek drainage and its tributaries. The gap fence may be expanded to the Happy Creek Allotment boundary should monitoring data and inspections prove the gap fence is not adequate in keeping livestock out of the drainage after 07/15.

Utilization data gathered in Water Canyon and the flats north of the Bottle Creek Farms indicates that short term utilization objectives for upland and riparian habitats are currently being met with both livestock and wild horses use in the area. Monitoring data indicates that short term utilization objectives are being met in the winter use area. The proposed well in the AMEX wetlands will allow for the Wilsons livestock to removed from the Water Canyon area and onto the flats after 10/30.

Alternative 4

Under this alternative, livestock grazing would be authorized as follows:

<u>Use Area</u>	<u>No.</u>	<u>Period of Use</u>	<u>AUMs</u>
Spring	208 c	04/01 to 06/14	513
Bottle Creek	208 c	06/15 to 07/15	212
Bottle Hill East	208 c	07/16 to 12/15	<u>1046</u>
Total			1771

Under this alternative, the following additional terms and conditions would be included:

Grazing authorized in Bottle Creek use area does not include use in the Little South Fork of Bottle Creek or at the headwaters of the Big South

Fork of Bottle Creek.

Livestock use in Bottle Creek use area is not authorized outside of the scheduled dates or above the scheduled numbers. The permittee has the flexibility of later turn out, early removal and/or reduced numbers of livestock in Bottle Creek use area. That flexibility allows the permittee to place those cattle that would otherwise be in Bottle Creek use area, onto the Spring use area, provided multiple use objectives will be met.

Rationale:

Stream survey and functionality data indicates the long term objectives, along with standards, for stream and riparian habitats are not being met in the upper reaches of Bottle Creek and are being met in the lower to mid reaches above the private lands. This is due to the upper reaches and Big South Fork of Bottle Creek, being accessible to livestock season long while the lower portions of the creek are less accessible due to the steepness of the canyon and woody riparian species such as cottonwoods and willows protecting the creek. The upper reaches of Bottle Creek and Big South Fork were found to be non-functioning to functioning at risk with a static to downward trend while the lower and mid reaches of the creek were found to be at proper functioning condition.

Under this alternative livestock use would not be permitted in Bottle Creek, nor in the Big South Fork, after July 15. After these dates, drying of upland grasses and higher temperatures result in the tendency for cattle to concentrate in riparian areas and also in increased use of woody species. Removal of livestock by those dates is expected to result in improved livestock distribution and allow regrowth of herbaceous vegetation where adequate soil moisture is available. Because even small numbers of cattle can result in heavy utilization of riparian vegetation during the hot season, it is important that **all** cattle be removed by those dates. The permittee is also responsible for ensuring that cattle do not drift into these areas outside the scheduled period of use.

The grazing schedule is expected to allow utilization objectives to be met and allow progress toward meeting long term allotment specific objectives and standards. The grazing schedule allows the permittee the flexibility of further reducing the period of use and numbers of cattle in the at risk riparian areas, while maintaining the stability of his grazing operation. Preventing cattle from going into Bottle Creek before June 15

would be facilitated by a drift fence north of Bottle Creek.

The following terms and conditions will apply to all grazing permits:

The terms and conditions must be in conformance with the Standard and Guidelines for the Sierra Front - Northwestern Great Basin Resource Advisory Council, approved by the Secretary of Interior on February 12, 1997.

The grazing authorization with the schedule of use will be the only approved use. All other schedules, flexibilities, terms and conditions addressed in the Allotment Management Plan dated 10/26/70 are suspended.

Pursuant 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.2). Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

The authorized officer reserves the authority to modify annual grazing authorizations as long as the modification is consistent with meeting management objectives and Standards of Rangeland Health, and remains in the designated general season of use.

Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of springs, streams, meadows, riparian habitats, or aspen stands.

The permittee is required to perform normal maintenance on the range improvements as per their signed cooperative agreements/section 4 permits prior to turning out in a pasture or use area scheduled for livestock use.

The permittee's certified actual report, by pasture/use area, is due 15 days after the end of the authorized grazing period.

3. Use Areas

Establish eight use areas within the Bottle Creek Allotment. The scheduling of grazing by use area, and subsequently the permittee's report of actual use by use area, will allow more accurate assessment of management practices. The eight use areas for the Bottle Creek Allotment are identified as follows: Alexander, Lower, Little South Fork, Common, Spring, Bottle Creek, Presnel, and Bottle Hill East

(Map 2). The establishment of these use areas will improve livestock distribution, more effectively manage use, and/or improve/maintain vegetation condition. The proposed use areas and initial stocking levels by use area are necessary in order to meet the multiple use objectives and standards for rangeland health for the allotment.

4. Wildlife

Adjustment to wildlife numbers is not warranted. Reasonable numbers will remain at the level outlined in the Land Use Plan. Reasonable numbers of wildlife are as follows:

Mule Deer	70 AUM's
Pronghorn	12 AUM's
Bighorn Sheep	71 AUM's

Rationale:

Analysis of monitoring data indicates that overall, the utilization objectives for upland habitats have been met. Wildlife did not contribute to the non-attainment of utilization objectives for wetland and streambank riparian habitat. Therefore, a change in the existing wildlife populations or the existing wildlife management, within the Bottle Creek Allotment, is not warranted.

5. Wild Horses

The appropriate management level for wild horses within the Bottle Creek Allotment portion of the Jackson Mountains Herd Management Area will be 20 horses (240 AUM's). They would be managed at a range of 13 to 20 wild horses(156 to 240 AUM's).

When excess wild horses are gathered blood samples will be taken to establish genetic baseline data. This information would be compared to data collected on the population during future gathers and if a problem is identified corrective measures will be instituted.

Rationale:

Based on monitoring during 1995 and 96, which has not identified any significant problems associated with wild horse use of the range, the AML for the Bottle Creek Allotment is established at 20 adult wild horses. This is based on

the average number of horses, which is 19 horses, within the Bottle Creek Allotment from May 1995 to April 1996 by month.

The Bottle Creek Allotment AML will be 240 AUMs of the 1200 AUMs allocated to wild horses in the northern portion of the Jackson Mountain HMA. It is recognized that by itself, 20 horses in the Bottle Creek Allotment is not a genetically viable population. However, as indicated, these horses interact with horses in other allotments and this interaction should assure genetic viability. The horses within Bottle Creek Allotment will be managed in conjunction with horses in Deer Creek, Happy Creek and Wilder Quinn Allotments. AML's (Appropriate Management Levels) have been established in Happy Creek (60 head), Wilder-Quinn (10 head) and Deer Creek (10 Head) Allotments. The sum total of the AML of all allotments in the northern portion of the Jackson Mt. HMA will be the management level. Management will not be fragmented by allotment, when population levels exceed the AML in total within the total herd area then the horses will be gathered regardless of the allotment they may be inhabiting at the time of the gather.

With the establishment of AML for Bottle Creek Allotment, the wild horse population within the northern portion of the Jackson Mountains HMA will be managed in a range of 60 to 100 horses. This population range is based on AML's established through final multiple use decisions for the Happy Creek, Deer Creek, and Wilder-Quinn Allotments.

6. Range Improvement Projects:

Two raised bog areas occur in T. 39 N., R. 33 E., Section 7, NE and T. 39 N., R. 33 E., Section 6, SE. The bog in section 7 has already been fenced and a water trough installed to protect the site from livestock grazing. The present fencing and water troughs may need to be replaced. Fence the raised bog in Section 6 and install a pipeline and water either from the bog or one of the springs that is within several hundred feet of the bog.

Develop Lone Tree Spring in T.40N., R.35E., Sec 19 and install a well in the vicinity of the old AMEX wetlands.

Develop Mine Spring in T.40N., R33E., Sec 30 and install a well between the Bottle Creek Ranches and the Hoenck's Ranch in the vicinity of the Bottle Creek road.

Construct exclosure fence and/or riparian pasture around the upper portion of Big Creek to protect these habitats.

Construct a drift fence in Section 14, T40N, R32E, to facilitate preventing cattle from going into Bottle Creek early.

Construct drift fences in Section 25, T40N, R32E to facilitate management of livestock use of Little South Fork.

Construct drift fences in Section 11, T39N, R32E to facilitate management of livestock use of Boulder Creek and Big Creek.

Rationale:

These two raised bogs are unique botanical and geological features estimated to be up to 10,000 years old. Both raised bogs have been noted as being unique and in need of protection as noted from the Jackson Mountains Wildlife Inventory and Analysis written in 1973.

Developing springs or wells on the flats will aid in spreading out livestock in these areas and providing additional waters for livestock use after 07/31. The well in the vicinity of the old AMEX wetlands will allow the Wilsons livestock to graze this area after 10/30 and take pressure off the Halburg Mine area where wild horses are located.

The construction of an enclosure fence around the upper portion of Big Creek will better manage livestock use on the creek and help ensure obtainment of utilization objectives for Big Creek.

Construction of the drift fences would assist in controlling the number of livestock and period of use in riparian areas. The amount of herding would be reduced.

4. Objectives

1. Revise the following short term objectives:

- a. The objective for utilization of key streambank riparian plant species is 30% on Big Creek (POTR, PRVI POA, CAREX, and JUNCUS) and 50% on Bottle Creek and Burro Bill Creek (SALIX, POTR, PRVI, POA, CAREX, and JUNCUS).
- b. The objective for utilization of key plant species in wetland riparian habitats is 50% (SALIX, POA, and JUNCUS).

- c. The objective for utilization of key plant species in upland habitats is 50% (POSE, SIHY, CELE3, AMAL, STTH2, and AGSP).

2. Revise long term objectives to the following:

5. Improve to and/or maintain 8 acres of ceanothus habitat types by allowing for successful reproduction and recruitment in the stand.
6. Improve to and/or maintain 21 acres of mahogany habitat types by allowing for successful reproduction and recruitment within the stand.
7. Improve to and/or maintain 183 acres of aspen habitat types to ensure good reproduction and maximize recruitment within the stand.
8. Improve to and/or maintain 162 acres of riparian and meadow habitat types to ensure species diversity and quality and to maximize reproduction and recruitment of woody riparian species.
10. Improve the following stream habitat conditions, from 59% on Big Creek and 75% on Bottle Creek to an overall optimum to 60% or above.
 - a. Streambank cover 60% or above.
 - b. Streambank stability 60% or above.
 - c. Maximum summer water temperatures below 68°F.
11. Improve or maintain suitable sage grouse strutting, nesting, brood rearing, and/or wintering habitat in good condition.

The following parameters have been found to constitute optimum (good) conditions for sage grouse use:

Strutting Habitat

Low sagebrush or brush free areas for strutting and nearby areas of sagebrush having 20-50% canopy cover for loafing.

Nesting Habitat

1. Sagebrush between 7 and 31 inches in height (optimum = 16 inches)
2. Sagebrush canopy cover of 15-30% (optimum = 27%)

3. 25-35% basal ground cover
4. Average understory height of 6-7 inches (grasses)

Brood Rearing Habitat

Early Season

1. Sagebrush canopy cover of 10-21% (optimum = 14%)

Late Season

1. Meadow areas that are in functioning condition
2. Residual meadow vegetation of no less than 3-6 inches in height

Winter Habitat

1. Greater than 20% sagebrush canopy cover

4. Monitoring

The following types of monitoring data are needed to make a determination if allotment objectives and standards for rangeland health are being met/acheived.

1. Utilization
2. Actual Use
3. Climate
4. Wildlife Habitat Evaluation/Condition
5. Trend
6. Ecological Status
7. Wild Horse Census
8. Water Quality
9. Riparian Functionality
10. Stream Survey

The next evaluation should be completed in 2006.

VII CONSULTATION

A Consultation of the 1st draft evaluation is listed chronologically as follows:

April 26, 1999

Draft Evaluation sent to: Delong Ranches, Wilson Ranch, Robert and Susan Honeck, Mel Hummel, Natural Resource Defense Council, Sierra Club-Toiyabe, Wild Horse Organized Assistance, U.S. Fish and Wildlife Service, Nevada Division Of Wildlife, Resource Concepts, Humbolt County Commissioners, Winnemucca Unit-NCA, Nevada Woolgrowers Assoc., The Wilderness Society, and State Clearinghouse.

Sept. 29, 1999

Intermountain Range Consultants submitted comments on evaluation as follows:

RANGE MANAGEMENT

COMMENT: page 11

Finally, as these objectives are written, they are unclear as to whether [sic] they apply to each and every "point" on the allotment and to each and every species individually. If it is the intention that such is the case, then such intention amounts to a "first bite" philosophy to livestock management, and we object to them as being onerous, draconian, and biologically unfounded. If it is the Bureau's intention that they should apply as an allotment-wide average, or an average of all species at a particular location, then such clarification should be included in subsequent drafts of the document. Upon clarification, we reserve the right to comment further as to application.

RESPONSE:

The purpose of the short term objectives is to maintain and improve the vegetative communities and allow long term objectives to be met. Loss of individual key species from a plant community is not acceptable and overutilization of individual species is unacceptable. Therefore, we do not intend to average all species at a particular location, rather these objectives do apply to each key species.

We intend that these objectives be met throughout the allotment. We do not intend that the short term objectives apply as an allotment-wide average. We apply these objectives, in part, to determine if distribution problems are occurring. Overutilization of all or portions of the allotment is generally unacceptable. Management changes may be implemented to meet objectives on small areas, particularly those with high resource values such as riparian areas.

COMMENT: Page 21

The precipitation data should be presented as crop year precipitation data...

RESPONSE:

We agree that there are a variety of ways precipitation data can be displayed to be more useful. Crop yield indices can also be used to help account for differences in vegetative production between years.

COMMENT: Page 24

It is impossible to assign meaning to the discussion of the utilization of reaches of stream by narrative descriptions of utilization...

RESPONSE:

Use pattern maps are available for examination at the Winnemucca Field Office.

COMMENT: Page 29

Range Survey Data. This section should be eliminated from the evaluation...

RESPONSE:

This information will remain in the document. It's useful baseline data as a starting point and when ESI is re-read analysis can be done to determine which way management is leading in regards to vegetation condition.

COMMENT: Page 52-53

We object to the first term and condition. The laws are clear that BLM must manage under the objectives of the Land Use Plan, not the nebulous "health standards" of the RAC's

RESPONSE:

You are incorrect in stating that the BLM must not manage under the standards developed in consultation the RAC. The requirement that we manage under the standards is clearly demonstrated in 43 CFR 4180.2(c) which states:

The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on failing to achieve the standards and conform with the guidelines that are made effective under this section.

COMMENT: Page 52-53

We object to the second term and condition. To suspend all flexibility is to put the permittees into impossible management situations which will lead to allegations of trespass and potential action against their permits at the whim of the authorized officer.

RESPONSE:

This term and condition refers to flexibilities contained in the Allotment Management Plan dated 10/26/70, which is replaced by the management developed through the allotment evaluation process.

COMMENT: Page 52-53

We object to the third term and condition. The T&C abrogates the responsibility of the Bureau of

Land Management, and unfairly and unreasonably places such responsibility upon the permittees, who have neither the knowledge nor the statutory obligation to perform as is demanded in this T&C.
RESPONSE:

The third term and condition is required on all new authorizations, permits, and licenses, including new grazing permits, by Instruction Memorandum No. NV-97-045. Please refer to your copy of that instruction memorandum for additional information.

COMMENT: Page 52-53

We object to the language of the fourth T&C regarding "Standards of Rangeland Health". We do not object to the language as it concerns management objectives. We object to the language relating to "TNR" use requiring input from interested parties, because the language effectively denies TNR forevermore. Further, 43 CFR 4130.4 does not require consultation of the "public" so long as such use is made part of the term permits, which we urge the Bureau to do for this allotment.

RESPONSE:

This term and condition does not in any way reference temporary nonrenewable grazing permits, also referred to as TNR.. Temporary nonrenewable use is not included in grazing permits. It is not a modification, flexibility or extension of a term grazing permit, rather it is authorized under a separate permit. 43 CFR 4130.4 refers to term permits only and in no manner exempts the Bureau from consulting on nonrenewable permits. Consultation is specifically required on nonrenewable grazing permits by 43 CFR 4130.6-2.

COMMENT: Page 52-53

We object to the language of the fifth T&C. It may be necessary and effective management to place salt blocks closer than 1/4 mile from water in order to accomplish the very management objective this T&C is intended to accomplish.

RESPONSE:

If you have information indicating that it is necessary and would be effective to place salt blocks closer than 1/4 mile of springs, streams, meadows, riparian habitats or aspen stands on Bottle Creek Allotment, please provide it. In the absence of that information, this term and condition will remain unchanged.

COMMENT: Page 66-67

We object to the proposed objective 4.1.b. regarding utilization of "wetland riparian plant species". Presumably this objective deals with meadows around springs, which are crucial livestock and wildlife watering areas. This objective as written will serve only to unjustifiably reduce livestock grazing of the allotment. The objective should be re-written to include the provision that such springs will be developed and livestock water piped onto upland areas and, if necessary, the spring will be developed and livestock water piped onto upland areas and, if necessary, the springhead area will be fenced.

RESPONSE:

This objective will not be changed to include management actions that will be taken if the objective

is not met. Rather, if this objective is not met, the management action(s) would be selected from the variety of alternatives available in consultation with the permittee and other interested public.

WILD HORSE COMMENTS

COMMENT: Page 3,16, & 51

Because there were no wild horses occupying the area of the Bottle Creek Allotment as of the date passage of the Act, no wild horse Allowable Management Level (AML) should be established for the allotment, and all wild horses should be removed and restrained from returning.

RESPONSE:

In 1982 the Winnemucca District approved its Land Use Plans (LUP) for the Sonoma/Gerlach and Paradise/Denio Resource Areas. These LUP established boundaries for the Herd Management Areas (HMA) within the District. Wild horse census maps were used to show current populations and distributions of the animals. These maps were used to create boundaries using reasonable assumptions of distribution for winter and summer ranges. Those boundaries make up the HMA's including the Jackson Mountains HMA. In 1993 a portion of the Jackson Mountains Allotment was divided off to recreate the Bottle Creek Allotment, the reestablished allotment contains a portion of the Jackson Mountains HMA (7%).

The Bottle Creek Evaluation addresses setting an AML of 20 horses (240 AUMS) for the portion of the allotment that falls within the Jackson Mountains HMA. This proposed allocation for hoses is within an area identified as a wild horse distribution area through public consultation. If the permittee's had a problem with the boundaries of the HMA, those concerns should have been expressed in the consultation period for the Paradise/Denio Resource Area LUP in 1982 and subsequent decision.

WILDLIFE COMMENTS (Aquatic)

COMMENT: Page 13

The Stream Habitat Condition Objectives are not based upon stream and stream side specific potential of the stream to achieve the objective, but are rather based on a generic "optimum".

RESPONSE:

It is agreed that all streams do not have the same potential for providing fisheries habitat, but to set realistic objectives based on a percentage of an optimum standard is not arbitrary and capricious. The purpose of the objective is to provide cold water fish habitat and the quality of that habitat is based on a standard of cold water fisheries habitat needs.

Setting the objective at 70% for bank stability and bank cover may not be consistent with other allotments but Bottle Creek currently meets this objective and Big Creek is progressing towards the objective, so they are within the potential of these streams.

COMMENT: Page 35

The figures shown on Big Creek stream survey are meaningless, because the numbers and locations of stations change over time.

RESPONSE:

The location of the stations in the 1976 and 1996 surveys are the same with the exception of the upper most station which was added in the 1996 survey. The 1990 survey station were different but were within the same reaches of the stream. While these numbers are not entirely comparable, they do show general stream trend and thus provides valuable information as to the meeting of aquatic objectives.

COMMENT: Page 36

The document failed to note Station 4 (Big Creek), at the headwaters, is in a snowpack area which is not conducive to production of dense shrubs, and tall trees, nor to the production of herbaceous riparian vegetation because of its snowpack.

RESPONSE:

Data for those years can be added.

Station 4 is in the upper part of the canyon that drains the headwaters meadow complex. This area is suitable for a dense herbaceous community, as substantiated by the residual communities along this reach and there may even be potential for shrub communities which do express themselves in snow pocket areas in this range and others in the northwest portion of the district.

COMMENT: Page 37

The table for Bottle Creek needs to show the numbers for the three locations in 1989 which are the same as the locations in 1976,1992, and 1996

RESPONSE:

We can include that data.

.COMMENT: Page 38

The purpose of the stream survey is to show the overall condition upon the stream for optimum fisheries habitat.

RESPONSE:

The purpose of this write up is to show the limiting factors for this stream reach by reach and not to compare reach to reach.

COMMENT: Page 40

The document report findings of "functionality" for Big Creek and Bottle Creek at this page (40), but we do not find any supporting data within the body or appendices of the document to support the conclusions.

RESPONSE:

None of the stream survey stations are in the reach that was rated as non functioning.

COMMENT: Page 47

We take exception to the findings regarding Big Creek, because of the mish-mash of stream survey stations used to make the determination.

RESPONSE:

While the data on Big Creek in 1990 is not directly comparable to the 1976 and 1996 on a reach by reach basis it does give a trend to the stream overall and conditions specifically in 1996 were not meeting objectives for bank stability and bank cover

WILDLIFE COMMENTS (Terrestrial)

COMMENT: Page 8

Habitat Management Plan

We are not aware of any agreement or decision which placed the Habitat Management Plan into effect.

RESPONSE:

A copy of the approved HMP and consultation documents have been sent to Intermountain Range Consultants.

COMMENT: Page 9

Habitat Objectives

The wildlife habitat objectives should be reassessed and, if they were implemented by agreement/decision, should be re-addressed and changed to reflect current data over time.

RESPONSE:

Agreed. These objectives will be re-assessed as soon as soil mapping and subsequent Ecological Site Inventories are completed for this allotment. The objectives will reflect NRCS site descriptions as identified by percent composition by weight.

COMMENT: Page 10

We are not aware of any agreement or decision. which placed the aquatic Habitat Management Plan into effect.

RESPONSE:

A copy of the approved HMP and consultation documents have been sent to Intermountain Range Consultants.

COMMENT: Page 12

"Long Term Objectives".

The document does not delineate, describe, or provide maps of the areas.

RESPONSE:

Maps of the below listed areas have been provided to Intermountain Range Consultants.

1. 19,205 acres of mule deer habitat.
2. 38,898 acres of pronghorn habitat.
3. 12,536 acres of bighorn sheep habitat.

4. 8 acres of ceanothus habitat.
5. 21 acres of mahogany habitat.
6. 183 acres of aspen habitat.
7. 162 acres of riparian and meadow habitat.
8. sage grouse strutting grounds and brooding areas.

Any further maps are located at the BLM office during office hours and may be view there.

120,298 acres of purportedly poor condition rangeland. These acres are displayed on the map entitled "Livestock Vegetation Condition" located at the end of Chapter 2 of the Paradise-Denio Grazing Environmental Impact Statement.

COMMENT: Page 12

Mule Deer Actual Use.

Table 1 shows the amount of mule deer use to be significantly more then outlined in the LUP regarding carrying capacity for the allotment.

RESPONSE:

These figures are only estimates of the potential wildlife census numbers as provided by Nevada Division of Wildlife (NDOW). Fences or lack of fences, seasons, weather, burned areas, ecological site potential and present status, drought, hunting pressure, nearness to alfalfa fields, predators, and mining activity are just some of the factors which indicate where and when wildlife will be found. These census figures are useful for accessing trends in populations, generally increases or decreases, rather than the true number of animals using the allotment.

COMMENT: Page 18

Pronghorn Actual Use.

Table 2 shows the amount of pronghorn use to be significantly more then outlined in the LUP regarding carrying capacity for the allotment.

RESPONSE:

These figures are only estimates of the potential wildlife census numbers as provided by Nevada Division of Wildlife (NDOW). Fences or lack of fences, seasons, weather, burned areas, ecological site potential and present status, drought, hunting pressure, nearness to alfalfa fields, predators, and mining activity are just some of the factors which indicate where and when wildlife will be found. These census figures are useful for accessing trends in populations, generally increases or decreases, rather than the true number of animals using the allotment.

COMMENT: Page 20

Bighorn Sheep Actual Use.

Table 3 shows the amount of bighorn sheep use to be significantly more outlined in the LUP regarding carrying capacity for the allotment.

RESPONSE:

These figures are only estimates of the potential wildlife census numbers as provided by Nevada Division of Wildlife (NDOW). Fences or lack of fences, seasons, weather, burned areas, ecological

site potential and present status, drought, hunting pressure, predators, and mining activity are just some of the factors which indicate where and when wildlife will be found. These census figures are useful for accessing trends in populations, generally increases or decreases, rather than the true number of animals using the allotment.

COMMENT: Page 32

Sage Grouse

We dispute the conclusive assumption at this page that livestock are known to have adverse impacts on the condition of sage grouse summer habitat.

RESPONSE: On page 12, number 9 is a generic statement to protect sage grouse by maintaining 30% sagebrush cover. This objective may not be obtainable for most of Bottle Creek Allotment. Sage grouse populations in general have been decreasing and may be listed as a Threatened species by the Fish and Wildlife Service in the near future. If this action was to take place then major actions on Bottle Creek and other allotments may be warranted to assist the species in their recovery.

The statement that removal of old and rank vegetation are known to have positive impacts on sage grouse may in some instances be detrimental. Sage grouse need old vegetation as cover to conceal nests and newly hatched birds. Sage grouse have evolved with predators and have done well in the presence of predators so predator control may not be beneficial for sage grouse.

These sage grouse criteria have been listed to increase the understanding of the permittees and other interested parties as to what constitutes good sage grouse habitat.

On page 32 the paragraph is started by "Livestock are known to have impacts.." has been understood to mean "Livestock [always]...". We can change the text to read "Livestock may have impacts to the condition...".

COMMENT: Page 33

Sage Grouse

The document at this page cites "anonymous" literature which NDOW has referred BLM. This literature should be listed in its entirety.

RESPONSE:

First, two literature sources have been provided to Intermountain Range Consultants about the importance of understory cover to nesting sage grouse. The sources are: Summary of Proceedings, Western Sage Grouse Status Conference, Boise, Idaho, 14 January 1999 and a DRAFT of BLM Programs/Projects with High Risk Potential for Sage Grouse Management. Second, this cited literature was not based on the studies on Bottle Creek Allotment.

COMMENT: Page 34

Sage Grouse

the only management objective which exists for the allotment for sage grouse is one of 30% sagebrush cover. Measurement of that objective has apparently not been documented throughout the allotment at any time, so no conclusions can be made as to the attainment of the LUP objectives.

RESPONSE:

The second paragraph states that no measurement of sagebrush was done on the allotment at any time so no conclusion may be made. Pages 33 and 34 Table 5 state that the Canopy Cover was not met for the 20 percent parameter let along 30 percent.

COMMENT: Page 34

Sage Grouse

Whether or not the purported strutting ground requirements are met is irrelevant, because no strutting grounds apparently exist at those legal locations.

RESPONSE:

The third paragraph is in error as T40N, R32E, Section 33 is adjacent to T40N, R32E, Section 28 a known strutting ground and T40N, R33E, Section 6 is adjacent to T40N, R32E, Section 1 another known strutting ground and therefore are relevant data locations.

COMMENT: Page 34

Sage Grouse

Assuming the sampling technique is sufficient to describe all of the conditions within the 160 acre parcels, we question whether it describes all of the area within two miles of the sage grouse strutting grounds, which comprises over 2,000 acres for each strutting ground location.

RESPONSE:

The fourth paragraph says that a transect's data is not relevant outside the 160 acre parcel in which it is located. This is false as there were no major vegetation breaks between or in the area of the strutting grounds and the transect locations.

COMMENT: Page 34

Sage Grouse

Table 5 and the studies it reports cannot describe the winter habitat conditions, because the data is not taken from within the known winter grounds of the species.

RESPONSE:

The last paragraph states that the two transects cannot be used to describe the habitat adjacent to the same section or between these two transects. This is in error as the sagebrush community is consistent and relatively uniform therefore these transects are relevant for the winter habitat area.

COMMENT: Page 54-66

The available wildlife data show an excess of forage.

RESPONSE:

Refer to comments made about the mule deer, pronghorn, and the bighorn sheep populations. Everyone needs to be careful about making statements on estimates which demonstrate trends in population size rather than true numbers.

COMMENT: Page 66-67

Objectives

We object to all of the objectives relating to sage grouse habitat.

RESPONSE:

These criteria found on page 32 are the best available data available. The original 30 percent minimum sagebrush canopy cover is basically unobtainable and therefore needs to be adjusted. Through the latest studies a range of the different parameters is better. We are not proposing to reduce the livestock preference because some of the parameters are not being met. The optimum (idealized) figures are given as well as the good sage grouse habitat which are the ranges.

COMMENT: Page 66-67

We object to objective 2.c, 2.g, and 2.h...

RESPONSE:

We will delete the word "maximum" from these objectives.

- Sept. 30, 1999 Permittee meeting to discuss final evaluation and proposed decision for Bottle Creek Allotment. In attendance were John, Will, and Judy Delong, Walt Wilson, Mel and Debbie Hummel, Robert and Susan Honeck, Bob Scheigert, Gene Seidlitz, Lynnda Jackson, Bryan Fuell, and Arn Bergland.
- Dec. 8, 1999 Permittee meeting to discuss final evaluation and proposed decision for Bottle Creek Allotment. In attendance were Lynda Jackson, Arn Bergland, Robert and Susan Honeck, Mel Hummel, and Walther Wilson.

Appendix I

Desired stocking rate calculations were determined in accordance with BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 4400-7. Desired stocking rates were calculated for the spring/summer use areas using riparian and/or meadow habitats as key management areas. The desired stocking rates calculated are the stocking rate at which both riparian and upland short-term utilization objectives are expected to be met under present management.

The desired stocking rates for the remaining use areas are the stocking rates at which upland short-term utilization objectives are expected to be met under present management.

Desired Stocking Rate Formula:

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

KMA = Key Management Area - Riparian/Meadow Habitat

Winter Grazing:

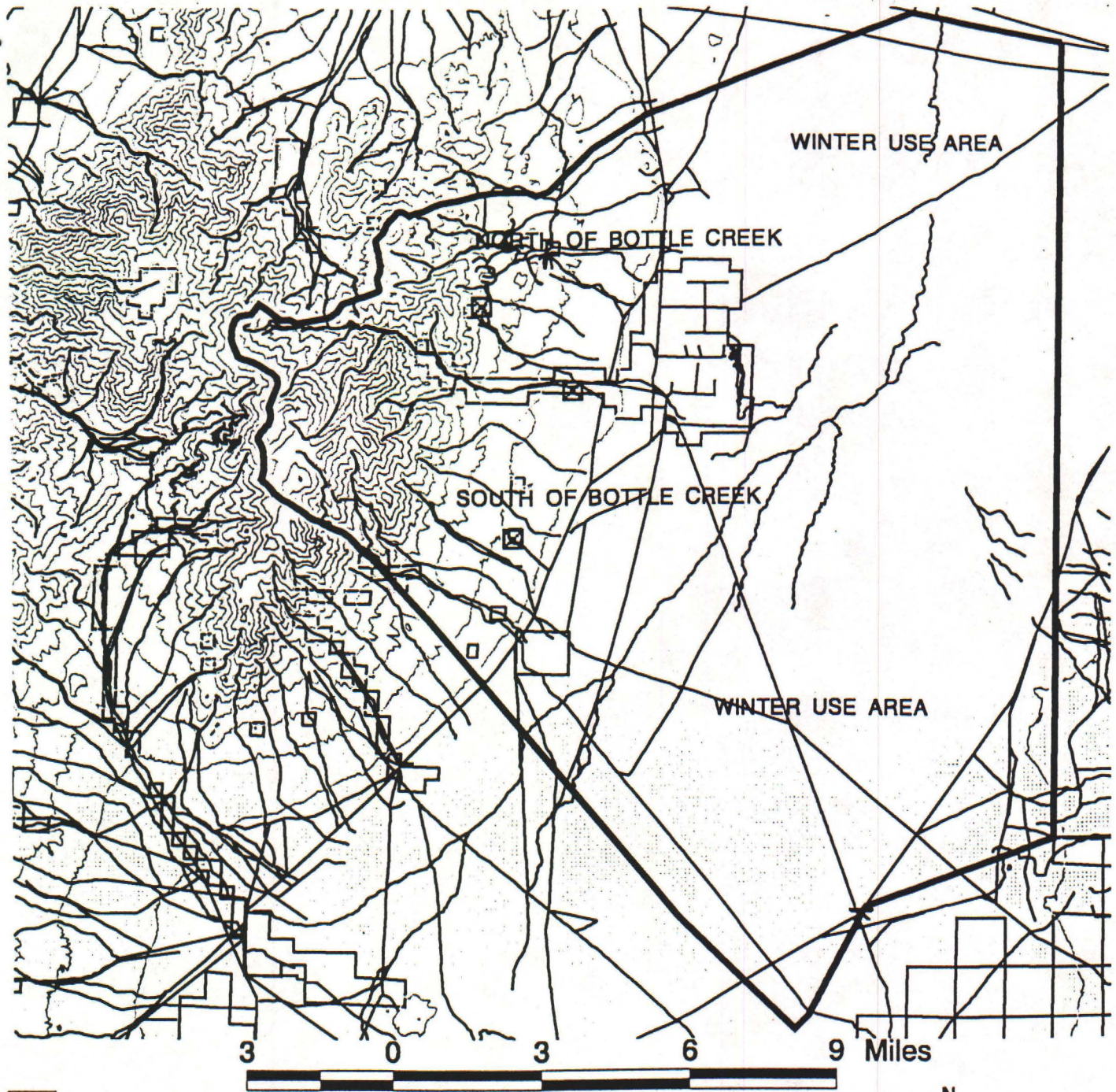
Monitoring data was not collected in the winter ranges during 1995 and 1996. However, utilization data collected in 1988 and 1989 indicates short term utilization objectives are being met in this area. Management practices and stocking levels are similar now as they were before 1994, when the transfers occurred. Therefore, no adjustments are necessary and the following AUMs are available in the winter grounds from 10/01 to 12/31:














1,152 AUMs

Spring/Summer/Fall Grazing: See attached (Appendix 1)

Appendix One - Desired Stocking Rate Calculations									
Spring/Summer/Fall Use Only									
Year: 1997					Year: 1996				
Utilization Class	%Area per UT. Class	Actual Utilization			Utilization Class	%Area per UT. Class	Actual Utilization		
70	1	70			70	1	70		
		0					0		
		0					0		
		0					0		
		0					0		
		0					0		
Sum of Actual Utilization		0.7			Sum of Actual Utilization		0.7		
Potential Stocking Rate Calculation					Potential Stocking Rate Calculation				
Year	Actual AUMs	Desired Ut. Level	Actual Ut. Level	Potential Stocking Rate	Year	Actual AUMs	Desired Ut. Level	Actual Ut. Level	Potential Stocking Rate
1997	2329	0.5	0.7	1664	1996	2224	0.5	0.7	1589
Year 1995					Year 1988				
Utilization Class	%Area per UT. Class	Actual Utilization			Utilization Class	%Area per UT. Class	Actual Utilization		
70	1	70			70	1	70		
		0					0		
		0					0		
		0					0		
		0					0		
		0					0		
Sum of Actual Utilization		0.7			Sum of Actual Utilization		0.7		
Potential Stocking Rate Calculation					Potential Stocking Rate Calculation				
Year	Actual AUMs	Desired Ut. Level	Actual Ut. Level	Potential Stocking Rate	Year	Actual AUMs	Desired Ut. Level	Actual Ut. Level	Potential Stocking Rate
1995	2125	0.5	0.7	1518	1988	3268	0.5	0.7	2334
Average Potential Stocking Rate:				1776					

APPENDIX 2 - MAP 1: BOTTLE CREEK ALLOTMENT

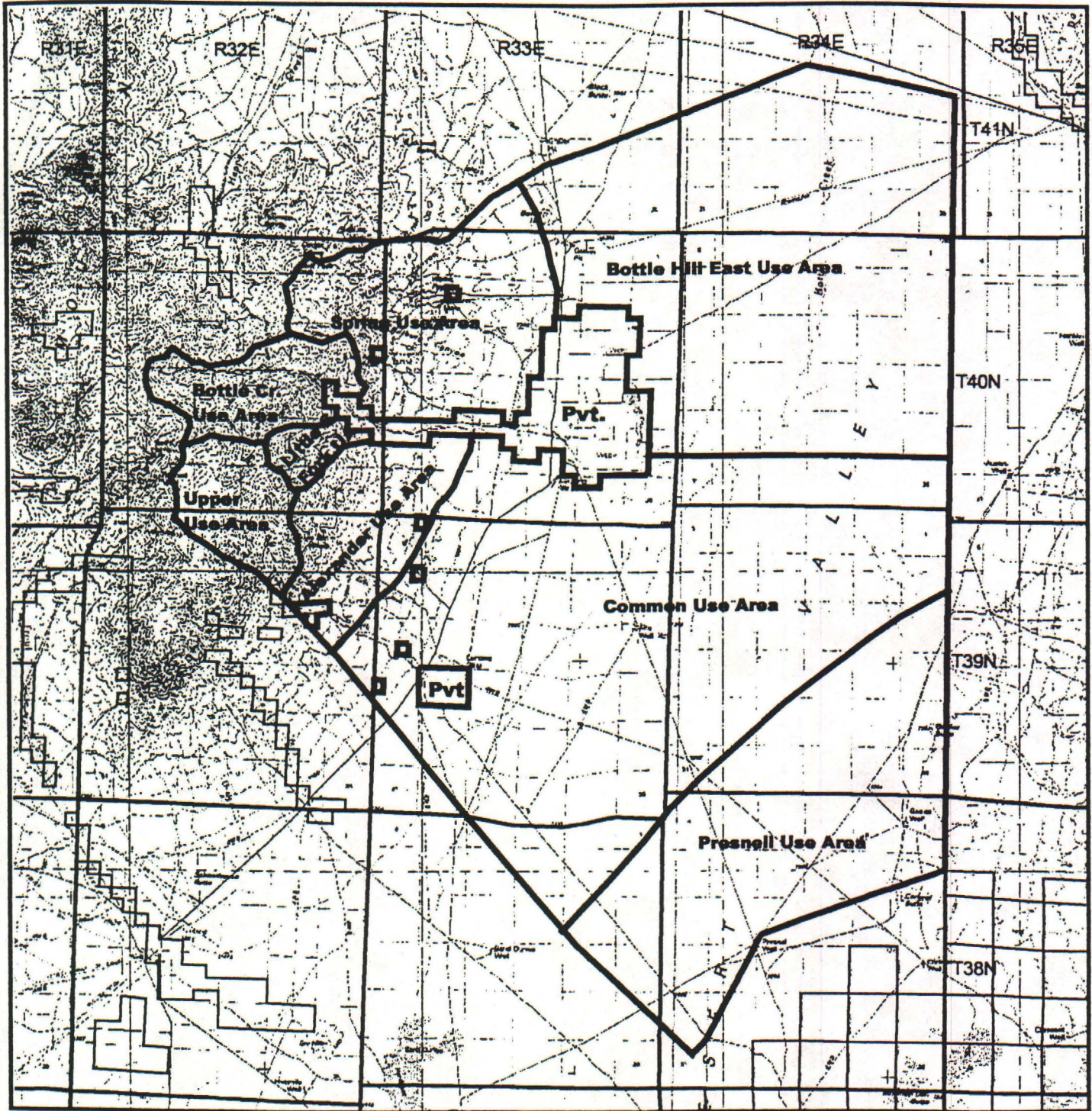


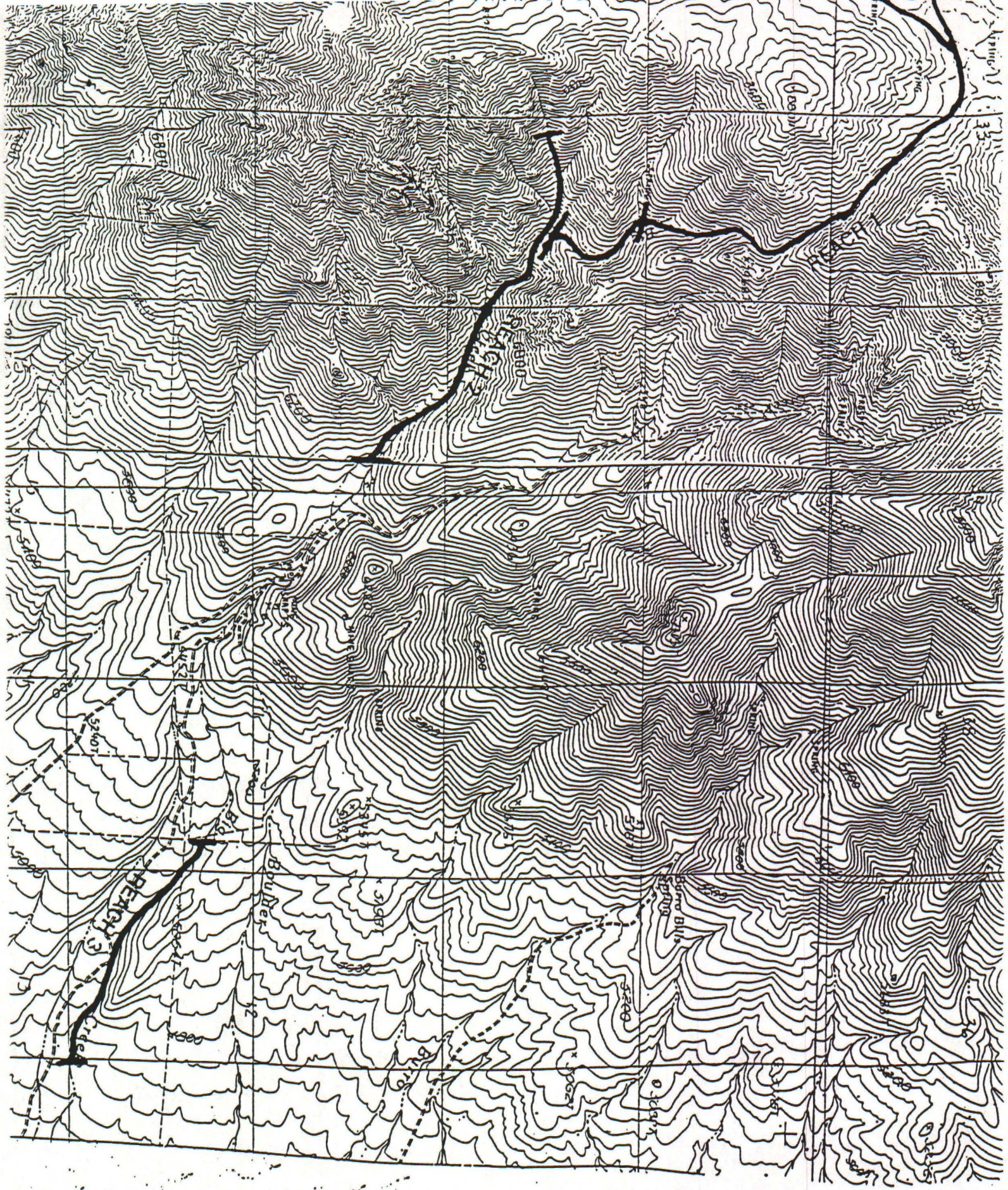
-  ALLOTMENT BOUNDARY
-  RANGE IMPROVEMENTS
-  WINDMILL
-  DEVELOPED SPRING
-  ROADS
-  CREEKS
-  CONTOUR LINES
- LANDOWNERSHIP**
-  BLM
-  BLM/PUBLIC WTR RESERVES
-  BLM/RADIO FACILITIES
-  INTERMITTENT WATER
-  NATIVE AMERICAN RESERVATIONS
-  PRIVATE LAND



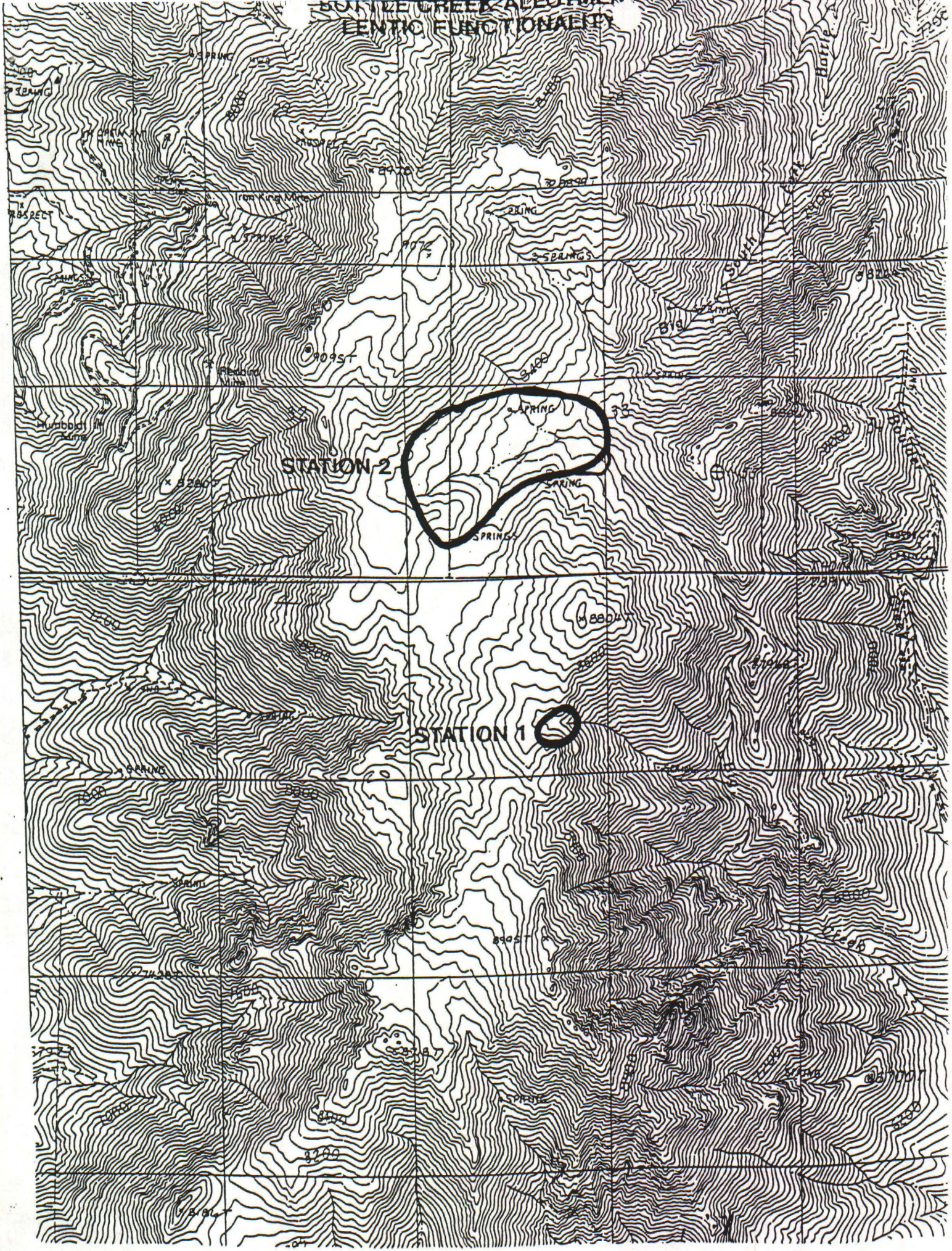
1:195000

Map 2
Bottle Creek Allotment Proposed Use Areas





BUNITE CREEK ALLEGATION
EENTIC FUNCTIONALITY



STATION 2

STATION 1