



United States Department of the Interior

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In Reply Refer To:
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m 11/10/98



Dear Interested Public:

Please find enclosed the Draft Little Owyhee Allotment Re-Evaluation Summary for your review. This document analyzed, interpreted and evaluated data for livestock, wild horses, and wildlife for the years 1995-1997.

Please provide your comments to me by December 14, 1998. If you have any questions, feel free to contact Gene Seidlitz at (702) 623-1500.

Sincerely yours,

Colin P. Christensen
Assistant Field Manager
Renewable Resources

Enclosure

DRAFT LITTLE OWYHEE ALLOTMENT RE-EVALUATION SUMMARY

This re-evaluation supplements the Final Little Owyhee Allotment Evaluation dated February 12, 1993.

I. PURPOSE

The purpose of this re-evaluation is to update the livestock, wildlife and wild horse grazing use on the Little Owyhee Allotment which was implemented by the Area Manager's Final Decision dated March 26, 1993 and the Stipulation for Dismissal of the Nevada First Corporation Appeals dated February 10, 1995 and February 17, 1995.

The livestock grazing system for the Little Owyhee Allotment is a three (3) pasture, rest within each pasture, rotation grazing system for the spring/winter pastures and a five (5) pasture deferment on the summer pastures.

(Use can be made in each of the spring pastures based on available water sources.) Livestock use is scheduled based on these water sources and available forage around the water source. The following stipulations pertain to the grazing use in the spring pastures: 1. no water source and accompanying service area will be scheduled for use more than two years in a row. The third year, the area will be rested. 2. if service areas for individual water sources overlap, the water source encompassing the greatest overlap will be used as the basic forage allocating unit.

The summer grazing system consists of a deferment for the Antelope #1, Antelope #2, and Rock Springs pastures while the Capital Peak pasture is scheduled for 07/28 to 08/15 use every year. Calico pasture is used for working/sorting and trailing livestock plus use in this pasture is from 08/16 to 08/31.

Fall/winter use within each of the three (3) spring pasture can be made within specific use areas which are separate from spring use areas. Use within each fall/winter use area will be limited to no more than two consecutive years. The third year the area will be rested.

II. SUMMARY OF DATA

A. Livestock (Actual Use)

Nevada First Corporation

<u>Year</u>	<u>Pasture</u>	<u>AUM's</u>
1995	Fairbanks	5004 Spring 1392 Winter
	Twin Valley	4318 Spring 587 Winter
	Antelope #1	278
	Antelope #2	328
	Calico	553
	Rock Spring	REST
	Capitol Peak	REST
	TOTAL	12,460 AUM's

Nevada First Corporation

1996	Fairbanks	5522 Spring 1093 Winter
	Antelope #1	541
	Antelope #2	444
	Calico	179
	Rock Spring	REST
	Capitol Peak	REST BLM
	TOTAL	7,779 AUM's

Nevada First Corporation

1997

Fairbanks	6407 Spring 369 Winter
Lake Creek	3653 Spring
Antelope #1	1539
Antelope #2	701
Rock Springs	1122
Calico	289
TOTAL	13,711 AUM's

Jerry Harper

1996

Twin Valley	2376 Spring 335 Winter
Antelope #1	146
Calico	453
Rock Spring	REST
Capital Peak	512
TOTAL	3822 AUM's

1997

Twin Valley	2467 Spring 607 Winter
Calico	592
Capital Peak	434
TOTAL	3493 AUM's

B. Wild Horse

CENSUS

12/04/97

Pasture	Adults	Foals
Fairbanks - west	67	
Fairbanks - east	6	
Twin Valley - south	124	2
Twin Valley - north	42	1
Lake Creek - south	61	
Lake Creek - north	54	2
TOTAL	354	5

07/29-30/97

Pasture	Adults	Foals
Fairbanks - west	304	56
Fairbanks - east	39	13
Twin Valley	320	67
Lake Creek	284	70
Rock Springs	1	0
Calico	9	1
TOTAL	957	207

09/20/95

Pasture	Adults	Foals
Fairbanks	155	41
Twin Valley	169	47
Lake Creek	181	45
Summer	11	2
TOTAL	516	135

08/31/94

Pasture	Adults	Foals
Fairbanks	89	24
Twin Valley	91	30
Lake Creek	99	22
TOTAL	279	76

GATHER

10/01/97 - 10/18/97

Fairbanks	324
Twin Valley	269
Lake Creek	312
Calico	5
Capital Peak	3
Antelope	2

TOTAL 915

1997 RELEASED

Lake Creek	97
Twin Valley	100
Fairbanks	112

TOTAL 309

C. Wildlife Populations

MULE DEER

There are 32 BLM grazing allotments and the Humboldt National Forest in Nevada Division of Wildlife (NDOW) hunt unit 051. Estimates of mule deer populations for allotments in Unit 051 are calculated using the following information:

1. Unit-wide population estimates published annually by NDOW.
2. Allotment proportions of seasonal population distributions which were developed in 1976 by Bill Foree. The estimates were based on 14 years of

actual distribution data. This was reviewed in 1995 by NDOW personnel who verified that the original figures were still representative of present day distribution.

With this information, estimates of winter, summer, spring and year-long forage demand were determined for the Little Owyhee Allotment.

Mule deer use in the Little Owyhee Allotment occurs on a year around basis in various locations in the allotment. The major deer population using the Little Owyhee originates on summer ranges on the west side of the allotment in the Santa Rosa Mountain Range. This herd summers throughout the high elevation portions of the mountain range and disperses down slope in the late fall and early winter onto the Little Owyhee Allotment. From this location, deer may or may not continue their down slope migration in response to weather conditions and snow accumulations. In years with heavier snow deer move off of the mountain foothills in the Summer pastures of the allotment and onto the foothills at the edge of the Owyhee plains, or south and east onto habitats in the neighboring William Stock Allotment.

As spring approaches, or as conditions permit, mule deer wintering in this area may move back toward the mountain and more diverse forage. During these movements deer are keying on green succulent perennial or annual grasses which greener up in the fall or in the early spring as well as browse other than sagebrush. With full spring grownup, the majority of the deer population moves back into the higher elevation areas in the summer pastures of the allotment as well as back onto Forest lands for the summer.

With this pattern described, the following table summarizes annual estimates of mule deer populations in the Little Owyhee allotment during the spring, summer and winter periods.

Estimated Spring, Summer, and Winter Mule Deer population Size in the Little Owyhee Allotment for 1992 Through 1997

	1992	1993	1994	1995	1996	1997	Average
SUMMER	54/ 81 AUMs	55/ 83 AUMs	81/ 121 AUMs	79/ 119 AUMs	65/ 97 AUMs	67/ 100 AUMs	101 AUMs
WINTER	88/ 88 AUMs	89/ 90 AUMs	131/ 131 AUMs	129/ 129 AUMs	105/ 105 AUMs	109/ 109 AUMs	109 AUMs
SPRING	84/ 42 AUMs	85/ 43 AUMs	125/ 62 AUMs	123/ 61 AUMs	79/ 40 AUMs	103/ 52 AUMs	52 AUMs
Allotment Totals	211 AUMs	216 AUMs	314 AUMs	309 AUMs	242 AUMs	261 AUMs	263 AUMs

Mule Deer populations are continuing to recover from the effects of the 1986-1992 drought. Populations have been recovering steadily since 1993 and are approaching reasonable numbers established in 1982.

PRONGHORN

Little is known about the Pronghorn populations in the Little Owyhee Desert area. Conversations with biologists from Regions I and II, NDOW in March, 1997 and September 1998, resulted in the following general information.

Pronghorn populations in the Little Owyhee Allotment have been up and down in the past 20 years. The population dropped significantly in 1992-1993, but is currently increasing. The estimated population size for the Little Owyhee Allotment for 1998 is as follows:

Summer months - 225-250 animals

Winter months - 375-425 animals

Water is a major limiting factor to the expansion of pronghorn in the Owyhee plateau with significant areas currently unoccupied due to lack of water.

SAGE GROUSE

Sage grouse populations in the Little Owyhee Allotment are some of the healthiest in the Winnemucca District. Numerous strutting grounds have been documented over the last four years as a result of the ongoing effort by NDOW and BLM to locate and document population status. Suitable crucial habitats abound in the allotment.

Since the last allotment evaluation 6 strutting grounds have been identified. When flown by NDOW in the spring of 1997 59 sage grouse were sighted using these strutting grounds.

BIGHORN SHEEP

California bighorn sheep occur as periodic visitors to suitable habitats in the extreme southern portions of the allotment in association with the South Fork Little Humboldt and North Fork Little Humboldt Rivers as a result of past reintroduction in the South Fork Drainage. In addition, recent pioneering activity has been noted in the Calico Mountains portion of the allotment as sheep from the west side of the Santa Rosa Mountains expand their range. This activity has been noted as recently as 1996 when several sheep were observed around Capitol Peak during the Quinn Odell wildfire. Long range planning by NDOW has identified the canyonlands associated with the North Fork Little Humboldt River as a priority site for reintroduction to supplement the natural expansion of South Fork and Eight Mile sheep populations.

D. Climatological Data

(NOAA) 1995-1996 Paradise Valley
Precipitation in Inches

<u>Year</u>	<u>Growing Season *</u>	<u>Annual</u>
1995	7.56	13.98
1996	3.01 m	14.05 m
1997	3.53 m	7.2 m

* growing season is defined as March - August
m partial data

E. Utilization

The following use classes were used during monitoring:

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

A. Livestock and Wild Horse Use (Upland Utilization)
1995 and 1996 Key Forage Plant Method
1997 - Landscape Assessment Method for Fairbanks, Twin Valley, and Lake
Creek

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Species</u>	<u>% Utilization</u>		
1995	Twin Valley	701	AGSP	10		
			SIHY	10		
		703	ORHY	10		
			SIHY	10		
		704	ORHY	10		
			SIHY	10		
		705	STTH2	10		
			SIHY	10		
		1995	Fairbanks	401	SIHY	46
					SIHY	28
				403	STTH2	12
					AGSP	14
SIHY	10					

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Species</u>	<u>% Utilization</u>		
1995	Antelope	101	STTH2	10		
			SIHY	10		
			FEID	10		
		102	STTH2	10		
			SIHY	10		
		103	SIHY	10		
			STTH2	10		
			FEID	12		
		110	SIHY	10		
			STTH2	10		
		1995	Calico	201	SIHY	10
					STTH2	10
202	STTH2			32		
	SIHY			24		
1995	Capital Peak	301	STTH2	3		
			AGSP	2		
			FEID	1		
1995	Lake Creek	REST				
1995	Rock Spring	REST				
1996	Twin Valley	701	AGSP	2		
		702	SIHY	2		
			ORHY	1		
		703	ORHY	2		
			SIHY	2		
		704	ORHY	2		
			SIHY	2		
705	STTH2	62				
	SIHY	48				
1996	Fairbanks	401	SIHY	22		
		402	STTH2	26		
			SIHY	26		
			ORHY	36		
		403	AGSP	14		
			SIHY	12		
STTH2	46					
1996	Lake Creek	REST				
1996	Antelope	101	STTH2	28		
			SIHY	14		
		102	STTH2	16		
			SIHY	12		
			ORHY	26		

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Species</u>	<u>% Utilization</u>
1996	Antelope	103	SIHY	10
			STTH2	22
1996	Calico	201	STTH2	18
			SIHY	8
1996	Capital Peak	301	STTH2	12
			AGSP	16
1996	Rock Spring	REST	SIHY	10
			FEID	12
1997	Twin Valley	701		21.1
		702		5.6
		703		40.3
		704		3.5
		705		4.6
1997	Fairbanks	401		17.1
		402		23.8
		403		27.3
		404		8.4
		405		3.5
1997	Lake Creek	501		48.0
		502		4.6
		503		2.5
		504		2.5
		505		2.5
		506		3.5
		507		3.5
		508		44.0
		509		50
		510		2.5
		511		2.5
		512		2.5
		513		2.5
1997	Antelope	101	STTH2	58%
			SIHY	8%
		102	STTH2	24%
			ORHY	30%
			SIHY	6%
		103	STTH2	56%
		110	STTH2	60%
			SIHY	10%

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>% Utilization</u>
1997	Calico	201	STTH2	36%
			SIHY	16%
		202	STTH2	44
			SIHY	34
1997	Capital Peak	301	FEID	2%
			STTH2	3%
			AGSP	3%
1997	Rock Springs	601	FEID	7%
			STTH2	6%
			SIHY	4%
		602	SIHY	11%
			AGSP	6%
			STTH2	12%
		603	STTH2	6%
			SIHY	5%

B. Livestock (Wetland and Streambank Riparian Utilization)

Utilization studies utilizing the Key Forage Plant Method (KFPM) were conducted in 1995, 1996, and 1997. The following table is summary of the utilization levels found on the summer pastures during the evaluation period.

pasture	key area	species monitored	Year		
			8/24,31 1995	8/7 and 10/16 1996	8/26,27/ 1997
Antelope	105	SALIX CAREX JUNCUS PONE3	0% 22% 24% 26%	0% -- -- --	0, 64%## 64% -- --
	106	JUNCUS PONE3 CAREX	10% 10% 10%	30% -- 30%	30% -- 28%
	107	JUNCUS PONE3 CAREX	26% -- --	not measured	13% -- 14%
	108	CAREX PONE3 JUNCUS	not measured	25% 25% --	32% 30% 31%
Capitol Peak	303	CAREX JUNCUS PONE3	8%*** 2%*** 0%	****	32% 35% --
	304	PONE3 TRIFO	2%*** <5%***		0% --
	305	JUNCUS PONE3 CAREX	3%*** 2%*** --		5% 13% 10%
Rock Springs	605	CAREX JUNCUS PONE3	0%** 0%** 0%**	0%** 0%** 0%**	-- -- 50%
	606	CAREX JUNCUS PONE3	0%** 0%** 0%**	0%** 0%** 0%**	50% 48% --

The indication of two utilization rates for the Antelope pasture key area 105 represent two different monitoring locations along the little Owyhee river. The first number represents the utilization at the upper site and represents 60 to 70 percent of the utilization pattern along the little Owyhee. The second utilization figure represents the lower 30 to 40% of the reach beginning above the reservoirs and extending to a point 1/4 mile below them.

** Rock Springs Pasture was rested in 1995 and 1996, Permittee did not need to use it. Utilization was documented to determine the influence of the existing wild horse population on utilization rates in this pasture.

*** The BLM lands within the Capitol Peak Pasture was rested in 1995, Permittee did not need to use it. Slight utilization rates are as a result of limited livestock drift off of the private lands.

**** The Capitol Peak Pasture was burned over the majority of its surface during the Quinn Odell Incident which began on 8/26 and was controlled on 9/2. Total acreage was over 56,000 acres with just over 8,100 acres occurring in the Capitol Peak Pasture 311 of which was on private lands.

With implementation of the January 1995 stipulated agreement, utilization levels dropped considerably, Another effect of the stipulated agreement was the implementation of rest in the Rock Springs pasture for the last two years. With the addition of extended spring use in the spring pastures, the Rock Spring pasture was not needed in the rotation from spring to summer use. Horse use, which had been believed to be significant in this pasture was found to be inconsequential to the total utilization of the allotment.

C. Wild Horse Utilization

Use Pattern Mapping

Use pattern mapping was conducted in the southern Fairbanks pasture on 2/28/96 prior to increased livestock turnout on 3/1. Species monitored included ELCI, ATCO, SIHY, POSE, and STTH2. The area monitored extended from the Bullhead Ranch to the Little Mud Spring area, including Fairbanks Reservoir and northeast toward the North Fork of the Little Humboldt. Although cattle and horses were in the area, use was no heavier than light-to-moderate at two stops around Key Management Area #402, light, slight or none observed elsewhere.

Use pattern mapping was conducted in the southern Twin Valley Springs pasture on 3/13/96 prior to increased livestock turnout on 3/15. Species monitored included SIHY, ORHY, POSE, STTH2 and AGSP. The area monitored extended from the southern gate to the Eight Mile Reservoir area. Use was moderate within the first 2 miles from the gate, tailing off to light and slight elsewhere.

An incidental observation of light use on AGSP by wild horses on Humboldt Hill was recorded 9/5/95.

Key Management Area utilization monitoring

11/5-8/96

KMA#	Species	Use	Comments
401	SIHY	18% SIHY	
402	stth,sihy,crepis	6% stth	
403	stth,sihy,agsp	19% stth, 9% sihy, 6% agsp	
(Big Reserv area)	sihy,stth	heavy	horses in area <i>How many?</i>
(Greeley Flat to Bull Pen Reserv)	stth,sihy	heavy	livestock drifting when trailing home from National Forest
501	orhy,sihy,eula	48% SIHY	
502	orhy,sihy,pose	1% SIHY	
503	sihy,stth	2% sihy, 2% stth	
504	orhy,sihy,pose	none observed	
505	orhy,sihy	none observed	
506	orhy,sihy,eula	none observed	
507	orhy,stth,sihy	1% stth	
508	orhy,sihy	none observed	
509	orhy,sihy	none observed	
510	sihy,stth	2% sihy, 7% stth	
511	orhy,sihy,stth	9% stth, 5% orhy	
512	sihy,stth	1% sihy, 4% stth	
513	orhy,sihy	none observed	
701	agsp,sihy,stth	2% agsp, 4% sihy, 5% stth	

702	sihy,orhy,crepis	none observed	
703	orhy,sihy	12% orhy, 4% sihy	
704	orhy,sihy	4% orhy,1% sihy	
705	stth,sihy	12% sihy, 4% stth	

8/1-2/95

KMA#	Species	Use	Comments
401	sihy	46% sihy	
402	sihy,stth	28% sihy,25% stth	
403	stth,agsp,sihy	12% stth, 14% agsp, 10% sihy	
404	agsp,sihy	none observed	
405	agsp,stth,sihy	very slight	1 grazed plant each
501	orhy,sihy,eula	14% orhy,6% sihy 0% eula	horses in area, Lake Creek reservoir full of water
508	orhy,sihy	none observed	
509	orhy,sihy	none observed	

7/20/95

KMA#	Species	Use	Comments
701	agsp,sihy	10% agsp, 10% sihy	
702	orhy,sihy	10% orhy, 10% sihy	
704	orhy,sihy	10% orhy, 10% sihy	
705	stth,sihy	10% stth, 10% sihy	

2/22-24/95

KMA#	Species	Use	Comments
401	sihy	slight (1%)	
402	stth,sihy,crepis	none observed	
503	sihy,stth	slight to none	
504	orhy,sihy,pose	slight to none	
513	orhy,sihy	slight to none	
701	agsp,sihy,crepis	slight	
702	sihy,orhy,crepis	none observed	
704	orhy,sihy	none observed	

F. Trend

Upland Key Areas (Data collected by Intermountain Range Consultants)

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>%Frequency</u>
1994	Fairbanks	401	STTH2 SIHY ORHY	48 55 1.5
1995	Fairbanks	401	STTH2 SIHY ORHY	51 52 1
1996	Fairbanks	401	STTH2 SIHY ORHY	52 51 0
1997	Fairbanks	401	STTH2 SIHY ORHY	49.5 44 0
1994	Fairbanks	402	STTH2 SIHY ORHY ELCI	21 41.5 .5 4
1995	Fairbanks	402	STTH2 SIHY ELCI	22.5 42 5
1996	Fairbanks	402	STTH2 SIHY ELCI AGSP ORHY	22 37.5 3.5 1 .5

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>%Frequency</u>
1997	Fairbanks	402	STTH2 SIHY ELCI AGSP	22 44 4.5 1
1994	Twin Valley	701	AGSP STTH2 SIHY	42.5 2.2 34.5
1995	Twin Valley	701	AGSP STTH2 SIHY	51 1.5 57
1996	Twin Valley	701	AGSP STTH2 SIHY	43.5 5 42
1997	Twin Valley	701	AGSP STTH2 SIHY	37 4.5 50
1994	Twin Valley	702	ORHY SIHY	10 68
1995	Twin Valley	702	ORHY SIHY	9 75
1996	Twin Valley	702	ORHY SIHY	10.5 71
1997	Twin Valley	702	ORHY SIHY	9 66.5
1994	Lake Creek	501	SIHY ORHY	45.5 10.5
1995	Lake Creek	501	SIHY ORHY	27.5 8.5
1996	Lake Creek	501	SIHY ORHY	47.5 14.5
1997	Lake Creek	501	SIHY ORHY	39 8
1994	Lake Creek	502	SIHY ORHY	81.5 16
1995	Lake Creek	502	SIHY ORHY STTH2	79 .5 21
1996	Lake Creek	502	SIHY ORHY STTH2	77.5 13.5 4
1997	Lake Creek	502	SIHY ORHY STTH2	70.5 9 1.5

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>%Frequency</u>
1994	Lake Creek	504	ORHY SIHY	14 54
1995	Lake Creek	504	ORHY SIHY	15 59
1996	Lake Creek	504	ORHY SIHY	12 60.5
1997	Lake Creek	504	ORHY SIHY	12.5 63.5
1994	Lake Creek	505	ORHY SIHY	15.5 25
1995	Lake Creek	505	ORHY SIHY	13.5 38
1996	Lake Creek	505	ORHY SIHY	16 34.5
1997	Lake Creek	505	ORHY SIHY	13.5 31
1994	Calico	201	STTH2 ORHY ELCI	47 10 3.5
1995	Calico	201	STTH2 ELCI	37 4
1996	Calico	201	STTH2 ORHY ELCI SIHY	42.5 1.5 4.5 61.5
1997	Calico	201	STTH2 ELCI SIHY	44.5 3.5 67.5
1994	Calico	202	STTH2 ORHY AGSP ELCI	17 3.5 1.5 8
1995	Calico	202	STTH2 ORHY AGSP ELCI	16 3.5 1 4
1996	Calico	202	STTH2 ORHY AGSP ELCI	19.5 2.5 .5 6.5
1997	Calico	202	STTH2 ORHY ELCI SIHY	15.5 3 6.5 57

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>% Frequency</u>
1994	Capital Peak	301	STTH2 FEID AGSP ELCI	32.5 14.5 3 .5
1995	Capital Peak	301	STTH2 FEID AGSP ELCI	37.5 13.5 3 1.5
1996	Capital Peak	301	STTH2 FEID AGSP ELCI	36 12.5 1.5 1
1994	Antelope	103	STTH2 SIHY	24 51.5
1995	Antelope	103	STTH2 SIHY	25.5 56
1996	Antelope	103	STTH2 SIHY	27 54.5
1997	Antelope	103	STTH2 SIHY	30 61
1994	Antelope	110	SIHY STTH2	69.5 3
1995	Antelope	110	SIHY STTH2	60 2.5
1996	Antelope	110	SIHY STTH2	74.5 4.5
1997	Antelope	110	SIHY STTH2	67 3
1994	Rock Spring	601	STTH2 FEID SIHY	25 39 64
1995	Rock Spring	601	STTH2 FEID SIHY	16.5 35.5 68.5
1996	Rock Spring	601	STTH2 FEID SIHY	27.5 36.5 66
1997	Rock Spring	601	STTH2 FEID SIHY	24 34.5 65.5
1994	Rock Spring	602	ELCI STTH2 ORHY SIHY	20.5 7.5 2.5 62.5

<u>Year</u>	<u>Pasture</u>	<u>Key Area</u>	<u>Key Species</u>	<u>% Frequency</u>
1995	Rock Spring	602	ELCI STTH2 SIHY	6.5 15.5 62.5
1996	Rock Spring	602	ELCI STTH2 ORHY SIHY	7.5 19.5 1.5 58
1994	Rock Spring	603	STTH2	60.5
1995	Rock Spring	603	STTH2	53
1996	Rock Spring	603	STTH2 SIHY	60.5 60.5
1997	Rock Spring	603	STTH2 SIHY	51.5 65.5

Riparian

One riparian key area was established as a headcut monitoring site in 1982. This site was located in the Capitol Peak pasture. The site was chosen to represent the numerous headcuts of various sizes which were documented in several mesic riparian meadows in the summer pastures.

Key Area 304-Capitol Peak Pasture

This key area is located at T46N R41E section 12 NE1/4NE1/4. The headcut is believed to have developed as a result of the access road which bisects the meadow at the lower end near a seasonally wet seep. The road crosses just uphill of the seep and the headcut begins as a noticeable feature within 10 feet of the edge of it.

The design of the study consists of two transects oriented perpendicular to the gully/headcut. The first intersects the main body of the gully, while the second was established at the cut face. A tape stretched tightly between the transect ends and flattened to the ground surface serves as a baseline from which width and depth measurements are collected at one foot intervals. Using this data, a profile diagram of the gully was developed. This methodology was used for all monitoring transects.

The first measurement of this site was made in summer 1982 with subsequent measurements being made in 1983, 1987 and 1993. See attachments A and B for profile drawings of the transect sites.

Results

In the period between 1982 and 1993, T-2 the lower transect located in the main body, widened four feet. the overall profile of the gully changed very little with exception of slight depth changes of less than 3 inches over the study period. One side of the gully was composed of a gently declining slope which was not wholly vegetated but did not move perceivably through the study period. The other side of the gully sustained the most change of any site on the transect. The greatest movement was detected between 1982 and 1983 measurements when this bank lost nearly two feet of material. This movement was presumably a consequence of the runoff event of 1983 which impacted systems throughout the region. In 1987 very little change was documented in the transect profile.

By 1993, an additional 1.4 feet had detached from the face as a slump. This material was still evident, creating a small bench. The transect has not been measured since 1993, however, due to the detachment of the last slump as a unit, the intact vegetation appeared to have become reattached to the soil. Assuming no flushing of the gully bottom or hoof action, this vegetation mass is likely to start the healing process of this gully.

Transect T-1 was initially established at the nick point of the headcut and measurements of the profile of the undercut site were made in addition to cross sectional measurements.

Very little movement of soil beneath this transect was recorded between 1982 and 1983 except for a deepening of the cut from 15 to 19 inches. In 1987, the cut profile had widened by 7 inches and had become more rectangular in shape suggesting the dynamics of water flow through its bottom had changed. By 1993, the cut profile had widened on both sides from 19 inches to over 4 feet. The rectangular shape had developed further and some of the initial depth had been restored as a result of filling.

The profile of the head of the cut as measured horizontally from the stretched tape also changed between 1982 and 1993. In 1982, the tape was located at the edge of the downcut. By 1993, the headcut had advanced 42 inches from the tape location at the 1982 headcut edge.

G. Wildlife; Riparian/Fisheries Habitat Inventory

1. Priority Species: mule deer, pronghorn, sage grouse, bighorn sheep.
2. Other Species: Several species of game and non game wildlife species occur in the allotment.

3. Habitat Evaluation

PRONGHORN/SAGE GROUSE

Since the identification of conflicts between livestock and wildlife in the 1993 FMUD and the subsequent February, 1995 stipulation for dismissal of appeals between Nevada First Corporation and BLM, crucial wildlife issues with regard to riparian habitats and conflicts with livestock grazing have been alleviated. The stipulated dismissal modified stocking rates and livestock seasons of use to improve/maintain the condition of the numerous riparian and wetland habitats in the allotment. The result of this agreement has been dramatic improvements in vigor and forage availability of riparian species crucial to sage grouse.

Supplemented by the establishment of appropriate management levels for wild horses, overall habitat conditions have improved for both pronghorn and sage grouse.

In August, 1996 the Quinn Odell fire burned a total of over 56,000 acres. Of this total, 8,165 acres occurred on BLM administered public lands in the Capitol Peak, Calico, and Rock Springs Pastures. In January and February of 1997, 5,500 acres were reseeded by BLM as a fire rehabilitation measure to mitigate impacts to wildlife and watershed values. The remaining acres were not seeded due to inaccessibility and an identified natural recovery potential. The rehabilitation seed mixture utilized a combination of grass, forb and shrub species in the mixture which are palatable to wildlife. Sagebrush, which is a crucial wildlife forage and cover species was included in the rehabilitation seed mix.

Both pronghorn and sage grouse will have direct benefits from this fire in coming years. Pronghorn have realized a net increase in suitable habitat with the reduction of sagebrush as result of the fire. Cover height has been identified as a limiting factor to pronghorn population growth throughout the Owyhee plateau. In addition, the release of suppressed grass and forb species and the planting of palatable grass, forb, and shrub species after the fire has resulted in an increase in both habitat quantity and forage quality and diversity for both sage grouse and pronghorn. Population status/densities in the future should improve dramatically.

FISHERIES

There is one currently existing fishery in the Little Owyhee Allotment. The North Fork Little Humboldt River contains a self sustaining population of Brook Trout Salvelinus fontinalis.

With the completion of the North Fork Exclosures in 1997, the majority of public lands in the upper reaches will be protected from grazing and significant improvement is expected.

North Fork Little Humboldt River

Background

The North Fork of the Little Humboldt River (River) begins at an elevation of 8200 feet on the East side of Buckskin Mountain in the Santa Rosa Range of the Humboldt National Forest. From this point, the River flows in an easterly direction for approximately 12.8 miles through National Forest and private land until it enters BLM administered public land. From the Forest Service/BLM boundary, the North Fork flows an additional 31 miles, including 6.75 miles of private land, where it exits the gorge at the North Fork Ranch.

The North Fork Little Humboldt River is the longest (43.81 miles total length) and largest (total watershed is 134,400 acres in size) perennial stream flowing in the Winnemucca District. The North Fork contains a significant self sustaining trout fishery and has been recognized for its resource values by both BLM which identified the Lower Gorge as Wilderness Eligible, as well as the Nation Park Service which included the North Fork in the Nationwide Rivers Inventory of 1982.

The North Fork Little Humboldt River sustains perennial flows from its inception to its terminal point at Chimney Reservoir on the Little Humboldt River. Peak flows on this stream have been recorded as high as 205 Cubic Feet per Second (cfs) and average flows are 26 cfs.

The North Fork Little Humboldt River, on BLM administered public lands occurs in two major forms. The upper reach (Forest Boundary to Greeley Crossing) can be characterized as a typical Nevada stream with a V shaped, narrow valley bottom and branching ephemeral tributary channels. The stream itself is slightly confined within a past downcut, however the perennial flows have widened this cut substantially, allowing the stream to regain a moderate degree of sinuosity. Vegetation along this reach includes several willow species including Coyote, and Yellow willow. Both willow species are well distributed throughout the reach with reproduction commonly noted on point bars and along the stream edge. Heavy past utilization has inhibited the success of this reproduction in its development, however. Herbaceous vegetation is very diverse and includes several species of sedge as well as JUNCUS, and a diverse array of forb species. Nebraska and beaked sedge species (Carex nebraskensis, CAREX rostrata) are abundant and widespread and appear to be increasing at historic photo points. Invading large stands of basin big sagebrush are also abundant on the upper terraces of the creek. In these areas, great basin wild rye and wood's rose, as well as several other mesic drainage bottom species occur in association.

In 1996, an enclosure was constructed on the upper reach of the North Fork from the forest boundary to Greeley crossing. While the potential for dramatic improvement is present with the completion of the fence, continuing problems with keeping livestock out are hampering the progress of recovery on some sections. A large number of watergaps contributes to this problem

The Middle Reach begins approximately 3 miles downstream of the mouth of the canyon marking the end of the upper reach and the beginning of the private land around Greeley Crossing. The downstream end of Greeley Crossing and the beginning of the middle reach is marked by the reentry of the creek into a canyon. This is the upper end of the North Fork Gorge, as well as the beginning of the Wilderness Study Area.

From this point, the North Fork is characterized as a moderately well confined stream with valley bottom widths ranging from one hundred feet to less than thirty. Due to the degree of confinement and the size of the watershed, this system is prone to large runoff events. The stream flows through a generally low gradient valley. The major control for the stream is geologic in the form of a regular series of twenty five to over one hundred foot long boulder steps. These steps are often but not always located on turns or narrow spots and appear to be extensions of rockslide or debris slide materials originating from the gorge walls. The step features are integral components to the maintenance of stream conditions and appear to have prevented significant large scale downcutting along this reach.

Riparian vegetation along this stretch is somewhat different than at the upper reach. Dominant woody vegetation along this stretch also includes Yellow and Coyote willow species, however, Wood's Rose, Red-Osier dogwood and Alder are much more prevalent. In addition, several areas include the dead remains of Cottonwoods. These cottonwoods appear to be mostly extirpated from the reach except for one mature tree on the extreme lower end of the gorge. Herbaceous vegetation is dominated by Juncus species with Carex species present but much less common than at the upper reach. In addition, true grass species are also much more abundant along this reach. This condition may be an expression of the long history of overgrazing by horses and livestock which tend to become stuck in the gorge once they achieve access to the water. Once there, the likelihood of heavy season long or even year around grazing in the bottom is high. There were only five negotiable access points between the upper and lower mouth of the canyon, by which livestock or horses could enter or exit without significant exertion, and use levels and cattle and horse presence in November demonstrated the difficulty with managing use in the Gorge.

Several times throughout the last twenty or more years, the lower gorge has been proposed for selected fencing to control access to the creek. Based on the continuing problems managing horse and livestock access, the selected fencing proposal is still germane to the management of this unique resource. Much of the original survey and design staking is still present in the gorge and could be used.

Stream Survey

The North Fork Little Humboldt River has been surveyed several times since the initial inventory in 1976 (1978, 1980, 1982, 1984, 1988, 1990, 1997). With exception of 1997 data, all stream surveys were incomplete with respect to sample intervals which varied up to four miles and were tied specifically to areas of easy access, not only by survey personnel, but by livestock and wild horses as well.

In 1997, a complete survey was initiated by BLM personnel. This survey established permanently marked survey stations at approximate one mile intervals and relocated/remarked all previous stations as well. This survey was complete, except for the last four miles of stream above the North Fork ranch. These stations were not inventoried due to a down turn in temperatures resulting in icing up of the channel. The comparative outcomes for the upper reach, lower reach, and overall stream survey findings, presented by marker year are provided below.

Table 1. Stream Habitat Parameters North Fork Little Humboldt River Upper Reach (forest boundary to Greeley), Middle Reach (Greeley to four miles above mouth) and overall, For Years 1976 to 1997 *

	Upper Reach				Middle Reach				OVERALL Rating for Upper and Middle Reaches			
	1997	1990	1980	1976	1997	1990	1980	1976	1997	1990	1980	1976
% Pool/Riffle Ratio	37	96	32	84	35	78	91	60	35	88	72	66
% Quality Pools	21	26	0	9	20	20	0	37	21	23	0	32
% Desirable Materials	59	37	74	37	53	23	48	12	55	31	61	19
% Bank cover	56	25	38	36	55	25	45	57	55	25	41	50
% Bank Stability	70	41	61	45	75	63	86	58	73	48	73	54
% Overall Habitat Optimum	48	45	41	42	48	42	54	45	48	43	49	44
Avg. Water Depth(feet)	.79	.66	.55	.38	.86	.6	.51	.51	.83	.63	.53	.46
Avg. Water Width(feet)	11.9	14.6	10.1	14.7	16.2	16.4	14.5	20.3	14.3	15.5	11.6	18.3
Width/Depth Ratio	15.1	22.1	18.4	38.7	18.8	27.3	28.4	39.7	17.2	24.6	21.9	39.3
<p>- Overall % Habitat Optimum rating is the average of the next five habitat parameters. - Data blocks not showing values were not available from the original study findings - 1997 data utilized a 5 transect per station approach whereas a 4 transect per station approach was used in previous years. * Data for years 1982, 1984, and 1988 was not included for ease in interpretation, but is available at the District Office. ** Total sample size was smaller than for 1997 data due to irregular station intervals. One to 5 stations were used in reaches indicated versus 8 for upper Reach and 10 for middle reach in 1997.</p>												

In general, the North Fork Little Humboldt River has improved slightly during the study period. A closer analysis of the study data indicates that major changes in the pool to riffle ratio and pool quality have been the primary reason for the lack of a more substantial improvement in overall habitat conditions. All of the three other Priority A limiting Factors, used to determine overall stream condition, have improved dramatically.

Bank cover is the element of the stream environment composed of the living streamside vegetation in close proximity to the stream. Bank cover provides several crucial contributions to aquatic habitat conditions including stabilization of the water column, temperature regulation, insects for forage, and filtration of sediment. Bank cover values on the North Fork have improved over ten points since 1976. Bank stability values have likewise improved over the period.

Bank stability is an assessment of the resilience of the immediate stream soil interface from destruction. Bank stability is maintained by a combination of vegetation and rock or bedrock. Bank stability values on the North Fork have improved by just over twenty points through the study period.

Stream bottom material composition is likewise another important parameter for quality stream habitat conditions. Stream bottom materials, both size and distribution, can directly affect fisheries habitat by influencing reproductive success of the fishery and the quality of the aquatic forage base. Stream bottom material quality has improved over 100 percent over its conditions in 1976.

The declines in pool quality and pool/riffle ratio are somewhat confusing given the state of the other critical habitat parameters discussed above. Pool quality and pool/riffle ratio components are generally the last parameters to unravel as a stream declines in condition. In a scenario of a declining stream, bank cover and bank stability decrease first. With this in place declines in stream bottom material quality follows. Finally, the channel profile itself changes from narrow and deep system to a wide and shallow system.

In the case of the North Fork, bank cover, bank stability and stream bottom material quality are all improving through the study period. The explanation in this sequence is found in an understanding of the process a stream goes through when it begins to improve. Once the stream reaches begins to improve, generally the first thing to happen is vegetation changes will occur. Both herbaceous and woody species will increase establishing a barrier to the rushing water. As this barrier becomes more established, the water slows and suspended sediments starting with the larger particles, begin to drop out. This process is known as bank building and can take several years to progress. As this process accelerates (more favorable growing sites are established and more vegetation becomes established and/or grows larger) the elevation of the sides of the stream begins to rise, and as this happens the water is forced to flow through a more and more confined space. The channel begins to evolve back towards a narrower and deeper system. As this happens, more and more of the stream becomes deeper and slower moving. Pool quality may improve, but often it lags as the relative number of pools increases dramatically, but the quality of the pools remains relatively low.

The North Fork demonstrates all of these qualities. Bank cover has improved dramatically, as has bank stability and stream bottom material quality. In addition, the average water depth has increased, and the overall average water width has decreased. (Note that water width change varied significantly between the upper and middle reaches). This is tied to the increased accessibility of the upper reach segment mostly by cattle, and the decreased use of the middle reach by both cattle and horses (though there still are areas of significant impact by horses and cattle). The percentage of stream width in pools has increased over thirty percent, but the overall quality of pools (expressed as the percentage of pools over 2 feet deep, longer than the stream is wide, and with cover divided by the width of all pools combined) has decreased. Lastly, the increase in the number and size of pools and the static quantity of riffles has decreased the pool/riffle ratio.

The conclusion of this data is that the North Fork has improved slightly since 1976. Pool parameters have not improved to date, and have actually declined as a consequence of the improvements in bank cover and stability and subsequent decreases in channel width and water width and increases in water depths. It would be expected, should improvements continue, that stream parameters (cover, stability and stream bottom material quality) continue to improve, and that pool parameters will follow with time. The improvement in pool parameters will likely not occur in the short term however.

Besides the existing fishery in the North Fork, portions of streams in the allotment drain to the north, out of the great basin and contribute to the Upper Columbia River Basin watershed. Since 1994 an interagency team has been working to complete and Environmental Impact Statement for the Upper Columbia River Basin. This document will be used to guide decision making regarding future land use and development in the basin. To date, the document has not been finalized. Potentially significant management implications are being contemplated in this document which will effect management of the Little Owyhee Allotment. The East Fork Little Owyhee River was historically occupied by populations of Redband trout Onchoryncus mykiss and seasonally supported anadromous stocks of Chinook Salmon.

Stream temperature monitoring has been conducted on the North Fork of the Little Humboldt River since the Spring of 1996. The temperature data has been collected at four separate sites: 1) Upper station is located adjacent to an under cut bank approximately 150 yards downstream of the upper end of the enclosure (1996, 97, 98) 2) Mid station is located approximately 500 yards upstream of the lower end of the enclosure (1997, 98), 3) Abandoned Mid Reach is located at the downstream edge of the private property on Greely flat, at the beginning of the lower gorge (1996-This site was abandoned and replaced by #2 above), and 4) Lower station is at the mouth of the lower gorge above the North Fork Ranch (1997).

The following table illustrates the percentage of time that the stream temperature exceeded select reference points:

Reach	Year	Sample Period (days)	# of days exceeding 68°F	% total hours spent in excess of 68°F	# of days exceeding 75°F	% total hours spent in excess of 75°F	Maximum Recorded Temp.°F
upper	1996	121	71	20.9%	40	6.30%	80.07
	1997	121	78	20.2%	22	2.60%	77.87
Mid	1996	123	76	26.4%	57	11.7%	85.57
Different site than 1996	1997	121	68	17.3%	7	0.80%	77.87
Lower	1996						
	1997	99	66	28.7%	27	4.30%	79.75

Although the period of record is brief (2 years) there appears to be a downward trend in temperature extremes. The upper station allows the best comparison since the data was collected at the same exact spot for both years, and is currently being collected there as well. The columns representing % of total hours spent in excess of 68°F and 75°F each show a decreasing trend and a two degree decrease in the overall maximum temperature was realized as well.

5. PROPER FUNCTIONING CONDITION (PFC)

Functionality was determined in accordance with BLM Technical Report 1737-9 (1993) Process for Assessing Functioning Condition (lotic) and Technical Report 1737-11 (1994) Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas. Five assessment classes are used: 1 - Proper Functioning Condition (PFC), 2 - Functioning at Risk, Upward Trend (FAR+), 3 - Functioning at Risk, Static Trend (FAR=), 4 - Functioning at Risk, Downward Trend (FAR-) and 5 - Non Functioning (NF).

	Lotic (Miles)				
	PFC	FAR+	FAR=	FAR-	NF
Calico Creek	18.12	0.60	0.27	2.24	0.00
Little Owyhee	11.16	0.00	3.10	2.43	0.00
Mahogany Creek	6.26	0.00	3.40	0.00	0.00
Milligan Creek	0.00	0.00	1.82	0.00	0.00
North Fork	5.11	16.23	0.00	0.00	0.00
Little Humboldt					
Willow Creek	<u>11.47</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Totals	40.65	16.83	8.59	4.67	0.00

	Lentic (Acres)				
	PFC	FAR+	FAR=	FAR-	NF
Calico Spring	50.50	0.00	0.00	0.00	0.00
Piccolo	0.00	0.00	0.00	11.39	0.00
Piccolo Exclosure	5.69	0.00	0.00	0.00	0.00
Piccolo Reservoir	<u>0.00</u>	<u>0.00</u>	<u>4.00</u>	<u>0.00</u>	<u>0.00</u>
Totals	56.19	0.00	4.00	11.39	0.00

The limiting factors inhibiting PFC on the above Lotic and Lentic systems are:

LOTIC

Calico Creek - herbaceous diversity and vigor are lacking, age class of wood species is limiting, reservoir in channel and water trough adjacent to channel

East Fork of Little Owyee River - heavy livestock use, incised/widened channel, limited woody species, poor streambank storage ability, poor herbaceous species diversity

Mahogany Creek - sloughing banks, riparian area has not achieved full potential, vegetation not comprised of desirable plant communities, adequate vegetation not present to protect banks and dissipate energy.

Milligan Creek - heavy use by livestock and wild horses, age structure and vegetative diversity are lacking

LENTIC

Piccolo - numerous headcuts, recent burn in the upland watershed, riparian vegetation dominated by POA, and less than 1% hydric soils

Piccolo Reservoir - lack of riparian vegetation to protect banks due to livestock use

6. THREATENED/ENDANGERED/CANDIDATE/SENSITIVE SPECIES

Informal consultation on effects of livestock grazing on the allotment was completed in January, 1993 (1-5-93-I-70) This consultation concluded that Lahontan cutthroat trout Onchoryncus clarki henshawi do not occur in the allotment.

In addition, a species list received in April, 1995 (1-5-95-SP-65) indicated that the spotted frog Rana pretiosa may occur in the allotment. The spotted frog is currently maintained as a candidate species. No other threatened, endangered, or candidate species were known to occur on the allotment. This list was updated in 1997 with no further additions.

The following BLM listed sensitive species is likely to occur on the allotment and could potentially be impacted by livestock grazing:

western burrowing owl Athene cunicularia hypugea

The Burrowing owl is a colonial underground nesting raptor which preys on small mammals, rodents and reptiles. Impacts to this species from livestock grazing would occur in the form of competition for forage between livestock and prey species and/or direct destruction of burrow entrances by hoof action. Competition for forage is not believed to occur and impacts to den entrances would be highly uncommon due to the high visibility of these features and the resistance of livestock to step in and on these holes. Therefore, there are not believed to be any significant negative effects on sensitive species as a result of livestock grazing.

7. Other Information

a. Range Improvements

Some of the riparian habitats identified for fencing by the permittee in the Stipulation For Dismissal of the Nevada First Corporation Appeals have been completed.

The South Cow Camp and East Antelope Spring Enclosures were constructed in addition to the North Fork Little Humboldt River riparian fence. Lone Willow Spring Enclosure is surveyed and designed, but won't be constructed until a pipeline system is developed to provide water to the area outside of the enclosure.

The Antelope #2 Division Fence is also surveyed and designed, but during 1995 and 1996, the permittee herded the livestock away from the wetland and streambank riparian habitats. The possibility exists that this proposed project is not warranted as a result of the permittees' actions. According to the permittee, if the management action of herding is allowing for the attainment of the utilization objectives, the need for this fence doesn't exist. The meadow east of Mahogany Pass which was included in the Stipulation For Dismissal for fencing, is also in the use area of Antelope #2 fence and if herding is successful, this meadow may not have to be fenced. These habitats will continue to be monitored.

b. Wildland Fire

The Quinn/Odell Fire started on 08/26/96 and was controlled on 09/02/96. The fire burned a total of 8,476 acres of which 8,165 acres were on BLM administered lands and 311 acres on private land.

Rehabilitation efforts were completed during the winter of 1997 with 5,485 acres being aurally seeded. Seven (7) miles of fence were also constructed to separate the seeded areas from the unburned areas in the Rock Springs pasture and allow necessary rest to the rehabilitated ranges. The burned portions of the Capitol Peak and Calico pastures were closed as a result of fire.

c. Transfer

In February 1996, NFC transferred 4100 AUM's from the Home Ranch to the Little Humboldt Ranch. These AUM's are part of the Little Owyhee Permit.

d. Lease

In February 1996, NFC leased the Little Humboldt Ranch and the grazing privileges associated with the base property (4100 AUM's) to Jerry Harper for a period of three years. A three year grazing permit was issued to Jerry Harper for the Little Owyhee Allotment.

e. Standards and Guidelines of Rangeland Health

The following are the Standards of Rangeland Health as developed in consultation with the Sierra Front-Northwest Great Basin Resource Advisory Council, other interested publics and approved by the Secretary of the Interior on February 12, 1997. The terms and conditions of the livestock grazing permit must be in conformance with these approved Standards and Guidelines.

1. Soil processes will be appropriate to soil type, climate and land form.
2. Riparian/wetland systems are in properly functioning condition.
3. Water quality criteria in Nevada or California State Law shall be achieved or maintained.
4. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.
5. Habitat conditions meet the life cycle requirements of special status species.

These standards will be addressed as to whether they are met or not met in the conclusion section.

8. Noxious Weeds

A complete noxious weed inventory for the allotment has not been completed. However, noxious weeds have been documented along roads/trails.

III. CONCLUSIONS

A. Short Term

1. The objective for utilization of key plant species (CAREX, JUNCUS, POA) in wetland riparian habitats is 50%.

This objective was met in 1995, 1996 and 1997. Since the implementation of the January 1995 stipulated agreement, grazing seasons and number have been different. Under this grazing system, utilization levels have been met. The Rock Springs pasture was rested in 1995 and 1996.

2. The objective is for utilization of key streambank riparian plant species (CAREX, JUNCUS, POA, SALIX, ROWO) on the East Fork of the Little Owyhee River is 30%. who

This objective was met in 1995 and 1996. However, in 1997, heavy use occurred on the herbaceous and woody vegetation along reaches of this river.

3. The objective for utilization of key streambank riparian plant species (CAREX, JUNCUS, POA, SALIX, ROWO) on the North Fork of the Little Humboldt River is 30%.

This objective was not monitored for during the evaluation period. Utilization rates and trends are believed to be similar to those for other riparian areas in the Antelope pasture. The completion of the North Fork Little Humboldt Enclosure fence in 1996 was expected to remove the majority of the public stretches of this creek from grazing use with exception of watergap locations. Inspection of these sites in the fall of 1997 indicated that portions of this enclosure received livestock use and some areas received more than 30% utilization.

4. The objective for utilization of key upland plant species will be 50% for STTH2, SIHY, and FEID and it will be 40% for CREPIS, ELCI, POSE, AGSP, EULA5, ORHY and LUPIN.

This objective was met in 1995 and 1996. However, data collected in 1997, at key areas 101, 103 and 110 indicates that the utilization objective for STTH2, in the Antelope pasture was exceeded, but utilization remained in the moderate category.

B. Long Term

1. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock with an initial stocking level of 27,800 AUMs.

No baseline data (ESI) has been collected since 1987 to evaluate this objective.

2. Improve to and maintain the ecological status per key management areas as determined in the Little Owyhee Monitoring Plan.

No baseline data (ESI) has been collected since 1982-1987 to evaluate

this objective. Personal observations indicate that improvement has taken place.

3. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 288 AUMs for mule deer, 1,233 AUMs for pronghorn and 72 AUMs for bighorn sheep.
 - a. Improve to and maintain 2,756 acres in Paradise Valley DY-1, 29,612 acres in Santa Rosa DY-10, 31,678 acres in Santa Rosa D-2, and 44,210 acres in Santa Rosa DS-1 in good or excellent mule deer habitat condition.
 - b. Improve to and maintain 2,490 acres in Mahogany Ridge PS-8, 25,837 acres in Santa Rosa PS-7 and 21,608 acres in Little Owyhee PS-10 to good condition. Improve to and maintain 457,963 acres in Owyhee Desert PY-9, 17,847 acres in Maiden Butte PW-9, 2,306 acres in Evans Lake PW-10, 7,762 acres in Button Lake PW-11, 4,939 acres in Button Lake PS-9, 8,322 acres in Evans Lake PS-11, and 7,469 acres in Bullhead PW-13 in fair or good pronghorn habitat condition.

New data has not been collected since the last evaluation to evaluate whether progress is being made toward attainment of this objective. Portions of Santa Rosa DW-1 and nearly all of Santa Rosa DS-1 use areas in the allotment were burned by the 1996 Quinn/Odell Fire. Much of the winter habitat which burned in this fire was reseeded in February, 1997, and drainages on the summer range were reseeded as well. The rehabilitation seed mix utilized a combination of perennial shrubs and grasses including sagebrush and it is hoped this action will minimize the period when habitat conditions as a result of the burn are depressed.

Pronghorn habitat conditions were not assessed. Two guzzlers were completed in PS-9 and PS-11 in 1994 and two more were constructed in 1997. This should reduce the effects of the most limiting factor to antelope habitat condition on the allotment (water availability and distribution). A second limiting factor has been identified in areas of tall sagebrush occurring as a strip up to two miles wide running roughly north and south of Button Lake. This vegetation presents a possible barrier to movement by antelope between areas east and west of this habitat. Selective cool season burning of portions of these ranges is recommended to provide corridors for movement and mixing of animals. In addition, the 1997 fire resulted in an increase in useable habitat for pronghorn within the allotment.

4. Improve to and maintain 594 acres of riparian and meadow habitat types in good condition.

With the implementation of grazing use under the terms and conditions of the January, 1995 stipulated agreement, riparian conditions have improved dramatically. Forage vigor noticeably increased after 1994, and observation of several of the identified headcuts in the summer pastures indicate the healing process is beginning on some. Progress is being made toward attainment of this objective.

5. Improve to and maintain 21 acres of aspen habitat types in good condition.

Data has not been collected to evaluate the achievement of this objective. Functionality assessments conducted in 1997 indicated much of this habitat lies on private land, however specific acreages were not indicated.

6. Improve to and maintain 60 acres of mahogany habitat types in good condition.

The principal mahogany habitat in the allotment is in the Antelope and extreme southern end of the Capital Peak pastures with the only public portion of this habitat occurring in the Antelope field. These areas were observed in 1996 and were found to have vigorous regeneration occurring. The limited mahogany habitat near Calico spring has had heavy use on regeneration in past years, most likely due to the limited extent of this plant and the proximity to water. In 1996 the utilization on regeneration was observed to be much lower.

7. Improve to or maintain the following stream habitat conditions on the North Fork of the Little Humboldt and East Little Owyhee from 48% on the North Fork, unknown on the East Little Owyhee to an overall optimum of 60% or above.

- 1) Streambank cover to 60% or above.
- 2) Streambank stability to 60% or above.
- 3) Maximum summer water temperature below 70 degrees Fahrenheit.
- 4) Sedimentation below 10%.

With completion of the enclosure fencing in 1996, progress is expected to be made toward achievement of this objective at least for portions of North Fork Little Humboldt River within the enclosure

In general, the North Fork Little Humboldt River has improved slightly during the study period. A closer analysis of the study data indicates that major changes in the pool to riffle ratio and pool quality have been the primary reason for the lack of a more substantial improvement in overall habitat conditions.. All of the three other priority A limiting factors use to determine overall condition, have improved dramatically.

Bank cover has improved dramatically, as has bank stability and stream bottom material quality.

As it is currently written, the temperature objective is not being met. The potential of the site needs to be characterized through the collection of baseline data prior to the establishment of an objective. Until the potential of the site is realized, any reversal in the current trend of decreasing temperatures shall constitute an "unmet" objective. Even at that time, the potential for the stream on public lands may not meet state water temperature objectives due to management on non-public lands upstream of public lands reaches.

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

Data has not been collected to evaluate whether progress is being made toward achievement of this objective. Portions of sage grouse habitat in the Capitol Peak pasture burned in 1996. In coming years, and following the establishment of the rehabilitation seeding the area is expected to provide high quality habitat for sage grouse. Together with the significant improvement in livestock grazing practices resulting in improvement in vigor in riparian habitats, it is believed that sage grouse habitat is improving.

9. Improve to or maintain the water quality of the North Fork Humboldt River and East Little Owyhee River to the state criteria set forth for the following beneficial uses: Livestock drinking water, cold water aquatic life, wading and wildlife propagation and sport fishery.

Data has not been collected to determine the condition of the water in these systems. Temperature data has been collected at several locations along the North Fork since 1995 and will continue to be collected. With completion of the enclosure fences, improvements in water quality will be expected.

C. Standards of Rangeland Health

1. Soil processes will be appropriate to soil type, climate and land form.

Utilization objectives for upland habitats, at the majority of the key areas have been met. In 1997, the utilization objective for STTH2 was exceeded at the key areas in the Antelope pasture. However, utilization was within the moderate use category. These objectives provide for maintenance of soil processes.

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

Fifty seven percent (57%) of the lotic systems are in properly functioning condition, twenty four percent (24%) are functioning at risk with an upward trend, twelve percent (12%) are functioning at risk with a static trend and six percent (6%) are functioning at risk with a downward trend. Lentic systems are seventy eight percent (78%) properly functioning condition, six percent (6%) functioning at risk with static trend, sixteen percent (16%) functioning at rise downward trend. Utilization levels have generally been met providing improvement towards achieving this standard.

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

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

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

Numerous ecological sites exists with varying plant communities within this allotment. Attainment of the majority of the utilization objectives indicates that this standard is being met.

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

The allotment provides the necessary environment for special status species. There are not believed to be any significant effects on sensitive species as a result of livestock grazing.

IV. TECHNICAL RECOMMENDATION

A. Livestock

1. Grazing Preference (AUM's) Nevada First Corporation

a.	Total	43,363
b.	Historical Suspended	19,663
c.	Total Number of AUM's of Specified Livestock Grazing	23,700
d.	Authorized	17,570
e.	Suspension	6,166
	- Voluntary Non-Use Spring/fall/winter	399
	- Temporary Suspension Non-Use Summer	5,767 *

* The 5,767 AUM's held in temporary suspension may be activated during the re-evaluation period. These AUM's are being held in temporary suspension based on the fire rehabilitation efforts and also the possibility of more AUM's being available if utilization levels on streambank/wetland riparian habitats are being achieved.

Grazing Preference (AUM's) Jerry Harper

a.	Total	4,100
b.	Historical Suspended	0
c.	Total Number of AUM's of Specified Livestock Grazing	4,100
d.	Authorized	4,100

2. Season of Use

Spring	03/01 to 05/31
Additional Spring	06/01 to 06/30
Summer	07/01 to 08/31
Fall/Winter	10/01 to 02/28

3. Kind of Livestock - Cow/Calf

4. Percent Federal Range - 100%

5. Grazing

The following grazing system will be implemented for the 1999-2003 grazing seasons.

NEVADA FIRST CORPORATION

SPRING USE (EVERY YEAR)

<u>Pasture</u>	<u>Livestock Number</u>	<u>Season of Use</u>	<u>AUM's</u>
Fairbanks	2000	03/01 to 05/31	6049
	500	06/01 to 06/30	493
Lake Creek	1500	03/01 to 05/31	4537
	500	06/01 to 06/30	329
TOTAL			11,408

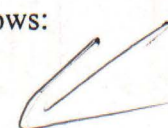
JERRY HARPER

Twin Valley	350	03/01 to 03/15	173
	450	03/16 to 03/31	237
	630	04/01 to 04/30	621
	665	05/01 to 06/30	1332
TOTAL			2,363

The maximum spring period of use will be 03/01 to 06/30. All three spring pastures will be used every year. Total scheduled spring use will be up to 13,771 AUM's.

A total of 21,462 AUM's have been calculated based on the identified permanent and seasonal available water sources in the spring, fall/winter pastures.

The carrying capacity for the spring, fall/winter pastures is as follows:

- 13,771 AUM's for spring use - livestock
 - 2,516 AUM's for winter use - livestock
 - 4,776 AUM's for year round use - horses
 - 399 AUM's non-use pending additional water
 - 21,462 AUM's total spring, fall/winter
- 

Twelve thousand two hundred ninety five (12,295) AUM's will be authorized annually from 03/01 to 05/31. An additional 1,478 AUM's may be authorized between 06/01 to 06/30 as additional spring use, provided that utilization is less than 50%. In normal years, of the 2,000 head in Fairbanks 1,500 head will be going onto the Forest and of the 1,500 head in Lake

Creek 1,000 head will be going onto the Forest. In most years, these livestock will be moved out of the spring pastures on 05/31 and onto the U.S. Forest Service and by 06/30 all livestock will be removed from the spring pastures.

Use in the spring pastures will continue to be based on available water sources. Use will be scheduled based on these water sources and available forage around the water source. Availability of water sources and forage will be determined by BLM and NFC based on the following criteria:

1. Water source(s) and accompanying service area(s) will be scheduled for use two consecutive years. The third year, the water source and service area will be rested.
2. If service area(s) for individual water sources overlap, the water source encompassing the greatest overlap area will be used as the basic forage allocating unit.

ADDITIONAL SPRING USE

Upon request by the permittee, additional spring use may be approved by the authorized officer. The authorization will be subject to the availability of sufficient forage in the spring pastures to support the additional use. Additional use, if authorized will be at the scheduled water source(s) for the current year only, with the stipulation that utilization must be less than 50%.

SUMMER USE

NEVADA FIRST CORPORATION 1999 (ODD YEARS)

<u>Pasture</u>	<u>Livestock Number</u>	<u>Season of Use</u>	<u>AUM's</u>
Antelope East	1500	06/01 TO 06/10	493 AUM'S
Antelope West	1500	06/11 TO 06/18	395 AUM'S
Antelope West	500	07/01 TO 08/15	756 AUM'S
Antelope East	500	08/16 TO 08/31	263 AUM'S
Calico			644 AUM'S
Rock Spring Native	1000	06/01 TO 06/10	329 AUM'S
Rock Spring Rehab	1000	06/11 TO 06/18	263 AUM'S
Rock Spring Rehab	500	07/01 TO 08/15	756 AUM'S
Rock Spring Native	500	08/16 TO 08/31	263 AUM'S
		TOTAL	4162 AUM'S

2000 (Even Years)

Antelope East	1500	06/01 TO 06/10	493 AUM'S
Antelope West	1500	06/11 TO 06/18	395 AUM'S
Antelope East	500	07/01 TO 08/15	756 AUM'S
Antelope West	500	08/16 TO 08/31	263 AUM'S
Calico			644 AUM'S
Rock Spring Native	1000	06/01 TO 06/10	329 AUM'S
Rock Spring Rehab	1000	06/11 TO 06/18	263 AUM'S
Rock Spring Native	500	07/01 TO 08/15	756 AUM'S
Rock Spring Rehab	500	08/16 TO 08/31	263 AUM'S
TOTAL			4162 AUM'S

JERRY HARPER - Every Year

<u>Pasture</u>	<u>Livestock #</u>	<u>Season of Use</u>	<u>AUM's</u>
Calico	600	07/01 to 07/07	138 AUM'S
Capital Peak	600	07/08 to 08/15	769 AUM'S
Calico	600	08/16 to 08/31	316 AUM'S
TOTAL			1,223 AUM'S

Season of use in the summer pastures will be 07/01 to 08/31. Total scheduled summer use will be 5,385 AUM's .

Five thousand seven hundred sixty seven (5,767) AUM's will be held in temporary suspension until utilization monitoring, in the summer pastures, indicates that these additional AUM's are available and also the possibility exists for additional AUM's as a result of the rehabilitation efforts.

Every year 2,500 head of livestock will be in the Antelope East, Antelope West, Rock Spring Native and Rock Spring Rehab pastures from 06/01 to 06/18. The limited use in these pastures is for facilitation of the livestock onto the Forest Service. The remaining 1,600 head will be authorized from 07/01 to 08/31.

Calico pasture will continue to be used to facilitate livestock operations from the spring pastures to the Forest Service and to and from spring pastures and summer pastures.

WINTER USE EVERY YEAR

NEVADA FIRST CORPORATION

<u>Pasture</u>	<u>Livestock Number</u>	<u>Season of Use</u>	<u>AUM's</u>
Fairbanks	254	11/01 To 02/28	1000 AUM'S
Lake Creek	200	10/01 To 02/28	1000 AUM's

JERRY HARPER

Twin Valley	104	10/01 to 02/28	516 AUM's
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Fall/winter use within each pasture will be made within specific use areas which are separate from spring use areas. Use within each fall/winter use area will be limited to no more than two consecutive years. The third year the area will be rested. Livestock use will be limited to specific use areas by utilizing natural snow accumulations, and by limiting access to developed waters. While some livestock drift out of the scheduled use area(s) may occur, the low livestock numbers will make these impacts minimal.

Fall/winter use areas by pasture are described as follows:

Twin Valley Spring Pasture

The fall/winter use area will consist of the basin around the Little Humboldt Ranch from the southern pasture boundary north to Four Mile Butte. Use can be made in the fall/winter use area for two consecutive years. The third year the area will be rested.

Lake Creek Pasture

The northern portion of this pasture has three use areas within it:

- Area A The area serviced by the Maiden Spring Pipeline
- Area B The area serviced by the Lake Creek Reservoir, East Fork Little Owyhee River and Cathcart Cabin.
- Area C The area serviced by Willow Reservoir and Wild Bill Spring.

Fairbanks Pasture

The southern portion of this pasture has three use areas within it:

- Area A The area serviced by private waters, Fairbanks Reservoir, and Pete's Reservoir.
- Area B The area serviced by private waters along the North Fork of the Little Humboldt River and Chimney Reservoir.
- Area C The areas east of the North Fork of the Little Humboldt River and various reservoirs.

Use can be made in a particular fall/winter use area for two consecutive years. The third year, the fall/winter use area will be rested.

RATIONALE

Spring Use

The proposed management action will continue to use each spring pasture every year from 03/01 to 05/31. However, rest within each pasture will be implemented. The authorized spring use will be based on available public and private water sources in these pastures, with the stipulation that a specific use area will not be utilized more than two consecutive years. The third year it will be rested. This rest will allow for an increase in plant vigor and seeding establishment.

Additional spring use, if authorized, will enable the permittee to utilize AUM's held in non-use, and will allow the summer season of use to be adjusted. Additional spring use will be authorized only if utilization is less than 50%.

Summer Use

The summer pastures contain the majority of the wetland riparian and streambank riparian habitats in the allotment.

Grazing use in the summer pastures will continue to end on 08/31.

The Antelope pasture will be split into the East and West Antelope Pastures. The Calico Mountains will be the imaginary split for these pastures. Riding by the permittee will be required to minimize the possible drift over the mountain. The Rock Spring pasture will also be split into the Rock Spring Native and Rock Spring Rehab Pastures. This pasture is split by an existing fence.

A deferment system will be implemented for the Antelope East and Antelope West pastures and also for the Rock Spring Native and Rock Spring Rehab pastures. On odd years the Antelope West and Rock Spring Rehab pastures will be used early for a longer period of time (07/01 to 08/15) with the Antelope East and Rock Spring Native pastures receiving 15 days of later use (08/16 to 08/31). On even years, Antelope East and Rock Spring Native pastures will be used early for a longer period of time (07/10 to 08/15) with the Antelope West and Rock Spring Rehab pastures receiving 15 days of later use (08/16 to 08/31).

This deferment will allow the vegetative resource a partial growing season rest until it would be utilized.

The Calico and Capital Peak pastures will continue to be used every year. The Calico pasture will be used throughout the summer months to facilitate the livestock operations. Capital Peak pasture will be used from 07/08 to 08/15. In the past three years the majority of the livestock have been placed on unfenced private land on the Calico Mountain Range in this pasture. The permittee has herded the livestock away from the public wetland riparian and streambank riparian habitats to eliminate excessive use. The fire rehab objectives have been met for this pasture. Thus, livestock use will be encouraged on the public portions of this pasture. By alternating use on the private land, thus resting the public portions and with use on the public land and resting the private land, rest is being incorporated. This rest will allow for an increase in plant vigor and seedling establishment. Some livestock drift will occur, but the impacts to the resource will be minimal. A continuous commitment by the permittee to ensure that livestock are in the authorized areas of this pasture is essential.

Use in Capitol Peak will end on 08/15.

The Antelope #2 fence as outlined in the Stipulation for Dismissal has not been constructed, but has been re-surveyed and designed to encompass the majority of the public reaches of the East Fork of the Little Owyhee River. Once this enclosure is built, livestock use may be authorized on a limited basis.

If it is determined through monitoring that grazing to 08/31 does not result in the attainment of the utilization objectives in all summer pastures, appropriate measures will be taken to correct the situation.

The utilization objectives will be evaluated annually. Adjustments to the season of use will be made until the utilization objectives can be consistently met. This relief measure will be a term and condition of the permit.

Fall/Winter Use

Fall/winter use will be taken when plants are dormant, thus the vegetative resource should not be adversely impacted.

Some use may be made on fall and spring green-up. If this does occur, the low livestock numbers along with the large use areas should result in low grazing pressure on the vegetative resource. Spring use of the vegetation in the winter use areas will be limited to that which is made during trailing to spring use areas.

TERMS AND CONDITIONS

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

1. Salt and/or mineral blocks shall not be placed within one quarter (1/4) mile of springs, streams, meadows, riparian habitats, or aspen stands.
2. The permittee is required to perform normal maintenance on the range improvements as per their signed cooperative agreements/section 4 permits prior to turn out.
3. The permittees' certified actual use report, by pasture, is due 15 days after the end of the authorized grazing period.
4. Livestock use is not authorized in the following enclosures:

a.	Lone Willow Enclosure	T.46N., R.41E., Sec. 1, 6, 7, 12
b.	Mahogany Ridge Enclosure	T.46N., R.41E., Sec. 14, 15, 22, 23
c.	Antelope Spring Enclosure	T.45N., R.42E., Sec. 28, 29, 33
d.	Owyhee Reservoir # 3 Enclosure	T.47N., R.41E., Sec 25
e.	South Cow Camp Enclosure	T.45N., R.42E., Sec. 24
f.	Antelope Spring East Enclosure	T.45N., R.42E., Sec. 33
5. Any livestock owned or controlled by the permittee must be eartagged. The permittee must submit to the BLM as list of private ear tags which will include numbers and colors.
6. If monitoring at the end of the grazing season in the summer pastures indicates that utilization objectives were not met on wetland riparian or streambank riparian habitats, appropriate corrective actions will be taken the following year. If BLM and NFC can't agree as to what the "appropriate management action should be, fifteen (15) days will be taken from the ending date of that pasture(s) that did not achieve the utilization objective.
7. The permittee will notify the BLM prior to using the Calico Pasture for the purpose of trailing and processing livestock.
8. No water source and accompanying service area will be scheduled for use more than two years in a row. The third year the area will be rested.

9. Additional spring use will be authorized only if utilization is less than 50% at the time of the request.
10. Spring and fall/winter use areas will be identified by NFC and BLM during the grazing application process.
11. The authorized officer may modify annual grazing authorization as long as the modification is consistent with management objectives and remains within the permitted season of use. Request outside of the permitted season of use will require input from interested publics.

B. WILDLIFE

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

Mule Deer	288 AUM's
Pronghorn	1,233 AUM's
Bighorn Sheep	72 AUM's

RATIONALE:

Analysis of monitoring data indicates that the utilization objectives for upland, wetland riparian and streambank riparian habitats have been met, except for 1997. Wildlife use did not contribute to the non-attainment of the objectives. Therefore, a change in the existing wildlife populations or the existing wildlife management, within the Little Owyhee Allotment, is not warranted.

C. WILD HORSES

1) Maintain AML within a range of 194-298 adult wild horses, as identified in the 1993 Final Multiple Use Decision.

2) At 3 year intervals, gather wild horses. The present population is approximately 450-500; population modeling indicates an approximate population of 600+ by the time the next gather is scheduled in 2000. Remove horses up to five years of age based on present policy (under certain conditions, animals up to nine years of age may be removed). At Bureau discretion, return to the range up to 5% of mares in the 3-5 age class.

3) After the 1997 gather, an estimated 398 horses remained on the allotment. Thus, 4,776 AUMs are being allocated for the wild horses. The allocation of forage is as follows:

12 AUM's
300
3600 ?
What happened
to 4,700 AUM's



Fairbanks -	112 horses or 1344 AUMs
Twin Valley -	169 horses or 2028 AUMs
Lake Creek -	117 horses or 1404 AUMS

RATIONALE

The Appropriate Management Level range of 194-298 horses in the Little Owyhee HMA was set in the 1993 Final Multiple Use Decision, following a prolonged, six year drought. It was based upon water availability on public land, as this is the limiting resource in the area rather than forage. Although the forage base can sustain the current population given adequate water, a reduction to AML is justified as it is unknown how long the current wet cycle will last.

Increases or decreases in forage availability, which may affect numbers of livestock permitted on the range, will have no effect on the wild horse AML.

The Little Owyhee HMA has undergone 3 selective removals in the past 6 years: a partial removal in summer 1992 which removed horses up to 9 years of age from southern Lake Creek and northern Twin Valley pastures, a full gather in the winter of 1993-94 which removed horses up to 5 years of age from the entire HMA and the summer pastures, and another full gather in October 1997 which removed horses up to 9 years of age from the HMA and summer pastures. The horses remaining from the 1992 gather are now at least 16 years old; those remaining from the 1993-94 gather are at least 10 years old. If all younger horses are removed at each gather, when the progressively aging population on the range eventually dies, or a catastrophic event occurs, a population crash will occur.

Population modeling indicates that, under current policy, AML may be reached by 2004 following gathers in 2000 and 2003. At that time, the age structure of the population will be approximately 33% 0-5, 1% 6-9, 1% 10-14, and 65% 15+. Continued modeling until 2010 shows the AML staying within the range, as older horses die and fewer colts are born. If AML is not reached in 2004, it should be reached by 2007. (See appendix 2 and 3)

It should be emphasized that the population model is not precise, and should not be used to make definite predictions regarding population sizes. Variables which can affect the model include imprecise initial age structure of herd due to inaccurate ageing and not being able to gather all horses, and uncertain survival probabilities and foaling rates. Therefore it will be necessary to monitor closely herd size and composition, with an attempt made to determine as accurately as possible the age structure during gathers. It may be necessary to return to the range a limited number of animals in the age classes to be removed.

D. RANGE IMPROVEMENTS

1. Prescribed Burns
2. East Fork of the Little Owyhee River Enclosure
3. Lone Willow Pipeline
4. South Cow Camp Pipeline

RATIONALE:

The proposed prescribed burn sites have not been specifically identified. However, dense stands of sagebrush with grass/forb understory occur throughout this allotment allowing for a highly successful burn.

Burning the sites, will promote greater grass and forb production which will benefit all resources. Prior to this project, cooperation, consultation, and coordination will occur with all interested publics.

The East Fork of the Little Owyhee River Exclosure will encompass the majority of the public reaches of the East Fork of the Little Owyhee River in the Antelope pasture. In the past, this streambank riparian habitat has received moderate to heavy use by livestock. This fence will be constructed with 8100 funds and the permittee will be assigned maintenance.

The Lone Willow and South Cow Camp pipelines will provide additional water to the Rock Spring Rehab and the East Antelope Pasture.

E. OBJECTIVES

1. Revise the long term objectives to the following:

Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock with an initial stocking level of 27,800 AUMs.

Improve to and maintain 594 acres of riparian and meadow habitat types to ensure species diversity and quality, and to maximize reproduction and recruitment of woody riparian species..

Improve to and maintain 21 acres of aspen habitat types to ensure good reproduction and maximize recruitment within the stand.

Improve to and maintain 60 acres of mahogany habitat types by allowing for successful reproduction and recruitment in the stand.

Improve to or maintain the following stream habitat conditions on the North Fork of the Little Humboldt and East Little Owyhee from 48% on the North Fork, unknown on the East Little Owyhee to an overall optimum of 60% or above.

- 1) Streambank cover to 60% or above.
- 2) Streambank stability to 60% or above.
- 3) Maximum stream temperatures do not exceed 68 degrees Farenheidt.

Improve or maintain suitable sage grouse strutting, nesting, brood rearing, and/or wintering habitat in good condition.

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

Strutting Habitat

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

Nesting Habitat

1. Sagebrush between seven (7) and 31 inches in height (optimum= 16 inches)
2. Sagebrush canopy coverage 15-30% (optimum = 27%)
3. 25-35% basal ground cover
4. Average understory height of 6-7 inches

Brood Rearing Habitat

Early Season

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

Late Season

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

Winter Habitat

1. Greater than 20% sagebrush canopy cover

Improve to and maintain state water quality criteria for North Fork Humboldt River and East Little Owyhee River.

2. Standards of Rangeland Health

1. Soil processes will be appropriate to soil type, climate and land form.
2. Riparian/wetland systems are in properly functioning condition.

3. Water quality criteria in Nevada or California State Law shall be achieved or maintained.
4. Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse.
5. Habitat conditions meet the life cycle requirements of special status species.

E. MONITORING

The following types of monitoring data are needed to make a determination of attainment of allotment objectives

1. Utilization - Livestock and Wild Horses
2. Trend
3. Actual Use - Livestock and Wild Horses
4. Climatological
5. Stream Survey
6. Lotic/Lentic riparian functionality assessment.
7. Water Quality
8. Condition and Trend - Wildlife Habitat

Appendix 1

Desired Stocking Rate Calculations

The desired stocking rates for the pastures were determined in accordance with BLM Manual Rangeland Monitoring Analysis, Interpretation, and Evaluation, Technical Reference 400-7.

The following formula was used for calculating desired stocking levels.

$$\frac{\text{ACTUAL USE}}{\text{KMA UTILIZATION}} = \frac{\text{DESIRED ACTUAL USE}}{\text{DESIRED KMA UTILIZATION}}$$

ANTELOPE #1 / EAST (UPLAND)

$$1995 \quad \frac{278 \text{ AUM's}}{12\%} \times 50\% = 1158 \text{ AUM's}$$

$$1996 \quad \frac{687 \text{ AUM's}}{28\%} \times 50\% = 1226 \text{ AUM's}$$

$$1997 \quad \frac{1539 \text{ AUM's}}{60\%} \times 50\% = 1282 \text{ AUM's}$$

$$\frac{1158 \text{ AUM's} + 1226 \text{ AUM's} + 1282 \text{ AUM's}}{3} = 1222 \text{ AUM's}$$

ANTELOPE#2 (STREAMBANK RIPARIAN)

$$1995 \quad \frac{328 \text{ AUM's}}{26\%} \times 30\% = 378 \text{ AUM's}$$

$$1996 \quad \frac{444 \text{ AUM's}}{25\%} \times 30\% = 532 \text{ AUM's}$$

$$1997 \quad \frac{701 \text{ AUM's}}{64\%} \times 30\% = 328 \text{ AUM's}$$

$$\frac{378 \text{ AUM's} + 532 \text{ AUM's} + 328 \text{ AUM's}}{3} = 412 \text{ AUM's}$$

ANTELOPE #2 / ANTELOPE WEST (UPLAND KEY AREA 102)

$$1995 \quad \frac{328 \text{ AUM's}}{10\%} \quad \times 50\% = \quad 1640 \text{ AUM's}$$

$$1996 \quad \frac{444 \text{ AUM's}}{26\%} \quad \times 50\% = \quad 853 \text{ AUM's}$$

$$1997 \quad \frac{701 \text{ AUM's}}{30\%} \quad \times 50\% = \quad 1168 \text{ AUM's}$$

$$\frac{1640 \text{ AUM's} + 853 \text{ AUM's} + 1168 \text{ AUM's}}{3} = 1220 \text{ AUM's}$$

ROCK SPRINGS (WETLAND RIPARIAN)

$$1997 \quad \frac{1122 \text{ AUM's}}{50\%} \quad \times 50\% = 1122 \text{ AUM's}$$

CALICO - UPLAND

$$1995 \quad \frac{553 \text{ AUM's}}{32\%} \quad \times 50\% = 864 \text{ AUM's}$$

$$1996 \quad \frac{632 \text{ AUM's}}{18\%} \quad \times 50\% = 1755 \text{ AUM's}$$

$$1997 \quad \frac{881 \text{ AUM's}}{44\%} \quad \times 50\% = 1000 \text{ AUM's}$$

$$\frac{864 \text{ AUM's} + 1755 \text{ AUM's} + 1000 \text{ AUM's}}{3} = 1200 \text{ AUM's}$$

CAPITAL PEAK (WETLAND RIPARIAN)

$$1996 \quad \frac{512 \text{ AUM's}}{16\%} \quad \times 50\% = 1600 \text{ AUM's}$$

$$1997 \quad \frac{434 \text{ AUM's}}{35\%} \quad \times 50\% = 620 \text{ AUM's}$$

$$\frac{1600 \text{ AUM's} + 620 \text{ AUM's}}{2} = 1110 \text{ AUM's}$$

Appendix 2

1997 ESTIMATED AGE STRUCTURE OF HORSES ON RANGE AFTER GATHER (INCLUDES 89 ADDITIONAL SEEN DURING FLIGHT 12/4/97, AGE STRUCTURE BASED ON 1994 RELEASE DATA FOR TWIN VALLEY AND LAKE CREEK)

AGE	Overall	
	M	F
colt	4	1
1	1	-
2	4	5
3	1	4
4	1	2
5	-	1
6	-	2
7	2	1
8	1	1
9	4	14
10	26	33
11	20	16
12	22	14
13	22	15
14	16	16
15	14	10
16	8	3
17	13	11
18	17	7
19	6	5
20	20	10
21+	20	5
Total	222	176

Appendix 3

Population Model

The population model used was that of Dr. Stephen Jenkins of UNR. Survival probabilities are those used for the Kamma gather and fertility study in February 1998. Foaling rate is determined by averaging results for six gathers (1983, 84, 85, 92, 94 and 97) of number of colts produced divided by number of mares 3 years old and older. Although some 2 year olds breed, the proportion is small compared to breeding by older mares (5 of 64 2 year old mares were identified as wet in the 1992 gather, 1 of 80 in the 1997 gather). Sex ratio at birth was determined from previous gather data.

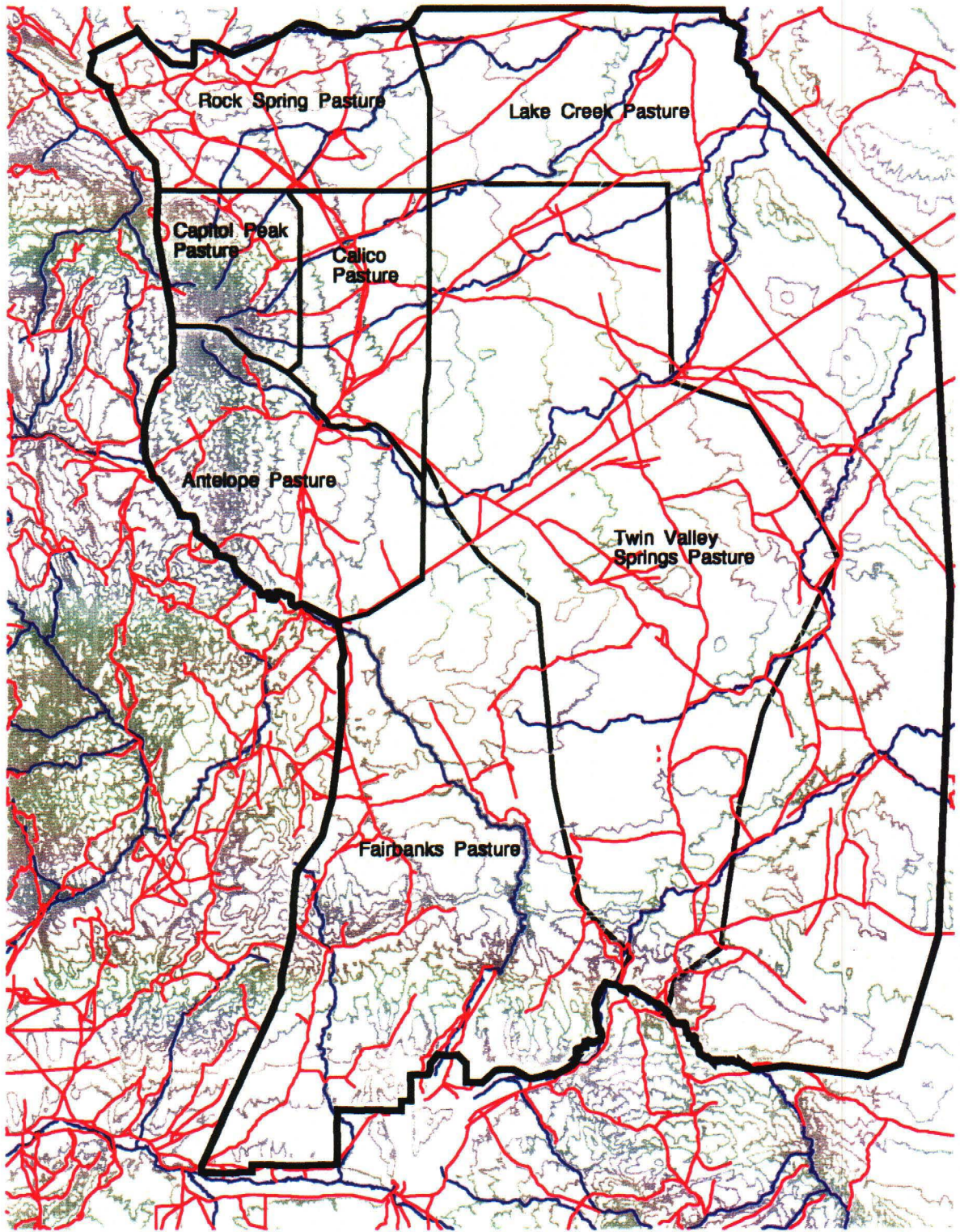
Projected age structure by year (average of 30 trials)

age	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0	5	107	100	95	91	79	75	63	64	61	57	53	49	55
1	1	0	101	94	9	84	73	9	60	58	25	44	47	45
2	9	0	0	100	9	8	82	9	9	57	23	17	40	43
3	5	1	0	0	10	9	8	12	9	8	22	15	14	37
4	3	0	1	0	0	10	8	1	11	8	4	14	13	12
5	1	0	0	1	0	0	10	1	1	10	4	2	12	11
6	2	0	0	0	0	0	0	2	1	1	6	3	2	10
7	3	2	0	0	0	0	0	0	2	1	1	6	3	2
8	2	3	2	0	0	0	0	0	0	2	1	1	5	3
9	18	2	3	2	0	0	0	0	0	0	2	1	1	5
10	59	17	2	3	2	0	0	0	0	0	0	2	1	1
11	36	57	17	2	3	2	0	0	0	0	0	0	2	1
12	36	35	55	16	2	3	2	0	0	0	0	0	0	1
13	37	35	34	54	16	2	2	2	0	0	0	0	0	0
14	32	35	34	34	52	15	2	2	2	0	0	0	0	0
15	24	31	34	33	33	48	15	2	2	2	0	0	0	0
16	11	23	30	33	32	31	46	13	1	2	2	0	0	0
17	24	11	22	28	31	30	29	42	13	1	2	1	0	0
18	24	23	10	21	27	29	28	27	40	12	1	2	1	0
19	11	22	21	9	20	25	28	25	26	38	11	1	2	1
20	30	10	21	20	9	18	23	25	24	24	35	11	1	2
21	13	27	9	19	18	8	16	20	23	22	22	33	10	1
22	6	12	24	8	16	16	7	13	18	21	20	20	30	10
23	4	5	10	21	7	13	13	5	12	15	19	18	18	28
24	1	3	4	8	17	5	11	11	5	10	13	17	15	15
25	1	1	3	3	6	11	4	8	9	4	9	12	13	13
Total	398	462	537	604	410	446	482	292	332	357	279	273	279	296
Adults	393	355	437	509	319	367	407	229	268	296	222	220	230	241

Parameters used in population model

gather when population exceeds: 298						
population size after gather: 194						
foals included in AML? NO						
percent to gather: 90						
minimum yrs. between gathers: 3						
trials: 30						
years: 13						
initial calendar year: 1997						
coeff. var. foal mortality: 2						
coeff. var. adult mortality: 1.7						
coeff. var. foaling rate: 0.2						
source of age distribution: supplied by user						
prop. male @ birth: 0.479						
age	initial age distribution		survival probability		foaling rate	% removed m & f
	female	male	female	male		
0	1	4	0.976	0.917	0	100
1	0	1	0.977	0.992	0	100
2	5	4	0.977	0.992	0	100
3	4	1	0.976	0.991	0.685	100
4	2	1	0.975	0.991	0.685	100
5	1	0	0.973	0.991	0.685	100
6	2	0	0.972	0.991	0.685	0
7	1	2	0.971	0.99	0.685	0
8	1	1	0.969	0.99	0.685	0
9	14	4	0.967	0.987	0.685	0
10	33	26	0.965	0.988	0.685	0
11	16	20	0.962	0.986	0.685	0
12	14	22	0.959	0.984	0.685	0
13	15	22	0.955	0.981	0.685	0
14	16	16	0.951	0.978	0.685	0
15	10	14	0.95	0.973	0.685	0
16	3	8	0.94	0.967	0.685	0
17	11	13	0.934	0.959	0.685	0
18	7	17	0.927	0.948	0.685	0
19	5	6	0.919	0.933	0.685	0
20	10	20	0.909	0.914	0.685	0
21	3	10	0.898	0.889	0.685	0
22	1	5	0.886	0.857	0.685	0
23	1	3	0.872	0.816	0.685	0
24	0	1	0.856	0.764	0.685	0
25	0	1	0	0	0.685	0

Little Owyhee Allotment



 Allotment Boundary

 Roads

 Major Streams

 Contours

5 0 5 10 Miles



1:350000



DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
**COMMISSION FOR THE
PRESERVATION OF WILD HORSES**

123 W. Nye Lane, Room 248
Carson City, Nevada 89706-0818
Phone (702) 687-1400 • Fax (702) 687-6122

December 14, 1998

Mr. Colin P. Christensen
Assistant Field Manager, Renewable Resources
Winnemucca Field Office
5100 East Winnemucca Blvd.
Winnemucca, Nevada 89445

RE: Draft Little Owyhee Allotment Re-Evaluation Summary

Dear Pete,

Thank you for consulting the Commission for the Preservation of Wild Horses. The 1993 Multiple Use Decision and preceding stipulation of agreement established specific allotment objectives, monitoring and an appropriate management level for wild horses. As a multiple use decision, livestock management became the action to balance uses on the allotment to meet a natural ecological balance.

The draft document does not accurately validate the appropriate management level for wild horses with the criteria and data since the multiple use decision. While there is rationale to keep horse numbers at levels to survive a severe drought, there is also the basic assumption that intensive management of livestock and range improvements will increase the carrying capacity of the allotment.

In our review of the draft document, livestock use is being increased on summer pastures that were considered critical during the past allotment evaluation. Therefore, changes other than climatic are accountable for the increase in livestock use.

We encourage the District to validate the present appropriate management level with the data collected since 1993.

Colin P. Christensen
December 14, 1998
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We appreciate the District's population modeling of past gather and census data. Again, we would appreciate an analysis to validate the model with observed data since the last gather. Allowing a reasonable proportion of mid-age mares to exist in the herd at the next gather might assure the viability of the herd.

Sincerely,

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

CATHERINE BARCOMB
Administrator