L 5/10/02

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Elko Field Office
3900 East Idaho Street
Elko, Nevada 89801-4611
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In Reply Refer To:
4130/4400.4 (NV-012)

CERTIFIED MAIL NO. 7000 0520 0020 5846 0872
RETURN RECEIPT REQUESTED

MAY 10 2002

Hammond Ranches, Inc. (a.k.a. Oro Vaca, Inc.)
c/o Glen Theide
Hot Springs Ranch
HC 66 Box 18
Golconda, NV 89414

FINAL DECISION EFFECTIVE UPON ISSUANCE REGARDING LIVESTOCK GRAZING IN THE SOUTH FORK OF THE LITTLE HUMBOLDT RIVER BASIN PORTION OF THE LITTLE HUMBOLDT ALLOTMENT

BACKGROUND

The Elko Field Office of the Bureau of Land Management (BLM) issued decisions in 1999, 2000 and 2001 directing changes in livestock management within the South Fork of the Little Humboldt River Basin (the Basin) portion of the Little Humboldt Allotment. The BLM had determined that riparian and Lahontan Cutthroat Trout (LCT) habitat conditions were unsatisfactory and that livestock use was a primary causal factor. Lahontan Cutthroat Trout is listed as a threatened species under the Endangered Species Act of 1973, as amended. These decisions were designed to manage livestock use in a manner that would provide for the improvement of riparian and LCT habitat in the short term pending completion of a multiple use management plan for the long term.

In February 2002, a draft evaluation was completed for the Little Humboldt, Tall Corral and Jakes Creek Allotments and mailed to the interested public for review and comment. This evaluation analyzed information on upland and riparian resource conditions and trends relative to livestock, wild horse and wildlife management between 1977 and 2001. Following the analysis, the BLM drafted conclusions regarding progress towards meeting the standards for rangeland health and Elko Resource Management Plan (RMP) objectives. This evaluation also included technical recommendations proposing changes in management that were considered necessary to achieve rangeland health standards and RMP objectives. These technical recommendations proposed management actions intended to guide management over the long term. Comments were received from Hammond Ranches, Inc. (aka Oro Vaca, Inc.) as well as agencies representing the State of Nevada, wild horse interest groups and conservation interest groups.

Following a review of public comments relative to the South Fork of the Little Humboldt River Basin (the Basin) portion of the Little Humboldt Allotment, the BLM selected proposed livestock grazing management actions to be implemented in the Basin beginning in 2002 and for the forseeable future. The Basin is defined as that area encompassing the North and South Basin Pastures. The proposed actions were similar to the technical recommendations that accompanied the allotment evaluation. Since the proposed management actions in the Basin affect LCT, the BLM drafted a biological assessment (BA) to describe the impacts of the proposed actions on LCT. The BA, titled "Little Humboldt Allotment South Fork Little Humboldt River Basin Livestock Grazing Proposal", relied on the best available scientific data. A biological assessment is a document the BLM prepares and transmits to the U.S. Fish and Wildlife Service (FWS) for consultation regarding the affects of BLM actions on species protected under the Endangered Species Act. All federal agencies are directed to consult with the FWS to insure that the agency's action is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the adverse modification of its critical habitat. The draft BA was provided to the permittee, Hammond Ranches, Inc., for review and comment. By letter dated April 10, 2002, Hammond Ranches, Inc. protested the draft BA. Those protest points reiterated comments previously submitted by Hammond Ranches, Inc. which are addressed in the BA enclosed as Appendix 1.

The BLM has carefully reviewed Hammond Ranches, Inc. protest points on the draft BA and has now finalized the BA (See Appendix 1). Rulings issued by the U.S. Department of Interior Office of Hearings and Appeals (OHA) in the case of F. Duane Blake et al. v. Bureau of Land Management, 156 IBLA 280 (2002), interpret the issuance of a BA that includes proposed actions affecting a livestock permittee to be a BLM decision subject to protest and appeal and review by OHA under the Taylor Grazing Act.

In accordance with OHA rulings, and in light of Hammond Ranches, Inc. protest, I have reconsidered my proposed/draft biological assessment and my decision is as follows:

DECISION

1. **Submit the biological assessment titled "Little Humboldt Allotment, South Fork Little Humboldt River Basin Livestock Grazing Proposal" dated May 9, 2002 (the BA) to the U.S. Fish and Wildlife Service (FWS) for the purpose of initiating formal consultation pursuant to Section 7 of the Endangered Species Act.**

   Rationale: All federal agencies are directed to consult with the FWS to insure that the agency's action is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the adverse modification of its critical habitat.

2. **Adopt the Proposed Actions in the BA and modify the terms and conditions of Hammond Ranches, Inc. (aka Oro Vaca, Inc.) grazing permit for the Little Humboldt Allotment to the extent necessary to implement the following proposed actions derived from the BA:**

A. Close the Basin to livestock grazing until the streams within the Basin (South Fork of the Little Humboldt River, Secret, Sheep, Oregon Canyon, and Pole Creeks) reach proper functioning condition (PFC) as defined in BLM Technical Reference 1737-9 (BLM 1993) and meets the short-term desired future condition (DFC) objectives described in Table 3 below. The Basin is that area described as the South Fork Little Humboldt Management Basin shown on Map 1 in the BA (See Appendix 1) which encompasses what is otherwise known as the North and South Basin Pastures.

Rationale: This grazing closure will allow for attainment of DFC objectives and ensure significant progress towards and attainment of the rangeland health standards for riparian/wetland sites and habitats, and the RMP objectives. The BA states the Basin will be closed to livestock grazing for up to 5 years, or until streams reach PFC/DFC objectives; however, the intent of the BA and this decision is to close the Basin until the short-term PFC/DFC objectives have been achieved. For additional information, refer to the BA in Appendix 1 and the Little Humboldt, Jakes Creek and Tall Corral Allotment Evaluations issued in February 2002 and available at the BLM's Elko Field Office.

B. Livestock trailing through the North Basin Pasture may be authorized to move cattle between the Jakes Creek and Castle Ridge Pastures. When trailing is authorized, the following terms and conditions will apply:
(1). All livestock being trailed at any one time will enter and leave the North Basin Pasture all in the same day. No overnight stops will be allowed.
(2). All livestock entering the North Basin Pasture will be attended by riders at all times.
(3). All trailing will occur along the road and/or ridges away from the Sheep Creek and Pole Creek drainages.
(4). All trailing will occur within the last seven days of the scheduled use in the pasture from which the cattle are trailing.
(5). If terms and conditions for trailing are violated during the interim grazing system period, trail use through the North Basin Pasture will not be allowed the following year. If terms and conditions for trailing are violated during implementation of the final/long-term grazing system, adjustments in authorized use will be made. Adjustments may include a reduction of grazing use within the North Basin Pasture of 25% or more during the current grazing season or the following grazing season, or a suspension of trailing privileges during the current grazing season or the next grazing season.

Rationale: Trailing cattle through the North Basin Pasture facilitates cattle movements between the Jakes Creek and Castle Ridge Pastures. Terms and condition for trailing will ensure that trailing doesn't negatively impact riparian conditions or LCT habitat.

C. Implement the following long-term grazing system upon meeting the short-term PFC/DFC riparian objectives for the North and South Basin Pastures.

(1). Pasture Rotations and Periods of Use

Table 1 - Pasture Rotations and Periods of Use		
Year	North Basin Pasture	South Basin Pasture
Even	This pasture may be used in either the spring (use prior to 7/1) or the fall (9/16-10/15). However the pasture cannot be used in both the spring and the fall of the same year. Trailing in accordance with the terms and conditions described under short-term grazing may be authorized.	Rest. No trailing will be allowed.
Odd	Rested. Trailing in accordance with the terms and conditions described under short-term grazing may be authorized.	This pasture may be used in either the spring (use prior to 7/1) or the fall (9/16-10/15). However the pasture cannot be used in both the spring and the fall of the same year.

(2). Utilization of herbaceous riparian vegetation shall ensure a minimum 4" stubble height remains when livestock are removed. In addition, utilization shall not exceed 20% on willows or 10% on aspen. Streambank trampling shall not exceed 10%.
(3). The pasture will be rested following any year of grazing use.
(4). Flexibility in the movement of cattle into and out of the North and South Basin Pastures is as follows:

Fall use: no flexibility in the on-date; 3 days flexibility in the off date.
Spring use: 3 days flexibility in the on date; no flexibility in the off-date.

This flexibility does not allow use in excess of permitted use for each pasture.

(5). The permittee will be responsible for ongoing observations of grazing use to ensure that stubble height, streambank trampling criteria, and utilization associated with livestock use are not exceeded. The BLM will provide information and or training to the permittee on the standard methodology used to monitor stubble height, streambank trampling and utilization if necessary or requested.

The BLM will continue monitoring to ensure that the permittee complies with the above criteria. If problems are identified, the BLM and permittee will work together to find solutions which address the problems and the annual grazing system will be adjusted the following year as needed.

Rationale: The long-term grazing system will allow for attainment or enhancement of DFC objectives and ensure significant progress towards and attainment of the rangeland health riparian standards, the habitat standards and the Resource Management Plan (RMP) objectives. These actions will benefit Lahontan cutthroat trout, a Federally threatened species, by managing livestock use to achieve PFC/DFC objectives on riparian/wetland herbaceous and woody vegetation associated with Lahontan cutthroat trout streams within the Basin. The proposed action would also benefit other sensitive species, including sage grouse (*Centrocercus urophasianus),* associated with the basin. For additional information, refer to the BA in Appendix 1 and the Little Humboldt, Jakes Creek and Tall Corral Allotment Evaluations issued in February 2002 and available at the Elko Field Office.

D. Livestock grazing use will be managed to achieve the following short and long-term PFC and DFC objectives for the streams in the Basin. The short-term DFC objectives must be achieved before the Basin is reopened to livestock grazing under the long-term grazing system.

Table 3 - Proper Functioning Condition (PFC) and Desired Future Condition Objectives

South Fork Little Humboldt River (SFLHR)

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM DFC OBJECTIVES (5 Yrs)	LONG-TERM DFC OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	59%	70 %	Maintain or improve
Stream width/depth ratio	25 to 35	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	20'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC-1.69 mi. FAR-1.26 mi. NF – 4.19 mi.	PFC – 2.95 miles FAR↑- 4.19 miles	Maintain PFC Improve FAR or NF

Secret Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	63%	70 %	Maintain or improve
Stream width/depth ratio	38 to 51	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	11'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- 0.56 mi. FAR- 1.04 mi. NF- 0.62 mi.	PFC – 1.60 miles FAR↑ - 0.62	Maintain PFC Improve FAR or NF-

Sheep Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	68%	70 %	Maintain or improve
Stream width/depth ratio	19 to 27	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	8'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- 0.57 mi. FAR- 1.88 mi. NF- 2.91	PFC – 2.45 miles FAR↑-2.91	Maintain PFC Improve FAR or NF

Oregon Canyon Creek

HABITAT PARAMETERS	1992 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	26%	60 %	Maintain or improve
Stream width/depth ratio	21 to 26	Improve 30%	Improve to 15:1 or better
Mean B riparian zone width (feet)	0'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- .30 mi. FAR- .89 mi. NF- 5.14 mi.	PFC- 1.19 miles FAR↑- 5.14 miles	Maintain PFC Improve FAR or NF

Upper Pole Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVE (5 Yrs.)	LONG-TERM OBJECTIVES (5 Yrs. +)
Riparian Condition Class	No data	70%	Maintain or improve
Stream width/depth ratio	No data	30% increase over baseline	Improve to 20:1 or better
Mean B riparian zone width	No data	30% increase over baseline	Improve to 20:1 or better
Proper Functioning Condition	PFC- .41 mi. FAR- 1.32 mi.	PFC – 1.73	Maintain PFC Improve FAR or NF

Selected stream survey data and proper functioning condition (PFC) analysis will be used to trigger when livestock grazing can resume in a manner to maintain and improve conditions over the long-term. An interdisciplinary team will assess if significant progress is being made towards multiple use objectives on the SFLHR, Secret Creek, Sheep Creek, Oregon Canyon Creek and Pole Creek. Survey data will be used from stations on public lands, or unfenced private lands administered by BLM during low flow or base flow conditions.

Short-term objectives for the streams within the Basin are based on B channel types since 11 of the 15 stream survey stations are B4s. B channel types show statistically significant changes in PFC ratings, Riparian Condition Indices, bank cover, bank angle, undercut banks, and to some extent in bank stability (Newman 2001). The baseline year for determining progress towards PFC and DFC objectives will be the 1999 and 2000 PFC ratings and the 1999 stream survey. Additional information on monitoring procedures can be found in the BA located in Appendix 1.

Rationale: PFC is the minimal BLM standard for riparian/wetland condition class. The other attributes delineated in Table 3 reflect riparian/stream values which are achievable for the benefit of habitat conditions for LCT.

Achievement of these standards and RMP objectives will ensure that streams will have a low width to depth ratio appropriate for the associated channel type with streambanks and floodplain areas in stable and densely vegetated condition with a riparian herbaceous plant community dominated by Nebraska sedge where appropriate to site potential. Areas of active erosion would be limited to bank sloughing associated with natural processes of channel evolution. Please refer to the BA at Appendix 1 for additional information.

3. **Deny those portions of Hammond Ranches, Inc. grazing applications for use in the Basin (North and South Basin Pastures) during 2002.**

Rationale: Authorizing grazing use in the Basin during 2002 would not be in conformance with the changes to terms and conditions described under decision point number 2 above; therefore, it is appropriate to deny those portions of Hammond Ranches, Inc. grazing application(s).

4. **This decision is issued as a final decision effective upon the date of issuance.**

A biological opinion to be issued by the FWS on the BA may result in the BLM issuing modifications to this decision.

The final multiple use decision to be issued on the Little Humboldt/Tall Corral and Jakes Creek Allotments will address all other issues outside the scope of the actions in this decision.

Rationale: Federal grazing regulations provide authority for the BLM to issue a final decision effective upon issuance when the authorized officer determines that the soil, vegetation, or other resources on the public lands require immediate protection when continued grazing use poses imminent likelihood of significant resource damage.

Current habitat conditions of the streams within the Basin pose a very real threat to the viability of this population of LCT as demonstrated by high summer water temperatures, high streambottom sedimentation, and streambank trampling. BLM monitoring data indicates the riparian/aquatic habitat in the Basin is in such a degraded and weakened condition that temporary rest from grazing is warranted to achieve any significant improvement of habitat conditions for LCT in the near future. The BLM is required by law to provide LCT with the full protection of the Endangered Species Act.

The BLM has consulted with Hammond Ranches, Inc. and the interested public regarding the proposal to temporarily close the Basin to livestock grazing. On December 18, 2001, a report was mailed to Hammond Ranches, Inc. and the interested public titled "2001 Monitoring Report, South Fork Little Humboldt River Basin - Little Humboldt Allotment" dated December 17, 2001. This report summarized an evaluation of livestock use in the Basin through the 2001 grazing season and, based on this report, a recommendation was made by BLM specialists that the Basin be closed to livestock grazing for up to 5 years, or until the streams met desired future condition (DFC) objectives. This proposal to temporarily close the Basin to livestock grazing beginning in 2002 was also discussed during a January 3, 2002 meeting with Hammond Ranches, Inc. This proposal was also presented as a technical recommendation in the February 2002 draft evaluation for the Little Humboldt/Tall Corral and Jakes Creek Allotments, and as the proposed action in the draft BA provided to Hammond Ranches, Inc. Although the BLM has, on several occasions, consulted with Hammond Ranches, Inc. and the interested public regarding the proposal to temporarily close the Basin beginning in 2002, Hammond Ranches, Inc. has continued to request grazing use in the Basin during 2002.

Since Hammond Ranches, Inc. has submitted an application to graze the Basin in 2002, this decision is to be effective upon the date of issuance in order to prevent Hammond Ranches, Inc. from placing cattle into the basin pending a hearing on an appeal of this decision.

AUTHORITY

Authority for the actions described in this final decision are found in the following parts of the 43 Code of Federal Regulations (CFR):

4100.0-8: The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans. Land use plans shall establish allowable resource uses (either singly or in combination), related levels of production or use to be maintained, areas of use, and resource condition goals and objectives to be obtained. The plans also set forth program constraints and general management practices needed to achieve management objectives. Livestock grazing activities and management actions approved by the authorized officer shall be in conformance with the land use plan as defined at 43 CFR 1601.0-5(b).

4110.3: The authorized officer shall periodically review the permitted use specified in a grazing permit or lease and shall make changes in the permitted use as needed to manage, maintain or improve rangeland productivity, to assist in restoring ecosystems to properly functioning condition, to conform with land use plans or activity plans, or to comply with the provisions of subpart 4180 of this part. These changes must be supported by monitoring, field observations, ecological site inventory or other data acceptable to the authorized officer.

4110.3-3(b): When the authorized officer determines that the soil, vegetation, or other resources on the public lands require immediate protection because of conditions such as drought, fire, flood, insect infestation, or when continued grazing use poses an imminent likelihood of significant resource damage, after consultation with, or a reasonable attempt to consult with, affected permittees or lessees, the interested public, and the State having lands or responsible for managing resources within the area, the authorized officer shall close allotments or portions of allotments to grazing by any kind of livestock or modify authorized grazing use... Notices of closure and decisions requiring modification of authorized grazing use may be issued as final decisions effective upon issuance or on the date specified in the decision. Such decisions shall remain in effect pending the decision on appeal unless a stay is granted by the Office of Hearings and Appeals in accordance with 43 CFR 4.21.

4130.3: Livestock grazing permits and leases shall contain terms and conditions determined by the authorized officer to be appropriate to achieve management and resource condition objectives for the public lands and other lands administered by the Bureau of Land Management, and to ensure conformance with the provisions of subpart 4180 of this part.

4130.3-1(a): The authorized officer shall specify the kind and number of livestock, the period(s) of use, the allotment(s) to be used, and the amount of use, in animal units months, for every grazing permit or lease. The authorized livestock grazing use shall not exceed the livestock carrying capacity of the allotment.

4130.3-1(b): All permits and leases shall be made subject to cancellation, suspension, or modification for any violation of these regulations or of any term or condition of ther permit or lease.

4130.3-1(c): Permits or leases shall incorporate terms and conditions that ensure conformance with subpart 4180 of this part.

4130.3-2: The authorized officer may specify in grazing permits or leases other terms and conditions which will assist in achieving management objectives, provide for proper range management or assist in the orderly administration of the public rangelands. These may include but are not limited to:

> (f): Provision for livestock grazing temporarily to be delayed, discontinued or modified to allow for the reproduction, establishment, or restoration of vigor of plants, provide for the improvement of riparian areas to achieve proper functioning condition or for the protection of other rangeland resources and values consistent with objectives of applicable land use plans...

4130.3-3: Following consultation, cooperation, and coordination with the affected lessees or permittees, the State having lands or responsible for managing resources within the area, and the interested public, the authorize officer may modify terms and conditions of the permit or lease when the active use or related management practices are not meeting the land use plan, allotment management plan or other activity plan, or management objectives, or is not in conformance with the provisions of subpart 4180 of this part...

4160.3(f): Notwithstanding the provisions of part 4.21(a) of this title pertaining to the period during which a final decision shall be in effect, the authorized officer may provide that the final decision shall be effective upon issuance or on a date established in the decision and shall remain in effect pending the decision on appeal unless a stay is granted by the Office of Hearings and Appeals when the authorized officer has made a determination in accordance with part 4110.3-3(b)...

4180.1: The authorized officer shall take appropriate action under subparts 4110,4120,4130, and 4160 of this part as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management needs to be modified to ensure that the following conditions exist.

(a). Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b). Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c). Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d). Habitats are, or are making significant progress toward being, or restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

4180.2(c): The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines that are made effective under this section. Appropriate action means implementing actions pursuant to subparts 4110, 4120, 4130, and 4160 of this part that will result in significant progress toward conformance with the guidelines. Practices and activities subject to standards and guidelines include the development of grazing related portions of activity plans, establishment of terms and conditions of permits, leases and other grazing authorizations, and range improvement activities...

Additional authority is contained within the pertinent sections of the Endangered Species Act (Act) and in 50 C.F.R part 402, which identifies the procedures for complying with the Act.

Section 7 (a) (2) of the Act states in part "Each Federal Agency shall, in consultation with and with the assistance of the Secretary, ensure that any action authorized, funded, or carried out by such agency... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species..."

PROVISIONS FOR APPEAL AND PETITION FOR STAY

Any applicant, permittee, lessee or other person whose interest is adversely affected by this final decision may file an appeal and petition for stay of the decision pending final determination on appeal. The appeal and petition for stay must be filed in the office of the authorized officer, at 3900 E. Idaho Street, Elko, NV, 89801 within 30 days following receipt of the final decision.

The appeal shall state the reasons, clearly and concisely, why the appellant thinks the final decision is in error.

Should you wish to file a motion for stay, the appellant shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied.
(2) The likelihood of the appellant's success on the merits.
(3) The likelihood of immediate and irreparable harm if the stay is not granted, and
(4) Whether the public interest favors granting the stay.

As noted above, the petition for stay must be filed in the office of the authorized officer.

For your information, an environmental assessment (BLM/EK/PL2002/026) has also been completed which analyzes the impacts of the actions in this decision relative to other alternatives. This environmental assessment is available at the Elko Field Office.

Sincerely yours,

CLINTON R. OKE
Assistant Field Manager
Renewable Resources

Enclosure(s): as stated above

cc: Daniel May
Barrick Goldstrike, Inc.
BLM - Winnemucca Field Office
Committee for Idaho's High Desert
Elko County Commissioners
Erickson, Duane
Friends of Nevada Wildlife
Farm Credit Service
Fund for Animals - New York City, NY.
Fund for Animals - Jackson, WY.
Friends of Nevada Wilderness
Hawkwatch International, Inc.
Humboldt County Commissioners
Natural Resources Defense Council
National Audubon Society
Nevada Division of Wildlife - Elko
Nevada Division of Wildlife - Elko, Pete Bradley

5/9/02

LITTLE HUMBOLDT ALLOTMENT
SOUTH FORK LITTLE HUMBOLDT RIVER BASIN
LIVESTOCK GRAZING PROPOSAL

Biological Assessment for Formal Consultation Request
Prepared by
Elko Field Office, Bureau of Land Management
May 9, 2002

PURPOSE

The purpose of this biological assessment (BA) is to evaluate the effects of long-term and recent livestock grazing on riparian and aquatic habitats within the South Fork Little Humboldt River Basin (SFLHR) basin portion of the Little Humboldt Allotment (Allotment), and to recommend changes in livestock grazing within the SFLHR basin necessary to prevent adversely affecting Lahontan cutthroat trout (LCT) (*Oncorhynchus clarki henshawi*), a federally listed threatened species (Maps 1 and 2). LCT occur in streams on public and private lands in the SFLHR basin. Other wildlife species, including the Bureau of Land Management (BLM) sensitive sage grouse (*Centrocercus urophasianus*) also occur within the basin which may be impacted by proposed management practices. Grazing practices on fenced private pastures (Oregon Flat Pasture, Pole Creek Pasture, and proposed Sheep Creek Pasture) within the basin are not considered as part of the BLM grazing proposed action (Map 3).

LOCATION

The Little Humboldt Allotment is located in western Elko County, north and west of the town of Midas (Map 1). The SFLHR basin part of the allotment, which is at higher elevations, has about 14,336 acres of public and private lands that encompass the headwaters of the SFLHR, and tributary streams Secret, Sheep, Oregon Canyon, and Pole creeks.

BACKGROUND

LCT are present in SFLHR, Sheep Creek, Secret Creek, and the headwaters of Pole Creek within the SFLHR basin portion of the Allotment. Stream Survey data and Proper Functioning Condition (PFC) have been collected on all basin streams. All the 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 and the headwaters of Pole Creek are in the North Basin Pasture (Map 3). 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 have been fenced as private pastures (Map 3). These fences were mostly completed in the summer of 2001. Several problem areas were identified by Oro Vaca and BLM

during the 2001grazing season, and Oro Vaca proposes to modify the fencing in these areas to address grazing problems encountered on private lands and build new private land fencing pastures during 2002. In addition, Oro Vaca Inc., has proposed fencing private land portions of Sheep Creek and Secret Creek.

The BLM has completed section 7 consultations (consultations) for interim grazing use within the SFLHR basin in 1999, 2000, and 2001,while awaiting completion of an Allotment Evaluation (AE) and Final Multiple Use Decision (FMUD). The AE and FMUD have been delayed because of appeals and court hearings. The results of these consultations are outlined below. Each interim grazing season authorization has been monitored and an annual monitoring report completed to document what occurred to riparian herbaceous and woody vegetation, and streambank trampling with each season of use

1999

The BLM issued a Final Decision, Effective Upon Issuance, for the Allotment to Hammond Ranches, Inc.(later changed to Oro Vaca, Inc.) on June 1, 1999, after completing informal section 7 consultation with the United States Fish and Wildlife Service (FWS). This decision implemented interim changes to the existing grazing permit designed to improve riparian herbaceous and woody vegetation important for recovery of LCT aquatic habitat within the basin by removing livestock grazing after June 30. This decision was effective immediately, to be followed by the completion of the A E and issuance of a FMUD in 2000.

An appeal and petition for stay to the final decision was filed by Oro Vaca, Inc. on July 8, 1999. On August 3, 1999, the Interior Board of Land Appeals (IBLA) issued an order staying BLM's June 1, 1999, decision. When the Office of Hearings and Appeals (OHA) stays a final decision, grazing use is authorized at previous levels until the stay is resolved as outlined in 43 CFR 4160.3 (d). Due to the OHAs August 3, 1999, stay order, Oro Vaca, Inc. was authorized at the 1998 licensed levels of grazing use (3/16-11/30). Because the stay allows for grazing to be different than that outlined the FWS informal consultation and the BLM's June 1, 1999, decision, the BLM was required to reinitiate section 7 consultation with the FWS.

2000

On January 3, 2000, Oro Vaca, Inc. presented a proposal to BLM for long-term livestock grazing management in the Allotment which included strategies for addressing impacts to LCT habitat. The BLM decided to consider the proposal in the context of the AE/FMUD process, but none-the-less took it into account in initiating construction of two new fences to control livestock movement into the basin. The Owyhee Rim fence was completed in early July, 2000, and the Jakes Creek Allotment boundary fence was partially completed by the end of 2000 as a result of a fire in the Jakes Creek Pasture. In addition, Oro Vaca, Inc., initiated private land fencing on the Oregon Flat meadow area

and on the Pole Creek meadow area during the summer of 2000 (Map 3). Oro Vaca, Inc., also completed private lands fencing from the southeast corner of the Oregon Flat pasture fence to the Owyhee Rim fence along an unnamed tributary west of Oregon Flat Creek (Map 3). This fence made the Castle Ridge a separate pasture from the SFLHR basin.

On January 31, 2000, BLM provided a Biological Assessment (BA) to the FWS and Oro Vaca, Inc., with a proposed action for the Allotment that would approve the 1998 level of livestock use consistent with the IBLA stay order. The BA provided an evaluation of riparian habitat conditions within the Allotment, and evaluated the effects of the proposed action upon LCT. The BA determined that hot season grazing use within the basin had adversely impacted riparian habitat conditions within the basin over time, and that the proposed action would continue to allow hot season grazing on 89 percent of LCT stream habitat, and consequently the proposed action would continue to degrade the majority of the aquatic habitat conditions in the basin, even with 4 miles of private lands fencing completed by the permittee.

The FWS issued a Jeopardy Biological Opinion (BO) (1-5-00-F-078) for BLM's proposed action and its potential effect upon LCT within the Allotment on March 30, 2000. This BO concluded that the proposed action would continue the heavy livestock utilization of riparian vegetation and trampling of streambanks and degradation of streams which had occurred in the past and "is likely to jeopardize the continued existence of the Humboldt Basin Distinct Population Segment of the LCT."

The BO provided Reasonable and Prudent Alternatives (RPAs) which were similar, but more extensive than, provided in informal consultation completed in 1999. The FWS's RPAs necessary to preclude a jeopardy opinion for LCT included:

1. BLM shall implement their "Full Force and Effect" (FFE) interim decision developed for the 1999 grazing season (removal of livestock from the entire allotment by June 30) for the 2000 grazing season, but with the following modification: If proposed fencing activities outlined by the BLM and private landowner are completed by June 30, then livestock will need to be removed only from the basin part of the allotment.

2. BLM shall complete an allotment evaluation, biological assessment, and long-term allotment management plan in 2000 to be implemented beginning with the 2001 grazing season. BLM will continue to use the June 30 off-date as described in number 1, with the requirement that riparian habitat on LCT streams are in an upward trend, or until alternative actions such as those described below are in place to allow for enhanced long-term livestock management within the basin.

    A. The BLM shall minimize adverse impacts of livestock grazing activities to riparian habitat associated with streams that support LCT by providing restriction on use of herbaceous and woody plant species within the riparian

zone.

To minimize adverse impacts of livestock grazing to riparian and upland habitats that support LCT, the allowable utilization level cannot exceed 30 percent by measurement of key representative herbaceous species (minimum standard of 6 inches stubble height) and 20 percent utilization of key woody species.

B Streambank trampling shall not exceed 10 percent.

C. Stubble height shall be at least 6 inches high at the end of the growing season.

D. Livestock should be intensively managed through:

a. development of riparian pastures and allotment boundary fencing;

b. Development of water away from streams and spring-sources;

c. Livestock herding onto uplands; and

d. Removal of problem livestock that continually return to riparian areas.

3. Monitor livestock utilization and trampling weekly after June 15 of each year until livestock are removed from the basin part of the allotment. BLM will provide an ongoing monitoring report documenting removal of livestock from the basin and an annual monitoring report on riparian utilization to the Service within 3 months of the end of livestock grazing.

The FWS stated that "implementation of these RPAs will avoid jeopardy to the Humboldt River basin DPS of LCT because these practices will improve riparian vegetation conditions and consequently improve riparian habitat and water flows over the long-term for the benefit of LCT."

On March 31, 2000, the BLM issued another Final Decision Effective Upon Issuance. The BLM decided to adopt the RPAs outlined in the BO. Upon receipt of a Jeopardy BO from the FWS, BLM must do one of the following in accordance with section 7(a)(2) of the ESA:

Adopt one of the RPAs for eliminating jeopardy or adverse modification of critical habitat in the opinion.

Decide not to grant the permit, fund the project, or undertake the action.

Request an exemption from the ESA.

Reinitiate the consultation by proposing modification of the action or offering RPAs not yet considered, or,

chose to take other action if it is believes, after a review of the BO and the best available scientific information, such actions satisfies section 7(a)(2).

Prior to receiving the BO on March 20, 2000, the BLM had requested that Oro Vaca, Inc., provide an alternative to the RPAs reflected in a draft BO, but Oro Vaca, Inc., failed to suggest an alternative that would prevent jeopardy. The RPAs would reduce livestock impacts on LCT habitat in the Allotment by removing livestock from the basin by June 30, and at the same time allow for some continued use of the Allotment by livestock.

Oro Vaca, Inc. appealed and requested a stay of the 2000 FFE decision to the OHA. The IBLA denied the stay and Oro Vaca, Inc., then filed a complaint for judicial review and injunctive relief with the U.S. District Court. A negotiated settlement for removal of livestock during the late summer of the 2000 grazing season within the basin was worked out in District Court, but different interpretations of the intent of the agreement resulted in some cattle remained in the basin throughout the summer of 2000, exceeding livestock utilization and streambank trampling requirements of the RPAs.

2001

The BLM determined that reinitiation of section 7 consultation with the FWS was necessary because the 2000 BO was no longer supported by the best scientific information available. The BLM had collected substantial new scientific data since the 2000 BO was issued that indicates the authorized grazing on the Allotment may affect the LCT in a manner or to an extent not considered in the 2000 BO. In addition, livestock grazing management was subsequently modified by actions as a result of the District Court agreement that caused an effect to LCT that was not considered in the 2000 BO. The 2001 BA evaluated impacts from livestock grazing in 1999 and 2000, which was in excess of what was authorized by BLM in its 1999 and 2000 FFE decisions (BLM 2001b).

On March 29, 2001, the BLM received a BO (1-5-01-F-033) from the FWS for BLM's proposed action related to livestock grazing on public and associated unfenced private lands within the SFLHR basin, Little Humboldt Allotment, Elko County, Nevada (FWS 2001). The FWS determined that the BLM's proposed livestock grazing system for 2001, as described in the BLM 2001 BA, would not likely jeopardize the continued existence of LCT within the SFLHR basin if the BLM adopted the Reasonable and Prudent Measures (RPAs) and Terms and Conditions (TC) established in the BO which provided a number of protective measures for LCT. The BO provided the following RPAs and TC.

Reasonable and Prudent Alternatives

The FWS believes the following RPAs 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 RPAs 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 TCs, which implement the RPAs, and outline required reporting/monitoring requirements. <u>These TCs are non-discretionary.</u>

3. To implement RPA 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.

B. Utilization of woody riparian vegetation (aspen and willow) will not exceed 20 percent of current years growth.

C. 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.

B. To implement RPA 2, the BLM shall fully implement the following requirement:

a. Complete an allotment evaluation, BA and long-term allotment management plan for the Allotment in 2001 to be implemented beginning with the 2002 grazing season. In addition, as part of the AE 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.

2001 LIVESTOCK AUTHORIZATION

BLM adopted the RPAs and implemented the TCs outlined in the 2001 FWS BO for the 2001 grazing season in their FFE 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 Allotment. Any further changes to Oro Vaca's term grazing permit and annual authorization for use in the 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, were 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 TCs:

    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.

2001 GRAZING USE

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 pastures. The South Basin Pasture was grazed with more than 600 head of livestock from about June 1, 2001 to about July 15. The North Basin Pasture had authorized grazing from September 15 through October 31 with more than 600 livestock. Use in both pastures exceeded authorized numbers of livestock and authorized season of use and Oro Vaca, Inc., was given trespass notices.

Livestock used the South Basin Pasture during the livestock use period of June 1 to July 15, 2001. Most cattle were moved to the Castle Ridge Pasture on or before July 15, although a few were still being moved as late as July 17 (NDOW 2002). No livestock were observed in the south or north pastures during the July 18-19 BLM 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 (personal observations, Coffin and Evans 2001).

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 (No count was made). Cattle were also observed in the Oregon Flat Private Pasture which had been severely used (personal observation, Coffin, Evans, Lister, McKinstry 2001). Cattle were trying to return from the North Basin Pasture back to Oregon Flat and were congregated along the fenceline at the gate near the confluence of Sheep Creek with the SFLHR. 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, 2001,and they were removed after their discovery (personal communication, Roy Shurtz). The cattle had been in the pasture for an undetermined period of time. Oro Vaca, Inc., states that gates within the two allotments were reportedly left open by unknown parties, allowing livestock in areas where they were not authorized(personal cummunication, Roy Shurtz).

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 Private Pasture, 6 in the Oregon Flat Private Pasture, and 8 in the rim pasture. The permittee was notified to remove the unauthorized cattle from the closed areas.

BLM MONITORING RESULTS

Information on habitat conditions have collected by BLM and NDOW in the basin from 1977 through 2001. Additional information on vegetation utilization and stubble height, streambank trampling, water temperatures, stream channel type, and Proper Functioning Condition (PFC) have been collected by BLM in 1999, 2000, and 2001. The information is summarized in the following sections.

To address the BO requirements, BLM initiated a monitoring program on LCT streams in the SFLHR basin portion of the Allotment during the 2001 field season. Monitoring was completed on June 15, June 28, July 18-19, and October 3, 2001. Monitoring sites 1, 2, 3, 4, 5, 5A, 6, and 7 were evaluated at least once during 2001. The locations and dates monitored were similar to 2000 monitoring (Appendices 1 and 2, Map 3). BLM collected information on utilization of riparian vegetation and woody species, and streambank trampling data and completed the 2001 monitoring report (BLM 2001d). BLM also collected some water temperature data during the sampling which is included in the monitoring report.

Summary

Monitoring conducted in the SFLHR basin in 2001 show utilization, stubble height and streambank trampling limits established in the BO were exceeded as a result of livestock use for all three LCT streams evaluated, despite separation of the basin into 2 pastures with a restricted season of use and an authorization for a maximum of 600 head of livestock. The South Basin Pasture was grazed from approximately June 1 through July 15, and the North Basin Pasture was authorized from September 15 to October 31, 2001. Some unauthorized cattle were in the North Basin Pasture before July 15, in August (Bullhead Allotment cattle as reported by Roy Shurtz after the fact)), 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).

The 2001 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 (BLM 2001d).

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 (Appendices 1 and 2). 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 monitoring sight where vegetation continued to have significant growth 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 (542), and 2000 (225). The July 15 off date in the South Basin Pasture allows livestock to utilize the pasture two weeks past what is believed to be the beginning of the hot season for this area. Use on aspen and willow increased dramatically after the end of June.

The drought conditions, loss of groundwater table water, and unauthorized use by livestock did not allow for significant 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. 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 are livestock related. Large numbers of wild horses in the Castle Ridge Pasture

continued to be a problem in 2001, but are scheduled to be gathered in 2002.

Stream Surveys

Stream habitat surveys were conducted by BLM and NDOW on streams in the basin between 1977 and 1999. Although additional stream survey data were collected in 1986, 1992, and 1995, some of the information was either unreliable (Berglund 1999) or was collected only for a limited portion of the stream. Limited habitat and LCT population information is available for the small part of Pole Creek located within the basin. Location of stream habitat survey stations within the basin is shown on **Map 4.**

Stream habitat survey data collected for the SFLHR, Sheep Creek, and Secret Creek in 1999 show the trend is static to downward for streams in the basin since baseline surveys were established in 1977 (Tables 1,2, and 3). Most significant were the declines in bank cover and bank stability and the increase in the stream width to depth ratio documented for all three LCT streams. These three parameters are reliable indicators of stream condition, especially in relation to livestock grazing impacts. Channel geometry changes such as in increase in the (bankful) width to depth ratio are an important indicator of channel instability (Rosgen 1996).

Other measured parameters including pool quality, pool to riffle ratio, and percent desirable streambottom substrates tend to be influenced by flow conditions at the time of the survey. For example, the low ratings for percent desirable streambottom substrates in 1977 reflect very low flow conditions in which a fine layer of silt covered the more desirable rubbles and gravels. Similar silt layering conditions were observed in 1999. High spring flows allow for removal of this surface sediment layer, where it is used by streambank vegetation to build streambanks. Higher flows will also often result in deeper pools and a higher pool rating in good quality habitat.

Table 1. Comparison of changes in stream survey habitat parameters for South Fork Little Humboldt River between 1977 and 1999.[1]

HABITAT PARAMETER	STREAM SURVEY		TREND
	1977	1999	
Index Rating Factors			
Pool-Riffle Ratio (% of optimum)[2]	100	66	Down
Pool Quality (% of optimum)[3]	0	12	Up
% Desirable Streambottom Substrates[4]	43	74	Up
Bank Cover(% optimum)[5]	**63**	**52**	**Down**
Bank Stability (% optimum)[6]	**62**	**55**	**Down**

HABITAT PARAMETER	STREAM SURVEY		TREND
	1977	1999	
Riparian Condition Class (% optimum)[7]	**62**	**54**	**Down**
Habitat Condition Class (% optimum)[8]	53	52	Down/Not Apparent
Other Factors			
Stream Width to Depth Ratio	**25**	**34**	**Down**

[1]Based on data from stream survey stations S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, and S-9 in both 1977 and 1999.
[2]Optimum is considered a 50-50 pool to riffle ratio.
[3]Optimum is considered to represent all quality pools.
[4]Desirable substrates include gravel, rubble, and organic debris.
[5]Optimum is considered to represent tall, dense tree cover.
[6]Optimum is considered to represent totally stable streambanks.
[7]Average of bank cover and bank stability.
[8]Average of pool-riffle ratio, pool quality, desirable substrates, bank cover, and bank stability.
Note: Bolded parameters represent the best indicators of stream and riparian habitat conditions

Table 2. Comparison of changes in stream survey habitat parameters for Sheep Creek between 1977 and 1999.

HABITAT PARAMETER	STREAM SURVEY		TREND
	1977	1999	
Index Rating Factors			
Pool-Riffle Ratio (% of optimum)[2]	86	46	Down
Pool Quality (% of optimum)[3]	0	0	No change
% Desirable Streambottom Substrates[4]	53	86	Up
Bank Cover(% optimum)[5]	**70**	**63**	**Down**
Bank Stability (% optimum)[6]	**67**	**59**	**Down**
Riparian Condition Class (% optimum)[7]	**69**	**61**	**Down**
Habitat Condition Class (% optimum)[8]	55	51	Down/Not Apparent
Other Factors			
Stream Width to Depth Ratio	**20**	**25**	**Down**

[1]Based on data from S-1, S-2, SA1, and SA2 in 1977 and S-1, S-2A, SA1A, and SA2A in 1999. Differences are in station names only; the same physical locations on the ground were surveyed in both years.
[2,3,4,5,6,7]Refer to footnotes for Table 4.
Note: Bolded parameters represent the best indicators of stream and riparian habitat conditions

Table 3. Comparison of changes in stream survey habitat parameters for Secret Creek between 1977 and 1999.[1]

HABITAT PARAMETER	STREAM SURVEY		TREND
	1977	1999	
Index Rating Factors			
Pool-Riffle Ratio (% of optimum)[2]	28	24	Down/Not Apparent
Pool Quality (% of optimum)[3]	0	0	No change
% Desirable Streambottom Substrates[4]	66	78	Up
Bank Cover(% optimum)[5]	**65**	**62**	**Down/Not Apparent**
Bank Stability (% optimum)[6]	**67**	**64**	**Down/Not Apparent**
Riparian Condition Class (% optimum)[7]	**66**	**63**	**Down/Not Apparent**
Habitat Condition Class (% optimum)[8]	55	51	Down/Not Apparent
Other Factors			
Stream Width to Depth Ratio	**20**	**25**	**Down/Not Apparent**

[1]Based on data from stream survey stations S-1, S-2, and S-3 in both 1977 and 1999.
[2,3,4,5,6,7]Refer to footnotes for Table 4.
Note: Bolded parameters represent the best indicators of stream and riparian habitat conditions

Functioning Condition Assessments

PFC assessments completed on 29.8 miles of basin streams in 1999 and 2000 showed that only 4.4 miles or 14.8 percent of the evaluated stream reaches exist in PFC or functional-at-risk with an upward trend state (Table 11 and Map 2). The areas in a PFC state were generally well vegetated, and occurred in narrow canyons inaccessible to livestock. Approximately 23.3 stream miles or 78 percent of the stream reaches were rated as non-functional or functional-at-risk with a downward trend.

These areas were readily available to livestock during the summer hot season and showed the impacts of their extended use. An additional 2.1 stream miles or 7 percent was rated functional-at-risk with no apparent trend. It was also noted that the reaches rated as functional were subject to levels of

sedimentation which could influence their long-term functionality. Ratings of nonfunctional were associated with channel entrenchment, draining of floodplains, unstable streambanks, excessive sedimentation, lack of riparian vegetation, and lack of woody plant regeneration.

Photographic Comparisons

An assessment of static to downward trend for LCT streams in the Allotment is substantiated with photographs taken in the same locations during years streams were surveyed (Table 4). In most cases, photographs show either deterioration or minimal change in poor conditions over a 23 year period. Exceptions include S-2 and SA1A on Sheep Creek and S-4 on the SFLHR. Conditions have improved for S-2 on Sheep Creek since 1992, while the stable, well vegetated streambanks initially photographed at SA1A on Sheep Creek and at S-4 on the SFLHR have been maintained over time. Other photographs are also available showing stream conditions at monitoring sites in 2000 and 2001.

Table 4. Assessment of trend of LCT streams in the Little Humboldt Allotment, SFLHR basin based on photographic comparisons spanning 20 years.

STREAM SURVEY STATION, TRANSECT	YEARS WITH COMPARABLE PHOTOGRAPHS[1]	TREND BASED ON PHOTOGRAPHIC COMPARISONS
South Fork Little Humboldt River		
Station 1, Transect 1	1977, 1986, and 1999	**Station**
Station 2	None	**NA**
Station 3, Transect 4	1977, 1999	**Down**
Station 4, Transect 1	1986, 1999	**Down**
Station 5, Transect 1	1977, 1986, 1999	**Static/Down**
Station 6	None	**NA**
Station 7, Transect 4	1977, 1999	**Static**
Station 8	None	**NA**
Station 9, Transect 3	1977, 1999	**Static**
Sheep Creek		
Station 1, Transect 1	1986, 1999	**Down**
Station 2 (S-2A), Transect 1	1986, 1992, 1999	**Up from 1992**

STREAM SURVEY STATION, TRANSECT	YEARS WITH COMPARABLE PHOTOGRAPHS[1]	TREND BASED ON PHOTOGRAPHIC COMPARISONS
Station SA1 (SA1A), Transect 1	1977, 1999	**Static**
Secret Creek		
Station 1, Transect 1	1977, 1999	**Down**
Station 2, Transect 0	1977, 1999	**Static**
Station 3, Transect 2	1977, 1999	**Down**

[1]Although photographs were taken at all stations on Sheep Creek and the South Fork Little Humboldt River in 1986, most show only the water surface and cannot be used for a visual comparison to photos from other years.

Channel Type

Rosgen (1996) channel types were determined for stream survey stations on the SFLHR, Sheep Creek, and Secret Creek in 1999. Significant parts of these streams are characterized by B4 channel types which are relatively stable in comparison to the C4, G4, and F4 channel types found in both the lower and upper reaches (**Table 5**). The latter three stream types, as well as the A4 type on Sheep Creek, are highly susceptible to lateral and/or vertical instability as a result of changes in flow and sediment regimes in the watershed (Rosgen 1996).

The presence of G (gully) channel types on the SFLHR and Sheep Creek is indicative of watershed condition in general and represents a progressive, predictable pattern of channel degradation in response to sediment loading (Rosgen 1996). All of the channel types documented with the exception of the C4b type share the absence of a well developed floodplain. The presence of a hydraulically connected floodplain is critical for regrowth later in the summer.

Table 5. Summary of Rosgen channel types for the South Fork Little Humboldt River, Sheep Creek and Secret Creek in SFLHR basin, Little Humboldt Allotment.

ROSGEN CHANNEL TYPE[1]	NUMBER STREAM SURVEY STATIONS	SENSITIVITY TO CHANGES IN FLOW AND SEDIMENT REGIMES OF CONTRIBUTING WATERSHED[1]
South Fork Little Humboldt River		
B4a, B4c, B4	6	Low
C4b	1	High

ROSGEN CHANNEL TYPE[1]	NUMBER STREAM SURVEY STATIONS	SENSITIVITY TO CHANGES IN FLOW AND SEDIMENT REGIMES OF CONTRIBUTING WATERSHED[1]
F4b	1	High
G4c	1	High
Sheep Creek		
A4	1	High
B4a, B4	3	Low
G4	1	High
Secret Creek		
B4	2	Low
C4b	1	High

[1]Rosgen (1996).

Utilization Studies

Herbaceous Vegetation Utilization

BLM collected riparian plant utilization information on the SFLHR, Secret Creek and Sheep Creek in 1999, 2000, and 2001. In 1999, riparian plant utilization data was collected on August 10 and 11. During the summer/fall of 2000, utilization data was collected on June 14/15, July 6/7, July 19 and 27, August 3 and 14, September 7, and October 4/5. In 2001, utilization measurements were taken on June 15 and 28, July 18/19, and October 3.

During 2000, the measurements showed utilization levels to be light (16-23 percent) in mid-June, but the criteria of 30 percent utilization of herbaceous vegetation recommended in the RPA section of the 1999 BO were generally exceeded by July 6,7, 2000. During 2001, utilization in the South Basin Pasture was high (54-69%) by mid to late June, and light (16%) in the closed North Basin Pasture. By the time the South Basin Pasture was closed to grazing on July 15, utilization was considered high (30-72%) on most stations, and light on two stations (4-17%) in the pasture.

The North Basin Pasture remained mostly unused (3-10% utilization) on July 18-19, and consequently livestock were authorized to use the North Basin Pasture from September 15 through October 31. Utilization data collected in the SFLHR basin on October 3, indicated that all measured stations were moderately to heavily utilized (32-63%) in both the North and South Basin pastures (Appendix 1,

Table 1). The unauthorized use in the basin pastures contributed to this heavy utilization.

Appendix I, Table 2 documents the plant stubble heights measurements taken on stations during 2000 and 2001. Stubble height of only 2 to 2.5 inches represented less than 30 percent utilization in 2000 because of poor vegetative growth. During 2001, stubble height was less than 2000 for similar dates, and utilization was considerably higher (45-70% vs 7-29%). Biologically, the issue of adequate stubble height at the end of the growing season is very important for recovery of streambanks to dissipation energy associated with high spring streamflows. The remnant .5-2 inches of stubble height remaining in October 2000 and 2001 does not provide the necessary stubble height to protect and enhance streambank conditions during spring runoff (Appendix I, Tables 2). While utilization of 30 percent, which was reached between June may seem acceptable to protect streambanks, it was obviously too heavy during the poor growing season of 2000 and 2001. The minimal regrowth of vegetation during the summers of 2000 and 2001 did not provide for the streambank protection necessary to dissipate the energies associated with any potential high flows the following spring.

Woody Vegetation Utilization

In 2000, grazing utilization of aspen and willow was monitored throughout the summer from June 14 to October 5. Three sites were monitored on the SFLHR, four on Sheep Creek and two on Secret Creek. Aspen use was low on five sites measured on June 14 and 15, but had exceeded the RPA criteria of 20 percent utilization by July 19 at the two sites measured on the SFLHR and Secret Creek.

Although utilization on aspen was still within acceptable levels on Sheep Creek on the first week of July, utilization had jumped to almost 60 percent by mid August on this stream. By October, use on aspen was in the "severe" range on two sites monitored on the SFLHR and above the criteria established in the RPAs for all remaining sites on Sheep and Secret creeks, with the exception of site 2, which was protected by private land fencing. The data suggests that sometime around July 7 utilization of aspen started exceeding the 20 percent utilization criteria.

In 2001, livestock utilization on aspen in the South Basin Pasture was low on June 15, but increased rapidly as the summer progressed (Table 6). 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 6). 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 Pasture.

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 7).

Table 6. Percent utilization of current year's growth of aspen recorded for LCT streams between June 15, 2001, and October 3, 2001, in the SFLHR 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)				
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**

Utilization on willow in 2000 and 2001 was difficult to determine because of the general absence of young willows in areas accessible to livestock. At locations where an adequate sample (a minimum of 20 plants were available for livestock to graze) could be measured, willow utilization was relatively light

in June, but had exceeded the criteria by July 6,7. At sites where fewer willow plants were available for livestock grazing, utilization levels were higher. By October, use was heavy to severe at some sites on the SFLHR and Sheep Creek, although there were few young willows available due to impacts of livestock grazing. Growth of new willow plants was abundant within utilization cages on Oregon Flat in areas that did not appear to have any willow outside the cage. These young plants grew up to 12 inches during the summer, but were grazed by livestock the following year after the utilization cages were moved a few yards.

Overall utilization of willow during the 2001 monitoring appeared to be higher than what is shown in **Table 7** 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).

Table 7 . 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
South Fork Little Humboldt River (south basin pasture)				
Station 1				
Station 2				62
Station 3		Not detectable		
Station 4				
Station 5				61.4 (7)
Station 7				90.0 (1)
Average				**62.7**
Sheep Creek (north basin pasture)				
Station 2			(11)	53.5
Station 2A				53.5
Station 3				51.3
Average				**52.9**
Secret Creek **(south basin pasture)**				

MONITORING SITE (refer to Map 2)	2001 MONITORING DATE			
	June 15	June 28	July 18	Oct. 3
Station 1				74.7
Station 2			45	(2)
Station 2A				
Station 3				(1)
Average			**45**	**74.7**

Streambank Trampling

During 2000, trampling of streambanks in the basin increased throughout the summer as livestock focused on the stream and riparian vegetation. Although trampling levels had not reached the BO criteria of 10 percent on the first week of July, physical impacts to streambanks by trampling were pronounced by the time trampling was measured at 8 percent. By the time trampling levels exceeded the management criteria (10 percent) in the RPAs (July 19th and later), impacts to streambanks were severe. Without exception, streambanks were damaged from high levels of shearing, tramping, and compaction at the end of the season at all monitoring sites evaluated.

During 2001, streambanks trampling 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 8**). 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.

Table 8. Percent streambank trampling recorded for LCT streams between June 15, 2001, and October 3, 2001, in the SFLHR 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**

Table 8 shows a decline in streambank trampling between July 18th and October 3rd for stations 5 and 5A on the SFLHR. These measurements were taken by different parties and may not be in the exact location at each time. Increases at station 2 on the SFLHR between July 18th and October 3rd probably reflect livestock access to the site because all the fencing to keep livestock out of the site had not been completed (Robert Schwigert personal communication 2002).

Water Temperature

Five recording thermographs were placed in the SFLHR and tributary streams starting on July 8, 2000 through October 1, 2000. Water temperatures recorded in the LCT streams within the basin consistently exceeded important thresholds (26°C) almost daily from July 8 through August 11, 2000. Maximum temperatures in excess of 29°C to 30° C (84°F to 86°F) were documented for monitoring sites on the SFLHR. These temperatures exceed the threshold for LCT survival. Water temperatures on Sheep Creek were not as high, but temperatures in excess of 22°C (72°F) were routinely recorded during the same period (Appendix I, Figure 3). Although LCT may tolerate warm water temperatures for brief periods of time (Dickerson and Vinyard 1999, Dunham et al. 1999, Dunham 1999), clearly the length of time that the trout are exposed to lethal or sublethal temperatures is important. Water

temperatures in excess of identified thresholds were sustained for a period of weeks on important LCT stream habitat within the basin (Appendix 1, Figure 3). Temperatures of 26°C or greater were frequently sustained for three or more hours during day during the later part of July and the first half of August. Sheep Creek temperatures did not reach the critical threshold of 26°C during 2000, but the main branch of Sheep Creek is spring-fed and a significant portion of the stream flows through areas of dense vegetation in protected canyon reaches.

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 .

PROPOSED ACTION

This BA looks at only the proposed action for the SFLHR basin portion of the Allotment which includes occupied LCT habitat, as well as intermittent drainages important for restoration of the watersheds lentic and lotic sites PFC standards and guidelines (Maps 3). The proposed action was derived from results of the1999-2001monitoring, the 2001 BO, informal consultation with the FWS, issues discussed at a consultation meeting between BLM Oro Vaca, Inc., on January 9, 2002, and internal BLM interdisciplinary team meetings. The BLM interdisciplinary team formalized the proposed livestock grazing use schedule for the basin for 2002 through 2007 (BLM 2002a).

As a follow-up to a January 3, 2001 meeting between BLM and Oro Vaca to discuss the proposed action in the 2001 monitoring report (closure of the SFLHR basin pastures for up to 5 years), BLM received a letter dated January 11, 2002, from Oro Vaca which included an application for grazing authorization in the SFLHR basin for 2002 and beyond (Oro Vaca 2002). In addition Oro Vaca provided additional information concerning problems associated with the Oregon Flat pasture, Pole Creek pasture, and Hangnail fences constructed in 2001, and proposed corrective actions.

Oro Vaca also proposed completing additional private lands fencing on Sheep Creek and Secret Creek, which would change livestock use authorization along reaches of SFLHR, Secret Creek, and Sheep Creek currently occupied by LCT (Oro Vaca 2002). They also indicated they were planning to complete some water developments on private lands during 2002, to attract livestock away from the

riparian areas, and using herders to move cattle away from the creeks while livestock were in the pastures.

In addition, Oro Vaca, Inc. through IRC provided comment to the Little Humboldt Allotment Evaluation which expressed their opposition to the proposed actions developed for the SFLHR basin and other parts of the Allotment. These comments reflect their views that the SFLHR basin pastures do not need to be rested, trailing restrictions are not necessary, and the season of use is restrictive. They object to the "subjective" standards and guidelines, and advise that the BLM has no authority to apply terms and conditions on private lands within the Allotment not under BLM's jurisdiction.

Oro Vaca, Inc., notes that as a result of Oro Vaca's private fencing in the North Basin Pasture in 2002, and that proposed by BLM for 2002 in the North Basin Pasture, all LCT perennial water within the pasture will be removed, and consideration should be given to permitting use at times other than September 15-October 31 (both earlier and later). They recommend that the grazing system put in place for the 2001 grazing season be followed for the short-term (5 years) to determine to evaluate the impacts of new fencing and livestock rotation. They also reference previous filings relating to the SFLHR basin portion of the allotment from 1999 through 2001, and state that the stream and riparian habitat has improved since 1986 and is in good condition. BLM does not agree with Oro Va, Inc.'s assessment of the condition of the basin stream and riparian areas

The BLM short-term proposed action reflects one of the Conservation Recommendations in the FWS 2001 BO and is considered necessary to achieve BLM PFC/DFC objectives and riparian Standards and Guidelines for the Nevada Northeastern Great Basin Resource Advisory Council area. BLM also recommends a rest-rotation grazing system for the long-term which provides for maintenance of PFC and meeting DFC objective.

Short-term (2002-2006)

The SFLHR basin will be closed to livestock grazing for up to 5 years, or until the streams within the SFLHR basin (SFLHR, Secret, Sheep, Oregon Canyon, and Pole Creeks) reach proper functioning condition (PFC) as defined in BLM Technical Reference 1737-9 (BLM 1993) and meets desired future condition (DFC) objectives criteria (Table 3).

The purpose of livestock trailing within the North Basin Pasture is to allow livestock to move between the Jakes Creek Pasture and the Castle Ridge Pasture without using the Rim pasture the same time each year. All livestock being trailed at any one time will leave the Jake Creek Pasture and enter and leave the North Basin Pasture all in the same day. All livestock entering the North Basin Pasture will be attended by riders at all times. No overnight stops will be allowed. All trailing will occur along the road and/or ridges away from the Sheep Creek and Pole Creek drainages. All trailing will occur within the last seven days of the scheduled use in the pasture cattle are trailing from. If terms and conditions for trailing are violated during the interim grazing system period, trail use through the North Basin Pasture

will not be allowed the following year.

If terms and conditions for trailing are violated during implementation of the final grazing system, adjustments in authorized use will be made. Adjustments may include a reduction of grazing used within the North Basin Pasture of 25% or more during the current grazing season or the following grazing season, or a suspension of trailing privileges during the current grazing season or the next grazing season.

Table 9 Proposed livestock use for SFLHR basin for 2002 thru 2005

YEAR	NORTH BASIN PASTURE	SOUTH BASIN PASTURE
2002	Resource protection closure. No trailing use allowed.	Resource protection closure. No trailing use allowed.
2003	Resource protection closure. Spring trailing through only between Jakes Creek and Castle Ridge pastures.	Resource protection closure. No trailing allowed.
2004	Resource protection closure. Fall trailing through only between Jakes Creek and Castle Ridge pastures.	Resource protection closure. No trailing allowed.
2005	Resource protection closure. Spring trailing through only between Jakes Creek and Castle Ridge pastures. Evaluate for opening.	Resource protection closure. No trailing allowed. Evaluate for opening.

Long-term (2006-2010)

The long-term grazing system would allow for attainment of DFC objectives and ensure significant progress towards and attainment of the rangeland health riparian standards, Northeastern Nevada Resource Advisory Councils riparian standards effective 2/12/97, and the Resource Management Plan (RMP) objectives. Achievement of these standards and RMP objectives will ensure that streams will have a low width to depth ratio appropriate for the associated channel type with streambanks and floodplain areas in stable and densely vegetated condition with a riparian herbaceous plant community dominated by Nebraska sedge where appropriate to site potential. Areas of active erosion would be limited to bank sloughing associated with natural processes of channel evolution.

Precipitation controls the extent of vegetative growth available for livestock grazing in the SFLHR basin as elsewhere. Data from 1981 to current indicates that at least 60 percent of the years have less than average precipitation, and as a consequence less than average vegetative growth. Stubble height, streambank trampling, and riparian herbaceous and woody species utilization data collected in 1999-

2001 are during a dry period with 2 years of extreme drought conditions (2000, 2001). In addition, stream survey data was collected in other years within the basin. **Grazing within the SFLHR basin should be authorized for the worst case condition (2000/2001) and additional grazing authorization when vegetative and range conditions meet objectives and standards.**

Data collected during 1999-2001 indicates the season of use within the basin should start June 1, or earlier, and livestock removal no later than June 30 to maintain and improve riparian vegetation. Light grazing use of herbaceous riparian vegetation is recommended with a goal of maintaining 4 inch stubble height when livestock are removed and 6 inch stubble height at the end of the growing season, even in drought years. The average stubble height in key areas should be at least 4-6 inches at the end of the growing season. Streambank trampling should not exceed 10 percent. This level of trampling was exceeded by mid-July in 2000, and in mid-to-late June in 2001.

Woody species (aspen and willow) utilization increases dramatically in late June to early July depending upon range conditions within the basin. We recommend less than 20 percent utilization on willow and less than 10 percent on aspen at the end of the grazing period after evaluating two years of annual monitoring within the SFLHR basin (2000 and 2001). Aspen and willow use is generally less in the fall, but during dryer years aspen and willow use by livestock is fairly extensive in September, and may continue into mid-October in very dry years.

Upland springs are badly trampled and over-grazed. BLM and the permitee should fence spring sites and develop off-site watering facilities for livestock and wildlife as deemed necessary. This would assist in improving grazing utilization in the uplands, and reduce riparian area grazing use. Fencing is needed to protect spring sources, aspen and willow regeneration, and improve spring sites to PFC.

Table 10. Long-term grazing system. The grazing system will be implemented upon meeting PFC/DFC riparian criteria in the Basin North and South Pastures.

Year	North Basin Pasture	South Basin Pasture
Even	This pasture may be used in either the spring (use prior to 7/1) or the fall (9/16-10/15). However the pasture cannot be used in both the spring and the fall of the same year. (444 AUMs)	Rest. No trailing will be allowed. Cattle movement will be in conjunction with use in the North Basin Pasture.
Odd	Rested. Trailing within criteria addressed for short-term grazing will be authorized.	This pasture may be used in either the spring (use prior to 7/1) or the fall (9/16-10/15). However the pasture cannot be used in both the spring and the fall of the same year. (792 AUMs)

The permittee is responsible for ongoing observations to ensure that stubble height, streambank trampling criteria, upland and riparian utilization associated with livestock use are not exceeded. The criteria for riparian/streambanks are: 1.) Herbaceous utilization shall ensure a 4" stubble height when livestock are removed. 2.) Woody utilization shall not exceed 20% on willows or 10% on aspen. 3.) Streambank trampling shall not exceed 10%. And 4.) The pasture will be rested following any year of grazing use.

The BLM will provide information and or training to the permittee on the standard methodology used to monitor stubble height, utilization and streambank trampling if necessary or requested. The BLM will continue monitoring to ensure that the permittee complies with the criteria. If problems are identified, the BLM and permittee will work together to find solutions which address the problems and the annual grazing system will be adjusted the following year as needed.

Moves between pastures may vary by three days before or after the scheduled dates outlined in the annual authorization in all but the Jakes Creek, North Basin, and South Basin pastures. The permittee may begin to gather and move livestock within three days prior to the last day allowed in a pasture and up to three days after the last day allowed in a pasture as outlined in the annual authorization. Therefore, some livestock may enter the next pasture a few days earlier than the first on-date. This flexibility does not allow use in excess of the carrying capacity of the pastures. Because of riparian concerns, no flexibility will be allowed within the following riparian pastures:

North Basin Pasture: fall use: no flexibility in on-date
spring use: no flexibility in off-date
South Basin Pasture: fall use: no flexibility in on-date
spring use: no flexibility in off-date

PROPOSED BLM MONITORING

Selected stream survey data and proper functioning condition (PFC) analysis will be used to trigger when livestock grazing can resume in a manner to maintain and improve conditions over the long-term. An interdisciplinary team will assess if significant progress is being made toward multiple use objectives on the SFLHR, Secret Creek, Sheep Creek, and Pole Creek. An intensive stream survey and PFC analysis should be completed in 2005 to determine whether riparian conditions have achieved PFC/DFC objectives (Table 11). If objectives and standards are achieved, then the SFLHR basin pastures can be used following the long-term grazing system. If the Objectives and standards are not met, then the pastures will receive another season of rest.

Survey data will be used from stations on public lands, or unfenced private lands administered by BLM during low flow or base flow conditions. This includes the following stream survey site locations: SFLHR stations 2,4,5,6,7,8, and 9, Secret Creek stations 1,2, and 3, and Sheep Creek stations 2, 2A, A1A, and A2A. Sheep Creek A1A and A2A may be included within the new Sheep Creek private

pasture proposed for construction in 2002 as well as the sites on Secret Creek 2 and 3 (Oro Vaca 2002).

BLM will also add two new sites as recommended by Intermountain Range Consultants (March 6, 2001 letter), one half way between stations 5 and 6 on the SFLHR, and one half way between stations half way between Secret Creek S1 and S2. In addition, a survey station will be located on Pole Creek within the Allotment. Most of these locations are found in Rosgen B4 channel types, except SFLHR S5 which is a C and S2 which is an F. Secret Creek is primarily B channel types, with S3 a C; and Sheep Creek has primarily B channel types with A2A being an A.

Short-term objectives for the streams within the SFLHR basin will be based on B channel types since 11 of the 15 survey stations are B4s. Two are C4s, one an A4, and one is an F4. B channel types show statistically significant changes in PFC ratings, Riparian Condition Indices, bank cover, bank angle, undercut banks, and to some extent in bank stability (Newman 2001). While C channel types are very susceptible to disturbance, they often recover well with stability greatly influenced by vegetation (Rosgen 1996, Newman 2001).

Rosgen B channel types are moderately entrenched (ratio of 1.4 to 2.2), have a moderate width/depth ratio (>12), moderate sinuosity (>1.2), moderate slopes of 2-4 percent, and B4's have gravel channel material. An A channel type has an entrenchment ratio of <1.4, a width/depth ratio of <12, sinuosity of 1 – 1.2, and a slope >10 percent. A4's have a gravel substrate. C channel types have >2.2 entrenchment, > 12 width/depth ratio, >1.2 sinuosity, < 2 percent slope, and B4's have a gravel channel material. F channel types are known for < 1.4 entrenchment, > 12 width/depth ratio, >1.2 sinuosity < 2 percent slope, and F4's have a gravel channel material (Rosgen 1996).

The baseline year for determining improvement in DFC objectives will be the 1999 stream survey and the following features will be evaluated. PFC was also completed in 1999 and 2000 and will be used as the baseline for the 2005 analysis. The following procedures will be used to monitor stream/riparian sites for short-term DFC objectives.

1. Bank cover and bank stability will be monitored as specified in Revised BLM Manual Handbook 6720-1, Phase III Inventory, Elko District 2002 draft (BLM 2002). Bank cover and bank stability will be combined to determine the riparian condition class. The standards to be met are a minimum of 70 percent of optimum on all channel types.

2. The ratio of stream width to depth will be determined as specified in BLM 2002. At each transect, the water depth will be recorded to the nearest 0.05 feet at ¼ , ½, and ¾ of the distance across the stream. Average depth will be based on the total of the depth of the depth measurements divided by four, if the shoreline water depth is zero, or by three, if one or both shoreline water depths are greater than zero (Platts et al 1983, USFS 1990). The wetted stream width will also be measured along each depth transect. At least five width/depth transects will be measured at each stream monitoring station.

The standard to be met and maintained are 15:1 for all transects except SFLHR S6, S7, S8, and S9, which are dryer sites in the upper SFLHR. These sites should show a decrease in stream width/depth ratio of at least 30 percent from baseline. This application does not apply in areas where beaver have established and constructed dams.

3. Increase type B riparian zone (areas with >50% basal cover of herbaceous and or woody riparian vegetation) width by 30 percent or more, or until it is greater than type A riparian zones (areas with <50% basal cover of herbaceous and or woody riparian vegetation). Vegetation to be considered should be limited to that adjacent to and is being maintained by the active stream channel for both banks. The beginning of the riparian zone is defined where the riparian vegetation is within half of its average ungrazed height to the waters edge. Where riparian plant species become gradually, but increasingly scattered, the zone will be defined as ending where the average distance between riparian plant species is greater than the average ungrazed height of those plants (Revised BLM manual handbook 6720-1, release 1, 2002 draft).

Table 11. SFLHR Basin Proper Functioning Condition/Desired Future Condition Riparian Habitat Objectives

South Fork Little Humboldt River

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	59%	70 %	Maintain or improve
Stream width/depth ratio	25 to 35	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	20'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC-1.69 mi. FAR-1.26 mi. NF – 4.19 mi.	PFC – 2.95 miles FAR↑- 4.19 miles	Maintain PFC Improve FAR or NF

Secret Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	63%	70 %	Maintain or improve
Stream width/depth ratio	38 to 51	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	11'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- 0.56 mi. FAR- 1.04 mi. NF- 0.62 mi.	PFC – 1.60 miles FAR↑ - 0.62	Maintain PFC Improve FAR or NF-

Sheep Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	68%	70 %	Maintain or improve
Stream width/depth ratio	19 to 27	Improve 30%	Improve to 20:1 or better
Mean B riparian zone width (feet)	8'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- 0.57 mi. FAR- 1.88 mi. NF- 2.91	PFC – 2.45 miles FAR↑-2.91	Maintain PFC Improve FAR or NF

Oregon Canyon Creek

HABITAT PARAMETERS	1992 Baseline	SHORT-TERM OBJECTIVES (5 Yrs)	LONG-TERM OBJECTIVES (5 Yrs +)
Riparian Condition Class (Percent Optimum)	26%	60 %	Maintain or improve
Stream width/depth ratio	21 to 26	Improve 30%	Improve to 15:1 or better
Mean B riparian zone width (feet)	0'	30% increase over baseline	Maintain or improve
Proper Functioning Condition	PFC- .30 mi. FAR- .89 mi. NF- 5.14 mi.	PFC- 1.19 miles FAR↑- 5.14 miles	Maintain PFC Improve FAR or NF

Upper Pole Creek

HABITAT PARAMETERS	1999 Baseline	SHORT-TERM OBJECTIVE (5 Yrs.)	LONG-TERM OBJECTIVES (5 Yrs. +)
Riparian Condition Class	No data	70%	Maintain or improve
Stream width/depth ratio	No data	30% increase over baseline	Improve to 20:1 or better
Mean B riparian zone width	No data	30% increase over baseline	Improve to 20:1 or better
Proper Functioning Condition	PFC- .41 mi. FAR- 1.32 mi.	PFC – 1.73	Maintain PFC Improve FAR or NF

PFC is the minimal BLM standard for riparian/wetland condition class. The other attributes delineated Table 11 reflect riparian/stream values which are achievable for the benefit of habitat conditions for on LCT. Riparian condition class and bank cover should improve significantly in B and E channel types(Newman 2001). With the exception of A channels, all remaining channel types should show a decrease in water width-depth ratios (improvement).

OTHER ACTIONS

As part of the AE/MUD being developed for livestock use, a number of projects are proposed and/or planned by either BLM or the permittee which will benefit LCT recovery including; development of springs private and public land, and installation of cattle guards on key access roads. In addition, Oro Vaca, Inc., proposes constructing some additional private lands fencing and water developments in 2002 which help keep cattle away from the streams and riparian areas. BLM projects will undergo National Environmental Policy Act (NEPA) evaluation before construction. The Little Humboldt AE has a more complete list of projects proposed by Oro Vaca and/or BLM.

DESCRIPTION OF THE AFFECTED AREA

The Allotment lies in the western portion of Elko County, Nevada, north and west of the town of Midas and includes about 67,871 acres of public lands and about 16,705 acres of private lands (Map 1). Lower portions of the allotment below the Owyhee Bluffs are characterized by gently rolling terrain at elevations between 4,570 to 5,700 feet. The majority of the Allotment however, is characterized by more mountainous terrain ranging in elevations from 5,500 to 8,000 feet. The basin part of the Allotment, which is at higher elevations, has approximately 14, 749 acres of land, with 13,608 acres administered by BLM. The SFLHR basin portion of the Allotment has been fenced since 2000 as a result of a series of actions related to court orders, fire closures, and private land fencing. The Pole Creek private pasture (729.2 acres) and Oregon Flat private pasture (411.1 acres) are also within the SFLHR basin, but are managed as separate private pastures. Parts of Sheep Creek will be fenced in 2002, according to Oro Vaca, to create an additional private pasture. These streams contain populations of LCT in variable numbers and locations.

Vegetation is diverse and includes plant communities dominated by Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), Sandberg bluegrass (*Poa secunda*), and bottlebrush squirreltail (*Sitanion hystrix*) in the lower elevations and by mountain big sagebrush (*Artemisia tridentata vaseyana*), Idaho fescue (*Festuca idahoensis*), and bluebunch wheatgrass (*Agropyron spicatum*) at the higher elevations. Riparian communities supporting aspen (*Populus tremuloides*) and willow (*Salix* spp) commonly occur at seeps, springs and as corridors along streams. The SFLHR basin also has dense aspen forests at higher elevations, as well as some areas of dense big sagebrush stands with limited understory in the upland.

Precipitation data from the Tuscarora Weather Station indicates the mean annual precipitation is about 12.5 inches with less moisture at lower elevations and more moisture at higher elevations. The 30 year median crop year (September through June) is about 9.94 inches. Most moisture falls as winter snow and spring rains. The data from 1981 through 2001 suggests that 12 of 21 years (57%) were less than average precipitation and three years of about 200 percent or above precipitation occurred (1982, 1983, and1984).

The overall climatic trend for the past two decades has generally been dry conditions with occasional wet periods. 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).

THE AFFECTED LISTED SPECIES AND THEIR RESPECTIVE HABITATS

The only listed species potentially affected by the proposed action is LCT. The LCT Recovery Plan identifies about 13.5 miles of stream as currently or recently occupied habitat within the SFLHR basin. New 2001 fish surveys by NDOW document LCT occurring in an estimated 8.5 miles of the 18.5 miles of permanent and ephemeral stream within the SFLHR basin including: 6.0 miles of the SFLHR,1.0 miles of Sheep Creek,1.5 miles of Secret Creek. In addition, LCT have been observed in about 0.5 miles of Pole Creek and at the confluence of Oregon Canyon Creek with the SFLHR within the Allotment. All or significant portions of these streams are located on private land owned primarily by Nevada First Corporation (91%) and leased to Oro Vaca, Inc for livestock grazing. However, in the absence of fencing, these areas have historically been grazed in conjunction with BLM permitted use on adjacent public lands. Grazing on private lands fenced within the basin since 2000 are independent from that authorized on public lands by BLM.

Private lands fencing was completed in 2001 on the Pole Creek pasture area and the Oregon Flat pasture area. In addition, In 2002 Oro Vaca proposed to complete 2.5 miles of fencing on Sheep Creek which would remove 200 acres of private land from the North basin pasture, and add about 3/4 mile of gap fencing on Secret Creek, which would exclude livestock use on about 1.5 miles of the stream, except near its confluence with the SFLHR and 3 other water gap areas (Oro Vaca 2002 letter). If the private land fencing is completed as proposed, approximately 5.3 miles of LCT habitat will be within fencing, some of which will be grazed as private pastures. An additional 1.75 to 2.0 miles (10%) are in areas generally inaccessible to livestock. Another 9.5 miles of unfenced permanent and ephemeral stream do not currently support LCT. These reaches are considered important for recovery of the riparian community and as a consequence important for recovery of the LCT over the long-term.

More than 85 percent of the permanent and ephemeral reaches of the streams within the basin are in unsatisfactory condition with a non-functional, functional-at-risk with a downward or static state (Table 11, Map 2). The streams have problems associated with channel entrenchment, draining of floodplains, poor bank stability, eroding and downcutting streambanks, and heavy use of riparian vegetation and woody species by livestock with a subsequent loss of streambank cover (BLM 1999).

Data shows stream and riparian conditions are generally poor and have deteriorated over time under

historic and current livestock management practices. A comparison of stream survey data for 1977 and 1999 show the most significant changes being a substantial decline in bank stability and bank cover. The width to depth ratio increased substantially, indicating a transition to a wider, shallower stream profile developing within an entrenched channel. Some of the stream reaches have been downcut to form a gully (BLM 1999). Livestock are considered to be the cause of the poor riparian condition on all streams within the basin with the exception of three small drainages north of Oregon Canyon Creek, where wild horses are the primary cause of poor riparian conditions.

SPECIES ACCOUNT

LCT are native to lakes and streams throughout the physiographic Lahontan basin of northern Nevada, eastern California, and southern Oregon. Currently, LCT occupy only about 0.4% of former lake habitat and less than 11% of former stream habitat (FWS 1995). Based on the most recent LCT population sampling within the Upper Humboldt River basin, LCT remain in only 72 streams and 188 miles of habitat within the Humboldt River basin (Elliott and Haskins 2000). It is estimated that LCT historically occupied more than 2,200 miles of habitat within the nine sub-basins of the Humboldt River system (Coffin 1981). Principle threats to LCT include habitat loss associated with livestock grazing practices, urban and mining development, water diversions, poor water quality, hybridization with non-native trout, and competition with introduced species of fish (FWS 1995).

Generally, fluvial LCT should inhabit small streams characterized by cool water, pools in close proximity to cover and velocity breaks, well vegetated and stable streambanks, and relatively silt free, rocky substrate in riffle-run areas. Stream dwelling LCT generally prefer rocky areas, riffles, deep pools, and habitats near overhanging logs, shrubs, or banks (McAfee 1966; Sigler and Sigler 1987). Intermittent tributary streams are occasionally used as spawning sites by LCT. Lahontan cutthroat trout are obligate stream spawners, with spawning occurring from March through August, depending upon stream flow, elevation and water temperature. Stream dwelling LCT are opportunistic feeders, with diets consisting of drift organisms, typically terrestrial and aquatic insect (Moyle 1976; Coffin 1983). Additional information on life history, ecology, habitat requirements and taxonomy of LCT is provided in Behnke (1992), Coffin (1983, 2000), and FWS (1995).

Water temperatures recommended to minimize the risk of mortality and sublethal stress should not exceed 22°C (72°F) (Dunham et al. 1999, Dunham 1999). LCT can survive short-term exposures to water temperatures of up to 26°C (79°F) and longer exposure to temperatures up to 24°C (75°F) (Dunham et al. 1999, Dickerson and Vinyard 1999). Distribution of LCT in streams is restricted by unsuitably warm summer water temperatures (Dunham et al. 1999). LCT have been observed dying in water temperatures above 27°C (81°F) in the SFLHR during the summer of 1994(Coffin 1994).

DISTRIBUTION WITHIN THE LITTLE HUMBOLDT ALLOTMENT

Fish population surveys conducted by the Nevada Division of Wildlife (NDOW) show a decline to

static trend in LCT numbers at specific sample sites from 1977 to 2001. LCT numbers in the SFLHR are down from 1977 and 1996 at comparable sites, while 2001Sheep Creek numbers are slightly higher than in 1977 and significantly higher than in 1996. Secret Creek numbers are lower in 2001 than they were in 1977, but higher than observed in 1996.

No statistically significant conclusions concerning population trends can be made using this fish population sampling data because of low sampling size, single pass sampling procedure, which may not capture all the fish, and sampling sites which are about 1 mile apart, and may not be representative of an entire reach. Fish also concentrate in cold spring areas and cooler habitat sites causing inflation of population estimates if sampling occurs in one of these sites (Table 12). NDOW observed 4 age classes of LCT in the SFLHR, 2 age classes in Secret Creek, and 3 age classes in Sheep Creek during 2001. The data generally indicates that LCT are present with multiple age classes in most reaches, although fish were not observed in two of the sites on the SFLHR.

Although no electroshocking data are available, LCT were observed in the upper reaches of Pole Creek by BLM in the fall of 1998 (BLM files), and in the lower portion of Oregon Canyon Creek by NDOW in 1998. LCT in the SFLHR, Sheep Creek, and Secret Creek have been determined to be genetically pure (NDOW 1996). Additional data shows dead LCT in the SFLHR at Oregon Flat in 1994 (Coffin 1994), and dead LCT were observed in the upper reaches of the SFLHR during the summer of 2000 by NDOW biologists (John Elliott, NDOW Fieldtrip Report 2000). Dead and dying LCT appear to be a result of high water temperatures. LCT have not been found in the SFLHR near the confluence of Pole Creek (Station 1) during recent surveys, although LCT occur both above and below this site in the SFLHR.

Table 12. NDOW Lahontan cutthroat trout population monitoring data for 1977, 1996 and 2001 for LCT streams in the Little Humboldt Allotment.

SURVEY PARAMETERS	NDOW LCT POPULATION SURVEY (Nonstatistical) (for the same sampling sites)		
	1977	1996	2001
South Fork Little Humboldt River (Little Humboldt Allotment)			
LCT/Mile Estimate	745	185	119
Number Age Classes	5	4	4
Secret Creek (Little Humboldt Allotment)			
LCT/Mile Estimate	120	66	106
Number Age Classes	5	2	2
Sheep Creek (Little Humboldt Allotment)			

LCT/Mile Estimate	475	53	493
Number Age Classes	4	2	3

SUMMARY OF LCT HABITAT CONDITIONS

The overall lack of a healthy riparian zone and associated channel features in the basin affect the ability of the SFLHR and its tributaries to maintain a viable fisheries over time. Although portions of the SFLHR system are relatively stable (B channel types in narrow canyons), have good vegetative cover, and are functioning well, significant parts of all streams are characterized by cut and eroding streambanks, a high stream width to depth ratio, and a loss of riparian herbaceous and woody vegetation. In addition, important indicators of disequilibrium within the system as a whole including channel entrenchment and aggradation are present on all LCT streams. Even in areas which were rated PFC in the analysis showed silt and gravel deposition which could lead to disequilibrium.

Lack of suitable riparian vegetation and woody plant cover along the streams are responsible for excessive water temperatures. Degraded riparian areas and downcut streams have reduced the cooler inflow of bank storage water back into the stream during the hotter parts of the summer when flows are low, again contributing to elevated water temperatures. Clary and Webster, 1989, note that at least four to six inches of residual stubble or regrowth is necessary to meet the requirements of plant vigor, maintenance, bank protection, and sediment entrapment. More than six inches of stubble height may be required for protection of critical fisheries or easily eroded streambanks (Clary and Webster 1989). Sediments from upstream should be trapped in riparian vegetation in the floodplain, causing narrowing and deepening of the stream. Sediments deposited in the stream channel cause siltation of spawning gravels, lower dissolved oxygen levels around LCT redds, and lowered reproduction rates for LCT.

Degraded LCT habitat conditions are generally attributable to overuse of riparian areas by livestock. These conditions can be reversed by changes in grazing management that contribute to redevelopment of streambank and riparian vegetation and rebuilding of the water table in suitable reaches of the streams. Some reaches may improve in a short period of time, while other more badly degraded and downcut areas will take long-term changes in management to enhance stream and riparian habitat for the benefit of the LCT population.

SPECIAL STATUS SPECIES AND ASSOCIATED HABITATS

Although no candidate species of plants or animals are known to be present in the Allotment, several Nevada BLM sensitive species have been documented for the allotment or adjoining areas (Table 13). It is also likely that additional BLM sensitive species including the Northern goshawk (*Accipiter gentilis*), ferruginous hawk (*Buteo regalis*), and the burrowing owl (*Speotyto cunicularia*), are present within or near the allotment. The diverse mixture of rocky cliffs, mountain brush communities, aspen woodlands, meadows, and streamside riparian zones provide important habitats for these

species. Less than satisfactory conditions, particularly for aspen stands, willow communities, meadows, and streamside zones, may be adversely affecting sensitive species many of which are dependent on riparian habitats.

Table 13. Nevada BLM special status species documented for the Little Humboldt Allotment.[1]

COMMON NAME	SCIENTIFIC NAME
Golden Eagle	*Aquila chrysaetos*
Swainson's Hawk	*Buteo swainsoni*
Western Sage Grouse	*Centrocercus urophasianus*
Mountain quail	*Oreortyx pictus*

[1]Based on input provided Wilkinson (2000).

EFFECTS OF PROPOSED ACTION

This BA looks at only the proposed action for the SFLHR basin portion of the Allotment which includes occupied and potential LCT habitat, as well as ephemeral or intermittent drainages important for restoration of the watershed streams and meeting PFC standards and guidelines (Maps 2 and 3). The proposed action was developed by BLM, after meeting with Oro Vaca, Inc., and in consultation with the FWS. The proposed action closes the SFLHR basin for up to 5 years for the short-term, and recommends restricted grazing practices be put in place for the long-term management within the SFLHR basin portion of the Allotment.

The objectives and standards will benefit recovery of LCT within the SFLHR and its tributary streams within the Little Humboldt Allotment. Achieving PFC and specified DFC objectives (Table 11) within 5 years will positively benefit stream-flows, water temperature, streambank cover attributes, spawning habitat conditions, and increasing the total suitable habitat for LCT. Maintaining or improving habitat conditions for LCT in the Long-term will provide additional stability for the LCT population , generate more overhanging bank cover, and further reduce water temperatures. These improvements will increase the potential for the species to extend its range and maintain their genetic viability because of improved distribution within the SFLHR system. These activities will compliment existing improved habitat conditions on the Bullhead Allotment, which is located immediately downstream of the Little Humboldt Allotment.

CUMULATIVE IMPACTS

Cumulative impacts to LCT in the basin may occur as a result of wildfires within the SFLHR basin portion of the Allotments, grazing by wild horses in surrounding pastures, new fencing and water developments, increased traffic in the basin, and angler harvest. Trailing of livestock between Jake Creek Pasture and Castle Ridge Pasture could have a negative affect to LCT habitat in the Oregon Flat private pasture since livestock will need to cross the SFLHR. Cumulative impacts to sage grouse and other wildlife species may occur as a result of recently completed and proposed fencing, water developments, and increased human presence. Some impacts may be beneficial such as protection of

springs, riparian areas and wetlands, and some impacts may be detrimental such as fences to wildlife and sage grouse. The FWS has provided a Technical Assistance letter which recommends additional measure to benefit sage grouse within the Allotment based on review of the AE.

DETERMINATION

The BLM short-term grazing closure restrictions proposed for up to five years (2002 through 2006) or until specific PFC and DFC objectives are reached (Table 12) will have a beneficial affect on recovery of LCT. BLM's short-term actions may affect LCT because of trailing in the North Basin Pasture and needing to cross the SFLHR to reach the Castle Ridge Pasture. The recommended short-term rest for most of the basin stream reaches would have a beneficial affect on LCT by improve the quality of the riparian and aquatic habitat for the species.

The long-term use recommendation would maintain or improve habitat conditions within the basin because of early or late use, and alternating rest within the basin pasture system. With the addition of the Sheep Creek private pasture fence, and .4 mile of BLM fencing, livestock will have access to occupied LCT habitat within the North Basin Pasture only on the private Sheep Creek Pasture, and near the confluence with the SFLHR, depending upon whether the Oregon Flat Pasture fence is adjusted. Oro Vaca, Inc., has suggested moving the northern Oregon Flat pasture fence to eliminate a bottleneck situation for livestock which occurred in 2001. The long-term action will have a beneficial affect on BLM administered grazing lands within the SFLHR basin.

Special status species (as well as other kinds of wildlife dependent on riparian habitats) will benefit from the proposed action, and may benefit from some projects proposed for private lands. New fences and water developments may impact special status species, but could be minimized by following BLM, NDOW, and FWS guidelines.

Livestock use on the fenced private lands is outside BLM management authority. Livestock can directly access the Pole Creek and Oregon Flat private pastures from the Castle Ridge Pasture without using the North and South Basin Pastures.

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Appendix 1

SOUTH FORK LITTLE HUMBOLDT RIVER BASIN, LITTLE HUMBOLDT ALLOTMENT

Table 1 **Percent Utilization of Herbaceous Riparian Vegetation, 2000-2001 (Rounded to nearest whole number)**

	2000								2001 (New fencing completed)				
	June	July	July	July	Aug.	Aug.	Sept.	Oct	June	June	July	Oct	Comments
	14-15	6-7	19	27	3	14	7	4-5	15	28	18-19	3	
South Fork Little Humboldt River	Season long livestock use (June 1 - Oct 31, 2000)								Livestock use from June 1 - July 15, 2001				
Station 1	29	46	-	55	68	-	-	-	69	-	36	-	Pole Creek private pasture
Station 2	-	-	-	-	-	-	-	45	-	-	4	56	BLM administered public land
Station 3	26	35	46	52	60	-	-	56	-	18	45	-	Oregon Flat private pasture
Station 4	-	29	43	32	41	-	-	50	-	-	-	-	BLM administered unfenced private land
Station 5	22	35	46	-	-	-	65	65	54	49	57	50	BLM administered unfenced private land
St. 5A	-	-	-	-	-	-	-	-	68	-	71	60	BLM administered unfenced private land
Station 6	-	-	-	-	-	-	-	75	-	-	72	-	BLM administered unfenced private land
Station 7	13	-	-	-	-	-	-	67	-	-	-	-	BLM administered unfenced private land
Secret Creek	Season long livestock use (June 1 - Oct 31, 2000)								Livestock use from June 1 - July 15, 2001				
Station 1	23	-	-	-	-	-	-	-	64	-	-	36	BLM administered unfenced private land
Station 2	16	22	38	-	-	-	-	56	-	-	30	60	BLM administered public land
Station 3	-	-	-	-	-	-	-	60	-	-	17	29	BLM administered unfenced private land
Sheep Creek	Season Long livestock use (June 1 - Oct. 31, 2000)								Livestock use from Sept. 15-Nov. 15, 2001				
Station 1	12	-	-	-	-	-	-	54	-	-	-	-	BLM administered public land
Station 2	7	37	-	-	-	-	-	23	-	-	10	63	BLM administered unfenced private land
St. 2A	-	-	-	-	-	-	-	-	-	-	0	56	BLM administered unfenced private land
Station 3	29	-	-	-	-	56	65	67	-	16	3	32	BLM administered unfenced private land
Station 4	-	-	-	-	-	-	-	60	-	-	-	-	BLM administered public land

Appendix 1

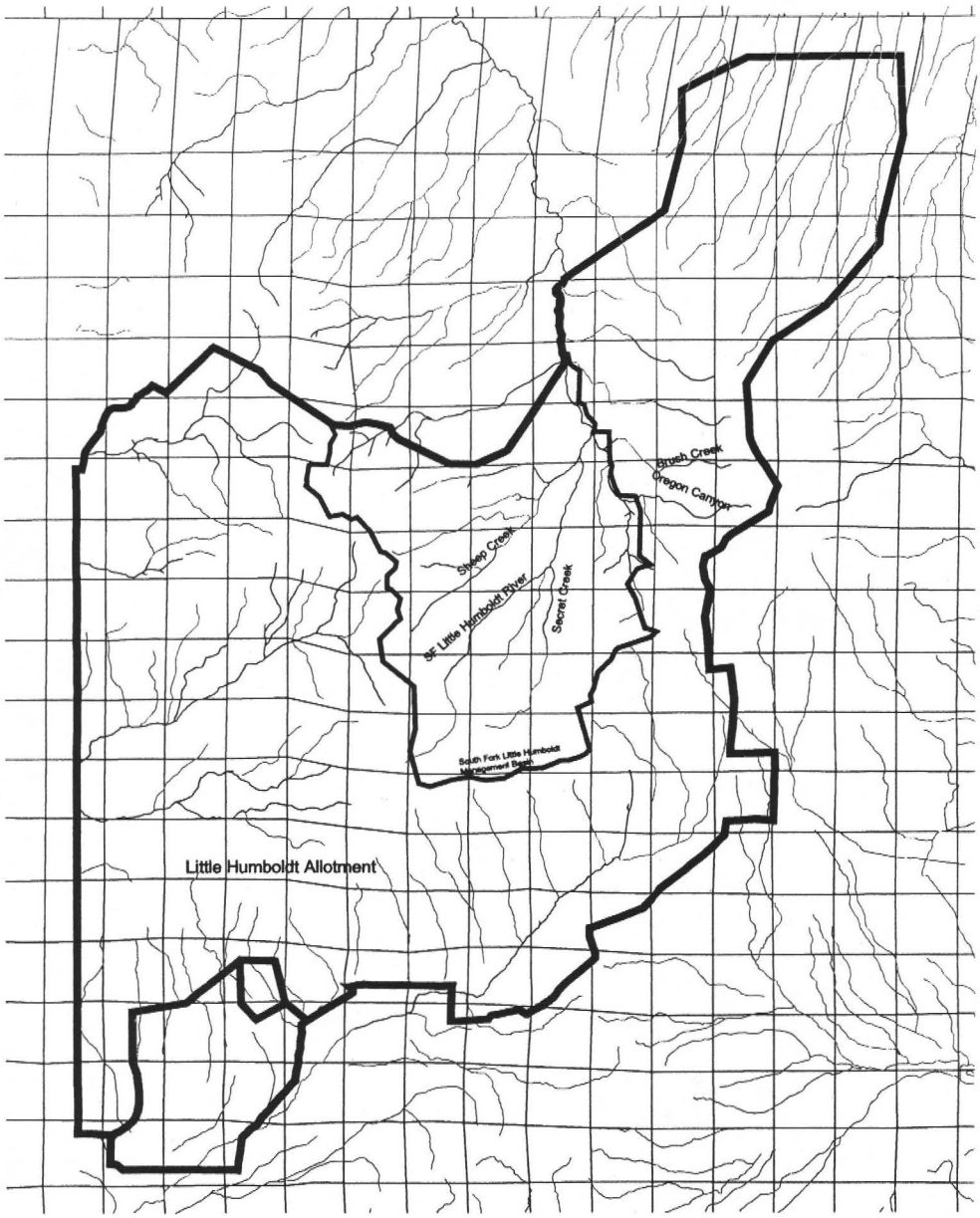
SOUTH FORK LITTLE HUMBOLDT RIVER BASIN, LITTLE HUMBOLDT ALLOTMENT

Table 2 **Average Stubble Height of Herbaceous Riparian Vegetation, 2000-2001**

	2000								2001 (New fencing completed)				
	June	July	July	July	Aug.	Aug.	Sept.	Oct	June	June	July	Oct	Comments
	14-15	6-7	19	27	3	14	7	4-5	15	28	18-19	3	
South Fork Little Humboldt River	Season long livestock use (June 1 - Oct 31, 2000)								Livestock use from June 1 - July 15, 2001				
Station 1	2.0	1.5	-	1.1	0.8	-	-	-	1.6	-	2.2	-	Pole Creek private pasture
Station 2	-	-	-	-	-	-	-	2.0	-	-	6.1	1.0	BLM administered public land
Station 3	2.2	2.0	1.1	1.2	1.3	-	-	1.4	-	2.7	1.8	-	Oregon Flat private pasture
Station 4	-	2.3	1.2	2.0	1.6	-	-	1.4	-	-	-	-	BLM administered unfenced private land
Station 5	2.5	2.0	1.1	-	-	-	1.0	1.0	1.7	1.6	1.4	1.2	BLM administered unfenced private land
St. 5A	-	-	-	-	-	-	-	-	-	-	1.0	0.9	BLM administered unfenced private land
Station 6	-	-	-	-	-	-	-	0.6	-	-	1.0	-	BLM administered unfenced private land
Station 7	0.9	-	-	-	-	-	-		-	-	-	-	BLM administered unfenced private land
Secret Creek	Season long livestock use (June 1 - Oct 31, 2000)								Livestock use from June 1 - July 15, 2001				
Station 1	2.4	2.8	1.4	-	-	-	-	-	1.9	-	-	1.8	BLM administered unfenced private land
Station 2	3.1	-	-	-	-	-	-	1.2	-	-	2.0	0.9	BLM administered public land
Station 3	-	-	-	-	-	-	-	-	-	-	3.5	2.2	BLM administered unfenced private land
Sheep Creek	Season Long livestock use (June 1 - Oct. 31, 2000)								Livestock use from Sept. 15-Nov. 15, 2001				
Station 1	3.6	-	-	-	-	-	-	1.5	-	-	-	-	BLM administered public land
Station 2	4.6	-	-	-	-	-	-	3.8	-	-	11.4	1.0	BLM administered unfenced private land
St. 2A	-	-	-	-	-	-	-	-	-	5.5	6.5	2.0	BLM administered unfenced private land
Station 3	2.0	1.9	-	-	-	1.1	1.0	0.9	-	-	4.5	0.8	BLM administered unfenced private land
Station 4	-	-	-	-	-	-	-	1.2	-	-	-	-	BLM administered public land

South Fork Little Humboldt Management Basin

MAP 1



Legend

- South Fork Little Humboldt Management Basin

Streams

- Intermittent
- perennial
- Allotment Boundary
- Square Mile Sections

Land-Ownership Status

- Public (Administered by BLM)
- Private

1 0 1 2 3 4 5 Miles

N
W E
S

Scale 1:200,000

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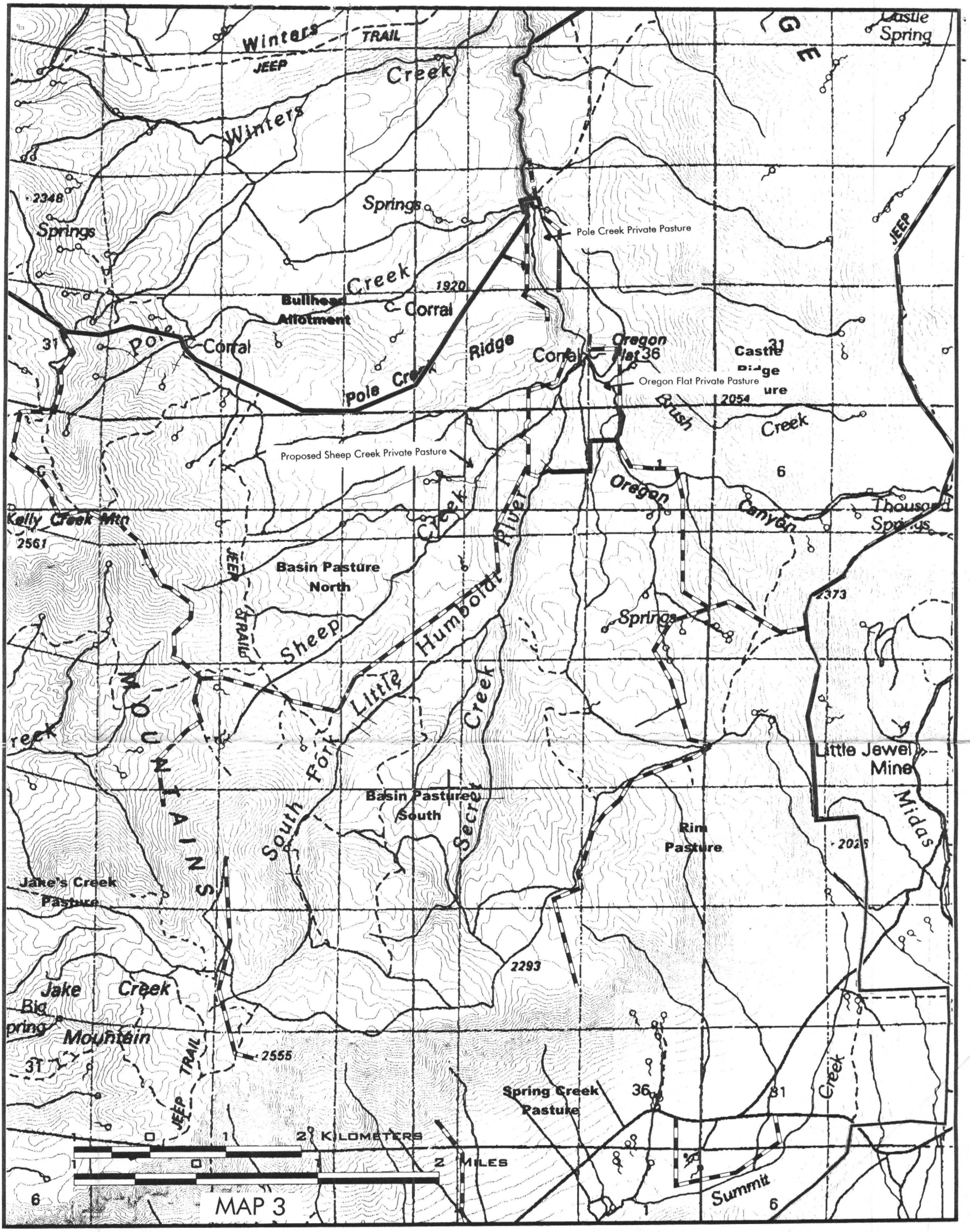
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. agk



South Fork Little Humboldt Basin Detail

Pasture Fences

Allotment Boundary

Land Status

Public (Administered by BLM)

Private

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ELKO FIELD OFFICE

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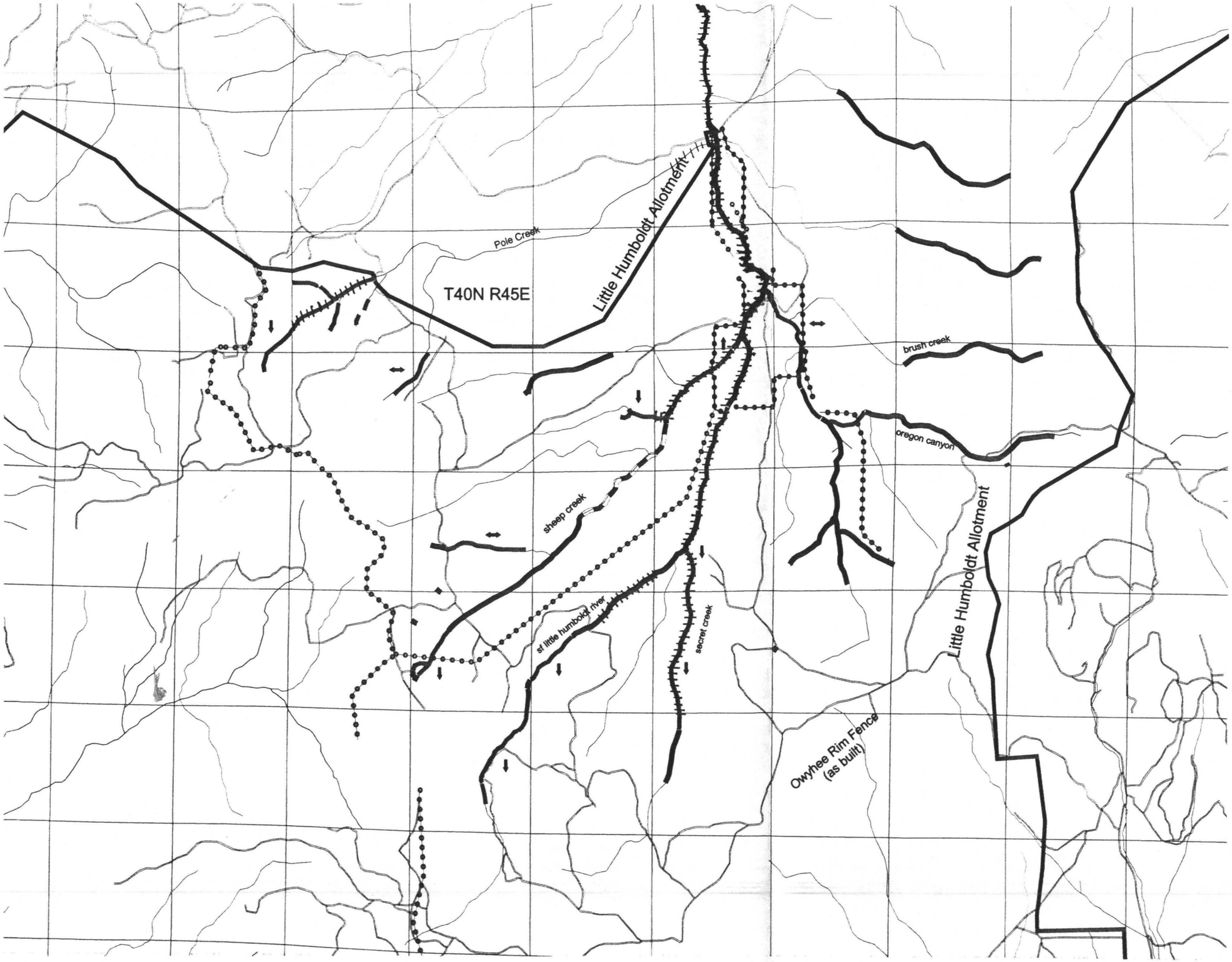
Little Humboldt Allotment
PFC, Topography and Fences

Map 2



Legend

- Owyhee Rim Fence
- Basin Fence
- Private Land Fence (approximate location)
- Proposed Fences for 2001 (approximate location)
- Oregon Flat Private Land Fence

Streams
- intermittent
- perennial

Roads

Allotment Boundary

Square Mile Sections

Topography Lines

Landownership Status
- Public (Administered by BLM)
- Private

Proper Functioning Condition Ratings 1999 & 2000
- Non-Functional/Perennial
- Functional-At-Risk/Perennial (Trend Indicated by Arrows)
- Proper Functioning Condition (PFC/Perennial)
- Impacted by Livestock/Intermittent
- Non-Functional Spring

LCT DIST. 2001

N W E S

Scale 1:60,000

1 0 1 Miles

LITTLE HUMBOLDT ALLOTMENT

MAP 4
STREAM SURVEY LOCATIONS