



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WINNEMUCCA DISTRICT OFFICE
705 East 4th Street
Winnemucca, Nevada 89445



7/8/87

July 8, 1987

IN REPLY REFER TO:
4160.0
(NV-026.12)

CERTIFIED MAIL P020753810
RETURN RECEIPT REQUESTED

Charlie Amos
P.O. Box 448
Star Route 146
Winnemucca, NV 89445

Dear Mr. Amos:

The Paradise-Denio Resource Area is now entering into the final phase of the planning process, the implementation of the land use planning decisions as specified in the Management Framework Plan Step III. This phase includes establishing monitoring studies for the rangeland resources in the **Little Owyhee Allotment** to measure what extent the allotment management objectives are being accomplished.

The Little Owyhee Coordinated Resource Management Plan (CRMP) developed by CRMP Local No. 1 provided the framework and was used as a basis for preparing the Little Owyhee Monitoring Plan (enclosed). The allotment management issues and objectives identified by CRMP are addressed in the Little Owyhee Monitoring Plan (attached).

Monitoring studies have been established on the Little Owyhee Allotment and data collection will continue during the interim period (1985-1990) and until sufficient monitoring data is available. These studies will then be evaluated to determine if resource objectives are being achieved. Data collection and evaluations will continue throughout the short-term and long-term periods.

Your involvement to date has been greatly appreciated in the implementation of the CRMP Plan, establishing objectives, establishment of monitoring study locations, needed range improvements, and voluntary nonuse taken to reach management objectives.

At this time, the Bureau plans to gather additional monitoring data in accordance with the attached Little Owyhee Allotment Monitoring Plan. This is

necessary to determine the success of our chosen management scheme, as outlined in the Little Owyhee Coordinated Resource Management Plan, towards reaching our chosen objectives for the allotment.

To implement the gathering of additional monitoring data, the Bureau plans to initiate the following management actions which are necessary in order to collect the required data. These management actions are:

1. Studies will be conducted in accordance with the Nevada Rangeland Monitoring Task Force minimum standards. Types of monitoring studies to be used include use pattern mapping, key area utilization, trend, ecological condition, actual use, and climatological data collection.
2. Key area locations and key management objectives are listed on attached Table 1 and Tables 2:

Table 1. Monitoring Studies Locations and Base Data
Table 2. Key Management Area Objectives

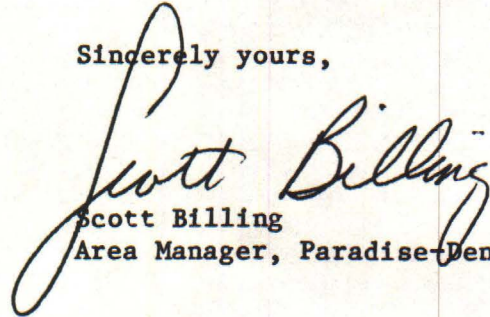
3. The evaluation of the monitoring data will consider all studies information collected and will be conducted through consultation with the affected interests. The evaluation of monitoring data will take place as scheduled in the Little Owyhee Allotment Monitoring Plan (attached).

Allotment evaluations will occur in three phases. During the interim, evaluate on the third year and at the end of the fifth year. Secondly, the short-term evaluation will occur in the eighth and at the end of ten years. The long-term evaluation will occur every six years after the short-term period, or on an as needed basis.

4. Your authorized level of grazing use will be your current agreed upon use of 27,800 AUMs. This use will be used as proposed in the Little Owyhee Coordinated Resource Management Plan, interim grazing schedule.
5. The CRMP outlines the interim and normal grazing schedule and formula for the allotment. The authorized level of grazing use will remain in effect until monitoring studies indicate there is a need for adjustment. Any adjustments to your authorized stocking level will be based upon the accomplishment or lack of accomplishment of the key management area objectives and CRMP objectives. These adjustments to grazing use may include, but are not limited to season-of-use, periods-of-use, animal numbers, kind and class of livestock, or a combination of these.
6. Any adjustments to grazing use will be phased in over a five-year implementation period, or sooner through agreement.
7. Wildlife - Wildlife in the allotment will be monitored by recognizing reasonable numbers demand for AUMs.
8. Wild Horses - Initial Appropriate Management Level (AML), as agreed to in the CRMP for the Little Owyhee is 200 adult animals.

We solicit your continued participation in the ongoing CRMP/monitoring effort. Your review of the Little Owyhee Monitoring Plan is appreciated. Please submit any comments or suggestions to our office within 30 days from receipt of the letter.

Sincerely yours,


Scott Billing
Area Manager, Paradise-Denio

Enclosure

cc: Nevada First Corp.
Nevada Dept. of Wildlife
Dawn Lappin
Helen Reilly
Sierra Club, Toiyabe Chapter

LITTLE OWYHEE ALLOTMENT
MONITORING PLAN

Paradise-Denio Resource Area
Winnemucca District Office
Bureau of Land Management

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Little Owyhee Monitoring Plan

I. Introduction

The purpose of this plan is to describe the monitoring program that will be implemented in the Little Owyhee Allotment as part of the Little Owyhee Coordinated Resource Management and Planning (CRMP) Plan (Winnemucca CRMP Local #1, 1982). It is intended to provide a basis for assessing the relative success of grazing and wildlife habitat management in achieving the specific objectives set forth in the CRMP Plan. Short and long-term management actions and/or decisions will be based upon the evaluation of the results of these monitoring studies.

The geographical area addressed in this plan includes over .5 million acres of public land located in northeastern Humboldt County and northwestern Elko County. The region is bounded by the Santa Rosa Mountains on the west, the South Fork of the Little Humboldt River on the south, and continues north to the Oregon and Idaho state lines forming a broad plateau known as the Little Owyhee Desert. (See Allotment Map in Appendix.)

Land ownership within the allotment is:

BLM - Winnemucca District	=	361,810	acres
BLM - Elko District	=	204,489	acres
Private	=	13,509	acres
TOTAL	=	579,808	acres

In general, elevation within the allotment increases in a westerly direction varying from 4,500 to 7,500 feet. Two vegetative complexes predominate the region: 1) the eastern half is characterized by shadscale (Atriplex confertifolia), budsage (Artemisia spinescens), Wyoming big sagebrush (Artemisia tridentata var. wyomingensis), ricegrass (Oryzopsis hymenoides), squirreltail (Sitanion hystrix), and cheatgrass (Bromus tectorum) and 2) the western half is dominated by low sagebrush (Artemisia arbuscula), bluegrass (Poa spp.), bluebunch wheatgrass (Agropyron spicatum), Thurber's needlegrass (Stipa thurberiana), squirreltail (Sitanion hystrix), and rabbitbrush (Chrysothamnus spp).

The Paradise-Denio Unit Resource Analysis (URA, BLM 1980) identified the following resources which should be considered in the management of this allotment: fisheries, watershed, wild horses, livestock grazing, riparian areas, wildlife habitat, recreation, mining, and cultural resources.

II. Public Involvement and Interdisciplinary Approach

The multidisciplinary approach that will be used in this plan is based on guidelines established by the Winnemucca District Coordinated Monitoring Plan (BLM 1984a, Sect. V). Because any single management

decision affects diverse resources, specialists and/or interested parties representing wildlife, wild horses, livestock grazing, watershed, range, and other interests will be involved in monitoring planning, placement of key management areas and studies, and evaluation of current studies.

Public participation to date has included: 1) Winnemucca CRMP Local #1, which recommended on February 12, 1982 a management plan for the Little Owyhee Allotment including objective #17, "Establish an on-going monitoring system for all objectives", and 2) Nevada First Corporation, base property owner to which grazing privileges are attached for the Little Owyhee Allotment.

Participation of public land users and other interests will be encouraged during all planning, initiating, and implementation of monitoring activities.

III. Historical Use

The CRMP process recommended the following stocking rates as objectives to meet forage demand for livestock, wildlife and wild horses:

	Livestock	44,882 AUMs
	Deer	200 AUMs
	Antelope	1,233 AUMs
(when introduced)	Bighorn Sheep	72 AUMs
	Wild Horses	3,840 AUMs
	TOTAL	50,227 AUMs

Normal livestock season of use has been from April 1 through September 30. Following is a summary of Actual Use for 1981-86.

<u>Year</u>	<u>AUMs</u>
1981	17,861
1982	4,910
1983	11,857
1984	16,943
1985	14,609
1986	8,213

IV. Allotment Issues

Major issues concerning the Little Owyhee Allotment as outlined by CRMP #1 are listed below (Winnemucca CRMP #1, 1982). The issues shown in this section are limited to resource problems that can be affected by grazing management and that can be evaluated through a monitoring system.

1. Proper long range stocking rate.
2. Present condition of the riparian habitats.
3. Wildlife problems as delineated by NDOW.
4. Watershed problems

5. Constraints placed upon livestock user and the riparian areas by the wilderness study area.
6. Lack of management and population control of wild horses.
7. Lack of range improvements.
8. Development of native meadows.

V. List of Allotment Objectives

Allotment objectives developed by the CRMP committee for the Little Owyhee Allotment are listed below (Winnemucca CRMP #1, 1982). These are objectives for which monitoring can be used to evaluate their status and are limited to resource concerns to which grazing management practices may be applied. Pertinent issues (listed under Sec. IV) which these objectives address are shown in parenthesis.

1. Establish proper long range stocking rates for livestock, wild horses, and wildlife (issue no. 1).
2. Establish proper initial stocking rates, season of use and pasture schedule for livestock (issue no. 1).
3. Establish a wild horse management plan.
 - a. Perpetuate a viable herd which is manageable and compatible with livestock operations, wildlife, and resources available (issues nos. 1, 6).
 - b. Preserve unique types and primitive mustang markings (issues no. 6).
 - c. Reduce internal barriers to herd migration within wild horse herd area (issue no. 6).
4. Improve condition of riparian habitats (issues nos. 2,5).
5. Improve ecological status on the allotment to a level which provides for optimum use by livestock, wild horses and wildlife (all issues).
6. Develop range improvement programs to:
 - a. Repair and up-grade current improvements (issue No. 8).
 - b. Increase range capacities to achieve objective #1 (issues nos. 1,8).
 - c. Control pests and noxious weeds (issues nos. 7,8).
 - d. Control watershed problems (issues nos. 4,8).
 - e. Enhance and protect wildlife areas (issues nos. 3,8).
7. Establish reasonable numbers for wildlife demand (issue no. 3).
8. Design grazing system to protect and enhance shrub, forb, winterfat, and meadow areas critical to wildlife populations (issues nos. 1, 2, 3, 9).

9. Protect sage grouse strutting grounds (issue no. 3).
10. Develop potential waterfowl habitats (issue no. 3).
11. Establish an on-going monitoring system for all objectives (all issues).

VI. Intensity and Type of Studies, and Key Management Area Objectives

A. Monitoring Objectives

Table 1 lists the types of monitoring studies established, their locations, and baseline ecological condition data.

Table 2 outlines specific interim, short-term and long-term objectives for each key management area.

Additional monitoring studies and key areas will be implemented on special habitat features including meadows, riparian, aspen and mahogany. When these studies are implemented, these tables will be revised to include the additional studies.

B. Allotment Categorization

The Selective Management categorization process in the Paradise-Denio Resource Area has identified the Little Owyhee as an "I" allotment. It is ranked number 1 in priority in the Resource Area's management/monitoring effort. See Winnemucca District Coordinated Monitoring Plan (BLM 1984a).

C. Intensity and Type of Studies

All studies will comply with the "Nevada Rangeland Monitoring Handbook" (N.R.T.F., 1984), the "Winnemucca District Coordinated Monitoring Plan" (BLM, 1984a), and BLM manuals (BLM 1984b, 1984c, 1984d, 1985).

1. Climatological

Climatological data (including daily temperature and precipitation) for the Paradise Valley station is available through the National Oceanic and Atmospheric Administration (N.O.A.A., 198_). Additional "local" climatic data may be obtained from selected locations using rain cans and/or hygrothermographs.

2. Actual Use

Actual use records will be submitted by the permittee(s) at the end of each grazing season. These records will include numbers, locations, and dates of livestock placement and removal, and other information that may be pertinent to the permittee's livestock operation or to grazing management.

Forage usage by wildlife (mule deer, antelope, bighorn sheep) will be figured based on annual population estimates as determined by the Nevada Department of Wildlife (NDOW). Wild horse forage use will be based on aerial census data. These combined data (livestock, wildlife and wild horses) will be used to figure overall forage consumption within the allotment.

3. Trend

Frequency will be used to detect changes in species composition over time. It provides a reliable and relatively unbiased estimate of the population. Data will be collected as described in "Nevada Rangeland Monitoring Handbook" (N.R.T.F., 1984). It will then be stored and analyzed using program "Object", a Bureau computer program, and statistical procedures as outlined by Nevada Range Task Force, 1984. As statistically significant changes in species composition are noted, the current ecological status will be reevaluated.

Key area objectives will be reviewed and/or adjusted based on ecological condition and measured trend status.

4. Utilization

The key forage plant method as described in the "Nevada Rangeland Monitoring Handbook" (N.R.T.F., 1984) will be used to collect wildlife, livestock, and wild horse utilization data. Wire cages will be placed on key areas as references for calibration purposes. Where key browse species (i.e., mtn. mahogany or bitterbrush) are prevalent, browse inventory procedures will be used in accordance with the Winnemucca District Wildlife Study Procedures (BLM, 1983).

5. Use Mapping

Use patterns will be mapped using utilization data as well as information obtained through consultation with permittees. Light (21-40%), moderate (41-60%), and heavy (61-80%) utilization classes will be used in mapping livestock use.

6. Ecological Status

Ecological status will be determined for each key area using the double sampling technique as described in the National Range Handbook (SCS, 1976). Ecological status is defined as the seral stage, i.e., early seral, mid-seral, late seral, or potential natural community (PNC), occupied by a community at a specified point in time.

The ecological site for a given location and community is based on species and life-form composition, vegetative production, soils, topography, and climate. Ecological site descriptions are written and developed by the Soil Conservation Service (SCS) for ecological sites within a Major Land Resource Area (MLRA).

7. Wild Horse and Burro Distribution

Range used by wild horses can effectively be monitored in pastures rested from livestock use, using the same studies implemented to monitor livestock use. When livestock and wild horses use the same pasture, differentiating the user can be difficult. Aerial census and other observation data will be helpful in determining areas of use and the relation to forage use. An aerial census of the Little Owyhee Herd Use Area will be done every third year at a minimum. The inventory data will also be used to plot distribution and document animal condition.

8. Wildlife Habitat

Key management areas are selected and established using an interdisciplinary (coordinated) approach. Hence, ecological status, trend, and utilization studies involving wildlife habitat can be evaluated using the methods described in 3, 4, and 6 (above) for most key areas. In cases where wildlife key areas and other studies must be established independently, these studies will be established and monitored in accordance with the Winnemucca District Wildlife Study Procedures (BLM, 1983).

VII. Schedule for Conducting Studies

Scheduling of studies will be done in accordance with monitoring priorities established in the Resource Area. Dates of interim, short-term, and long-term time periods are as follows:

Interim (first 5 years):	1986 to 1990
Short-term (first 10 years):	1986 to 1995
Long term (35 years):	1986 to 2020

Table 3 summarizes the schedule for when each type of monitoring study will be read during the interim and short-term periods. During the evaluation at the end of each time period, a new utilization and frequency schedule will be established.

A. Climatological

Climatological data is collected daily by NOAA for the Paradise Valley station. Data will be analyzed annually to estimate the effects of crop-year precipitation on herbage production and to correlate with forage utilization studies and general observations.

B. Actual Use

Actual use records will be submitted annually by each livestock operator and compiled in the allotment studies file. Wild horse actual use will be figured based on inventory totals and recorded in the allotment studies file. Wildlife forage use will be determined on an "as needed" basis.

C. Use Mapping

Livestock, wild horse and wildlife use patterns will be mapped initially prior to location and establishment of key management areas. Subsequently use pattern mapping will be performed to evaluate suitability of key area locations, the value of range improvements, and changes in management which may alter livestock distribution.

D. Frequency

1. Interim: All studies will be read the first and fifth year. Thereafter, frequency will be read when an evaluation is to be conducted or every fifth year.
2. Short-term: Read every fifth year.
3. Long-term: Read every fifth year until a statistically significant change in trend is noted. After short-term objectives have been accomplished, monitor every five years.

F. Ecological Status

Ecological status transects will be reevaluated upon measurement of a statistically significant change in frequency (trend) data to determine progress towards accomplishment of management objectives. Sampling should occur when the pasture involved has been rested.

G. Utilization

1. Interim - read whenever the pasture is used by livestock, wildlife or wild horses at the end of the scheduled grazing use, or as needed to differentiate between animal users.
2. Short-term - Studies will be read every year until allowable utilization levels have been achieved for a full grazing cycle. At this point future scheduling will be evaluated and determined.
3. Long-term - if allowable utilization levels have not been achieved, continue short-term scheduling.

VIII. Schedule for Conducting Allotment Evaluation

A. Evaluation Process

Monitoring data will be summarized and analyzed in accordance with the Winnemucca District Coordinated Monitoring Plan (BLM, 1984a). It will then be included into the appropriate section of the Little Owyhee Study file. The summarized data will be analyzed and interpreted by the area range conservationist and/or by those persons selected by the area supervisory range conservationist.

The Bureau computer program "Object" will be used to determine significant changes in percent frequency.

Analyses will be based on the attainment of key area and overall allotment objectives, identifying which objectives were not met and why the objectives were not met (if known). Analysis and interpretation will be done in consultation with the supervisory range conservationist and staff monitoring specialist. The supervisory range conservationist will submit a recommendation for further action (if required) to the Area Manager.

Subsequent analysis and changes to the grazing system or Monitoring Plan will be made on a case by case basis, as directed by the Area Manager and supervisory range conservationist in consultation with the permittees and other affected interests. In 1991 a formal management decision for the Little Owyhee Allotment will be issued based on the available data collected during the interim period. However, if no change is indicated then no decision will be issued and data will be collected according to the following schedule.

B. Evaluation Schedule

Evaluation schedules of monitoring data will be based on Resource Area priorities. A basic schedule is shown below, with specific dates to be filled in on approval of this plan and after a decision to monitor has been issued.

1. Interim: Evaluate on the third year and at the end of the first five years

1988	(year 3)
1990	(year 5)

2. Short-term: Evaluate at end of eight and tenth year.

1993	(year 8)
1995	(year 10)

3. Long-term: After interim and short-term, evaluate every five years.

2000	(year 15)
2005	(year 20)
2010	(year 25)
2015	(year 30)
2020	(year 35)

C. Management Alternatives

Table 4 lists possible management actions available to the BLM, when monitoring indicates objectives are met or not met on the allotment.

IX. Coordination of Work Force and Authority to Initiate Plan

The Paradise-Denio Resource Area range conservationist, wildlife biologist and/or these persons appointed by the Area Manager and supervisory range conservationist shall be responsible for the coordination and carrying out of this plan.

Monitoring and evaluation are authorized under various laws, including: The Taylor Grazing Act of June 28, 1934, as amended; The Federal Land Policy and Management Act of October 21, 1976, as amended; The Public Rangeland Improvement Act of October 25, 1978; and The National Environmental Policy Act of 1969.

Table 1. Monitoring Studies Locations and Baseline Data

Little Owyhee 1

KEY AREA NO. (PASTURE)	KEY AREA NAME	LOCATION	TYPE OF STUDY(S)	ECOLOGICAL SITE ¹	ECOLOGICAL STATUS ²
0101 (Antelope)	Greely Crossing	T.45N., R.42E., Sec. 32 SE SE	Trend Utilization	025x22N (cobble claypan 8-12" p.z.)	63% Late Seral
0102 (Antelope)	Forks Ranch	T.45N., R.41E., Sec. 22 NW NW	Trend Utilization	025x19N (loamy 8-10" p.z.)	63% Late Seral
0103 (Antelope)	Antelope Spring	T.45N., R.42E., Sec. 29 NE NE	Utilization	N/A	N/A
0201 (Calico)	Maiden Spring	T.45N., R.42E., Sec. 3 NE NE	Trend Utilization	025x19N (loamy 8-10" p.z.)	52% Late Seral
0202 (Calico)	Calico Ranch	T.46N., R.42E., Sec. 4 SE SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	29% Mid-Seral
0301 (Capitol)	Capitol Peak	T.46N., R.42E., Sec. 7 SE SE	Trend Utilization	025x14N (loamy 10-12" p.z.)	42% Mid-Seral
0401 (Fairbanks)	Fairbanks Creek	T.41N., R.42E., Sec. 4 SE NW	Utilization	N/A	N/A
0402 (Fairbanks)	Mud Spring	T.42N., R.42E., Sec. 21 NE SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	68% Late Seral
0403 (Fairbanks)	North Fairbanks	T.44N., R.42E., Sec. 8 SE NW	Trend Utilization	025x18N (claypan 10-12" p.z.)	57% Late Seral
0501 (Lake)	Northern Lake Creek	T.47N., R.45E., Sec. 32 NE NW	Trend Utilization	024x4N (silty 4-8" p.z.)	25% Early Seral
0502 (Lake)	McCleary No. 2A	T.42N., R.45E., Sec. 12, SW NE	Trend Utilization	025x19N (loamy 8-10" p.z.)	40% Mid-Seral
0503 (Lake)	McCleary No. 1	T.43N., R.46E., Sec. 7 SW SE	Utilization	N/A	N/A

¹ Ecological sites listed here can be referenced to SCS Ecological Site Descriptions (SCS 1983)

² Ecological status is referred to here in terms of the percent potential natural plant community (PNC) present on the site

Table 1. Monitoring Studies Locations and Baseline Data

Little Owyhee 2

KEY AREA NO. (PASTURE)	KEY AREA NAME	LOCATION	TYPE OF STUDY(S)	ECOLOGICAL SITE ¹	ECOLOGICAL STATUS ²
0504 (Lake)	Lake Creek	T.44N., R.45E., Sec. 36 SE SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	36% Mid-Seral
0505 (Lake)	Corral Lake	T.44N., R.46E., Sec. 4 SW SW	Utilization	N/A	N/A
0506 (Lake)	Pipeline	T.45N., R.45E., Sec. 13 NW SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	37% Mid-Seral
0507 (Lake)	McCleary No.2B	T.42N., R.45E., Sec. 12 NE NE	Utilization	N/A	N/A
0601 (Rock Springs)	Mahogany Ridge	T.47N., R.42E., Sec. 13 NE NE	Utilization	N/A	N/A
0602 (Rock Springs)	Piccolo	T.47N., R.42E., Sec. 30 SE SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	34% Mid-Seral
0603 (Rock Springs)	Rock Spring	T.47N., R.41E., Sec. 22 NE NW	Trend Utilization	025x14N (loamy 10-12" p.z.)	57% Late-Seral
0701 (Twin)	Fourmile	T.43N., R.44E., Sec. 36 SW SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	73% Late-Seral
0702 (Twin)	Button Lake	T.44N., R.44E., Sec. 23 SW SE	Trend Utilization	025x19N (loamy 8-10" p.z.)	33% Mid-Seral
0703 (Twin)	Maiden Pipeline	T.46N., R.43E., Sec. 16 NW NE	Trend Utilization	024x20N (Droughty loam 8-10" p.z.)	56% Late-Seral

¹ Ecological sites listed here can be referenced to SCS Ecological Site Descriptions (SCS 1983)² Ecological status is referred to here in terms of the percent potential natural plant community (PNC) present on the site

Table 2. Key Management Area Objectives

Little Owyhee 1

KEY AREA NUMBER	KEY SPECIES ¹	ALLOWABLE USE LEVELS ²	DESIRED ECOLOGICAL STATUS ³	INTERIM (5 YEARS)	SHORT TERM (10 YEARS)		LONG TERM (35 Years)				
				FREQUENCY TREND ⁴	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES			
0101	CREPI	50	Late Seral	Static	Static	Maintain	Late	Static	Maintain		
	SSTH ₂	40								Seral	Late Seral
	SIHY	40									
0102	CREPI	50	Late Seral	Static	Static	Maintain	Late	Static	Maintain		
	SIHY	40								Seral	Late Seral
	SSTH ₂	40									
0103	SIHY	40	<u>Utilization Study Only</u>								
	SSTH ₂	40									
0201	LUPIN	50	Late Seral	Static	Static	Maintain	Late	Static	Maintain		
	SIHY	40								Seral	Late Seral
	SSTH ₂	40									
0202	CREPI	50	Late Seral	Static	Upward	Mid-Seral		Upward	Late Seral		
	SIHY	40									
	SSTH ₂	40									

¹Plant abbreviation codes are used here. These codes are identified in the Plant List (See Appendix).

²Allowable use levels are the objectives established for utilization. They are derived from the Paradise-Denio Grazing Environmental Impact Statement (BLM 1981).

³This is the Seral stage that would have the greatest value for all resources (livestock, wild horses, and wildlife).

⁴Frequency identified as static or upward. If an important plant forage species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

Table 2. Key Management Area Objectives

Little Owyhee 2

KEY AREA NUMBER	KEY SPECIES ¹	ALLOWABLE USE LEVELS ²	DESIRED ECOLOGICAL STATUS ³	INTERIM (5 YEARS)	SHORT TERM (10 YEARS)		LONG TERM (35 Years)	
				FREQUENCY TREND ⁴	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES
0301	CREPI	40	Late Seral	Static	Upward	Late Seral	Upward	Maintain Late Seral
	FEID	40						
	STTH ₂	40						
0401	SIHY	40	<u>Utilization Study Only</u>					
0402	AGSP	50	Late Seral	Static	Static	Maintain Late Seral	Static	Maintain Late Seral
	CREPI	50						
	SIHY	40						
	STTH ₂	40						
0403	AGSP	50	Late Seral	Static	Static	Maintain Late Seral	Static	Maintain Late Seral
	CREPI	50						
	SIHY	40						
	STTH ₂	40						
0501	EULA ₅	50	Late Seral	Static	Upward	Mid-Seral	Upward	Late Seral
	ORHY	50						
	SIHY	40						

¹Plant abbreviation codes are used here. These codes are identified in the Plant List (See Appendix).

²Allowable use levels are the objectives established for utilization. They are derived from the Paradise-Denio Grazing Environmental Impact Statement (BLM 1981).

³This is the Seral stage that would have the greatest value for all resources (livestock, wild horses, and wildlife).

⁴Frequency identified as static or upward. If an important plant forage species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

Table 2. Key Management Area Objectives

Little Owyhee 3

KEY AREA NUMBER	KEY SPECIES ¹	ALLOWABLE USE LEVELS ²	DESIRED ECOLOGICAL STATUS ³	INTERIM (5 YEARS)	SHORT TERM (10 YEARS)		LONG TERM (35 Years)	
				FREQUENCY TREND ⁴	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES
0502	ORHY	50	Late Seral	Static	Upward	Mid-Seral	Upward	Late Seral
	POSE	50						
	SIHY	40						
0503	SIHY	40	<u>Utilization Study Only</u>					
	STTH ₂	40						
0504	ORHY	50	Late Seral	Static	Upward	Mid-Seral	Upward	Late Seral
	POSE	50						
	SIHY	40						
0505	ORHY	50	<u>Utilization Study Only</u>					
	SIHY	40						
0506	EULA ₅	50	Late Seral	Static	Upward	Mid-Seral	Upward	Late Seral
	ORHY	50						
	SIHY	40						

¹Plant abbreviation codes are used here. These codes are identified in the Plant List (See Appendix).

²Allowable use levels are the objectives established for utilization. They are derived from the Paradise-Denio Grazing Environmental Impact Statement (BLM 1981).

³This is the Seral stage that would have the greatest value for all resources (livestock, wild horses, and wildlife).

⁴Frequency identified as static or upward. If an important plant forage species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

Table 2. Key Management Area Objectives

Little Owyhee 4

KEY AREA NUMBER	KEY SPECIES ¹	ALLOWABLE USE LEVELS ²	DESIRED ECOLOGICAL STATUS ³	INTERIM (5 YEARS)	SHORT TERM (10 YEARS)	LONG TERM (35 Years)		
				FREQUENCY TREND ⁴	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES	FREQUENCY TREND	ECOLOGICAL STATUS OBJECTIVES
0507	ORHY	50	<u>Utilization Study Only</u>					
	STTH ₂	40						
	SIHY	40						
0601	FEID	40	<u>Utilization Study Only</u>					
	STTH ₂	40						
0602	CREPI	50	Late Seral	Static	Upward	Mid Seral	Upward	Late Seral
	ELCI	50						
	STTH ₂	40						
0603	CREPI	50	Late Seral	Static	Static	Maintain Late Seral	Static	Maintain Late Seral
	SIHY	40						
	STTH ₂	40						
0701	AGSP	50	Late Seral	Static	Static	Maintain Late Seral	Static	Maintain Late Seral
	CREPI	50						
	STTH ₂	40						

¹Plant abbreviation codes are used here. These codes are identified in the Plant List (See Appendix).

²Allowable use levels are the objectives established for utilization. They are derived from the Paradise-Denio Grazing Environmental Impact Statement (BLM 1981).

³This is the Seral stage that would have the greatest value for all resources (livestock, wild horses, and wildlife).

⁴Frequency identified as static or upward. If an important plant forage species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

Table 2. Key Management Area Objectives

Little Owyhee 5

KEY AREA NUMBER	KEY SPECIES ¹	ALLOWABLE USE LEVELS ²	DESIRED ECOLOGICAL STATUS ³	INTERIM (5 YEARS)	SHORT TERM (10 YEARS)	LONG TERM (35 Years)		
				FREQUENCY TREND ⁴	FREQUENCY TREND ECOLOGICAL STATUS OBJECTIVES	FREQUENCY TREND ECOLOGICAL STATUS OBJECTIVES		
0702	CREPI	50	Late Seral	Static	Upward	Mid-Seral	Upward	Late Seral
	ORHY	50						
	SIHY	40						
0703	ERIOG	50	Late Seral	Static	Static	Maintain Late Seral	Static	Maintain Late Seral
	ORHY	50						
	SIHY	40						

¹Plant abbreviation codes are used here. These codes are identified in the Plant List (See Appendix).

²Allowable use levels are the objectives established for utilization. They are derived from the Paradise-Denio Grazing Environmental Impact Statement (BLM 1981).

³This is the Seral stage that would have the greatest value for all resources (livestock, wild horses, and wildlife).

⁴Frequency identified as static or upward. If an important plant forage species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

Table 3. Schedule for Reading Monitoring Studies

Little Owyhee 1

KEY AREA NO.	YEAR										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
0101	X	X				X					X
0102	X	X				X					X
0201	X	X				X					X
0202	X	X				X					X
0301	X	X				X					X
0402	X	X				X					X
0403	X	X				X					X
0501	X	X				X					X
0502	X	X				X					X
0504	X	X				X					X
0506	X	X				X					X
0602	X	X				X					X
0603	X	X				X					X
0701	X	X				X					X
0702	X	X				X					X
0703	X	X				X					X

FREQUENCY Based on phenology stages of key and associated species, frequency studies should generally be read from May to July, allowing for seasonal variation and site location.

UTILIZATION

Utilization checks and use pattern mapping should be done when the livestock are removed or the end of the growing season, whichever comes first, or both if time and manpower permit.

TABLE 4. POSSIBLE MANAGEMENT ACTIONS THROUGH MONITORING EVALUATION

Evaluation Period ¹	Livestock Distribution ²	Climate ³	Utilization Objectives ⁴	Frequency Objectives ¹	Ecological Status Objectives ¹	Management Actions ⁵
Interim	Good	Favorable	AUL	N/A	N/A	May indicate understocking. Adjust livestock numbers or periods-of-use.
	Poor	Favorable	AUL	N/A	N/A	Indicates poor distribution. Change distribution patterns through range improvements, saltings, etc.
	Good	Unfavorable	AUL	N/A	N/A	Indicates unfavorable climatic conditions. If conditions exist for more than 2 years adjust livestock numbers or periods-of-use until climatic conditions, range condition, and utilization are favorable.
	Good	Favorable	AUL	N/A	N/A	May indicate overstocking. Adjust livestock numbers or periods-of-use.
Short-term and Long-term	Good	Favorable	AUL	Met	Met	Indicates understocking. Adjust livestock numbers or periods-of-use.
	Poor	Favorable	AUL	Met	Met	Indicates poor distribution. Change distribution patterns through range improvements, salting, etc.
	Poor	Favorable	AUL	Met	Met	Indicates poor distribution. Change distribution patterns.
	Good	Unfavorable	AUL	Not Met	Not Met	Indicates unfavorable climatic conditions. If conditions exist for more than two years, adjust livestock numbers or periods-of-use until monitoring indicates conditions are more favorable.
	Good	Favorable	AUL	Not Met	Not Met	May indicate overstocking. Adjust livestock numbers or periods-of-use.
	Good	Favorable	AUL	Not Met	Not Met	Trend and condition objectives not being met, for unknown reasons. Reevaluate monitoring procedures and/or intensify monitoring.

¹ Specific time frames and objectives are outlined in Section VI of this plan.

² Distribution is identified as "good" (livestock well distributed throughout pasture) and as "poor" (livestock concentrated near riparian, watering sites, on flats, etc.).

³ Climate is identified as "favorable" or "unfavorable." Favorable and unfavorable conditions can be derived from deviations in normal temperature and precipitation patterns.

⁴ AUL - less than the allowable use levels on any key species as shown in the monitoring plan.

AUL - greater than the allowable use levels on any key species as shown in the monitoring plan.

⁵ This column shows the conclusions that can be derived from the combination of monitoring results from the other columns, as well as what management actions could be used to help the range meet monitoring objectives.

APPENDIX 1. Glossary of Terms ¹

Allowable use level (AUL): Percent of above-ground plant material that may be removed by grazing animals established to achieve management objectives. Also referred to as "proper use factor (PUF)." See all "usable forage."

Climax: See "potential natural community."

Double sampling method: Study method used for determining the plant composition of a vegetative community. It involves a transect where several plots are estimated as to the weight per species of current year's forage production, then representative plants are clipped and weighed to determine actual weight of material being produced (SCS 1976).

Ecological Site: A land designation identifying a specific potential natural plant community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and respond to management (SRM 1983). Also referred to as "range site" and "ecological range site."

Ecological Status: The present state of a vegetation and soil surface protection of an ecological site related to the potential natural plant community for that site (SRM 1983). Ecological status may be expressed in terms of a seral stage or as a percentage of species found in the potential natural community. This term is also referred to as "ecological range condition."

Frequency: A numerical expression of the presence or absence of individuals of a species in a population (BLM 1983). Frequency is shown as a percentage of a species occurrence within a series of samples (see quadrat-frequency method).

Key forage plant method: Study method used to determine utilization of key plant species. The method involves a transect where several plots are estimated as to the use being made on plants within each plot. In order to eliminate small variations in figures between different observers viewing the same plot, utilization classes are used instead of specific percentages (BLM 1981).

Key management area or key area: An area used as a monitoring point of grazing use because of its location, use and grazing value (BLM 1983). It is assumed that the key area will reflect the impacts of management over the rangeland.

Key species: (1) a forage plant species whose use serves as an indicator to the degree of use on other species or (2) a plant species that because of its importance, be considered in a management program (BLM 1983a).

Phenological stage: Refers to the growth stage of individual plants.

Plant Code: An abbreviated method of identifying plant species. The method takes the first two letters of the genus (e.g., SI from Sitanion) and the first two letters of the species (e.g., HY from hysterix) to form the plant code (e.g., SIHY = Sitanion hysterix or bottlebrush squirreltail). When more than one plant species has the same code, numbers are used to

distinguish between them. The first five letters of a genus may be used if the species is not known (e.g., ARTEM = Artemisia sp or sagebrush). The SCS has published a standardized list of plant codes and names (SCS 1982).

Plant Community: An assemblage of several species of plants in a common arrangement. Communities are usually expressed in terms of their most visually dominant plant species (e.g., Wyoming big sagebrush-bottlebrush squirreltail community, shadscale-bud sagebrush community).

Potential natural community (PNC): The plant community that would eventually become established under current environmental conditions without human interference (SRM 1983). PNC differs from "climax" in that climax is composed entirely of native plant species while PNC also takes into effect certain introduced plant species.

Quadrat-frequency method: Study method used to determine frequency. It uses a series of transects ran off a center line (baseline), each transect being composed of plots (quadrats) placed one after another in a line (BLM 1981). Frequency is expressed as the number of plots where a species is represented (number of plants of a species within each plot is not used) compared to the total number of plots in the study [e.g., of 50 out of 200 plots contained squirreltail, the frequency of squirreltail is (50 divided by 200) X 100 or 25%].

Seral stage or seral community: A plant community that represents a stage in an ecological site development as it approaches the potential natural community. Four seral stages are commonly used, each stage determined by the percent of the potential natural community represented in a particular plant community:

early seral	=	0-25% PNC
mid-seral	=	26-50%
late seral	=	51-75%
potential natural community	=	76-100%

Trend: The direction of change in ecological status or resource value observed over time (SRM 1983).

Usable forage: That portion of forage that can be grazed without damage to the basic resources (SRM 1983). Allowable use levels are generally based on usable forage.

Utilization: The amount of plant material grazed off by animals. Generally referred to in terms of % utilization or by utilization classes:

<u>Class</u>	<u>% Utilization</u>
Slight	0-20
Light	21-40
Moderate	41-60
Heavy	61-80
Severe	81-100%

Utilization cage: A wire cage used to protect a plot from being grazed. Cages are placed on key areas so observers doing utilization studies will have ungrazed plants for calibration.

APPENDIX 2. Plant List¹

<u>Plant Code</u>	<u>Scientific Name</u>	<u>Common Name</u>
BRTE	<u>Bromus tectorum</u>	Cheatgrass
AGSP	<u>Agropyron spicatum</u>	Bluebunch wheatgrass
ARAR ₅	<u>Artemisia arbuscula</u>	Low sagebrush
ARSP ₈	<u>Artemisia spinescens</u>	Bud sagebrush
ARTR	<u>Artemisia tridentata</u>	Big sagebrush
ATCO	<u>Atriplex confertifolia</u>	Shadscale
CHRY	<u>Chrysothamnus spp.</u>	Rabbitbrush
CREPI	<u>Crepis spp.</u>	Hawks beard
ELCI	<u>Elymus cinereus</u>	Basin wildrye
ERIOG	<u>Eriogonum spp.</u>	Eriogonum
EULA ₅	<u>Eurotia lanata</u>	Winterfat (white sage)
FEID	<u>Festuca idahoensis</u>	Idaho fescue
LUPIN	<u>Lupine spp.</u>	Lupine
ORHY	<u>Oryzopsis hymenoides</u>	Indian ricegrass
POTR ₅	<u>Populus tremuloides</u>	Trembling aspen
POA	<u>Poa spp.</u>	Bluegrass
SIHY	<u>Sitanion hysterix</u>	Bottlebrush squirreltail
STTH ₂	<u>Stipa thurberiana</u>	Thurber's needlegrass
SYOR	<u>Symphoricarpos oreophilus</u>	Mountain snowberry

¹ Codes and scientific names based on SCS (1982).

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