UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Winnemucca District Office
705 East Fourth Street
Winnemucca, Nevada 89445

In reply refer to:

4100 (NV 02.60)

January 30, 1989

Memorandum

To: District Manager, Winnemucca

From: Area Manager, Paradise-Denio R.A.

Subject: Management Analysis of Allotment Evaluations

BACKGROUND

With the completion in 1983 of the Rangeland Program Summary, the Resource Area started the implementation of the Grazing portion of it's Land Use Plan. The strategy used for this implementation was to work through the Coordinated Resource Management and Planning process to identify specific allotment issues, develop monitoring strategies, gather information, use the monitoring data to develop allotment evaluations and then use the evaluations to formulate livestock use agreements or issue decisions to adjust management as needed. This was a 5 year process which we intended to use for our "I" and "M" allotments. The Resource Area started this process, but found out in 1986 that the intent of the 5 years was not a process but was a requirement to have agreements or decisions for all "I" and "M" allotments done within 5 years after issuance of the Rangeland Program Summary.

MONITORING DATA

Needless to say, this left the Resource Area in a situation that we did not have current data on a large percentage of our allotments. We did the best we could to collect monitoring data on all "I" and "M" allotments during the 1987 and 1988 field seasons.

The Resource Area issued a letter to all permittees on February 3, 1988 informing them that the evaluation process was occurring and that we would like to include any data that they may have in this process.

In January of 1988, the District Manager met with the Regional Office Staff of NDOW and discussed the evaluation process. He asked that they provide any information or data that we could use in our evaluation process. He also indicated to them that they should let us know in the review process if

wildlife data was correctly represented or if information had been left out.

In April, 1988 the permittees were invited to meetings that Jeff Rawson and I held in Denio, Winnemucca, Orovada and Paradise Valley. The purpose of these meetings was to inform the permittees about the evaluation process, utilization levels, why we were doing the evaluations and the timeframes we were working with.

EVALUATION PROCESS

My biggest concern throughout the process was the quantification of Land Use Plan objectives to specific allotment objectives. The specific allotment objectives seem to be generic in nature for the Resource Area, but we do have similar forage conditions and similar conflicts throughout the Resource Area.

The evaluation document presents data that we have collected or that was presented to us. I have also allowed the specialists to include professional opinion based on observations they have made in the field. If these observations were not documented, they were not carried forward into the management evaluation section of the document and were not used as a basis for any conclusions or recommendations for livestock management in the livestock use agreements or future decisions. My staff and I also reviewed all documented data, and if there seemed to be a problem with the data, it was not carried forward into the management evaluation section.

I will use the undocumented observations and the questionable data as a basis for future monitoring schemes to collect more data to substantiate or dismiss problem areas or questionable data.

The documents were sent to the permittees and NDOW for review purposes. Copies of evaluations were also sent to USFWS if they contained information about the Lahontan Cutthroat trout or other threatened species.

I elected to send documents to the permittees and the USFWS without any recommendation section, so that they would not get sighted in on the recommendations and forget to formulate actions of their own to solve any identified problems. This worked well.

The evaluation documents are left in draft form as I feel that the Livestock Use Agreement or any future decision will be the finalization of the evaluation process. Permittee comments, NDOW comments or other written comments will be filed in the monitoring file for future review during the next evaluation and consideration in any adjustment of grazing management to be made at this time.

CONSULTATION

I am disappointed in the responses that we received from NDOW. Their comments did not address specific problems but were directed more toward our planning process and implementation of the 1978 range survey. This suggestion was disregarded as Bureau policy is not to base changes on one time surveys. On many allotments, new data was not conclusive enough to initiate changes in livestock numbers.

Our consultation process went well with all the permittees. They were willing to work with us by discussing the evaluation and advising us of information that was not correct.

The permittees were encouraged to formalize in writing their comments about the evaluation.

As we discussed the evaluations, there seemed to be three major topics of concern:

1) Utilization levels
2) Riparian habitat
3) Streams identified for fisheries management

The concern for utilization levels stems from the Forest Service action in the Austin area where utilization levels were set up as allowable use levels requiring permittees to remove livestock when the utilization in a certain area was reached. We explained to the permittees that the utilization levels in their evaluations are target levels and that we did not consider them to be allowable use levels dictating livestock removals on a seasonal basis.

The riparian habitat questions seemed to center on what is a riparian area and where are the areas located. My staff used information from the 1977 and 1978 Special Habitat Features Inventory to develop a general location map of riparian areas and other special habitat features. This map was sent to the permittee along with the allotment evaluation. The one problem with this approach is that I can not find any documentation that indicates how the term riparian was defined. The area Supervisory Range Conservationist and I took the time to visit a few of the allotments and visit areas identified in the inventory that had been labeled riparian. In several instances I had to agree with the permittee that a riparian area did not exist.

Streams identified for fisheries presented another problem for us. Alot of permittees were very willing to relate to us which streams had been fishable over the past years and which streams dried up almost every year early in the summer. Their concern was trying to manage fisheries habitat on a stream that goes dry. There was also concern with the stream survey data and the overall percent of optimum calculation that was derived from the survey. The permittees wanted to know why pool riffle ratios are averaged in the optimum rating. The livestock industry questions how livestock can have an effect on pool riffle ratios. It appears that the Bureau needs to develop some sort of process that measures stream potential for supporting a fisheries.

LIVESTOCK USE AGREEMENTS

After holding consultation sessions with 20-30 percent of the permittees we discussed possible solutions to address the concerns of the permittees.

To help resolve the concerns of utilization levels, we agreed that it would be best to include a statement in the Livestock Use Agreements that supported our discussion that the utilization level was a target level to be evaluated over a period of time and not on allowable use level for seasonal adjustment of livestock.

This statement has helped resolve some of the concern over utilization levels, but now we face the question of what is the proper utilization level. Proper utilization levels will be developed for individual allotments. Consideration will be given to the following:

1) type of forage
2) type of grazing system
3) time of year forage is used
4) type and amount of data that has been collected on the allotment

The riparian issue will be resolved by field examination with the permittee of the areas that we consider riparian. We will use the definition of riparian as stated by Director Burford in his riparian policy statement dated January 22, 1987. I may also have to drop the riparian acreage figure from the riparian objective, but do not feel it will hinder management of riparian areas.

To resolve the concern for the fishable streams, I revisited the P-D EIS and reviewed the information on fisheries. I have elected to include stream objectives for those streams that are listed as protectable for fisheries in Appendix F, Table F-1, page 6-24 of the EIS. As time goes on and we can determine that other steams have potential to support a fisheries habitat, we will develop objectives for them. I also elected to use a 50% streambank utilization level as a starting point for our objectives except on streams that contain the Lahontan Cutthroat trout. I will remain with 30% at this time to help ensure good to excellent habitat for this threatened species.

Once the Livestock Use Agreement was drafted using the above guidelines, it was sent to the permittee and further negotiations will be held.

At this time, most permittees have worked with us to establish and document livestock use operations. They have been willing to adjust grazing schedules, provide more livestock management and acknowledge where problem areas exist. As of this date, the main concern for signing the Livestock Use Agreement is that they feel their signature indicates full agreement with the specific allotment objectives. At this time they do not agree with all of the allotment objectives. We have tried to word the agreement to indicate only that the allotment objectives have been discussed. We are not asking the permittees to agree with us, only to acknowledge that they know what we are managing for.

Scott Billing

September 8, 1988

Jackson Mountain and Bottle Creek
Allotment Evaluation Summary

I. Allotment Information

A. Jackson Mountain Allotment, Allotment Number 0058
Priority 21, Category M
Permittee - DeLong Ranches Inc.
Bottle Creek Allotment, Allotment Number 0078
Priority 21, Category M
Permittee - Tim Delong Cattle Co.

There are two use areas within the boundaries of the Jackson Mountain Allotment. The Jackson Mountain use area is used solely by DeLong Ranches, Inc. and the Bottle Creek use area by Tim DeLong Cattle Company.

B. Allotment Description - Refer to Denio Planning Unit Resource Analysis D-RM 113 to D-RM 120 and the Paradise-Denio Environmental Impact Statement for specific details. These documents are located in the Winnemucca District Office. The following information is a brief description of the allotments:

The Jackson Mountain allotment contains 485,207 acres of public land and 11,620 acres of private land. The eastern boundary of the allotment is located west of the Blue Mountain allotment, which is approximately 25 miles due west of Winnemucca, Nevada. It is bounded on the west by the Black Rock Desert. The Jackson Mountains are located in the western portion and the desert valley is in the eastern portion. Elevation varies from 4,000' to 8,900'. The lower elevations are dominated by greasewood and shadscale. The intermediate elevation contains big sagebrush, shadscale and grass. The higher areas are dominated by low sage - grass associations. Grass species include: Bottlebrush squirreltail, Basin wild rye, and Bluebunch wheatgrass. Soils are basalt and granitic in origin.

C. Livestock Use

1.

	Jackson Mtn.	Bottle Creek	Total
a. Total preference	11,880	4,574	16,454
b. Active preference	8,857	3,409	12,266
c. Suspended preference	3,023	1,165	4,188

2. Season of Use

a. Jackson Mountain year round
b. Bottle Creek 4/1 to 12/31

3. Kind and Class of Livestock

a. Jackson Mountain Cattle (cow/calf)
b. Bottle Creek Cattle (cow/calf)

4. Grazing System

a. Jackson Mountains

There is no established grazing system for the Jackson Mountain allotment. Grazing is year long.

b. Bottle Creek

There is no established grazing system for the Bottle Creek allotment. Use usually begins approximately 4/1 and concludes 12/31. The eastern portion of this allotment is dominated by expanses of sand dunes.

5. a. In 1969, DeLong Ranches, Inc. acquired the grazing privileges, base property and AUM's attached to it in the Bottle Creek use area from Ralph and Julia Aitken.

b. In early 1984, DeLong Ranches, Inc. sold the base property for Bottle Creek Ranch to Tim DeLong Cattle Company. The 1985 total preference reflects this transaction.

D. Allotment Objectives

1. Short Term Objectives

a. Utilization of key streambank riparian plant species shall not exceed 30% on Bottle, Jackson, Trout, Big, and Mary Sloan creeks except where adjusted by an approved activity plan. (WL 1.1, WL 1.2)

b. Utilization of key plant species in wetland riparian habitats shall not exceed 50% except where adjusted by an approved activity plan. (WL 1.3, WL 1.5, WL 1.28)

c. Utilization of key plant species in upland habitats shall not exceed 50% except where adjusted by an approved activity plan. (RM 1.11, WL 1.2, WL 1.4, WL 1.28)

2. Long Term Objectives

a. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 448 AUMs for mule deer, 72 AUMs for pronghorn and 346 AUMs for bighorn sheep. (WL 1.2, WL 1.4)

1) Improve to and maintain 122,135 acres in good to excellent mule deer habitat condition.

2) Improve to and maintain 225,421 acres in fair or good pronghorn habitat condition.

3) Improve to and maintain 60,965 acres in good to excellent bighorn sheep habitat condition.

b. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 12,266 AUMs. (RM 1.11)

c. Improve range condition from poor to fair on 475,523 acres and from fair to good on 9,684 acres. [1] (RM 1.4)

d. Maintain and improve free roaming behavior of wild horses by protecting and enhancing their home ranges. (WHB 1.1, WHB 1.5).

1) Manage, maintain and improve public rangeland conditions to provide an initial level of 1,920 AUMs of forage on a sustained yield basis for 160 wild horses.

2) Maintain and improve wild horse habitat by assuring free access to water.

e. Improve to and maintain 9 acres of ceanothus habitat types in good condition. [1] (WL 1.4)

f. Improve to and maintain 467 acres of mahogany habitat types in good condition. [1] (WL 1.3, F 1.2)

g. Improve to and maintain 275 acres of aspen habitat types in good condition. [1] (WL 1.3, F 1.3)

h. Improve to and maintain 1,129 acres of riparian and meadow habitat types in good condition. [1] (WL 1.5)

i. Improve to or maintain the following stream habitat conditions from 72% on Big Creek, 38% on Bottle, 55% on Mary Sloan, 57% on Trout and 53% on Jackson creeks to an overall optimum to 60% or above. (WLA 1.1, WLA 1.2)

1) Streambank cover 60% or above.
2) Streambank stability 60% or above.
3) Maximum summer water temperatures below 70°F.
4) Sedimentation below 10%.

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

k. 1) Improve to and maintain the water quality of Jackson, Trout, Big and Mary Sloan Creeks to the state criteria set for the following beneficial uses: livestock drinking water, cold water aquatic life, wading and wildlife propagation. (W 1.1)

2) Improve or maintain the water quality of Bottle Creek from its point of origin to the first diversion point to the Nevada Class A water standards. (W 1.11)

[1] The condition objective will be redefined/quantified to obtain a particular ecological status when site potential and identified uses are combined to meet vegetative objectives.

E. Monitoring and Inventory Data

1. Climate

a. Climatological Data (NOAA - 1983-87 Kings River Valley Station)

Precipitation in Inches

Year	Growing Season	Annual Total
1983	7.72	16.83
1984	3.00 (Partial Data)	No Data
1985	2.05	6.35
1986	3.75 (Partial Data)	No Data
1987	4.42	Pending

b. Climatological Data (NOAA 1983-1987 - Leonard Creek Station)

Year	Growing Season	Annual Total
1983	6.94	17.74 M
1984	3.00	8.50
1985	2.48	(M)
1986	4.85	9.60
1987	5.42	(M)

M - Insufficient or partial data

1) Kings River Station is located approximately 20 miles north of the northeast corner of the Bottle Creek use area.

2) The Leonard Creek Station is located approximately 15 miles west of the western boundary of the Jackson Mountain use area.

2. Livesto[redacted]Use

Year	Jackson Mountains	Bottle Creek	Total
1987	8,668	2,939*	11,607
1986	8,503	3,400	11,903
1985	8,847	3,011*	11,858
1984	12,523		12,523
1983	12,523		12,523

* Actual use records submitted by permittee.
1985 is year when Bottle Creek use area base property was sold by DeLong Ranches, inc. to Tim DeLong Cattle Company.

3. Utilization

Utilization data is very limited. Data was collected in 1982 and 1987.

a. Jackson Mountains

Utilization was checked in January 1982 in the vicinity of Salt Water Spring. Use was slight (0-20%) on ORHY in the dune area. ELCI was used light (21-40%). DIST had slight to light use.

b. Bottle Creek

On September 9, 1987, observations were made on utilization in a portion of the Bottle Creek use area. The area included part of the eastern slope of Buff Peak, the western portion of Water Canyon, White Peaks, Halburg Mtn. and the upper end of Bottle Creek including its headwaters to the west. The area around the Red Ore and Baldwin Mines was also observed.

Severe use (81-100%) was noted on all key grass species and browse in Bottle Creek. This area extended to approximately 500 yards on both sides of the creek (north and south) and then gradually changed to heavy use (61-80%) up to the fenceline on the north side, and to the steepest slopes on the south side. Severe use was also noted in Water Canyon and on stringer meadows in the vicinity of the mines. The low slopes on the eastern side of this area towards the Bottle Creek road received moderate use (41-60%).

Key species noted throughout: Uplands: POSE, SIHY, FEID:, AGROP, $STTH_2$, ELCI. Meadows: PONE, POPR, HOBR.

4. Trend

Trend data is not available for either use areas. However, the EIS indicates a downward trend.

5. Ecologi[redacted] Site Inventory (ESI) [redacted]

Studies will not be initiated on either use area until the current soil survey in this area has been completed.

6. Stream Survey

Stream	Year	Overall Optimum	% Sedimentation	Bank Cover	Bank Stability
Big Creek	1976	72	15	86	84
Bottle Cr.	1976	57	22	81	56
	1987	38	22	49	53
Mary Sloan Cr.	1976	55	33	75	90
Trout Cr.	1976	45	40	89	70
	1987	57	23	81	77
Jackson Cr.	1976	66	32	64	71
	1978	60	22	66	66
	1980	58	12	78	74
	1982	40	14.0	54	34
	1984	48	13.0	51	34
	1986	58	9.0	55	58

7. Wildlife Habitat Inventory

a. Priority Species: Mule deer, sage grouse, trout, pronghorn, bighorn sheep

b. Other Game Species: Chukar and Hungarian partridge, Valley Quail, and Mountain Lion.

c. Special habitat features

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

2) Riparian and meadow habitat - 1,129 acres located predominantly in the northern portion of the Jackson Mountain Range.

Aspen - 275 acres located in the northern part of the Jackson Range.

Curlleaf mountain mahogany - 467 acres located scattered throughout the mountain range at the higher elevations usually in association with juniper.

Ceanothus - 9 acres scattered throughout the northern portion of the allotment at higher elevations.

Bitterbrush - Identified as a component in 1,435 acres of various ecological sites.

Serviceberry - Identified as a component in 1,357 acres of various ecological sites.

Mountain browse - 13,793 acres located throughout the allotment generally in the northern portion of the allotment. Antelope bitterbrush, serviceberry, snowberry, and currant are the dominant mountain browse species in most of this area.

3) The inventory recorded the following in 1977:

The southern end of the Jackson Mountains allotment has limited riparian habitat. The riparian habitat present had received heavy utilization by livestock and wet areas were trampled and punched. Excessive erosion was noted, and washes and gullies were prevalent.

The King Lear Peak area of the mountain range had received heavy livestock use at the lower elevations of the east side while moderate use on the west side. Riparian habitat was utilized especially hard in all accessible locations, with trampling and punching being present in most wet areas. Utilization of upland habitats was also noted as being heavy at the lower elevations. The higher elevations also received livestock use in all accessible area, but condition and presence of forage was better. The Louse Creek area had received moderate livestock use and appeared to be a wintering area for mule deer. Bitterbrush was common in this area.

The area encompassed by Jackson Creek and Mary Sloan Creek was also receiving heavy livestock use in accessible locations. Use on some bitterbrush and serviceberry was heavy. Riparian habitat showed damage from trampling and punching, as well as moderate to heavy livestock utilization. The higher, inaccessible locations exhibited very good perennial grass composition and little livestock use. The riparian vegetation on Jackson Creek was receiving moderate to heavy use and was in only fair condition. The springs and aspen at the head of the stream receiving the same amount of use, especially on very limited aspen reproduction. Mary Sloan Creek had received light livestock use in the lower stretches, but use was heavy in the upper basin. Trout were observed in this stream.

The Trout Creek Spur area had also received heavy livestock use in accessible areas. Trout Creek was grazed moderate to heavy, with trampling and punching present in all wet areas. Meadows associated with spring sources had also received heavy use. The entire large meadow complex on top of the Spur was in poor condition. Severe livestock use was occurring, and had resulted in headcuts and punched wet areas. There were also large areas of the meadow which were reduced to bare ground. This meadow complex had been substantially reduced in size due to these factors. Big Creek had received light to moderate livestock use with the riparian habitat being in fair to good condition. Riparian habitat in the Burro Bills drainage was receiving moderate use.

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

Additional Observations - A large portion of this allotment has been inspected almost yearly by the Area Wildlife Biologist. The observations made in 1977 are still accurate at the present time, with a couple of exceptions. These exceptions are: 1) Due to concern with the riparian habitat on Trout Creek, the permittee has attempted to reduce use on this stream. This has generally been successful, with good aspen reproduction that is now replenishing some stands. However, in 1988, use of aspen and other riparian species is again heavy to severe. Use on meadows was reduced in this area to some extent, but is again heavy in 1988. Use remained heavy on the higher reaches of the stream, due primarily to the narrowness of the canyon which livestock are trailed through. 2) The riparian habitat along Jackson Creek also shows some improvement with some reduced livestock use, but the degree is slight.

Severe problems still exist, such as the meadow complex on the top of the Trout Creek Spur. The Bottle Creek drainage has high potential for improvement, but continues to receive heavy cattle use and deteriorating riparian habitat. Mule deer winter range in the Bottle Creek area and on the east side of King Lear Peak continues to receive heavy to severe cattle use. The area on the east side of King Lear Peak is also being

used as winter habitat for bighorn sheep, and the heavy use in this area by livestock is impacting that habitat.

Sage grouse strutting grounds and brooding areas have not been identified on this allotment. A wintering area is identified south of Bottle Creek. General distribution for sage grouse encompasses the majority of the allotment.

4) Wildlife Use Areas

Jackson Mountains DY-19	73,464 acres
Jackson Creek DY-20	2,781 acres
Jackson Mountains DW-13	12,794 acres
Jackson Mountains DY-18	6,528 acres
Jackson Mountains DS-8	14,749 acres
Jackson Mountains DS-9	11,819 acres
Jackson Mountains PY-13	174,577 acres
Silver State PY-12	5,847 acres
Trout Creek PW-15	15,562 acres
Bottle Creek PW-14	9,204 acres
Bottle Creek PS-13	2,171 acres
Bottle Creek PS-14	13,658 acres
Buff Creek PS-12	4,402 acres
Jackson Mountains BY-15	34,324 acres
Jackson Mountains BY-6	26,641 acres

d. Habitat Evaluation

A habitat evaluation has not been conducted on the allotment for big game or sage grouse.

8. Water Quality

a. Jackson Mountains

Jackson and Trout Creeks have water quality analyses from May, July and September, 1979 at two locations and May, July and September, 1982 at one location each. Jackson Creek was also sampled twice in 1983, 1984 and 1985. Big Creek was sampled during May, July and September, 1979. There is some stream survey water quality data for all the creeks from 1976.

Temperatures on Jackson Creek ranged from 43 to 64° F, pH 7.5 to 8.8, turbidity 0 to 24 TUS, TDS 134 to 228 mg/l, nitrates 0.12 to 1.8 mg/l, phosphates nondetectable to 0.3 mb/l, fecal coliform 0-90/100 ml., and alkalinity 52 to 168 mb/l. Dissolved oxygen was 7.0 mg/l when it was tested during the stream survey.

Temperatures on Trout Creek ranged from 46 to 75° F, pH 6.3 to 8.8, turbidity 0 to 80 TUS, TDS 145 to 260 mg/l, nitrates nondetectable 0.38 mg/l, phosphates nondetectable

to [redacted]2 mb/l, alkalinity 66 to 178 m[redacted], and fecal coliform 0-300/100 ml. Dissolved oxygen was 10 mg/l the one time it was tested.

Nitrates ranged from 0.29 to 0.52 mg/l on Big Alexander Creek, TDS 120 to 16 mg/l, pH 6.75 to 8.5, fecal coliform 0 to 28/100 ml., and alkalinity 61 to 118 mg/l. Dissolved oxygen was 10 mg/l the one time it was tested.

Alkalinity was 180 mg/l on Mary Sloan Creek, D.O. 8 mb/l, and pH 7.12.

b. Bottle Creek

Water quality samples were collected during May, July and September, 1979 and 1982 from Bottle Creek and analyzed by a lab. A few water quality parameters were also tested during the 1976 stream survey.

The pH ranged from 7.1 to 8.5, temperature 43° F to 64° C, phosphate nondetectable to 0.04 mb/l, TDS 96 to 204 mg/l, and fecal coliform 0 to 10/100 ml. Dissolved oxygen was only tested once and was 8 mg/l.

9. Past Inventories

a. A Phase I Watershed Inventory was conducted between 1971 and 1974 with the following results:

* Good Condition	* Fair Condition	* Poor Condition
0 acres	9,684 acres	475,523 acres

* The range condition used in this survey are forage condition that will be replaced with ecological status condition as information becomes available. The condition objective will be redefined/quantified to obtain a particular ecological status when site potential and identified uses are combined to meet vegetative objectives.

b. In 1978 a range survey was conducted using the Ocular Reconnaissance Method. The survey was conducted to provide baseline data for analysis purposes in the Paradise-Denio EIS. This survey along with suitability criteria indicated that 5,332 AUMs were available in 1978 for livestock and wild horses.

F. Management Actions and Other Factors

1. The Jackson Mountain Wild Horse Herd Management Area is found within the Jackson Mountain and Bottle Creek use areas, Deer and Happy Creek allotments. Population surveys in 1986 indicated 215 wild horses with this herd use area. The 1988 population estimate of 279 wild horses is based on a 14% yearly population increase. The Appropriate Management Level (AML) for this herd use area is 215. The AML for the Jackson

Mountai[redacted]ottle Creek use areas is 160 w[redacted] horses. No current census data exists for an estimate of wild horses in the Jackson Mtn. vs. Bottle Creek use areas.

2. California bighorn sheep were released in this allotment in 1983 at the mouth of McGill Canyon and use this allotment as part of their normal use area. Additional bighorn sheep were released near Mary Sloan Creek in 1987 and now use the northern portion of this allotment as well.

3. The P-D EIS indicated that forage demand on this allotment for big game was 498 AUMs for mule deer and 50 AUMs for pronghorn. Forage demand for 1986 was determined to be 1,249 AUMs for mule deer, 288 AUMs for pronghorn, and 120 AUMs for bighorn sheep in 1987. Survey methods to determine forage demand for big game differ for the two time periods, so data is not comparable. However, population estimates have increased over the last ten years for all species in the Jackson Mountains.

II. Management Evaluation

A. Short Term

1. Utilization of key streambank riparian plant species in riparian habitats shall not exceed 30% on Bottle, Jackson, Trout, Big Alexander, Mary Sloan creeks except where adjusted by an approved activity plan.

   a. Jackson Mountain

      Utilization data has not been collected to evaluate the achievement of this objective.

   b. Bottle Creek

      In September, 1987, severe use was noted on all key grass species and browse in Bottle Creek. This objective was not met.

2. Utilization of key plant species on wetland riparian habitats shall not exceed 50% except where adjusted by an approved activity plan.

   a. Jackson Mountains

      Utilization data has not been collected to evaluate the achievement of this objective.

   b. Bottle Creek

      Utilization data collected in September, 1987 indicates this objective is not being met due to severe use.

3. Utilization of key plant species in upland habitats shall not exceed 50% except where adjusted by an approved activity plan.

   a. Jackson Mountains

      Utilization data has not been collected to evaluate the achievement of this objective.

   b. Bottle Creek

      Utilization observations in 1987 were made in portions of Bottle Creek. Use in upland areas in Bottle Creek varied from severe within 1/4 mile of the creek to heavy on the north sides and steepest slopes on the south side. Severe use was observed in Water Canyon in vicinity of the mines. The lower slopes eas of this area towards Bottle Creek road received moderate use. Based on observation in these areas it appears that the objective is not being met in these areas.

2. Long Term Objectives

   a. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for big game, with an initial forage demand of 448 AUMs for mule deer, 72 AUMs for pronghorn and 346 AUMs for bighorn sheep.

      1) Improve to and maintain 122,135 acres in good to excellent mule deer habitat condition.

      2) Improve to and maintain 225,421 acres in fair or good pronghorn habitat condition.

      3) Improve to and maintain 60,965 acres in good to excellent bighorn sheep habitat condition.

      Baseline data is not available to evaluate the achievement of this objective in the Jackson Mountains and Bottle Creek use areas.

   b. Manage, maintain and improve public rangeland conditions to provide forage on a sustained yield basis for livestock, with an initial stocking level of 12,266 AUMs.

      Baseline data is not available to evaluate the achievement of this objective on both use areas.

   c. Improve to and maintain from poor to fair on 475,523 acres and from fair to good on 9,684 acres.

      Baseline data is not available to evaluate if this objective is being met on Jackson Mountain and Bottle Creek use areas. The range conditions are forage condition that will be replaced with ecological status condition as

information becomes available. The objective will be redefined/quantified to obtain a particular ecological status when site potential and identified uses are combined to meet vegetative objectives.

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

1) Manage, maintain and improve public rangeland conditions to provide an initial level of 1,920 AUMs of forage on a sustained yield basis for 160 wild horses.

This objective is being met on both use areas.

2) Maintain and improve wild horse habitat by assuring free access to water.

This objective is being met on both use areas.

e. Improve to and maintain 9 acres of ceanothus habitat types in good condition.

Baseline data is not available to evaluate this objective.

f. Improve to and maintain 467 acres of mahogany habitat types in good condition.

Baseline data is not available to evaluate the achievement of this objective.

g. Improve to and maintain 275 acres of aspen habitat types in good condition.

Aspen is located in both use areas. Baseline data is not available to evaluate the achievement of this objective.

h. Improve to and maintain 1,129 acres of riparian and meadow habitat types in good condition.

1) Jackson Mountains

Baseline data has not been collected to evaluate the achievement of this objective.

2) Bottle Creek

Baseline data has not been collected to evaluate the achievement of this objective. Utilization observations in September, 1987, showed severe use on riparian and stringer meadows. This indicates that progress is not being made towards this objective in these areas.

i. Improve to or maintain the following stream habitat conditions from 72% on Big Creek, 38% on Bottle, 55% on Mary Sloan, 57% on Trout and 53% on Jackson creeks to an overall optimum to 60% or above.

1) Streambank cover 60% or above.
2) Streambank stability 60% or above.
3) Maximum summer water temperatures below 70°F.
4) Sedimentation below 10%.

a) Jackson Mountains

Mary Sloan

Mary Sloan Creek was surveyed in 1976 at 55% of optimum. Data has not been collected since that time, therefore, this objective can not be evaluated due to insufficient data.

Trout Creek

This creek has surveyed in 1976 and 1987. The overall optimum increased 12%. Sedimentation decreased 17%, bank cover decreased 8% and bank stability increased 7%. This indicates that the objective is being met, primarily due to efforts by the permittee to reduce livestock impact along this creek.

Jackson Creek

This creek was surveyed in 1976, 1978, 1980, 1982, 1984 and 1986. The overall optimum has fluctuated but remains at 58%. Sedimentation has decreased 23% from 1976 to 1986. Bank cover has fluctuated but has decreased since 1980 to 55% in 1986. Bank stability has decreased from 1980 to 1986 to 58%. Based on this date the objective was not being met on Jackson Creek in 1986.

b) Bottle Creek

Big Creek

This creek was only surveyed in 1976 all factors were above the specified requirements. The objective was met in 1976 but insufficient data is available for comparison at this time.

Bottle Creek

This creek was surveyed in 1976 and 1987. The overall optimum decreased 19%, sedimentations remained the same (22%), bank cover decreased 32%

and bank stability decrease[illegible]%. In 1987 this objective was not being met.

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

Baseline data is not available to evaluate the achievement of this objective for both use areas.

k. 1) Improve to and maintain the water quality of Jackson, Trout, Big and Mary Sloan Creeks to the state criteria set for the following beneficial uses: livestock drinking water, cold water aquatic life, wading and wildlife propagation.

a) Jackson Mountain

The objective is not being met on Jackson Creek for cold water aquatic life and wildlife propagation because of high turbidity, alkalinity, and phosphate.

Arsenic was also tested on Jackson Creek and was too high for drinking water. Although the creek is not used for drinking water, arsenic could become a problem for stockwater if it gets much higher. The stream temperatures were all quite low which means the stream is well shaded.

The objective is being met for stockwater and wading on Jackson Creek.

There is not enough data to evaluate whether the objective is being met on Trout Creek for cold water aquatic life, wildlife propagation, and wading. Temperature and turbidity were quite high in 1979 at the lower sampling site, but suitable at the upper site in both 1979 and 1982. The water quality for fisheries does deteriorate downstream and further monitoring would be necessary to see if the objective is still not being met at the lower site. The pH taken during the stream survey was too low for fish and wading, but the other nine pH readings were much higher, so the pH is probably suitable. The alkalinity was too high for wildlife propagation in half of the samples. One of the fecal coliform samples was too high for wading, but not enough samples were taken. The objective is being met for stockwater.

There is not enough data to evaluate whether the objective is being met on Mary Sloan Creek. The 1976 stream survey mentions dense riparian

vegetation, 63% stream shading, and no ungulate damage. If things have remained essentially the same since 1976, then the objective probably is being met.

b) Improve or maintain the water quality of Bottle Creek from its point of origin to the first diversion point to the Nevada Class A water standards.

1) Bottle Creek

Not enough fecal coliform samples were collected from Bottle Creek to evaluate whether the objective is being met. The four fecal coliform samples that were collected were all less than 10/100 ml. so the objective is probably being met. All the other water quality parameters listed on Table I were well within acceptable levels.

III Conclusions

A. Based on observations of riparian and upland areas in the Bottle Creek use areas the short term objectives are not being met in some areas.

B. The stream habitat conditions on Bottle Creek, in the Bottle Creek use area, are all decreasing except sedimentation.

C. No defined grazing system has been implemented on either use area.