9-23-94

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Winnemucca District Office
705 East 4th Street
Winnemucca, Nevada 89445

IN REPLY REFER TO:

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(NV-026.1)

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Dear Interested Party:

I am sending you the Final Re-Evaluation and the Proposed Full Force and Effect Multiple Use Decision for the Blue Wing/Seven Troughs Allotment that implements the recommendations of the re-evaluation.

This marks the culmination of two years of intensive work on the part of the BLM and interested parties in developing these documents. The re-evaluation was started in May of 1993 with a meeting in Lovelock. The "Draft Re-Evaluation of the Blue Wing/Seven Troughs Allotment" was issued on May 24, 1994, to 29 affected interests. A meeting was held on June 16, 1994, in Lovelock, to answer questions on the draft. We received comments from 12 individuals from the meeting and the draft document. Based on these comments, two more alternatives to the Grazing System and another Stocking Level alternative for wild horses/burros were added to the Final Re-Evaluation.

I wish to express my appreciation for the time and effort that you, as an affected interest, have put into this process. If you have any questions regarding these documents, please contact Rich Adams or Ron Pearson at (702) 623-1500.

Sincerely yours,

Bud C. Cribley, Area Manager
Sonoma-Gerlach Resource Area

Enclosures


BLUEWING-SEVEN TOUGHS ALLOTMENT
MAJUBA-SEVEN TROUGHS BOUNDARY (NEW)
NORTH-SOUTH DIVISION

BLUE WING/SEVEN TROUGHS ALLOTMENT RE-EVALUATION

I. Introduction

The Blue Wing and Seven Troughs are two separate allotments although for the re-evaluation process they have been combined and evaluated as one. The major livestock operator (C-Punch) uses both allotments and some of the wild horse/burro Herd Management Areas (HMAS) as well as wildlife use areas cross the allotment boundaries.

The Blue Wing/Seven Troughs Allotment Re-evaluation will evaluate the actual use, climate, utilization, stream survey, wild horse/burro distribution and census, and wildlife habitat data to determine the effectiveness of the present management practices. This re-evaluation addresses the Blue Wing/Seven Troughs Allotment Management Plan(AMP) the 1988 allotment evaluation and livestock grazing agreements and the Blue Wing/Seven Troughs Herd Management Area Plan (HAMP) to determine if the allotment specific objectives have been met or not met and if the objectives are still appropriate. Among the management actions to be developed will be to establish the carrying capacities by use areas, establish Appropriate Management Levels (AMLs) for wild horses/burros and appropriate numbers, allowable use levels, season of use and a revised grazing system for livestock.

The area is comprised of all or part of 11 mountain ranges: Kamma, Antelope, and Seven Troughs within the Seven Troughs Allotment and Selenite, Lava Beds, Trinity, Blue Wing, Nightingale, Shawave, and Truckee within the Blue Wing Allotment. The mountain ranges are typically separated by valley floors ranging from 2-15 miles across in size. The area is bordered on the north by the Union Pacific Railroad tracks, on the west by Highway 447 and the southeastern edge of the Pyramid Lake Indian Reservation boundary.

The Blue Wing/Seven Troughs Allotments are within the Basin and Range physiographic province. The typical features of the area are the broad, flat valleys and north-south trending mountain ranges. Elevation varies from 3,800 feet on the desert floor to 8,200 feet in the mountain peaks. The climate is characteristic of the high, cold desert with highly variable precipitation patterns and extreme variations in temperatures. The Blue Wing Allotment is approximately 66 miles long in a north-south direction and 22 miles wide in an east-west direction. The Seven Troughs Allotment is approximately 29 miles long in a north-south direction and 22 miles wide in an east-west direction.

The Bluewing/Seven Troughs Allotments have an existing Allotment Management Plan (AMP) and Herd Management Area Plan (HMAP) that was developed in agreement with the Lovelock Coordinated Resources Management Plan (CRMP).

Land Ownership Status - Ac.

	Public	Other	Total
Blue Wing	976,928 (86%)	164,973 (14%)	1,141,901 (100%)
Seven Troughs	302,371 (83%)	62,398 (17%)	364,769 (100%)
Total	1,279,299 (85%)	227,371 (15%)	1,506,670 (100%)

A. Blue Wing Allotment - 00135
Seven Troughs Allotment - 10134

B. Permittees:

1. Blue Wing: C-Punch Corp. and Wesley Cook

2. Seven Troughs: C-Punch Corp., John Espil, Duffurrena Sheep Co. and Tim DeLong Family Trust.

C. Evaluation Period: The Blue Wing and Seven Troughs Allotments were evaluated in 1988. The Re-evaluation period is from 1989 through 1992. Only the data generated during that four year period is discussed below.

D. Selective Management Category and Priority

1. Blue Wing: Category - I, Priority - 5

2. Seven Troughs: Category - I, Priority - 6

E. Livestock Preference

1. Blue Wing Allotment

Active grazing preference in the Blue Wing Allotment is 24,329 AUMs. There are currently two livestock operators in the Blue Wing Allotment. C-Punch Corporation graze cattle yearlong. Wes Cook grazes sheep during the winter.

Operator	Total	Preference Suspended	Active	Kind of Livestock	Fed. Range
C-Punch	21,460	0	21,460	Cattle	80%
C-Punch	5,349	Exchange of Use		Cattle	
Wesley Cook	2,975	106	2,869	Sheep	100%

2. Seven Troughs Allotment

Active grazing preference in the Seven Troughs Allotment is 9,523 AUMs. There are currently four operators in Seven Troughs Allotment.

Operator	Preference Total	Suspended	Active	Kind of Livestock	Fed. Range
C-Punch	4,404	0	4,404	Cattle	92%
C-Punch	399	Exchange of Use		Cattle	
John Espil	3,627	0	3,627	Sheep	100%
Dufurrena	746	0	746	Sheep	67%
Dufurrena	373	Exchange of Use		Sheep	
DeLong Trust	746	0	746	Cattle	33%
DeLong Trust	1,494	Exchange-of-use		Cattle	

The percentages less than 100% Federal Range refers to private lands and the attached AUMS accepted under an Exchange-of Use (EOU) agreements.

NOTE: In 1992 Tim DeLong Family Trust acquired the permit previously held by DeLong Ranches Inc. thereby leaving only four permittees in the Seven Troughs Allotment. The total AUMS both federal and private were transferred from DeLong Ranches to Tim Delong Family Trust.

F. Wild Horse/ Burro Numbers from the 1987 Blue Wing and Seven Troughs HMAP.

HERD MGT AREA	Numbers of Horses/Burros		AUMs for Horses/Burros	
Lava Beds - BW	375	40	4500	480
Blue Wing Mtns. - BW	50	39	600	468
Nightingale Mtns. - BW	87	0	1044	0
Shawave Mtns. - BW	100	0	1200	0
Seven Troughs - ST	215	64	2580	768
Kamma Mtns. - ST	50	0	600	0
TOTALS	877	143	10524	1716

G. Wildlife Numbers

These are the reasonable numbers established for wildlife in the Sonoma-Gerlach MFP III (WL 1.1) for the Blue Wing/Seven Troughs Allotments.

BLUE WING ALLOTMENT

	Number	AUMs
Bighorn Sheep	44	106*
Mule Deer	234	701
Pronghorn	20	49

SEVEN TROUGHS ALLOTMENT

	Number	AUMs
Bighorn Sheep	0	0
Mule Deer	165	495
Pronghorn	11	26

* These are potential AUMS identified in the northern portion of the Selenite Range, Bighorn sheep will not be reintroduced unless conflicts with domestic sheep are resolved.

II. Summary of Blue Wing / Seven Troughs 1988 Evaluation:

The 1988 Allotment Evaluation determined that the utilization objectives on the wetland riparian, streambank riparian and upland sites associated with water were not being met. The factors contributing to these objectives not being met were:

1. Poor livestock distribution.

2. Failure to maintain livestock in the designated areas of use as outlined in the Allotment Management Plan (AMP).

3. Salt placed near the water (within 1/4 mile).

4. Poor water distribution and inadequate water sources.

5. Wild horse and burro numbers above Appropriate Management Level (AML) until the winter of 1987.

6. Livestock and wildlife competition restricted wildlife numbers to small concentrations at higher elevations.

7. Lack of maintenance on range improvements.

III. Blue Wing/Seven Troughs HMAP Objectives

A. Habitat Objectives

1. Maintain or improve the rangeland ecological status within the HMAs utilizing the criteria and timeframes established in the Blue Wing-Seven Troughs Monitoring Plan 1985.

2. Provide water for wild horses/burros throughout the HMAs, where possible to yield a better distribution of animals utilizing the habitat, therefore reducing concentration or overuse of particular areas.

B. Animal Objectives

1. Maintain a healthy herd of animals within the AML of 877 horses and 143 burros.

2. Establish forage use levels for the wild horse/burro population (i.e. refine the AML) through monitoring of the wild horse/burro habitat.

3. Maintain the wild free-roaming characteristics of the animals in the HMAs.

4. Preserve and perpetuate the unique spotted and pinto burro population.

5. Acquire data on the demographic characteristics of the wild horse/burro populations to include information on sex ratio, age structure, young/adult ratio, and actual use. These parameters will be analyzed to determine natality, mortality, and rate of increase.

6. Determine the dietary preferences of wild horses/burros within the HMAs.

7. Determine distribution and movement patterns for the wild horse/burro populations in the HMAs.

IV. Management Actions from the 1988 Evaluation Agreement:

(Refer to Appendix 11 for a more detailed explanation of the existing grazing systems)

A. C-Punch Corp:

1. C-Punch Corp. agreed to reduce a total of 300 head of cattle for the 1989 grazing season in the Blue Wing and Seven Troughs Allotments.

   This action was accomplished.

2. Agreed to fence the meadows at Jenny Creek, and also agreed that riparian areas identified as needing protection would be fenced by BLM on public lands in the Blue Wing and Seven Troughs Allotments.

   The private lands along Jenny Creek were fenced by C-Punch. The riparian areas on public lands were not fenced.

3. C-Punch would begin work on the proposed Vernon No. 2 pipeline under a Sec. 4 Permit and pursue these future projects: Antelope spring and pipeline, Ten Mile spring and pipeline, and Desert Spring and pipeline.

   C-Punch drilled a well on private lands leased from the railroad and constructed a water trough to provide water into the area that was proposed by the Veron No. 2 pipeline. No additional sources of water were pursued or developed.

B. Wes Cook:

1. Agreed to graze his sheep in a circular pattern within his area of use in the Blue Wing Allotment. The pattern would be clockwise one year then counter-clockwise the next year depending upon snow conditions and forage availability. The actual pattern would be agreed upon at a yearly meeting prior to the sheep trailing into the Blue Wing Allotment.

   This action has been accomplished.

2. Agreed to take a voluntary reduction of 500 AUMS for the 1989 grazing season.

   This action was accomplished.

C. Dufurrena Sheep Co:

1. Agreed to graze his sheep in a circular pattern in the Antelope and Rosebud areas of use in the Seven Troughs Allotment. The pattern would be clockwise one year then counter-clockwise the next year depending upon snow conditions and forage availability. The actual pattern would be agreed

upon at a yearly meeting prior to the sheep trailing into the Seven Troughs Allotment. This action has been accomplished.

D. John Espil:

1. Agreed to graze his sheep in a circular pattern within his area of use in the Seven Troughs Allotment. The pattern would be clockwise one year then counter-clockwise the next year depending upon snow conditions and forage availability. The actual pattern would be agreed upon at a yearly meeting prior to the sheep trailing into the Seven Troughs Allotment.

   This action has been accomplished.

2. Agreed to investigate the possibility of grading roads, hauling water and/or installing water storage tanks in winter use areas that received light or no use.

   Water hauling was accomplished, road grading was not accomplished and the storage tanks installation alternative has been investigated.

E. DeLong Ranches:

1. Agreed to continue to operate within the adjudicated area of use which includes the Kamma Mountains, Antelope Range and the northwest corner of the Seven Troughs Range. Grazing would continue each year as winter use from November 1 through Jume 15 when livestock would be moved out of the allotment.

   This action has been accomplished.

2. Agreed to investigate and develop, if feasible, water in the following areas:

a. Antelope Spring - T.35N., R.30E.
b. Sulphur Seep - T.34N., R.29E.
c. Crazy Jack Seep - T.34N., R.31N.
d. Mauds Well- develop a more reliable source.
e. Box Canyon #2- maintain and develop.

This has not been accomplished.

V. MONITORING AND INVENTORY DATA DISPLAY AND ANALYSIS

A. Summary of Actual Use Data (1989-1992):

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: (Cattle and Sheep)

The following data was compiled from the actual use reports provided by the permittees or from the livestock licenses.

Blue Wing Allotment

Permittee	1989	1990	1991	1992
C-Punch	14592	6720	7942	10560
Wes Cook	2006	2528	1854	1560
Subtotal	16598	9248	9796	12120

Seven Troughs Allotment

Permittee	1989	1990	1991	1992
C-Punch Ranch	3643	2438	2491	240
Dufurrena	628	459	649	664
John Espil	1882	1784	2060	2087
DeLong Ranches	737/589*	743/589*	743/589*	206/163*
Tim DeLong	0/891*	0/891*	0/891*	169/1317*[1]
Subtotal	6890/1480*	5424/1480*	5943/1480*	3366/1480*
Grand Total	23488/1480*	14672/1480*	15739/1480*	15486/1480*

* Indicates the AUMS of Exchange of Use.

[1] The increase in AUMS is due to a permit transfer from Delong Ranches to Tim Delong in 1992.

NOTE: Additional actual use information can be found in Appendix 1.

b. Wildlife

The following data was provided by Nevada Division of Wildlife

BLUE WING ALLOTMENT - MULE DEER

YEAR	NUMBER	AUMS
1989	225	675
1990	225	675
1991	200	600
1992	200	600

BLUE WING ALLOTMENT - PRONGHORN ANTELOPE

YEAR	NUMBER	AUMS
1989	75	180
1990	100	240
1991	100	240
1992	125	300

SEVEN TROUGHS ALLOTMENT - MULE DEER

YEAR	NUMBER	AUMS
1989	100	300
1990	120	360
1991	100	300
1992	100	300

SEVEN TROUGHS ALLOTMENT - PRONGHORN ANTELOPE

YEAR	NUMBER	AUMS
1989	30	72
1990	40	96
1991	50	120
1992	50	120

c. Wild Horses and Burros

Blue Wing Allotment

YEAR	HORSES - AUMS		BURROS - AUMS		WH&B TOTALS - AUMS	
1989	958	11496	119	1428	1077	12924
1990	1064	12768	133	1596	1197	14364
1991	1181	14172	148	1776	1329	15948
1992	1477	17724	87	1044	1564	18768

Seven Troughs Allotment

YEAR	HORSES - AUMS		BURROS - AUMS		WH&B TOTALS - AUMS	
1989	263	3156	91	1092	354	4248
1990	292	3504	101	1212	393	4716
1991	325	3900	112	1344	437	5244
1992	523	6276	172	2064	695	8340

GRAND TOTALS BLUE WING / SEVEN TROUGHS ALLOTMENTS

YEAR	HORSES - AUMS		BURROS - AUMS		WH&B TOTALS - AUMS	
1989	1221	14652	210	2520	1431	17172
1990	1356	16272	234	2808	1590	19080
1991	1506	18072	260	3120	1766	21192
1992	2000	24000	259	3108	2259	27108

2. Climate

Climatological Data

Precipitation ranges from 3.80 inches on the valley floor to 16 inches in the higher mountains. The following table displays precipitation data from four National Oceanic Atmospheric Administration (NOAA) stations that are within close proximity to the allotments.

PRECIPITATION (inches)

STATION	ELEVATION	ANN. NORM$_1$	GROW NORM$_2$	WINTER NORM$_3$
Gerlach	3950'	7.46	3.52	3.29
Lovelock	3975'	5.41	2.44	2.22
Lovelock AP*	3900'	4.78	2.34	1.77
Sutcliffe	3980'	7.35	2.79	3.57

	Ann.	%/Norm	Grow	%/Norm	Win.	%/Norm
1989						
Gerlach	7.68	103%	3.80	108%	2.21	67%
Lovelock	5.00	92%	2.69	110%	.66	30%
Lovelock AP	3.63	76%	1.60	68%	.44	25%
Sutcliffe	7.69	105%	2.93	105%	1.74	49%
1990						
Gerlach	10.15	139%	6.28	178%	3.81	116%
Lovelock	5.65	104%	4.13	169%	1.11	50%
Lovelock AP	4.69	98%	3.36	144%	1.18	67%
Sutcliffe	4.36	59%	1.73	62%	2.14	60%
1991						
Gerlach	7.71	103%	4.27	121%	2.32	71%
Lovelock	4.91	91%	2.92	120%	1.19	54%
Lovelock AP	5.16	108%	2.91	124%	1.32	75%
Sutcliffe	7.50	102%	5.25	188%	1.16	32%
1992						
Gerlach	5.46	73%	2.99	85%	2.34	71%
Lovelock	3.04	56%	1.72	70%	1.31	59%
Lovelock AP	3.05	64%	1.65	71%	.72	41%
Sutcliffe	4.41	60%	2.10	75%	2.46	41%

1 Annual is October - September
2 Growing Season is March - August
3 Winter Snowfall is November - February
* AP = Airport

Climatological Data provided by the Western Regional Climate Center - Atmospheric Sciences Center, Desert Research Institute.

During the re-evaluation period (1989-92) the annual precipitation ranged from a low of 56% of normal at the Lovelock AP station in 1992 to a high of 139% of normal at the Gerlach station in 1990. The precipitation during the growing season (March-August) went from a low of 62% at the Sutcliffe station in 1990 to 188% of normal at the same station in 1991. The winter precipitation (November-February) varied from a low of 25% of normal at the Lovelock AP station in 1989 to a high of 116% of normal at the Gerlach site in 1990. This substantial deviation below normal winter precipitation in the form of snowfall resulted in a reduced snowpack and subsequent lack of groundwater recharge leading to reduced streamflows within the allotments. The reduced precipitation could also have resulted in limited soil moisture at the higher elevation sites leading to below normal production.

3. UTILIZATION

Use Pattern Mapping (UPM) was utilized to determine utilization levels within use area. Key Forage Plant Method (KFPM) Utilization transects were completed on upland and riparian sites to supplement use pattern maps and to differentiate and ascertain use zones and their corresponding levels of use. This data is used to document the effectiveness of management and determine carrying capacity. The procedures used to collect this data can be found in the Nevada Rangeland Monitoring Handbook and BLM Handbook 4400-3. Total use monitoring measures combined utilization levels of all users (livestock (cattle and sheep), wildlife and wild horses/burros). Regardless of when data was collected, use pattern mapping tends to show that the water sources, meadows, and certain upland areas are consistently receiving heavy use. Use patterns indicate that poor livestock distribution is a factor. The analysis summary of the data is below and the data itself can be found in the resource area monitoring files and maps (Refer to Appendix 10 for additional information).

NOTE: Utilization data was originally collected using four classes. Starting in 1990 six classes were used.

Date	Area Mapped	[1]Use Class	Acres Mapped	[2]Percent
09/89	Lava Beds/Dry Mtn.			
		Light	1756	6
		Moderate	11779	41
		Heavy	15008	53
10/89	Nightingale/Shawave			
		Light	25213	49
		Moderate	17639	34
		Heavy	8451	17
11/89	Bluewing Mtns./Shawave/ Nightingales			
		Light	3698	15
		Moderate	16845	67
		Heavy	4639	18
04/90	Bluewing Allot.			
		None	5083	7
		Light	7744	10
		Moderate	32095	43
		Heavy	75604	40
04/90	Seven Troughs			
		None	4053	4
		Light	6828	7
		Moderate	16704	16
		Heavy	75604	73
09/90	Bluewing Allot.			
		None	25773	19
		Light	48819	35
		Moderate	37714	27
		Heavy	26053	19

Utilization class changed from 4 classes to 6 classes.

10/90 Lava Beds			
	Moderate	593	10
	Heavy	2059	34
	Severe	393	56
10/90 Seven Troughs			
	Slight	148	3
	Light	544	10
	Moderate	1923	40
	Heavy	865	17
	Severe	474	30
10/90 Selenite			
	Slight	552	10
	Severe	5263	90
11/90 Bluewing Mtn.			
	None	2553	14
	Severe	631	86
11/90 Shawave Mtn.			
	None	222	18
	Severe	1021	82
05/91 Nightingale			
	Light	5188	15
	Moderate	20754	61
	Heavy	8179	24
05/91 Shawave			
	Light	10704	62
	Moderate	5845	33
	Heavy	931	5
04/91 Lava Beds			
	Moderate	21817	39

	Heavy	24613	44
	Severe	10105	17
10/92 Nightingale/Shawave			
	Slight	9108	18
	Light	2432	5
	Moderate	15766	32
	Heavy	14626	30
	Severe	7600	15
09/92 Lava Beds			
	Slight	8033	28
	Light	8097	29
	Moderate	10205	36
	Heavy	1952	7
	Severe	67	less than 1%
09/92 Seven Troughs			
	Slight	514	2
	Light	18663	54
	Moderate	6949	20
	Heavy	8212	23
	Severe	229	1

1 Use Class:

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

2 Percent

Refers to the percentages of the total acres mapped not the total of the HMA or the livestock use area.

MONITORING DATA BY THE KEY FORAGE PLANT METHOD IN RIPARIAN AREAS

Area Monitored	Date Monitored	Results
Jenny Creek (POTR5)	5-17-90	81% use or severe
	10-6-92	83% use or severe
	3-30-93	Age class is unsatisfactory Presence is unsatisfactory Self perpetuating is unsatisfactory or not being met.
Cow Creek (SALIX) (PONE3)	10-28-92	85% or severe use-unsatisfactory Form Class-unsatisfactory 86% use or severe utilization.

MONITORING DATA BY THE KEY FORAGE PLANT METHOD IN MEADOW AREAS

Area Monitored	Date Monitored	Results
Seven Troughs range	10-28-92	90% use on PONE3 90% use on CAREX
Last Chance Spring	10-28-92	90% use on DISTI 90% use on CAREX
Rabbithole Spring	10-28-92	87% use on SCIRP 90% use on DISTI 86% use on CAREX
Porter Springs	10-28-92	90% use on PONE3 90% use on DISTI 90% use on CAREX
East side of Selenites	10-28-92	90% use on PONE3 90% use on CAREX

MONITORING DATA BY THE EXTENSIVE UTILIZATION METHOD IN MOUNTAIN BROWSE AREAS

Area Monitored	Date Monitored	Results
Selenite Range PUTR2 transect # 2	5-23-89	73% use or heavy utilization Age class-unsatisfactory Form class-unsatisfactory
	10-28-92	Key Forage Plant Method-20% use or slight
	10-27-93	28% utilization Age class-unsatisfactory

		Form class-unsatisfactory
Selenite Range Mountain Browse transect # 1	5-23-89	RIBES 14% use HOLOD 21% use EPVI 72% use CERCO 0% use Average 28% use or satisfactory use Age class satisfactory Form class satisfactory
	10-27-93	RIBES 0 % use HOLOD 6 % use Average 3 % use or satisfactory Age class-unsatisfactory Form class-satisfactory

4. TREND

There is a total of thirteen frequency and trend sites (eight in the Blue Wing and five in the Seven Troughs) in which data have been summarized and evaluated. The following is a brief site specific summary of the key area data by allotment. The major topic of discussion will focus primarily on the perennial grass species since they are the more stable component of the ecological sites and the more palatable species for livestock and/or wild horses and burros. Reference to the shrub component of the Key Areas will be those species that are found to be more palatable to wildlife, livestock and wild horses and burros. Significant increases and/or decreases refers to any change in excess of five percent for a particular species. It is expected that all frequency percentages for key species should fall between ten and ninety percent or, if possible between twenty and eighty percent. Plant species will be referred to using their scientific symbol i.e. SIHY = Sitanion hystrix = Bottlebrush squirreltail. A complete list of plant species' common name, scientific name and symbol are in Appendix 5 (Refer to Appendix 10 for more detailed trend site description).
The key areas are listed below by allotment, mountain range, HMA and the livestock use area.

BLUE WING ALLOTMENT: 00135

Key Area 0135-0001
Shawave Range - Shawave HMA - C-Punch Summer Use

There was an increase in both POA++ and SIHY from 1987 to 1988 followed by decreases in both species from 1988 to 1989. Evaluating this limited data over a relatively short period of time indicates there is not sufficient data to plot trend at this site.

Key Area 0135-0002
Lava Beds Range - Lava Beds HMA - C-Punch Yearlong Rotation - Cook Winter Sheep

There was an increase in STTH2 from 1982 to 1986 with a subsequent decrease in 1987 then a small increase by 1989. SIHY increased from 1982 to 1986, then decreased slightly in 1987 and again in 1989. POA++ remained relatively unchanged from 1982 through to 1989. This data analysis would indicate a static to upward trend based upon the increase of both SIHY and STTH2 from the base percentages in 1982 to the percentages reflected in 1989.

Key Area 0135-0003
Lava Beds Range - Lava Beds HMA - C-Punch Yearlong Rotation
- Cook Winter Sheep

There were no significant changes in ORHY and STTH2 over the period from 1982 to 1989. SIHY realized an increase in 1987 followed by a decrease in 1989 but ended up with an overall increase. POA++ remained unchanged from 1982 to 1987 then increased by 1989. Considering the overall increases in SIHY, POA++ AND STTH2 it would appear that this site is in an upward trend.

Key Area 0135-0004
Shawave Range - Shawave HMA - C-Punch Winter Use

This site is dominated by BRTE, an annual grass often referred to as an undesirable species. The perennial grass species are a small component of this site and remained relatively static from 1984 to 1988. There is a palatable shrub species, EULA5, which makes up a small percentage of the site and remained unchanged. This site appears to be in a static trend.

Key Area 0135-0005
Nightingale Range - Nightingale HMA - C-Punch Summer Use

This is another site with a large percentage of BRTE, an annual species, with the perennial species also present as major components. Both SIHY AND POA++ fluctuated substantially from 1984 to 1988 with POA++ showing an overall increase and SIHY remaining relatively unchanged. There is insufficient data over a relatively short time to determine anything other than a static trend.

Key Area 0135-0007
Selenite Range - No HMA - C-Punch Summer Use

This site has a relatively high percentage of perennial grasses as well as a perennial shrub, PUTR2, that is an important species for mule deer and pronghorn. Three out of four grass species STTH2, AGSP and POA++ show an increase from 1984 to 1988 although POA++ did show a decline in 1986. SIHY recorded increases in 1985 and 1986 followed by a decrease in 1988. PUTR2 remained unchanged until 1988 when it showed a significant increase. This data would indicate that this site is in a upward trend.

Key Area 0135-0008
Selenite Range - No HMA - C-Punch Summer Use

This site is dominated by relatively large percentages of perennial grasses even though BRTE remains a strong component of the site. There were substantial increases by STTH2, SIHY

and POA++ from 1985 to 1988 and all but SIHY increased again in 1989. Based upon this data the site appears to be progressing in an upward trend.

Key Area 0135-0012
Lava Beds Range - Lava Beds HMA - C-Punch Yearlong Rotation - Cook Winter Sheep

This site which has a significant percentage of perennial grasses STTH2, SIHY and POA++ remained relatively unchanged during the short time frame that data was collected. One note of interest is the substantial decrease in BRTE from 100% in 1986 to 7% in 1987 which over time could indicate an upward trend but in this case with insignificant changes in perennial species over a short time there is insufficient data to determine trend.

SEVEN TROUGHS ALLOTMENT: 10134

Key Area 0134-0001
Antelope Range - No HMA - C-Punch Winter Use - Dufurrena Winter Sheep - DeLong Cattle

This site is limited in that there is only one perennial species, SIHY and one annual species, BRTE which are both present in substantial percentages. From 1984 to 1986 there appears to be an inverse relationship with increases in SIHY and decreases in BRTE. While BRTE continues to decrease in 1988 and 1992, SIHY also decreases only not to the extent of BRTE. Based upon this limited data this site appears to be static or in a downward trend.

Key Area 0134-0002
Kamma Range - Kamma HMA - C-Punch Winter Use - DeLong Cattle

There are two perennial species, SIHY and ORHY and one annual grass species BRTE on this site. SIHY decreased from 1984 to 1985 then increased in 1986, unchanged in 1988 then substantially decreased in 1992. This pattern was repeated with BRTE which went from a high of 92% in 1984 to a low of 8% in 1992. ORHY and EULA5 recorded insignificant changes during this period. An interesting point is that HAGL, an extremely undesirable annual due to its toxic properties, increased from 1% in 1984 to 98% in 1992. This data would indicate the site is in a downward trend.

Key Area 0134-0003
Seven Troughs Range - Seven Troughs HMA - C-Punch Summer Use - Dufurrena Winter Sheep

This site is well represented with significant percentages of three perennial grass species: STTH2, POA++ and SIHY. STTH2 was unchanged from 1984 to 1986 then decreased on the site in 1988. POA++ decreased from 1984 to 1985 then increased significantly in 1986 and remained unchanged in 1988. SIHY increased from 1984 to 1985 then decreased in 1986 and 1988. BRTE also increased from 1984 to 1985 remained unchanged in 1986 then significantly decreased in 1988. The data seems to indicate a downward trend at this site.

Key Area 0134-0006
Seven Troughs Range - Seven Troughs HMA - C-Punch Summer Use - Espil Winter Sheep

This site has three perennial species, STTH2, SIHY and POA++ with all but STTH2 that are significant components of the site. STTH2 remained relatively unchanged from 1985 to 1992. SIHY increased from 1985 to 1986, declined by 1988 then increased again in 1992. POA++ remained relatively unchanged from 1985 to 1986 then increased substantially in 1988 and remained relatively unchanged in 1992. Due to the fluctuation in percentages of the perennial grasses resulting in gains in SIHY and POA++ it appears that the site has a static or slightly upward trend.

Key Area 0134-0007
Seven Troughs Range - Seven Troughs HMA - C-Punch Summer Use - Espil Winter Sheep

This site has three dominate perennial grass species, SIHY, STTH2 and POA++ that are present in substantial percentages. SIHY and STTH2 remained relatively unchanged during the monitoring period from 1986 to 1989. POA+ increased from 1986 to 1987 followed by a similar decrease in 1989. The relatively stable nature of the perennial grasses, shrubs and even forbs to some extent would indicate that this site is in a static trend.

SUMMARY OF FREQUENCY AND TREND DATA

BLUE WING ALLOTMENT: (0135)

Key Area 0135-0001 = insufficient data

Key Area 0135-0002 = static to upward

Key Area 0135-0003 = upward trend

Key Area 0135-0004 = static

Key Area 0135-0005 = static

Key Area 0135-0007 = upward trend

Key Area 0135-0008 = upward trend

Key Area 0135-0012 = insufficient data

SEVEN TROUGHS ALLOTMENT: (0134)

Key Area 0134-0001 = static to downward

Key Area 0134-0002 = downward

Key Area 0134-0003 = downward

Key Area 0134-0006 = static to upward

Key Area 0134-0007 = static

NOTE: It is important to understand that the intent of establishment of Frequency and Trend sites is to measure the long term (20+ years) effects of existing management practices.

5. ECOLOGICAL STATUS

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 such as grazing or for many other uses such as: wildlife habitat, recreation, natural beauty, watershed, and open space. Ecological Site Inventory (ESI) data is used to develop Desired Plant Community (DPC) Objectives. 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 objectives and activity plan objectives established for the sites. The ESI data are in the process of being compiled and will be incorporated into the development of DPC objectives for these allotments upon its completion.

6. Wild Horse and Burro Distribution and Census

Aerial distribution maps are on file in the District Office. Appendix 10 shows the results of each distribution flight, the date flown, and the number of horses observed.

Eight distribution flights were conducted during the evaluation period to determine the seasonal movement of wild horses and burros throughout each year. There were 2 spring flights, 2 summer flights and 4 winter flights. The results of these flights are shown in Appendix 10.

Shawave and Nightingale Mountains HMA's, NV-218 and NV-219

Distribution data for these two HMA's were collected and analyzed as one unit because there is daily movement of horses between the HMA's.

Distribution of horses appears to be influenced by seasonal water and forage availability. During late spring, summer and fall, horses are found primarily in the northern half of the Shawave and Nightingale Mountains in the vicinity of developed and undeveloped water sources. As temperatures decrease and forage availability declines, the animals range from these water sources to forage in the southern area where there are very few perennial water sources. During the winter months horses are able to utilize storm water that has ponded in depressions and snow, if present. As these sources of water dry up in the spring, animals must travel long distances between water and forage to continue to utilize the southern area. By late spring the majority of the animals are once again found primarily in the northern half of the HMA's. The majority of the habitat in the HMA's is occupied by horses throughout the year, but the density of the animals shifts by season.

There were no burros found in the HMA's when the 1971 Wild and Free Roaming Horse and Burro Act (P.L. 92-195) was passed. During the evaluation period burros have moved freely into and out of the HMA's from the Blue Wing Mountains HMA which lies to the north.

Blue Wing Mountains HMA, NV-217

Blue Wing Mountains HMA is small in size and has had a fairly stable population of both horses and burros during the evaluation period. There were no discernable differences in distribution through out the evaluation period. It does appear that the time of day that flights were conducted has the greatest effect on distribution results since the animals are normally found in the general vicinity of the three water sources in the HMA.

Kamma Mountains HMA, NV 214

The elevation in the Kamma Mountains HMA is low enough that horse

distribution does not appear to be influenced by seasonal changes. However, horses do remain within a few miles of a good year round water source, in particular Outlaw Spring in the southern part of the HMA and Wildrose Spring in the northern part. Horse and burro numbers over the evaluation period ranged from 5 to 32. This is most likely the result of free movement between the Kamma Mountains HMA and the Antelope Range HA to the east, Seven Troughs HMA to the south, and Lava Beds HMA to the west. Also there was a substantial number of horses gathered in 1987 from this area. No natural or artificial barriers exist between these 4 areas. Due to the low number of horses on the Kamma Mountains HMA, (no burros were present within this area at the passage of the ACT), distribution patterns were not discernible. When numbers increase, distribution patterns may become more apparent.

Lava Beds HMA, 215

Generally, winter snow conditions drive horses to lower elevations in search of food and water. However, during the evaluation period, horses were found at all elevations throughout the HMA. Concentrations of horses fluctuated from place to place probably in response to forage availability. During the winter of 1990 - 1991 horses were found on Rattlesnake Extension, while none were found there during the winter of 1992. In contrast, during winter of 1991 - 1992 horses were present on the mountain southwest of Rabbithole Spring, whereas none were there during the winter of 1990. Horses probably moved from Rattlesnake Extension to the Rabbithole Spring mountain as forage declined on Rattlesnake Extension. In January 1993, following heavy winter snow, horses were predictably found at lower elevations and concentrated in Kumiva Valley.

In the spring horses tend to be found at intermediate to upper elevations with a few scattered at lower elevations and on the flats. Highest concentrations were found around springs south of Garret Mine on Lava Beds Proper. Horses on Dry Mountain must get their water from Garret Spring or move off the mountain to the Selenites or to the Lava Beds. No horses or burros were found on Rattlesnake Extension during the spring. Though some were seen at lower elevations and on the flats south of the Rabbithole Spring mountain, none were found on the mountain itself during spring flights.

During the summer, horses are usually found at all elevations and on the flats. Burros are predominantly found on the south area although a few are found on Dry Mountain. Though this was the case in summer of 1991, the drought diminished forage conditions to the extent that by summer 1992 horses and burros were forced to range farther from springs in order to find adequate forage. Therefore, larger numbers than usual were found at lower elevations and on the flats. No horses were observed in the central section of the Lava Beds proper and none were observed on or around the Rabbithole Spring mountain.

Seven Troughs HMA, 216

Horses and burros were scattered throughout the HMA at mostly lower to intermediate elevations with a few occurring at higher elevations during the winter season. Burros occur only rarely at higher elevations. During both spring and summer, horses were concentrated on the northern and northwestern portions of the HMA at all elevations, while burros were concentrated on the southern and southwestern portions of the HMA at lower to intermediate elevations. During the whole evaluation period, horses were never observed south of Signal Peak and burros generally remained in the southern portion of the HMA.

7. WILD HORSE AND BURRO REMOVAL DATA

There have been no removals of wild horses and burros from the allotments during the evaluation period.

8. WILDLIFE HABITAT

Mountain browse data collected during the evaluation period is listed in APPENDIX 9. In July of 1990, some of the mountain browse, mainly bitterbrush, was burned in the Limbo wildfire and resulted in a loss of about 1300 acres of Mule deer habitat.

There is currently no approved Selenite/Seven Troughs Habitat Management Plan (HMP)

9. STREAM SURVEY AND WATER QUALITY

The only perennial stream in the evaluation area that was addressed in the 1988 evaluation is Jenny Creek (Class 2) which is located on the southwest side of the Selenite Range. No quantifiable water quality data or stream survey data has been collected during the evaluation period.

10. THREATENED AND ENDANGERED SPECIES

There are no threatened, endangered or candidate wildlife or plant species known to exist in the Blue Wing or Seven Troughs Allotments.

11. RIPARIAN AND MEADOW HABITAT

The riparian and meadow data collected during the evaluation period is listed in APPENDIX 9. These riparian and meadow areas should be classified as critical wildlife habitat for game and non-game species alike.

A wetland complex (Sulphur Wetlands) has been developed as a result of mining a local clay deposit. This area is gaining popularity with numerous waterfowl and shorebirds. This wetlands is not being impacted by livestock or wild horses and burros because it is fenced.

VI. CONCLUSIONS

Since the Blue Wing and Seven Troughs Allotments were evaluated in 1988 the monitoring data will address primarily the short term objectives and use updated data to requantify some of the long term objectives.

A. EVALUATION OF THE 1988 ALLOTMENT OBJECTIVES

A. Short Term

1. Utilization of streambank riparian plant species shall not exceed 30% in Jenny Creek except where adjusted by an approved activity plan. (WLA-1.3)

   Sites associated with Jenny Creek were mapped as receiving heavy to severe use, therefore this objective is not being met. Refer to Appendix 10 for additional information.

2. Total utilization of plant species in 358 acres of wetland riparian habitat shall not exceed 50%. (WL-1.10)

   These sites are associated with numerous springs and seeps throughout the allotments. These complexes are usually too small to delineate in any detail but the Use Pattern data indicate that those sites adjacent to wetland habitats received heavy to severe use, therefore this objective is not being met. Refer to Appendix 10 for additional information.

3. Total utilization shall not exceed the allowable use for the following wildlife key species. (WL-1.7 & WL-1.9)

Antelope bitterbrush (PUTR2)	50%
Quaking aspen (POTR5)	40%
Serviceberry (AMAL)	40%
Snowberry (SYMPH)	40%
Winterfat (EULA5)	50%
Cinquefoil (POTEN)	20%
Sandberg bluegrass (POSE)	30%

   Browse transects using Antelope bitterbrush (PUTR2) and Quaking Aspen (POTR5) as key species on sites in the Selenite Range within identified wildlife use areas, indicate the utilization levels were exceeded one out of four years therefore this objective was met for most of the evaluation period. The other species were not monitored. Refer to Appendix 10 for additional information.

4. Utilization of key plant species on upland rangeland habitat shall not exceed 50% during the growing season and 60% yearlong

except where adjusted by an approved activity plan. (WL 1.7, WL 1.9, RM 1).

Use Pattern Mapping (UPM) indicates that the utilization levels were exceeded on various sites throughout the allotments, therefore this objective is not being met throughout the allotments. Refer to Appendix 10 for additional information.

B. Long Term

1. Improve and maintain the overall stream habitat in 2 miles of Jenny Creek from poor to 60% of optimum or better. (WLA-1.3)

During the evaluation period there hasn't been stream survey information collected that would indicate stream condition trend. However since the streambank riparian utilization objective (Short term a.) was not met it would be reasonable to assume that we are not progressing toward attainment of this objective.

2. Improve or maintain the condition of 358 acres of wetland riparian habitat to good or higher. (WL-1.10)

This situation is similar to the stream habitat objective above (long term a.) in that if the short term objective wasn't met due to utilization levels being exceeded then the long term objective was also not met. The conclusion is that this objective was not attained.

3. Improve or maintain 24 acres streambank riparian habitat at good condition from poor condition. (WLA-1.3 & WL-1.9)

This objective is best answered by referring to the short and long term objective (a.). Since both the short/long term streambank objectives were not achieved it is reasonable to assume that this objective also was not attained.

4. Protect sage grouse strutting grounds and brooding habitat and improve nesting and wintering habitat by: (WL-1.11)

1) Following NDOW's guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada.

2) Maintain sagebrush canopy at 30% in sage grouse nesting areas where sagebrush does not exceed three (3) feet in height.

This objective has been met. UPM has shown light utilization levels throughout the evaluation period except for portions around 2 leks which were mapped as heavy. The areas mapped as heavy probably had a greater impact the following spring then the year mapped. The mapping was done in September (refer to Appendix 1). In addition, there were no vegetal manipulations as a result of new range improvement projects such as fencing, brush control, or pipelines or alterations to the vegetation by wildland fires with the exception of a 1300 ac. burn between Kumiva and Purgatory Peaks on the Selenite Range in 1990.

5. Maintain or improve 40 acres of aspen woodland to good status or equivalent. (WL-1.9)

The ecological sites with aspen as a vegetative component occur in the Selenite Range. The Selenite 10/90 utilization map show 90% of the area mapped as severe (80 - 100%) use (Refer to Appendix 10). There also is a transect conducted in an aspen site associated with Jenny Creek that shows an unsatisfactory age class (Refer to Section IV - C). Based on this data it is the conclusion that this objective was not achieved.

It is difficult to determine if we are progressing toward this objective since the past condition is not known. Aspen stands are considered a woodland site and are assigned a woodland suitability rating rather than a seral stage. It would be more appropriate to address age class structure and/or stem density rather than a seral stage for aspen stands in future evaluations.

6. Manage, maintain or improve public rangeland habitat condition to provide forage on a sustained yield basis with an initial forage demand for big game of 1,196 AUMs for mule deer, 75 AUMs for pronghorn and 106 AUMs for bighorn sheep by:

a. Improving overall mule deer habitat as follows:

1) From fair to good 113,719 acres: Lava Beds DY-4; Selenite Range DY-1; Seven Troughs DS-2; Seven Troughs DY-5.

2) From poor to fair 22,107 acres: Nightingale Mtns. DY-2 and Shawave Mtns. DY-3.

Trend study sites 135 - 0008 in the Selenite Range, 135

- 0002 in the Lava Beds and 134 - 0006 in the Seven Troughs Range are all within mule deer habitat areas and indicate a static to upward trend. Based on the trend data and that wildlife numbers have fluctuated during the evaluation period, AUMS for the individual species have been provided. An ecological site inventory (ESI) has been completed in these areas and once the data is compiled it will be used to determine site conditions and develop Desired Plant Community (DPC) objectives.

b. Improving potential pronghorn habitat 308,900 acres from fair to good condition.

The pronghorn population has increased during the evaluation period to a point that there is now a small huntable population. Based upon the increase of numbers it is reasonable to assume that at least a portion of this objective has been met. Ecological site inventories (ESI) have been completed in these areas, and once the data is compiled it will be used to determine site conditions and develop Desired Plant Community (DPC) objectives

c. Improving 9,485 acres of potential bighorn sheep habitat (Selenite Range BY-1) to 90% of optimum.

There have been confirmed reports of various numbers of bighorn sheep on the northern portion of the Selenite Range by NDOW personnel. There have also been reports of bighorn sheep in the northern portion of the Shawave Range.

7. Manage, maintain and improve rangeland conditions on a sustained yield basis with an initial stocking level of 33,852 AUMs.

At this time the allotment is not providing a stocking level of 33,852 AUMS on a sustained yield basis. During the evaluation period actual livestock use varied from 9,248 to 16,598 AUMS in the Blue Wing allotment and 5,011 to 8,370 AUMS in the Seven Troughs Allotment. Although there was a substantial amount of nonuse taken there were areas throughout the allotments where utilization objectives were exceeded. Some of the problems identified through the monitoring and evaluation are as follows:

1) The use pattern mapping shows that the livestock and wild horse/burro distribution is poor due to lack of water resulting in overuse in portions of use areas and/or HMAS.

2) Existing water projects need to be maintained or possibly reconstructed to provide water for livestock, wild horses/burros and wildlife.

3) Wild horse/burro populations have been above LUP identified numbers within the allotments.

Based upon the above rationale it would appear that this objective was not met.

8. Manage domestic livestock grazing to increase 136,318 acres from poor and fair to good, and 3,505 acres from good to excellent ecological condition; improve range condition and forage availability, to reach and sustain 33,852 AUMs of active preference for livestock grazing.

The range conditions in this objective refers to forage condition that will be replaced with ecological status condition as information becomes available. An Ecological Site Inventory (ESI) has been completed and this data, once compiled will replace the forage condition. The objective will be redefined/quantified to obtain a particular ecological status when the site potential and identified uses are combined to meet vegetative objectives as desired plant communities.

A determination will be made if this objective has been met or not met once the ESI data has been compiled.

9. Manage, maintain and improve rangeland conditions to provide an initial level of 12,240 AUMs of forage on a sustained yield basis for 877 wild horses and 143 burros in the following Herd (Management) Areas:

	ISL*	AUMs
Lava Beds 2/	375/40	4500/480
Blue Wing Mtn.	50/39	600/468
Nightingales	87/0	1044/0
Shawave Mtns.	100/0	1200/0
Seven Troughs	215/64	2580/768
Kamma Mtns.	50/0	600/0

2/Northeast corner of the Herd Area is in the Seven Troughs Allotment.

* ISL (initial stocking level) refers to the numbers of wild horses/burros listed in the Sonoma-Gerlach MFP-III Wild Horse and Burro decision 1:1 to be used as a starting point for monitoring purposes. In accordance with the June 7, 1989 Interior Board of Land Appeals Ruling (IBLA 88-591), adjustments to wild horse/burro populations and establishment of AML will be based on monitoring data to obtain the optimum number of wild horses and burros which result in a Thriving Natural Ecological Balance and avoids deterioration of the range.

The portion of the objective related to providing forage was met or exceeded, however not on a sustained yield basis. Total AUM demand by wild horses and burros within the allotments ranged from a low of 17172 AUMs in 1989, to a high of 27108 AUMs in 1992.

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

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

11. Maintain/Improve wild horse/burro habitat by assuring free access to water.

This objective has been met. During the time period covered by this evaluation the Bureau has insured that the existing sources of water are made available to wild horses and burros. There are currently new water projects proposed such as Garrett Spring development in the Blue Wing Allotment.

12. Improve or maintain the water quality of Jenny Creek to the state criteria for livestock drinking and wildlife propagation.

State Water Quality Criteria

Constituent/use	Livestock drinking	Wildlife Propagation
^{1}TDS	< 3000 mg/1	-
NO_3 (N)	< 100 mg/1	<100 mg/1
Fecal coliform	<1000/100 ml.	<1000/100 ml.
pH	5.0-9.0	5.0-9.2
^{2}D.O.	aerobic	aerobic
Alkalinity	-	30-130 mg/1

^{1} = Total Dissolved Solids
^{2} = Dissolved oxygen

No water quality data has been collected during the evaluation period therefore it is undetermined if this objective has been achieved.

B. EVALUATION OF THE HMAP OBJECTIVES

A. Habitat Objectives

1. Maintain or improve the rangeland ecological status within the HMAs utilizing the criteria and timeframes established in the Blue Wing-Seven Troughs Monitoring Plan 1985.

   This objective has not been met. Use Pattern Mapping (UPM) indicates that utilization levels were exceeded on various sites within all HMA's, except the Kamma Mountains. There was no UPM data collected in the Kamma Mountains during the evaluation period. Frequency and Trend data collected at key areas within or adjacent to the HMA's indicate that trend was static to downward at the majority of the sites. Maintenance or improvement of ecological status will not occur when there is a static to downward trend combined with excessive utilization levels.

2. Provide water for wild horses/burros throughout the HMAs, where possible to yield a better distribution of animals utilizing the habitat, therefore reducing concentrated or overuse of particular areas.

   There were no water developments constructed during the evaluation period within the HMA's. All existing water sources on public lands were available to wild horses and burros. Water projects identified in the HMAP and AMP were not constructed due to a conflict with the State of Nevada regarding the ability of the federal government to hold water rights, or the projects were not feasible.

B. Animal Objectives

1. Maintain a healthy herd of animals within the AML of 877 horses and 143 burros.

   This objective was not met. During the evaluation period the population of wild horses and burros exceeded the AML as identified in the HMAP. In response to an appeal on capture plans, the Interior Board of Land Appeals ruled on June 7, 1989 that adjustments to wild horse/burro populations and establishment of AML will be based on monitoring data to obtain the optimum number of wild horses and burros which results in a Thriving Natural Ecological Balance and avoids deterioration of the range. As a result of this ruling there were no removals of wild horses or burros from the HMA's to reduce the population to the level identified as AML in the HMAP.

2. Establish forage use levels for the wild horse/burro population (i.e. refine the AML) through monitoring of the wild horse/burro habitat.

This objective has been met in all HMA's except the Kamma Mountains. During the evaluation period UPM data was collected within all HMA's except the Kamma Mountains. This information is the basis for the changes in total carrying capacity and establishment of AML within the HMA's that is identified in the Technical Recommendations section of this evaluation. Forage use levels were established in the 1988 Blue Wing/Seven Troughs Allotments Evaluation.

3. Maintain the wild free-roaming characteristics of the animals in the HMAs.

   This objective was met. There were no fence construction or other type of projects within any of the HMA's. Aerial distribution mapping and on the ground observations of wild horses and burros conducted during the evaluation period indicates that the animals have complete freedom of movement within the entire Blue Wing/Seven Troughs Allotments as well as the HMA's.

4. Preserve and perpetuate the unique spotted and pinto burro population.

   This objective has been met. Since there have been no removals conducted within the HMA's during the evaluation period, the population of spotted/pinto burro have been preserved. NOTE: During the Checkerboard Wild Horse and Burro Removal in June 1993, 5 spotted/pinto burros which had moved from the Seven Troughs HMA to the Trinity Range Herd Area were relocated back into the Seven Troughs HMA in the vicinity of Porter Springs.

5. Acquire data on the demographic characteristics of the wild horse/burro populations to include information on sex ratio, age structure, young/adult ratio, and actual use. These parameters will be analyzed to determine natality, mortality, and rate of increase.

   The portion of the objective relating to young/adult ratio and actual use has been met through helicopter census conducted in April 1989 and July 1992. Rather than expressing the young/adult ratio, data was recorded as the percent reproductive rate which is the inverse of the young/adult ratio. There were no removals conducted during the evaluation period and no data collected on the sex ratio or age structure of the populations within the HMA's.

6. Determine the dietary preferences of wild horses/burros within the HMAs.

   This objective has not been met.

7. Determine distribution and movement patterns for the wild horse/burro populations in the HMAs.

This objective has been met. During the evaluation period aerial distribution pattern mapping was conducted during the four season of the year to determine distribution and begin the definition of seasonal movement of animals within each of the HMA's. Since the populations within the HMA's have not been at the AML listed in the HMAP, the distribution patterns and seasonal use areas identified through analysis of current data may or may not accurately represent the distribution and movement patterns of wild horses and burro that would occur at AML.

VII. TECHNICAL RECOMMENDATIONS

1. Establish Carrying Capacity

a. Livestock

There are no proposed changes to the Active Preference, sheep numbers or season of use for Dufurrenas' and Espils' winter sheep permits in the Seven Troughs Allotment, and Cooks' winter sheep operations in the Blue Wing Allotment for the following reasons:

* Monitoring data collected within the sheep use areas does not indicate there is a need to change the existing management practices.

* The sheep operaters constantly herd the sheep while in the allotments to prevent over utilization within their respective use areas.

* The sheep operations are all winter permits grazing in the allotments when most of the vegetation is dormant.

* The utilization monitoring data was collected on key species that consist primarily of perennial grasses whereas the sheep graze predominately on the native shrubs.

NOTE: The sheep use areas could change if a grazing alternative is selected that would increase the cow numbers or extend the season of use by cows within the existing sheep use areas.

There are no proposed changes to the Active Preference, livestock numbers or season of use for Tim DeLongs' winter cow operations for the following reasons:

* The cattle graze in the allotment on a winter permit when most of the vegetation is dormant.

* The proposed fence between the Seven Troughs and Majuba allotments would relocate this permit into the Majuba allotments.

* Monitoring data collected within the winter livestock use area does not indicate there is a need to change the existing management practices.

C-Punch (Cows):

The following data displays four different stocking level options for comparison of the livestock operation of C-Punch. The first using the Total Active Preference from the 1966 adjudication, the second using the AMP Grazing System implemented in 1986, the third using the Actual Use Average during the evaluation period from 1989 to 1992 and the fourth using the Carrying Capacity Calculation using the data in Appendix 12.

Change From: **EXISTING OPERATION**

BLUE WING ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
21,460	21,460	0	03/01 - 02/28	2229**

SEVEN TROUGHS ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
4,404	4,404	0	03/01 - 02/28	398**

Change To: **STOCKING LEVEL - AMP GRAZING SYSTEM 1986**

Reduce the active preference from 21,460 AUMS to (15,600 - 18,000*) AUMS in the Blue Wing Allotment and from 4,404 AUMS to (4,200 - 4,800*) AUMS in the Seven Troughs Allotment.

* The AMP proposed a range in the numbers of livestock using the summer, winter and yearlong use areas. For this case the lower numbers will be used, refer to the Appendix 11 - Existing Grazing System for additional information.

BLUE WING ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
21,460	15,600	5,860	03/01 - 02/28	1300**

SEVEN TROUGHS ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
4,404	4,200	204	03/01 - 02/28	350**

Change To: **STOCKING LEVEL - ACTUAL USE AVERAGE 1989 - 1992**

Weighted average utilization calculations were obtained using the moderate, heavy and severe use classes. This data was used to support the potential stocking levels by use areas within the allotments. Calculations are shown in Appendix 12.

Reduce the active preference from 21,460 AUMS to 9,954 AUMS in the Blue Wing Allotment and from 4,404 AUMS to 2,203 AUMS in the Seven Troughs Allotment.

BLUE WING ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
21,460	9,954	11,506	03/01 - 02/28	1034**

SEVEN TROUGHS ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
4,404	2,203	2,201	03/01 - 02/28	199**

Change To: **STOCKING LEVEL - CARRYING CAPACITY CALCULATIONS**

Reduce the active preference from 21,460 AUMS to 4,528 AUMS in the Blue Wing Allotment and from 4,404 AUMS to 1,358 AUMS in the Seven Troughs Allotment.

BLUE WING ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
21,460	4,528	16,932	03/01 - 02/28	559**

SEVEN TROUGHS ALLOTMENT

Total Preference	Active Preference	Suspended Preference	Period of Use	Livestock Numbers
4,404	1,358	3,046	03/01 - 02/28	194**

** Total livestock numbers include those on railroad exchange of use lands. The livestock numbers within the Seven Troughs and Blue Wing Allotments could vary depending upon the grazing alternative selected.

DeLong Family Trust (Cows):

Maintain the existing active preference of 746 AUMS, the winter season of use and the livestock numbers within the Seven Troughs Allotment.

Dururrena (Sheep):

Maintain the existing active preference of 746 AUMS, the winter season of use and the livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep):

Maintain the existing active preference of 3,627 AUMS, the winter season of use and the livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep):

Maintain the existing active preference of 2,975 AUMS, the winter season of use and the livestock numbers within the Seven Troughs Allotment.

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 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.

The following data displays two different stocking level options for comparison of Wild Horse and Burro numbers. The first is using the HMAP Numbers and the second is using Carrying Capacity Calculation numbers from the data in Appendix 12.

STOCKING LEVEL - HMAP

Herd Management Area	Wild Horses/Burros 75% of AML to AML	AUM's
Lava Beds*		
Wild Horses	281 to 375	3372 to 4500
Burros	30 to 40	360 to 480
Seven Troughs**		
Wild Horses	161 to 2154	1932 to 2580
Burros	48 to 64	576 to 768
Blue Wing Mountain		
Wild Horses	38 to 50	456 to 600
Burros	29 to 39	348 to 468
Kamma Mountains		
Wild Horses	38 to 50	456 to 600
Burros	0	0
Shawave-Nightingale		
Wild Horses	140 to 187	1680 to 2244
Burros	0	0
TOTALS		
Wild Horses	**658 to 877**	**7896 to 10524**
Burros	**107 to 143**	**1284 to 1716**

* a portion of this HMA is in the Seven Troughs Allotment.
** a portion of this HMA is in the Blue Wing Allotment.

These numbers are based on a three year gathering cycle. If the gathering cycle changes, the lower management range of wild horse numbers may be adjusted.

STOCKING LEVEL - CARRYING CAPACITY CALCULATIONS

HERD MANAGEMENT AREAS	WILD HORSES/BURROS	AUM's
Lava Beds	110/12	1320/144
Seven Troughs	103/31	1236/372
Kamma Mountains*	-	-
Shawave-Nightingale	112/ 0	1344/ 0
Blue Wing	29/23	348/276
TOTALS	354/66	4248/792

* Wild horses and burros numbers are not included in the Carrying Capacity Calculations number, no monitoring data was collected in the Kamma Mtns HMA therefore, an AML could not be established. Once AML is reached the wild horse and burro populations will be maintained within the following ranges in order to ensure that the carrying capacity is not exceeded. These ranges are based on gathering horses every three years. If gathering schedules change, these ranges may change.

HERD MANAGEMENT AREAS	WILD HORSE/BURRO NUMBERS 75% OF AML TO AML	AUMS
Lava Beds		
Wild Horses	83 to 110	1020 to 1356
Burros	9 to 12	108 to 144
Seven Troughs		
Wild Horses	77 to 103	924 to 1236
Burros	23 to 31	276 to 372
Kamma Mountains	-	-
Shawave-Nightingale		
Wild Horses	84 to 112	1008 to 1344
Burros	0	0
Blue Wing		
Wild Horses	22 to 29	264 to 348
Burros	17 to 23	204 to 276
Totals		
Wild Horses	**266 to 354**	**3216 to 4284**
Burros	**49 to 66**	**588 to 792**

Wild horses and burros will not be managed in the Selenite Mountain Range. Any animals found in this range will be removed.

We realize that it is possible the allotment objectives could be obtained prior to reaching the bottom line of 5,040 AUMs for wild horses and burros identified in the Carrying Capacity Calculations. Monitoring will be conducted to determine the AMLs that will achieve the allotment objectives and then no further reductions are required.

2. CHANGE GRAZING SYSTEM

Alternative 1:

C-Punch (Cows): Continue with the existing year round grazing system within the Blue Wing/Seven Troughs Allotments.

* Maintain the existing summer (4/1 -10/31), winter (11/1 - 3/31) and yearlong (3/1 - 2/28) use areas.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. This would reduce the utilization levels by livestock which should help achieve the allotments utilization objectives.

Alternative 2:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Change the existing summer use areas from 4/1 - 10/31 (7 mos.) to 5/1 - 10/31 (6 mos.), and the existing winter use areas from 11/1 - 3/31 (5 mos.) to 11/1 - 4/31 (6 mos.).

* Convert the existing yearlong 3/1 - 2/28 use areas to summer use areas 5/1 - 10/31.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected, livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. This would reduce the utilization levels by livestock which should help achieve the allotments utilization objectives. Change the summer use areas from 4/1 -10/31 to 5/1 - 10/31 and the winter use areas from 11/1 - 3/31 to 11/1 - 4/31 which would provide some early season rest for the summer use areas. Eliminate the yearlong rotation areas of use by converting them to summer use 5/1 - 10/31 providing a seasonal rest period.

Alternative 3:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Divide the Blue Wing/Seven Troughs Allotments into four use areas; a NW 1/4, NE 1/4, SE 1/4 and a SW 1/4 quarters.

* graze livestock within each area yearlong 2/28 -3/1 for one year then rotate into the next quarter, resulting in one year of use and three years of rest.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected, livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. Provides three years of rest and one year of use by livestock allowing an extended rest period.

Alternative 4:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Change the use period on the existing summer use areas from 4/1 - 10/31 to 6/1 - 10/31 and retain the winter use as 11/1 - 3/31.

* Convert the Slough House/Granite Springs Valley area from an existing winter use area to a two month (4/1 - 5/31) use area to be treated as an off pasture since this area is the majority of the checkerboard (RR) private lands.

* Remove all livestock (C-Punch cows) from the Blue Wing/Seven Troughs Allotments into the Slough House/Granite Springs winter pasture for two months (4/1 - 5/31).

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected, livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. Provides an annual early season rest in the use areas within the Blue Wing/Seven Troughs Allotments. This alternative could present a significant challenge to the livestock manager as well as displace wild horses/burros and wildlife twice each year when moving livestock into and out of the rest pasture.

Alternative 5:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Construct a fence across the Blue Wing/Seven Troughs Allotments in an east to west direction that would divide the allotments into north and south use areas.

* Eliminate the existing summer/winter/yearlong rotation use areas and graze all of the livestock (C-Punch cows) in the north use area for two years then graze in the south use area for two years.

* Construct a south to north fence west of the checkerboard lands and incorporate into the Majuba Allotment.

Tim DeLong Family Trust (Cows): For the short term continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment. Once the checkerboard division fence is built the entire operation will be in the Majuba Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected, livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. Provides two years of rest in a four year cycle from C-Punch livestock in the use areas within the Blue Wing/Seven Troughs Allotments. This alternative could present a significant challenge to the livestock manager as well as displace wild horses/burros and wildlife every two years. The proposed fence could result in the disruption of seasonal movement by wild horses/burros. The proposed fence costs would be significant, estimates in the neighborhood of $200,000.

Alternative 5A:

This alternative would be the same as the above (Alt 5) with the following exceptions:

* During the two years that the C-Punch livestock were grazing the north use area Wes Cook and Buster Dufurrenas' winter sheep operations would be allowed to graze in the southern use area.

* During the two years that the C-Punch livestock were grazing the south use area John Espils' winter sheep operations would be allowed to graze in the northern use area.

Alternative 6:

C-Punch (Cows): Maintain the existing winter, summer and yearling rotation grazing system within the Blue Wing Allotment and amend the grazing system in the Seven Trough Allotment as follows:

* Eliminate livestock (C-Punch) grazing within the Seven Troughs Allotment.

* Construct a fence along the Blue Wing/Seven Troughs Allotments boundary in a north to south direction that would separate the allotments and create the boundary for the Seven Troughs Horse Range.

* Convert the existing livestock (C-Punch) permit in the Seven Troughs allotment to AUMS to be utilized by wild horses/burros.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected, livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. Eliminates the use by C-Punch livestock within the Seven Troughs Allotment. The proposed fence could result in the disruption of seasonal movement by wild horses/burros as well as fence off a portion of the Lava Beds HMA. The proposed fence costs would be significant, estimates in the neighborhood of $200,000.

Alternative 7:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Divide the Blue Wing/Seven Troughs Allotments into three use areas; a NW 1/3, NE 1/3 and a S 1/3 use areas.

* Graze livestock within each area yearlong 2/28 -3/1 for one year then rotate into the next area, resulting in one year of use and two years of rest.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Based upon the Stocking level option selected livestock numbers could be reduced in the use areas within the Blue Wing and Seven Troughs Allotments. Provides two years of rest and one year of use by livestock allowing an extended rest period. Divides the allotments into smaller more manageably units requiring less labor and expense such as hauling water into smaller areas. Riparian areas would need to be protected from livestock and wild horses/burros. This alternative would provide more rest from cattle grazing than Alternative #5 allowing the long term vegetative objectives to be more quickly obtained. This alternative provides the opportunity to monitor utilization levels by wild horses/burros during years that cows are not using the area.

Alternative 8:

C-Punch (Cows): Amend the existing year round grazing system within the Blue Wing/Seven Troughs Allotments as follows:

* Convert the existing yearlong grazing system to winter use throughout the allotments.

* Change the existing yearlong 3/1 - 2/28 season of use to a 10/1 -3/31 season of use throughout the allotments.

Tim DeLong Family Trust (Cows): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Buster Dufurrena (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

John Espil (Sheep) Continue with the existing winter grazing system, active preference and livestock numbers within the Seven Troughs Allotment.

Wes Cook (Sheep): Continue with the existing winter grazing system, active preference and livestock numbers within the Blue Wing Allotment.

Rationale: Riparian areas would need to be protected from livestock and wild horses/burros. This alternative would provide total seasonal rest from cattle grazing and allow the greatest opportunity for vegetative recovery and allow the long term vegetative objectives to be more quickly obtained. This alternative would require the permittee (C-Punch) to adjust the operation and provide an area for the livestock when not on public lands. This alternative would somewhat alleviate the combined use by livestock and wild horses/burros on the limited water sources.

3. MULTIPLE USE OBJECTIVES

THE 1988 ALLOTMENT OBJECTIVES SHORT TERM (4) AND LONG TERM (1,2,4,5,6,7,8,&9), REFER TO APPENDIX 7, WILL BE REQUANTIFIED UPON CULMINATION OF ECOLOGICAL SITE INVENTORY (ESI) DATA. THE ESI DATA WILL BE USED TO DEVELOP DESIRED PLANT COMMUNITY OBJECTIVES (DPC) ON WETLAND RIPERIANS AND UPLAND SITES USED BY LIVESTOCK, WILD HORSES AND BURROS, AND WILDLIFE.

THE FOLLOWING OBJECTIVES WILL BE USED TO GUIDE MANAGEMENT ON THE ALLOTMENTS IN THE INTERIM BETWEEN COMPLETION OF THIS EVALUATION AND DEVELOPMENT OF THE DPC OBJECTIVES BASED UPON ESI DATA.

SHORT TERM.

1. Utilization on key riparian plant species (such as willow, aspen, rushes, sedge, and Nevada bluegrass) shall not exceed thirty percent (30%) utilization and maintain a satisfactory age class, form class, and be self perpetuating in the following areas: [except where adjusted by an approved activity plan]

   Blue Wing
   Jenny Creek.
   Unnamed Canyon at T. 29 N., R. 24 E., Sections 2 and 3.
   Unnamed Canyon at T. 32 N., R. 26 E., Sections 25 and 36
   Unnamed Canyon at T. 32 N., R. 27 E., Section 31.

   Seven Troughs
   Cow Creek.
   Egbert Canyon.
   Stonehouse Canyon.

   These sites will be identified as key areas and monitored annually to insure self perpetuating stands. A self perpetuating stand is one which has a woodland suitability index with uneven aged stands of seedlings, saplings, pole and mature sized trees. The objective is to provide adequate stubble height, thermal cover, successful recruitment of suckers, saplings, and root complexes which should maintain plant vigor, disperse flood waters, filter sediment, maximize bank water storage, provide dry season flows, and habitat for neotropical birds and other wildlife. (F-1, F 1.1, W 1, W 1.1, WL-1, WL 1.9, WL 1.10, WL 1.12).

The relative abundance of the following wildlife species could be used as indicators of healthy riparian areas:

Common Yellowthroat (willows)
Willow Flycatcher (Trail's Flycatcher) (willows)
Yellow-breasted Chat (willows)
Goshawk, Coopers Hawk, or Sharp-shinned Hawk (aspens)
Warbling Vireo
Wilson's Warbler
Hermit Thrush (willows)
Dipper (healthy aquatic system)
Red-naped Sapsucker (aspens)

2. Total utilization of plant species such as willow, aspen, sedge, bulrush, cattails, and Nevada bluegrass in approximately 358 acres of riparian, wetland, and meadow habitat (addition to the above sites) shall not exceed 50% utilization. These sites are adjacent to wetlands and pools like Sulphur wetlands and meadows such as Rabbithole and Last Chance Spring.

3. Total utilization shall not exceed the allowable use on the following wildlife key species. (F 1.1, F 1.3, RM 1, WL 1.1, WL 1.7, and WL 1.9). - Note: Aspen was removed from this list because it contradicted with the levels described in #1 and #2 from above.

Antelope bitterbrush (PUTR2)	50%
Serviceberry (AMAL)	40%
Snowberry (SYMPH)	40%
Winterfat (EULA5)	50%
Cinquefoil (POTEN)	20%
Sandberg bluegrass	30%
Buffaloberry (SHEPH)	50%
Ephedra (EPHED)	50%

4. Utilization of key plant species on upland rangeland habitat shall not exceed 50% during the growing season and 60% yearlong - key plants are specified at the specific key areas. (WL 1.7, WL 1.9, RM 1).

LONG TERM

1. Improve or maintain the condition on 358 acres of wetland, riparian, and meadow habitats to good condition or higher.(WL 1.10, RM-1) - Change to DPC Objective

2. Improve or maintain 24 acres of streambank riparian habitat at good condition from poor condition. (WLA 1.3, WL 1.9, RM-1) - Change to DPC Objective

3. Protect sage grouse strutting grounds and brooding habitat and improve nesting and wintering habitat by: (WL - 1.11) (Refer to Appendix 1 for the locations of the leks)

a. Following NDOW guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada.

b. Use the following criteria to identify and maintain sites that would sustain the highest level of use and success by sage grouse:

Strutting Habitat

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

Nesting Habitat

1. Areas within 2 miles of strutting grounds.
2. Sagebrush between 7 and 31 inches in height (optimum = 16 inches).
3. Sagebrush canopy coverage 15-30% (optimum = 27%).

Brood Rearing Habitat

1. Sagebrush canopy cover 10-21% (optimum = 14%).
2. High composition of forb species.
3. Vigorous-available meadow vegetation in late summer and fall.

Winter Habitat

1. Greater than 20% Sagebrush canopy cover.
2. Areas do not maintain high winter snow depth as a function of elevation or topography.

Optimum sagebrush canopy coverage, as indicated in BLM Technical Note; "Habitat Requirements and Management Recommendations for Sage Grouse" (1979), for high quality nesting and brood rearing habitat, is approximately 30%. Based on professional observations, this recommended sagebrush canopy coverage is not present. Studies conducted on similar range sites within the Winnemucca District were not capable of obtaining the recommended sagebrush canopy coverage for nesting and brood rearing habitat. Passey et al. (1982) in: "Relation Between Soil, Plant Communities, and Climate on Rangelands of the Intermountain West", while working in the Sagebrush eco-region, found that total vegetative canopy coverage under PNC conditions, in Wyoming Big Sagebrush communities, ranged from 8 to 24% with an average plant cover of 17%. Also, Passey states, a 30% canopy cover objective is not an accurate measure of quality nesting and brood rearing habitat.

4. Improve and/or maintain 40 acres of aspen woodland, located in the Jenny Creek watershed, to an acceptable woodland suitability index that would maintain self perpetuating uneven aged stands of seedlings, saplings, pole and mature sized trees. (RM 1, WLA 1.13, WL 1, WL 1.9, WL 1.10, and WL 1.12)

5. Maintain and improve the Sulphur Wetlands to provide migratory waterfowl habitat in the following locations:

T. 35 N., R. 29 E. Section 26 SW¼
Section 27 SE¼
Section 34 NE¼
Section 35 NW¼

Water quality will be inventoried to determine baseline conditions and monitored to insure sustained water quality for wildlife propagation. (R 1.4, W 1, W 1.1, W 2.1, WHB 1.7, WLA 1, WLA 1.6, WLA 1.9, WLA 1.13, WL 1, WL 1.7, WL 1.10, WL 1.13, WL 1.26, and Wl 1.27)

6. Maintain and improve the free-roaming behavior of wild horses by:

(a) protecting their home range

(b) assuring free access to water

7. Improve or maintain the water quality of Jenny Creek to the state criteria for livestock drinking and wildlife propagation.

State Water Quality Criteria

Constituent/use	Livestock drinking	Wildlife Propagation
^{1}TDS	< 3000 mg/1	-
NO_3 (N)	< 100 mg/1	<100 mg/1
Fecal coliform	<1000/100 ml.	<1000/100 ml.
pH	5.0-9.0	5.0-9.2
^{2}D.O.	aerobic	aerobic
Alkalinity	-	30-130 mg/1

^{1} = Total Dissolved Solids
^{2} = Dissolved oxygen

4. Range Improvements

a. Water Projects

1. Evaluate the condition of existing water developments in conjunction with the permittees by FY 1996. Projects which only require normal maintenance to be functional will be maintained by the permittees. Projects which are viable but in a state of disrepair will be identified and reconstructed as funding becomes available. Projects will also be inspected to determine if they are designed to protect water sources and associated spring sources.

2. Analyze the District water inventory by 1995 and determine if there are any additional surface water sources that could be developed to expedite the achievement of allotment objectives.

3. In cooperation with NDOW, identify guzzler sites within the allotment to improve chukar habitat.

b. Fence Projects

1. Construct small horse proof exclosures around identified spring sources and provide water outside these exclosures for livestock, wild horses/burros and wildlife in the following locations;

Lava Beds - Rattlesnake, Hannah, Dead Horse, Sheep Head, Turtle Rock and Mustang Springs.

Bluewing Mtn. - Black Mtn Spring

Nightingale - unnamed spring identified by WH&B specialist.

Shawave - unnamed spring approximately 2 mi. north of Bluewing Spring identified by NDOW biologist.

Blue Wing/Seven Troughs Allotments - areas identified with exceptional resource values that justify protective fencing.

2. Construct a boundary fence between the Seven Troughs and Majuba Allotments. This fence would be entirely on BLM lands and would separate these public lands from the checkerboard railroad lands to the east in the Majuba Allotment. The proposed fence would restrict movement of wild horses and burros onto the private lands outside the HMA.

5. MONITORING

a. Monitoring Schedule Frequency and Trend

BLUE WING - SEVEN TROUGHS ALLOTMENTS
Frequency and Utilization Schedule 1/

Frequency	1993	1994	1995	1996	1997	1998	1999	2000	2001
134-0001			X			X			X
134-0002			X			X			X
134-0003			X			X			X
134-0006			X			X			X
134-0007	X			X			X		
134-0008	X			X			X		
135-0001	X			X			X		
135-0002	X			X			X		
135-0003	X			X			X		
135-0004			X			X			X
135-0005			X			X			X
135-0007			X			X			X
135-0008	X			X			X		
135-0010	X			X			X		
135-0011	X			X			X		
135-0012	X			X			X		
UTILIZATION	2/		X	X	X	X	X	X (reschedule after sixth year evaluation)	

1/ A check (X) shows what year frequency studies are to be read. Based on phenological stages of ORHY, SIHY, STTH2, and BASA3, studies should be read from early to mid-May (BLM 1979b).

2/ Utilization should be read at least three times a year, based on time and manpower, at the end of the growing season during late fall or winter, when livestock are moved to the next use area, and in mid-July.

VIII. CONSULTATION AND COOPERATION

NV Div. of Wildlife
Ms. Rose Strickland, Sierra Club

Honorable Harry Reid
Mr. Marion A. McClellan, Pershing County Concerned Citizens
Dufurrena Sheep Co.
Mr. John Espil
Mr. Wes Cook

Mr. Ted Fitzpatrick, Catellus Corp.
Mr. John King, NDOW - Reno

Mr. Mel Cheney, SCS - Lovelock
Mr. Keith Guenther
Ms. Barbara Spolter, Wilderness Soc.
Ms. Karen Sussman, ISPMB
Federal Land Bank of Sacramento
Mr. Bob Irvin

Mrs. Dawn Lappin, WHOA
Ms. Cathy Barcomb, Commission for the Preservation of Wild Horses
Mayor Hugh Montrose, Lovelock
Chairman Pershing Cty Commissioners

C-Punch Ranch, Inc.
Tim Delong Family Trust
Mr. Marlowe Jevning, Pershing Cty Sportsmen's Assoc.
Mr. Myron J. Goldsworthy
Mr. Philip Benolkin, NDOW - Lovelock
Mr. Joe Dahl
Ms. Johanna H. Wald, NRDC
Ms. Paula Jewell, Humane Soc. of US
Mr. Craig Plummer, SCS - Winnemucca
Lassen Prod. Credit Assoc, Alturas Branch

The following individuals and groups provided comments on the draft which were incorporated into the final document:

NV Div. of Wildlife
Keith Guenther
Ms. Cathy Barcomb, Commission
Dufurrena Sheep Co.
Mr. Ed Biggs, SCS - Lovelock
Mr. Joe Dahl

C-Punch Ranch, Inc.
Mrs. Dawn Lappin, WHOA
Mr. Tim Delong, Delong Family Trust
Mr. Mel Cheney, SCS - Lovelock
Mr. Abigah Duncan
Mr. Louie Esparza

IX. SELECTED MANAGEMENT ACTIONS

Incorporate the Technical Recommendations for the Multiple Use Objectives (pg. 58), the Range Improvements (pg. 62), and the Monitoring Schedule (pg. 63) as outlined in this allotment re-evaluation. The carrying capacity figures for C-Punch and Wild Horses and Burros were based on the Carrying Capacity Calculatioins (pgs. 44 and 47 respecitively). Grazing system Alternative #5 is the selected livestock management action as modified by rotating between pastures annually. If Alternative #5 is not working, then implement Alternative #8, winter use (10/1 - 3/31).

X. RATIONALE

Through the re-evaluation process it has been determined that changes in existing management are required to achieve the multiple use objectives for the Blue Wing/Seven Trough Allotment. Analysis of the monitoring data indicates that the existing numbers of wild horses and burros, and livestock; along with livestock management is significantly

contributing to the failure in meeting LUP and the 1988 Allotment Agreement multiple use objectives. Analysis of the wildlife monitoring data does not indicate a need for change in the existing wildlife management. These adopted Technical Recommendations change livestock management and numbers, the grazing system, establishes an Appropriate Management Level for wild horses and burros, and modify or establishes new multiple use objectives. Various projects were identified to assist in meeting the allotment objectives. By implementing the Technical Recommendations it should be possible to attain the objectives for this allotment. Adjusting overall numbers of animals should reduce the likelihood of a serous threat to the wild horse and burro herds should there be a severe winter.

XI. FUTURE MONITORING AND GRAZING ADJUSTMENTS

The Sonoma-Gerlach Resource Area will continue to monitor existing studies as outlined on page 63. This monitoring data will continue to be collected to provide the necessary information for subsequent re-evaluations. These re-evaluations are necessary to determine if the allotment specific objectives are being met under the existing and/or new grazing strategies or if changes are required. Also, adjustments in grazing management, and the determination of new range projects will be base on the data collected.

XII. NEPA REVIEW

The selected management actions for grazing in the Blue Wing/Seven Troughs Allotment conforms with the environmental analysis of grazing impacts described in the Final Sonoma-Gerlach Environmental Impact Statement dated September 9, 1982.

The EIS and NEPA Compliance Record are on file in the Winnemucca District Office, located at 705 E. Fourth Street, Winnemucca, Nevada, 89445.

APPENDIX 1 ACTUAL USE

A. LIVESTOCK

This actual use data is obtained from grazing licenses or actual use reports which document the actual livestock grazing use.

During the evaluation period the actual use in the Blue Wing Allotment varied from 9,248 to 16,598 AUMS and from 5,011 to 8,370 AUMS in the Seven Troughs Allotment. These actual use levels represent a range of 38% to 88% of active preference in the Blue Wing Allotment and 53% to 88% in the Seven Troughs Allotment. (Refer to Actual Use section for additional information and numbers).

B. WILDLIFE

MULE DEER

Nevada Division of Wildlife (NDOW) wildlife biologist, Philip Benolkin, has provided the wildlife population and adult to fawn/kid ratio data by allotment. The mule deer were estimated using a population model. The pronghorn population was estimated using professional judgement. (Refer to Actual Use section for additional information and numbers).

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

The mule deer recruitment (fawns per 100 adults) appears to be more stable and acceptable in the Blue Wing/Seven Troughs allotments than in the majority of the other allotments. Characteristically less than 35 fawns per 100 adults especially in the spring denotes a decreasing population over an extended period of time.

PRONGHORN ANTELOPE

The pronghorn antelope population estimates indicate they have increased in the western half of Pershing County which would include the Blue Wing and Seven Troughs Allotments to the point where there is now a small huntable population within the allotments (Units 041 and 042). However, the ability of pronghorn to move (most fences are not restricting), drought, high number of wild horses/burros and the avoidance by pronghorn of impacts by wild horses/burros at water sources may cause variations in pronghorn distribution. Pronghorn may be migrating from other

areas outside of the Blue Wing/Seven Troughs Allotments.

The fall census of pronghorn indicates the population recruitment may be decreasing on the short term according to the kid to 100 doe ratio for the last two years of data. The competition for the available water during the ongoing drought may be impeding the pronghorn recruitment. The natural reintroduction and establishment of pronghorn into these two allotments is a success story for biodiversity, consumptive and non-consumptive recreation, and ecosystem management.

SAGE GROUSE

Sage Grouse Strutting Ground Survey in Spring 1992

Observation Number	# of Male Grouse	Location	Utl. levels*
1	3	T. 31 N., R. 29 E., Sect. 5, SWSW	89-no use, 92-H
2	2	T. 31 N., R. 29 E., Sect. 13, SENW	92-light
3	14	T. 31 N., R. 29 E., Sect. 14, SENW	92-light
4	1	T. 31 N., R. 29 E., Sect. 15, SENE	92-light
5	1	T. 32 N., R. 29 E., Sect. 17, SWNW	not mapped
6	1	T. 32 N., R. 29 E., Sect. 19, SWSE	92-H
7	1	T. 32 N., R. 29 E., Sect. 19, SWNE	not mapped

*Mapping was done in September. If an area was mapped as heavy (H), it generally covered a small portion of the lek. Based on actual use reports, the majority of the utilization that occured was from wild horses or burros and not livestock.

The number of sage grouse strutting grounds for this size of an area is poor. The number of male sage grouse per strutting ground is quite variable. The strutting grounds with 1 to 3 males is too low of a number to maintain genetic diversity for a sage grouse population. The sage grouse strutting grounds in all but T. 31 N., R 29 E., Sect. 14, SE, NW will require close monitoring to determine trend. If these strutting grounds are static or declining in the number of male grouse then management actions should be taken. Land management alternatives include the reduction of grazing pressure at the strutting grounds and potentially more important at nearby meadows which would be used by brooding hens and young chicks.

The sage grouse strutting grounds located by NDOW in the past on the Selenite Range were noted to be unoccupied at this 1992 helicopter survey. However, this method of estimating existing number of male sage grouse and the lek locations have several shortcomings when weighted as an indication of habitat condition, or actual use. Sage grouse are a mobile species, and may use different locations each year as a result of weather conditions, forage availability, water distribution, and stress.

C. WILD HORSES AND BURROS

Actual use data for wild horses/burros is derived from the total numbers (adults and foals) inhabiting a Herd Management Area (HMA) multiplied by 12 months (March 1 through February 28). The number of wild horses/burros is based on the most recent helicopter census of an HMA. For years in which an aerial census was not conducted a population estimate is calculated by multiplying the previous year's census or population estimate by 11% as outlined in the Sonoma-Gerlach Grazing Environmental Impact Statement. The 11% rate of increase is based on an analysis of helicopter census data collected by experienced personnel in the Sonoma-Gerlach Resource area in 1974, 1977, and 1980 and has been verified by data gathered during wild horse removals.

The census population is obtained by utilizing a helicopter to conduct a direct count of all adults and foals found within an HMA. This method assumes complete coverage of the HMA and observation of all animals. However, Cauley (1974) found in his study and literature search that the closest an aerial survey ever came to the actual population size was 89%. Wagner reported that studies conducted in four horse management areas (Nevada - 2, Oregon and Wyoming) showed about 93% accuracy in areas of low vegetation and moderate terrain, while 60% of the animals in wooded and mountainous topography were missed (Forty-eighth North American Wildlife Conference). Actual use is calculated using the total census population to closely approximate the true forage demand made by wild horses recognizing that all animals are not observed during a census.

When conducting a census, an HMA is flown in a modified transect pattern utilizing topography and natural or man-made barriers to ensure complete coverage and that animals are not counted twice. (Refer to Actual Use section for additional information).

Wildlife data

Valley quail habitat-Blue Wing Allotment-78,911 acres
Seven Troughs Allotment-43,250 acres.

Bighorn sheep habitat-Blue wing allotment- BY-2 Shawave Mountains 23,200 acres. - OCCUPIED

Pronghorn habitat-Blue wing allotment- AY-1 720,000 acres public and 87,680 acres private.
Seven troughs allotment- AY-1 294,400 acres public and 62,080 acres private.

The recruitment and winter loss estimates for mule deer and pronghorn provided by Nevada Division of Wildlife (NDOW) are for the hunting unit which covers both allotments as listed 35
below.

MULE DEER hunting unit 041 Blue Wing/Seven Troughs Allotments

Year	Fall		Year	Spring		% Loss
1988	48	fawns/100 adults	1989	23	fawns/100 adults	51
1989	37	fawns/100 adults	1990	41	fawns/100 adults	0
1990	42	fawns/100 adults	1991	34	fawns/100 adults	18
1991	42	fawns/100 adults	1992	35	fawns/100 adults	16
1992	34	fawns/100 adults	1993	24	fawns/100 adults	29

PRONGHORN hunting unit 041 Blue Wing/Seven Troughs Allotments

Year	Fall Census	Fall Census
1988	60 bucks/100 does	68 kids/100 does
1989	44 bucks/100 does	64 kids/100 does
1990	113 bucks/100 does	73 kids/100 does
1991	46 bucks/100 does	39 kids/100 does
1992	63 bucks/100 does	3 kids/100 does

APPENDIX 2 HABITAT SUITABILITY

Mule Deer

Mule deer habitat analysis is based on: browse vigor rating, forage quality, vertical cover, disturbance or interface, and water distribution. Forage variables from the above list were the only ones that changed during this period. Forage vigor, quality, and cover are the variables most likely to be influenced by management, and will therefore be monitored in the future. For future evaluations, mule deer habitat condition transects will be conducted at the key areas by an interdisciplinary team.

Pronghorn Antelope

Pronghorn habitat condition ratings are based on: vegetation quality, quantity, height, and diversity, water distribution, water quantity, and limiting factors (fences, snow depth, and habitat disturbance).

Competition for water was the only variable to change during the evaluation period due mostly to an increase in wild horses/burros.

California Bighorn Sheep

California bighorn sheep habitat suitability ratings are based on topography, water, forage, human conflicts, and domestic sheep use conflicts. The water rating includes: distance from escape cover, competition, visual obstruction, and distance between waters.

Habitat Suitability Rating (HSR) for bighorn sheep and mule deer habitats as recorded in 1987. During the evaluation period data was not collected to determine habitat suitability trend.

BIGHORN SHEEP

Selenite BY-1 Habitat suitability rating is 0.0 due to domestic sheep conflicts.

MULE DEER

Area	HSR	Most limiting factor 1/
Selenite Range (DY-1)	0.7	Forage quality.
Lava Beds (DY-4)	0.65	Forage quality.
Nightingale Mtns.(DY-2)	0.56	Forage quality.
Seven Troughs (DS-2)	0.65	Forage quality.
Seven Troughs (DY-5)	0.64	Forage quality
Shawave Mtns. (DY-3)	0.58	Forage quality

1/ Second most limiting factor for mule deer is cover.

APPENDIX 3 Plant list: Upland and Riparian

1. Upland Habitat

Symbol	Scientific Name	Common Name
AGSP	Agropyron spicatum	bluebunch wheatgrass
AMAL2	Amelanchier alnifolia	serviceberry
AMSIN	Amsinckia	fiddleneck
ARABI2	Arabis	rockcress
ARAR8	Artemisia arbuscula	low sagebrush
ARGROS2	Agrostis	bentgrass
ARSP	Artemisia spinescens	bud sagebrush
ARTRW	Artemisia tridentata wyo	Wyo. big sagebrush
ARVA2	Artemisia tridentata vas	mt. big sagebrush
ASTRA	Astragalus	milkvetch
ATCO	Atriplex confertifolia	shadscale
BAHO	Balsamorhiza hookeri	Hooker balsamroot
BASA3	Balsamorhiza sagittata	arrowleaf balsamroot
BRASS2	Brassica	mustard
BRTE	Bromus tectorum	cheatgrass
CASTI2	Castilleja	paintbrush
CELE3	Cercocarpus ledifolius	curlleaf mountain mahogany
CERCO	Cercocarpus	mountainmahogany
CHRYS9	Chrysothamnus	rabbitbrush
CHVI8	Chrysothamnus viscidiflorus	Douglas rabbitbrush
COPA	Collinsia parviflora	blue-eyed Mary
CRAC2	Crepis acuminata	tapertip hawksbeard
CREPI	Crepis	hawksbeard
CRYPT	Cryptantha	cryptantha
DEPI	Descurainia pinnata	pinnate tansymustard
DESC	Delphinium scaposum	tall mt. larkspur
ELCI2	Elymus cinereus	basin wildrye
ELTR3	Elymus triticoides	creeping wildrye
EPHED	Ephedra spp.	ephedra
EPVI	Ephedra viridis	green ephedra
ERIOG	Eriogonum	eriogonum
EULA5	Eurotia lanata	winterfat
FEID	Festuca idahoensis	Idaho Fescue
GILIA	Gillia	Gillia
GRSP	Grayia spinosa	spiny hopsage
HAGL	Halogeton glomeratus	halogeton
HOLOD	Holodiscus	oceanspray
LEPID	Lepidium	pepperweed
LEPU	Leptodactylon pungens	common pricklygilia
LOMAT	Lomatium	biscuitroot
LUPIN	Lupinus spp	lupine
ORHY	Oryzopsis hymenoides	Indian ricegrass
PAEON	Paionia	peony
PHHO	Phlox hoodii	spiny phlox

PHLO2	Phlox longifolia	longleaf phlox
POA++	Poa	bluegrass
POSE	Poa secunda	Sandberg's bluegrass
POTEN	Potentillia	cinquefoil
PUTR2	Purshia tridentata	Antelope bitterbrush
RIBES	Ribes	currant
SAVE8	Sarcobatus vermiculatus baileyi	Bailey greasewood
SENEC	Senecio	groundsel
SIHY	Sitanian hystrix	bottlebrush squirreltail
SPHAE	Sphaeralcea	globemallow
STCO3	Stipa columbiana	Columbia needlegrass
STTH2	Stipa thurberana	Thurber's needlegrass
SYMPH	Symphoricarpus spp	snowberry
TEGL	Tetradymia glabrata	littleleaf horsebrush
TYPHA	Typha	cattail

2. Riparian Habitat

Symbol	Scientific Name	Common Name
AGIN2	Agropyron intermedium	intermediate wheatgrass
CAREX	Carex spp.	sedge
DECE	Deschampsia cespitosa	tufted hairgrass
DISTI	Distichlis	saltgrass
HOBR	Hordeum brachyantherum	meadow barley
JUBA	Juncus balticus	baltic rush
JUNCUS	Juncus spp.	rush
POA++	Poa spp	bluegrass
POA3	Poa nevadensis	Nevada bluegrass
POTR5	Populus tremuloides	quaking aspen
ROWO	Rosa woodsii	woods rose
SALIX	Salix spp.	willow
SCIRP	Scirpus	bulrush

APPENDIX 4 List of acronyms

ACRONYM	DEFINITION
AML	Appropriate Management Level
AUM	Animal Unit Month
AS	Antelope Summer
AW	Antelope Winter
AY	Antelope Yearlong
BLM	Bureau of Land Management
BR	Black Rock
BS	Bighorn sheep Summer
BW	Bighorn sheep Winter
BY	Bighorn sheep Yearlong
DPC	Desired Plant Community
DS	Deer Summer
DW	Deer Winter
DY	Deer Yearlong
ESI	Ecological Site Inventory
FONSI	Finding Of No Significant Impacts
HMA	Herd Management Area
HAMP	Herd Area Management Plan
HSR	Habitat Suitability Rating
LCT	Lahontan Cutthroat Trout
MFP	Management Framework Plan
NEPA	National Environmental Policy Act
NDOW	Nevada Division Of Wildlife
NOAA	National Oceanic and Atmospheric Admin.
PNC	Potential Natural Community
RAWS	Remote Automated Weather Station
RIPS	Rangeland Improvement Project System
RMP	Resource Management Plan
SCS	Soil Conservation Service
SWA	Site Writeup Area
UPM	Use Pattern Map
WHA	Wildlife Habitat Area

ADDITIONAL DEFINITIONS

Growing Season - March through August

Animal Unit Month - the amount of vegetation necessary for the subsistence of one cow or its equivalent (i.e., four deer, five antelope, five bighorn sheep, five domestic sheep or one horse) for one month.

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

Seral Stages: Percent of Potential Natural Community by Air Dry Weight

0 - 25	Early
26 - 50	Mid
51 - 75	Late
76 - 100	PNC

Habitat Suitability Rating - Poor, Fair, good, Excellent

APPENDIX 5 Phenology.

Blue Wing/Seven Troughs Allotments

DEVELOPMENT STAGES

Species	Start Growth	Peak of Flowering	Seed Flowering	Seedripe	Disseminate
Grasses:					
STTH2	3/15-3/30	5/15-5/30	6/01-6/15	6/15-6/30	6/30-7/15
ORHY	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
POA++	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
SIHY	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
FEID	3/15-3/30	5/15-5/30	6/01-6/15	6/15-6/30	7/01-6/15
AGSP	3/01-5/30	6/01-6/15	6/15-6/30	6/30-7/15	7/15-7/30
ELCI2	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
BRMA4	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
Forbs:					
BASA3	4/15-4/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
CRAC2	4/15-4/30	5/15-5/30	6/01-6/15	6/01-6/15	6/15-6/30
SPHAE	4/15-4/30	5/15-5/30	5/15-5/30	6/01-6/15	6/15-6/30
HAVE	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
TAOF	4/15-4/30	S/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
LUPIN	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
ERIOG	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
CASTI	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
CREPI	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
ACMIL	4/15-4/30	S/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
BAHO	4/15-4/30	5/15-5/30	6/01-6/15	6/15-7/01	6/15-7/01
Shrubs:					
PUTR2	3/15-3/30	5/15-5/30	6/01-6/15	7/01-7/15	7/15-7/30
SYMPH	3/15-3/30	5/15-5/30	6/01-6/15	7/01-7/15	7/15-7/30
POTR5	3/15-3/30	5/15-5/30	6/01-6/15	7/01-7/15	7/15-7/30

This phenology data was obtained from reference to the Sonoma-Gerlach Grazing Environmental Impact Statement. Phenology study data was collected in cooperation with Natural Resource Consultants during the period 1977-1979.

APPENDIX 6 1988 ALLOTMENT OBJECTIVES

A. Short Term

1. Utilization of streambank riparian plant species shall not exceed 30% in Jenny Creek except where adjusted by an approved activity plan. (WLA-1.3)

2. Total utilization of plant species in 358 acres of wetland riparian habitat shall not exceed 50%. (WL-1.10)

3. Total utilization shall not exceed the allowable use for the following wildlife key species. (WL-1.7 & WL-1.9)

Antelope bitterbrush (PUTR2)	50%
Quaking aspen (POTR5)	40%
Serviceberry (AMAL)	40%
Snowberry (SYMPH)	40%
Winterfat (EULA5)	50%
Cinquefoil (POTEN)	20%
Sandberg bluegrass (POSE)	30%

4. Utilization of key plant species on upland rangeland habitat shall not exceed 50% during the growing season and 60% yearlong except where adjusted by an approved activity plan. (WL 1.7, WL 1.9, RM 1).

B. Long Term

1. Improve and maintain the overall stream habitat in 2 miles of Jenny Creek from poor to 60% of optimum or better. (WLA-1.3)

2. Improve or maintain the condition of 358 acres of wetland riparian habitat to good or higher. (WL-1.10)

3. Improve or maintain 24 acres streambank riparian habitat at good condition from poor condition. (WLA-1.3 & WL-1.9)

4. Protect sage grouse strutting grounds and brooding habitat and improve nesting and wintering habitat by: (WL-1.11)

   1) Following NDOW's guidelines for Vegetal Control Programs in Sage Grouse Habitat in Nevada.

   2) Maintain sagebrush canopy at 30% in sage grouse nesting areas where sagebrush does not exceed three (3) feet in height.

5. Maintain or improve 40 acres of aspen woodland to good status or equivalent. (WL-1.9)

6. Manage, maintain or improve public rangeland habitat condition to provide forage on a sustained yield basis with an initial forage demand for big game of 1,196 AUMs for mule deer, 75 AUMs for pronghorn and 106 AUMs for bighorn sheep by:

   a. Improving overall mule deer habitat as follows:

      1) From fair to good 113,719 acres: Lava Beds DY-4; Selenite Range DY-1; Seven Troughs DS-2; Seven Troughs DY-5.

      2) From poor to fair 22,107 acres: Nightingale Mtns. DY-2 and Shawave Mtns. DY-3.

   b. Improving potential pronghorn habitat 308,900 acres from fair to good condition.

   c. Improving 9,485 acres of potential bighorn sheep habitat (Selenite Range BY-1) to 90% of optimum.

7. Manage, maintain and improve rangeland conditions on a sustained yield basis with an initial stocking level of 33,852 AUMs.

8. Manage domestic livestock grazing to increase 136,318 acres from poor and fair to good, and 3,505 acres from good to excellent ecological condition; improve range condition and forage availability, to reach and sustain 33,852 AUMs of active preference for livestock grazing.

9. Manage, maintain and improve rangeland conditions to provide an initial level of 12,240 AUMs of forage on a sustained yield basis for 877 wild horses and 143 burros in the following Herd (Management) Areas:

	ISL*	AUMs
Lava Beds 2/	375/40	4500/480
Blue Wing Mtn.	50/39	600/468
Nightingales	87/0	1044/0
Shawave Mtns.	100/0	1200/0
Seven Troughs	215/64	2580/768
Kamma Mtns. 50/0	600/0	

2/Northeast corner of the Herd Area is in the Seven Troughs Allotment.
* ISL (initial stocking level) refers to the numbers of wild horses/burros listed in the Sonoma-Gerlach MFP-III Wild Horse and Burro decision 1:1 to be used as a starting point for monitoring purposes. In accordance with the June 7, 1989 Interior Board of Land Appeals Ruling

(IBLA 88-591), adjustments to wild horse/burro populations and establishment of AML will be based on monitoring data to obtain the optimum number of wild horses and burros which result in a Thriving Natural Ecological Balance and avoids deterioration of the range.

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

11. Maintain/Improve wild horse/burro habitat by assuring free access to water.

12. Improve or maintain the water quality of Jenny Creek to the state criteria for livestock drinking and wildlife propagation.

State Water Quality Criteria

Constituent/use	Livestock drinking	Wildlife Propagation
$_1$TDS	< 3000 mg/1	-
NO_3 (N)	< 100 mg/1	<100 mg/1
Fecal coliform	<1000/100 ml.	<1000/100 ml.
pH	5.0-9.0	5.0-9.2
$_2$D.O.	aerobic	aerobic
Alkalinity	-	30-130 mg/1

$_1$ = Total Dissolved Solids
$_2$ = Dissolved oxygen

APPENDIX 7 FREQUENCY AND TREND

FREQUENCY AND TREND DATA

The Frequency and Trend Key Areas were established by an interdisciplinary team within a dominate ecological site to measure long term changes in the frequency of occurrence of key species. Statistically significant changes are evaluated to determine if specific management objectives for the rangelands represented by the key area are being achieved.

These sites were monitored using twenty transects and ten quadrats (20 X 10) along a one hundred foot baseline transect for a total of two hundred frames. The numbers appearing to the right of the species symbol is the percentage of occurrence of that specific species within the key area site by the year(s) monitored.

Refer to the Nevada Rangeland Monitoring Handbook (the blue book) for any further explanation of this Bureau approved methodology.

*COMMENTS
NS = Not Significant (no more than a 5% increase/decrease)
SI = Significant Increase (more than a 5% increase)
SD = Significant Decrease (more than a 5% decrease)
Common and scientific names of plant symbols are in Appendix 5

BLUE WING ALLOTMENT:

Key Area: 0135 - 0001

	% OF SPECIES BY YEAR			COMMENTS*
PLANT SYMBOL	1987	1988	1989	
BRTE	0	11	5	SI,SD
POA++	72	93	78	SI,SD
SIHY	69	54	65	SD,SI
STTH2	4	2	8	NS,SI
ASTRA	7	19	10	SI,SD
LOMAT	6	2	3	NS,NS
PHLO2	40	23	40	SD,SI
PAEON	2	0	0	NS,NS
LEPU	32	0	39	SD,SI
ARTRW	44	69	46	SI,SD

Key Area: 0135 - 0002

PLANT SYMBOL	% OF SPECIES BY YEAR 1982	1986	1987	1989	COMMENTS*
BRTE	17	78	1	38	SI,SD,SI
SIHY	11	34	31	26	SI,NS,NS
STTH2	22	34	25	30	SI,SD,NS
POA++	66	63	66	69	NS,NS,NS
BASA3	7	5	5	5	NS,NS,NS
PHHO2	27	79	84	47	SI,SI,SD
CRAC2	1	10	9	12	SI,NS,NS
ASTRA	-	20	21	25	SI,NS,NS
ARTRW	14	25	25	24	SI,NS,NS
CHRYS9	-	10	10	10	SI,NS,NS

Key Area: 0135 - 0003

PLANT SYMBOL	% OF SPECIES BY YEAR 1982	1987	1989	COMMENTS*
ORHY	3	1	3	NS,NS
SIHY	25	60	47	SI,SD
BRTE	-	17	46	SI,SI
POA++	16	14	26	NS,SI
STTH2	6	20	7	SI,SD
ERIOG	1	2	1	NS,NS
PHLO2	9	38	47	SI,SI
PHHO	16	24	30	SI,SI
LOMAT	1	4	2	NS,NS
ASTRA	1	13	10	SI,NS
ARTRW	20	37	34	SI,NS
CHVI8	1	2	2	NS,NS

Key Area: 0135 - 0004

PLANT SYMBOL	% OF SPECIES BY YEAR 1984	1985	1986	1988	COMMENTS*
BRTE	98	99	98	100	NS,NS,NS
ORHY	6	6	13	5	NS,SI,SD
SIHY	1	1	0	1	NS,NS,NS
BRASS2	-	37	0	22	SI,SD,SI
AMSIN	-	-	1	0	NS,NS,NS
ATCO	-	1	1	6	NS,NS,NS
GRSP	1	1	2	20	NS,NS,SI
EULA5	2	2	1	2	NS,NS,NS
SAVE8	22	14	13	21	SI,NS,SI

Key Area: 0135 - 0005

PLANT SYMBOL	% OF SPECIES BY YEAR 1984	1985	1986	1988	COMMENTS*
POA++	18	12	53	35	SD,SI,SD
SIHY	39	60	60	34	SI,NS,SD
BRTE	100	98	96	61	NS,NS,SD
CASTI2	1	1	1	2	NS,NS,NS
LOMAT	-	-	7	-	NS,SI,SD
ASTRA	-	11	8	8	SI,NS,NS
PHLO2	40	67	75	44	SI,SI,SD
COPA3	-	-	86	21	NS,SI,SD
ARAR8	74	58	51	78	SD,SD,SI
GRSP	1	1	2	-	NS,NS,NS

Key Area: 0135 - 0007

PLANT SYMBOL	% OF SPECIES BY YEAR 1984	1985	1986	1988	COMMENTS*
STTH2	2	1	4	14	NS,NS,SI
AGSP	5	8	18	21	NS,SI,NS
SIHY	5	14	25	5	SI,SI,SD
POA++	12	17	48	33	NS,SI,SD
BRTE	99	97	100	100	NS,NS,NS
LUPIN	2	1	1	1	NS,NS,NS
BASA3	-	22	37	44	SI,SI,SI
LOMAT	-	11	3	0	SI,SD,NS
COPA3	-	15	63	0	SI,SI,NS
ASTRA	-	1	1	0	NS,NS,NS
ERIOG	-	1	1	0	NS,NS,NS
PUTR2	13	10	13	36	NS,NS,SI
ARTRV	9	10	21	35	NS,SI,SI
CHRYS9	3	3	8	9	NS,NS,NS

Key Area: 0135 - 0008

PLANT SYMBOL	% OF SPECIES BY YEAR 1985	1986	1988	1989	COMMENTS*
BRTE	69	88	97	41	SI,SI,SD
STTH2	12	16	20	10	NS,NS,SD
SIHY	18	25	27	48	SI,NS,SI
POA++	33	59	54	71	SI,NS,SI
ARABI2	5	5	0	0	NS,NS,NS
LUPIN	26	37	49	45	SI,SI,NS
LOMAT	21	22	49	11	NS,SI,SD
AGROS2	11	9	4	8	NS,NS,NS
SENEC	4	5	0	4	NS,NS,NS

PHLO2	33	34	53	48	NS,SI,NS
ASTRA	3	4	16	7	NS,SI,SD
COPA3	85	95	51	59	SI,SD,SI
ARTRV	24	27	46	43	NS,SI,NS
VHRYS9	17	24	33	24	SI,SI,SD

Key Area: 0135 - 0012

	% OF SPECIES BY YEAR		COMMENTS*
PLANT SYMBOL	1986	1987	
STTH2	37	40	NS
SIHY	20	22	NS
POA++	44	47	NS
BRTE	100	7	SD
ASTRA	28	15	SI
BASA3	1	2	NS
ERIOG	1	1	NS
COPA3	7	1	SD
PHHO	1	1	NS
PHLO	40	36	NS
ARTRW	39	36	NS
CHVI	1	0	NS

SEVEN TROUGHS ALLOTMENT:

Key Area: 0134 - 0001

	% OF SPECIES BY YEAR					COMMENTS*
PLANT SYMBOL	1984	1985	1986	1988	1992	
BRTE	89	68	37	9	1	SD,SD,SD,SD
SIHY	52	58	66	54	25	SI,SI,SD,SD
LEPID	52	88	100	100	46	SI,SD,NS,SD
DEPI	1	3	5	12	0	NS,NS,SI,NS
CRYPT	-	3	2	0	-	NS,NS,NS,NS
ARSP5	43	30	37	40	15	SD,SI,NS,SD

Key Area: 0134 - 0002

PLANT SYMBOL	% OF SPECIES BY YEAR 1984	1985	1986	1988	1992	COMMENTS*
SIHY	40	30	46	45	1	SD,SI,NS,SD
ORHY	6	2	3	7	5	NS,NS,NS,NS
BRTE	92	75	87	80	8	SD,SI,SD,SD
SPHAE	3	2	4	2	2	NS,NS,NS,NS
ASTRA	1	-	3	9	2	NS,NS,SI,SD
HAGL	1	-	9	17	98	NS,SI,SI,SI
EULA5	3	-	6	9	5	NS,SI,NS,NS
CHVI8	20	15	20	17	10	NS,NS,NS,SD
ARSP5	27	35	26	32	10	SI,SD,SI,SD

Key Area: 0134 - 0003

PLANT SYMBOL	% OF SPECIES BY YEAR 1984	1985	1986	1988	COMMENTS*
STTH2	30	25	32	-	NS,SI,SD
POA++	94	75	98	97	SD,SI,NS
SIHY	21	28	23	12	SI,NS,SD
BRTE	44	97	91	7	SI,SD,SD
ERIOG	2	4	5	3	NS,NS,NS
ASTRA	-	14	14	21	SI,NS,SI
PHHO	88	96	93	90	SI,NS,NS
ARAR8	39	38	36	50	NS,NS,SI

Key Area: 0134 - 0006

PLANT SYMBOL	% OF SPECIES BY YEAR 1985	1986	1988	1992	COMMENTS*
STTH2	7	7	8	4	NS,NS,NS
SIHY	52	61	52	70	SI,SD,SI
POA++	16	20	54	50	NS,SI,NS
BRTE	32	61	68	39	SI,SI,SD
ERIOG	1	1	5	2	NS,NS,NS
ASTRA	4	6	11	4	NS,NS,SD
LEPTO	1	1	0	1	NS,NS,NS
LUPIN	24	32	29	29	SI,NS,NS
LOMAT	49	44	25	68	NS,SI,SI
PHLO2	31	31	28	19	NS,NS,SD
CREPI	7	4	4	-	NS,NS,NS
ARTR2	21	23	50	54	NS,SI,NS
CHRYS9	38	38	34	47	NS,NS,SI
EPVI	3	3	7	7	NS,NS,NS

Key Area: 0134 - 0007

PLANT SYMBOL	% OF SPECIES BY YEAR 1986	1987	1989	COMMENTS*
SIHY	29	27	27	NS,NS
STTH2	8	8	13	NS,NS
POA++	55	76	56	SI,SD
BRTE	80	1	14	SD,SI
DESC	1	0	1	NS,NS
LAYIA	1	0	1	NS,NS
BAHO	12	7	1	NS,SD
ASTRA	10	0	2	SD,NS
LOMAT	16	0	2	SD,NS
ERIOG	1	1	1	NS,NS
CRAC2	20	7	20	SD,SI
GILIA	4	3	2	NS,NS
CRYPT	2	0	2	NS,NS
GRSP	2	3	2	NS,NS
TEGL	2	2	2	NS,NS
ARTRW	25	24	26	NS,NS

APPENDIX 8 MONITORING STUDIES

Monitoring Studies Location and BAse Data

KEY AREA NO.	KEY AREA NAME	MT. RANGE	LOCATION
		SEVEN TROUGHS ALLOTMENT	
134-0001	Mauds Well	Antelope	T.34N.,R.36E.,Sec. 31
134-0002	Scossa	Antelope	T.33N.,R.30E.,Sec. 16
134-0003	Juniper Canyon	Seven Troughs	T.31N.,R.28E.,Sec. 2
134-0006	Cow Creek	Seven Troughs	T.31N.,R.28E.,Sec. 13
134-0007	Exclosure #1	Seven Troughs	T.31N.,R.29E.,Sec. 3
		BLUE WING ALLOTMENT	
135-0001	Shawave	Shawave	T.26N.,R.25E.,Sec. 13
135-0002	Lava Beds #2	Lava Beds	T.31N.,R.27E.,Sec. 4
135-0003	Lava Beds #3	Lava Beds	T.31N.,R.26E.,Sec. 36
135-0004	Bob Spring	Shawave	T.27N.,R.27E.,Sec. 6
135-0005	Stonehouse	Selenite	T.27N.,R.25E.,Sec. 21
135-0007	Selenite #3	Selenite	T.30N.,R.25E.,Sec. 29
135-0008	Selenite #1	Selenite	T.31N.,R.24E.,Sec. 32
135-0012	Lava Beds #3	Lava Beds	T.31N.,R.26E.,Sec. 36

APPENDIX 9 USE PATTERN MAPPING (UPM)

The Utilization Pattern Mapping (UPM) information listed below is presented by year and area mapped. Some of the areas mapped may include one or more Herd Management Areas (HMAS) and/or livestock use areas or pastures. The data will reference Summer Use which would be monitored in the fall to measure the utilization levels occurring on the current years growth whereas the Winter Use monitored in the spring of the year measures the use on the previous years growth.

During the evaluation period (1989 - 1992) there was a shift in 1990 from using four (4) utilization classes; No Apparent Use, Light Use (1 - 40%), Moderate Use (41 - 60%) and Heavy Use (61 - 100%) to Six (6) classes No Apparent Use, Slight Use (1 - 20%), Light Use (21 -40%), Moderate Use (41 -60%), Heavy Use (61 -80%) and Severe Use (81 -100%).

The Utilization summaries list acres by use class and percentages of the total acres by use class mapped at different use levels by year and area. This data refers to portions of the total acres mapped and not the total acres within an HMA or livestock use area or pasture. Due to the vast area to be monitored it is unrealistic to cover the entire area therefore these seasonal monitoring maps represent a utilization trend throughout a larger area.

Use Pattern Mapping (UPM) data has been compiled during the evaluation period and is displayed below. Refer to the Sonoma-Gerlach file maps for additional information.

09/89 Lava Beds/Dry Mtn.

The areas of heavy use occur primarily on those sites associated with sources of water from Rattlesnake Spring on the southeastern portion of the Lava Beds north of Garrett Mine and southwest along the road west of Mustang Spring. The areas of moderate use occurred in the vicinity of Hanna Spring, Dead Horse Spring, Windy Hill Mine small areas west and south of Mustang Spring and an area east of Twin Butte Well.

10/89 Nightingale/Shawave

One heavy use area is in the vicinity of Sage Hen Spring with other areas west of Granite Spring, north of Bluewing Spring and southwest of Bob Spring. Moderate use is primarily south and east of Sage Hen Spring, north of Sage Hen Spring and northwest of Bluewing Spring.

11/89 Bluewing Mtns./Shawave/Nightingales

The heavy use areas were from Lower Stonehouse Spring north to Jayhawk Well, south of Tunnel Spring in the Nightingale Range. In the Shawave Range Juniper Spring and the area from Cottonwood Spring south to Bob Spring had heavy use. Black Mtn. Spring, an area east of Juniper Pass and the northeast portion on the Bluewing Mtn. received heavy use. Moderate use was mapped in the northwest and southeast areas of the Bluewing Mtn., northwest area in the Shawave Range and areas of the northern portion of the Nightingale Range.

04/90 Bluewing Allot.

The various use levels are scattered throughout the Bluewing, Nightingale and Shawave Mountains HMAS. The majority of heavy use south and west of Bluewing Mtn., along the east side of the Nightingale Range from Stonehouse south to Sage Hen and in the southern two thirds of the Shawave Range. The moderate use was north of Blue Wing Flat, the northeast side and southeast portion of the Shawave Range, the western side of the Nightingale Range and the northern half of the flat between the Nightingale and Shawave Ranges.

04/90 Seven Troughs

The heavy use occurred in the northeast portion of the Seven Troughs Range near Cow Creek and the north part of Sage Valley and the flat between the Seven Troughs and Lava Beds Ranges. Other extensive areas of heavy use were mapped in the Lava Beds from Windy Hill Mine northwest to the main road southwest to Twin Buttes and southeast to the southern portion of the range. The moderate use was in the northeastern part of the Seven Troughs Range south of Corral Spring, along the western edge of the Seven Troughs Range and the area around the north road in the vicinity of Lava Beds Creek.

09/90 Bluewing Allotment

The majority of heavy use occurred from north of Lower Stonehouse Spring in the northeast portion of the Nightingale Range south along the main road to the corral then northeast to Tunnel Spring and northeast to Juniper Spring in the northwest portion of the Shawave Range. Other small areas are in the vicinity of Sage Hen Spring, scattered areas along the western side of the Shawave Range and an area on the southern end of the Bluewing Mountains. The moderate use areas are primarily associated with and adjacent to those areas mentioned with heavy use.

10/90 Lava Beds

The areas of severe use occurred in the vicinity of Hanna Spring, areas adjacent to Sheep Head Spring and both east and northwest of Sheep Head Spring and southwest of Trail Canyon. The heavy use was south of Sheep Head Spring and in the vicinity of Trail Canyon. The moderate use was south and west of Dead Horse Spring.

10/90 Seven Troughs

The areas of severe use were north of American Flat Canyon, Shingle Spring and south of Cow Creek Canyon. The heavy use occurred in Stonehouse Canyon and northwest of Wildcat Canyon while the moderate use was in areas northeast of Porter Spring, southwest of Vernon, the lower end of American Flat Canyon, west and north of Shingle Spring and the northern portion of Cow Creek.

10/90 Selenite

11/90 Bluewing Mtn.

The areas of severe use were north and east of Juniper Pass and north of Blue Wing Flat along the road running north toward Porter Spring.

11/90 Shawave Mtn.

The area of severe use occurred south and east of Juniper Pass in the vicinity of North Cottonwood and Cottonwood Springs.

05/91 Nightingale

The majority of the heavy use was in the northern portion of the Nightingale Range from Lower Stonehouse Spring north to near Jayhawk Well. The moderate use occurred from Lower Stonehouse Spring alone the eastern portion of the Nightingale Range south to Sage Hen Spring.

05/91 Shawave

The areas of heavy use were the sites in the vicinity of Granite Springs. The moderate use occurred east of Granite Spring extending north and east of Bluewing Spring.

04/91 Lava Beds

The areas of severe use occurred on the northern portion of the Lava Beds east of Wet Weather Spring in the vicinity of Lava Beds Creek, southeast of Sheep Spring and northeast of Trail Canyon. The heavy use was from Windy Hill Mine to the Garrett Mine and north to Lava Beds Creek, southeast of Sheep Spring west of Trail Canyon and in the vicinity of Sheep Head Spring, Dead Horse Spring and Rattlesnake Spring. The moderate use was from Rattlesnake Spring to Hanna Spring and up to Dead Horse Spring, along the southwestern part of the Lava Beds north to Trail Canyon and Northeast of Sheep Spring.

10/92 Nightingale/Shawave

The severe use was at Sage Hen Spring, the windmill south of Sage Hen, Lower Stonehouse Spring and Tunnel Spring in the Nightingale Range and Juniper Spring, North Cottonwood and Cottonwood Springs in the Shawave Range. Heavy use occurred primarily in the flat between the Nightingale and Shawave Ranges, west of Lower Stonehouse Spring in the northern part of the Nightingale Range and an area north of Sage Hen Spring. The moderate use was observed south of Sage Hen Spring, along the powerline road on the east side of the Nightingale Range and in the vicinity of Granite Springs Ridge in the Shawave Range.

09/92 Lava Beds

The areas of severe use were at Garrett Spring and a small area on the northwestern side of Dry Mountain. Heavy use occurred north of Garrett Spring, west of Dry Mountain and in the vicinity of Mustang and Sheep Head Springs. The moderate use was in the north central portion of Dry Mountain, southwest of Mustang Spring, east of Sheep Head Spring and in the vicinity of Dead Horse, Hanna and Rattlesnake Springs.

09/92 Seven Troughs

The severe use areas are associated with water sources at Corral Spring, Shingle

Spring and Last Chance Spring. The heavy use areas are southeast of Vernon, and the sites in the vicinity of Alson Spring, Nera Springs No. 56 and 33, Shingle Spring, Olson Meadow Spring and American and Stonehouse Canyons. The moderate use was northwest of Vernon, southeast of Alson Spring, northwest of Nera Springs No. 56 and 33, and southwest of and adjacent to Olson Meadow Spring.

MONITORING DATA BY THE KEY FORAGE PLANT METHOD IN RIPARIAN AREAS

Area Monitored	Date Monitored	Results
Jenny Creek (Aspen)	5-17-90	81% use or severe
	10-6-92	83% use or severe
	3-30-93	Age class is unsatisfactory Presence is unsatisfactory Self perpetuating is unsatisfactory
Cow Creek (Willow) (Nevada bluegrass)	10-28-92	85% or severe use Form class-unsatisfactory 86% use or severe utilization.

MONITORING DATA BY THE KEY FORAGE PLANT METHOD IN MEADOW AREAS

Area Monitored	Date Monitored	Results
Seven troughs range	10-28-92	90% use on Nevada bluegrass 90% use on sedge
Last Chance Spring	10-28-92	90% use on saltgrass 90% use on carex
Rabbithole Spring	10-28-92	87% use on bulrush 90% use on saltgrass 86% use on sedge
Porter Springs	10-28-92	90% use on Nevada bluegrass 90% use on saltgrass 90% use on sedge
East side of Selenites	10-28-92	90% use on Nevada bluegrass 90% use on sedge

MONITORING DATA BY THE EXTENSIVE UTILIZATION METHOD IN MOUNTAIN BROWSE AREAS

Area Monitored	Date Monitored	Results
Selenite Range Bitterbrush transect # 2	5-23-89	73% use or heavy utilization Age class-unsatisfactory Form class-unsatisfactory
	10-28-92	Key Forage Plant Method-20% use or slight
	10-27-93	28% utilization Age class-unsatisfactory Form class-unsatisfactory
Selenite Range Mountain Browse transect # 1	5-23-89	Ribes 14% use Holod 21% use Epvi 72% use Cerco 0% use Average 28% use or satisfactory use Age class satisfactory Form class satisfactory
	10-27-93	Ribes 0 % use Holod 6 % use Average 3 % use or satisfactory Age class-unsatisfactory Form class-satisfactory

Appendix 10. Wild Horse and Burro 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 1/2 mile to 2 miles apart depending on 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 range from 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 M5 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 did the counting. In areas of high concentrations a total count of all bands was recorded on the map rather than each individual band.

Shawave and Nightingale Mountains

April 1989 - Horses were evenly distributed on the east side of the Nightingale Mountains south to Sage Hen Spring, and along the length of the Shawave Mountains. There were no horses found on the west slope of the Nightingale Mountains or Sage Hen Valley. Burros were located on the east aspect slopes of the Shawave Mountains from Juniper Pass to Cottonwood Spring. Animals were found primarily on the mountains at all elevations.

March 1990 - Horses were concentrated in two general areas. The largest concentration of animals were located on the southern half of the Shawave Mountains from the upper fan piedmont of Sage Hen wash east to the base of the mountain. The other area of concentration was in the northern half of the Shawave and Nightingale Mountains from Granite Springs Ridge/Juniper Spring area west to Stonehouse Canyon. There were very few horses found on the southern half of the Nightingales or east of Granite Springs Ridge/Juniper Spring on the Shawave Mountains.

One group of burros were found in the Nightingale Mountains, 2 miles north of Jayhawk Well. A lone burro was found just south of Juniper Pass in the Shawave Mountains.

February 1991 - Horses were concentrated on the southern end of the Shawave

Mountains and, along higher ridges from Stonehouse Canyon south on the east side of the Nightingale Mountains. There were a large number of horses in the vicinity of Tunnel Spring east to Granite Springs Ridge/Juniper Spring. There were no horses found on the west side of the Nightingale Mountains. On the northern half of the Shawave Mountains there were few horses found on the east side.

July 1991 - Horses were concentrated in the Shawave Mountains from Granite Springs Ridge north to Juniper Pass. They were utilizing west aspect areas ranging from the upper fan piedmont to the top of Juniper Mountain. The only other concentration area was in the vicinity of the Los Angles Water and Power powerline southeast of Upper Stonehouse Spring in the Nightingale Mountains. There were very few horses found in Sage Hen Valley, or in the south half of the Shawave and Nightingale Mountains. There were no burros noted during this flight.

March 1992 - The largest concentrations of horses were found in the north half of the Shawave Mountains from Granite Springs Ridge to Juniper Pass between Tunnel Spring and Juniper Mountain. Horses were also concentrated on the east side of the Nightingale Mountains from Stonehouse Canyon to Sage Hen Spring, the north end of Sage Hen Valley, and on the southern half of the Shawave Mountains. There were some horses on the western slopes of the Nightingale Mountains, and on the eastern slope of the north half of the Shawave Mountains. There were no horses found in the lower two thirds of Sage Hen Valley.

Three groups of burros were found on the Shawave Mountains; near Granite Springs Ridge, Bob Spring and Juniper Pass.

May 1992 - The largest concentration of horses was found along the west side of the Shawave Mountains on the upper fans and lower elevations from Granite Springs Ridge north to Juniper Pass. Horses were also concentrated along the eastern and western side of Sage Hen Valley on the toe slopes of both the Shawave and Nightingale Mountains. There were no horses found on the western half of the Nightingale Mountains or around Tunnel Springs. There were very few horses found on the south half of the Shawave Mountains.

July 1992 - Horses were from Sage Hen Spring north to Upper Stonehouse Spring, along the upper fans north of Juniper Spring and, the west aspect slopes on the south half of the Shawave Mountains. There were few horses found in the vicinity of Tunnel Spring or in Sage Hen Valley. Horses found on the east aspect slopes on the north half of the Shawave Mountains had a fairly even distribution.

Burros were found from Cottonwood Spring north to Juniper Pass from the lower to the upper fan piedmont.

The following table lists the results of each distribution flight conducted during the evaluation period.

	Shawave Mtns.	Nightingale Mtns.		
Date	Horses/Burros	Horses/Burros	Total	Aircraft
4/89*	308/17	306/0	614/17	Bell 47G3B-S
3/90	357/1	103/9	460/10	Cessna 210
2/91	383/3	195/0	578/3	Cessna 210
7/91	500/0	151/0	651/0	Maule MX-5
3/92	540/13	218/0	758/13	Cessna 210
5/92	547/3	145/0	692/3	Maule MX-5
7/92*	675/15	237/1	912/16	Bell 47G4A-S

* census

Blue Wing Mountains

April 1989 - Horses were concentrated at the middle to upper elevations in the center of the HMA while burros were evenly distributed throughout the area on mid slopes.

March 1990 - Horses were distributed evenly along higher elevation ridges from Black Mountain east. Only 1 burro was noted during the flight. The animal was located on a steep rocky ridge just north of Juniper Pass.

February 1991 - The majority of animals were found on mid slopes. Both horses and burros had a fairly even distribution from the flats to the ridge tops.

July 1991 - Burros were distributed throughout the northern half of the HMA, while the majority of horses were found on a spring east of Black Mountain.

March 1992 - Horses and burros were found from the valley floor to the higher elevations. The majority of animals were located in the western half of the HMA.

May 1992 - Horses and burros were concentrated north of Black Mountain. There were 2 groups of horses and no burros south of Black Mountain.

July 1992 - Horses and burros were concentrated in the northern area in the vicinity of Black Mountain and the spring on the east side of Black Mountain. There were some animals in the southern half of the HMA.

The following table lists the results of each distribution flight conducted during the evaluation period.

Date	Horses/Burros	Aircraft
4/89*	30/24	Bell 47G3B-S
3/90	27/1	Cessna 210
2/91	23/18	Cessna 210
7/91	22/13	Maule MX-5
3/92	27/13	Cessna 210
5/92	35/11	Maule MX-5
7/92*	34/20	Bell 47G4A-S

* census

Kamma Mountains

April 1989 - The majority of horses were found in the southern part of the HMA south of Rosebud Canyon with most of these found near Outlaw Spring.

February 1990 - All horses were found south of Rosebud Canyon in low hills about 3 miles east of Outlaw Spring.

February 1991 - As in winter 1990, all horses were found south of Rosebud Canyon in low hills east of Outlaw Spring.

July 1991 - Only 5 horses were observed. All were about 3 miles southeast of Outlaw Spring near the HMA boundary.

March 1992 - Five horses were located about 2 miles northeast of Rosebud Peak, while the rest were south of Rosebud Canyon in low hills around and east of Outlaw Spring.

May 1992 - The majority of horses and foals were located 2 to 3 miles northeast of Rosebud Peak. One horse was seen south of Rosebud Canyon. Some horses had apparently moved off the HMA.

July 1992 - The majority of horses were seen in the low hill country south of Rosebud Canyon. Of these, a few were 2 to 3 miles east of Outlaw Spring, while the rest, including 1 burro, were found 1 to 3 miles south of the HMA boundary. Five horses were north of Rosebud Canyon about 3 miles northwest of Maud's Well.

The following table lists the results of each distribution flight conducted during the evaluation period.

Date	Horses/Burros	Aircraft
4/89*	8/0	Bell 47G3B-S
3/90	7/0	Cessna 210
2/91	18/0	Cessna 210
7/91	5/0	Maule MX-5
3/92	18/2	Cessna 210
5/92	10/0	Maule MX-5
7/92*	31/1	Bell 47G4A-S

* census

Lava Beds

April 1989 - About 2/3rds of the horses and burros were concentrated in the eastern half of the Lava Beds proper, relatively evenly distributed from north to south. Another large number were scattered and fairly evenly distributed north to south in the western half of the Lava Beds proper below Rattlesnake Extension. No horses occurred on Rattlesnake Extension. A third group was generally scattered south and southwest of Wet Weather Spring on the Dry Mountain Range. Both horses and burros were found at various elevations on the mountains. Only burros were observed south of Hanna Spring.

March 1990 - Horses were found at various elevations on all mountain ranges flown throughout the HMA except Middle Mountain, where no horses were observed. Few horses were observed on the flats. Small concentrations were observed north of Sheep Spring on the Rattlesnake Extension, south of Sheep Head Spring and east of Dead Horse Spring on the Lava Beds proper. On Dry Mountain, horses were generally concentrated on the southern portion of the range. Only 1 burro was observed on this flight.

February 1991 - Horses were widely scattered throughout the HMA at various elevations with concentrations at lower to moderate elevations to the west and south on Dry Mountain. Other concentrations were observed east of Sheep Spring and in an area 1 to 3 miles south of Rattlesnake Spring on the Lava Beds proper. Another small concentration was observed on the small range southwest of Rabbithole Spring. One burro was observed on this flight.

August 1991 - Horses were mainly at higher elevations with a few scattered at lower elevations throughout most of the HMA. Heaviest concentrations occurred in the northern half of Dry Mountain at upper elevations and in the central western part of the Lava Beds proper at upper elevations. No horses were found on Rattlesnake Extension. Fourteen adult burros were found outside the extreme southeastern boundary of the HMA, while a single adult and foal were observed outside the HMA boundary southeast of the mountain range southwest of Rabbithole Spring.

March 1992 - Horses were found at various elevations throughout the HMA except on the Rattlesnake Extension where no horses were observed. Burros were limited to

Lava Beds proper. The greatest concentration of horses and burros occurred in the west central part of the Lava Beds proper.

May 1992 - Horses were found in large concentrations at upper elevations on the northern half of Dry Mountain, from lower to upper elevations about 1 1/2 miles northwest of Dead Horse Spring, and on intermediate to upper slopes near Sheep Head Spring. Small groups were scattered on lower elevations south of the mountain range southwest of Rabbithole Spring and across the western half of the Lava Beds proper south of Garret Mine. Only 5 burros were observed: 2 near Sheep Head Spring and 3 outside the HMA about 1 1/2 miles southeast of Rattlesnake Spring.

July 1992 - Horses were found widely scattered at lower elevations than usual throughout most of the HMA. Horse observations were also made on Rattlesnake Extension and Middle Mountain. No horses were observed on or around the mountain southwest of Rabbithole Spring. Most burros were also found at various elevations but mainly grouped in the southeastern portion of the HMA. Some bands of burros were observed between the Lava Beds HMA and Seven Troughs HMA.

The following table lists the results of each distribution flight conducted during the evaluation period.

Date	Horses/Burros	Aircraft
4/89*	287/55	Bell 47G3B-S
3/90	249/0	Cessna 210
2/91	355/1	Cessna 210
8/91	445/16	Maule MX-5
3/92	272/11	Cessna 210
5/92	302/5	Maule MX-5
7/92*	438/40	Bell 47G4A-S

* census

Seven Troughs

April 1989 - Horses and burros were observed in high concentrations on the western and southern aspects of the Seven Troughs Range with a few small bands of burros occurring in the southern peninsular area. Most of the burros were at lower or intermediate elevations, while horses were observed at all elevations. No burros were found north of Mule and Wildcat Canyons and no horses were observed south of Seven Troughs Mountain.
March 1990 - Horses and burros were scattered throughout the HMA mostly in lower to moderate elevations with a few at higher elevations.

February 1991 - Horses were found at various elevations throughout the HMA. No concentrations of horses or burros were observed, and no burros were located west of Rocky Canyon in the mountain range. However, 5 bands and 1 lone burro were observed in the Sage Valley area of the HMA.

July 1991 - Horses were found mostly around springs on the northwestern side of the Seven Troughs Range at various elevations. A large concentration of 41 horses was found around the springs between Mule Canyon and South Fork. Burros were all observed in the southern third of the HMA with no concentrations occurring. No

horses occurred south of Signal Peak.

March 1992 - All horses were found north of Signal Peak at all elevations in bands ranging in size from 1 to 12 horses. Seven separate bands, totaling 39 adult horses, were found in a 4 square mile area south of Nera Spring #56 and Nera Spring #33. Horses were otherwise relatively scattered. Burros were generally scattered in the southern and the eastern parts of the HMA.

May 1992 - A large concentration of horses consisting of 6 bands totalling 104 adults and 12 foals was observed in the Willow Creek, Mule Canyon, South Fork area. A large band of 30 adults and 4 foals was found south of the corral on Cow Creek, and another band of 21 adults and 5 foals was observed near Stonehouse Canyon. Other bands of horses and burros were scattered at various elevations. Again, no horses were found south of Signal Peak.

July 1992 - Horses were all found north of Signal Peak with the heaviest concentrations occurring at higher elevations in a northeast to southwest line from Shingle Spring in the north to the head of Lone Canyon in the south. Burros were scattered throughout the HMA except for the northeastern portion that abuts the Trinities. The area of largest burro concentration was south of Signal Peak. Most burros occurred at lower elevations.

The following table lists the results of each distribution flight conducted during the evaluation period.

Date	Horses/Burros	Aircraft
4/89*	201/91	Bell 47G3B-S
3/90	67/17	Cessna 210
2/91	147/33	Cessna 210
7/91	125/23	Maule MX-5
3/92	186/25	Cessna 210
5/92	214/18	Maule MX-5
7/92*	402/163	Bell 47G4A-S

* census

APPENDIX 11. EXISTING GRAZING

Existing Grazing System - C-Punch

Graze 150-200 head of livestock in the Slough House area above Nixon during the winter season-of-use (11/1-3/31). At the beginning of plant growth of the key species, cattle will be moved north and held on the west side of the Selenite Range from 4/1-10/31. This will allow for rest of key species in Slough House during the critical growing period and also allow improved vigor, production and storage of nutrients, and seed production. Grazing on the Selenite Range occurs when the forage is most nutritious and when weight gains per day are highest.

Livestock management techniques will be the principal tool for resource management. Water control and riding will be the method of controlling livestock distribution and drift, season-of-use, and intensity of grazing.

Waters that will be shut down in the Slough House area after livestock have been moved are:

Existing: Little Valley Well
Proposed: Nixon Flat Well

Mineral supplements may also be used to control livestock distribution and prevent drift out of units. In the Selenite unit, the Highway 34 fence and the Selenite Range provide control to the east and west. In the Slough House area, the Desert Queen fence and Highway 34 fence provide control to the south. Livestock will be trailed between management units. Water will be hauled to a point along the reservation fence approximately half way down the west side of Winnemucca Lake where cattle will be held overnight. In the Slough House unit Nixon Flat and Little Valley Wells will be shut down upon movement north. Trailing of cattle between units will take about three days.

Graze 550-600 head of livestock in the Granite Springs Valley during the winter season-of-use (11/1-3/31) during the start of growth of the key species, the livestock will be moved to the Nightingale and Shawave Mountains from 4/1-10/31 (see attached map). This will allow for rest of the key species in Granite Springs Valley during the critical growth period. Grazing in the Nightingale and Shawave Mountains unit will occur when the forage is most nutritious and when weight gains are highest.

Water control and riding will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. At the end of each season-of-use, waters will be shutdown and cattle will then drift into the other adjacent unit. West Ragged Top Well #1 and Telephone Well are the major watering sources in the Granite Springs Valley and they will be shut down after the livestock leave. Once Hard to Find Well and Lowry Well are constructed, they will also be shut off. The depth of the snow in the Nightingales and Shawaves is sufficient to force the livestock into Granite Springs Valley.

Mineral supplements may also be used to control livestock distribution and to prevent drift into other units. Control of livestock will also be accomplished

by riding.

Graze 250-300 head of livestock on the flats between the Selenites and the Lava Beds during the winter season-of-use (11/I-3/31). When growth of the key species begins, cattle will be moved west and held on the east side of the Selenite Range from 4/1-10/31 (see attached map). This will allow for rest of key species in the flats during the critical growing period and allow for growth of winter grazing species for the next season. Grazing in the East Selenites occurs when the forage is most nutritious and promotes the highest weight gains per day.

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. Livestock will be rotated and distributed by shutting down waters for distribution both within and out of each grazing unit.

Waters in the area which may be shutdown are:

Limbo Well
Lower end of Betty Creek
C-Punch Pipelines
Desert Well
Twin Buttes Well

Graze 350-400 head of livestock in the Kamma Mountains and Antelope Range during the winter season-of-use (11/I-3/31). At the start of growth cattle will be moved into the Seven Troughs Range and held from 4/1-10/31 (see attached Map #1). This will allow for growth of winter grazing species for the next season. Grazing will occur in the Seven Troughs Range when forage is most nutritious and weight gains are highest.

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. Livestock will be rotated and distributed primarily by shutting down waters for distribution both within grazing units and controlled drift out of grazing units.

Waters (once constructed) to be controlled are:

Antelope Siding Well
Toll Rock Canyon Well
Rocky Canyon Well
Long Walk Well (existing)

Graze 350-400 head of livestock in the Lava Beds, Blue Wing Mountains, and western slopes of the Seven Troughs Range on a rotating basis throughout the year depending on weather and forage conditions (refer to Map #1).

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing.

Waters (once constructed) in the area are:

Trail Canyon Well
Twin Butte Well (existing)

Benefits: The ecological status of the native vegetation and watershed resources will improve. The quantity, quality, and diversity of vegetation should be improved. Competition for available forage and habitat should decrease among sheep, cattle, wild horses-burros, and wildlife. Over the long term this (combined with other actions planned to achieve this objective) should allow C-Punch Corp. and the other livestock permittees to graze at 100% of their active preference.

Existing Grazing System - Tim DeLong Family Trust

Livestock grazing use will occur in the former Tharalson and Duncan area for exchange-of-use within the Seven Troughs Allotment. Southern Pacific Grazing Lease SPL-6431 is offered for exchange-of-use. Refer to Map#1 for the Tharalson and Duncan area for exchange-of-use. Grazing use will continue each year for the period (11/1 - 6/30).

Benefits: Cattle will be moved out of the allotment after seed dissemination of the majority of the plants. This will allow for trampling and covering of the seed, and also provide fall growth prior to late fall grazing.

Existing Grazing System - Dufurrena Sheep Co.

The sheep operation of Dufurrena Sheep Co. will be managed as in the past in accordance with the adjudicated area and season-of-use. Refer to allotment maps for the adjudicated area-of-use and the area for exchange-of-use. The active preference shall change from 1,492 AUMs to 746 AUMs. This reflects the undivided 1/2 interest with Tim DeLong Family trust. Sheep grazing will continue during the winter season (11/1-3/31) in the northern portion of the Seven Troughs Allotment occurring in the Kamma Mountains, Seven Troughs, and Antelope Range. During the start of growth of the key species sheep will be trailed out of the allotment. This will allow for rest during the critical growing period, growth of winter grazing species, improved vigor, production and storage of nutrients, and seed production.

Benefits: This should provide for the best utilization of the perennial vegetation and should improve the overall ecological condition in the Seven Troughs Allotment.

Existing Grazing System - John Espil

The grazing management system for John Espil will not change from past use, continuing as winter season-of-use and an active preference of 3,627 AUMs. The area-of-use shall continue as adjudicated in the south half of the Seven

Troughs Allotment. Refer to the allotment map for location of use area.

Graze 2,000 head of sheep in the southern portion of the Seven Troughs Allotment during the winter season 12/1-3/15. This treatment allows for grazing during the dormancy period when plants are least susceptible to the impacts of grazing; sheep will be removed prior to the critical growth period. This allows for rest during the critical growth period providing plant growth, improved vigor, production and storage of nutrients, and seed production.

Sheep are trailed from Lovelock in the fall, to the Seven Troughs Allotment, and in the spring are trailed to the Calneva unit of the Susanville District. Refer to each individual grazing license for a detailed trailing description.

Benefits: This grazing system should provide for the best utilization of the perennial vegetation and should improve the overall ecological condition in the Seven Troughs Allotment.

Existing Grazing - Wes Cook

Wes Cooks adjudicated area-of-use will expand to includes the old Holland sheep use area that was once shared in part with B. G. Bunyard. Refer to allotment maps for adjudicated area-of-use and the expanded area-of-use. The winter season-of-use and active preference shall remain unchanged.

Graze 4,000 head of sheep in the two areas-of-use during the winter season (12/7-3/17). This allows for grazing during the dormancy period when plants are least susceptible to the impacts of grazing. During the start of growth of particularly the key species the livestock will be trailed out of the area. This will allow for rest during the critical growing period. This treatment provides growing season rest for forage plants allowing plant growth, improved vigor, production and storage of food for next year's growth, and seed production.

Sheep will be trailed from the Susanville District to the Blue Wing area-of-use during December and trailed from the Blue Wing area-of-use back to the Susanville District during March. Refer to each grazing license for a detailed description of designated trail area, trailing days, camping areas, prohibited areas, etc.

Benefits: The expanded area-of-use will alleviate repeated concentrated grazing use on the smaller original adjudicated area-of-use.This action will also provide the permittee an opportunity to be more flexible in his operation by allowing him to follow the localized snowstorms thus eliminating as great a need to haul water. This will help to improve the overall ecological condition in the northern Selenite Range.

APPENDIX 12 **CARRYING CAPACITY CALCULATIONS**

Potential Stocking Level Calculations

The potential stocking level for these allotments is based on data collected for the 1989 through 1992 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/burros and wildlife.

The potential stocking level is the calculated number of available AUM's that will lead to the attainment of allotment specific long term objectives. The weighted average utilization of 50 % 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.

Wt. Av. util. = $\frac{\text{(ac. moderate use X .50) + (ac. heavy use X .70) + (ac. severe use X .90)}}{\text{Total acres}}$

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

During this evaluation period Use Pattern Mapping (UPM) data were collected primarily in the areas that exceeded utilization levels identified in the 1988 allotment evaluation. These areas are prevalent where there was combined use by wild horses/burros and cows which provides a reasonable correlation between the Herd Management Areas (HMA) and the seasonal use areas of the existing cattle grazing system.

LAVA BEDS

1. 09/30/89 LAVA BEDS/DRY MOUNTAIN

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(11779 \text{ ac. x } .5) + (15008 \text{ ac. x } .8)}{26787 \text{ ac.}} = \frac{17896}{26787} = .67$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 9/30) = 214 days
Grazing system = 70 - 80 hd. yearlong, use 80 hd.

80 hd. x 214 days = 563 AUMS

30.41666

b) Sheep * Wes Cooks actual use in 1989 from 3/1 to 9/30 was 224 AUMS X 90% (Lava Beds percentages of total area) = 202 AUMS

c) Wild Horses/Burros * (3/1 - 9/30) = 214 days
1989 WH = 287, B = 55 Total WH&B = 342 Hd.

342 hd. WH&B x 214 days = 2406 AUMS
30.41666

2. STOCKING CALCULATION

(563 COWS) + (202 SHEEP) + (2406 WH&B) = 3171 = x x = 2366 AUMS
.67 weighted avg. .67 .50

2. 04/13/90 LAVA BEDS

This Use Pattern Mapping was conducted in the spring of 1990 to determine the utilization that occurred throughout the winter on the 1989 vegetative production therefore the numbers of ungulates using this area during that time will be used in the calculations.

A. WEIGHTED AVERAGE UTILIZATION

(9032 ac. x .5)+(59872 ac. x .8)= 52414 = .76
68904 ac.

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 2/28) = 365 days
Grazing System = 70 - 80 hd. yearlong, use 80 hd.

80 hd. x 365 days = 960 AUMS
30.41666

b) Sheep * Wes Cooks actual use in 1990 from sheep turnout in the winter Of 1990 until 2/28 of 1991 = 1536 X 90% (Lava Beds percentage of total area) = 1382 AUMS

c) Wild Horses/Burros * (3/1 - 2/28 = 365 days
1989 WH = 287, B = 55 Total = 342

2. STOCKING CALCULATION

342 hd. x 365 days = 4104 AUMS
30.41666

(960 COWS) + (1382 SHEEP) + (4104 WH&B) = 6446 = x x = 4241 AUMS
.76 weighted avg..76.50

3. 10/30/90 LAVA BEDS

A. WEIGHTED AVERAGE UTILIZATION

(593 ac. x .5) + (2059 ac. x .7) + (3393 ac. x .9) = 4791 = .79
6045 6045

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 10/30) = 244 days
Grazing System = 70 - 80 hd. yearlong, use 80 hd.

80 hd. x 244 days = 642 AUMS
30.41666

b) Sheep * Wes Cooks actual use in 1990 from 3/1 to 10/30 was 246 AUMS
X 90% (Lava Beds percentage of total area) = 221 AUMS

c) Wild horses/burros * (3/1 - 10/30) = 244 days
1990 WH = 319, B = 61 Total WH&B = 380

2. STOCKING CALCULATION

380 hd. x 244 days = 3048 AUMS
30.41666

(642 COWS)+(221 SHEEP)+(3048 WH&B) = 3911 = x x = 2475 AUMS
.79 weighted avg..79 .50

4. 05/06/91 LAVA BEDS

This Use Pattern Mapping was conducted in the spring of 1991 to determine the utilization that occurred throughout the winter on the 1990 vegetative production therefore the numbers of ungulates using this area during that time will be used in the calculations.

A. WEIGHTED AVERAGE UTILIZATION

(21817 ac. x .5)+(24613 ac. x .7)+(10105 ac. x .9)=37233 = .66
56535 ac. 56535

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 2/28) = 365 days
Grazing System = 70 - 80 hd. yearlong, use 80 hd.

80 hd. x 365 days = 960 AUMS
30.41666

b) Sheep * Wes Cooks actual use in 1990 from sheep turnout in the winter Of 1990 until 2/28 of 1991 = 1536 X 90% (Lava Beds percentage of total area) = 1382 AUMS

c) Wild Horses/Burros * (3/1 - 2/28 = 365 days
1990 WH = 319, B = 61 Total = 380

2. STOCKING CALCULATION

380 hd. x 365 days = 4560 AUMS
30.41666

(960 COWS) + (1382 SHEEP) + (4560 WH&B) = 6902 = x x = 5229 AUMS
.66 weighted avg..66.50

5. 09/17/92 LAVA BEDS

A. WEIGHTED AVERAGE UTILIZATION

(10205 ac. x .5) + (1952 ac. x .7) + (67 ac. x .9) = 6529 = .53
12224 ac. 12224

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 9/17) = 201 days
Grazing System = 70 - 80 hd. yearlong, use 80 hd.

80 hd. x 201 days = 529 AUMS

30.41666

b) Sheep * Wes Cooks actual use 1992 from 3/1 to 9/17 was 552 AUMS X 90% (Lava Bed percentage of total area) = 497 AUMS

c) Wild Horses/Burros * (3/1 - 9/17) = 201 days
1992 WH = 438, B = 40 Total WH&B = 478 hd.

2. STOCKING CALCULATION

478 hd. x 201 days = 3159 AUMS
30.41666

(529 COWS) + (497 SHEEP) + (3159 WH&B) = 4185 = x x = 3948 AUMS
.53 weighted avg..53 .50

LAVA BEDS - SUMMARY OF THE POTENTIAL STOCKING LEVEL CALCULATIONS

YEAR	AUMS
09/30/1989	2366
04/13/1990	4241
10/30/1990	2475
05/06/1991	5229
09/17/1992	3948
AVERAGE	**3652**

Land Use Plan (LUP) Ratios numbers established in HMAP and AMP

The following calculations are based upon the number of ungulates(Cows, Wild Horses/Burros and Sheep), the seasons of use and areas of use by each class of grazing animal. This use relates to a percentage of the total use in Animal Unit Months (AUMS) as identified in the Land Use Plan (LUP), HMAP and AMP.

Wild Horse/Burro - 375 WH(90%), 40 B(10%) Total of 415 hd.
415 hd. x 365 days = 4980 AUMS
30.41666

Cows - C-Punch yearlong rotation 400 hd.
400 hd. x 365 days = 4800 AUMS
30.41666

Sheep - Wes Cook grazes sheep in two use areas; the Lava Beds and

the east portion of the Selenite Range. The Lava Beds consists of approximately ninety percent (90%) of the total acreage.

Lava Beds Use Area (90% of total ac.) x 2869 AUMS (Act. Pref.) = 2582 AUMS

PERCENTAGES OF TOTAL USE BY CLASS OF UNGULATE

Wild Horses/Burros	= 4980 AUMS	= 40%
Cows	= 4800 AUMS	= 39%
Sheep	= 2582 AUMS	= 21%
Totals	12362 AUMS	100%

Wild Horses/Burros	- (40%) x 3652 AUMS (summary avg.)	= 1461 AUMS
Cattle	- (39%) x 3652 AUMS (summary avg.)	= 1424 AUMS
Sheep	- (21%) x 3652 AUMS (summary avg.)	= 767 AUMS
Totals	100%	3652 AUMS

WILD HORSES & BURROS

$\frac{1461 \text{ AUMS} \times 30.41666}{365 \text{ days}}$ = 122 Wild Horse/Burro

122 x 90% = 110 Wild Horses
122 x 10% = 12 Burros

COWS

$\frac{1424 \text{ AUMS} \times 30.41666}{365 \text{ days}}$ = 119 Cows

SHEEP

$\frac{767 \text{ AUMS} \times 30.41666}{90 \text{ days}}$ = 259 x 5 Sheep/AUM = 1296 Sheep

6. 10/31/89 NIGHTINGALE/SHAWAVE/BLUEWING MTN.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(34484 \text{ ac.} \times .5) + (13089 \text{ ac.} \times .8)}{47573 \text{ ac.}} = \frac{27713}{47573} = .58$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (3/1 - 10/31) = 245 days
Actual use report grazed 50 hd. on the north portion of the Nightingales, 100 hd. on the north portion of the Shawaves and 80 hd. in the southern portion of the Shawaves. There were no cattle reported to have used the Bluewing Mtn. area. Total = 230 hd.

$$\frac{230 \text{ hd.} \times 245 \text{ days}}{30.41666} = 1853 \text{ AUMS}$$

b) Wild Horses/Burros (3/1 - 10/31) = 245 days
1989 Nightingale - WH = 306, B = 0 Total WH&B = 306 hd.
1989 Shawave - WH = 308, B = 17 Total WH&B = 325 hd.
1989 Bluewing Mtn. - WH = 30, B = 24 Total = 54 hd.
TOTAL = 685 hd.

2. STOCKING CALCULATION

$$\frac{685 \text{ hd.} \times 245 \text{ days}}{30.41666} = 5518 \text{ AUMS}$$

$$\frac{(1853 \text{ COWS}) + (5518 \text{ WH\&B})}{.58 \text{ weighted avg.}} = \frac{7371}{.58} = \frac{x}{.50} \quad x = 6354 \text{ AUMS}$$

7. 04/02/90 NIGHTINGALE/SHAWAVE/BLUWING MTN.

The UPM data show that the areas mapped were within the Blue Wing Mtn. and Nightingale/Shawave HMAs, and the summer and yearlong rotation livestock (C-Punch) use areas. Since the Nightingale and Shawave Ranges are summer use areas (4/1 - 10/31) for cattle and there was no reported livestock use in the Bluewing Mountain use area, only the WH&B census information will be used for these calculations.

This Use Pattern Mapping was conducted in the spring of 1990 to determine the utilization that occurred throughout the winter on the 1989 vegetative production therefore the numbers of ungulates using this area during that time will be used in the calculations.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(32095 \text{ ac.} \times .5) + (29601 \text{ ac.} \times .8)}{61696 \text{ ac.}} = \frac{39728}{61696} = .64$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Wild Horses/Burros * (3/1 - 2/28) = 365 days
1989 Nightingale - WH = 306, B = 0 Total WH&B = 306 hd.
1989 Shawave - WH = 308, B = 17 Total WH&B = 325 hd.
TOTAL = 631 hd.

$$\frac{631 \text{ hd.} \times 365 \text{ days}}{30.41666} = 7572 \text{ AUMS}$$

2. STOCKING CALCULATION

$$\frac{(7572 \text{ WH\&B})}{.64 \text{ weighted avg.}} = \frac{7572}{.64} = \frac{x}{.50} \quad x = 5916 \text{ AUMS}$$

8. 09/19/90 NIGHTINGALE/SHAWAVE/BLUEWING MTN.

After reviewing the UPM data, I found that the areas mapped were within the Blue Wing Mtn. and Nightingale/Shawave HMAs and the summer and yearlong rotation livestock (C-Punch) use areas. The Nightingale and Shawave Ranges are summer use areas (04/1 - 10/31) for cattle, and the Bluewing Mountain (yearlong seasonal rotation). The actual use reported by C-Punch and the WH&B census information will be used for these calculations.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(37714 \text{ ac. } x\ .5) + (26053 \text{ ac. } x\ .8)}{63767 \text{ ac.}} = \frac{39699}{63767} = .62$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch Summer Use 4/1 - 9/19) = 172 days
Actual use reported 50 hd. on the north portion of the Nightingales, 100 hd. on the north portion of the Shawaves and 80 hd. in the southern portion of the Shawaves. No livestock use was reported in the Bluewing Mountain area. Total = 230

$$\frac{230 \text{ hd. x } 172 \text{ days}}{30.41666} = 1301 \text{ AUMS}$$

b) Wild Horses/Burros * (3/1 - 9/19 = 203 days
1990 Bluewing Mtn. - WH = 33, B = 27 Total 60
1990 Nightingale - WH = 340, B = 0 Total WH&B = 340 hd.
1990 Shawave - WH = 342, B = 19 Total WH&B = 361 hd.
TOTAL = 1081 hd.

$$\frac{761 \text{ hd. x } 203 \text{ days}}{30.41666} = 5079 \text{ AUMS}$$

2. STOCKING CALCULATION

$$\frac{(1301 \text{ COWS}) + (5079 \text{ WH\&B})}{.62 \text{ weighted avg.}} = \frac{6380}{.62} = \frac{x}{.50}\ x = 5145 \text{ AUMS}$$

9. 11/01/90 SHAWAVE MTN./BLUEWING MTN.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(2652 \text{ ac. } x\ .8)}{2652 \text{ ac.}} = \frac{2387}{2652} = .80$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch Summer Use (4/1 - 10/31) = 214 days
Actual use report grazed 100 hd. on the north portion of the Shawaves and 80 hd. in the southern portion of the Shawaves. There were no cattle reported to have used the Bluewing Mtn. area. Total = 180 hd.

$$\frac{180 \text{ hd.} \times 214 \text{ days}}{30.41666} = 1266 \text{ AUMS}$$

b) Wild Horses/Burros * (3/1 - 11/1) = 246 days
1990 Shawave - WH = 342, B = 19 Total WH&B = 361 hd.
1990 Bluewing Mtn. - WH = 33, B = 27 Total WH&B = 60 hd.
TOTAL = 421 hd.

$$\frac{421 \text{ hd.} \times 246 \text{ days}}{30.41666} = 3405 \text{ AUMS}$$

2. STOCKING CALCULATION

$$\frac{(1266 \text{ COWS}) + (3405 \text{ WH\&B})}{.80 \text{ weighted avg.}} = \frac{4671}{.80} = \frac{x}{.50} \quad x = 2919 \text{ AUMS}$$

10. 05/08/91 NIGHTINGALE/SHAWAVE

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(26599 \text{ ac.} \times .5) + (9110 \text{ ac.} \times .7)}{35709} = \frac{19677}{35709} = .55$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (4/1 - 5/8) = 38 days
Actual use reported 50 hd. in the northern portion of the Nightingale Range, 100 hd. on the north portion of the Shawaves and 80 hd. in the southern portion of the Shawaves. Total = 230 hd.

$$\frac{230 \text{ hd.} \times 38 \text{ days}}{30.41666} = 287 \text{ AUMS}$$

b) Wild Horses/Burros * (3/1 - 5/8) = 69 days
1991 Nightingale WH = 377, B = 0 Total WH&B = 377 hd.
1991 Shawave WH = 380, B = 21 Total WH&B = 401 hd.
TOTAL = 778 hd.

778 hd. x 69 days = 1765 AUMS
30.41666

2. STOCKING CALCULATION

(287 COWS) + (1765 WH&B) = 2052 = x x = 1865 AUMS
.55 weighted avg. .55 .50

11. 10/20/92 NIGHTINGALE/SHAWAVE

A. WEIGHTED AVERAGE UTILIZATION

(15766 ac. x .5)+(14626 ac. x .7)+(7600 ac. x .9) = 24961 = .66

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch (4/1 - 10/31) = 214 days
Actual use report grazed 50 hd. on the north portion of the Nightingales, 100 hd. on the north portion of the Shawaves and 80 hd. in the southern portion of the Shawaves. Total = 230 hd.

230 hd. x 214 days = 1618 AUMS
30.41666

b) Wild Horses/Burros * (3/1 - 10/20) = 234 days
1992 Nightingale - WH = 237, B = 1 Total WH&B = 306 hd.
1992 Shawave - WH = 675, B = 15 Total WH&B = 690 hd.
TOTAL = 928 hd.

928 hd. x 234 days = 7139 AUMS
30.41666

2. STOCKING CALCULATION

(1618 COWS) + (7139 WH&B) = 8757 = x x = 6634 AUMS
.66 .66 .50

NIGHTINGALE/SHAWAVE/BLUEWING MTN.- SUMMARY OF THE POTENTIAL STOCKING LEVEL CALCULATIONS

YEAR	AUMS
10/31/1989	6354
04/02/1990	5916
09/19/1990	5145
11/01/1990	2919
05/08/1991	1865
10/20/1992	6634
AVERAGE	**4806**

Land Use Plan (LUP) Ratios

The following calculations are based upon the number of ungulates (Cows and Wild Horses/Burros), the seasons of use and areas of use by each class of grazing animal. This use relates to a percentage of the total use in Animal Unit Months (AUMS) as identified in the Land Use Plan (LUP), Herd Management Area Plan (HMAP) and the Allotment Management Plan (AMP).

Wild Horse/Burro - Nightingale/Shawave Herd Management Area
187 WH(100%), 0 B(0%) Total of 187 hd.
Bluewing Mountain Herd Management Area
50 WH(56%), 39 B(44%) Total of 89 hd.
Total 276 hd.

$$\frac{276 \text{ hd.} \times 365 \text{ days}}{30.41666} = 3312 \text{ AUMS}$$

Cows - C-Punch, Nightingale/Shawave = Summer Use (04/1 - 10/31 = 214 days) 600 hd. The Bluewing Mtn. is a part of the yearlong rotation area which grazes 350 - 400 hd. Due to the relatively small size of the Bluewing Mtn. and the lack of reliable waters in this area I estimate that approximately 50 head would use this area. Total = 600 hd. 4/1 - 10/31 and 50 hd. 3/1 - 2/28.

$$\frac{600 \text{ hd.} \times 214 \text{ days}}{30.41666} = 4221 \text{ AUMS} = 88\%$$

$$\frac{50 \text{ hd.} \times 365 \text{ days}}{30.41666} = 600 \text{ AUMS} = 12\%$$

Total of 4821 AUMS

PERCENTAGES OF TOTAL USE BY CLASS OF UNGULATE

Wild Horses/Burros	=	3312 AUMS	= 41%
Cows	=	4821 AUMS	= 59%
Totals		8131 AUMS	100%

Wild Horses/Burros	-	(41%) x 4806 AUMS (summary avg.)	=	1970 AUMS
Cattle	-	(59%) x 4806 AUMS (summary avg.)	=	2836 AUMS
Totals		100%		4806 AUMS

WILD HORSES & BURROS

$$\frac{1970 \text{ AUMS} \times 30.41666}{365 \text{ days}} = 164 \text{ Wild Horses/Burros}$$

The total of 164 WH&B is proportionally divided by Herd Management Area (HMA) in accordance with the Land Use Plan (LUP) as listed below:

Nightingale/Shawave WH = 112, B = 0
Bluewing Mtn. WH = 29, B = 23
TOTAL = 164 WH&B

COWS

2836 AUMS x 88% = 2496 AUMS in the Nightingale/Shawave
2836 AUMS x 12% = 340 AUMS in the Bluewing Mtn.

$$\frac{2496 \text{ AUMS} \times 30.41666}{214 \text{ days}} = 355 \text{ Cows in the Nightingale/Shawave}$$

$$\frac{340 \text{ AUMS} \times 30.41666}{365 \text{ days}} = 28 \text{ Cows in the Bluewing Mtn.}$$

Total = 2836 AUMS = 383 Cows

12. 04/13/90 SEVEN TROUGHS

After reviewing the area identified as the Seven Troughs Herd Management Area (HMA) and the areas monitored, identified as Seven Troughs Use Pattern Mapping (UPM) I noted that the only livestock users in this area would be C-Punch (cows) and John Espil (sheep). The Dufurrena Sheep Co. (sheep) and Time DeLong (cows) operations will not be included in these calculations.

This Use Pattern Mapping was conducted in the spring of 1990 to determine the utilization that occurred throughout the winter on the 1989 vegetative production therefore the numbers of ungulates using this area during that time will be used in the calculations.

Since the winter season of use for C-Punch is 11/1 - 3/31 this Use Pattern Map (UPM) indicates the use during that time.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(7672 \text{ ac.} \times .5) + (15732 \text{ ac.} \times .8)}{23404 \text{ ac.}} = \frac{16422}{23404} = .70$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch * (11/1 - 3/31) = 151 days
For the Seven Troughs UPM calculation I will use 350 -400 hd. (400 hd.) as identified in the grazing system multiplied by the percentage licensed use for 1990. C-Punch has a total active preference of 4404 AUMs of which 3643 were scheduled in 1989, the majority of the use period.

$\frac{3643}{4404}$ = 83% x 400 hd. = 332 hd.

$$\frac{332 \text{ hd.} \times 151 \text{ days}}{30.41666} = 1648 \text{ AUMS}$$

b) Sheep * Espil Sheep Co. actual use in 1989 was 1882 AUMS

c) Wild Horses/Burros * (3/1 - 2/28) = 365 days
1989 Seven Troughs WH = 201, B = 91 Total = 292 hd.

$$\frac{292 \text{ hd.} \times 365 \text{ days}}{30.41666} = 3504 \text{ AUMS}$$

2. STOCKING CALCULATION

$$\frac{(1648\ \text{COWS})+(1882\ \text{SHEEP})+(3504\ \text{WH\&B})}{.70\ \text{weighted avg.}} = \frac{7034}{.70} = \frac{x}{.50}\quad x = 5024\ \text{AUMS}$$

13. 10/31/90 SEVEN TROUGHS

After reviewing the area identified as the Seven Troughs Herd Management Area (HMA) and the areas monitored, identified as Seven Troughs Use Pattern Mapping (UPM) I noted that the only livestock users in this area would be C-Punch (cows) and John Espil (sheep). The Dufurrena Sheep Co. (sheep) and Time DeLong (cows) operations will not be included in these calculations.

Since the summer season of use for C-Punch is 4/1 - 10/31 this Use Pattern Map (UPM) indicates the use during that time.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(1923\ \text{ac.} \times .5) + (865\ \text{ac.} \times .7) + (1474\ \text{ac.} \times .9)}{4262} = \frac{2894}{4262} = .68$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch * (4/1 - 10/31) = 214 days
For the Seven Troughs UPM calculation I will use 350 -400 hd. (400 hd.) as identified in the grazing system multiplied by the percentage licensed use for 1990. C-Punch has a total active preference of 4404 AUMs of which 2438 were scheduled in 1990, the majority of the use period.

$\frac{2438}{4404}$ = 55% x 400 hd. = 220 hd.

$$\frac{220\ \text{hd.} \times 214\ \text{days}}{30.41666} = 1548\ \text{AUMS}$$

b) Sheep * Espil Sheep Co. actual use in 1990 was 1784 AUMS

c) Wild Horses/Burros * (3/1 - 10/13) = 245 days
1990 Seven Troughs WH = 223, B = 101 Total = 324 hd.

$$\frac{324\ \text{hd.} \times 245\ \text{days}}{30.41666} = 2610\ \text{AUMS}$$

2. STOCKING CALCULATION

$$\frac{(1548\ \text{COWS})+(1784\ \text{SHEEP})+(2610\ \text{WH\&B})}{.68\ \text{weighted avg.}} = \frac{5942}{.68} = \frac{x}{.50}\quad x = 4369\ \text{AUMS}$$

14. 09/16/92 SEVEN TROUGHS

After reviewing the area identified as the Seven Troughs Herd Management Area (HMA) and the areas monitored, identified as Seven Troughs Use Pattern Mapping (UPM) the only livestock users in this area were C-Punch (cows) and John Espil (sheep). The Dufurrena Sheep Co. (sheep) and Tim DeLong (cows) operations will not be included in these calculations.

Since the winter season of use for C-Punch is 11/1 - 3/31 this Use Pattern Map (UPM) indicates the use during that time.

A. WEIGHTED AVERAGE UTILIZATION

$$\frac{(6949\ \text{ac.} \times .5) + (8212\ \text{ac.} \times .7) + (229\ \text{ac.} \times .9)}{15390} = \frac{9429}{15390} = .61$$

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * C-Punch * (4/1 - 9/16) = 169 days
For the Seven Troughs UPM calculation I will use 350 -400 hd. (400 hd.) as identified in the grazing system multiplied by the percentage licensed use for 1992. C-Punch has a total active preference of 4404 AUMs of which 240 were scheduled in 1992, the majority of the use period.

$\frac{240}{4404}$ = 5% x 400 hd. = 20 hd.

$$\frac{20\ \text{hd.} \times 169\ \text{days}}{30.41666} = 111\ \text{AUMS}$$

b) Sheep * Espil Sheep Co. actual use in 1992 was 2087 AUMS

c) Wild Horses/Burros * (3/1 - 9/16) = 200 days
1992 Seven Troughs WH = 402, B = 163 Total = 565 hd.

$$\frac{565\ \text{hd.} \times 200\ \text{days}}{30.41666} = 3715\ \text{AUMS}$$

2. STOCKING CALCULATION

$$\frac{(111\ \text{COWS})+(2087\ \text{SHEEP})+(3715\ \text{WH\&B})}{.61\ \text{weighted avg.}} = \frac{5913}{.61} = \frac{x}{.50}\quad x = 4847\ \text{AUMS}$$

SEVEN TROUGHS - SUMMARY OF THE POTENTIAL STOCKING LEVEL CALCULATIONS

YEAR	AUMS
04/13/1990	5024
10/31/1990	4369
09/16/1992	4847
AVERAGE	**4747**

Land Use Plan (LUP) Ratios

The following calculations are based upon the number of ungulates (Cows, Wild Horses/Burros and Sheep), the seasons of use and areas of use by each class of grazing animal. This use relates to a percentage of the total use in Animal Unit Months (AUMS) as identified in the Land Use Plan (LUP).

Wild Horse/Burro - 215 WH(77%), 64 B(23%) Total of 279 hd.

$$\frac{279 \text{ hd.} \times 365 \text{ days}}{30.41666} = 3348 \text{ AUMS}$$

Cows - C-Punch (4/1 - 10/31 = 214 days) 400 hd.

$$\frac{400 \text{ hd.} \times 214 \text{ days}}{30.41666} = 2814 \text{ AUMS}$$

Sheep - Espil (winter use permit) Active Preference = 3627 AUMS

PERCENTAGES OF TOTAL USE BY CLASS OF UNGULATE

Wild Horses/Burros	=	3348 AUMS	= 34%
Cows	=	2814 AUMS	= 29%
Sheep	=	3627 AUMS	= 37%
Totals		9789 AUMS	100%

Wild Horses/Burros -	(34%)	x 4747 AUMS	(summary avg.)	= 1614 AUMS
Cows -	(29%)	x 4747 AUMS	(summary avg.)	= 1377 AUMS
Sheep -	(37%)	x 4747 AUMS	(summary avg.)	= 1756 AUMS
Totals	100%			4747 AUMS

WILD HORSES & BURROS

$$\frac{1614 \text{ AUMS} \times 30.41666}{365 \text{ days}} = 134 \text{ Wild Horses/Burros}$$

134 WH&B x (77%) = 103 hd. WH, 134 x(23%) = 31 hd. B

COWS

$$\frac{1377 \text{ AUMS} \times 30.41666}{214 \text{ days}} = 196 \text{ Cows}$$

SHEEP

1756 AUMS x 30.41666 = 593 x 5 Sheep/AUM = 2965 Sheep
90 days

SELENITES

15. 10/28/90 SELENITES

The areas Use Pattern Mapped (UPM) are shrub dominated sites at the higher elevations in the Selenite Range. These sites are currently within the Selenite Range "**HERD AREA**" **(HA)** and also a summer (4/1 - 10/31) livestock use area grazed by 150 - 200 hd. of C-Punch cattle under the existing grazing system.

A. WEIGHTED AVERAGE UTILIZATION

(5264 ac. x .9) = 4738 = .90
5264 ac. 5264

B. POTENTIAL STOCKING LEVEL

1. ACTUAL USE

a) Cattle * (4/1 - 10/28) = 211 days

Actual use report grazed 150 hd. this area. Total = 150

150 hd. x 211 days = 1041 AUMS
30.41666

b) Wild Horses/Burros * (3/1 - 10/28) = 242 days
1990 Selenite HA WH = 30, B = 26 Total = 56 hd.

56 hd. x 242 days = 446 AUMS
30.41666

2. STOCKING CALCULATION

(1041 COWS) + (446 WH&B) = 1487 = x x = 826 AUMS
.90 weighted avg. .90 .50

SELENITES - SUMMARY OF THE POTENTIAL STOCKING LEVEL CALCULATIONS

YEAR	AUMS
10/28/1990	826
AVERAGE	826

Land Use Plan (LUP) Ratios

The following calculations are based upon the number of ungulates (Cows, Wild Horses/Burros and Sheep), the season of use and area of use by each class of grazing animal. This use relates to a percentage of the total use in Animal Unit Months (AUMS) as identified it the Land Use Plan (LUP).

Wild Horse/Burro - The Selenite Range is not identified for the management of Wild Horses and Burros.

Cows - C-Punch, summer use (04/01 - 10/31) = 214 days 300 hd.

$$\frac{300 \text{ hd.} \times 214 \text{ days}}{30.41666} = 2111 \text{ AUMS}$$

Sheep - Wes Cook grazes sheep in two use areas; the Lava Beds and the east portion of the Selenite Range. Since this Use Pattern Mapping (UPM) area is relatively small at the higher elevation sites in the Selenite Range and not within the area of use for Wes Cooks sheep the calculations will only address the livestock operation of C-Punch.

PERCENTAGES OF TOTAL USE BY CLASS OF UNGULATE

Cows	=	2111 AUMS	= 100%
Totals		2111 AUMS	= 100%

Cows (100%) x 826 AUMS (summary avg.) = 826 AUMS

COWS

$$\frac{826 \text{ AUMS} \times 30.41666}{214 \text{ days}} = 117 \text{ Cows}$$

COMPARISON OF POTENTIAL STOCKING LEVELS TO LAND USE PLAN (LUP) / HERD MANAGEMENT PLAN (HMAP) RATIOS AND EXISTING NUMBERS

	STOCKING LEVEL NUMBERS	AUMS()	LUP/HMAP NUMBER	AUMS()	EXISTING 1992 NUMBER	AUMS()
BLUEWING ALLOTMENT						
LAVA BEDS/DRY MOUNTAIN						
COWS -	119	(1428)	400	(4800)	80	(960)
WH&B -	122	(1464)	415	(4980)	478	(5736)
SHEEP -	1296	(767)	4400	(2869)	2600	(1560)
NIGHTINGALE/SHAWAVE/BLUEWING MOUNTAIN						
COWS -	383	(2836)	600	(4200)	230	(2760)
WH&B -	164	(1968)	276	(3312)	982	(11784)
SHEEP -	0	(0)	0	(0)	0	(0)
SELENITE RANGE						
COWS -	117	(819)	300	(2100)	200	(1400)
WH&B -	0	(0)	0	(0)	104	(1248)
SHEEP -	0	(0)	0	(0)	0	(0)
Subtotal:						
COWS -	619	(5083)	1300	(11100)	510	(5120)
WH&B -	286	(3432)	691	(8292)	1564	(18768)
SHEEP -	1296	(767)	4400	(2869)	2600	(1560)
SEVEN TROUGHS ALLOTMENT						
SEVEN TROUGHS - SOUTHERN PORTION						
COWS -	196	(1377)	400	(2800)	24	(168)
WH&B -	134	(1608)	279	(3348)	565	(6780)
SHEEP -	2965	(1756)	6045	(3627)	3480	(2087)
Totals						
COWS	815	(6460)	1700	(13900)	534	(5288)
WH&B	420*	(5040)	970	(11640)	2129	(25548)
SHEEP	4261	(2523)	10445	(6496)	6080	(3647)

* calculations don't include the Kamma Mtns. HMA of 50 WH = 600 AUMS

NOTE: REFER TO THE FOLLOWING PAGE FOR AN EXPLANATION OF CALCULATION RATIONALE

CALCULATION RATIONALE

Divide sheep AUMS by season of use (3 mos.) x percent of use area x 5 sheep/AUM, ie. LUP Active Preference = 2869 AUMS divided by 3 mo. = 956 AUMS x (92% lava beds area) = 880 AUMS x 5 (sheep/aum) = 4400 Sheep. For wild horses/burros and cows multiply numbers of animals X months = AUMS or AUMS divided by number of months = animals.

Season of Use:
Wild Horses/Burros = 12 mos. in all the HMAS.
Cows = 7 mos. in Selenites, Shawave/Nightingale and Seven Troughs/Sage Valley
Cows = 5 mos. in Slough House/Granite Springs Valley, Kumiva Valley/Lava Beds/Blue Wing Mtn. and Kamma Mtns./Antelope Range/Sage Valley.
Cows = 12 mos. in Lava Beds/Dry Mtn./Blue Wing Mtn.

Livestock numbers are only for the Nightingale/Shawave, the Bluewing Mtn. area is part of the Lava Beds/Bluewing Mtn/Seven Troughs (western slopes) yearlong rotation grazing by 350 - 400 head.

6-15-94

BOB MILLER
Governor

STATE OF NEVADA

CATHERINE BARCOMB
Executive Director

COMMISSION FOR THE PRESERVATION OF WILD HORSES

255 W. Moana Lane
Suite 207A
Reno, Nevada 89509
(702) 688-2626

June 15, 1994

Mr. Bud Cribley, Area Manager
Sonoma/Gerlach Resource Area
Bureau of Land Management
705 East Fourth Street
Winnemucca, Nevada 89445

Subject: Blue Wing/Seven Trough Re-evaluation

Dear Mr. Cribley:

The Commission for the Preservation of Wild Horses has concerns for the Lava Beds, Blue Wing Mountain, Nightingale Mountain, Shawave Mountain, Seven Troughs and Kama Mountain Wild Horse Herds. As you are aware, these herds have a herd management plan that disclose data and objectives to meet the needs of these herds. Please consider the following comments for the final evaluation and decision.

COMMENTS

Page 4, Wild Horse/Burro Numbers

It is important to note that numbers determined in 1985, by the Coordinated Resource Management Plan Committee, are not the initial numbers of the land use plan or appropriate management levels determined by monitoring data. The CRMP numbers are 486 animals less than the 1982 land use plan initial numbers. The land use plan initial numbers were significantly influenced by the 1981 gather. It would be more appropriate to express the initial numbers of the land use plan with explanation.

Page 6, Summary of 1988 Evaluation

Though not listed in the 1988 conclusions, the previous evaluation discusses the ongoing problem to monitor wild horses and cattle on the allotment. The BLM determined the wild horse use and livestock use much be determined separately for future decisions. Wild horse and burro censuses were conducted in 1974, 1977, 1980, 1984, and 1985. Wild horse and burro gathers were conducted in 1981, 1984, and 1985. These data bases can better estimate populations for this allotment evaluation.

Page 16, Utilization

The BLM only collected use pattern mapping data that represented the combined use by livestock, wild horses/burros, and wildlife. Collection dates are important. For example, data collected in the fall of 1990 at the Lava Beds indicate "severe use" of over 50% of the area. Data collected in the spring of 1991 in the Lava Beds document only 17% in "severe use". It is obvious that this level of use is significant.

Page 28, Wild Horse and Burro Distribution and Census

Distribution data should be summarized on maps illustrating summer, spring, and winter ranges of each herd. These distribution data must support the actual use estimates (days of use) in the carrying capacity calculations that establishes the appropriate management levels for each herd.

All census flight data from 1974 to 1992 should be presented.

Page 31, Wild Horse and Burro Removal Data

Please include the following data:

Wild Horse/Burro Gathers

	BLM			Private			
	Horse	Mule	Burros	Horse	Mule	Burros	Total
1981	1,145	0	19	150	0	0	1,314
1984	2,885	2	460	508	6	0	3,861
1985	1,707	0	237	200	11	9	2,164

The removal of 7,339 wild horses/burros from the Blue Wing/ Seven Troughs Allotment provided the BLM with specific age, recruitment and composition data essential to population modeling. These data are found in the herd management plan. We encourage you to include these data to assess population status and wild horse/burro impacts to their habitat.

The author makes a statement that wild horse herds have never been at the appropriate management levels. This statement is inaccurate, due to the fact that appropriate management levels have never been established. It is obvious that the land use plan initial numbers were not appropriate management levels, the CRMP numbers were arbitrary and the 1988 evaluation did not establish the allotment's carrying capacity.

It would be reasonable to expect the District could assess wild horse/burro census, distribution and population data collected since 1974. According to our documents there have been 12 census flights and three major gathers conducted on this allotment. It is surprising to find that the Bureau persists to rely on out-dated population objectives as a rationale for not using data to determine the distribution and population status.

Page 42, Technical Recommendations-Carrying Capacity

Data present in this allotment evaluation could establish a carrying capacity to meet all allotment objectives. However, the carrying capacity and management alternatives have some discrepancies.

* Wild horse and burro actual use included adults and foals (See page 64)
* Domestic sheep actual use included in the carrying capacity calculations, but management alternatives excluded winter sheep use as a factor.
* Wild horse/burro dsitribution data could not support the actual use determinations found in the carrying capacity calculations.
* Weight averaging moderate use acreage resulted in a carrying capacity known to exceed riparian objectives.
* The appropriate management levels for wild horses/burro herds did not consider recruitment rates documented in the gather.
* The appropriate management levels did not consider restructuring age composition of the herds.

SUMMARY

It would appear that the Blue Wing/Seven Troughs Allotment has an abundance of winter range for livestock and wild horse/burro herds. Resource damage occurring on the allotment appears to be the riparian habitat. Adjusting season of use for livestock, not to exclude hot season grazing, will most likely not avoid overuse of riparian habitat in the future. Therefore, in order to sustain viable wild horse/burro herds, summer ranges may be better suited and reserved for wild horse/burro herds. We suggest that the alternative analysis include a carrying capacity and season of use adjustment alternative.

Thank you for consulting the Commission.

Sincerely,

Catherine A. Barcomb
Director

6/15/94

WHOA
WILD HORSE ORGANIZED ASSISTANCE
P.O. BOX 555
RENO, NEVADA 89504
(702) 851-4817

FILE COPY

June 15, 1994

. . . a note from

Dawn Y. Lappin

Mr. Bud Cribley, Area Manager
Sonoma/Gerlach Resource Area
Bureau of Land Management
705 East Fourth Street
Winnemucca, Nevada 89445

Subject: Blue Wing/Seven Trough Re-evaluation

Dear Mr. Cribley:

Having participated in the Land Use Planning, as well as several CRMP's in the Winnemucca District, WHOA has numerous concerns for the Lava Beds, Blue Wing Mountain, Nightingale Mountain, Shawave Mountain, Seven Troughs and Kama Mountain Wild Horse Herds. As you are aware, these herds have a herd management plan that disclose data and objectives to meet the needs of these herds. Please consider the following comments for the final evaluation and decision.

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removal of over 7300 animals, despite having failed to set AML through monitoring, it is inappropriate to state that wild horses/burros have not been managed.

It would be reasonable to expect the District could assess wild horse/burro census, distribution and population data collected since 1974. According to our documents there have been 12 census flights and three major gathers conducted on this allotment. It is surprising to find that the Bureau persists to rely on out-dated population objectives as a rationale for not using data to determine the distribution and population status.

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It would appear that the Blue Wing/Seven Troughs Allotment has an abundance of winter range for livestock and wild horse/burro herds. Resource damage occurring on the allotment appears to be the riparian habitat. Adjusting season of use for livestock, not to exclude hot season grazing, will most likely not avoid overuse of riparian habitat in the future. Therefore, in order to sustain viable wild horse/burro herds, summer ranges may be better suited and reserved for wild horse/burro herds. We suggest that the alternative analysis include a carrying capacity and season of use adjustment alternative.

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Page 28, Wild Horse and Burro Distribution and Census

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All census flight data from 1974 to 1992 should be presented.

Page 31, Wild Horse and Burro Removal Data

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Wild Horse/Burro Gathers

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WHOA agreed with the rationale of removing wild horses/burros from the checkerboard lands, primarily because of the inability of the agency to manage wild horses/burros on private rangelands without the consent of the landowner, which was not forthcoming. Now the agency has pretty mucy delineated out the public land areas for the management of wild horses and burros. Despite the fact that permittees recaptured the checkerboard to dominant use by them, it appears, through this evaluation, that maintaining livestock at the statis quo will further reduce these herds.

WHOA is not surprised at the fact that despite the thousands of wild horses/burros removed from this area, little recovery is seen; and once more the agency suggests a repetition of massive removals of wild horses.

Sincerely,

Dawn Y. Lappin (Mrs.)
Executive Director