



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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Elko, Nevada 89803-4611

In Reply Refer To:
4130 (NV012)

DEC 18 2001

CERTIFIED MAIL # 7000 0520 0020 5845 7810

Dear Interested Reader:

Enclosed is a copy of the 2001 monitoring report for the South Fork Little Humboldt River basin, **Little Humboldt Allotment**. This data collected on BLM monitoring sites shows heavy to severe use for the 2001 grazing year, despite new fences and a change in grazing use in the two new pastures. The monitoring report recommends closing the basin pastures to grazing for at least 5 years or until streams/wetlands have achieved desired future condition criteria, which includes standards for woody and herbaceous riparian species, streambank stability and cover (page 23).

These recommendations will be sent to the interested public for consultation and will contain proposed management changes for the Little Humboldt Allotment in 2002. BLM is proceeding with preparation of a biological assessment and allotment evaluation. The public comment period will be 15 days in order to facilitate completion of the evaluation and final multiple use decision by the next grazing season.

If you have any questions concerning this matter, please contact Patrick Coffin, Fisheries Biologist, of my staff at (775) 753-0289.

Sincerely,

CLINTON R. OKE
Assistant Field Manager
Renewable Resources

Enclosure: as stated above

cc: Bottari & Associates Realty
Elko County Conservation Association

Wild Horse Organized Assistance
Friends of Nevada Wilderness
Barrick Goldstrike Mines Inc.
Nevada Division of Wildlife
Nevada Division of Agriculture
HTT Resource Advisors
Commission for the Preservation of Wild Horses
Nevada Cattlemen's Association & Land Action Association
Resource Concepts, Inc.
Nevada State Clearinghouse
Ellison Ranching Company
Kenneth Buckingham
Federal Land Bank of Sacramento
Elko County Commissioners
Nevada First Corporation
U.S. Fish and Wildlife Service
Oro Vaca Ranches, Inc.
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Intermountain Range Consultants
Sierra Club
Northeastern Nevada Trout Unlimited
Committee for Idaho's High Desert
Idaho Watersheds Project
Schroeder & Lezamiz
Phyllis Jo Dean
Trout Unlimited, California Policy Office

2001 Monitoring Report
South Fork Little Humboldt River Basin - Little Humboldt Allotment
Prepared by Elko Field Office, Bureau of Land Management
12-17-01

INTRODUCTION

On March 29, 2001, the Elko Field Office of the Bureau of Land Management (BLM) received a biological opinion (BO) from the U. S. Fish and Wildlife Service (FWS) for BLM's proposed action related to livestock grazing on unfenced public and associated private lands within the South Fork Little Humboldt River (SFLHR) basin, Little Humboldt Allotment, Elko County, Nevada (FWS 2001). This BO transmitted the FWS's not likely to jeopardize the continued existence determination of the effects on Lahontan cutthroat trout (LCT) from the BLM's proposed livestock grazing system on the Little Humboldt Allotment addressed in the BLM biological assessment (BLM 2001). In order to avoid a jeopardy finding, BLM adopted the Reasonable and Prudent Measures and Terms and Conditions established in the BO which provided a number of protective measures for LCT.

Reasonable and Prudent Measures

The FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of LCT. With implementation of the BLM's proposed action, the FWS has developed two reasonable and prudent measures to minimize the impacts of anticipated take.

1. Minimize utilization of riparian vegetation and streambank trampling by livestock along LCT streams within the SFLHR basin.
2. Assess compliance with the reasonable and prudent measures , terms and conditions for minimizing utilization of riparian vegetation and streambank trampling, and ensure compliance with reinitiation requirements contained in the biological opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Endangered Species Act of 1973, as amended, BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures, and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

3. To implement reasonable and prudent measure 1, the BLM shall fully implement all actions that minimize the impacts of livestock grazing on LCT as described in the description of the proposed action and shall implement the following additional requirements:

- a. Issue a final 2001 interim grazing decision for the SFLHR basin, Little Humboldt Allotment effective upon issuance before the proposed April 1, 2001, turnout date for the south basin pasture. This decision is required because past and existing livestock grazing practices pose imminent likelihood of continued degradation of LCT habitat thereby jeopardizing the continued existence and survival of LCT within the Humboldt Basin DPS. The decision shall verify that maximum livestock numbers authorized at any one time within the SFLHR basin shall not exceed six hundred (600) head including cattle that may be trailed through the basin. In addition, the decision must limit the season of use of the north basin pasture to September 15 through October 31, 2001, and the season of use of the south pasture to April 1 through July 15, 2001, so livestock are completely removed from the entire SFLHR basin by July 15, 2001. All livestock must be removed from each pasture no later than their respective seasonal end date. Trailing of cattle through the SFLHR basin (either into or out of other pastures within the allotment) is restricted to the authorized 2001 season of use for the north and south pastures within the basin. Trailing cattle along with permitted cattle within the SFLHR basin shall not exceed 600 head at any one time.
- b. Complete the necessary project planning (NEPA, cultural, cooperative agreement) and provide Oro Vaca with fencing materials to construct the Blue and Hangnail fences as soon as possible preferably May 1, 2001, and no later than August 1, 2001. BLM shall not sign a cooperative agreement with Oro Vaca or provide fencing materials for the construction of these fences until Oro Vaca provides BLM with necessary easements across private lands.
- c. Ensure that Oro Vaca completes the installation of the Blue and Hangnail fences before September 15, 2001. If the installation of these fences has not been completed and inspected by BLM before September 15, 2001, BLM shall not authorize Oro Vaca to enter the north basin pasture on September 15, 2001. Nor shall BLM authorize any grazing in the north basin pasture for the remainder of the grazing year.
- d. Require that Oro Vaca take any and all steps necessary to prevent livestock from utilizing the north basin pasture during the period (April 1 through July 15, 2001) in which they are authorized to utilize the south basin pasture. If livestock are not confined to the south basin pasture during this period, BLM shall not authorize Oro Vaca to use the north pasture during the period of September 15 through October 31, 2001.
- e. Require that all salt blocks be placed on ridges or other areas at least 1/4 mile away from live water (springs, streams), troughs, wet or dry meadows and aspen stands and additionally require that salting locations will be changed weekly throughout the authorized use within the basin.

f. Initiate actions to monitor herbaceous stubble height, woody species utilization, and streambank trampling during the 2001 grazing season. Monitoring results will be compared to the following criteria for the purpose of evaluating whether or not the proposed 2001 grazing program impedes the recovery of LCT habitat within the basin:

- (1) Riparian herbaceous vegetation will be 6 inches at the end of the growing season.
- (2) Utilization of woody riparian vegetation (aspen and willow) will not exceed 20 percent of current years growth.
- (3) Streambank trampling will not exceed 10 percent.

Monitoring will be conducted during the 2001 grazing season for the purpose of evaluating whether or not the proposed 2001 grazing program impedes the recovery of LCT habitat within the basin: Monitoring will be conducted in the south basin pasture after July 15, 2001 and at the end of the growing season. The north basin pasture will be monitored between October 15 through October 31, 2001.

2. To implement Reasonable and Prudent Measure number 2, the BLM shall fully implement the following requirement:

- a. Complete an allotment evaluation, BA (Biological Assessment) and long-term allotment management plan for the Little Humboldt Allotment in 2001 to be implemented beginning with the 2002 grazing season. In addition, as part of the allotment evaluation process the BLM shall evaluate the monitoring data collected during the 2001 grazing season to determine if other grazing strategies (e.g., reduction in season of use, reduction in numbers of livestock, extended period of rest or a combination of all these strategies) are warranted for the management of LCT habitat within the basin in order to minimize the effects of grazing during the hot season.

Conservation Recommendations

Section 7(a)(1) of the Endangered Species Act (ESA) directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. If BLM's 2001 basin monitoring shows that recovery was impeded by 2001 grazing activities, BLM should consider initiating actions that would provide extended rest of the basin from livestock grazing.
2. BLM should encourage Oro Vaca to utilize alternative routes other than the basin for trailing cattle to and from Midas to the Castle Ridge area.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the FWS request notification of the implementation of any conservation recommendations.

To address these requirements, BLM initiated a monitoring program on LCT streams in the Little Humboldt Allotment during the 2001 field season. BLM collected information on utilization of riparian vegetation and woody species, and streambank trampling data. BLM also collected water temperature data during the sampling.

STUDY AREA

The SFLHR basin, Little Humboldt Allotment is located in western Elko County, north and west of the town of Midas. The SFLHR basin part of the allotment, which is at higher elevations, has approximately 14,336 acres of public and private lands and encompasses the headwaters of the SFLHR, Secret, Sheep, Oregon Canyon, and Pole Creeks. These streams contain populations of LCT in variable numbers and locations. Data were collected on three LCT streams in the SFLHR basin including the SFLHR, Sheep Creek, and Secret Creek. All three streams are characterized by heavily grazed meadows, entrenched channels, and drained floodplains interspersed with areas of dense aspen and willow growth in narrow, rocky canyons where vegetation is less accessible to grazing use. The SFLHR and Secret Creek are within the new south basin pasture, while Sheep Creek is in the north basin pasture. Private lands surrounding Oregon Flat on the SFLHR, Oregon Flat Creek, and the confluence of Sheep Creek, and the SFLHR at the confluence of Pole Creek upstream have been fenced as private pastures.

2001 LIVESTOCK USE

BLM adopted the reasonable and prudent measures and implemented the terms and conditions outlined in the final FWS BO (1-5-01-F-033) for the 2001 grazing season in their Full Force and Effect decision for 2001. This decision was effective immediately upon issuance on April 5, 2001. 43 CFR 4110.3-3(b) states "When the authorized officer determines that the soil, vegetation, or other resources on the public lands require immediate protection because of conditions ... when continued grazing use poses an imminent likelihood of significant resource damage ... the authorized officer shall close allotments or portions of allotments to grazing by any kind of livestock or modify authorized grazing use ..." and 4160.3(f) states "... the authorized officer may provide that the final decision shall be effective upon issuance ... and shall remain in effect pending the decision on appeal unless a stay is granted by

the Office of Hearings and Appeals ... as provided in 43 CFR 4.21 ...". The April 5, 2001 decision was applicable for the 2001 grazing season and only to the SFLHR basin within the Little Humboldt Allotment. Any further changes to Oro Vaca's term grazing permit and annual authorization for use in the Little Humboldt Allotment outside the SFLHR basin, including changes due to fire closure as well as authorized use in other areas of the allotment after June 30, 2001, will be dealt with in actions separate from this decision. This decision outlined the 2001 grazing use in the SFLHR basin as follows:

1. BLM approved livestock grazing use in the basin during 2001 in accordance with the following terms and conditions:
 - a. The maximum livestock numbers authorized at any one time within the SFLHR basin shall not exceed six hundred (600) head including cattle that may be trailed through the basin. Trailed cattle along with permitted cattle within the SFLHR basin shall not exceed 600 head at any one time. The SFLHR basin is defined as that area encompassing the north and south basin pastures as shown on Map #2 of the Environmental Assessment BLM/EK/PL2001/018 titled "2001 Grazing Program for the South Fork Little Humboldt River Basin, Little Humboldt Allotment" (BLM 2001a).
 - b. The season of use authorized for the south basin pasture is April 1 through July 15, 2001. Oro Vaca shall begin removing livestock from the south basin pasture on June 30, 2001, so the cattle are completely removed from the entire SFLHR basin by July 15, 2001. The term "entire SFLHR basin" means the south and north basin pastures but does not include the Pole Creek and Oregon Flat private lands exclosures.
 - c. The season of use for the north basin pasture is September 15 through October 31, 2001. The BLM will monitor riparian herbaceous stubble height, woody species utilization, and streambank trampling in the north basin pasture between October 1 and October 31, 2001. Monitoring results will be compared to the following criteria for the purpose of evaluating whether or not the proposed 2001 grazing program in the north basin pasture impedes the recovery of LCT habitat within the SFLHR basin:
 - (1) Riparian herbaceous vegetation will be 6 inches at the end of the growing season.
 - (2) Utilization of woody riparian vegetation (aspen and willows) will not exceed 20 percent of current years growth.
 - (3) Streambank trampling will not exceed 10 percent.
 - d. Oro Vaca must take any and all steps necessary to prevent livestock from utilizing the north basin pasture during the period (April 1 through July 15, 2001) in which they are

authorized to utilize the south basin pasture. If livestock are not confined to the south basin pasture during this period, BLM shall not authorize Oro Vaca use of the north basin pasture during the period of September 15 through October 31, 2001.

- e. All livestock must be removed from each pasture no later than their respective seasonal end date. Trailing of cattle through the SFLHR basin (either into or out of other pastures within the Allotment) is restricted to the authorized 2001 season of use for the north and south basin pastures within the basin.
 - f. All salt blocks will be placed on ridges or other areas at least 1/4 mile away from live water (springs, streams) troughs, wet or dry meadows and aspen stands and salting locations will be changed weekly throughout the authorized period within the SFLHR basin.
 - g. Grazing authorization billings for livestock grazing use in the SFLHR basin will be issued for approved use, as described above, subject to a pending decision from the Office of Hearings and Appeals on a trespass in the summer of 1999 and the demand for payment decision issued on February 29, 2000.
- 2.
- a. The BLM authorizes construction of the "Blue" and "Hangnail" fences subject to the survey and design process, the acquisition of the necessary easements across the private lands, and approval of a cooperative agreement(s). The BLM will complete the survey and design process for these fences as soon as possible and no later than August 1, 2001. The BLM will provide fence materials to Oro Vaca, and Oro Vaca will construct and maintain the fences. The BLM will not sign a cooperative agreement with Oro Vaca or provide fencing materials for the construction of these fences until Oro Vaca provides BLM with the necessary easements across private lands.
 - b. If the installation of these fences has not been completed and inspected by BLM before September 14, 2001, BLM shall not authorize Oro Vaca to enter the north basin pasture on September 15, 2001. Nor shall BLM authorize any grazing in the north basin pasture for the remainder of the grazing season.

Rationale: Authorized livestock grazing use within the SFLHR basin for the year 2001, as described above, are in conformance with the terms and conditions described in the BO (1-5-01-F-033). These terms and conditions are non-discretionary.

Oro Vaca has previously been authorized to graze approximately 1400 head of cattle on the allotment. The BO limits the number of cattle in the SFLHR basin portion of the Allotment in 2001 to 600 head at any one time. BLM's monitoring data collected in 1999 and 2000 shows undesirable impacts to the riparian/stream habitat with less than 600 head in the basin (225 in 1999, and 542 in 2000) during

summer-long use; therefore, it was determined appropriate to limit the number of livestock in the basin and monitor to determine if further adjustments are warranted.

The BO included criteria (i.e. herbaceous riparian stubble height, woody riparian species utilization, and streambank trampling) for the purpose of evaluating whether or not the proposed 2001 grazing program impedes the recovery of LCT habitat within the SFLHR basin. The criteria in the BO for herbaceous riparian stubble height is to have 6 inches of growth at the end of the growing season. Since the growing season is likely to end before the end of authorized use in the north basin pasture, the BLM has included the same criteria to the September 15 through October 31, 2001 grazing use in the north basin pasture with the qualification that there should be 6 inches of herbaceous riparian vegetation growth remaining at the end of the grazing season in the pasture.

Actual use data supplied by the permittee indicated that Oro Vaca had allowed 614 livestock to use the south basin pasture from approximately June 1 to July 15. Most cattle were moved to the Castle Ridge pasture on or before July 15, and no livestock were observed in the south or north pastures during the July 18,19 monitoring. Livestock that were in the Castle Ridge pasture were trying to return to the Oregon Flat private lands fenced pasture, and were getting through the fence on a corner that was close to water and green vegetation on the lower end of Oregon Flat on July 18, 19. These cattle were being moved out of Oregon Flat daily by the permittee, but by the end of the day, many had returned. Unauthorized use by Oro Vaca in the north basin pasture was minimal on July 18 (average 4.3% utilization of herbaceous vegetation) and BLM authorized use for the north basin pasture from September 15 to October 31. The pasture division fence ("blue fence") had been in place since mid-June and Oro Vaca had removed any livestock that were grazing in the north basin area in a timely manner.

On the October 3, 2001 monitoring date, large numbers of livestock were observed in the north basin pasture. Several cattle were observed in the Oregon Flat private lands pasture which had been heavily used. Cattle were trying to return from the north basin pasture back to Oregon Flat and were congregated along the fenceline near the gate. Many cattle were in very poor condition. A few cattle (3-4) were observed along the SFLHR in the south basin pasture on October 3.

About 75 head of livestock from the adjoining Bullhead Allotment were found in the north basin pasture in August, and they were removed after their discovery. The cattle had been in the pasture for an undetermined period of time. Gates within the two allotments were reportedly left open by unknown parties, allowing livestock in areas where they were not authorized.

BLM flew the SFLHR basin and other closed areas of the Little Humboldt Allotment on November 16, 2001 and observed 81 cattle in closed areas, including 31 head still in the SFLHR basin, with 12 in the north basin pasture and 16 in the south basin pastures. A follow-up check on the ground on November 19, 2001 revealed 4 in the south basin pasture and 8 in the north basin pasture. An additional 7 cattle were located in the Pole Creek pasture, 6 in the Oregon Flat pasture, and 8 in the

rim pasture. The permittee was notified to remove the trespass cattle from the closed areas, including the SFLHR basin.

CLIMATIC CONDITIONS

Northeastern Nevada was again extremely dry during the 2001 growing season, continuing a trend from 1999. The National Weather Service reported 2001 as the second driest year in Nevada since 1871. Using information from the NOAA Palmer Drought Severity Index for the end of September, we observed that 1999 was characterized as "moderate drought" (precipitation 2.0 to 2.0 inches below normal) and 2000 and 2001 were considered an "extreme drought" (precipitation 4.0 or more inches below normal) including the area encompassed by the Little Humboldt Allotment (NOAA 2001). As a result of the drought conditions riparian vegetation growth was affected. In meadows that have lost their capability to store water because of downcutting, vegetation growth was well below growth observed in areas where riparian areas maintained soil moisture condition and vegetation continued to grow.

MONITORING METHODS

Monitoring was completed by collecting data for stubble height, percent utilization, and percent streambank trampling. Location of monitoring sites is shown on Map 1. Stream temperature data was collected by checking water temperature at selected sites while monitoring data was being collected. This information compliments recording thermograph water temperature data collected in 2000 (BLM 2001b).

Riparian Herbaceous

A height-weight relationship for overall herbaceous riparian vegetation was developed from ungrazed vegetation within utilization cages within the SFLHR basin on 4 sites on SFLHR, and 2 sites on Sheep Creek. Two of the utilization cages on the SFLHR were on fenced private lands, one in the Pole Creek pasture (SFLHR #1), and one on the Oregon Flat pasture (below SFLHR # 3). The other two utilization cages on the SFLHR are on sites within the south basin pasture, one above the confluence of Sheep Creek, and the second below the confluence of Secret Creek (SFLHR #5). Two utilization cages were on Sheep Creek within the north basin pasture (at station # 2A and below station # 3).

Stubble heights of herbaceous vegetation was measured and weighed from within the utilization cages. Stubble height data measured within the cages were converted to a percent utilization of the current year's growth based on the average height weight relationship established for the cage sites using exponential and logarithmic regression techniques. Transects were established parallel to the stream channel in the same plant community in which the height weight relationship was established and within the active floodplain or "flood-prone area" (as defined by Rosgen 1996). In general, the transects were located within five feet of the bankful channel edge as described by Platts (1990). A minimum of 20 measurements were recorded for each transect and the data was averaged for transects and for

study sites for each stream.

Woody Riparian Vegetation (aspen and willow)

Utilization estimates for woody riparian vegetation were made for grazed areas based on comparisons to ungrazed plants using the key forage plant method (Nevada Rangeland Monitoring Handbook 1984 and the 1996 BLM Interagency Technical Reference). Current year's growth (leader lengths) were measured for ungrazed willows and aspen at transect sites to establish a baseline. Also the number of grazed willow and/or aspen compared to the number of ungrazed plants were counted. Data were collected along transects established at study sites. Only those aspen and willow which were available to livestock and which were adjacent to the active floodplain were evaluated. A minimal sample of 20 plants were measured wherever available. Data were averaged for transects and for study sites for each stream. Observations on new willow growth within utilization cages was also noted.

Streambank Trampling

Streambank trampling was determined by measuring the percent of streambank trampling or hoof action by livestock along one hundred foot transects. Linear transects were established for both the left and right streambanks by using a one hundred foot tape parallel to the stream channel along the bankful channel line (as defined by Rosgen 1996). Feet of streambank showing recent (2001) evidence of trampling or hoof action from livestock were recorded along each transect. Streambanks inaccessible to livestock including banks protected by rocks, logs, or other features were included in the measurements. Data were averaged for each study site and for each stream.

RESULTS AND DISCUSSION

Stubble Heights

Growth of ungrazed riparian herbaceous vegetation near LCT streams was poor to fair throughout the 2001 field season (Table 1). By June 15, the average stubble heights within utilization cages on private lands above the confluence of Pole Creek and on Oregon Flat were 5.1 inches with less average growth in the cage on Oregon Flat (3.5 inches) than in the cage above Pole Creek (6.7 inches). On June 28th the utilization cage installed on June 15th, below the confluence of Secret Creek on the SFLHR was measured and the vegetation averaged 2.1 inches. This site (SFLHR, station #5) is in the south basin pasture and was available for livestock to graze since they were moved into the south basin pasture about June 1, 2001. Riparian vegetation measured at sampling sites SFLHR #5 and Secret Creek #1 (BLM administered) averaged 1.8 inches on June 15th, compared to an average of 5.1 inches within all utilization cages (range 3.5 to 6.7 inches).

Two additional utilization cages were placed on Sheep Creek, in the north basin pasture, one at station number S-2A on June 28th and the other at station S-3 on July 18th, before livestock were authorized in the north basin pasture. Both these areas showed evidence of no use to very light livestock grazing use at that time. The average riparian vegetation herbaceous vegetation at S-2A, where the new cage

was installed on June 28th averaged 5.5 inches, and had increased to 6.8 inches within the cage on July 18th, when the utilization cages were measured for the second time. The average stubble height within all the utilization cages on July 18th was 5.2 inches, a slight increase from the June 15th average of 5.1 inches (Table 1).

The end of the field season monitoring was completed on October 3, 2001, before livestock were required to leave the north basin pasture. The average stubble heights for all the utilization cages with the exception of the cage above Pole Creek monitoring sites was 8.5 inches (ranging from 6.6 to 11.5 inches). The utilization cage at Sheep Creek S-2A showed good riparian vegetation growth for the summer and averaged 11.5 inches within the cage, increasing 4.7 inches from July 18th.

Table 1. Average stubble height (inches) for ungrazed vegetation within utilization cages located within the SFLHR basin, Little Humboldt Allotment in 2001.

MONITORING SITES (Refer to Map -2)	DATE RECORDED			
	June 15	June 28	July 18/19	Oct. 3
	Herbaceous Riparian Plants			
SFLHR #1 - Cage above Pole Creek (Est. 8/99)	6.7	No data	6.9	No data
SFLHR #5 - Cage below Secret Creek (Est. 6/15/01)	No data	2.1	3.6	7.4
SFLHR #3 - Cage on Oregon Flat (Est. 8/99)	3.5	No data	3.6	6.6
Sheep Creek #2A (Est. 6/28/01)	No data	5.5	6.8	11.5
Average	5.1	3.8	5.2	8.5

The first monitoring on the riparian vegetation along the streambanks was completed June 15th. On June 15th the average stubble height for monitoring sites 1-6 on the South Fork Little Humboldt River, within the open south basin pasture, was 2.0 inches compared to 5.1 inches within utilization cages on private lands above Pole Creek and on Oregon Flat (Table 2). Average stubble height on June 15th on Secret Creek was 1.9 inches, which is also inside the south basin pasture and had livestock grazing since about June 1. No data was collected on Sheep Creek which is within the closed north basin pasture on June 15.

On June 28th, additional monitoring was completed on the SFLHR and Sheep Creek. The SFLHR monitoring was completed at two stations (3 and 5). Station 3 is inside the fenced private lands on

Oregon Flat which was not being used extensively at that time. Station 5 is in the south basin pasture and was available to livestock grazing when cattle moved into the pasture about June 1. Station 3 had a stubble height of 5.0 inches, while station 5 had a stubble height of 1.6 inches (Table 2).

The next monitoring was completed on July 18 and 19, after livestock were removed from the basin and measurements were taken in both the north and south basin pastures. Six monitoring sites were checked along the SFLHR including the private lands pasture on Oregon Flat (Station #3). The riparian vegetation stubble height ranged from 1.0 to 6.1 inches with an average of 2.3 inches. The 6.1 inch stubble height was at station #2 on the SFLHR which is in a steep canyon above the Pole Creek private pasture, is generally less accessible to livestock than more open areas. The average stubble height on areas easily available to livestock grazing was 1.5 inches with a range of 1.0 to 2.2 inches (Table 2). The average stubble height on two stations on Secret Creek which are in the south basin pasture was 2.8 inches on July 18th. Three stations on Sheep Creek, in the closed north basin pasture were measured to determine if livestock could use the pasture in the fall (September 15 through October 31). The average stubble height was 7.5 inches and ranged from 4.5 inches to 11.4 inches (Table 2).

The last monitoring for the year was completed on October 3, two and a half weeks after livestock were authorized to use the north basin pasture. Measurements of stubble height on the SFLHR in the south basin pasture averaged 1.0 inches, and ranged from 0.9 to 1.2 inches. Monitoring on Secret Creek averaged 1.6 inches at three sites and ranged from 0.9 inches to 2.2 inches. Livestock were not authorized in the south basin pasture after July 15, two weeks after the June 28th monitoring date. In addition, a few (3-4) were observed on Secret Creek on October 3, 2001. Monitoring on Sheep Creek in the north basin pasture showed an average stubble height of 1.3 inches with a range from 0.8 to 2.0 inches. Some of the heavy use in the north basin pasture may have been caused by the unauthorized use from the Bullhead Allotment in August, but Oro Vaca livestock focused on the riparian areas along streams as soon as they were placed in the north basin pasture on September 15. The stubble height measurements throughout the basin did not meet terms and condition 3f(1) for a riparian herbaceous vegetation stubble height of 6 inches at the end of the growing season from the BO.

Table 2. Summary of stubble height data (in inches) collected for grazed vegetation outside utilization

Table 2. Summary of stubble height data (in inches) collected for grazed vegetation outside utilization cages between June 15, 2001, and October 3, 2001, South Fork Little Humboldt River basin, Little Humboldt Allotment.

MONITORING SITE (Refer to Map -2)	2001 MONITORING DATES			
	June 15	June 28	July 18/19	Oct. 3
South Fork Little Humboldt River (south basin pasture)				
Station1 (Pole Creek private pasture)	1.6	No data	2.2	No data
Station 2 (BLM unfenced public land)	No data	No data	6.1	1.0
Station 3 (Oregon Flat private pasture)	2.7	5.0	1.8	No data
Station 5 (BLM admin. unfenced private)	1.7	1.6	1.4	1.2
Station 5A (BLM admin. unfenced private)	No data	No data	1.0	0.9
Station 6 (BLM admin unfenced private)	No data	No data	1.0	No data
Average	2.0	3.3	2.3	1.0
Secret Creek (south basin pasture)				
Station 1 (BLM admin. unfenced private)	1.9	No data	No data	1.8
Station 2 (BLM administered public land)	No data	No data	2.0	0.9
Station 3 (BLM admin. unfenced private)	No data	No data	3.5	2.2
Average	1.9	No data	2.8	1.6
Sheep Creek (north basin pasture)				
Station 2 (BLM admin. unfenced private)	No data	No data	11.4	1.0
Station 3 (BLM admin. unfenced private)	No data	No data	4.5	0.8
Station 2A (BLM administered public land)	No data	5.5	6.5	2.0
Average	No data	5.5	7.5	1.3

Plant Utilization

Riparian Herbaceous

South Basin Pasture

Percent utilization of riparian herbaceous vegetation by livestock measured in the south basin pasture on the SFLHR averaged 62.8 percent on June 15 (Table 3). This included sites in the Pole Creek private lands pasture (S-1), and sites just below the confluence of Secret Creek (S-5), and upstream ½ mile (S-5A). On June 28th vegetation utilization in the Oregon Flat private lands

and upstream ½ mile (S-5A). On June 28th vegetation utilization in the Oregon Flat private lands pasture (S-3) averaged 17.8 percent and site 5 averaged 49.3 percent (a slight decrease from June 15) for an average of 31.9 percent for the SFLHR, including a closed private lands pasture (S-3) which had very light grazing to date (Table 3). Utilization in grazed areas was 49.3 percent for the one station measured.

Percent utilization on Secret Creek, also in the south basin pasture was 64.3 percent for one heavily used station (Station 1) on June 15th, and 23.7 percent on July 18th on two other sites in the canyon area of Secret Creek (Station 2 and 3) which are less accessible to livestock than station 1. By October 3rd, the average utilization on the three sites measured 41.2 percent and ranged from 28.5 percent at Station 3 to 59.5 percent at Station 2.

Figure 1. Monitoring site on South Fork Little Humboldt River below the confluence of Secret Creek showing 50 percent utilization on October 3, 2001. Ungrazed vegetation inside cage



averaged 7.5 inches.

Table 3. Percent utilization of current year's growth of riparian herbaceous vegetation recorded for LCT streams between June 15, 2001, and October 3, 2001, in the South Fork Little Humboldt River Basin, Little Humboldt Allotment.

MONITORING SITE (Refer to Map -2)	2001 MONITORING DATES			
	June 15	June 28	July 18/19	Oct. 3
South Fork Little Humboldt River (south basin pasture)				
Station 1(Pole Creek private pasture)	69.4		36.1	
Station 2 (BLM public land)			3.9	56.2
Station 3 Oregon Flat private pasture)		17.8	45.4	
Station 5 (BLM admin. private land)	53.8	49.3	57	50.2
Station 5A (BLM admin. private land)	67.6		71.7	59.5
Station 6 (BLM admin. private land)			71.7	
Average	62.8	31.9	47.6	55.3
Secret Creek (south basin pasture)				
Station 1(BLM admin. private land)	64.3			35.7
Station 2 (BLM public land)			30.1	59.5
Station 3 (BLM admin. private land)			17.2	28.5
Average	64.3		23.7	50.4
Sheep Creek (north basin pasture)				
Station 2 (BLM admin. private land)			9.7	63
Station 2A (BLM public land)			0.2	56.2
Station 3 (BLM admin. private land)		15.5	3.1	31.9
Average		15.1	4.3	50.4

North Basin Pasture

Utilization on Sheep Creek was measured in July to determine if livestock would be authorized to graze the north basin pasture starting September 15 through October 31. Utilization averaged 4.3 percent and ranged from 0.2 to 9.7 percent on July 18. Monitoring of the same three stations on October 3, two weeks after livestock were authorized in the pasture, averaged 50.4 percent and ranged from 31.9 percent to 63 percent.

Figure 2. Monitoring site 2A on Sheep Creek showing 56 percent utilization on October 3, 2001. Ungrazed vegetation inside cage averages 11.5 inches.



Woody Riparian

Livestock utilization on aspen in the south basin pasture was low on June 15, but increased rapidly as the summer progressed (Table 4). On June 28th, aspen utilization was 38 percent on the SFLHR station 5, just below the confluence of Secret Creek, and by July 18th, utilization had increased to 47 percent at this site. Utilization averaged 35.5 percent on Secret Creek (24 percent on station 3, and 47 percent at station 2) on June 28th (Table 4). Utilization on Sheep Creek in the closed north basin pasture on July 18th averaged 7.8 percent and ranged from 2 to 13.6 percent, showing some light trespass into the north basin pasture by cattle from the south basin.

The south basin pasture exceeded the terms and conditions limit from the BO criteria (20 percent on aspen and willow) by June 28th on the SFLHR station 5, and by July 18th on all monitoring sites on the SFLHR and on Secret Creek. By October 3rd, use of aspen was in the "severe" range (> than 80 percent) for most of the SFLHR stations and heavy (60 to 80 percent use) on Secret Creek stations. Sheep Creek stations which were in the north basin pasture and had authorized livestock use after September 15th, showed 67 percent utilization by October 3rd (range from 61 to 79 percent) (Table 4).

Table 4. Percent utilization of current year's growth of aspen recorded for LCT streams between June 15, 2001, and October 3, 2001, in the South Fork Little Humboldt River Basin, Little Humboldt Allotment.

MONITORING SITE (Refer to Map -2)	2001 MONITORING DATES			
	June 15	June 28	July 18	Oct. 3
South Fork Little Humboldt River (south basin pasture)				
Station 1 (Pole Creek private pasture)			(9)	60
Station 3 (Oregon Flat private pasture)				
Station 5 (BLM admin. private land)	3.5	38	47	79.9
Station 5A (BLM admin. private land)				90
Station 6 (BLM admin. private land)				87.1
Average	3.5	38	47	79.3
Secret Creek (south basin pasture)				
Station 1 (BLM admin. private land)				57.9
Station 2 (BLM public land)			47	68
Station 2A (BLM admin. private land)				68.5
Station 3 (BLM admin. private land)			24	71.2
Average			35.5	66.4
Sheep Creek (north basin pasture)				
Station 2 BLM admin. private land)			13.6	79.4
Station 2A (BLM public land)				60.8
Station 3 (BLM admin. private land)			24	71.2
Average			35.5	66.4

Generally, utilization of willow was difficult to determine because of the lack of young willows in

areas available to livestock. In most cases, only a few small willow and some mature willows were present within the floodplain area. At locations where an adequate sample (a minimum of 20 plants available to livestock grazing) could be obtained, willow utilization was high. Overall utilization of willow during the 2001 monitoring appeared to be higher than what is shown in Table 5 because of the number of sites with less than 15 willows in the sample size. Adequate sample size for willow was found at only 5 of 12 monitoring sites (42 percent).

The role of the livestock grazing in determining willow survival and growth is illustrated by growth of young willow within utilization cages observed in 2000 and 2001. The abundance of young willows was much greater inside utilization cages where plants were protected from grazing, than in areas outside the cages exposed to grazing. Height of ungrazed willow seedlings was also considerably greater inside cages.



Figure 3. Aspen use by livestock on South Fork Little Humboldt River near Station 6. Utilization averaged 87 percent at this site.

Table 5 . Percent utilization of willow recorded between June 15, 2001, and October 3, 2001, in the South Fork Little Humboldt River Basin, Little Humboldt Allotment. Sample sizes of less than 20 plants are not included, except for SFLHR station 5, and Sheep Creek, station 2 for October 3rd. Sample sizes of less than 20 are shown in parentheses.

MONITORING SITE (refer to Map 2)	2001 MONITORING DATE			
	June 15	June 28	July 18	Oct. 3
<i>South Fork Little Humboldt River</i> (south basin pasture)				
Station 1				
Station 2				64
Station 3		Not detectable		
Station 4				
Station 5				61.4 (7)
Station 7				90.0 (1)
Average				62.7
<i>Sheep Creek</i> (north basin pasture)				
Station 2			(11)	53.5
Station 2A				53.5
Station 3				51.3
Average				52.9
<i>Secret Creek</i> (south basin pasture)				
Station 1				74.7
Station 2			45	(2)
Station 2A				
Station 3				(1)
Average			45	74.7

Streambank Trampling

Trampling of streambanks in the SFLHR basin increased throughout the summer with measurements of 11.5 percent on the SFLHR station 5 on June 15, which increased to 39 percent by June 28th. Measurements at six stations on the SFLHR on July 18th showed streambank trampling ranges from 11.9 to 36.4 percent and averaged 24.2 percent (Table 6). The BO criteria of 10 percent was exceeded by the 28th on the one station on the SFLHR, and on all stations in the south basin pasture by July 18th. Station 2 on the SFLHR had the lowest reading on July 18th

(11.9%), but this site is generally less accessible to livestock. By the time trampling levels exceeded the BO criteria (July 19th and later), impacts to streambanks were severe. Without exception, streambanks were damaged from high levels of shearing, trampling, and compaction at the end of the season at all monitoring sites evaluated (Figures 4 and 5).

Table 6. Percent streambank trampling recorded for LCT streams between June 14, 2000, and October 5, 2000, in the South Fork Little Humboldt River Basin, Little Humboldt Allotment.

MONITORING SITE (Refer to Map -2)	2001 MONITORING DATES			
	June 15	June 28	July 18	Oct. 3
South Fork Little Humboldt River (south basin pasture)				
Station 1			18.8	
Station 2			11.9	16.6
Station 3			21.5	
Station 5	11.5	39	33.1	15.7
Station 5A			36.4	22.2
Station 6			23.2	
Average	11.5	39	24.2	18.2
Secret Creek (south basin pasture)				
Station 1				21.3
Station 2			20.9	15.5
Station 3			23.8	22.9
Average			22.4	20
Sheep Creek (north basin pasture)				
Station 2			35.5	32.2
Station 2A			3.4	16.5
Station 3		10.4	12	56.8
Average		10.4	17	35.2

Some streambank trampling measurements were lower in October than in July which may be the result of different biologists measuring in slightly different locations

Figure 4. Monitoring site below Station 3 on Sheep Creek showing 57 percent streambank trampling on 10/31/01.



Water Temperatures

Spot water temperatures were taken during monitoring visits to the streams within the basin between June 15 and October 3, 2001. Water temperatures in June ranged from 56° F on Secret Creek to 72° F on the SFLHR near the Pole Creek confluence. By the end of June water temperatures in the SFLHR at Oregon Flat were 74° F. High water temperatures of 79° F were measured on Secret Creek near station 2 on July 18th with water temperatures of 77° F on upper SFLHR at station 6 and 76° F at Oregon Flat on the SFLHR for the same day. While water temperatures on July 18th ranged from 72 to 79° F in Secret Creek and the SFLHR, Sheep Creek remained cooler with temperatures of 57 to 58° F at two locations on the same day. A large, cool spring on Sheep Creek and dense cover in protected areas along Sheep Creek appear to maintain lower water temperatures generally than occur in the other to streams. No water temperatures were

taken during the peak high water temperature period in August to determine the maximum water temperatures achieved during 2001, but important LCT thresholds between 72 and 79° F were being passed on July 18th.

CONCLUSIONS

Monitoring conducted in the South Fork Little Humboldt River basin, Little Humboldt Allotment in 2001 show utilization, stubble height and streambank trampling limits established in the BO were exceeded as a result of livestock for all three LCT streams evaluated, despite separation of the basin into 2 pastures with a restricted season of use and an authorization for 600 head of livestock. The south basin pasture was used from approximately June 1 through July 15, and the north basin pasture was authorized from September 15 to October 31, 2001. Some trespass cattle were in the north basin pasture before July 15, in August (Bullhead Allotment cattle) and until mid-November. Another drought year provided limited growth on riparian vegetation along the streams, except in areas where groundwater provided adequate water for summer-long vegetation growth (Sheep Creek station 2A).

End of growing season stubble height within utilization cages averaged 8.5 inches and ranged from 6.6 to 11.5 inches on October 3rd. Vegetation height within the utilization cages averaged only 7 inches when growth in the Sheep Creek 2A cage was excluded (11.5") Herbaceous riparian stubble was grazed down to 1.6 to 2.7 inches in areas of the south basin pasture accessible to livestock before July 1, while vegetation on Sheep Creek in the north basin pasture was 5.5 inches. Riparian vegetation utilization along Sheep Creek in the north basin pasture averaged 1.3 inches by October 3rd, after livestock had been allowed into the pasture on September 15. No vegetative regrowth was observed in the south basin pasture after July 15th.

Utilization rates for aspen became unacceptable by the end of June in the south basin pasture along the SFLHR (38%), and had increased to 47 percent by July 18th. Although utilization data for willows is limited, numbers of young willows observed growing in ungrazed cages suggests this species has the potential to be abundant in the absence of grazing. One site showed undetectable use on willows on June 28th along the SFLHR, and one site on Secret Creek showed 45 percent utilization by July 18th. By October 3rd willow and aspen use in the north and south basin pastures was heavy to severe.

Data collected in 2000 and 2001 indicate herbaceous utilization standards may have limited applicability in drought years. The lack of growth characterizing the 2000 and 2001 season resulted in relatively low utilization estimates at very low stubble heights. By July 18th, stubble heights ranged from 1.0 to 3.5 inches on the SFLHR and Secret Creek in the south basin pasture. Utilization rates for these sites were in the range of 17 to 72 percent.

Impacts to streams under even limited levels of grazing are obviously more significant in years where plant production is limited by climatic factors. Growth through July 18th in the north basin pasture where livestock use was very slight showed growth ranges of 4.5 to 11.4 inches with an average height of 7.5 inches. On October 3rd this vegetation averaged 1.3 inches and ranged from

0.8 to 2 inches in height and represented 31 to 63 percent utilization.

Site 2A on Sheep Creek provided a notable exception to the results obtained for other monitoring sites. Site 2A was not being grazed at the end of June and showed vegetation growth much higher than other grazed and ungrazed sites. Followup data collected in October showed lower levels of trampling and utilization in comparison to other sites, but they still exceeded the biological opinion terms and conditions. This site maintained groundwater throughout the summer period, and was the only sight where vegetation continued to grow through-out the growing season. This site has only limited access to livestock

Although livestock impacts to streams were clearly exacerbated as a result of severe to extreme drought conditions in 2000 and 2001, it is important to note that seasons of use were reduced within the new 2 pasture system, and a limit of 600 cattle were authorized to use the basin pastures, which is more than were observed in the basin in 1999 (225), and 2000 (542). The July 15 off date in the south basin pasture allows livestock to utilize the pasture, 1-2 weeks past what is believed to be the beginning of the hot season for this area. Use on aspen and willow increase dramatically after the end of June. The drought conditions and use by livestock did not allow for expected re-growth of riparian vegetation after the July 15th removal of livestock. Livestock use in the north basin pasture after September 15 did not work during 2001. Livestock focused on riparian areas and woody species, perhaps because of drought conditions and hot dry weather. Riparian areas around springs and along streams were heavily grazed and impacted by trampling activity from livestock. No wild horses remain in these two pastures so the impacts can definitively be placed on livestock. Large numbers of wild horses in the Castle Ridge pasture continued to be a problem in 2001, but are scheduled to be gathered in the summer of 2002.

The SFLHR basin portion of the Little Humboldt Allotment has approximately 14,337 acres of public and private land. The south basin pasture is the larger of the two new pastures with approximately 8,832 acres and the north basin pasture encompasses approximately 4,891 acres. The balance of the acreage is within the Pole Creek (approximately 154 acres) and Oregon Flat (approximately 460 acres) private lands pastures. The south basin pasture was grazed with 600 head of livestock from about June 1, 2001 to about July 15, or approximately 900 animal unit months (AUMs). The north basin pasture had authorized grazing from September 15 through October 31 with 600 livestock for approximately 900 AUMs also. This equates to about 9.8 acres per AUM in the south basin pasture and 5.4 acres per AUM in the north basin pasture, if you consider all the pastures accessible to livestock for grazing purposes, and use only during the authorized period.

Myers (1989) noted that successful grazing systems had 12.1 acres or more per AUM, less than 30 days of grazing duration, with 12.5 days of hot season use (7/1-9/15), or 21 days of fall use (8/15-1/10). Unsuccessful grazing systems had 9.4 or less acres per AUM, 59 days of grazing use, 33 days of hot season use, and/or 51 days of fall use in 34 Montana grazing treatments. This data suggests that the south basin pasture can support no more than 736 AUMs and the north basin pasture 407 AUMs if they were 100 percent useable by livestock.

RECOMMENDATIONS

Conservation recommendation #1 states "If BLM's 2001 monitoring shows that recovery was impeded by 2001 grazing activities, BLM should consider initiating actions that would provide extended rest of the basin from livestock grazing." Therefore it is our recommendation that the SFLHR basin be closed to grazing for up to 5 years, or until the streams meet desired future condition objectives (DFC). DFC objectives will be developed through the allotment evaluation process, scheduled to be completed and implemented through issuance of a final multiple use decision prior to livestock turnout in 2002.

The 2001 BLM monitoring shows that the SFLHR basin did not meet the terms and conditions of the FWS BO (1-5-01-F-033). Data from the 2000 monitoring report indicates that more than 85 percent of the stream lengths are in unsatisfactory condition according to the BLM's proper functioning condition (PFC) assessment (BLM 2001b). The basis for providing the basin with extended rest is set with the FWS conservation recommendation #1 and three years of extensive riparian monitoring by BLM. DFC objectives will be based on site potential of having heavy aspen, willow or other woody species cover. Streams will have a narrow and deep channel with streambanks and floodplain areas in stable and densely vegetated condition with a riparian herbaceous plant community dominated by Nebraska sedge where appropriate. Areas of active erosion will be limited to bank sloughing associated with natural processes of channel evolution. Selected stream survey data will also be used to trigger when livestock grazing can resume in a manner to maintain and improve conditions over the long-term.

ID Team Members

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Concurrence:

<u>Clint Oke</u> Clint Oke, Assistant Field Manager Renewable Resources	<u>12/18/02</u> Date
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APPENDIX A

Additional photographs along streams within South Fork Little Humboldt Basin, Little Humboldt Allotment, Elko County, Nevada.

Figure 4. Sheep Creek, below station 3 showing streambank trampling and utilization inside and outside cage on October 3, 2001. The site had 57 percent streambank trampling, and 0.8 inch average stubble height in the riparian zone along the stream.



Figure 5. Streambank trampling below Sheep Creek station 4 on October 3, 2001.

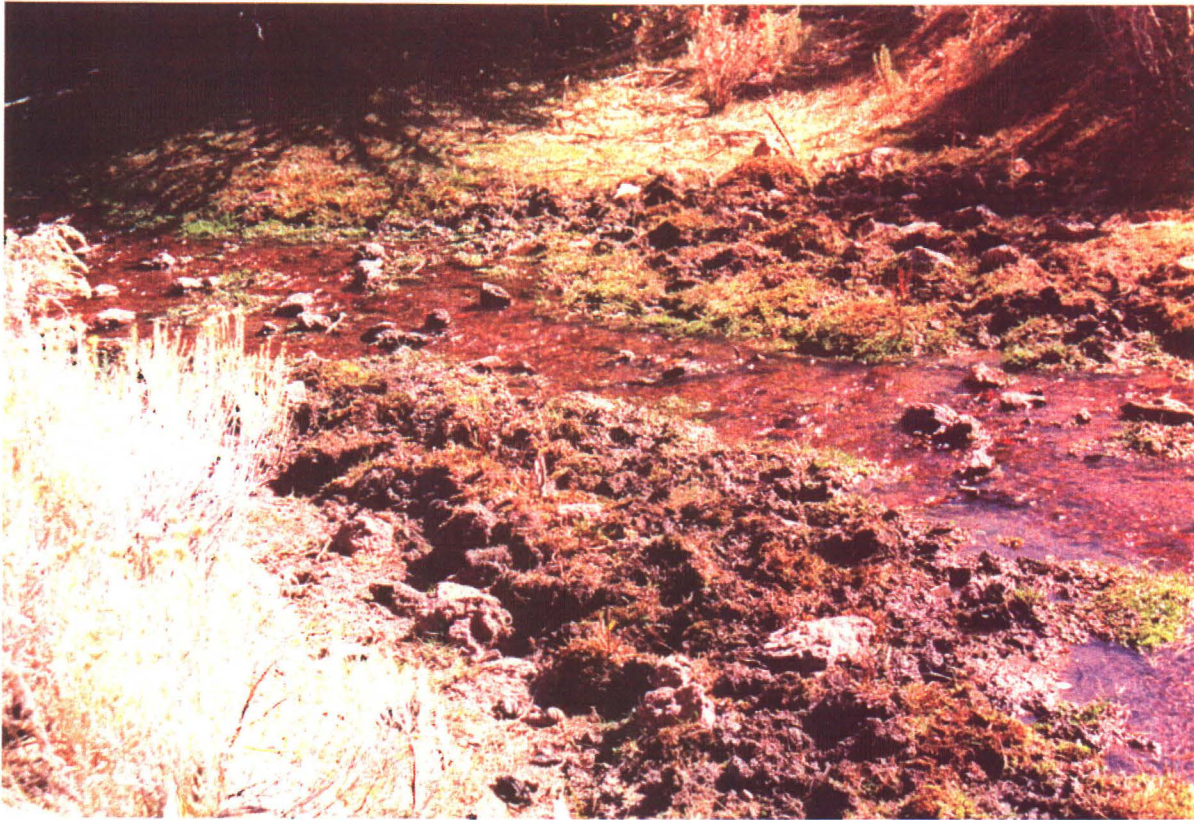


Figure 6. Sedimentation in South Fork Little Humboldt River on October 3, 2001.

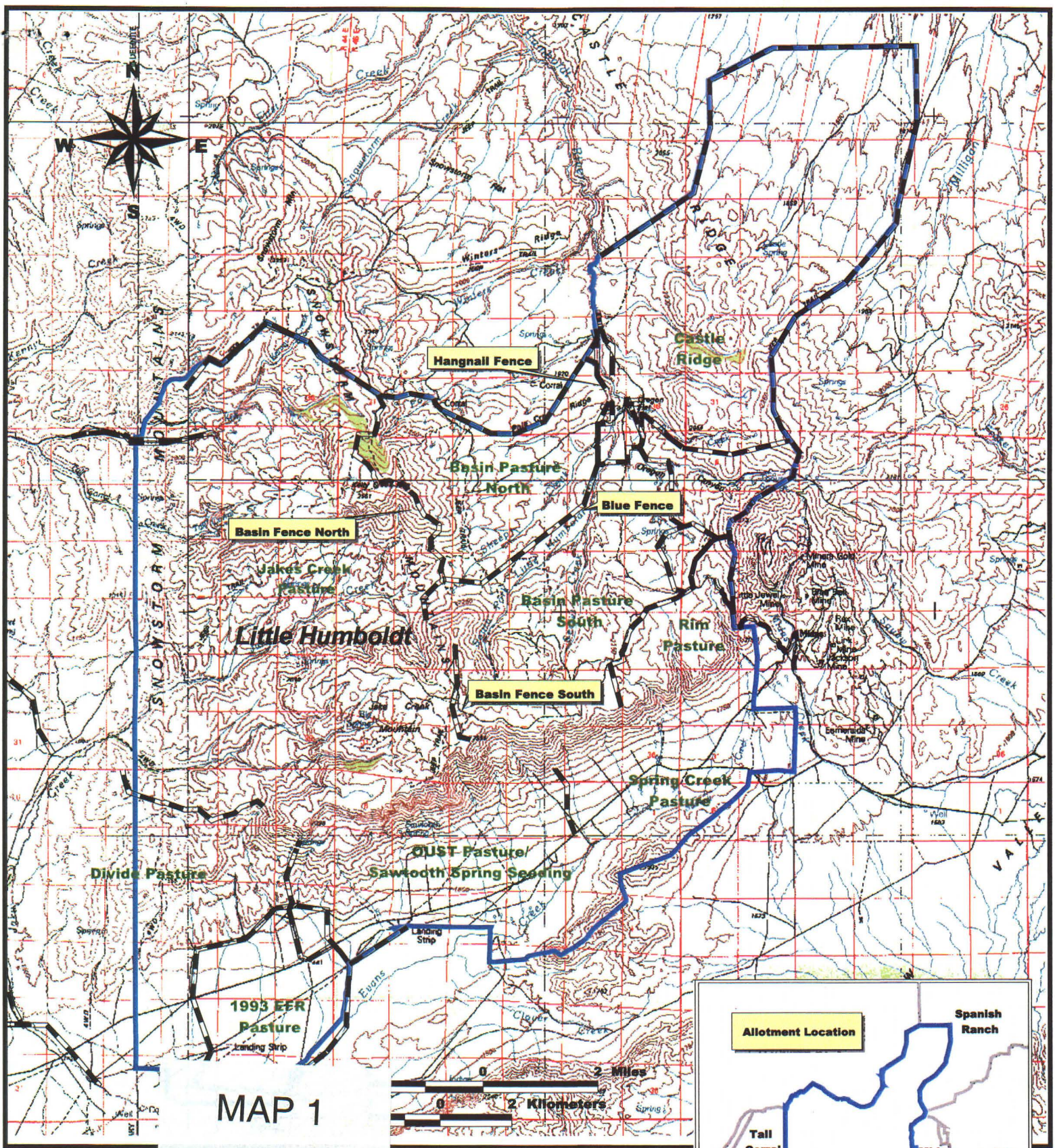


Figure 7. Secret Creek near station 2 on October 3, 2001. Approximately 16 percent streambank trampling and 68 percent utilization with 0.9 inch stubble height.



Figure 8. Measuring streambank trampling along a 100 foot transect.





MAP 1

LITTLE HUMBOLDT ALLOTMENT

Pasture Detail

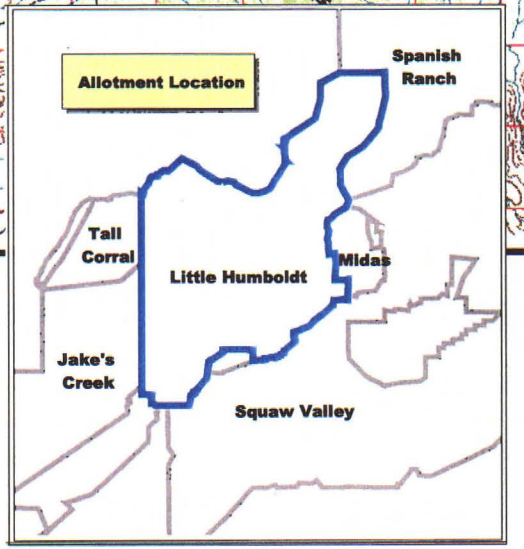
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ELKO FIELD OFFICE

 Pasture Fences
 Allotment Boundary



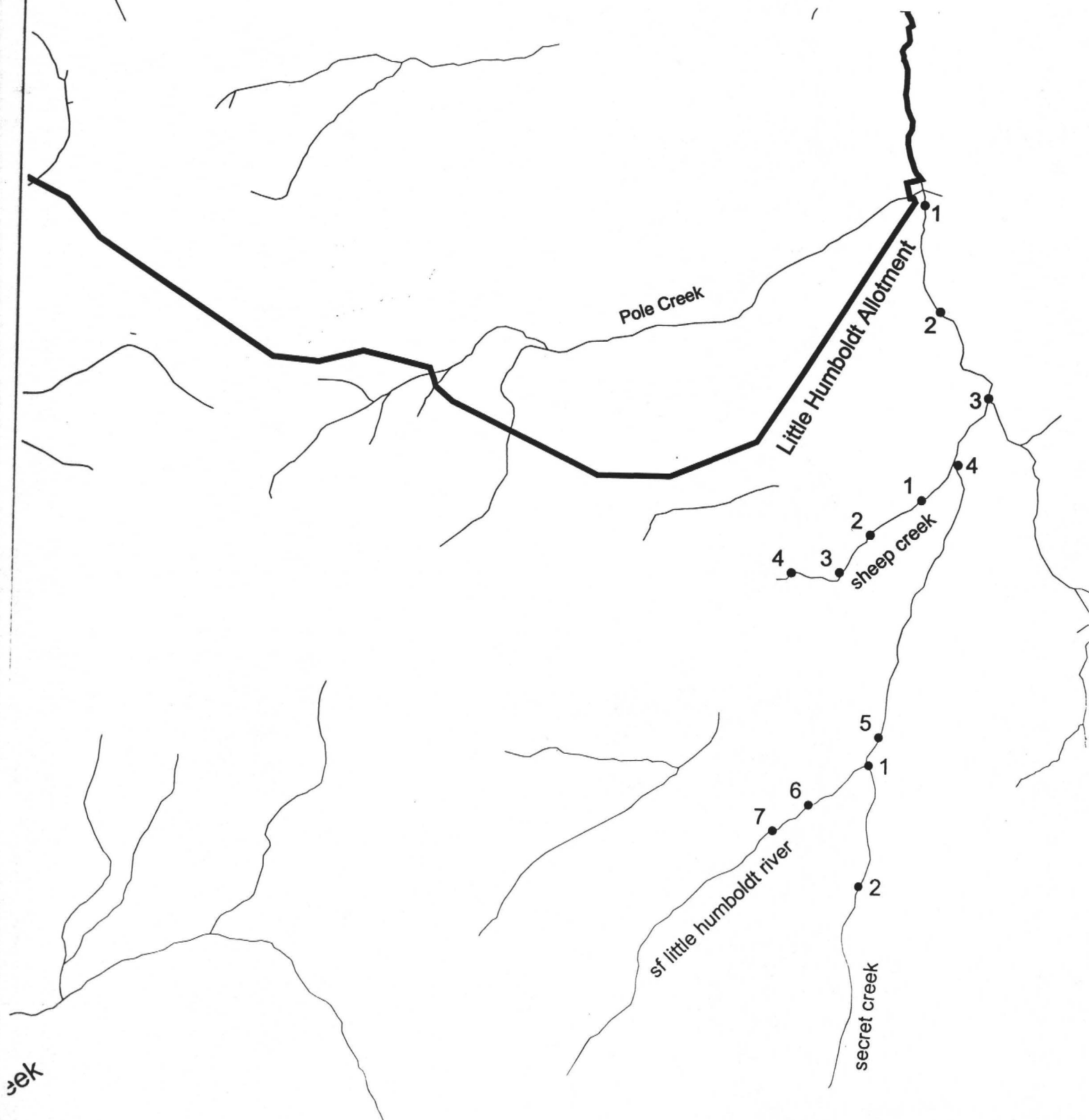
11-05-01
by kmd, ELFO

"NO WARRANTY IS MADE BY THE BUREAU OF LAND MANAGEMENT AS TO THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THESE DATA FOR INDIVIDUAL USE OR AGGREGATE USE WITH OTHER DATA."



MAP 2

SOUTH FORK LITTLE
HUMBOLDT RIVER BASIN
MONITORING SITES



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