



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Winnemucca District Office  
5100 East Winnemucca Boulevard  
Winnemucca, Nevada 89445  
702-623-1500

In Reply Refer To:

(NV-026.14) 4100

June 25, 1996

CERTIFIED MAIL NO. P383116201  
RETURN RECEIPT REQUESTED

*see file*  
**PROPOSED MULTIPLE USE DECISION**  
**HOLE IN THE WALL, JERSEY VALLEY & HOME STATION GAP ALLOTMENTS**

Jerry Kelly  
P.O. Box 885  
Lovelock, Nevada 89419

Dear Mr. Kelly:

The Sonoma/Gerlach Land Use Plan (LUP), the Shoshone/Eureka Resource Management Plan (RMP) and the Lahontan RMP established the multiple use goals and objectives which guide management of the public lands in the Jersey Valley, Home Station Gap, and Hole in the Wall allotments.

In 1988 the Hole in the Wall allotment was evaluated using monitoring data to determine whether or not the RMP's objectives were being met. As a result of that evaluation an Agreement was negotiated which identified site specific objectives. The Jersey Valley and Home Station Gap allotments have never been evaluated.

Monitoring has been conducted to determine if livestock grazing, wild horse use, and wildlife use are within the objective parameters established in the LUP and RMPs. Monitoring data has been collected and analyzed to determine whether or not progress is being made in meeting the multiple use allotment objectives. In addition this information will direct changes, if any are required, in management actions to meet those objectives.

Through the allotment evaluation process the Bureau of Land Management determined that

changes in existing management are required to achieve the multiple use objectives for the allotment. Analysis of the monitoring data indicates that the existing numbers of wild horses, and the numbers and management of livestock are contributing to the failure in meeting parameters of the LUP, RMPs, and 1988 Agreement. The majority of these are utilization objectives. Analysis of wildlife data does not indicate a need for change in the existing management. Therefore, this proposed decision changes livestock management, the grazing system, establishes new or modified objectives; and establishes an Appropriate Management Level (AML) for wild horses which will result in a thriving natural ecological balance.

The draft evaluation was sent to interested parties for consultation, coordination, and cooperation purposes. Individual or group comments that were submitted were incorporated into the development of the document.

### **ALLOTMENT WIDE MULTIPLE USE OBJECTIVES**

*These apply to all three allotments unless specified otherwise.*

#### I. Short Term Objectives

- A. Utilization of key plant species in upland habitats shall not exceed 55% of current year's growth on grasses, 50% on shrubs, except where adjusted by an approved activity plan. (WL-1.7 & 1.9)
- B. Utilization of key plant species in riparian habitat shall not exceed 50%. (WL-1.10)

#### II. Desired Plant Community Objectives

Desired plant community (DPC) objectives were based on an ecological site inventory. Key management areas were selected by reviewing ecological site inventory data, use pattern mapping data, distance to available water, wild horse distribution and wildlife habitat areas.

Several monitoring sites exist in the Hole in the Wall and Jersey Valley allotments. These are located in areas that correspond to three major ecological sites and receive use from both horses and livestock. Final site selection will be made by an interdisciplinary team and affected interests. Percentages may need to be slightly adjusted once locations are finalized.

##### Hole in the Wall Allotment

- A. On Ecological Site 027XY018 within site writeup area (SWA) I140, at monitoring site #5 (T. 24N., R.38E., Sec. 28) increase similarity to potential from 38% to 45% by the year 2003 or after three grazing cycles. Desired species most likely to increase are bud sage, Indian ricegrass, and globemallow.

- B. On Ecological Site 027XY027 within site write up area (SWA) I113, at monitoring site #3 (T.23N.,R.39E., Sec. 12) increase similarity to potential from 32% to 40% by the year 2003 or after three grazing cycles. Desired species most likely to increase are bud sage, Indian ricegrass, globemallow, and desert needlegrass.
- C. On Ecological Site 027XY007 within site write up area (SWA) I107, at monitoring site #7 (T.24N.,R.40E., Sec. 29) increase similarity to potential from 31% to 40% by the year 2003 or after three grazing cycles. Desired species most likely to increase are Sandberg bluegrass, bottlebrush squirreltail, and globemallow.

#### Jersey Valley

- A. On Ecological Site 027XY018 within site write up area (SWA) C223, at monitoring site (T.25N.,R.38E., Sec. 28) increase similarity to potential from 48% to 55% by the year 2003 or after three grazing cycles. Desired species most likely to increase are bud sagebrush, Sandberg bluegrass, and globemallow.
- B. On Ecological Site 027XY013 within site write up area (SWA) C234, at monitoring site (T.25N.,R.38E., Sec. 22) maintain similarity to potential at 53%.
- C. On Ecological Site 024XY002 within site write up area (SWA) C210, at monitoring site (T.26N.,R.40E., Sec. 4) maintain similarity to potential at 61%.

### WILDLIFE MANAGEMENT

Based on the interpretation and analysis of the monitoring data, consultation with the interested public, and staff technical recommendations, no adjustment in wildlife use or numbers is necessary to meet multiple use objectives. Wildlife habitat will be managed as outlined in the Land Use Plan, Resource Management Plans and in accordance with the objectives in this decision.

**As a result of this process my proposed decisions are as follows:**

**Carrying Capacity**

The combined carrying capacities for livestock and wild horses to achieve these objectives are:

**Hole in the Wall**

Livestock            1224 Aums  
 Wild Horses        851 Aums  
                              2075 Aums

**Jersey Valley**

Livestock            917 Aums  
 Wild Horses        1781 Aums  
                              2698 Aums

**Home Station Gap**

Livestock            934 Aums  
 Wild Horses        677 Aums  
                              1611 Aums

The carrying capacity between livestock and wild horses is based on LUP and RMP ratios.

**LIVESTOCK MANAGEMENT**

Based on the evaluation of monitoring data for the Hole in the Wall, Home Station Gap, and Jersey Valley Allotments, consultation with the permittee and other affected interests, it is my proposed decision to change the livestock management as follows:

**FROM:**

1. Grazing Preference (Aums)

	Hole in the Wall	Home Station Gap	Jersey Valley
Total Permitted Use	2,675	994	2912
Historical Suspended Pref.	0	0	1331
Permitted Active Pref.	2,675	994	1581
Exchange of Use	0	0	0
Season of Use	11/1 - 3/31	4/1 - 10/31	3/1 - 2/28 10/1 - 2/28

2. Number, Class of Livestock

Hole in the Wall 535 cow/calf  
 Home Station Gap 142 cow/calf  
 Jersey Valley 87 cow/calf  
 109 cow/calf

3. Percent Federal Range 100%

TO:

1. Grazing Preference (AUMs)

	Hole in the Wall	Home Station Gap	Jersey Valley
Total Permitted Use	1224	934	917
Historical Suspended Pref	0	0	1331
Permitted Active Pref.	1132	914	914
Exchange of Use	0	0	0
Season of Use	12/1 -4/30	5/1 - 7/31 8/1 -11/30	8/1 -11/30 5/1 - 7/31

2. Number, Class of Livestock

Hole in the Wall 228 cow/calf  
 Home Station Gap 228 cow/calf  
 Jersey Valley 228 cow/calf

3. Percent Federal Range 100%

## Grazing System

228 Total number of livestock

	Hole in the Wall	Home Station Gap/ Jersey Valley- East Side	Jersey Valley- West Side
Year 1	12/1 to 4/30 1132 Aums.	5/1 to 7/31 690 Aums	8/1 to 11/30 914 Aums
Year 2	12/1 to 4/30 1132 Aums	8/1 to 11/30 914 Aums	5/1 to 7/31 690 Aums

The permittee will be allowed 10 days to move between allotments. Moves will be permitted 5 days on either side of the begin date and trailing will be permitted through Jersey Valley if required. This system will be put in place on December 1, 1996.

### Rationale:

This system proposes using the three allotments as pastures. This would give Home Station Gap and Jersey Valley allotments spring deferment every other year. During the years that Home Station Gap is used from 8/1 to 11/30, livestock use will be permitted on the east side of Jersey Valley (as drift). On the years when Jersey Valley is used from 5/1 to 7/31, livestock use will be restricted to the west side of the allotment (from Jersey Valley Wash west). Hole in the Wall allotment will remain a winter use allotment. Riparian areas in Home Station Gap and Jersey Valley allotments will benefit by having rest from hot season use every other year. This also allows the permittee to maintain a year round operation while not maintaining continuous use on any one allotment.

### *Terms and Conditions*

A new ten year permit will be issued when the Final Multiple Use Decision process is concluded. The following terms and conditions will be incorporated into the permittee's term permit and annual authorizations via the grazing bill:

1. Grazing use will be in accordance with this grazing decision.
2. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of springs, streams, meadows, or aspen stands.
3. The permittee is required to perform normal maintenance on the range improvement projects which have been assigned to the permittee for maintenance responsibility.
4. Actual Use grazing reports are due within 15 days after completing your annual grazing use.
5. 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.

### *Authority*

The authority for this decision is contained in Title 43 of the Code of Federal Regulations; pertinent citations are below:

- 4100.0-8                      Land use plans - The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans. Land use plans shall establish allowable resource uses (either singly or in combination), related levels of production or use to be maintained, areas of use, and resource condition goals and objectives to be obtained. The plans also set forth program constraints and general management practices needed to achieve management objectives. Livestock grazing activities and management actions approved by the authorized officer shall be in conformance with the land use plan as defined at 43 CFR 1601.0-5(b).
- 4110.3                         Changes in permitted use- The authorized officer shall periodically review the permitted use specified in a grazing permit or grazing lease and shall make changes in the permitted use as needed to manage, maintain, or improve rangeland productivity, to assist in restoring ecosystems to properly functioning condition, to conform with land use plans or activity plans, or to comply with the provisions of subpart 4180. These changes must be supported by monitoring, field observations, ecological site inventory or other data acceptable to the authorized officer.
- 4120.3-1(a)                   Conditions for range improvements - Range improvements shall be installed, used, maintained,

and/or modified on the public lands, 4130.3-1(a)Mandatory terms and conditions - The authorized officer shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal unit months, for every grazing permit or lease. The authorized livestock grazing use shall not exceed the livestock carrying capacity of the allotment.

4130.3-2

Other terms and conditions - The authorized officer may specify in grazing permits or leases other terms and conditions which will assist in achieving management objectives, provide for proper range management or assist in the orderly administration of the public rangelands.

4130.3-3

Modifications of permits or leases - Following consultation, cooperation, and coordination with the affected lessees or permittees, the State having lands or responsible for managing resources within the area, and the interested public, the authorized officer may modify terms and conditions of the permit or lease when the active grazing use or related management practices are not meeting the land use plan, allotment management objectives, or is not in conformance with the provisions of subpart 4180. To the extent practical, the authorized officer shall provide to affected permittees or lessees, States having lands or responsibility for managing resources within the affected area, and the interested public an opportunity to review, comment and give input during the preparation of reports that evaluate monitoring and other data that are used as a basis for making decisions to increase or decrease grazing use, or to change the terms and conditions of a permit or lease.



## WILD HORSE MANAGEMENT

Establish appropriate management levels for the Augusta Range HMA within the Hole in the Wall, Home Station Gap, and Jersey Valley Allotments.

<u>Augusta Mountain HMA</u>	<u>75% of AML to AML</u>	<u>AUMS</u>
Hole in the Wall	53 to 71	636 to 851
Home Station Gap	42 to 56	508 to 677
Jersey Valley	111 to 148	1332 to 1781

Maintain and improve the free-roaming behavior of wild horses by protecting their home range and assuring free access to water.

### *Authority*

The authority for this decision is contained in Sec. 3(a), 3(b)(1), and 3(b)(2) of the Wild-Free-Roaming Horse and Burro Act (P.L. 92-195) as amended and in Title 43 of the Code of Federal Regulations:

- 4700.0-6(a)            **Policy** - Wild horses and burros shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat.
- 4710.3-1            **Herd Management Areas** - ...In delineating each herd management area, the authorized officer shall consider the appropriate management level for the herd, the habitat requirements of the animals, the relationships with other uses of the public and adjacent private lands, and the constraints contained in 4710.4.
- 4710.4            **Constraints on Management** - Management of wild horses and burros shall be undertaken with the objective of limiting the animals' distribution to herd areas. Management shall be at the minimum level necessary to attain the objectives identified in approved land use plans and herd management areas plans.
- 4720.1            **Removal of Excess Animals from Public Lands** - Upon examination of current information and a determination by the authorized officer that an excess of wild horses or burros exists, the authorized officer shall remove the excess animals immediately...

## *FUTURE MONITORING AND GRAZING ADJUSTMENT*

The Winnemucca District will continue to monitor the Hole in the Wall, Home Station Gap, and Jersey Valley Allotments to provide the necessary information to determine if the allotment specific objectives are being met under the new grazing strategy. An annual report will be written to analyze the previous year's monitoring data and current conditions in order to make recommendations and/or adjustments for the upcoming grazing year. The allotments are scheduled for re-evaluation in 2003.

### *PROTEST PROCEDURES*

Any applicant, permittee, lessee, or other interested may protest this proposed multiple-use decision under Section 43 CFR 4160.2, in person or in writing to:

Assistant District Manager  
Division of Renewable Resources  
Bureau of Land Management, Winnemucca District  
5100 E. Winnemucca Blvd.  
Winnemucca, NV 89445

within 15 days after receipt of such decision. The protest should clearly and concisely state the reason(s) as to why the proposed decision is in error.

Subsequent to the protest period, a final multiple-use decision will be issued specifying the appeal procedures.

If you have any questions, please contact Leigh Redick at (702) 623-1500.

Sincerely yours,



Colin P. Christensen, Assist. District Manager  
Division of Renewable Resources

The Jersey Valley, Hole in the Wall, and Home Station Gap Allotments have been administered by the Carson City, Battle Mountain, and Winnemucca Districts, in conjunction or separately, in an attempt to find the most efficient administration for this area. Several Memorandums of Understanding have been in effect since 1976. In 1995 it was agreed that the Winnemucca District would manage the livestock, wild horses, wildlife, and wilderness values in these allotments.

This document will evaluate the actual use, climate, utilization, ecological site inventory, trend, threatened and endangered species, riparian, and wildlife habitat data to determine the effectiveness of the present management. The 1988 Hole in the Wall evaluation and livestock agreement, and Land Use Plan objectives are addressed to determine whether allotment specific objectives have been met or not met and if the objectives are still appropriate. Those objectives that are carried forward may be requantified and management actions developed to ensure their achievement. The evaluation will be the basis for the Final Multiple Use Decision.

This evaluation is by allotment, but there are several sets of data which are common to all three allotments. This information has been placed in the appendices.

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# *Hole in the Wall*





## II. INITIAL STOCKING RATE

### A. Livestock Use:

1. Total Preference 2,675 AUMs  
Active Preference 2,675 AUMs  
Suspended Preference -0-
2. Season of Use  
November 1 to March 31
3. Kind and Class of Livestock  
Cattle, cow/calf operation
4. Grazing System

There is no systematic movement of cattle employed, normal season of use is from November 1 to March 31. There are no pastures, use is determined largely by whether or not water is available. When livestock enter the allotment, they locate around water sources, then range out depending on the amounts of snow available. Little to no use is made in the highest elevations by cattle, but they do use the foothill area and valley floors.

### B. Wildlife Use:

1. Reasonable Numbers (from Lahontan Resource Management Plan)  
Mule Deer - (*Odocoileus hemionus*) - 57 AUMs
2. Key or Critical Management Areas within the allotment.  
There have been none identified.

### C. Wild Horse Use:

Initial stocking level for wild horses from the Lahontan RMP.

	<u>Wild Horses</u>	
	Number	AUMs
Augusta Mountain HMA	155	1,860

### III. ALLOTMENT PROFILE

#### A. Description

The Hole in the Wall Allotment is a typical salt desert shrub winter use allotment. The majority of the country is foothill type terrain of the Augusta Mountains which includes alluvial fans at the lowest elevations. Vegetation is sparse; typical of the average 4-6" precipitation the allotment receives. Natural water is limiting. The allotment boundary is not completely fenced. Livestock are controlled by natural terrain except on the north portion of the common boundary with Jersey Valley Allotment.

#### B. Acreage

		Land Status	
<u>Public Land</u>	<u>Percent</u>	<u>Other Land</u>	<u>Total</u>
84,171	100%	0	84,171

Acreages derived from the Geographic Information System total for the Hole in the Wall Allotment.

#### C. Allotment Objectives from the 1988 Grazing Agreement

##### 1. Vegetation Objectives

- a. Improve current ecological condition on key sites (Ref. to Allotment Evaluation 1988).
- b. Obtain proper utilization on key species in key areas, 55% current years growth on grasses, 50% on shrubs.
- c. Obtain proper spring growing season utilization of 25% of current years growth on key grass species in key areas on 11/1.

##### 2. Livestock Objectives

Initially provide forage for the grazing preference of 2,675 AUMs. Long term cattle use will be determined through analysis of monitoring data and will be consistent with the attainment of vegetation and multiple use objectives. (Ref. to Allotment Evaluation)

##### 3. Wildlife Objectives

- a. Provide for reasonable numbers of deer (57 AUMs) in habitat rated in fair or better condition.

- b. Achieve and maintain late ecological status on two spring sources.

4. Wild Horse Objectives

- a. Maintain (adjudicated) 760 AUMs for wild horses. (Ref. Allot. Eval. 1988)
- b. Initially provide habitat for 155 horses in the Augusta Mountain Herd area (that portion within Carson City District). Long term horse use will be determined through analysis of monitoring data and will be consistent with the multiple use objectives for the allotment.

**IV. MANAGEMENT EVALUATION**

A. Summary of Studies Data

1. Actual Use

Actual Use means where, how many, what kind or class of animals, and how long the animals graze on an allotment.

- a. Livestock

=====

Table #1. Actual use for the Hole in the Wall Allotment.

Grazing Year	Ave. Lvstk Number	Begin	End	AUMs
1988	204	11/3/88	3/31/89	997
1989	NA*	NA*	NA*	NA*
1990	180	11/11/90	4/3/90	854
1991	131	11/3/91	4/3/92	655
1992	102	11/1/92	4/13/93	554
1993	167	11/7/93	4/10/94	851
1994	125	11/8/94	4/15/95	628

NA - Not available

**Evaluation of Table 1**

Livestock use has varied from 21% to 37% of active preference through this evaluation period due to fluctuations in the annual livestock operation. Average

use over this period of time has been 757 aums or 28% of active preference. 1989 data is unavailable.

b. Wildlife Population Estimates and Trend

Nevada Division of Wildlife (NDOW) biologist, Philip Benolkin, has provided the wildlife population and adult to fawn ratio data by allotment. Use by mule deer in the allotment is yearlong. Mule deer numbers were estimated using a population model.

These methods of estimating existing numbers have several shortcomings when weighed as an indication of habitat condition or actual use. Mule deer are a highly mobile species, and may use different locations each year as a result of weather conditions, forage availability, water distribution, and stress.

Table #2 Unit 183			Mule Deer Ratios Fawns/100 Adults	
Year	Population estimates	AUMs	Spring	Fall
1989	3	9	ND*	56
1990	4	12	ND*	30
1991	5	15	30.5	ND*
1992	5	15	42.3	32.1
1993	5	15	25.9	30
1994	5	15	ND	ND

\* No Data

c. Wild Horse Use

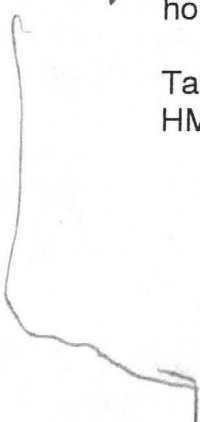
Wild horse actual use has been determined based on census flights. 1991 actual use is adjusted to reflect the removal of 497 horses in February.

Table #3. Wild Horse Actual Use for the portion of the Augusta Mtn HMA in the Hole in the Wall Allotment.

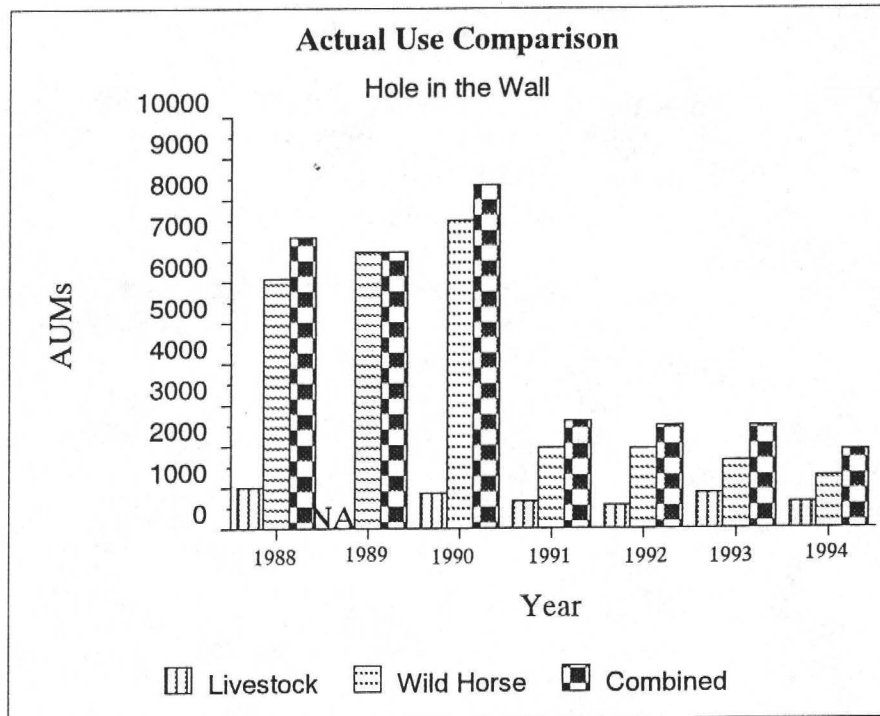
Year	Horse Numbers	AUMs
1988	507	6084
1989	560	6720
1990	625	7500
1991	162	1944
1992	161	1932
1993	136	1632
1994	105	1260
1995	125	1500

Re-structure

decline #



The following graph compares livestock and wild horse use during the evaluation period.



2. Climate

See Appendix A.

3. Utilization

Use Pattern Maps were used to determine levels of use within the allotment. The procedures used to collect this data can be found in the Nevada Rangeland Monitoring Handbook and BLM Handbook TR-4400-3. These data are used to document the effectiveness of management and determine carrying capacity. Summary of the data is depicted below. The actual data and maps can be found in the resource area monitoring files.

*Hole in the Wall Allotment*

<u>Date Mapped</u>	<u>Use Class</u>	<u>Acres</u>	<u>Percent *</u>
<u>1992 Combined Use</u>			
4/93	Light <sup>4</sup>	8,108	13
	Moderate <sup>5</sup>	21,985	34
77% of allotment mapped	Heavy <sup>7</sup>	31,867	49
	Severe <sup>8</sup>	2,799	4
<u>1993 Wild Horse Use Only</u>			
10/93	No apparent use	59	1
	Slight	23,558	53
52% of allotment mapped	Light	13,174	30
	Moderate	5,810	13
	Heavy	1,313	3
<u>1993 Combined Use</u>			
4/94	Heavy	69,120	100
82% of allotment mapped			
<u>1994 Wild Horse Use Only</u>			
11/94	Light	19,840	31
	Moderate	44,160	69
76% of allotment mapped			

\* This is the percentage of the total area mapped, not the percentage of the allotment in the use class.

4. Trend

There are two photo trend plots within the allotment which are photographed on a five-year cycle. They have not been photographed during the evaluation period. There is also one frequency transect within the allotment which has not been read during the evaluation period.

B. Ecological Site Inventory

An ecological site is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. An ecological site is the product of all environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differ from that of other range sites in the kind or proportion of species or in total production.

Ecological sites are a basic component of rangeland inventories. They are ecological subdivisions into which rangeland is divided for study, evaluation, and management. The ecological site map provides the basic ecological data for

planning the use, development, rehabilitation, and management of the rangeland.

Ecological site information can be interpreted as to suitability of a site for a single use as grazing or for many other uses such as: wildlife habitat, recreation, natural beauty, watershed, and open space. Ecological Site Inventory (ESI) data was used to develop Desired Plant Communities (DPC). Desired Plant Communities are the plant communities that produce the kind, proportion and amount of the vegetation necessary for meeting or exceeding the Land Use Plan goals and activity plan objectives established for the site.

An ecological status inventory was completed during the 1984 field season. The following lists the acres and percentage by seral stage for the allotment.

<u>Seral Stage</u>	<u>Acres</u>	<u>Percentage</u>
Early	13,317	16
Mid	67,156	79
Late	1,142	1
Potential	0	0
Barren	2,556	3

The following table summarizes the characteristics of the predominate ecological sites within the allotment.

Site Number & Name	Total annual air-dry production	Seral Stage	Acreage / % of Site	Lifeform percentages at PNC
027XY007 loamy slope 8-10" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 50 %
	Favorable yrs 700	Late	1142 ac / 12%	Forbs - 5 %
	Normal yrs 500	Mid	8121 ac / 83%	Shrubs - 45 %
	Unfavorable yrs 300	Early	463 ac / 5%	
027XY018 gravelly loam 4-8" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 30 %
	Favorable yrs 400	Late	0 ac / 0%	Forbs - 5 %
	Normal yrs 250	Mid	32808 ac / 76%	Shrubs - 65 %
	Unfavorable yrs 100	Early	10151 ac / 24%	
027XY027 barren gravelly slope 4- 8" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 40 %
	Favorable yrs 200	Late	0 ac / 0%	Forbs - 5 %
	Normal yrs 100	Mid	7367 ac / 100%	Shrubs - 55 %
	Unfavorable yrs 50	Early	0 ac / 0%	

Following is a brief description of each major ecological site.

Ecological Site 027XY007

This site occurs on sideslopes of rock pediments, rolling hills, and lower mountains on all exposures. Twelve percent of the allotment is made up of this site. Elevations are 5000 to 6500 feet. At lower elevations, this site is restricted to steep, northerly aspects. Slope gradients of 30 to 50 percent are most typical. The potential plant community is dominated by Wyoming big sagebrush and



Thurber needlegrass. Where management results in abusive livestock use, Wyoming big sagebrush and Douglas rabbitbrush increase. With further decline in site condition, Thurber needlegrass becomes scarce and Sandberg bluegrass and bottlebrush squirreltail are dominant in the shrub understory. With further degradation, cheatgrass, horsebrush, Nevada ephedra and rabbitbrush often form the dominant vegetation with Wyoming big sagebrush. Species likely to invade this site are cheatgrass and annual forbs. Most of these sites on the allotment are dominated by shrubs with very few grasses or forbs. Thurber needlegrass was absent or made up less than 5% on all transects. The sites in early seral condition were lacking Wyoming sagebrush.

#### Ecological Site 027XY018

This site occurs on piedmont slopes. Slopes range from 0 to 30 percent. Elevations are 3400 to 5000 feet. Fifty-one percent of the allotment is made up of this site. The potential plant community is dominated by Bailey greasewood, shadscale and Indian ricegrass. As ecological condition deteriorates, Bailey greasewood and shadscale will increase while Indian ricegrass and other palatable grasses and shrubs decrease. Species most likely to invade this site are cheatgrass and annual mustards. In Hole in the Wall these sites are mostly in a mid condition due to the presence of shadscale and Bailey greasewood, which dominate this site throughout the allotment. Indian ricegrass and bud sagebrush palatable are generally scarce on this site.

#### Ecological Site 027XY027

This site occurs on sideslopes of lower mountains and hills and on sideslopes of dissected, erosional fan remnants. Slope gradients of 30 to 50 percent are most typical. Elevations are 4000 to 5500 feet. Nine percent of the allotment is made up of this site. The potential native plant community is dominated by shadscale and Indian ricegrass. As ecological condition deteriorates due to surface disturbance such as erosion, horsebrush and Douglas rabbitbrush increase while shadscale and perennial grasses decrease. Species likely to invade this site are cheatgrass and annual mustards. Perennial grasses are scarce on this site while shadscale is the major component.

#### C. Wildlife Habitat

There has been no critical or crucial habitat identified. Mule deer habitat condition and trend studies have not been completed for the allotment. Limited habitat supports small populations of mule deer, chukar partridge, mourning dove, and numerous nongame species. There has been no sage grouse habitat identified in the Hole in the Wall Allotment.

D. Water Inventory

The water inventory for the Hole in the Wall Allotment does not show any new springs or seeps that could be developed to improve management of the allotment. Some water sources bordering the allotment have been proposed as developments if they could be piped into the allotment.

E. Fisheries Habitat

The Lahontan RMP did not identify any fisheries habitat in the Hole in the Wall allotment.

F. Wild Horse Distribution

Aerial distribution maps are on file in the District Office. Appendix B shows the results of each distribution flight, the date flown and the number of horses observed. Carson City District horses are usually found in the foothills with a few on the flats and a few tending toward upper elevations all seasons of the year. They can sometimes water at Hole In The Wall well number 2, Tom's Well, the McCoy Mine, and at water haul locations when the cattle are in the allotment. Otherwise they water at small seeps in the foothills or across the district boundary at some of the springs in the southern portion of the Winnemucca part of the HMA. Movement is not seasonal and is driven by water and forage needs.

G. Wild Horse Removal Data

497 horses were removed from the Hole in the Wall Allotment in February of 1991.

H. Threatened and Endangered Species

To date there have been no Threatened, Endangered, or Sensitive species identified in the Hole in the Wall Allotment, but the U.S. Fish and Wildlife Service has identified a list of candidate species that may occur in this allotment. These are listed in Appendix C with their candidate status.

I. Riparian

There is very little riparian habitat in the Hole in the Wall Allotment. There was none identified through the Ecological Site Inventory and there are approximately five acres in the entire allotment occurring around the few known spring sources. Lentic functionality assessment has not been performed on any springs in the allotment.

## V. EVALUATION OF OBJECTIVES/CONCLUSIONS

### A. Allotment Objectives from the 1988 Grazing Agreement

#### 1. Vegetation Objectives

- a. Improve current ecological condition on key sites (Ref. to Allotment Evaluation 1988).

Unable to determine. The ecological condition at key sites has not been determined during this evaluation period. Use pattern mapping data collected during this time period indicates that the ecological condition on key sites has probably not changed.

- b. Obtain proper utilization on key species in key areas, 55% current years growth on grasses, 50% on shrubs.

Not met. Use on grasses at key areas exceeded 55% in 1992 and 1993, but were met in 1994.

- c. Obtain proper spring growing season utilization of 25% of current years growth on key grass species in key areas on 11/1.

Not met. This limit was exceeded in 1993 and 1994.

#### 2. Livestock Objectives

Initially provide forage for the grazing preference of 2,675 AUMs. Long term cattle use will be determined through analysis of monitoring data and will be consistent with the attainment of vegetation and multiple use objectives. (Ref. to Allotment Evaluation)

Not met. Livestock have not used the allotment at this level during the evaluation period.

#### 3. Wildlife Objectives

- a. Provide for reasonable numbers of deer (57 AUMs) in habitat rated in fair or better condition.

Unknown. According to data provided by NDOW, deer have been below this level during the evaluation period.

- b. Achieve and maintain late ecological status on two spring sources.

Unknown. Both spring sources, Rose Spring and Hole in the Wall Spring were fenced. Rose Spring is still fenced and should be progressing toward the goal. Hole in the Wall Spring was fenced until about 1993 when the fence was removed by an unknown party. Presently, the condition is not as bad as described in the 1988 evaluation so it is likely that it is progressing toward the objective.

4. Wild Horse Objectives

- a. Maintain (adjudicated) 760 AUMs for wild horses. (Ref. Allot. Eval. 1988)

Met. AUM use by wild horses has exceeded this level for the entire evaluation period.

- b. Initially provide habitat for 155 horses in the Augusta Mountain Herd area (that portion within Carson City District). Long term horse use will be determined through analysis of monitoring data and will be consistent with the multiple use objectives for the allotment.

Not met. Although horse numbers have ranged from 625 to 105, other objectives have not been met because of the numbers.

## VI. RECOMMENDATIONS

### A. Technical Recommendations

#### 1. Carrying Capacity

The total carrying capacity was determined for the allotment using the potential stocking level calculation from BLM TR 4400-7. The potential stocking level is the level of use that could be achieved on a management unit, at the desired utilization figure, assuming utilization could be completely uniform. The potential stocking level calculation is:

$$\frac{\text{Actual Use}}{\text{Average/Weighted Average Utilization}} = \frac{\text{Potential Actual Use}}{\text{Desired Average Utilization}}$$

A weighted average utilization was calculated using the moderate, heavy and severe use classes. The weighted average utilization was then used to determine the potential stocking level for the allotment. The Land Use Plan ratio was then applied to the calculated carrying capacity to determine the number of

Aums for livestock and wild horses. Calculations are shown in Appendix E. The total carrying capacity for the allotment is calculated to be 2075 Aums.

a. Livestock

Reduce the active preference from 2,675 aums to 1224 aums, and change the period of use as shown below in the "Grazing System" section.

Change from:

Total Pref- erence	Active Preference	Suspended Preference	Period of Use	Numbers
2,675	2,675	0	11/1 - 3/31	535

Change to:

Permitted Use	Period of Use	Numbers
1224	9/30 to 5/31	Will depend on grazing system

b. Wild Horses

The Strategic plan for the Management of Wild Horses on the Public Lands was signed on June 6, 1992. The policy states that unadoptable wild horses will remain on the public lands, and that other methods such as fertility control may be utilized for population management. It is Nevada BLM's current policy to return wild horses six years of age or older to public lands. In order to achieve the Appropriate Management Level (AML) within the allotment two removals may be required.

	Wild Horses	AUMs
<u>Herd Management Area</u>	<u>75% of AML to AML</u>	
Augusta Mountains	53 to 71	636 to 851

2. Grazing System

The grazing system will treat the Hole in the Wall, Home Station Gap, and Jersey Valley allotments as pastures. A deferred rotation system would be employed and the season of use could run from 9/1 to 5/30 depending on the selected alternative. The alternatives can be found in APPENDIX H.

B. Range Improvements

The projects outlined in the 1988 Grazing Agreement have been started, with the Hole in the Wall Well project being completed in 1994. Maintenance and improvement of Tom's Well will be started this year. Hauling water to T. 24N., R. 40E., Sec. 33 will still be required. Other projects identified in the 1988 Agreement may need to be analyzed to determine if they are still feasible.

C. Allotment Objectives

1. Short Term

a. Utilization of key plant species in upland habitats shall not exceed 55% of current year's growth on grasses ( Indian ricegrass, squirreltail, desert needlegrass, Sandberg bluegrass, basin wildrye), 50% on shrubs (winterfat, budsage, shadscale, spiny hopsage).

b. Limit the amount of utilization by wild horses to 20% by July 15. This level will limit use sufficiently so that key species will reach seed ripe. This allows the plants to gain vigor through building of carbohydrate reserves and allows seed production and dispersal for reproduction.

2. Long Term

a. Maintain and improve the free-roaming behavior of wild horses by protecting their home range and assuring free access to water.

b. Desired Plant Community Objectives

Desired Plant Community (DPC) is

**a plant community which produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plan goals and activity plan objectives established for the site. The DPC becomes the vegetation management objective for the site and must be consistent with the site's capability to produce the desired vegetation through management, land treatment, or a combination of the two.**

The Desired Plant Community (DPC) process is a major tool in resource management initiatives such as **Ecosystem Management** and **Biodiversity**. Enhancing or conserving Biological Diversity involves perpetuating native species in numbers and distributions that provide a high likelihood of continued existence. DPC objectives are one of the indicators of success for enhancing Biodiversity. The Desired Plant Community is a common and shared vision of what the ecosystem should be or how the landscape should look with the resources, uses, and values present.

Objectives for this allotment were based on ecological status inventory data. The seral stage of each vegetative community and its potential was considered in conjunction with wildlife, wild horse, and livestock use to develop desired plant community objectives. Short term objectives will be used to determine the progress each community is making toward its desired stage.

Several monitoring sites exist in the allotment in addition to the frequency and photo trend sites. These are located in areas that correspond to three major ecological sites and receive use from both horses and livestock. Following are DPC objectives for each site. Final site selection will be made by an inter-disciplinary team and interested public. The expected baseline percentages will probably be changed once the locations are finalized.

(1) On Ecological Site 027XY018 within site write up area (SWA) I140, at monitoring site #5 (T.24N.,R.38E., Sec. 28) increase similarity to potential from 38% to 45% by the year 2003 or after two grazing cycles. Desired species most likely to increase are bud sage, Indian ricegrass, and globemallow.

(2) On Ecological Site 027XY027 within site write up area (SWA) I113, at monitoring site #3 (T.23N.,R.39E., Sec. 12) increase similarity to potential from 32% to 40% by the year 2003 or after two grazing cycles. Desired species most likely to increase are bud sage, Indian ricegrass, globemallow, and desert needlegrass.

(3) On Ecological Site 027XY007 within site write up area (SWA) I107, at monitoring site #7 (T.24N.,R.40E., Sec. 29) increase similarity to potential from 31% to 40% by the year 2003 or after two grazing cycles. Desired species most likely to increase are Sandberg bluegrass, bottlebrush squirreltail, and globemallow.

D. Wildlife Monitoring

Wildlife monitoring would be comprised of monitoring identified key areas for achievement of DPC objectives, use pattern mapping, lentic functionality assessment, and establishment of habitat condition rating transects for mule deer.

E. Wild Horse Monitoring

Continue collecting wild horse census and seasonal distribution data to determine population trends (reproductive rates, recruitment rate, etc.) and seasonal use areas. Wild Horse monitoring should be conducted as follows:

- Census every three years in July.
- Aerial distribution mapping every three years with flights conducted in January, April, July and October.
- On the ground distribution mapping every three years. On the ground distribution mapping will supplement aerial distribution mapping, and provide more specific population information on band size and composition.

F. Set Schedule for Next Evaluation

The next evaluation is scheduled to be conducted in 2003.



# *Home Station Gap*

**I. INTRODUCTION**

- A. Allotment Name Home Station Gap  
Allotment Number 10064
- B. Permittee(s) Deborah and Jerry Kelly
- C. Evaluation Period 1985-1994
- D. Selective Management Category I  
Priority Not prioritized
- E. Summary of previous evaluations or livestock agreements

There have been no evaluations or livestock agreements completed for this allotment.

**II. INITIAL STOCKING RATE**

A. Livestock Use:

- 1. Total Preference 994 AUMs  
Active Preference 994 AUMs  
Suspended Preference 0 AUMs

- 2. Season of Use  
April 1 to October 31

- 3. Kind and Class of Livestock  
cow/calf

- 4. Grazing System

There is currently no grazing system in place for the Home Station Gap Allotment.

B. Wildlife Use:

Reasonable Numbers

Reasonable numbers have not been identified for the Home Station Gap allotment. It was previously part of the Cottonwood Allotment and when the two were divided wildlife numbers were not re-established for Home Station Gap.

C. Wild Horse Use:

Initial stocking level for wild horses from the Shoshone-Eureka Resource Management Plan.

	<u>Wild Horses</u>	
	<u>Number</u>	<u>AUMs</u>
Augusta Mtn HMA	59	708

III. **ALLOTMENT PROFILE**

A. Description

The Home Station Gap allotment is located in west central Lander county on the Pershing county line. It is approximately 5 miles long in a north-south direction and 3 miles wide running east-west. It was split from the Cottonwood allotment, which is to the south and east, based on use areas. It is bordered by the Jersey Valley allotment on the west. The allotment occurs almost entirely in the Augusta Mountains.

Vegetation types in the allotment range from salt desert shrub types to sagebrush-needlegrass types.

B. Acreage

<u>Public Land</u>	<u>Percent</u>	<u>Land Status</u>		<u>Total</u>
		<u>Other Land</u>		
10,982	100%	0		10,982

Acreage calculated using the Geographic Information System for the Home Station Gap Allotment.

C. Allotment Objectives

No activity plans have been written for the Home Station Gap Allotment. The objectives that exist are Long Term objectives from the Shoshone-Eureka RMP that provide direction for the current management. These objectives can also be found in the 1988 Shoshone-Eureka Rangeland Program Summary (RPS).

1. Range

- a. Utilization not to exceed 50% on key species by seed dissemination, and 60% by the end of the grazing year.

- b. In the long term, improve 808 acres to good, and 205 acres to excellent condition.
  - c. In the long term, stop downward trends on 1077 acres, and manage for upward trends on 1093 acres.
  - d. In the short term manage use at 994 AUMs.
  - e. In the long term, manage use at 1093 AUMs in conformance with other objectives of the RMP.
2. Wildlife
- a. Utilization of key browse species not to exceed 50% in terrestrial big game habitat areas.
3. Wild Horses
- a. Initially manage to provide 708 AUMs of forage for 59 horses within the Augusta Mountains Herd Management Area. 20.9% of the herd management area is within this allotment.
  - b. Maintain or improve wild horse habitat in a condition which enhances or preserves their wild and free-roaming behavior, in conformance with other objectives of the RMP.
  - c. Maintain or improve wild horse habitat by ensuring free access to water, in conformance with other objectives of the RMP.

#### IV. MANAGEMENT EVALUATION

##### A. Summary of Studies Data

##### 1. Actual Use

Actual Use means where, how many, what kind or class of animals, and how long the animals graze on an allotment.

a. Livestock

=====  
Table #1. Livestock Actual Use from Actual Use Reports and Licensed Use.

Grazing Year	Ave. Lvstk Number	Begin	End	AUMs
1985	250	5/1/85	8/31/85	1000
1986	250	5/1/86	8/31/86	1000
1987	182	5/6/87	9/30/87	890
1988	80	5/1/88	10/9/88	424
1989	165	5/1/89	10/31/89	998
1990	112	5/11/90	7/31/90	302
1990	22	8/1/90	10/31/90	67
1991	100	5/15/91	8/30/91	355
1992	141	4/1/92	8/1/92	570
1992	34	8/2/92	10/31/92	103
1993	141	5/1/93	10/31/93	853
1994	94	5/1/94	10/15/94	518

**Evaluation of Table 1**

Livestock use has varied from 36% to 100% of active preference through this evaluation period due to fluctuations in the annual livestock operation and for resource conservation. Average use over this period of time has been 612 aums or 56% of active preference.

b. Wildlife

NDOW biologist, Philip Benolkin, has provided the wildlife population and adult to fawn ratio data by allotment. Use by mule deer in the allotment is yearlong. Mule deer numbers were estimated using a population model.

Table #2 Unit 151 Mule Deer Ratios Fawns/100 Adults

Year	Population estimates	AUMs	Spring	Fall
1989	5	15	ND*	56
1990	6	18	ND*	30
1991	8	24	30.5	ND*
1992	10	30	42.3	32.1
1993	9	27	25.9	30
1994	9	27	ND*	ND*

\* No Data

c. Wild Horse

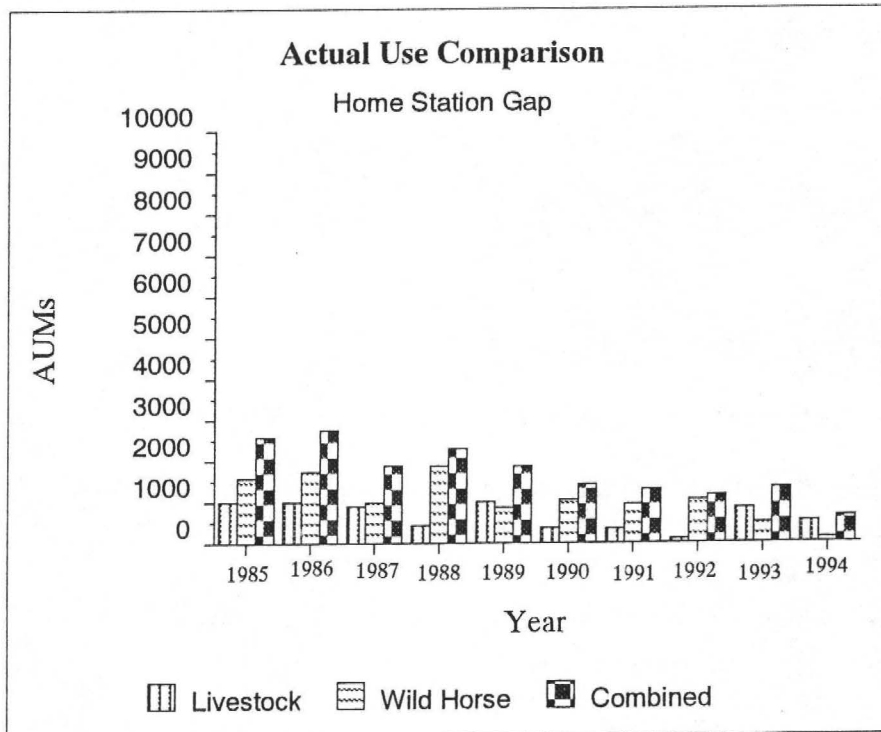
Wild horse actual use has been determined based on census flights. There were no census flights conducted in 1986 or 1992, so an 11% population increase was used to determine actual use for these years.

Table #3. Wild Horse Actual Use for the portion of the Augusta Mtn. HMA in the Home Station Gap Allotment.

Date	Horse Numbers	AUMs
1985	131	1572
1986*	145	1740
1987	82	984
1988	156	1872
1989	72	864
1990	88	1056
1991	79	948
1992*	88	1056
1993	41	492
1994	10	120
1995	71	852

\* Estimate based on 11% increase.

The following graph compares wild horse and livestock use during the evaluation period.



2. Climate

See Appendix A.

3. Utilization

Use Pattern Maps were used to determine levels of use within the allotment. The procedures used to collect this data can be found in the Nevada Rangeland Monitoring Handbook and BLM Handbook TR-4400-3. This data is used to document the effectiveness of management and determine carrying capacity. Summary of the data is depicted below. The actual data and maps can be found in the resource area monitoring files.

<u>Date Mapped</u>	<u>Use Class</u>	<u>Acres</u>	<u>Percent *</u>
<u>3/17/88</u>	No apparent use	0	0
Combined Use  100% of Allotment mapped	Slight	3939	36%
	Light	0	0
	Moderate	2423	22%
	Heavy	4528	41%
	Severe	92	.83%
<u>3/8/89</u>	No apparent use	0	0
Combined Use  100% of allotment mapped	Slight	0	0
	Light	3769	34%
	Moderate	3897	35%
	Heavy	0	0
	Severe	3317	30%
<u>11/1/89</u>	No apparent Use	0	0
Combined Use  93% of allotment mapped	Slight	340	3%
	Light	693	7%
	Moderate	3388	33%
	Heavy	3705	36%
	Severe	2136	21%
<u>11//93</u>	No apparent use	0	0
Combined Use  69% of allotment mapped	Slight	931	12%
	Light	1709	23%
	Moderate	4473	59%
	Heavy	420	6%
	Severe	0	0

\* This is the percentage of the total area mapped, not the percentage of the allotment in the use class.

Utilization data was also collected on Home Station Wash during the 1994 grazing season. On 11/8/94 use on Coyote willow (*Salix exigua*) measured 55%, Pacific tree willow (*Salix lasiandra*) 49%, and Baltic rush (*Juncus balticus*) 42%.

4. Trend

There are three 3x3 photo trend study sites in the allotment established in 1979 and 1980. These plots were photographed in 1993/1994. General observations were made, but complete photo trend plot data was not collected during the evaluation period. Photo interpretation indicates that trend at all three sites is downward. This is evident by the lack of vigor in the present plants and the absence of litter.

B. Ecological Site Inventory

The Ecological site inventory for this allotment has not yet been completed.

C. Wildlife Habitat

Data has not been collected to determine wildlife habitat condition and trend in this allotment. The land use plan did not identify this allotment as high priority habitat for mule deer or sage grouse. There has been no sage grouse habitat identified in the Home Station Gap Allotment.

D. Water Inventory

The water inventory identifies three seeps and springs that originate within this allotment.

E. Fisheries Habitat

The LUP did not identify any fisheries habitat in the Home Station Gap allotment.

F. Wild Horse Distribution

Aerial distribution maps are on file in the District Office. Appendix B shows the results of each distribution flight, the date flown and the number of horses observed. Horses can be seen going over the mountains into the Winnemucca District or visiting various springs including Cain and Hess Springs or Cottonwood Creek for water. Their movement within the Battle Mountain District is somewhat restricted by a drift fence between Home Station Gap and Cottonwood Allotments that separates the southern and central portion of those allotments. As in the Winnemucca District, horse movement is not dictated by the season, but by forage and watering needs. Battle Mountain District horses are found predominately in the foothills and upper elevations. Some are seen occasionally on the flats.



G. Wild Horse Removal Data

A total of 65 horses were removed from the Cottonwood Allotment portion of the Augusta Mtn. HMA in October of 1994.

H. Threatened and Endangered Species

To date there have been no Threatened, Endangered, or Sensitive species identified in the Home Station Gap Allotment, but the U.S. Fish and Wildlife Service has identified a list of candidate species that may occur in this allotment. These are listed in Appendix C with their candidate status.

I. Riparian

Approximately 100 acres of riparian habitat are found in the allotment. Riparian habitat occurs along Home Station Wash and at a couple seeps and springs. Lentic and lotic functionality assessment have not been done in this allotment.

V. **EVALUATION OF OBJECTIVES/CONCLUSIONS**

A. Range

1. Utilization not to exceed 50% on key species by seed dissemination, and 60% by the end of the grazing year.

Use Pattern Mapping (UPM) indicates that the amount of use exceeding 60% has ranged from 420 acres to 5841 acres. Therefore this objective has not been met throughout the allotment.

2. In the long term, improve 808 acres to good, and 205 acres to excellent condition.

It is difficult to determine the status of this objective, as there is no location identified to monitor, but based on the UPM and photo trend data, this objective has probably not yet been met.

3. In the long term, stop downward trends on 1077 acres, and manage for upward trends on 1093 acres.

Not met. Same rationale as objective 2 above.

4. In the short term manage use at 994 AUMs.

This objective has not been met. Livestock use has varied from 36% to 100% of active preference throughout the evaluation period. Use has averaged 553 aums per year.

5. In the long term, manage use at 1093 AUMs in conformance with other objectives of the RMP.

Not met. The highest level of use by livestock in this allotment has been 1000 aums. At this level and levels below this, other RMP objectives were not met.

B. Wildlife

1. Utilization of key browse species not to exceed 50% in terrestrial big game habitat areas.

Data has not been collected to determine if this objective has been met. Based on observations made during use pattern mapping the last couple years, there is no substantial big game habitat in the Home Station Gap allotment and very few key browse species.

C. Wild Horses

1. Initially manage to provide 708 AUMs of forage for 59 horses within the Augusta Mountains Herd Management Area. 20.9% of the herd management area is within this allotment.

This objective has been met or exceeded. However, a sustained yield basis would be difficult to support at present levels and still meet land use plan objectives.

2. Maintain or improve wild horse habitat in a condition which enhances or preserves their wild and free-roaming behavior, in conformance with other objectives of the RMP.

There have been no fences constructed during the evaluation period that would restrict horse movement. Aerial and on the ground distribution data indicates that wild horses have freedom of movement and are maintaining their free roaming behavior within the Herd Management Area. This objective has been met.

3. Maintain or improve wild horse habitat by ensuring free access to water, in conformance with other objectives of the RMP.

This objective has been met.

VI. RECOMMENDATIONS

A. Technical Recommendations

1. Carrying Capacity

The total carrying capacity was determined for the allotment using the potential stocking level calculation from BLM TR 4400-7. The potential stocking level is the level of use that could be achieved on a management unit, at the desired utilization figure, assuming utilization could be completely uniform. The potential stocking level calculation is:

$$\frac{\text{Actual Use}}{\text{Average/Weighted Average Utilization}} = \frac{\text{Potential Actual Use}}{\text{Desired Average Utilization}}$$

A weighted average utilization was calculated using the moderate, heavy and severe use classes. The weighted average utilization was then used to determine the potential stocking level for the allotment. The Land Use Plan ratio was then applied to the calculated carrying capacity to determine the number of AUMs for livestock and wild horses. Calculations are shown in Appendix E. The total carrying capacity for the allotment is calculated to be 1611 Aums.

a. Livestock

Reduce the active preference from 994 aums to 934 aums, and change the period of use as shown below in the "Grazing System" section.

Change from:

Total Preference	Active Preference	Suspended Preference	Period of Use	Numbers
994	994	0	4/1 - 10/31	142

Change to:

Permitted Use	Period of Use	Numbers
934	9/30 to 5/31	Will depend on grazing system

b. Wild Horses

The Strategic plan for the Management of Wild Horses on the Public Lands was signed on June 6, 1992. The policy states that unadoptable wild horses will remain on the public lands, and that other methods such as fertility control may be utilized for population management. It is Nevada BLM's current policy to return wild horses six years of age or older to public lands.

<u>Herd Management Area</u>	<u>Wild Horses</u> <u>75% of AML to AML</u>	<u>AUMs</u>
Augusta Mountains	42 to 56	504 to 672

2. Grazing System

The grazing system will treat the Hole in the Wall, Home Station Gap, and Jersey Valley allotments as pastures. A deferred rotation system would be employed and the season of use could run from 9/1 to 5/30 depending on the selected alternative. The alternatives can be found in APPENDIX H.

B. Range Improvements

There have been no new range improvements identified through this evaluation.

C. Allotment Objectives

1. Short Term

a. Utilization of key plant species in upland habitats shall not exceed 55% of current year's growth on grasses (Indian ricegrass, squirreltail, desert needlegrass, Thurber's needlegrass, Sandberg bluegrass, basin wildrye), 50% on shrubs (winterfat, budsage, shadscale, spiny hopsage, snowberry).

b. Utilization of key plant species in riparian habitat shall not exceed 50% (Sedges, rushes, meadow barley, bluegrass, saltgrass, willow).

c. Limit the amount of utilization by wild horses to 20% by July 15. This level will limit use sufficiently so that the key species will reach seed ripe. This allows the plants to gain vigor through building of carbohydrate reserves and allows seed production and dispersal for reproduction.

2. Long Term

- a. Maintain and improve the free-roaming behavior of wild horses by protecting their home range and assuring free access to water.
- b. Initiate and maintain an upward trend at the three photo trend study plots already established in the allotment.
- c. Desired Plant Community Objectives

Ecological Site Inventory data has not been collected for this allotment so desired plant community objectives have not been developed.

D. Wildlife Monitoring

Continue to monitor the present photo trend sites on a three year cycle. Establish a mule deer habitat condition rating transect. Lentic and lotic functionality assessment.

E. Wild Horse Monitoring

Continue collecting wild horse census and seasonal distribution data to determine population trends (reproductive rates, recruitment rate, etc.) and seasonal use areas. Wild Horse monitoring should be conducted as follows:

- Census every three years in July.
- Aerial distribution mapping every three years with flights conducted in January, April, July and October.
- On the ground distribution mapping every three years. On the ground distribution mapping will supplement aerial distribution mapping, and provide more specific population information on band size and composition.

F. Set Schedule for Next Evaluation

The next evaluation is scheduled to be conducted in 2003.

# *Jersey Valley*

**I. INTRODUCTION**

- A. Allotment Name Jersey Valley  
Allotment Number 00148
- B. Permittee(s) Deborah and Jerry Kelly
- C. Evaluation Period 1985 - 1994
- D. Selective Management Category C  
Priority Not prioritized
- E. Summary of previous evaluations and agreements

There have been no evaluations or livestock agreements completed for this allotment.

**II. INITIAL STOCKING RATE**

A. Livestock Use:

- 1. Total Preference 2912 AUMs  
Active Preference 1581 AUMs  
Suspended Preference 1331 AUMs

2. Season of Use

March 1 to February 28

3. Kind and Class of Livestock

Cattle, cow/calf operation

4. Grazing System

Jersey Valley is presently grazed yearlong with no grazing system.

B. Wildlife Use:

The following are reasonable numbers from the Sonoma-Gerlach land use plan (MFP III -1982):

- Mule deer - (*Odocoileus hemionus*) - 48 AUMs
- Bighorn Sheep - (*Ovis canadensis nelsoni*) - 1 AUM

C. Wild Horse Use:

Initial stocking level for wild horses from the 1982 Sonoma-Gerlach Management Framework Plan III for the Jersey Valley Allotment.

	<u>Wild Horses</u>	
	Number	AUMs
Augusta Mountain HMA	261	3132
Stillwater Mtn HMA	0	0

III. ALLOTMENT PROFILE

A. Allotment Description

The allotment is located in southeastern Pershing County, south of Winnemucca, Nevada, and east of Lovelock, Nevada. It is approximately 5 miles long in a north-south direction and 17 miles wide in an west-east direction. It is bordered by the Home Station Gap allotment on the north-east, Battle Mountain District on the south-east and north, and Hole in the Wall allotment to the south. The allotment takes in the western edge of the Augusta Mountains, an eastern portion of the Stillwater Mountains, and parts of Jersey and Dixie Valleys.

Vegetation types in the allotment range from salt desert shrub types to sagebrush-bluegrass types.

B. Acreage

		<u>Land Status</u>		
<u>Public Land</u>		<u>Other Land</u>		<u>Total</u>
66,536	98%	1,583	2%	68,119

Acreages taken from the Geographic Information System total for the Jersey Valley Allotment.

C. Allotment Objectives

No allotment specific activity plans have been written for the Jersey Valley Allotment. The objectives that exist are Long Term objectives from the Sonoma-Gerlach MFP that provide direction of the current management. These objectives can also be found in the Rangeland Program Summary (RPS) Update 1992.

1. Range



- a. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis with an initial stocking level of 1,581 AUMs.
- b. Maintain an acceptable allowable use level on key forage species that will provide a sustained yield.
- c. Improve range/ecological condition from poor to fair on 5,787 acres and from fair to good on 86 acres and good to excellent on 50 acres.

2. Wildlife

- a. Manage, maintain and improve public rangeland habitat condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 48 AUMs for mule deer and 1 AUM for bighorn sheep, by:
  - 1) Improving or maintaining the following mule deer habitat in Stillwater Range DY-3 and Augusta Mts. DY-4 to at least good condition.
  - 2) Improving and maintaining bighorn habitat condition in Stillwater Range BY-1 to 80% of optimum.
- b. Wildlife habitat management objectives for vegetation utilization shall be as follows except where adjusted by an approved HMP, AMP, and HMAP.
  - 1) Terrestrial: will not exceed levels established in the Sonoma-Gerlach EIS Table I-3 for key species.
  - 2) Wetland Riparian: shall not exceed 50% for key species. The HMP for Stillwater Range WHA-T-16 was prepared during FY86.

3. Wild Horses

- a. Manage, maintain and improve public rangeland conditions to provide an initial level of 3,132 AUMs of forage on a sustained yield basis for 261 wild horses in the Augusta Mountains Herd Management Area.
- b. Manage wild horse/burro habitat to improve range/ecological condition as listed under livestock objectives.

- c. Maintain an acceptable allowable use level on key forage species that are consistent with those established for livestock and wildlife.
- d. Maintain and improve the free-roaming behavior of wild horses and burros by protecting and enhancing their home ranges.
- e. Maintain/improve wild horse/burro habitat by assuring free access to water.

**IV. MANAGEMENT EVALUATION**

A. Summary of Studies Data

1. Actual Use

Actual Use means where, how many, what kind or class of animals, and how long the animals graze on an allotment.

a. Livestock

=====

Table #1. Livestock Actual Use from Actual Use Reports and Licensed Use.

Grazing Year	Ave. Lvstk Number	Begin	End	AUMs
1985	311	10/1/85	12/31/85	933
1986	132	4/1/86	9/30/86	793
1987	130	4/2/87	2/26/88	1411
1988	123	4/1/88	2/28/89	1350
1989	103	4/2/89	10/31/89	723
1990	152	4/1/90	2/28/91	1063
1991	100	4/1/91	10/30/91	700
1992	132	3/1/92	2/28/93	1585
1993	87	4/1/93	2/28/94	955
1994	87	4/1/94	4/1/95	955

**Evaluation of Table 1**

Livestock use has varied from 44% to 100% of active preference through this evaluation period due to fluctuations in the annual livestock operation. Average use over this period of time has been 1047 aums or 66% of active preference.

b. Wildlife

NDOW wildlife biologist, Philip Benolkin, has provided the wildlife population and adult to fawn ratio data by allotment. Use by mule deer in the allotment is yearlong. The mule deer numbers were estimated using a population model.

Table 2a Unit 183

Mule Deer Ratios  
Fawns/100 Adults

Year	Population estimates	AUMs	Spring	Fall
1989	32	96	ND	56
1990	41	123	ND	30
1991	65	195	30.5	ND
1992	65	195	42.3	32.1
1993	61	183	25.9	30
1994	61	183	ND	ND

=====

Table # 2b Desert Bighorn Sheep Population and Use. Use by desert bighorn sheep in the allotment is yearlong.

<u>Allotment</u>	<u>Year</u>	<u>Population Estimate</u>	<u>AUMs</u>
Jersey Valley (Unit 183)	1989	5	12
	1990	5	12
	1991	5	12
	1992	5	12
	1993	5	12
	1994	5	12

c. Wild Horse

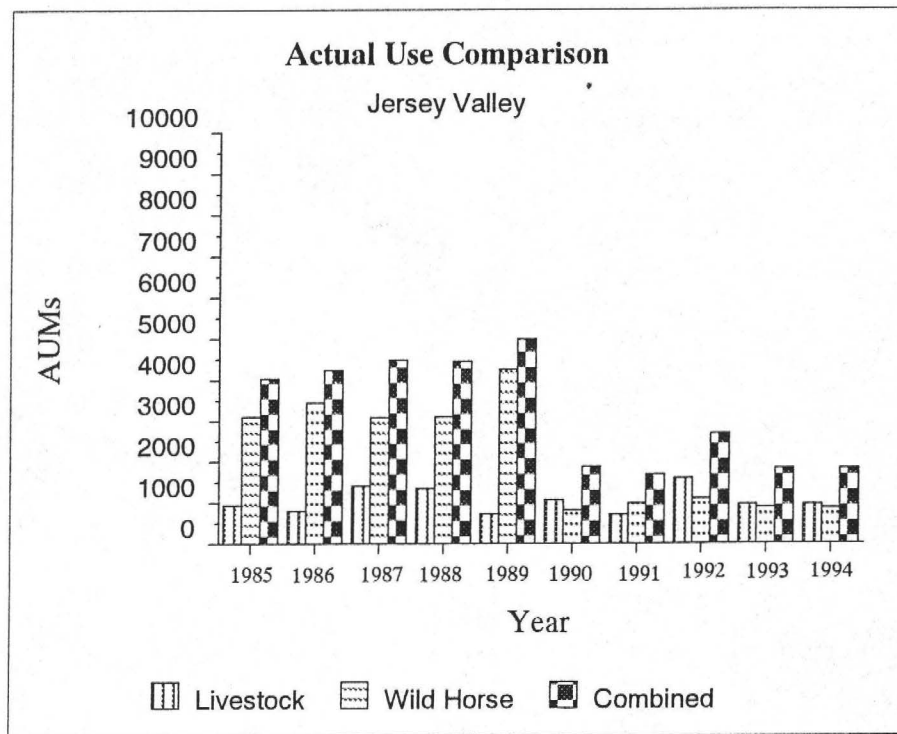
Wild horse actual use is based on census flights. There were no census flights conducted in 1986 or 1992, so an 11% population increase was used to determine actual use for those years.

Table #3. Wild Horse Actual Use for the portion of the Augusta Mountains HMA in the Jersey Valley Allotment.

Date	Horse Numbers	AUMs
1985	259	3108
1986*	287	3444
1987	257	3084
1988	259	3108
1989	355	4260
1990	67	804
1991	103	1236
1992*	114	1368
1993	73	876
1994	72	864
1995	116	1392

\* Estimate based on 11% increase.

The following graph compares wild horse and livestock use during the evaluation period.



2. Climate

See Appendix A.

## B. Utilization

Use Pattern Maps were used to determine levels of use within the allotment. The procedures used to collect this data can be found in the Nevada Rangeland Monitoring Handbook and BLM Handbook TR-4400-3. This data is used to document the effectiveness of management and determine carrying capacity. The summary of the data is displayed below. The actual data and maps can be found in the resource area monitoring files.

<u>Date Mapped</u>	<u>Use Class</u>	<u>Acres</u>	<u>Percent *</u>
<u>3/4/87</u>	No apparent use	987	3%
Combined Use 43% of allotment mapped	Slight	13,357	4%
	Light	4,437	15%
	Moderate	2,757	9%
	Heavy	3,086	10%
	Severe	4,628	16%
<u>3/17/88</u>	No apparent use	0	0
Combined Use 63% of allotment mapped	Slight	8,711	20%
	Light	0	0
	Moderate	8,639	20%
	Heavy	18,886	44%
	Severe	7,012	16%
<u>3/8/89</u>	No apparent Use	0	0
Combined Use 63% of allotment mapped	Slight	11,394	27%
	Light	886	2%
	Moderate	8,102	19%
	Heavy	7,088	16%
	Severe	15,304	36%
<u>11/1/89</u>	No apparent use	0	0
Combined Use 62% of allotment mapped	Slight	11,131	26%
	Light	364	1%
	Moderate	10,091	24%
	Heavy	10,327	24%
	Severe	10,543	25%
<u>11/24/92</u>	No apparent use	37,732	85%
Combined Use 65% of allotment mapped	Slight	951	2%
	Light	0	0
	Moderate	5,035	11%
	Heavy	311	1%
	Severe	429	1%
<u>8/18/93</u>	No apparent use	34,555	86%
Combined Use 59% of allotment mapped	Slight	1,000	2%
	Light	3,228	8%
	Moderate	1,129	3%
	Heavy	185	1%
	Severe	0	0

\* This is the percentage of the total area mapped, not the percentage of the allotment in the use class.

C. Trend

Trend data for the Jersey Valley allotment has not been collected since the trend sites were established in 1978 and 1979.

D. Ecological Site Inventory

An ecological status inventory was completed during the 1982 field season. The subsequent table lists the acres and percentage by seral stage for the allotment.

Seral Stage	Acres	Percentage
Early	1,779	3
Mid	29,712	44
Late	26,250	39
Potential	2,267	3
Woodland	5,735	3
Barren	1,986	8

The table below summarizes the characteristics of the predominate ecological sites within the allotment.

Site Number & Name	Total annual air-dry production	Seral Stage	Acreage / % of Site	Lifform percentages at PNC
024XY002 loamy 5-8" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 25 %
	Favorable yrs 750	Late	8906 ac / 72%	Forbs - 5 %
	Normal yrs 450	Mid	3417 ac / 28%	Shrubs - 70 %
	Unfavorable yrs 300	Early	0 ac / 0%	
027XY018 gravelly loam 4-8" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 30 %
	Favorable yrs 400	Late	51 ac / .4%	Forbs - 5 %
	Normal yrs 250	Mid	11,532 ac / 99.6%	Shrubs - 65 %
	Unfavorable yrs 100	Early	0 ac / 0%	
027XY013 loamy 4-8" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 35 %
	Favorable yrs 750	Late	6732 ac / 95%	Forbs - 5 %
	Normal yrs 450	Mid	328 ac / 5%	Shrubs - 60 %
	Unfavorable yrs 300	Early	0 ac / 0%	
024XY003 sodic terrace 6-8" p.z.	<u>lbs/ac</u>	PNC	2267 ac / 46%	Grass - 10 %
	Favorable yrs 600	Late	2671 ac / 54%	Forbs - 5 %
	Normal yrs 450	Mid	0 ac / 0%	Shrubs - 85 %
	Unfavorable yrs 300	Early	0 ac / 0%	
024XY030 shallow calcareous loam 8-10" p.z.	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 50 %
	Favorable yrs 500	Late	490 ac / 11%	Forbs - 5 %
	Normal yrs 350	Mid	3966 ac / 89%	Shrubs - 45 %
	Unfavorable yrs 250	Early	0 ac / 0%	
024XY007 saline bottom	<u>lbs/ac</u>	PNC	0 ac / 0%	Grass - 70 %
	Favorable yrs 1900	Late	0 ac / 0%	Forbs - 5 %
	Normal yrs 1400	Mid	4237 ac / 100%	Shrubs - 25 %
	Unfavorable yrs 800	Early	0 ac / 0%	

Following is a brief description of each major ecological site.

Ecological Site 024XY002

This site occurs on low hills, fan piedmonts and alluvial flats on all aspects. Slopes range from 0 to 50 percent. Elevations are 4000 to 6000 feet. Twelve percent of the allotment is made up of this site. The potential plant community is dominated by shadscale, bud sagebrush and Indian ricegrass. Where management results in abusive use by livestock, shadscale increases in density while Indian ricegrass and bud sagebrush compositions are reduced. With further site degradation, shadscale may become dominant to the extent of a nearly pure stand. Cheatgrass, halogeton and tansy mustard are species likely to invade this area. These sites on the allotment are mostly in a late seral stage due to the high percentage of shadscale and bud sage. Indian ricegrass and bottlebrush squirreltail occur, but are sparse.

Ecological Site 027XY018

This site occurs on piedmont slopes. Slopes range from 0 to 30 percent. Elevations are 3400 to 5000 feet. Seventeen percent of the allotment is made up of this site. The potential plant community is dominated by Bailey greasewood, shadscale and Indian ricegrass. As ecological condition deteriorates, Bailey greasewood and shadscale will increase while Indian ricegrass and other palatable grasses and shrubs decrease. Species most likely to invade this site are cheatgrass and annual mustards. In Jersey Valley these sites are mostly in a mid condition due to the presence of shadscale and bud sagebrush which dominate this site throughout the allotment. Indian ricegrass and other palatable grasses and shrubs are generally scarce on this site.

Ecological Site 027XY013

This site occurs on piedmont slopes, alluvial plains and relict alluvial flats. Slopes range from 2 to 30 percent. Elevations are 4000 to 5000 feet. This site makes up ten percent of the allotment. The plant community is dominated by shadscale, bud sagebrush and Indian ricegrass. Where management results in abusive livestock use, Bailey greasewood, shadscale, and Douglas rabbitbrush increase in the plant community as Indian ricegrass, winterfat and bud sagebrush decrease. With continued over utilization, particularly during the late-winter/early-spring period, shadscale will decrease. Sandberg bluegrass is most prevalent where surface soils are high in silt content. Species likely to invade this site are halogeton, Russian thistle, cheatgrass and annual mustards. This ecosite is in a late seral stage on most of the allotment due to the abundance of shadscale and bud sagebrush. Perennial grasses and winterfat are present in some areas, but are generally lacking.

Ecological Site 024XY003

This site occurs on fan skirts, alluvial flats, stream terraces and lake-plain terraces. Slopes range from 0 to 15 percent. Elevations are 3500 to 5500 feet. Seven percent of the allotment is made up of this site. The potential plant community is dominated by shadscale and black greasewood. Where abusive livestock use occurs, black greasewood and seepweed increase in density as perennial understory grass species decline. Russian thistle, annual mustards and halogeton are species likely to invade disturbed areas on this site. This ecological site is at PNC or late stage. Shadscale and black greasewood dominate this site.

Ecological Site 024XY030

This site occurs on summits and side slopes of fan piedmont slopes, hills and lower mountains on all exposures. Slopes range from 2 to 50 percent. Elevations are 5000 to 6500 feet. Seven percent of the allotment is made up of this site. The potential plant community is dominated by black sagebrush, Thurber needlegrass and Indian ricegrass. Indian ricegrass and Thurber needlegrass decrease and Sandberg bluegrass and bottlebrush squirreltail increase in the understory when abusive livestock use occurs. The density of black sagebrush, rabbitbrush, shadscale, and horsebrush increase and become the dominant overstory vegetation. Cheatgrass, Russian thistle, and halogeton are species most likely to invade this site. These sites are in late and mid seral stages due to the presence of black and low sagebrush and other shrubs. Understory perennial grass species are very scarce and Thurber needlegrass does not even occur on this site.

Ecological Site 024XY007

This site occurs on lake-plain terraces, stream terraces and on the margin of axil-stream floodplains. The ground surface is typically level but the slopes may reach 2 percent on the perimeters of the site. Elevations are from 4000 to 5500 feet. This site makes up six percent of the allotment. The potential plant community is dominated by basin wildrye. Where management results in abusive use by livestock, rabbitbrush and black greasewood increase and become the dominant vegetation in lower condition classes. Inland saltgrass increases as condition declines and usually dominates the understory when this site is in fair condition. Fivehook bassia and annual mustards are species likely to invade this site. The Jersey Valley sites are in a mid seral stage and are dominated by inland saltgrass, rabbitbrush, and black greasewood.



E. Wildlife Habitat

The Stillwater Range Habitat Management Plan (HMP) was completed in July, 1986 and encompasses part of the Jersey Valley Allotment. Desert bighorn sheep and mule deer were the priority species used to design this HMP. There has been no sagegrouse habitat identified in the Jersey Valley Allotment. Objectives from the HMP are included in Appendix D.

1. Mule Deer

Wildlife habitat data for the Stillwater Range was collected in 1986. Five parameters are considered when evaluating mule deer habitat condition: browse vigor, forage quality, vertical cover, disturbance or interference, and water distribution. The Stillwater Range (DY-3) includes 34,301 acres of mule deer habitat, of which 1,657 acres are in the Jersey Valley Allotment. The overall habitat rating for DY-3 is 66 or good; where good ranges from 61 to 80. Individual parameters are summarized below. Mule deer habitat is limited most by lack of forage species diversity.

*Summary of individual mule deer habitat suitability parameters for the Stillwater Range DY-3 listed from limiting to least limiting.*

<u>Parameters</u>	<u>DY-3</u>	<u>Optimum Rating</u>
Forage Quality Rating	2	17
Vertical Cover Rating	7	17
Water Distribution Rating	13	16
Browse Vigor Rating	16	16
Disturbance or Interference	18	18

2. Desert Bighorn Sheep

A habitat suitability rating was done for bighorn sheep in 1986. The overall Habitat Suitability Rating was 74% of optimum, or good. Water is the most limiting factor. A summary of the suitability indices (SI) is included below.

Plant Community	Cover SI	Water SI	Forage SI	Human Use SI	Domestic Sheep SI
Mtn. big sagebrush /bunchgrass	.65	.67	.85	.80	1.00
Wyoming big sage /bunchgrass	.80	.67	.84	.60	1.00
Low sagebrush /bunchgrass	.60	0	.89	1.00	1.00
Shadscale saltbush /bunchgrass	.65	.55	.72	.50	1.00
Juniper /Pinyon /Mtn big sagebrush	.80	.50	.65	.80	1.00

F. Water Inventory

The Winnemucca District water inventory identifies several springs that may potentially be developed. See map 1.

G. Fisheries Habitat

The Land Use Plan did not identify any fisheries habitat in the Jersey Valley allotment.

H. Wild Horse Distribution

Aerial distribution maps are on file in the District Office. Appendix B shows the results of each distribution flight, the date flown and the number of horses observed. The wild horses generally occupying the Augusta Range HMA on the Winnemucca District seem to exhibit no seasonal pattern of movement up and down the mountain slopes. On the contrary, they move from forage to water and back again daily, and therefore may be found at any elevation during any season of the year, depending on the weather and the hour of flight on that particular day. There are a number of seeps and springs in the foothills and on the flats that the horses visit daily.

I. Wild Horse Removal Data

There have been no BLM wild horse removals in the Jersey Valley Allotment.

J. Threatened and Endangered Species

To date there have been no Threatened, Endangered, or Sensitive species identified in the Jersey Valley Allotment, but the U.S. Fish and Wildlife Service has identified a list of candidate species that may occur in this allotment. These are listed in Appendix C with their candidate status.

K. Riparian

Approximately 80 acres of riparian habitat are found in the allotment. Riparian habitat occurs Hyder Hot Spring and at various couple seeps and springs. Home Station Wash also runs into this allotment. Lentic and lotic functionality assessment have not been done in this allotment.

V. **EVALUATION OF OBJECTIVES/CONCLUSIONS**

A. Allotment objectives from the LUP

1. Range

- a. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis with an initial stocking level of 1,581 AUMs.

Not met. Use pattern mapping and actual use for this allotment show that we were unable to sustain this level of use while maintaining and improving rangeland conditions.

- b. Maintain an acceptable allowable use level on key forage species that will provide a sustained yield.

This objective was met in 1992 on 92% of the allotment mapped and 1993 on 99% of allotment mapped, but was not met in 1987, 1988, and 1989.

- c. Improve range/ecological condition from poor to fair on 5,787 acres and from fair to good on 86 acres and good to excellent on 50 acres.

Undetermined. These acreages were not identified in the land use plan so we can not determine if this objective is being met.

## 2. Wildlife

- a. Manage, maintain and improve public rangeland habitat condition to provide forage on a sustained yield basis, with an initial forage demand for big game of 48 AUMs for mule deer and 1 AUM for bighorn sheep, by:

1. Improving or maintaining the following mule deer habitat in Stillwater Range DY-3 and Augusta Mts. DY-4 to at least good condition.

A habitat condition and trend rating was done for the Stillwater Range in 1986. Forage quality and vertical cover were the most limiting factors. There have been no factors which would have adversely affected the the habitat condition. There have been no major fires in this area, there has been no increase or decrease in the available waters, and use pattern mapping has not shown livestock or wild horses to have an impact on vegetation in these areas due to topography. Therefore we can surmise that the habitat conditions have been maintained.

2. Improving and maintaining bighorn condition in Stillwater Range BY-1 to 80% of optimum.

Same as a1 above.

- b. Wildlife habitat management objectives for vegetation utilization shall be as follows except where adjusted by an approved HMP, AMP, and HMAP.

1. Terrestrial: will not exceed levels established in the Sonoma-Gerlach EIS Table I-3 for key species.

Same as 1b above on both grasses and shrubs.

2. Wetland Riparian: shall not exceed 50% for key species. The HMP for Stillwater Range WHA-T-16 was prepared during FY86.

This objective was met at Hyder Hot Springs. Other riparian areas in the allotment were not differentiated in the use pattern mapping.

3. Wild Horses

- a. Manage, maintain and improve public rangeland conditions to provide an initial level of 3,132 AUMs of forage on a sustained yield basis for 261 wild horses in the Augusta Mountains Herd Management Area.

Not met. Vegetative objectives were not met in 1987 & 1988 when horse numbers were relatively close to these numbers.

- b. Manage wild horse/burro habitat to improve range/ecological condition as listed under livestock objectives.

Same as range objective 1c.

- c. Maintain an acceptable allowable use level on key forage species that are consistent with those established for livestock and wildlife.

Same as range objective 1b (undetermined).

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

Met. There have been no fences or structures built during the evaluation period which would inhibit the wild and free-roaming behavior of wild horses.

- e. Maintain/improve wild horse/burro habitat by assuring free access to water.

Met. Free access to water has not been inhibited.

## VI. RECOMMENDATIONS

### A. Technical Recommendations

#### 1. Carrying Capacity

The total carrying capacity was determined for the allotment using the potential stocking level calculation from BLM TR 4400-7. The potential stocking level is the level of use that could be achieved on a management unit, at the desired utilization figure, assuming utilization could be completely uniform. The potential stocking level calculation is:

$$\frac{\text{Actual Use}}{\text{Average/Weighted Average Utilization}} = \frac{\text{Potential Actual Use}}{\text{Desired Average Utilization}}$$

A weighted average utilization was calculated using the moderate, heavy and severe use classes. The weighted average utilization was then used to determine the potential stocking level for the allotment. The Land Use Plan ratio was then applied to the calculated potential actual use to determine the number of AUMs for livestock and wild horses. Calculations are shown in Appendix E. The total carrying capacity for the allotment is calculated to be 2698 Aums.

#### a. Livestock

Reduce the active preference from 1581 aums to 917 aums, and change the period of use as shown below in the "Grazing System" section.

Change from:

Total Preference	Active Preference	Suspended Preference	Period of Use	Numbers
2912	1581	1331	3/1 to 2/28 10/1 - 2/28	87 109

Change to:

Permitted Use	Suspended Preference	Period of Use	Numbers
917	1331	9/30 to 5/31	Will depend on grazing system

b. Wild Horses

The Strategic plan for the Management of Wild Horses on the Public Lands was signed on June 6, 1992. The policy states that unadoptable wild horses will remain on the public lands, and that other methods such as fertility control may be utilized for population management. It is Nevada BLM's current policy to return wild horses six years of age or older to public lands. In order to achieve the Appropriate Management Level (AML) within the allotment two removals may be required.

Wild Horses		
<u>Herd Management Area</u>	<u>75% of AML to AML</u>	<u>AUMs</u>
Augusta Mountains	111 to 148	1332 to 1776

2. Grazing System

The grazing system will treat the Hole in the Wall, Home Station Gap, and Jersey Valley allotments as pastures. A deferred rotation system would be employed and the season of use could run from 9/1 to 5/30 depending on the selected alternative. The alternatives can be found in APPENDIX H.

B. Range Improvements

An abandoned well has been identified for development on the southeast side of this allotment and several springs may potentially be developed.

C. Allotment Objectives

1. Short Term

- a. Utilization of key plant species in upland habitats shall not exceed 55% of current year's growth on grasses, (Indian ricegrass, squirreltail, desert needlegrass, Thurber's needlegrass, Sandberg bluegrass, basin wildrye), 50% on shrubs (winterfat, budsage, shadscale, spiny hopsage, snowberry).
- b. Utilization of key plant species in riparian habitat shall not exceed 50% (Sedges, rushes, meadow barley, bluegrass, saltgrass, willow).
- c. Limit the amount of utilization by wild horses to 20% by July 15. This level will limit use sufficiently so that the key species will reach seed ripe. This allows the plants to gain vigor through building of carbohydrate reserves and allows seed production and dispersal for reproduction.

2. Long Term

- a. Maintain and improve the free-roaming behavior of wild horses by protecting their home range and assuring free access to water.
- b. Desired Plant Community Objectives

Objectives for this allotment were based on ecological status inventory data. The seral stage of each vegetative community and its potential was considered in conjunction with the wildlife, wild horse, and livestock use to develop desired plant community objectives. Short term objectives will be used to determine the progress each community is making toward its desired stage.

Several monitoring sites exist in the allotment. These are located in areas that correspond to three major ecological sites and receive use from both horses and livestock. Following are DPC objectives for each site. Final site selection will be made by an inter-disciplinary team and affected interests. The expected baseline numbers will probably be changed once the locations are finalized.

- (1) On Ecological Site 027XY018 within site write up area (SWA) C223, at monitoring site (T.25N., R.38E., Sec. 28) increase similarity to potential from 48% to 55% by the year 2003 or after two grazing cycles. Desired species most likely to increase are bud sagebrush, Sandberg bluegrass, and globemallow.

(2) On Ecological Site 027XY013 within site write up area (SWA) C234, at monitoring site (T.25N.,R.38E., Sec. 22) maintain similarity to potential at 53%.

(3) On Ecological Site 024XY002 within site write up area (SWA) C210, at monitoring site (T.26N.,R.40E., Sec. 4) maintain similarity to potential at 61%.

D. Wildlife Monitoring

Wildlife monitoring would be comprised of reading mule deer habitat condition and trend studies established in the Stillwater Range DY-3, establishing a mule deer study site in the Augusta Mountains DY-4 if needed, reading established bighorn sheep transects in the Stillwater Range BY-1, and conducting lentic/lodic riparian functionality surveys that may be identified.

E. Wild Horse Monitoring

Continue collecting wild horse census and seasonal distribution data to determine population trends (reproductive rates, recruitment rate, etc.) and seasonal use areas. Wild Horse monitoring should be conducted as follows:

- Census every three years in July.
- Aerial distribution mapping every three years with flights conducted in January, April, July and October.
- On the ground distribution mapping every three years. On the ground distribution mapping will supplement aerial distribution mapping, and provide more specific population information on band size and composition.

F. Set Schedule for Next Evaluation

The next evaluation is scheduled to be conducted in 2003.

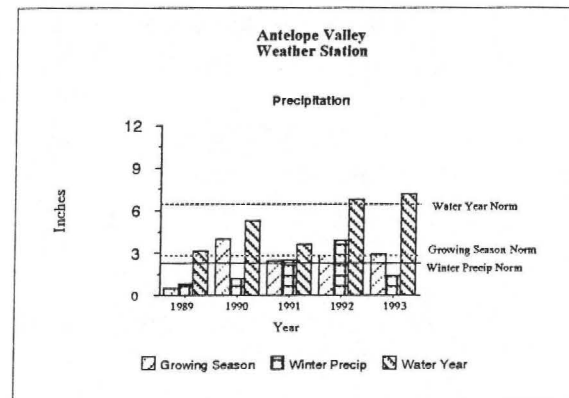
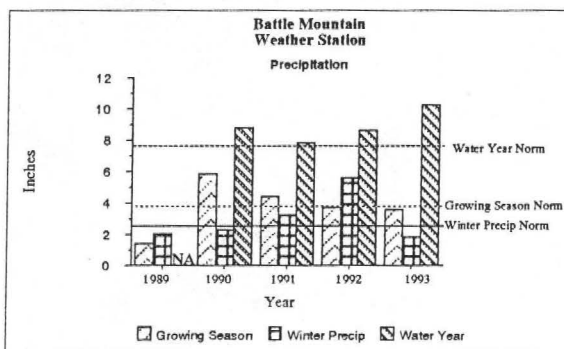
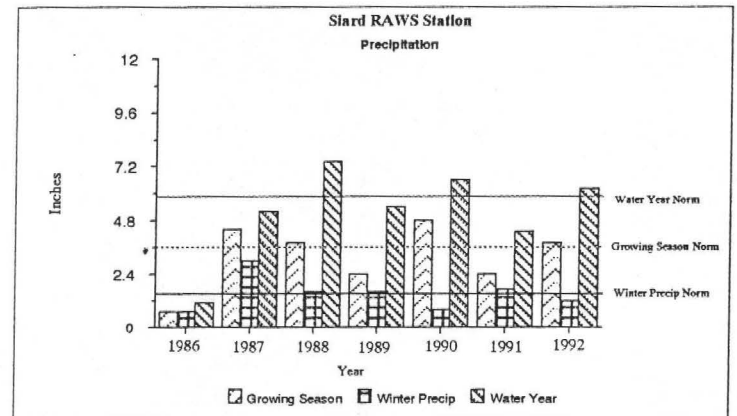
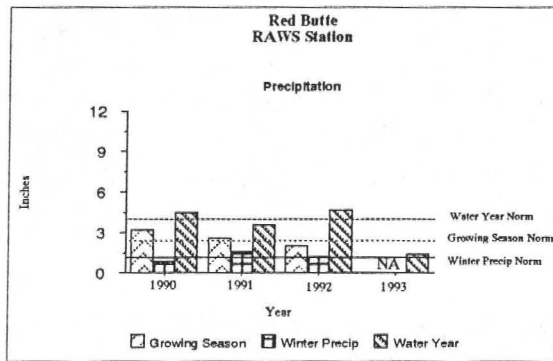


Appendix A

Climate Data

There are four weather stations that are relatively close to the Hole in the Wall, Jersey Valley and Home Station Gap Allotments. Two of the stations are National Oceanic and Atmospheric Administration (NOAA) sites and two are BLM Remote Automated Weather System (RAWS) sites. The charts below illustrate the precipitation received during the water year (October - September), the growing season (March - August), and winter (November - February) along with the long term averages for these periods.

The wide variation depicted between stations is typical of precipitation patterns in Nevada and on these allotments.



## Appendix B

## Wild Horse Distribution

When collecting distribution data by fixed-wing aircraft the objective is to identify those areas that wild horses are utilizing at that point in time, not to obtain a count as accurate as a helicopter census. The entire HMA is flown in a transect pattern with the flight lines ranging from ½ mile to 2 miles apart depending on terrain, cover, visibility and flight conditions. In steep mountainous country the straight line transects are modified to follow the topography of the area to ensure complete coverage. Aircraft altitude ranged approximately 300 to 600 feet above ground level, depending on visibility and local flight conditions.

During the evaluation period data was collected from two different fixed-wing aircraft, Maule MX-5 and Cessna 210. In addition to the fixed wing distribution data, each helicopter census provides distribution information on wild horses. When utilizing the Cessna there were two observers on board, one individual recorded flight lines, animal locations, and the number of animals (adults and foals) seen at each location while the other individual conducted the counting. In areas of high concentrations a total count of all bands was recorded on the map rather than each individual band. Four distribution flights were conducted during the evaluation period to determine the seasonal movement of wild horses throughout each year. There was one spring flight, two summer flights, and one winter flight.

Wild horse behavior in the Augusta Range differs from that of horses in other ranges due to the fact that access to water and forage are limited by topography. The highest elevations are extremely difficult to access and are generally either too steep and craggy to support vegetation or covered with juniper and pinon pine with not much understory forage. Horses generally avoid these areas. However, there are some canyon seeps going up to the higher elevations that horses access for food and water, as well as springs on the flats in the Winnemucca District and Cain and Hess Springs in the upper foothills in Battle Mountain District which the horses use.

As horses move from forage to water they may traverse the mountainous ridge between Winnemucca's side of the HMA and Battle Mountain's; they may move back and forth across the east/west district boundary between Winnemucca and Carson City Districts, or they may be located climbing or descending the slopes in any of the districts. These movements appear to occur daily throughout all the seasons with exact locations differing hourly depending on the time of day the HMA was flown.

DEFINITION: Elevations are differentiated into 3 categories: flats, foothills, and higher elevations. On the Winnemucca and Carson City Districts "flats" are flat or gradually sloping areas between 3575 and 4063 feet while on Battle Mountain

District the "flats" are areas between 4875 and 5083 feet; foothills range from 4063 to 5688 feet on the Winnemucca and Carson City Districts and from 5038 to 5688 on the Battle Mountain District; higher elevations include 5688 feet and above on all three districts.

Following are the results of each distribution and census flight conducted during the evaluation period.

**Carson City District - Hole in the Wall Allotment**

<b>Date</b>	<b>Horses</b>	<b>Aircraft</b>
5/88*	507	Bell 47 Soloy
7/89*	560	Bell 47G3B1-S
4/90*	625	Bell 47G3B1-S
11/90*	609	Bell 47 Soloy
1/91*	492	Bell 47G4A Soloy
2/91*	162	Bell 47G4A Soloy
12/91*	147	Bell 47G4A Soloy
2/92	74	Cessna 210
5/92	88	Maule MX-5
7/92	111	Maule MX-5
9/92	52	Maule MX-5
9/92*	161	Bell 47G4A Soloy
7/93*	136	Bell 47G4A Soloy
8/94*	105	Bell 47G4A Soloy
3/95*	125	Bell 47G4A Soloy

\* Census flight.

May 1988 -- 426/81 = 507

Horses were dispersed from the lower foothills to the upper elevations.

September 1989 -- 472/88 = 560

Horses were scattered at all elevations tending more toward the foothills and flats.

April 1990 -- 560/65 = 625 this number includes 4 horses outside the HMA.

Horses were found at all elevations with most occurring on the flats and in the foothills.

November 1990 -- 548/61 = 609 this includes 58/6 on the Winnemucca Dist. side.

These horses were scattered throughout the HMA at all elevations but with the majority occurring in the lower foothills and on the flats.

January 1991 -- 491/1 = 492

Horses were generally in the foothills and upper elevations.

February 1991 CAPTURE Removed 497 horses from the Carson City District only.

February 1991 -- 158/4 = 162 POST-removal census  
Horses were scattered throughout the HMA at all elevations.

December 1991 -- 140/7 = 147 includes 4 horses west of the HMA  
The majority of horses were in the foothills with a few at higher elevations.

February 1992 -- 73/1 = 74 Most of the horses were found from the upper foothills to lower elevation with a few at upper elevations. The weather was recorded as warm and little snow was on the ground. Horses appeared to be moving up in the mountains.

May 1992 -- 76/12 = 88 All of the horses in this HMA were located in the foothills.

July 1992 -- 92/19 = 111 Horses were distributed relatively evenly from the upper foothills down to the flats.

September 1992 -- 44/8 = 52 Horses were dispersed in the upper and lower foothills.

September 1992 -- 147/14 = 161 includes 4 horses outside the HMA.  
Horses were on the flats and in the foothills. None were at the highest elevations.

July 1993 -- 127/9 = 136  
Horses were mainly on the flats and at high elevations with a few in the foothills.

August 1994 -- 94/11 = 105  
All horses were on the flats and in the foothills.

March 1995 -- 121/4 = 125 2/1 additional horses outside HMA  
Most of the horses were in the upper and lower foothills with about 5 animals in the upper elevations.

Battle Mountain District - Home Station Gap Allotment

Date	Horses	Aircraft
6/85*	131	Bell 47G3B1-S
9/87*	82	Bell 47G3B1-S
5/88*	156	Bell 47 Soloy
9/89*	72	Bell 47G4A Soloy
4/90*	88	Bell 47G4A Soloy
2/91*	79	Bell 47G4A Soloy
12/91*	31	Bell 47G4A Soloy
2/92	11	Cessna 210
5/92	55	Maule MX-5
7/92	7	Maule MX-5
7/93*	41	Bell 47G4A Soloy
8/94*	10	Bell 47G4A Soloy
3/95*	71	Bell 47G4A Soloy

\* Census flight.

June 1985 -- 192/40 = 232

Home S.G.--(111/20 = 131)

Cottonwd --( 81/20 = 101) Cottonwood Eval. indicates 101 horses

The majority of these horses were in the foothills with a few at upper elevations.

September 1987 -- 96/15 = 111

Home S.G.--(71/11 = 82)

Cottonwd --(25/4 = 29) Cottonwood Eval. indicates 80 horses

Horses were found in the foothills and upper elevations.

May 1988 -- 183/31 = 214

Home S.G.--(135/21 = 156)

Cottonwd --( 48/10 = 58) Cottonwood Eval. indicates 58 horses

The majority of horses were dispersed in the upper foothills and upper elevations with a few occurring in the lower foothills.

September 1989 -- 138/11 = 149

Home S.G.--( 69/3 = 72) 2 of these were outside the HMA

Cottonwd --( 69/8 = 77) Cottonwood Eval. indicates 77 horses.

Horses were scattered at all elevations.

April 1990 -- 117/14 = 131

Home S.G.--( 79/9 = 88)

Cottonwd --( 38/5 = 43) Cottonwood Eval. indicates 43 horses.

Horses found basically in the foothills and upper elevations.

February 1991 -- 194/5 = 199

Home S.G.--( 75/4 = 79)

Cottonwd --(119/1 = 120) Cottonwood Eval. indicates 124 horses

Horses were mostly in the foothills with quite a few at upper elevations. Carson City's gather doesn't seem to have had an effect on Battle Mountain horses.

December 1991 -- 78/1 = 79

Home S.G.--(31/0 = 31)

Cottonwd --(47/1 = 48) Cottonwood Eval. indicates 48 horses

All the horses were found in the foothills and at upper elevations.

February 1992 -- 18/0 = 18

Home S.G.--(11/0 = 11)

Cottonwd --( 7/0 = 7)

These horses were basically found in the upper and lower foothills.

Battle Mountain's part of the Augusta HMA was not completely flown in this distribution flight.

May 1992 -- 52/8 = 60

Home S.G.--(47/8 = 55)

Cottonwd --( 5/0 = 5)

Only the area west of the Home Station Gap road was flown. Horses seen in this area were in the upper and lower foothills with a few at upper elevations.

July 1992 -- 19/2 = 21

Home S.G.--( 6/1 = 7)

Cottonwd --(13/1 = 14)

Except for 5 horses on the flats, the rest of the horses ranged from the upper foothills to upper elevations.

July 1993 -- 118/12 = 130

Home S.G.--( 37/4 = 41)

Cottonwd --( 81/8 = 89)

Horses were found in the foothills and at the higher elevations.

August 1994 -- 87/18 = 105

Home S.G.--( 9/1 = 10)

Cottonwd --(78/17 = 95)

Horses were in foothills and upper elevations with the majority found high.

FALL 1994 CAPTURE Removed 65 horses from the Cottonwood Allotment portion of the Augusta Range HMA.

March 1995 -- 151/1 = 152

Home S.G.--( 70/1 = 71)

Cottonwd --( 81/0 = 81)

Majority of horses found in the foothills with a few at higher elevations.

Winnemucca District - Jersey Valley

<b>Date</b>	<b>Horses</b>	<b>Aircraft</b>
5/88*	259	Bell 47 Soloy
9/89*	355	Bell 47G3B1-S
4/90*	67	Bell 47G3B1-S
2/91*	103	Bell 47G4A Soloy
8/91	82	Maule M-5
12/91*	82	Bell 47G4A Soloy
2/92	100	Cessna 210
5/92	82	Maule MX-5
7/92	45	Maule MX-5
9/92	34	Maule MX-5
7/93*	73	Bell 47G4A Soloy
8/94*	72	Bell 47G4A Soloy
3/95*	116	Bell 47G4A Soloy

\* Census flights.

May 1988 -- 223/36 = 259

Horses were found along the upper elevation slopes down to the foothills. None were seen on the flats.

September 1989 -- 300/55 = 355

Horses scattered at all elevations.

April 1990 -- 63/4 = 67

Majority of horses were in the foothills up to the upper elevations.

February 1991 -- 103/0 = 103

Horses were seen mostly at upper elevations with a few in the foothills and on the flats. Perhaps the just completed BLM horse removal on the Carson City portion of the HMA influenced the horses to seek the upper elevations.

August 1991 -- 70/12 = 82

Most of the horses were seen in the foothills and on the flats with a few at upper elevations. While doing the flight, a total of 17/1 horses and foals moved from Winnemucca District to Carson City District, indicating movement back and forth across allotment (and district) lines but within the HMA probably to facilitate water and forage needs.

December 1991 -- 79/3 = 82 includes 5 horses north of the HMA

Most horses were in the foothills, while some were at higher elevations.

February 1992 -- 98/2 = 100

The majority of horses were distributed in the foothills and the flats with a few at the upper elevations.

May 1992 -- 74/8 = 82

Seventy-five percent of the horses were found on the flats or in the foothills with about 25% at upper elevations.

July 1992 -- 40/5 = 45

Horses were relatively evenly distributed between upper elevations and the foothills.

September 1992 -- 31/3 = 34

Horses were mostly located in the foothills and flats with 4 seen on middle elevation slopes.

July 1993 -- 68/5 = 73

Horses were in the foothills and at upper elevations.

August 1994 -- 64/8 = 72

Horses were found from the flats to the upper elevations with most of them in the foothills.

March 1995 -- 113/3 = 116

All horses located in foothills to upper elevations.



Augusta Range HMA NV311  
1977-1995  
Census Data and Analysis

COMBINED CENSUS TOTALS FOR ALL 3 DISTRICT

<u>Date</u>	<u>Totals</u>	<u>Season</u>
June 1977	63 (Winnemucca only)	Spr-Sum
Mar 1979	81 (Winnemucca only)	Winter
June 1980	212 (Winnemucca only)	Summer
June 1985	778	Spr-Sum
Sept 1987	744	Summer
May 1988	980	Spring
Sept 1989	1064	Fall
Apr 1990	823	Spring
Nov 1990	609 (Carson City only)	Fall
Jan 1991	492 (Carson City only)	Winter
FEB 1991	REMOVAL OF 497 HORSES FROM CARSON CITY DIST.	
Feb 1991	464	Winter
Dec 1991	308	Fall
Sept 1992	161 (Carson City only)	Fall
July 1993	339	Summer
Aug 1994	282	Summer
OCT 1994	REMOVAL OF 65 HORSES FROM BATTLE MTN. DIST.	
Mar 1995	393	Winter

There is a great deal of fluctuation in census numbers from year to year. Other than population decreases following BLM gathers, large decreases in the total population have occurred at times when increases were expected. In the 2 year period between 1985 and 1987 horse numbers decreased by 34 instead of increasing to about 1059; between 1989 and April 1990 numbers decreased by 241 instead of increasing to around 1182; and finally, from December 1991 until March 1995 numbers stayed below the February 1991 post gather census. During that time horse numbers fluctuated from a post removal census of 464 in February of 1991, down to 308 in December 1991, up to 339 in July 1993, down to 282 in August 1994, and back up to 393 - the highest since 1991 - in March 1995. At an 11% increase per year, the population should have increased from 464 in February 1991 to about 705 horses in 1995.

Accuracy of aerial censuses can result in perceived population fluctuations. Aerial censuses are about 85% accurate at best. Topography can affect census accuracy as can weather and lighting conditions.

Under most weather conditions with adequate forage and water available, increases, not decreases, should have been observed. Hard winters may account for some decrease in

numbers. However, winter deaths are frequently the result of poor summer and fall forage, resulting in horses going into winter in less than optimum condition and frequently underweight. If pregnant mares approach winter in poor condition they may die, reabsorb their fetuses, or slough their foals prematurely. Horses, including mares, have been observed in thin to poor condition midsummer in the Augusta Range HMA.

## Appendix C Threatened and Endangered Species

	Federal Status	Candidate Species	
<b>Mammals</b>	2	pygmy rabbit	<i>Brachysagus idahoensis</i>
	2	spotted bat	<i>Euderma maculatum</i>
	2	small-footed myotis	<i>Myotis ciliolabrum</i>
	2	long-eared myotis	<i>Myotis evotis</i>
	2	fringed myotis	<i>Myotis thysanodes</i>
	2	long-legged myotis	<i>Myotis volans</i>
	2	Pale Townsend's big-eared bat	<i>Plecotus townsendii pallescens</i>
	2	Pacific Townsend's big-eared bat	<i>Plecotus townsendii townsendii</i>
	<b>Birds</b>	2	northern goshawk
2		black tern	<i>Chlidonias niger</i>
2		white-faced ibis	<i>Plegadis cnihi</i>
2		ferruginous hawk	<i>Buteo regalis</i>
2		western least bittern	<i>Ixobrychus exilis hesperis</i>
2		western burrowing owl	<i>Athene cunicularia hypugea</i>
<b>Plants</b>	2	windloving buckwheat	<i>Eriogonum anemophilum</i>
	2	Nevada oryctes	<i>Oryctes nevadensis</i>
	2	Eastwood's milkweed	<i>Asclepias eastwoodiana</i>

## Appendix D      Objectives from Previous Documents

### Allotment Objectives from 1988 Hole in the Wall Evaluation

1. Initially reduce wild horse numbers to 160 head in the Allotment.

Limiting utilization on key grass species at key dual use areas to:

Nov. reading @ 25% overall, to improve condition (grass species)

Mar. reading @ 55% overall, to improve condition (grass species)

Mar. reading @ 50% overall, to improve condition (shrub species)

2. The past four years (1984-1988) average actual use by livestock in the allotment has been 1056 Aums . The operator has not used full preference due to a reduction in his base herd size and it is not anticipated this herd size will increase. Restrictions in the operator's year-round operation (in other allotments) also makes it impossible for him to activate his entire preference in the Hole in the Wall Allotment.

Since the excessive utilization of the key vegetation resource is occurring during the spring and summer season (when livestock are not present), adjustments in livestock preference cannot be made at this time. However, a subsequent monitoring evaluation of the allotment will be made in 1991 to determine if adjustments from actual use in livestock are needed. Adjustments will be made in 1992.

Require all wells on the allotment to be pumped during this period. If not, reduce livestock by 1/3 for each well not producing. Limit utilization on all key species at key dual use areas to 55% by 3/30.

3. Protect and develop two spring sources:

Have no use by livestock or wild horses at immediate spring source

Provide water in troughs outside spring riparian sites.

Recommended long term objectives should include:

Improve present condition of range sites.

Have riparian habitat (range sites) at water sources in good condition in 20 years.

Adjust for a sustained use by both wild horses and/or livestock identified on the allotment which will accomplish the above resource conditions.

Stillwater Range HMP Objectives

MANAGEMENT OBJECTIVES

1. Objective Statement

The Sonoma-Gerlach MFP III decisions concerning bighorn sheep and mule deer provide for the following reasonable numbers and animal unit months (AUM) forage requirements for yearlong use.

Allotment	Bighorn Sheep		Mule Deer	
	Reasonable No.	AUMs	Reasonable No.	AUMs
Pleasant Valley	40	97	118	354
South Rochester	6	15	15	45
Rawhide	19	46	28	84
South Buffalo	56	135	127	381
Jersey Valley	1	1	16	48
Cottonwood Canyon	0	0	6	18
TOTALS	122	294	310	930

2. Specific Objectives

Detailing specific objectives for habitat management and improvement is difficult at this time. Once objectives a through c are met, this HMP will be upgraded to provide for more specific habitat objectives.

- a. Reintroduce desert bighorn sheep in WHA-T-16 by 1986, and provide forage and cover annually to support a population growth up to 211 animals.
- b. Monitor the bighorn sheep seasonally for a minimum of 5 years beginning in 1986 to determine population distribution and density.
- c. Monitor bighorn sheep habitat seasonally for a minimum of five years beginning in 1986 to determine actual habitat use.
- d. Provide forage and cover annually to support 310 mule deer on a yearlong basis.
- e. Raise the water suitability index for the low sagebrush/bunchgrass plant community from 0.0 to 1.0 and the weighted water index from 0.56 to 0.62 by 1989.
- f. Raise the visual obstruction rating for bighorn sheep in the juniper/singleleaf pinyon/mountain big sagebrush plant community from 0.05 to 0.5 by 1990.

## Appendix E      Hole in the Wall Carrying Capacity Calculations

### Potential Stocking Level Calculations

The potential stocking level for this allotment is based on data collected for the 1993 and 1994 grazing seasons. This utilization data has been collected in the spring and the fall of the year to determine the overall use by livestock, wild horses, and wildlife.

The potential stocking level is the calculated number of available aums that will lead to the attainment of allotment specific long term objectives. The weighted average utilization of 55 % at the end of the grazing season ( April 1) will ensure the maintenance and improvement of the vegetative communities. The desired stocking level for the allotment is determined using the following Weighted Average Utilization and Actual Use/Utilization formulas. Actual Use was determined through actual use reports submitted by the operator for cattle and through census flights for wild horses.

$$\text{Wt. Av. Util.} = \frac{(\text{ac. Mod. use} \times .5) + (\text{ac. heavy use} \times .70) + (\text{Ac. severe use} \times .90)}{\text{Total acres}}$$

$$\text{Potential Stocking Level: } \frac{\text{actual use (Aums)}}{\text{Wt. Av. util.}} = \frac{\text{desired actual use}}{\text{desired util.}}$$

#### 1. 04/13/93

##### A. Weighted Average Utilization

$$\frac{(21,985 \text{ ac} \times .5) + (31,867 \times .7) + (2,799 \times .9)}{56,651} = \frac{35,819}{56,651} = .63$$

##### B. Potential Stocking

##### 1. Actual Use

a) Cattle                    554 Aums

b) Wild Horses    1916 Aums (based on 12/91 and 9/92 census)

Wild horse actual use calculation

(147 horses from 4/4/92 to 9/1/92) & (161 horses from 9/2/92 to 4/13/93)

[(147 h \* 151 days) / 30.41666] = 730 Aums

[(161 h \* 224 days) / 30.41666] = 1186 Aums

C. Stocking Calculation

$$\frac{554 \text{ Aums} + 1916 \text{ Aums}}{.63} = \frac{x}{.55} \quad x = 2156 \text{ Aums}$$

2. 04/16/94

A. Weighted Average Utilization

$$\frac{(69,120 \text{ ac} \times .7)}{69,120} = .7$$

B. Potential Stocking

1. Actual Use

*Horse only*

- a) Cattle 851 Aums
- b) Wild Horses 1669 Aums (based on 8/94 census)

Wild horse actual use calculation

(161 horses from 4/14/93 to 7/1/92) & (136 horses from 7/2/93 to 4/10/94)

$[(161 \text{ h} \times 110 \text{ days}) / 30.41666] = 582 \text{ Aums}$

$[(136 \text{ h} \times 243 \text{ days}) / 30.41666] = 1669 \text{ Aums}$

C. Stocking Calculation

$$\frac{851 \text{ Aums} + 1669 \text{ Aums}}{.7} = \frac{x}{.55} \quad x = 1980 \text{ Aums}$$

Average Carrying Capacity

$$\text{Combined Use} = \frac{2156 \text{ Aums} + 1980 \text{ Aums}}{2} = 2075 \text{ Aums}$$

Allocation

1. Land Use Plan Ratios

Livestock 2675 Aums 59%  
 Wild Horses 1860 Aums 41%

Land Use Plan Ratios Applied to Carrying Capacity

Livestock 59% x 2075 Aums = 1224 Aums  
 Wild Horses 41% x 2075 Aums = 851 Aums

## Appendix F Home Station Gap Carrying Capacity Calculations

### Potential Stocking Level Calculations

The potential stocking level for this allotment is based on data collected for the 1987, 1988, 1989, and 1993 grazing seasons. This utilization data has been collected in the spring and the fall of the year to determine the overall use by livestock, wild horses, and wildlife.

The potential stocking level is the calculated number of available aums that will lead to the attainment of allotment specific long term objectives. The weighted average utilization of 55 % at the end of the grazing season ( February 28) will ensure the maintenance and improvement of the vegetative communities. The desired stocking level for the allotment is determined using the following Weighted Average Utilization and Actual Use/Utilization formulas. Actual Use was determined through actual use reports submitted by the operator for cattle and through census flights for wild horses.

$$\text{Wt. Av. Util.} = \frac{(\text{ac. Mod. use} \times .5) + (\text{ac. heavy use} \times .70) + (\text{Ac. severe use} \times .90)}{\text{Total acres}}$$

$$\text{Potential Stocking Level: } \frac{\text{actual use (Aums)}}{\text{Wt. Av. util.}} = \frac{\text{desired actual use}}{\text{desired util.}}$$

1. 03/17/88 On 1987 use.

A. Weighted Average Utilization

$$\frac{(2,423 \text{ ac} \times .5) + (4528 \times .7) + (92 \times .9)}{7043} = \frac{4464}{7043} = .63$$

B. Potential Stocking

1. Actual Use

a)	Cattle	890 Aums
b)	Wild Horses	984 Aums (based on 9/87 census)

C. Stocking Calculation

$$\frac{890 \text{ Aums} + 984 \text{ Aums}}{.63} = \frac{x}{.55} \quad x = 1636 \text{ Aums}$$



2. 03/8/89 On 1988 use.

## A. Weighted Average Utilization

$$\frac{(3897 \text{ ac} \times .5) + (3317 \text{ ac} \times .9)}{7214} = \frac{4934}{7214} = .68$$

## B. Potential Stocking

## 1. Actual Use

- a) Cattle 424 Aums  
 b) Wild Horses 1872 Aums (based on 5/88 census)  
 Rationale: Use Pattern Mapping was conducted to determine use on previous year's vegetation; so actual use would also be determined from the previous year's population.

## C. Stocking Calculation

$$\frac{424 \text{ Aums} + 1872 \text{ Aums}}{.68} = \frac{x}{.55} \quad x = 1857 \text{ Aums}$$

3. 11/1/89

## A. Weighted Average Utilization

$$\frac{(3388 \text{ ac} \times .5) + (3705 \text{ ac} \times .7) + (2136 \text{ ac} \times .9)}{9229} = \frac{6210}{9229} = .67$$

## B. Potential Stocking

## 1. Actual Use

- a) Cattle 998 Aums  
 b) Wild Horses 864 Aums (based on 9/89 census)

## C. Stocking Calculation

$$\frac{998 \text{ Aums} + 864 \text{ Aums}}{.67} = \frac{x}{.55} \quad x = 1529 \text{ Aums}$$

4. 11/17/93

A. Weighted Average Utilization

$$\frac{(4473 \text{ ac} \times .5) + (420 \times .7)}{9229} = \frac{2531}{4893} = .52$$

B. Potential Stocking

1. Actual Use

- a) Cattle 853 Aums
- b) Wild Horses 492 Aums (based on 7/93 census)

C. Stocking Calculation

$$\frac{853 \text{ Aums} + 492 \text{ Aums}}{.52} = \frac{x}{.55} \quad x = 1423 \text{ Aums}$$

Average Carrying Capacity

$$\frac{1636 + 1857 + 1529 + 1423}{4} = 1611 \text{ Aums}$$

Shoshone-Eureka Rangeland Program Summary Ratios

Livestock 994 Aums 58%  
 Wild horses 708 Aums 42%

Ratios Applied to Average Carrying Capacity

Livestock 58% x 1611 = 934 Aums  
 Wild horses 42% x 1611 = 677 Aums

## Appendix G Jersey Valley Carrying Capacity Calculations

### Potential Stocking Level Calculations

The potential stocking level for this allotment is based on data collected for the 1987, 1988, 1989, 1992, and 1993 grazing seasons. This utilization data has been collected in the spring and the fall of the year to determine the overall use by livestock, wild horses, and wildlife.

The potential stocking level is the calculated number of available aums that will lead to the attainment of allotment specific long term objectives. The weighted average utilization of 55 % at the end of the grazing season ( February 28) will ensure the maintenance and improvement of the vegetative communities. The desired stocking level for the allotment is determined using the following Weighted Average Utilization and Actual Use/Utilization formulas. Actual Use was determined through actual use reports submitted by the operator for cattle and through census flights for wild horses.

$$\text{Wt. Av. Util.} = \frac{(\text{ac. Mod. use} \times .5) + (\text{ac. heavy use} \times .70) + (\text{Ac. severe use} \times .90)}{\text{Total acres}}$$

$$\text{Potential Stocking Level: } \frac{\text{actual use (Aums)}}{\text{Wt. Av. util.}} = \frac{\text{desired} \cdot \text{actual use}}{\text{desired util.}}$$

#### 1. 03/04/87

##### A. Weighted Average Utilization

$$\frac{(2,757 \text{ ac} \times .5) + (3,086 \times .7) + (4,628 \times .9)}{10,471} = \frac{7,704}{10,471} = .74$$

##### B. Potential Stocking

###### 1. Actual Use

- a) Cattle 793 Aums
- b) Wild Horses 3084 Aums (based on 9/87 census)

##### C. Stocking Calculation

$$\frac{793 \text{ Aums} + 3084 \text{ Aums}}{.74} = \frac{x}{.55} \quad x = 2882 \text{ Aums}$$

2. 03/17/88

## A. Weighted Average Utilization

$$\frac{(8,639 \text{ ac} \times .5) + (18,886 \times .7) + (7,012 \times .9)}{34,537} = \frac{23,851}{34,537} = .69$$

## B. Potential Stocking

## 1. Actual Use

- a) Cattle 1411 Aums
- b) Wild Horses 3108 Aums (based on 5/88 census)

## C. Stocking Calculation

$$\frac{1411 \text{ Aums} + 3108 \text{ Aums}}{.69} = \frac{x}{.55} \quad x = 3602 \text{ Aums}$$

3. 03/08/89

## A. Weighted Average Utilization

$$\frac{(8,102 \text{ ac} \times .5) + (7,088 \times .7) + (15,304 \times .9)}{30,494} = \frac{22,786}{30,494} = .75$$

## B. Potential Stocking

## 1. Actual Use

- a) Cattle 1350 Aums
- b) Wild Horses 4260 Aums (based on 9/89 census)

## C. Stocking Calculation

$$\frac{1350 \text{ Aums} + 4260 \text{ Aums}}{.75} = \frac{x}{.55} \quad x = 4114 \text{ Aums}$$

4. 11/1/89

A. Weighted Average Utilization

$$\frac{(10,091 \text{ ac} \times .5) + (10,327 \times .7) + (10,543 \times .9)}{30,961} = \frac{21,763}{30,961} = .70$$

B. Potential Stocking

1. Actual Use

a)	Cattle	723 Aums
b)	Wild Horses	355 horses from 3/1 to 11/1 (9/89 census)
		<u>355 horses x 246 days</u> = 2871 Aums
		30.41666

C. Stocking Calculation

$$\frac{723 \text{ Aums} + 2871 \text{ Aums}}{.70} = \frac{x}{.55} \quad x = 2824 \text{ Aums}$$

5. 11/24/92

A. Weighted Average Utilization

$$\frac{(5,035 \text{ ac} \times .5) + (311 \times .7) + (429 \times .9)}{5,775} = \frac{3,121}{5,775} = .54$$

B. Potential Stocking

1. Actual Use

a)	Cattle	132 cows from 3/1 to 11/24
		<u>132 cows x 269 days</u> = 1167 Aums
b)	Wild Horses	82 horses from 3/1 to 11/24 (12/91 census)
		<u>82 horses x 269 days</u> = 725 Aums
		30.41666

C. Stocking Calculation

$$\frac{1167 \text{ Aums} + 725 \text{ Aums}}{.54} = \frac{x}{.55} \quad x = 1927 \text{ Aums}$$

6. 8/18/93

A. Weighted Average Utilization

$$\frac{(1,129 \text{ ac} \times .5) + (185 \times .7)}{1,314} = \frac{694}{1,314} = .53$$

B. Potential Stocking

1. Actual Use

a) Cattle 87 cows from 4/1 to 8/18  
87 cows x 140 days = 400 Aums

b) Wild Horses 73 horses from 3/1 to 8/18 (7/93 census)  
73 horses x 171 days = 410 Aums  
 30.41666

C. Stocking Calculation

$$\frac{400 \text{ Aums} + 410 \text{ Aums}}{.53} = \frac{x}{.55} \quad x = 840 \text{ Aums}$$

Average Carrying Capacity

$$\frac{2882 + 3602 + 4114 + 2824 + 1927 + 840}{6} = 2698 \text{ Aums}$$

Sonoma-Gerlach Land Use Plan Ratios

Livestock 1581 Aums 34%  
 Wild Horses 3132 Aums 66%

Ratios Applied to Carrying Capacity

Livestock 34% x 2698 = 917 Aums  
 Wild Horses 66% x 2698 = 1781 Aums

**Appendix H      Grazing System Alternatives**

- I.    Livestock Carrying Capacity
  - A.    Hole in the Wall    1224 Aums
  - B.    Home Station Gap    934 Aums
  - C.    Jersey Valley        917 Aums
  - D.    Total Livestock       3075 Aums

II.    Alternative A

Total # 400 c 10/1 to 5/15 = 2985 Aums

	Hole in the Wall	Jersey Valley	Home Station Gap
Year 1	10/1 to 12/25 1131 Aums	12/26 to 3/5 921 Aums	3/6 to 5/15 934
Year 2	2/19 to 5/15 1131 Aums	10/1 to 12/9 921 Aums	12/10 to 2/18 934 Aums
Year 3	12/11 to 3/6 1131 Aums	3/7 to 5/15 921 Aums	10/1 to 12/10 934 Aums

III.    Alternative B

Total # 350 c 10/1 to 5/30 = 2785 Aums

	Hole in the Wall	Jersey Valley	Home Station Gap
Year 1	10/1 to 1/5 1116 Aums	1/6 to 3/18 840 Aums	3/19 to 5/31 852 Aums
Year 2	3/1 to 5/31 1059 Aums	10/1 to 12/11 828 Aums	12/12 to 2/28 909 Aums
Year 3	12/21 to 3/27 1128 Aums	3/28 to 5/31 748 Aums	10/1 to 12/20 932 Aums

IV.    Alternative C

Total # 300 c 9/1 to 5/30 = 2693 Aums

	Hole in the Wall	Jersey Valley	Home Station Gap
Year 1	9/1 to 12/20 1095 Aums	12/21 to 3/10 799 Aums	3/11 to 5/31 809 Aums
Year 2	3/1 to 5/31 907 Aums	9/1 to 11/24 838 Aums	11/25 to 2/28 947 Aums
Year 3	11/25 to 2/28 947 Aums	3/1 to 5/31 907 Aums	9/1 to 11/24 838 Aums

Under the above alternatives the permittee would be allowed 10 to 15 days to make pasture moves.

V. Alternative D

Total # 300 c Yearlong using Boyer Allotment 2703 Aum's + 898 Aum's = 3601 Aum's

	Hole in the Wall	Jersey Valley	Home Station Gap	Boyer Ranch
Year 1	9/1 to 12/20 1095 Aums	12/21 to 3/10 799 Aums	3/11 to 5/31 809 Aums	6/1 to 8/30 898 Aums
Year 2	3/1 to 5/31 907 Aums	9/1 to 11/24 838 Aums	11/25 to 2/28 947 Aums	
Year 3	11/25 to 2/28 947 Aums	3/1 to 5/31 907 Aums	9/1 to 11/24 838 Aums	

This alternative would depend on Carson City's concurrence. The stocking rate and season of use for the Boyer Ranch allotment is currently:

179 c from May 1 to February 28 = 1790 AUMs

Due to the water and types of forage in the Hole in the Wall, Jersey Valley, and Home Station Gap Allotments, they would not be used from 6/1 to 8/30.

VI. Alternative E

The following alternative would essentially use the existing preference with an increase in the Home Station Gap and Jersey Valley Allotments. If Rosewood Spring on the N.W. corner of Hole in the Wall Allotment and Shoshone Seep near the S.W. corner of the allotment were made available to cattle in Hole in the Wall, the allotment could be more fully utilized. May and October would be the best months to have cattle on private grounds, as this is when they are being worked.

	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Tot. Aum
JV			179	179	179	179	179	179	179	179	179	179	1789
HSG	79	79	200	200	200	200	306	125		71	71		1337
HIW	500	500							500	500	337	500	2316
BR			200	200	200	200	94						902
Pvt								275					280



## VII. Alternative F

228 Total number of livestock - Yearlong without the Boyer Allotment 2728 Aums

	Hole in the Wall	Home Station Gap/ Jersey Valley - East side	Jersey Valley- West side
Year 1	12/1 to 4/30 1132 Aums	5/1 to 7/31 690 Aums	8/1 to 11/30 914 Aums
Year 2	12/1 to 4/30 1132 Aums	8/1 to 11/30 914 Aums	5/1 to 7/31 690 Aums

The permittee will be allowed 10 days to move between allotments. Moves will be permitted 5 days on either side of the begin date and trailing will be permitted through Jersey Valley if required. This system will be put in place on December 1, 1996.