



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Elko Field Office
3900 East Idaho Street
Elko, Nevada 89801-4611
<http://www.nv.blm.gov>



4/26/99

In Reply Refer To:
4130 (NV-012)

APR 26 1999

*Little Humboldt
HMA*

Dear Interested Public:

In accordance with 43 CFR 4110.3, the Elko Field Office has conducted a review of the permitted use specified in the grazing permit for the Little Humboldt Allotment. Based upon this review, we have serious concerns regarding the degraded riparian conditions existing particularly on the South Fork Little Humboldt River, Sheep Creek, Secret Creek and Pole Creek all of which provide habitat for the Federally listed threatened Lahontan cutthroat trout.

As a result of this evaluation of current stream and riparian conditions, we have determined that changes in the permitted use for the Little Humboldt Allotment are necessary to improve stream and riparian conditions and conform with land use plan objectives and to comply with the provisions of 43 CFR 4180 (Rangeland Health Standards). Therefore, changes in livestock management are being proposed in accordance with 43 CFR 4110.3-2(b) for the Little Humboldt Allotment. The proposed management changes will become effective upon issuance of a final (full force and effect) decision and will remain in effect pending appeal and petition for stay in accordance with 43 CFR 4160.1(c).

A copy of the enclosed Summary of Stream and Riparian Conditions and Proposed Changes in Livestock Management is being sent to the affected permittees, all Federal and State agencies having lands or responsibility for managing resources within the affected area, and the interested public for comment, in accordance with 43 CFR 4130.3-3.

Please provide this office with any comments you may have to the enclosed evaluation summary and proposed changes in livestock management by May 14, 1999. If you have any questions, please don't hesitate to contact me or Mike Jensen, the assigned rangeland management specialist.

Sincerely,

CLINTON R. OKE
Assistant Field Manager
for Renewable Resources

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LITTLE HUMBOLDT ALLOTMENT

**SUMMARY OF STREAM AND RIPARIAN CONDITIONS OF THE SOUTH FORK
LITTLE HUMBODT RIVER DRAINAGE
AND
PROPOSED CHANGES IN LIVESTOCK MANAGEMENT**

APRIL 13, 1999

**BUREAU OF LAND MANAGEMENT
ELKO FIELD OFFICE**

I INTRODUCTION

The Little Humboldt Allotment is in the western portion of the Elko District, north and west of the town of Midas (Map 1). The southern, eastern and northern boundaries of the allotment are fenced with the exception of approximately 1.5 miles of natural barriers along the northwest boundary. The western boundary is unfenced and is defined by the Humboldt/Elko County boundary.

The Little Humboldt Allotment encompasses the headwaters of the South Fork Little Humboldt River and its tributaries, Sheep, Secret, and Pole Creeks. These streams support Lahontan cutthroat trout (*Oncorhynchus clarki henshawii*) (LCT), a federally listed threatened species and are included in the Recovery Plan for the Lahontan Cutthroat Trout. In addition, because of the high resource values existing in the allotment, the Elko Resource Management Plan (RMP) designated this allotment as an "I" (improve) category allotment and ranked it first on the current planning efforts in the Rangeland Program Summary (RPS) for management.

Both Hammond Ranches, Inc. and Ellison Ranching Company have grazing permits within the allotment. Hammond Ranches, Inc. has a permitted use for cattle of 8,279 AUMs. The period of use outlined on Hammond Ranches, Inc. term grazing permit is season long running from March 16 through January 31 of each year. Ellison Ranching Company currently has an Exchange of Use Agreement for 242 AUMS of sheep use within the allotment. Because of the presence of California bighorn sheep populations within the Owyhee Bluffs, domestic sheep use is confined to a small portion of the allotment in which they trail through for a short period of time.

Currently there is no Allotment Management Plan (AMP) or formal grazing system in effect on the allotment, and the allotment has no interior fencing to control cattle distribution and movement.

The extent of resource impacts documented for LCT streams in the Little Humboldt Allotment led the Elko Field Office of the Bureau of Land Management (BLM) to propose management changes for the 1999 grazing system in an effort to prevent the accelerated loss of threatened/endangered species habitat.

II. STANDARDS AND GUIDELINES FOR THE NORTHEASTERN GREAT BASIN AREA OF NEVADA AND THE MULTIPLE USE OBJECTIVES FOR THE LITTLE HUMBOLDT ALLOTMENT PERTAINING TO RIPARIAN RESOURCES

1. STANDARDS FOR RANGELAND HEALTH

a. Standard 2. Riparian and Wetland Sites:

Riparian and wetland areas exhibit a properly functioning condition (PFC) and achieve state water quality criteria.

2. LAND USE PLAN (LUP)

- a. *Maintain or improve the condition of the public rangelands to enhance productivity for all rangeland values.*
- b. *Conserve and enhance terrestrial, riparian, and aquatic wildlife habitat.*

3. RANGELAND PROGRAM SUMMARY (RPS) OBJECTIVES

- a. *Improve and maintain habitat condition of meadows and riparian areas for mule deer, pronghorn antelope, bighorn sheep and Lahontan cutthroat trout and raptors on 1.5 miles of the South Fork Little Humboldt River, 5.0 miles of the South Fork Jakes Creek, 2.5 miles of the North Fork Jakes Creek and 1.0 miles of Sheep Creek. Techniques which would result in a minimum improvement of 30 percent in habitat condition in the short-term from the date of implementation would be used.*
- b. *Utilization levels will not exceed 50 percent on meadow and riparian areas.*

III. DATA SUMMARY FOR LCT STREAMS

The headwaters of the South Fork Little Humboldt River and its tributaries, Sheep, Secret, and Pole Creeks support low to moderate populations of LCT (Table 1). All or significant portions of these streams are located on private land; however, these areas are grazed in conjunction with adjacent uplands administered through grazing authorizations by BLM.

Table 1. LCT population estimates and stream miles for the Little Humboldt Allotment.

STREAM	STREAM MILES		LCT/MILE ¹
	Total	Public	
South Fork Little Humboldt River	7.6	0.5	185 ¹
Sheep Creek	5.5	1.0	53 ¹
Secret Creek	4.0	0.0	66 ¹
Pole Creek	1.2	0.2	Present ²

¹Based on electrofishing studies conducted by Nevada Division of Wildlife (NDOW) in 1996.

²Based on observations made by BLM in 1998.

Stream surveys were completed by BLM on the South Fork Little Humboldt River, Sheep Creek, and Secret Creek in the Little Humboldt Allotment between 1977 and 1995 using techniques described in BLM manuals 6671 and 6720-1. Although stream survey data were

also collected for all these streams in 1986, this information is not presented due to potential problems with data collection methods. Additional observations of stream condition were made for most of these streams as well as for the upper reaches of Pole Creek by BLM in 1998. Results are summarized below.

Stream Surveys

South Fork Little Humboldt River

The headwaters of the South Fork Little Humboldt River originate in the Little Humboldt Allotment and flow for about 8 miles before entering the Bullhead Allotment administered by the Winnemucca District. The South Fork flows through narrow rocky canyons alternating with more open meadow areas. Woody riparian species including willow (*Salix* spp.), aspen, and current (*Ribes* spp.) are common in canyon areas, while Kentucky bluegrass (*Poa pratensis*) dominates remnant meadow areas. Downcut channels eroding streambanks, and drained floodplains characterize significant portions of the stream in areas accessible to cattle.

Stream and riparian habitat conditions have declined for the public land portion of the South Fork Little Humboldt River between 1977 and 1995 (Table 2). Substantial declines occurred in bank stability and especially bank cover, while percentage of desirable streambottom substrates also decreased. Variability between surveys in the pool-riffle ratio and percent quality pools are likely more related to flow conditions at the time of the survey rather than actual changes in habitat conditions.

Although transition to a lower width/depth ratio is often associated with an improvement in stream conditions, the low width/depth ratio recorded on the South Fork Little Humboldt River in 1995 reflects recent channel entrenchment. This portion of the South Fork was rated as a "G4" stream type (Rosgen 1996), meaning the channel has become downcut to form a gully. This process is accelerating as evidenced by photos taken in 1998 (Appendix I). Channel adjustments of this nature typically occur in response to high sediment loads from the surrounding watershed or from poorly vegetated streambanks (Rosgen 1996).

Although water temperatures recorded during stream surveys have been relatively cool in comparison to ambient temperatures (refer to Table 2), Coffin (1994) recorded much warmer water temperatures in the South Fork Little Humboldt River in downstream areas during the dry summer of 1994.

Table 2. Changes in habitat parameters recorded for the public land portion of the South Fork of the Little Humboldt River between 1977 and 1995.¹

HABITAT PARAMETER	YEAR	
	1977	1995
<i>Index Rating Factors</i>		
Pool-Riffle Ratio (% optimum) ²	44	32
Percent of Pools Rated as Class I, II, or III ³	0	21
Desirable Streambottom Substrates (%)	61	52
Bank Cover (% optimum) ⁴	91	67
Bank Stability (% optimum) ⁵	69	63
Habitat Condition Index (% optimum)⁶	53	44
Riparian Habitat Condition Index (% optimum)⁷	80	65
<i>Additional Information</i>		
Stream Width/Depth Ratio	25	19
Max. Stream Temperature (°F) Water, Air	64 (82)	59 (95)

¹Data are from stream survey station S-2.

²Optimum pool-riffle ratio is considered to represent 50% pools and 50% riffles.

³Class I, II or III pools are deep, wide and have at least some cover.

⁴Optimum is considered to represent medium to dense cover of tall trees or shrubs.

⁵Optimum is considered to represent totally stable streambanks.

⁶Average of bank cover, bank stability, percent desirable streambottom substrates, bank cover, and bank stability. 70%+=Excellent; 60-69%=Good; 50-59%=Fair; 10-49%=Poor.

⁷Average of bank cover and bank stability. 70%+=Excellent; 60-69%=Good; 50-59%=Fair; 25-49%=Poor.

Grazing utilization levels on riparian vegetation as well as bank trampling were observed to be heavy on the public land portion of the South Fork Little Humboldt in July of both 1977 and 1986. Utilization of both woody and herbaceous riparian vegetation in July of 1995 was recorded as slight, however, a lack of aspen and willow regeneration, presence of plant species associated with disturbance, and an absence of plant litter all suggest utilization levels are typically heavy by the end of the growing season in most years.

Sheep Creek

Sheep Creek is one of several small streams forming the headwaters of the South Fork of the Little Humboldt River. The stream represents important spawning habitat for LCT. Valley width is limited as most of Sheep Creek flows through a narrow rocky canyon. Historically beaver were important to the system and were the primary mechanism for floodplain development wherever canyon areas become more open. Today, former beaver formed meadow complexes have become drained as a result of channel entrenchment. Sagebrush now dominates historic floodplains. Although willow and aspen still occur throughout the

drainage, distribution of both species has been greatly reduced. Only mature willows are present in areas less accessible to cattle, while extensive amounts of aspen habitat has been lost as evidenced by numerous downed logs and absence of regeneration (Appendix I).

A comparison of stream survey data for 1977 and 1992 show overall conditions on public land have remained poor with the most significant changes being a substantial decline in bank stability (Table 3). Stability was rated as fair to good in 1977 but decreased to poor by 1992. Although bank cover appears to have improved, the changes are the result of incorporation of an additional transect located in a remnant aspen stand in 1992. Most remaining parameters support a decline in conditions. The width to depth ratio has increased substantially indicating transition to a wider, shallower stream profile developing within an entrenched channel. No quality pools were recorded in either 1977 or 1992, while summer water temperatures were found to be at or above lethal limits for trout. Variability between years in pool-riffle ratios and percent desirable streambottom substrates are likely related to differences in flow conditions at the time of the survey.

Table 3. Changes in habitat parameters recorded for the public land portion of Sheep Creek between 1977 and 1992.¹

HABITAT PARAMETER	YEAR	
	1977	1992
<i>Index Rating Factors</i>		
Pool-Riffle Ratio (% optimum) ²	50	92
Percent of Pools Rated as Class I, II, or III ³	0	0
Desirable Streambottom Substrates (%)	25	51
Bank Cover (% optimum) ⁴	41	53
Bank Stability (% optimum) ⁵	56	35
Habitat Condition Index (% optimum)⁶	34	46
Riparian Habitat Condition Index (% optimum)⁷	49	44
<i>Additional Information</i>		
Stream Width/Depth Ratio	19	40
Max. Stream Temperature (°F) Water, Air	75 (84)	71 (74)

¹Data are from stream survey station S-2.

²Optimum pool-riffle ratio is considered to represent 50% pools and 50% riffles.

³Class I, II or III pools are deep, wide and have at least some cover.

⁴Optimum is considered to represent medium to dense cover of tall trees or shrubs.

⁵Optimum is considered to represent totally stable streambanks.

⁶Average of bank cover, bank stability, percent desirable streambottom substrates, bank cover, and bank stability. 70%+=Excellent; 60-69%=Good; 50-59%=Fair; 10-49%=Poor.

⁷Average of bank cover and bank stability. 70%+=Excellent; 60-69%=Good; 50-59%=Fair; 25-49%=Poor.

Livestock impacts in the form of streamside forage utilization and bank trampling were documented as heavy to severe on the public land portion of Sheep Creek during all years the stream was surveyed.

Stream survey data are not included for Secret Creek, since the stream is exclusively privately owned.

Other Information

Although no stream survey data are available for the portion of Pole Creek located within the Little Humboldt Allotment, professional observations in 1998 indicate stream and riparian habitat conditions are poor especially in the lower reaches. Problems include channel entrenchment, draining of floodplains, poor bank stability, and heavy use of riparian vegetation by livestock. However, the habitat conditions improve in the upper reaches of Pole Creek which are more difficult for cattle to access.

IV. CONCLUSIONS

Standards for rangeland health have not been met for riparian and wetland sites on the South Fork Little Humboldt River and Sheep Creek within the Little Humboldt Allotment. Monitoring shows public land portions of both streams are essentially nonfunctional as indicated by channel downcutting, eroding streambanks and loss of floodplain sediments, drained floodplains, and loss of streambank cover.

LUP and RPS objectives for improving and maintaining stream and riparian habitat conditions on public land portions of the South Fork Little Humboldt River and Sheep Creek in the Little Humboldt Allotment have not been met. Data show conditions are currently poor and have deteriorated over time under present livestock management. Data also indicate use of riparian vegetation by livestock has consistently exceeded 50% (of the current year's growth) by the end of the growing season.

It has been determined that livestock are the causal factor in non-attainment of both the rangeland health standard and the LUP and the RPS objectives. Poor stream and riparian habitat conditions are the result of heavy grazing of riparian vegetation by livestock on an annual basis.

V. MANAGEMENT ACTIONS

Implement the following interim grazing management actions listed below until completion of the Little Humboldt Evaluation process and issuance of a Final Multiple Use Decision (FMUD) for implementing long-term management actions to achieve all multiple use objectives.

- 1. Interim livestock management with the current Total Number of AUMs of Specified*

Livestock Grazing for the Little Humboldt Allotment will be as follows:

Allotment	Livestock Number & Kind	Begin Period	End Period	%PL	Type Use	AUMs
Little Humboldt	2,426 Cattle	3/16	6/30	97	Active	8,279
Total						8,279
Jakes Creek	122 Cattle	4/1	11/15	34	Active	312
	25 Horses	4/16	10/15	34	Active	51
Jakes Creek FFR	4 Cattle	4/1	2/28	100	Custodial Grazing	50
Total						413

The terms and conditions on the term grazing permit will be as follows:

Authorized grazing use will be in accordance with the Little Humboldt Allotment Summary of Stream and Riparian Conditions Evaluation of the South Fork Little Humboldt Drainage and Final Decision implementing interim grazing management dated _____.

Hammond's historic suspended AUMs are listed below by allotment:

*Little Humboldt: 2,600
Jakes Creek: 107*

All horse use will be in the Jakes Creek Allotment.

The livestock permittee will have the flexibility to adjust livestock numbers within the seasons of use outlined for the allotments above as long as the total number of AUMs of permitted use are not exceeded.

Deviations from the seasons of use may be authorized on an annual basis where such deviations would not prevent attainment of the multiple-use objectives for the allotment and the standards for rangeland health.

The terms and conditions of your permit may be modified if additional information indicates that revision is necessary to conform with 43 CFR 4180.

Actual use data on all pastures must be submitted to this office within 15 days from the last day of use.

Supplemental feeding is limited to salt, mineral and/or protein supplements in block, granular or liquid form. Such supplements must be placed at least ¼ mile from live waters (springs, streams), troughs, wet or dry meadows, and aspen stands.

All riparian exclosures, including spring development exclosures, are closed to livestock use unless specifically authorized in writing.

*Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer, by telephone, with written confirmation, immediately upon discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the **immediate** vicinity of the discovery and protect it **from your activities** for 30 days or until notified to proceed by the authorized officer.*

VI. RATIONALE

There is a need to make management changes on LCT streams in the Little Humboldt Allotment as soon as possible. Observations in 1998 show severe recent channel entrenchment along the South Fork Little Humboldt River resulting in accelerated base level lowering of the entire South Fork system including tributaries, Sheep and Secret Creeks (refer to Appendix I). Streambanks are cut and eroded, floodplains have been largely drained, and there is minimal regeneration of woody riparian plants. Although recent years of good streamflow conditions have allowed LCT populations to remain viable even though habitat conditions are poor, fish remain vulnerable to high summer stream temperatures and lethal winter icing conditions during periods of low flow. In addition, heavy sediment loads threaten spawning success.

Removal of cattle from the Little Humboldt Allotment by 6/30 is felt to provide for sufficient protection of LCT habitats based the relatively high average elevation (about 6,800 feet) of the South Fork Little Humboldt drainage. Snow cover typically precludes cattle from gaining access to LCT streams until about mid to late May, effectively limiting duration of grazing to about four to six weeks prior to 6/30. Meyers (1989) found that in Montana the duration of grazing for successful systems averaged about 28 days in comparison to unsuccessful systems where grazing averaged about 58 days. In addition, uplands remain green later into the growing season at higher elevations, effectively limiting use of riparian areas until later in the summer. On Little Porter and Winters Creeks in the Elko District, use of both woody and riparian vegetation was found to be only slight by July in 1998. Elevation of these streams ranges between about 6,200 to 6,900 feet.

Finally, early grazing treatments with off dates between mid June and mid July have been shown to result in excellent recovery of stream systems within the Elko District regardless of elevation, channel type, vegetative type or on-dates. Excellent recovery has been documented for 11 widely different stream systems in the Elko District with off-dates ranging from mid June to mid July and with elevations ranging from just over 5,000 feet to approximately 6,600

feet.

The Little Humboldt FMUD is scheduled for completion in 2000 and will address other issues in the allotment including wild horses, uplands and remaining riparian habitats.

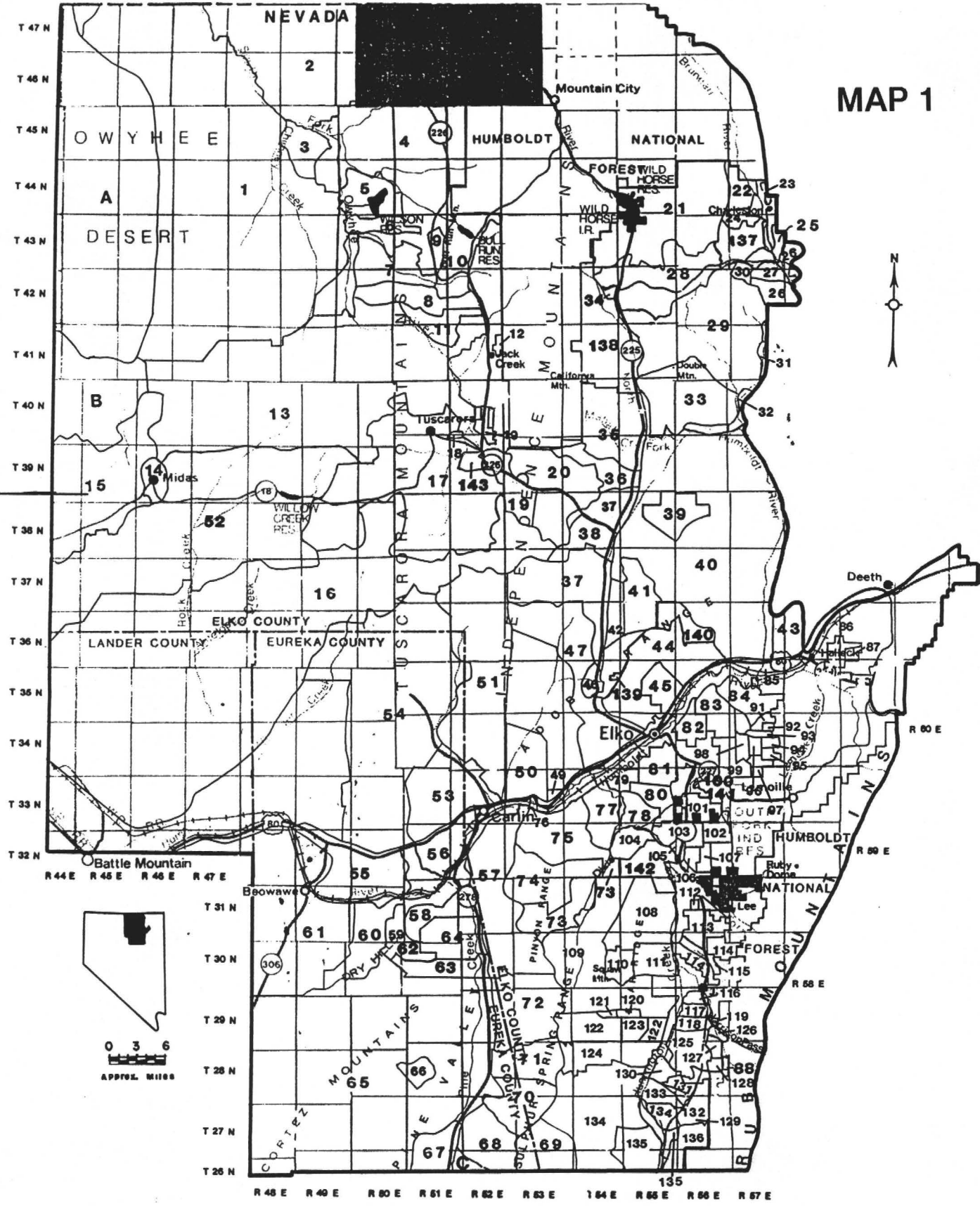
This action will result in significant progress toward fulfillment of the Riparian and Wetland Standard for Rangeland Health developed for the Northeastern Great Basin area of Nevada. This management action is consistent with Guidelines 2.1 and 2.4, which have been developed for the Northeastern Great Basin Resource Advisory Council area of Nevada to establish significant progress toward conformance with the Riparian and Wetland Standard for Rangeland Health.

VII. LITERATURE CITED

- Coffin, Patrick. 1994. Field trip report-Bullhead and Little Humboldt Allotments, July 26-27, 1994. U. S. Fish and Wildlife Service, Reno, Nevada.
- Meyers, Lewis. 1989. Grazing and riparian management in Southwestern Montana. Pages 117-120 in Gresswell, B. A. Barton and J. L. Kershner, eds. Practical Approaches to Riparian Resource Management. Billings, MT.
- Rosgen, David. 1996. Applied river morphology. Printed Media Companies, Minneapolis, Minnesota.
- USDI, Bureau of Land Management. 1993. Process for assessing proper functioning condition. Riparian area management, TR 1737-9, Denver Service Center, Denver, Colorado.

LITTLE HUMBOLDT ALLOTMENT

MAP 1



GENERAL VICINITY MAP

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ELKO RESOURCE AREA

ALLOTMENT BOUNDARIES

APPENDIX I



South Fork Little Humboldt River just below the confluence of Sheep Creek. 9-15-98. Although this photograph was taken on private land, poor habitat conditions on public and private lands upstream have led to accelerated channel entrenchment and associated baselevel lowering of the entire South Fork of the Little Humboldt system in the Little Humboldt Allotment.



Sheep Creek, BLM stream survey station S-2. 7-22-92. Channel downcutting has led to draining of the historic floodplain and loss of the associated riparian zone including streamside aspen. Lack of floodplain development allows for concentration of flood flow energies, while the shallow channel profile and absence of any overhanging vegetation allows for excessive warming of the water column on hot summer days. Streambanks are mostly unstable and are only poorly vegetated.