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IN REPLY REFER TO:



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CALIENTE RESOURCE AREA

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To whom it may concern,

Enclosed is the "draft" Clover Creek/Cottonwood Habitat Management Plan and associated Environmental Assessment. This HMP, when signed, will provide the basis for management of the public lands within Clover Canyon, Cottonwood Canyon and the surrounding watersheds. If you have any comments concerning this plan or the EA, please submit them in writing to our office in Caliente prior to **September 16, 1991.**

If there are any questions or concerns please contact Kyle Teel of the Caliente Resource Area, at the number above, Monday through Friday 7:30 a.m. through 4:15 p.m.

Sincerely,

Curtis G. Tucker

Curtis G. Tucker
Area Manager

Enclosure: "draft" Clover Creek/Cottonwood HMP and EA

Handwritten notes and diagrams:

- Wildlife
- Habitat Management Plan
- Management Plan
- Area Plan
- 18
- 2
- 3
- 5
- 6
- 8
- 9
- 10
- 11
- 12
- 100%
- 50%
- 33
- 38
- 30
- 19

CLOVER CREEK/COTTONWOOD
HABITAT MANAGEMENT PLAN

N5-WHA-T24

BUREAU OF LAND MANAGEMENT

CALIENTE RESOURCE AREA

LAS VEGAS DISTRICT

ABSTRACT

The Clover Creek/Cottonwood Habitat Management Plan (HMP) is designed to maintain or enhance certain habitat features for Rainbow Trout and Desert Suckers in Clover Creek, Cutthroat trout in the Cottonwood drainage, riparian values for Clover Creek and the Cottonwood drainage and all other users including livestock, wild horses and non-game/game animals. Both perennial creeks are detached and are spring fed systems which lie within the Las Vegas District, Caliente Resource Area. The Cottonwood drainage lies within the Clover Wilderness Study Area (WSA). This plan includes objectives designed to maintain or enhance quality and quantity of the habitat elements food, water, cover, and space for all users, as appropriate.

A SIKES ACT COOPERATIVE FEDERAL - STATE
MANAGEMENT PLAN

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I. INTRODUCTION

A. Justification

This Habitat Management Plan (HMP) has been developed under Sikes Act authority. The Sikes Act of 1974, was a congressional mandate for BLM to plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game through the development and implementation of habitat management plans. This plan calls for the Nevada Department of Wildlife (NDOW) and the Bureau of Land Management (BLM) to work together to maintain, improve, and manage the wildlife resources and their habitat for the best intent of the people of Nevada and of the United States.

Clover Creek is one of only two stream fisheries on BLM land in the Caliente Resource Area. Over the last several years fisheries habitat, riparian conditions, and trout populations have been decreasing along Clover Creek. At the same time riparian and habitat conditions along Ash and Pine Creeks in the Cottonwood drainage are in poor conditions.

The purpose of this HMP is to document habitat suitability, implement land use plan objectives, set habitat management objectives and describe the actions necessary to achieve those objectives. Specifically, to increase rainbow trout populations in Clover Creek and improve riparian conditions along Clover Creek and Ash and Pine Creeks.

In addition to the Sikes Act there are at least 30 Legislative Acts, 6 Executive Orders and several Bureau manual sections that provide direction to BLM for the management of aquatic resources on public lands.

With the passage of the Federal Land Policy and Management Act of 1976 (FLPMA), BLM received for the first time permanent authority to retain and manage resources on public lands, including fisheries, for multiple uses. FLPMA provided a broad legal framework for management of the public lands and remains the basic guidance for management of fish and wildlife habitat on public lands. Specifically, FLPMA:

-Places fish and wildlife management on an equal footing with other traditional land uses.

-Requires that part of grazing fees be spent for range betterment, including aquatic and terrestrial wildlife habitat enhancement, protection, and maintenance where livestock use occurs.

In 1987 the Bureau of Land Management developed a Riparian Area Management Policy, which was signed by the Director on 1/22/87. The main objective of this policy is to maintain, restore, or improve riparian areas to achieve a healthy and productive ecological condition for maximum long-term benefits.

II. EXISTING ENVIRONMENT

A. Location

The Clover Creek riparian zone originates in eastern Lincoln County and is fed by numerous perennial spring sources along its course. Clover Creek terminates in the town of Caliente, where it meets with the Meadow Valley Wash (See Map 1).

This HMP will address approximately 6 miles of Clover Creek which makes up the majority of the rainbow trout habitat. Approximately 1 mile of the 6 will go dry during the hot summer months. Legal descriptions for the creek and HMP boundary is as follows:

Clover Creek Mount Diablo Meridian

T. 4 S., R. 68 E., Secs. 21, 27, 28, 34; T. 5 S., R. 68 E., Secs. 2, 11, 12 and T. 5 S., R. 69 E., Sec. 7.

HMP Boundary

T. 4 S., R. 68 E., Secs. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 34, 35, 36; T. 5 S., R. 68 E., Secs. 1, 2, 3, 11, 12, 13, 14, 25, 26; and T. 5 S., R. 68 E., Secs. 6, 7, 18 (See Map 2).

Ash and Pine Creeks are also found in Lincoln County and originate approximately 2 miles southeast of Ella Mountain in the Clover Mountains (See Map 1). Ash Creek is approximately 4 miles in length and joins with Pine Creek which is approximately 8 miles in length. Both creeks drain into Cottonwood Canyon, which lies within the Clover WSA. Approximately 4 miles of the total 12 miles dry up during the summer months. Legal descriptions for the creeks and HMP boundary are as follows:

Ash and Pine Creeks

T. 6 S., R. 67 E., Secs. 13, 24; T. 6 S., R. 68 E., Secs. 7, 17, 18, 19, 20, 29, 30, 32, 33; and T. 7 S., R. 68 E., Secs. 4, 5, 8, 17, 20.

HMP Boundary

T. 5 S., R. 67 E., Secs. 36; T. 6 S., R. 67 E., Secs. 1, 2, 11, 14, 23, 26, 34, 35; T. 7 S., R. 67 E., Secs. 3, 10, 15, 16, 22, 26, 35, 36; T. 5 S., R. 68 E., Sec. 31; T. 6 S., R. 68 E., Secs. 6, 8, 9, 13, 14, 15, 16, 24, 25; T. 7 S., R. 68 E., Secs. 31, 32, 33, 34, 35, 36; T. 6 S., R. 69 E., Secs. 30, 31, 32; and T. 7 S., R. 69 E., Secs. 4, 9, 10, 16, 17, 18, 19, 30 (See Map 3).

B. Stream Characteristics

Clover Creek varies in elevation from 4720 feet at the lower end to 5200 feet at the upper end. Average width and average depth of the creek is 10 feet and 0.46 feet respectively. The width/depth ratio is 22. The width/depth ratio is a comparison of the width of the stream banks and stream depth. The lower the number is, the narrower and deeper the stream is, the higher the number is, the wider and shallower the stream is. Average stream velocity is .76 feet/second. Average stream discharge is 8.75 cubic feet/second. Average stream gradient is 1.75%. The creek is well confined within Clover Canyon which rises to an elevation of 5800 feet. The sinuosity of the creek is 1.4 (channel length divided by valley length). The sinuosity is somewhat restricted by the Union Pacific Railroad which runs parallel with the creek through the canyon.

Ash and Pine Creeks elevation varies from 5,602 feet at the origin of Ash Creek to 3,760 feet at the terminus of Pine Creek. Average width and average depth of the Ash and Pine systems are 4.5 feet and .13 feet respectively. The width/depth ratio is 35. Average stream velocity is .78 feet/second. Average stream discharge is .43 cubic feet/sec. Average stream gradient is 2.6%, with a high of 4% and a low of 1.8%. The two creeks are well confined as they flow into Cottonwood Canyon and when they become one in Cottonwood. This drainage is subject to impacts from flooding during snow melt and coincidental cloudbursts due to the major tributaries which collect water and the significant gradient within the Cottonwood drainage.

C. Climate

In the Clover Creek riparian system, precipitation averages about 9 inches per year, with extreme averages being between 4 to 10 inches per year, most of which occurs as thundershowers and snow from late fall to early spring. Snowfall averages 6 to 12 inches during the winter months. Temperatures seldom exceed 100 degrees F. during the summer months, although they will go to below 0 degrees F. in the winter.

In the Ash and Pine riparian system, precipitation also averages about 9 inches per year, with extreme averages being between 4 to 10 inches per year, although the upper 2 miles of Ash and Pine can receive 8 to 16 inches per year. Most of the precipitation occurs from thundershowers and snow from late fall to early spring. Snowfall averages 6 to 24 inches during the winter months depending on elevation. Temperatures will reach 100 degrees F. during mid summer in the lower stretches of Cottonwood Canyon and will go to below 0 degrees F. in the winter. Temperatures will vary significantly from the lower part of Cottonwood Canyon to the upper part due to differences in elevation.

D. Vegetation

Riparian:

Herbaceous riparian vegetation was inventoried by determining dominant/subdominant species groups a foot out from the banks for Clover Creek. Species encountered along the creek include saltgrass, spikerush, clover, berula, cheatgrass, cattails, medic, mint and bluegrass. Some of the more prevalent dominant/subdominant species groups include saltgrass, saltgrass/spikerush, saltgrass/clover and clover/spikerush. Woody vegetation along Clover Creek consists of cottonwood, ash, desert, coyote and black willow, rubber rabbitbrush, sagebrush, yenta-santa and tamarisk.

Herbaceous riparian vegetation along Ash and Pine Creeks is more sparse than along Clover Creek. Species encountered along the creeks include cheatgrass, various riparian grasses, bluegrass, various annuals and horsetail. Woody vegetation along the creeks consists of willow, cottonwood, juniper, pine, oak, sagebrush and rose.

Uplands:

The surrounding uplands are represented by sagebrush, rubber rabbitbrush, Utah juniper, pinion-pine, fourwing saltbush, skunkbush, cheatgrass, indian ricegrass, bluegrass, threeawn, bottlebrush squirreltail and sand dropseed.

E. Aquatic System Conditions

Current riparian vegetative conditions on Clover Creek and Ash and Pine Creeks are fair and poor, respectively. Both creeks receive heavy livestock and wild horse use which keeps the conditions down. Percent of habitat optimum for the creeks was determined from surveys conducted in 1976 and 1987 for Clover Creek and 1987 for Ash and Pine Creeks. The percent of habitat optimum for Clover Creek was 52% in 1976 and dropped 15% to 37% optimum for 1987. Ash and Pine Creeks had a percent of habitat optimum of 27% for the 1987 survey.

F. Aquatic System Limiting Factors

Priority "A" Limiting Factors

Priority "A" limiting factors as defined by the Bureau Stream Survey Manual are factors absolutely essential for maximum fish production and are more easily improved with stream improvement programs.

Clover Creek

Habitat conditions along Clover Creek have dropped 15% between the 1976 and 1987 stream surveys. The main reason for this drop is the drastic reduction in the pool/riffle ratio and the pool quality. The reduction in bank cover and stability is also a contributing factor in this reduction.

Ash and Pine Creeks

Habitat conditions for Ash and Pine Creeks are extremely poor. The reasons for such poor conditions is the total lack of pools and low bank cover and stability.

Priority "B" Limiting Factors

Priority "B" limiting factors are supporting or complimentary factors.

All along the creeks (Clover, Ash and Pine) stream temperatures are limiting during the summer months due to the lack of stream side cover and low percentage of the creeks shaded. The relatively wide width and shallow depth of the creeks is also limiting.

F. Water Quality for Clover Creek

The following information was taken from the Staff Report on Water Quality and Instream Flow Analysis for Clover Creek, Nevada, Las Vegas District, Bureau of Land Management. The data was compiled from 19 discrete water quality samples which were collected at seven sample locations from 1986 through 1988. The location of the sample sites are depicted on Map 4.

Clover Creek has been classified by the State of Nevada as a Class B stream. A Class B stream is a stream which include waters located in areas of light to moderate human habitation, little industrial development, light to moderate agricultural development, and where the watershed is moderately influenced by human activities.

The results of this study indicated that three specific constituents exceeded the standards established by the Nevada State Water Pollution Control Regulations (WPCR) at some point and time during the study. These constituents where: fecal coliform, temperature, and ph.

Fecal coliform are considered the primary indicators of fecal contamination by warm blooded animals. The standard for fecal coliform established for Class B stream by WPCR is: "the fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 milliliters". This study did

not allow for the strict examination of this standard. However, based on the upper limits of 400 per 100 milliliters, 21% (4 out of 19 samples), sample sites 8 & 12, exceeded this limit over a three year period. Since cattle do not utilize the creek on a continuous basis, high fecal coliform probably indicated the periods that cattle were utilizing the stream. This data suggests excessive utilization of the stream riparian area which has resulted in degraded water quality.

The Class B temperature standard established by WPCR for trout fisheries is 20 C. Three samples out of 19 (15%) exceeded this standard. This standard was only exceeded at sample sites 11 and 12, the lower end of the stream. The sampling indicated an increase in water temperature of 9 C from the source (Big Spring) to site 12 four miles down stream. This is a significant increase in water temperature for this distance of stream and is a direct result of the lack of shading in the lower reaches of the stream. This increase in temperature has restricted the range of the trout within the stream limiting the productive fishery to the shaded upper reaches. Examination of the riparian vegetation which would provide shading indicated excessive utilization which has eliminated much of the protective shading in the lower two miles of the stream.

The ph standard established by the WPCR for Class B streams is 6.5 to 8.5. This standard was exceeded twice out of the 19 samples collected (10%) over the three year study. This constituent was only exceeded at site 12 which is the lowest site on the creek. These high ph readings were not being influenced by the impacts of grazing, but were a result of a natural situation probably caused by the volcanic parent material which the stream flows over.

The water quality data gathered over the past three years has indicated a definite decline in water quality as the stream moves down the drainage. Since Clover Creek is a losing stream and flows naturally decrease in the lower reaches, some decline in water quality should be expected. However, the degree of decline, specifically the increase in water temperature, appears to be accelerated by a lack of shading resulting from over utilization of riparian species.

G. Aquatic System Impacts.

As mentioned before, Clover Creek and Ash and Pine Creeks receive heavy livestock and wild horse use. Livestock are released in the southern part of the Cottonwood drainage on 5/1 and trail up through Ash and Pine Creeks to Clover Creek. The livestock tend to remain on the riparian of Clover Creek until removed in 10/31. The wild horse use is generally year round. Utilization is generally above the 50% level before livestock go on in 5/1 and are heavy to severe when they come off. The Union Pacific Railroad along Clover Creek occasionally causes impacts to the creek by diverting the creek to protect the railroad bed. Flooding occurs periodically causing wash outs along the creeks.

H. Geology

Both the Clover Creek and Cottonwood drainages are comprised of lava flows and tuffs, mostly of late Tertiary age (USDI, 1979).

I. Soils

Soils within Clover Creek and Cottonwood are similar and represented by Argixerolls (stony and very cobbly clay loam) and Haplargids (gravelly and cobbly loam). These soils can vary in depth from shallow to moderately deep. These soils are formed primarily from igneous parent materials.

J. Wildlife

Several different species of passerine birds are apt to be found in both the Clover Creek and Cottonwood riparian systems: Blue Grosbeak, Black-throated sparrow, Yellow-breasted chat, Gray flycatcher, Ash-throated flycatcher, Wilson warbler, Indigo bunting, Raven and Mourning dove. Gambel's quail have been seen in the lower elevations of Cottonwood Canyon. Raptor activity is significant in Clover Creek, especially during the spring and summer. Species which can be seen are Golden eagles, Red-tailed hawks and Cooper's hawk. Various other species of birds that may occur in both systems are Northern flicker, White-throated swift, Turkey vulture, Long-eared owl, Belted kingfisher and the Black-chinned hummingbird. The Great Blue Heron and numerous species of different waterfowl have been spotted on Clover Creek.

Both riparian systems make up mule deer hunting area 24, which is comprised of a small herd (41 - summer; 22 - winter) in the Cottonwood drainage area where deer movements are from higher elevations on Ella Mountain (approx. 5,120 acres are crucial deer summer range) during the summer to south and lower elevations during the winter. The 6 miles in Clover Creek probably provides forage and water for 45 deer on an yearlong basis.

K. Fisheries

Clover Creek

Clover Creek is managed for a "wild trout" fishery of rainbow trout (*Oncorhynchus mykiss*) and has not been stocked since the 1960's. In 1977 the Nevada Department of Wildlife (NDOW) conducted a fishery survey at three station along Clover Creek. This survey indicated that there was an average of 862 trout per mile. In June of 1991 this survey was reconducted at one of the previous sites (#2) and at four additional site for a total of five sites samples along the creek. Sample site #1 of the old survey was not located due to channel change and site #3 was dry. The resurvey indicated that there was an average of 1,425 trout per mile at the repeated site and an average of 521 trout per mile for all of the sample sites. This is an increase of 263 trout per mile for the repeated site and a decrease of 341 trout per mile for all of the stations, between the two sample years. See Map 5

for the location of the sample sites. Table 1 indicates the number caught, average size, size range and trout per mile for each sample station.

Ash and Pine Creeks

Cutthroat trout were transplanted into the Cottonwood drainage by NDOW in 1984. It is not known how this population has fared, as there has not been any fishery surveys conducted since that date.

Table 1: Number of rainbow trout caught, their average size, size range and fish per mile for each sample station by year.

Sample Station	1977					1991					
	Transect Length	#	Avg. Size	Size Range	Fish/Mile	Transect Length	#	Avg. Size	Size Range	Fish/Mile	
1	100 ft	24	4.6"	2.7-7.8"	1,267			Unlocatable			
2	100 ft	22	5.0"	2.6-7.6"	1,162	100 ft	27	4.8"	.8-8.5"	1,425	
3	100 ft	<u>3</u>	<u>6.1"</u>	<u>2.1-4.7"</u>	<u>158</u>			Dry			
Total	300 ft	49	5.2"	2.1-7.8"	862						
A						300 ft	5	5.2"	2.5-5.6"	88	
B						100 ft	15	8.1"	1.4-9.9"	792	
C						100 ft	18	6.9"	5.1-8.9"	950	
D						200 ft	<u>14</u>	<u>7.4"</u>	<u>5.1-9.3"</u>	<u>369</u>	
						Total	800 ft	79	6.4"	1.4-9.9"	521

L. Special Status Species

Two Federal category 2 fish species are also located in Clover Creek, the Meadow Valley Wash desert sucker (Catostomus clarki) and the Meadow Valley Wash speckled dace (Rhinichthys osculus). The survey conducted by NDOW in 1977 also included these species. The survey indicated that there was an average of 1,196 desert sucker per mile and 3,502 speckled dace per mile. The survey reconducted in June of 1991 indicated that there was an average of 369 desert suckers per mile and 6,072 speckled dace per mile for the resurveyed station (#2) and a average of 580 desert suckers per mile and 2,164 speckled dace per mile for all of the 1991 sample stations. Comparison of the three sample stations between 1977 and 1991 indicated a decrease of 616 desert suckers per mile and a decrease of 1,338 speckle dace per mile. Table 2 gives number caught, their average size, size range and fish per mile for each station and by species.

Table 2: Number caught, their average size, size range and fish per mile, for each sample station by year and species.

Desert Sucker										
Sample Station	1977					1991				
	Transect Length	#	Avg. Size	Size Range	Fish/Mile	Transect Length	#	Avg. Size	Size Range	Fish/Mile
1	100 ft	7	7.1"	3.8-8.8"	370	Unlocatable				
2	100 ft	41	7.5"	4.3-10.0"	2,164	100 ft	7	7.9"	4.5-9.7"	369
3	100 ft	20	3.6"	2.1-4.7"	1,056	Dry				
Total	300 ft	68	6.0"	3.3-7.8"	1,196					
A						300 ft	17	5.2"	3.3-8.3"	299
B						100 ft	8	7.7"	6.8-10.3"	422
C						100 ft	5	8.6"	7.6-9.4"	264
D						200 ft	51	8.9"	5.3-10.9"	1,346
Total						800 ft	88	7.6"	3.3-10.9"	580

Speckle Dace										
Sample Station	1977					1991				
	Transect Length	#	Avg. Size	Size Range	Fish/Mile	Transect Length	#	Avg. Size	Size Range	Fish/Mile
1	100 ft	30	2.5"	1.3-3.6"	1,584	Unlocatable				
2	100 ft	70	2.2"	1.2-3.1"	3,696	100 ft	115	2.4"*	1.2-3.6"	6,072
3	100 ft	99	---	-----	5,227	Dry				
Total	300 ft	199	2.3"	1.2-3.6"	3,502					
A						300 ft	100	1.9"*	1.2-2.9"	1,760
B						100 ft	18	2.3"	1.9-3.0"	950
C						100 ft	23	2.7"	1.0-4.2"	1,214
D						200 ft	72	2.8"*	1.5-4.4"	1,900
Total						800 ft	328	2.4"	1.2-4.4"	2,164

* Indicates average length of 40 individuals.

In 1987 a field trip was held where the BLM, USFWS and NDOW discussed the possibilities of transplanting the Big Springs spinedace, a Federally Threatened species and occurs north of Panaca, Nevada, to the Big Spring Site.

III. WILD HORSES

The HMP area falls into three wild horse herd management areas (HMA): the Miller Flat, Clover Creek, and Clover Mountain HMAs. Clover Creek is the border for all three of these HMAs. The Miller Flat HMA borders all of Clover Creek on its eastern side, while the Clover Creek HMA borders Clover Creek on the upper half and the lower half of Clover Creek is bordered by the Clover

Mountain HMA (See Map 5). The Cottonwood drainage falls entirely within the Clover Mountain HMA.

The most current data (1988 census) shows that there are 26 horses in the Clover HMA, 84 horses in the Clover Mountain HMA and 71 horses in the Miller Flat HMA.

There are no horse numbers available per allotment. The Clover Mountain HMA contains the Sheep Flat, Pennsylvania, Cottonwood and Sandhills allotments. The Clover Creek HMA contains the Clover Creek, Mustang Flat and Sawmill Canyon allotments. The Miller Flat HMA contains the Clover Creek, Oak Wells, Sheep spring and Rabbit Spring allotments.

IV. RECREATION

Vehicle traffic into Clover Canyon (Clover Creek) has been minimal, due to the washing out of the old jeep trail which used to run parallel to the railroad bed prior to 1982 when Lincoln County experienced severe floods. Public use of the railroad maintenance road is discouraged by signs put up by UPR but still occurs some. The aquatic system does receive light fishing pressure.

Public use of Cottonwood Canyon (Ash and Pine Creek) is limited to non-motorized vehicles due to the WSA designation and Interim Management Policy.

The Caliente Off Road Vehicle Designations identify the riparian zone of Clover Creek to be "open", which means that competitive races and casual use can occur in the riparian zone.

V. LIVESTOCK GRAZING

There are three grazing allotments, Clover Creek, Cottonwood, and Sheep Flat, which involve and affect the riparian zones in Clover Creek (See Map 2).

Ash and Pine Creeks are solely in the Cottonwood Allotment (See Map 3).

The Clover Creek allotment contains the last 3 miles (downstream) of the 6 miles in Clover Creek. The Sheep Flat allotment and the Cottonwood allotment co-share 2 miles of the Clover Creek as the common allotment boundary. The Sheep Flat allotment contains the remainder of the 1 mile (upstream) of riparian zone. The three allotments are administered by the Las Vegas District, Caliente Resource Area.

The Cottonwood allotment grazing preference is authorized for use by Kevin Olson and Hank Rice. Season of use is 5/1 - 10/31. Class of livestock is cattle. Existing active preference is 1296 AUMs.

The Clover Creek allotment grazing preference is authorized for use by the National Mustang Association and Bruce K. Micheal. Season of use is 11/1 - 4/30. Class of livestock is cattle. Existing active preference is 613 AUMs.

The Sheep Flat allotment grazing preference is authorized for use by Newby Cattle Co., Francis Lytle and James Wade. Season of use is 5/16 - 9/15. Class of livestock is cattle. Existing active preference is 1977 AUMs.

Due to precipitous terrain, livestock from the Sheep Flat allotment are thought to not utilize the 2 miles of Clover Creek that are shared with the Cottonwood allotment or the Cottonwood drainage.

The Clover Creek allotment was inactive for many years. In 1989 authorized use was activated from 3/1 - 4/30 for 56 AUMs. Livestock typically utilize the eastern part of the allotment, specifically the 2 miles of riparian zone within the Clover Creek riparian zone.

The Cottonwood allotment contains the Cottonwood drainage (Ash and Pine Creeks) and approximately 2 miles of Clover Creek. Typical livestock management within the Cottonwood allotment is to release cows at the southern part of the allotment, allow them to trail approximately 18 - 20 miles through the Cottonwood drainage to Clover Creek, which can be traversed within a few days by experienced livestock. Once livestock reach Clover Creek, they tend to remain on the riparian until removed.

This type of grazing system is basically continuous season-long grazing. A continuous season-long grazing system is a system in which grazing takes place on a particular pasture annually throughout the complete vegetation growing season. Under the continuous season-long strategy, livestock congregate and linger on riparian streambank areas because of the presence of succulent forage, drinking water, gentle terrain, shade, and vegetation. These areas usually receive excessive use even under light stocking rates. This grazing strategy is seldom compatible under commonly used forage intensity and seasons of use because too much pressure is exerted on riparian plants and stream banks. (Platts, 1989).

In order for the riparian conditions to improve on the Cottonwood drainage and Clover Creek a change in the season of use or development of a grazing system which allows for periodic rest during the growing season in the Cottonwood drainage needs to be made for the Cottonwood allotment. These changes would allow the riparian vegetation its maximum growth potential. Short of totally resting or closure of the riparian areas to grazing, some systems that might work are seasonal grazing, with riparian values in mind, or developing a riparian pasture. Seasonal grazing would allow livestock to graze during a time when the riparian values are most compatible. An example of this system would be to change

the season of use to spring or early season grazing. This seasonal grazing would benefit the riparian vegetation by allowing for rest during much of the growing period and lessen the use on woody species. Creating a riparian pasture would allow the riparian area to be grazed or rested on any given season or year depending on stream-riparian needs. As the riparian vegetation regains its vigor and productivity, available forage for livestock use can often be increased under this strategy (Platts, 1989). Table 3 outlines problems, benefits, and fishery compatibility and rates grazing strategies.

Table 3 - Evaluation and rating of grazing strategies as related to stream-riparian habitats (Platts 1989).

Strategy	Level to which riparian vegetation is commonly used	Control of animal distribution (allotment)	Stream-bank stability	Brushy species condition	Seasonal plant regrowth	Stream-riparian rehabilitative potential	Rating
Continuous season-long	Heavy	Poor	Poor	Poor	Poor	Poor	1*
Seasonal Riparian preference	Moderate to light	Good	Good	Good	Fair	Fair	6
Riparian Pasture	As prescribed	Good	Good	Good	Good	Good	8
Rest or closure	None	Excellent	Excellent	Excellent	Excellent	Excellent	10

*Rating scale based on 1 (poorly compatible) to 10 (highly compatible) with fishery needs.

VI. MINING, OIL AND GAS

Presently, there are two mining claims and six oil and gas leases in the Clover Creek HMP area (See Map 4).

Minerals:

Olympia T. 5 S., R. 6B E., Sec. 11, NW1/4
 Olympia #1 " " " " "

Oil and gas leases:

OG lease N31831 (See Map 4)
 OG lease N32796 "
 OG lease N31831A "
 OG lease N33035 "
 OG lease N30209 "
 OG lease N30671 "

There are twelve mining claims and six oil and gas leases in the Cottonwood HMP area (See Map 6).

Minerals:

MER #23	T. 6 S., R. 67 E., Sec. 23. NW1/4
MER #24	" " " " "
MER #25	" " " " "
MER #26	" " " " "
MER #27	" " " " W1/2
MER #28	" " " " SW1/4
MER #29	" " " " "
MER #30	" " " " "
MER #70	" " " " "
MER #70	T. 6 S., R. 67 E., Sec. 26. NW1/4
MER #71	" " " " "
MER #72	" " " " "

Oil and gas leases:

OG lease N18484	(See Map 6)
OG lease N18491	"
OG lease N18493	"
OG lease N18496	"
OG lease N26111	"
OG lease N26113	"

VII. UNION PACIFIC RAILROAD ACTIVITIES

The Union Pacific Railroad (UPR) runs parallel to and in the same canyon as the Clover Creek riparian zone. The UPR maintains a 100 - 200 foot right of way (depending on location), on either side of the tracks, throughout the canyon. During periods of heavy flooding, the UPR is committed to protecting its structures and in the past has had to dredge soil from the creek bottom to build up its maintenance road. The railroad has also attempted to move the creek to the far side of the canyon, with the probable intent being to keep it from impacting the railroad bed.

There are existing fence lines which run parallel with the railroad and were used to prohibit livestock from being run over by trains. These fences have deteriorated and the railroad now pays for cow mortalities rather than upkeep on the fence lines.

VIII. CITY OF CALIENTE

In 1987, the city of Caliente hired the firm of Earth Technology Corporation, for the purpose of investigating the possibilities of collecting stream flow from Clover Creek and piping the water to the City of Caliente for domestic purposes. The firm recommended that other methods of acquiring water be explored.

IX. LAND STATUS/ADMINISTRATION

There is one mile of the downstream section of Clover Creek within the Clover Creek allotment which is public land identified as public water reserves (See Map 2). The remainder of riparian zone within Clover Creek and Cottonwood are without a water reserve designation.

Legal description of the public water reserve is as follows:

T. 4 S., R. 68 E., Sec. 21 SW1/4, NE1/4, N1/2, SE1/4, SE1/4
Sec. 28 E1/2, NE1/2, E1/2, SE1/4
Sec. 27 SW1/4, SW1/4

Big Springs, which is in Clover Canyon and provides the majority of water to Clover Creek is appropriated to the UPR and the Bureau of Land Management (BLM). The UPR has first rights of 2 cfs, and the BLM has second rights to any excess over the 2 cfs. However, the UPR does not use their water rights at this time. Earth Technology Corporation has determined that water available at the source is less than 2 cfs. The BLM filed for .0028 c.f.s. of water from Little Springs #3 to be reserved for public use. Little Springs #3 is located approximately one mile downstream of Big Springs.

Ash and Pine Creeks (Cottonwood drainage) falls within the Clover WSA (See Map 6).

X. LAND USE PLAN OBJECTIVES

The following are Land Use Plan objectives and decisions taken from the Caliente Resource Area Management Framework Plan which are related to the 18 miles of riparian habitat and associated grazing allotments.

Wildlife

Objective 2:

Return native fauna to historic ranges or improve population numbers in current use areas.

Decision 2.6

Complete the Habitat Management Plan and Environmental Assessment on the aquatic and riparian zones of:

1. Clover Creek drainage from the start of BLM administered land in T. 5 S., R. 69 E., Sec. 8 to a point approximately 4 miles below Big Spring (T. 4 S., R. 68 E., Sec. 28). This area has a high priority for evaluation and implementation because of the miles of

riparian and aquatic habitat. A livestock Allotment Management Plan should be prepared in conjunction with the wildlife program to assure proper management of this habitat.

2. Ash/Cottonwood Creek drainages. Look at the feasibility of this project before preparing an environmental assessment or Habitat Management Plan. This has a low priority.

Objective 3:

Provide sufficient quantity and quality of food, cover, and shelter to satisfy the demands of all grazing animals currently using the public lands. Assure use is consistent with the forage produced and that future developments are compatible with all animals using the area. Modify those existing developments known to inhibit species utilization or distribution.

Decision 3.4:

Water is the most limiting factor in the desert environment for all species of wildlife, wild horses and domestic livestock. Water sources (developed and undeveloped) should be protected from trampling and destruction. water quality should be maintained at the highest possible level, and water should remain available for all users on a year-round basis, when possible.

Objective 4:

Maintain through surveillance, acquisition, or management decision 3.413.706 acres of terrestrial habitat, 400 acres of riparian or pond habitat, and 100 miles of aquatic stream habitat in order to maintain existing species populations until activity plans are developed to determine the degree/need to enhance, improve, or maintain present habitat conditions.

Decision 4.9:

Manage mule deer habitat to provide, as a future goal, a minimum of 15,391 mule deer AUMs of perennial forage in the allotments shown in Table WL-4.9 of the Caliente MFP so as to achieve reasonable numbers for mule deer. Starting with current populations in 1981, monitor forage utilization by all ungulate species and take such management actions as necessary and practical to achieve the reasonable numbers goal.

Sheep Flat - 425 deer AUMs - Yearlong; 313 deer AUMs - Winter

Cottonwood - 400 deer AUMs - Yearlong; 503 deer AUMs - Summer; 313 deer AUMs - Winter

Clover Creek - 195 deer AUMs - Yearlong; 21 deer AUMs - Summer

Decision 4.9:

Prepare HMPs on the following species. The order of listing establishes the priority based on sensitivity of the species, available habitat, habitat condition, and public use periods.

- Trout
- a. Clover Creek
 - b. Ash/Cottonwood Creek

Decision 4.24:

In relation to wild horse and burro use in deer crucial areas:

In deer crucial areas, assure a proper allocation of forage is undertaken and that management plans consider the wildlife values at stake. Specific conflict areas should be identified in the plan. All specific removals (horse and/or burros) should be tied to the plan and its related recommendations.

Range

Objective 1:

Continue to manage grazing of domestic livestock on the Federal range for maximum yield of livestock forage in the Caliente Planning Unit.

Decision 1.1:

Establish periods-of-use on all perennial and ephemeral-perennial allotments through CRMP and subsequent development of allotment management plans or in conjunction with development of grazing systems.

Decision 1.2:

Determine proper stocking rates of domestic livestock on perennial and ephemeral-perennial allotments through a range monitoring system and the Coordinated Resource Management and Planning process (CRMP). Where it becomes necessary to take immediate action to effectively implement management, appropriate survey, utilization, actual use, etc., data can be obtained to initiate a beginning point in the number of animals on the public lands, utilize monitoring to determine adjustments to be implemented in the 3rd and 5th years following the initial stocking rate to attain balance of grazing use with capacity.

Decision 1.8:

Develop allotment management plans on the following allotments (combinations) within five years.

1. Sheep Flat, Garden Springs, Summit Springs, White Rock and Oak Wells.
2. Cottonwood, Henrie and Morrison Wengert.

Decision 3.3:

Where needed, construct fences and develop trails to improve livestock management, prevent trespass, and reduce conflicts with other resource values. Prepare an Environmental Assessment prior to any fence or trail construction. Construct fences to meet accepted wildlife standards. Preserve the normal wild horse distribution and movement patterns when locating and constructing fences. Give priority to fences in existing AMP areas and those areas proposed for new AMPs.

Objective 4:

Manage the wild horses and burro populations at a level consistent with proper resource management. Properly allocate forage to domestic livestock and wild horses to reduce the competition on the resource.

Decision 5.1:

Develop and implement a range monitoring system that incorporates, as a minimum, the Nevada Range Monitoring Procedures developed in 1981 by the Range Studies task group under the chairmanship of the Extension Service, Univ. of NV. (Reno), to provide data to guide the CRMP groups in recommending necessary adjustment in use of public rangeland vegetation resources by foraging animals.

Recreation

Objective 1:

Protect important botanic, zoologic, geologic, and paleontologic values to assure that they are not lost, destroyed, or substantially altered. Provide appropriate forms of protective designation and management practices, and rehabilitation, where necessary, to assure protection of these natural values.

Decision 1.10:

Protect the fishing resources of the following areas through stipulations added to all permits issued within each area which would prevent adverse impacts on the fish populations:

Clover Creek

Objective 2:

Provide adequate access to and user facilities for important sight-seeing and recreational use areas to assure their continued enjoyment by the public.

Objective 4:

Inventory and protect those areas within the Caliente Planning Unit having high wilderness values for inclusion into the National Wilderness System by October 21, 1991.

Decision 7.1:

Conduct a Class 2 cultural resources inventory of those areas identified as exhibiting a high potential for aboriginal site occurrences.

Clover Creek

Objective 9:

Protect and enhance, when possible, the visual resource of the Caliente Planning Unit through application of Visual Resource Management classes and Visual Resource Contrast Rating System.

Decision 9.1:

Provide Visual Resource Management (VRM) Class II management level to the following areas of high scenic quality to associated with these areas as identified on the VRM MFP 2 overlay.

Clover Creek

Decision 9.2:

Provide Visual Resource Management Class III Management level to all "B" class visual rating areas found in the Caliente Planning Unit. The areas identified on the MFP 2 overlay should be used.

lower Clover Creek

Wild Horse and Burro

Objective 1:

Manage wild horse and burro populations in those areas (wild horse and burro areas) where they existed at the passage of the Wild and Free-Roaming Horse and Burro Act (PL. 92-195) on December 15, 1971.

Decision 1.1:

Unless determined otherwise through the CRMP process, manage current estimated numbers (FY81) of wild horses and burros within the following herd management areas:

- Clover Creek - 9
- Clover Mountain - 55

Determine, through a range monitoring system and the CRMP process, desirable numbers in each area. Develop herd management area plans for each area in the fiscal year shown. Where it becomes necessary to take immediate action to effectively implement management, appropriate survey, utilization, actual use, etc., data can be obtained to initiate a beginning point in the number of animals on the public lands. Through the CRMP process, develop by FY 1982 a set of criteria to be applied in establishing desirable numbers of wild horses and burros.

In consideration of appeals of Bureau of Land Management decisions to remove excess wild horses, the Interior Board of Land Appeals (IBLA) decided on June 7, 1989 that removal of horses from herd management areas would be based on an appropriate determination that removal is necessary to restore the range to a thriving natural ecological balance and prevent a deterioration of the range, in accordance with the Wild Free - Roaming Horse and Burro Act. In this decision, IBLA stated that "an allowable management level (AML) established purely for administrative reasons because it was the level of wild horse use at a particular point in time cannot be justified under the statute."

Decision 1.2:

Beginning in FY 82, periodically remove wild horses and burros in excess of current numbers (FY81) in the 12 herd management areas. Concurrent with the final livestock adjustments to attain balance of grazing use, manage for desirable numbers of wild horses and burros within the herd management areas, utilizing CRMP and range monitoring. Remove excess animals as necessary to reach and maintain desirable numbers.

All these decisions are mutual - not consistent w/ current policy or LAW

not consistent w/ current policy or LAW

what have you been doing all these years?

intermittent?

most current? major problem 10 years old is that most recent are you stressed up or what

CAN'T DO THIS

you can't #15 for permit be managed except by selling

you cannot do this

AML

AML

AML must be set by mon. data

violation of decision

changed in... w/ a HMP... from do we change... which would be... w/ a HMP

Watershed

Objective 2:

Reduce flood and sediment damage occurring on watersheds in the planning unit.

Caliente Range Program Summary

The following allotment specific riparian objectives are taken from the Caliente Range Program Summary (RPS).

Cottonwood Allotment: Implement plans which will achieve habitat management objectives for this allotment by: providing riparian habitat protection at the water source.

Clover Creek Allotment: Implement plans which will achieve habitat management objectives for this allotment by: providing riparian habitat protection at the water source; and provide management of trout habitat in Clover Creek.

Sheep Flat Allotment: Implement plans which will achieve habitat management objectives for this allotment by: providing riparian habitat protection at the water source.

XI. HABITAT MANAGEMENT PLAN OBJECTIVES/PLANNED ACTIONS

HMP Objectives

Implementation of HMP objectives, planned actions and facilitating actions will be scheduled as per "year of completion or implementation" with year 1 being the year that this HMP is signed.

Clover Creek

1. Within Clover Canyon, allow no more than 50% vegetative utilization, on current years growth, on an annual basis, at any one station (10-13). To be completed by year 3.

Date of completion _____

2. Within Clover Canyon (other than identified water gaps) - allow no more than 50% vegetative utilization, on current years growth, on an annual basis, at any one station (1-9). To be completed by year 3.

Date of completion _____

3. Within Clover Canyon, increase average cumulative vegetative ground cover of 33% to a minimum of 65% between stations (1-10) by year 4.

Date of completion _____

4. Within Clover Canyon, increase the average vegetative overhang from 1.85 feet for station (1-5) to a minimum of 4 feet, from 2.95 feet for stations (6-9) to a minimum of 5 feet and from .45 feet for stations (10-13) to a minimum of 2 feet by year 4.

Date of completion _____

5. Increase current percent of habitat optimum rating of 37, as identified in the 1987 stream habitat survey summary and analysis and averaged between stations (1-13) in Clover Canyon to 60 by year 10.

Date of completion _____

6. Within Clover Canyon, increase percent stream shade from 23% for stations (1-5) to 40%, from 20% for station (6-9) to 40%, and from 12% to 25% for stations (10-13) through the increase of desirable riparian vegetation by year 7.

Date of completion _____

7. Within Clover Canyon, increase the pool/riffle ratio percent optimum from 42% to 60% for stations (1-13) by year 7.

Date of completion _____

8. Within Clover Canyon, increase the current rainbow trout population from 521 fish per mile to 650 fish per mile for stations (1-10) by year 7.

Date of completion _____

9. Within Clover Canyon, decrease the average temperature from 24 C for stations (1-10) to an average of 20 C by year 7.

Date of completion _____

10. Within Clover Canyon, develop a desired plant community, consisting of the following vegetative groups for stations (1-13) by year 8:

	Herbaceous Vegetation	Present
<u>Distichlis</u> dominant group	46%	increase to 50%
<u>Eleocharis</u> dominant group	7%	increase to 10%
<u>Trifolium</u> dominant group	16%	decrease to 10%
Miscellaneous groups (<u>Bromus</u> , <u>Berula</u> , <u>Typha</u> etc.)	17%	increase to 20%
Miscellaneous groups (<u>Artemisis</u> , Unknowns, <u>Medicago</u> , bare ground etc.)	14%	decrease to 10%
	100%	100%

Date of Completion _____

11. Within Clover Canyon, at stations (1, 6 and 10) maintain current willow numbers and increase cottonwood numbers from a current average of 16 per 1/4 acre to 50 per 1/4 acre by year 8.

Date of Completion _____

12. Within Clover Canyon, at stations (3, 4 and 5) maintain current willow numbers and increase current ash numbers from an average of 36 per 1/4 acre to 50 per 1/4 acre by year 8.

Date of Completion _____

13. Within Clover Canyon, at stations (7, 8, 9 and 12) increase current willow numbers from an average of 73 per 1/4 acre to 150 per 1/4 acre, increase current ash numbers from an average of 12 per 1/4 acre to 50 per 1/4 acre and maintain the current cottonwood numbers by year 8.

Date of Completion _____

COTTONWOOD DRAINAGE

1. Within Cottonwood drainage (Ash and Pine Creek), of the Cottonwood allotment, allow no more than 50% vegetative utilization, on current years growth, on an annual basis at any on station (1-18) by year 3.

Date of completion _____

2. Increase the average cumulative vegetative ground cover of 10% to a minimum of 40% between stations 3-11 of the Cottonwood drainage of the Cottonwood allotment by year 7.

Date of completion _____

3. Within Cottonwood drainage, increase the average vegetative overhang from .8 feet to a minimum of 1.5 feet for stations (1-18) through the increase of desirable riparian vegetation by year 7.

Date of completion _____

4. Increase the current percent of habitat optimum of 27% as identified in the 1987 stream habitat survey summary and analysis and averaged between stations (1-18) in the Cottonwood drainage to 50% by year 10.

Date of completion _____

Planned Actions

The implementation of these planned actions depends on the availability of manpower and funding.

	To be completed or implemented by	Estimated cost
1. As identified in the Caliente LUP, initiate the development of an Allotment Management Plan (AMP) within the Cottonwood, Henrie and the Morrison Wengert allotments that emphasizes the management of the perennial streams within the Cottonwood allotment. This AMP should implement a season-of-use change for the Cottonwood allotment or implement a livestock grazing system that allows for periodic deferment during the vegetative growing season within the Cottonwood drainage. This AMP in association with range improvements would allow for a reasonable likelihood of the achievement of the objectives outlined in this HMP.	Year 2	5 WM

Date of completion _____

- | | | | |
|----|--|--------|----------|
| 2. | Install required gap fences to restrict livestock and wild horse impacts to the riparian zones within Clover Canyon (See Map 7).

Date of completion _____ | Year 3 | \$30,000 |
| 3. | Once the gap fences have been installed along Clover Creek eliminate livestock grazing from Clover Creek, within the Cottonwood allotment. Grazing may be allowed at certain times when it is determined that it will enhance riparian habitat features.

Date of completion _____ | Year 4 | |
| 4. | Install gap fence along segments of Ash/Pine Creeks to exclude livestock and wild horse grazing.

Date of completion _____ | Year 4 | \$50,000 |
| 5. | The Bureau should file for an instream flow appropriation within Clover Canyon to assure the required volume of water to maintain the required habitat for the existing Rainbow Trout and Desert Sucker populations.

Date of completion _____ | Year 1 | 2 WM |
| 6. | Provide the necessary amendment to the Caliente ORV designation to identify "Limited" designation-organized competitive and non-competitive ORV events are not allowed within Clover Canyon.

Date of completion _____ | Year 2 | 2WM |
| 7. | Develop a water source in the uplands through a well, spring development or guzzler to help draw livestock and wild horses off the riparian areas.

Date of completion _____ | Year 3 | \$30,000 |

- | | | | |
|-----|---|---------|----------|
| 8. | Implement a tamarisk eradication program within the Clover Creek HMP area that will eliminate tamarisk as it is discovered. | Year 1 | 2 WM |
| | Date of completion _____ | | |
| 9. | Implement a riparian monitoring program within the Cottonwood allotment which will quantify, to the extent possible, levels of utilization on riparian vegetation by cattle, wild horses and mule deer. | Ongoing | |
| | Date of completion _____ | | |
| 10. | Determine the feasibility of constructing stream improvement structures and conduct vegetation plantings along Clover Creek to improve the habitat quality. | Year 1 | 1 WM |
| | Date of completion _____ | | |
| | If determined feasible construct stream improvement structures and conduct vegetation plantings along Clover Creek to improve the habitat quality. | Year 2 | \$20,000 |
| | Date of completion _____ | | |
| 11. | Reconduct low level infrared photos along Clover Creek. | Year 8 | \$20,000 |
| | Date of Completion _____ | | |
| 12. | With the cooperation of the railroad, develop flood deterrent structures at critical area along Clover Creek to help protect the railroad. This may be done by constructing berms or gabions or by creating a natural looking flood deterrent through the planting of dormant stubs. By developing these structures the railroad would not have to dredge material from the stream bed to construct these deterrents. | Year 3 | \$25,000 |
| | Date of completion _____ | | |

13. Determine if the UPR right-of-way road can be closed to recreational traffic. If they can not, then work out agreement for use of the ROW road. Year 1 2 WM

Date of completion _____

14. Investigate the possibility of introducing the Federally Threatened Big Spring spinedace into the Big Spring source. Year 2 1 WM

Date of completion _____

Mitigation/Protection Actions

1. Assure compliance with minerals surface management regulations, 43 CFR 3802.3-2. (B & E) and 43 CFR 3809.2-2, (d).
2. Protect riparian zones from existing oil and gas lease activities through identification of mitigation during Environmental Assessment (EA) process.
3. Develop an AMP within the Cottonwood allotment which would eliminate grazing from the riparian zone within Clover Creek by providing water source(s) in the uplands and installing riparian gap fences along Clover Creek. These projects would help to attract livestock and wild horses and consequently keep them out of the riparian zone.

Clover Creek, within the Cottonwood allotment makes up the majority of perennial, higher quality (due to dependable water flow) trout habitat. Livestock grazing could be allowed to occur periodically when it is determined that it will enhance riparian habitat features. These situations should be handled on a case by case basis and in collaboration with all parties concerned.

4. A grazing system which would allow for periodic seasonal deferment during the vegetative growing season within Cottonwood Canyon (Ash and Pine Creek) or a season-of-use change for the entire Cottonwood allotment should be implemented. The LUP calls for an AMP for Cottonwood, Henrie and the Morrison Wengert allotments. This should seriously be explored as the three allotments contain either one or both permittees which run livestock on the Cottonwood allotment.
5. As exists presently, Ash, Pine and Clover Creek make up a small portion of the Cottonwood allotment but support and are impacted by a large number of cows and wild horses as a result of their frequency of use and time of year the use occurs. All efforts should be made to distribute these animals away from the riparian zone.

I. LAND USE PLAN CONSTRAINTS

None known.

XIII. EVALUATION AND MONITORING

The approximately 6 miles of aquatic habitat and associated riparian zone of Clover Creek was inventoried in 1976 and 1987. Three miles of Ash and 9 miles of Pine Creek in the Cottonwood drainage were inventoried in 1977 and 1987. The BLM Manual 6671 Stream Survey methodology was used for the 1977/1987 Clover Creek and 1987 Ash and Pine Creek inventories. A unknown stream survey methodology was used for the 1977 Ash and Pine Creek inventories. Additional methodology from the U.S. Forest Service Methods for Evaluating Riparian Habitats with Applications to Management (USDA, 1987) was used to determine undercut banks, bank angles, and vegetative overhang for the 1987 surveys. Stations were established every 1/2 mile. At each station measurements were taken at 4 transects per station, spaced one hundred feet apart. In Clover Creek 13 stations were established, 6 stations in Ash Creek and 18 in Pine Creek. See Map 2 for station locations on Clover Creek and Map 3 for station locations on Ash and Pine Creek.

The Riparian Transect Method developed by Alma H. Winward and amended for use in small streams by James Cagney was also incorporated for the 1987 surveys (methodology in Clover Creek monitoring file).

The percent ground cover was generated by using the point step method. Ground cover is determined by calculating percent of herbaceous, woody, bare ground, litter or rock. Transects were walked for a predetermined number of steps parallel with the stream bank, no further than 6 feet laterally from the bank.

Methodology for vegetative utilization is as explained in the Nevada Rangeland Monitoring Handbook. Utilization cages will be employed in conjunction with utilization readings to help the observer make reliable estimates of the present utilization-by-weight of the key species.

A low level, color infra red photographic aerial survey was conducted in 1986 for Clover Creek. Analysis of this survey will provide data in relation to acres of dominant species groups, percent ground cover and change in physical attributes along the stream course.

A. Evaluation

The stream survey data indicated that as a whole the percent of habitat optimum for Clover Creek in 1976 was 53% and 36% in 1987. The percent of habitat optimum for Ash and Pine Creek in 1987 was 22%. Decline in percent habitat optimum for Clover Creek was significantly influenced by the decline in both pool quality and

pool/riffle ratio. This could be due to the substantial flooding in 1982. The low percent habitat optimum for Ash and Pine Creek is due to the lack of pools in the system.

Utilization levels on riparian vegetation is typically at or above the 50% level prior to livestock coming into the Cottonwood allotment on 5/1. Utilization levels have historically been heavy/severe on 10/31 when livestock leave the allotment. Wild horses undoubtedly contribute to these utilization levels, although it is unknown at this time, as to what extent. Table 4 gives a summary of utilization levels since November of 1988.

B. Monitoring

The Riparian Transect Method is quick and easy. This method should be implemented every 2 years or when circumstances warrant to get an idea of whether or not we are meeting our objectives.

Vegetative utilization monitoring should be read at all the key areas before livestock go on in the spring (5/1), when the livestock come off (10/31) and at least two other times while livestock are present to assure objectives are not surpassed.

The 6671 Manual Stream Survey methodology and the U.S. Forest Service methodology should be read at five to ten year intervals.

The Riparian Transect Method would require .5 WM to carry out and compile data. Vegetative utilization monitoring would require .5 WM to carry out and compile data. The five to ten year effort would require 4.5 WM the year it is read for ground work and data compilation. Studies should be correlated with livestock movement and the vegetative growing season.

Table 4: Summary of utilization data for Clover Creek since November of 1988.
 LC - Lower Utilization Cage UC - Upper Utilization Cage

Key Area	Date	Species				Area	Date	Species				
		Riparian Grasses	Willow	Ash	Cottonwood			Riparian Grasses	Willow	Ash	Cottonwood	Bitterbrush
1	4-30-91	2%	18%			8	4-22-91	4%	42%	86%		
	6-20-89	58%	38%	30%			10-02-90	14%	30%	64%		
	11-02-88	<u>40%</u>	<u>57%</u>				6-01-89	10%	27%	24%		
	Average	33%	37%	30%			11-03-88		<u>57%</u>	<u>65%</u>	<u>77%</u>	
						Average	9%	39%	60%	77%		
2	4-30-91	0%	20%			9	4-30-91	1%	65%	81%		
	10-02-90	0%	20%				3-04-91	77%	78%		87%	
	6-05-89	<u>0%</u>	<u>6%</u>				11-02-90	68%	66%		80%	
	Average	0%	15%				10-02-90	66%	66%		64%	
LC	4-22-91	3%	18%			7-18-90	40%	20%		50%		
	3-04-91	77%	71%			6-01-89	38%	66%		82%		
	11-02-90	71%	59%			11-03-88		<u>89%</u>				
	7-18-90	40%	20%			Average	48%	64%		74%		
	4-25-90	31%	0%			4-30-91		86%				
	11-03-89	58%	50%	46%		3-04-91	80%	80%				
	11-02-88	<u>38%</u>	<u>73%</u>	<u>72%</u>		UC 11-02-90	56%	82%				
Average	45%	41%	59%		7-18-90	50%						
5	4-22-91	17%	40%	86%		4-25-90	<u>19%</u>					
	10-02-90	26%	37%	62%		Average	51%	82%				
	6-05-89	15%	50%		66%	4-30-91		32%				
	11-02-88		<u>54%</u>	<u>87%</u>	<u>81%</u>	11 10-02-90	52%	52%				
	Average	19%	45%	78%	73%	6-05-89	<u>11%</u>	<u>29%</u>				
					Average	21%	49%					
6	4-22-91	10%	44%	86%		12	4-30-91		32%			
	10-02-90	58%	52%	76%			10-02-90	5%	47%			
	6-01-89	18%	28%				7-18-90	10%	10%			
	11-02-88		<u>56%</u>	<u>86%</u>			6-05-89	<u>24%</u>	<u>40%</u>			
Average	28%	56%	82%		Average	13%	32%					
7	4-22-91	5%	52%	82%		7	10-02-90	60%	58%	80%		
	10-02-90	60%	58%	80%			6-01-89	10%	35%	66%		
	6-01-89	10%	35%	66%			11-03-88	<u>50%</u>	<u>55%</u>	<u>77%</u>		
	11-03-88	<u>50%</u>	<u>55%</u>	<u>77%</u>			Average	31%	50%	76%		
	Average	31%	50%	76%								

Figures 1-6, are identified as Priority "A" limiting factors, and defined by the Bureau Stream Survey Manual as factors absolutely essential for maximum fish production and are more easily improved with stream improvement programs.

These parameters were not determined for the 1977 Ash and Pine Creek Survey.

Pool/Riffle Ratio, Percent Optimum:

The pool/riffle ratio is the total width of all pools divided by the total of all stream water widths. If 50% of the creek was made up of pools, this would yield 100% optimum habitat, according to this methodology. For Clover Creek the pool/riffle ratio was 94% in 1976 and 42% in 1987. For Ash and Pine Creek the ratio was 0% for the 1987 survey.

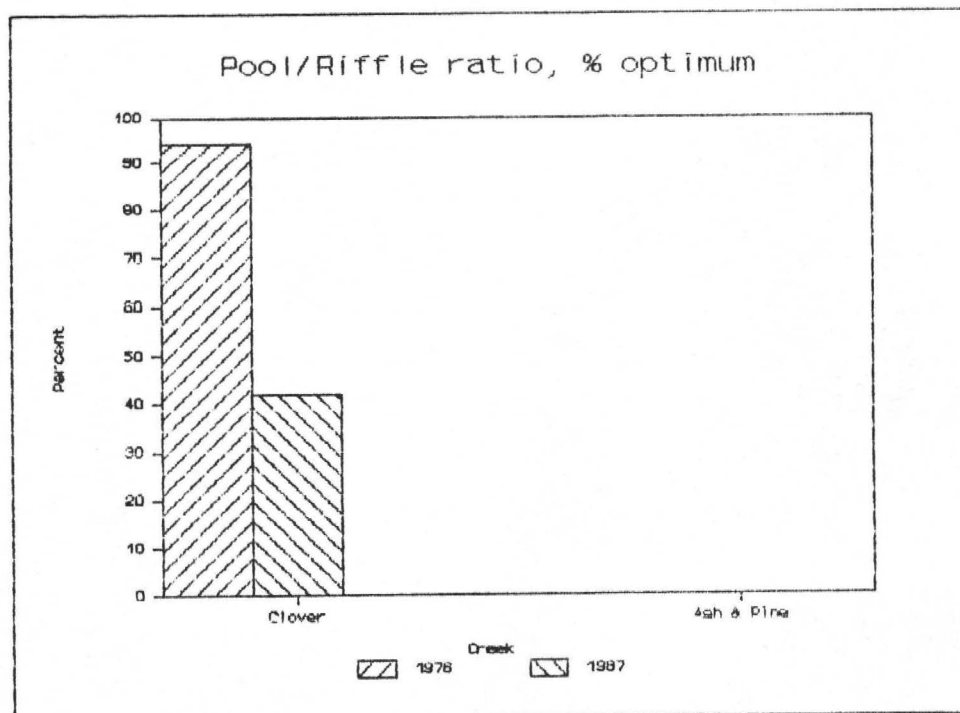


Figure 1

Pool Quality, Percent Optimum:

The pool quality rating was compiled in relation to the size, depth and amount of cover along the bank or in the pool itself. Clover Creek averaged 45% in 1976 and 10% in 1987. Pool quality for Ash and Pine Creeks in 1987 was 0%.

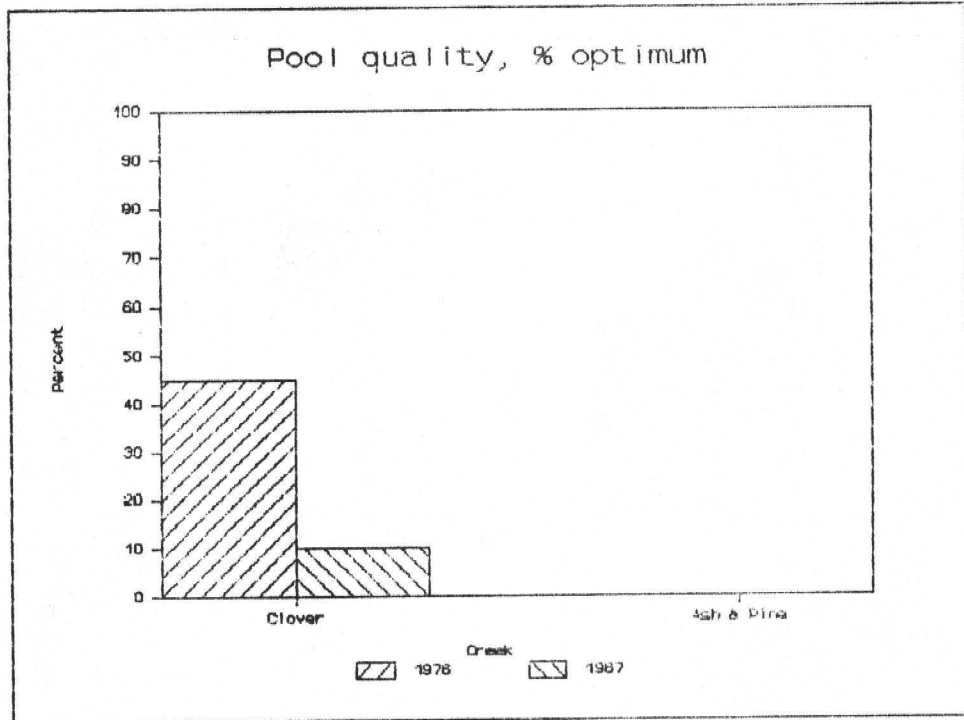


Figure 2

Percent of Stream Bottom with Desirable Bottom Material:

Bottom materials such as organic debris, muck, silt, fine and coarse gravel, and small and large rubble are considered desirable. Clover Creek during the 1976 survey had 56% desirable bottom materials. The 1987 survey revealed a 26% increase in desirable bottom materials to 82%. Ash and Pine Creeks had 78% desirable bottom materials for the 1987 survey.

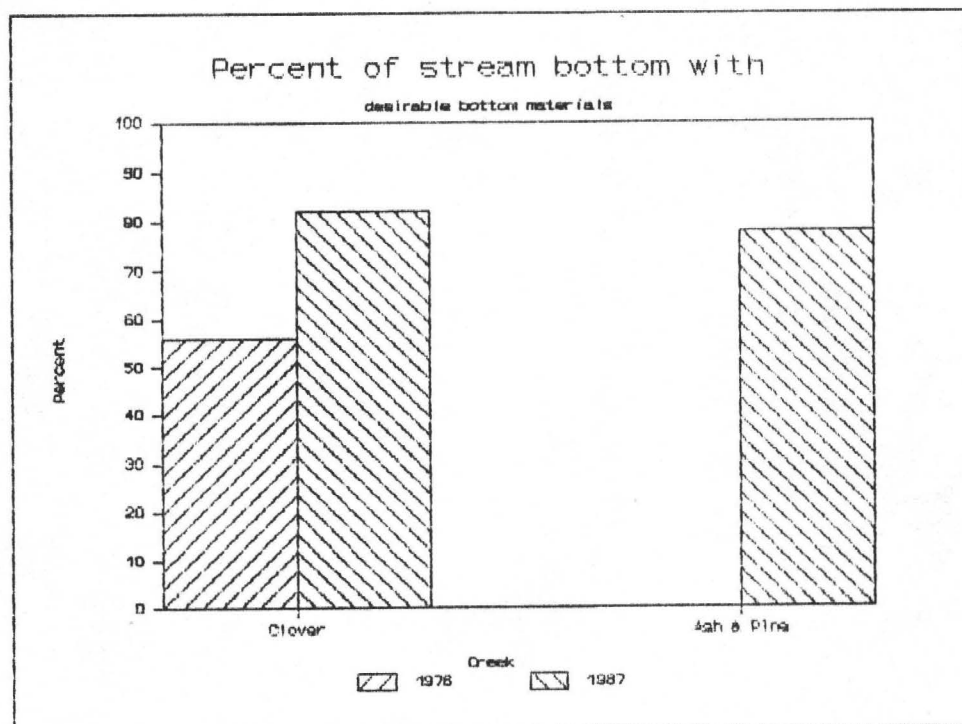


Figure 3

Bank Cover, Percent Optimum:

Ratings were: .5 - exposed, bank covered with scattered low shrubs, forbs, or grasses, or a combination of these plants, 1.0 - grass, bank is medium to heavily covered with low shrubs, forbs, or grasses, or a combination of these, 1.5 - brush, banks have scattered trees and/or tall shrubs, 2.0 - forested, bank is medium to heavily covered with trees and/or tall shrubs.

Bank cover is living stream side vegetation in close proximity to the stream. Bank cover was 31% for the 1976 survey and 26% for the 1987 survey in Clover Creek. Ash and Pine Creeks averaged 17% for the 1987 survey.

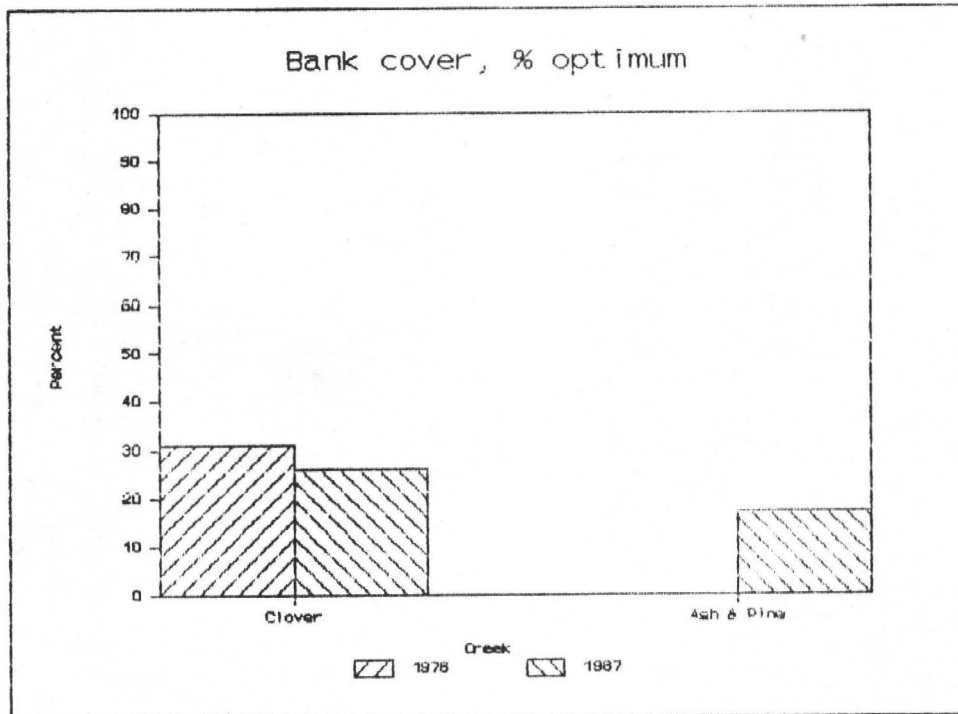


Figure 4

Bank Stability, Percent Optimum:

Ratings were: .5 - totally unstable, 1.0 - less than 50% stable, but not totally unstable, 1.5 - more than 50% stable, but not totally stable, 2.0 - bank is totally stable.

Stable banks are generally associated with those covered by dense vegetation, or those characterized by large or solid rocks. Unstable banks are usually associated with sparse vegetative cover, overgrazed stream bottoms, stream channel alteration, etc. Bank stability was 36% in 1976 and 25% in 1987 for Clover Creek. Ash and Pine Creeks averaged 15% for the 1987 survey.

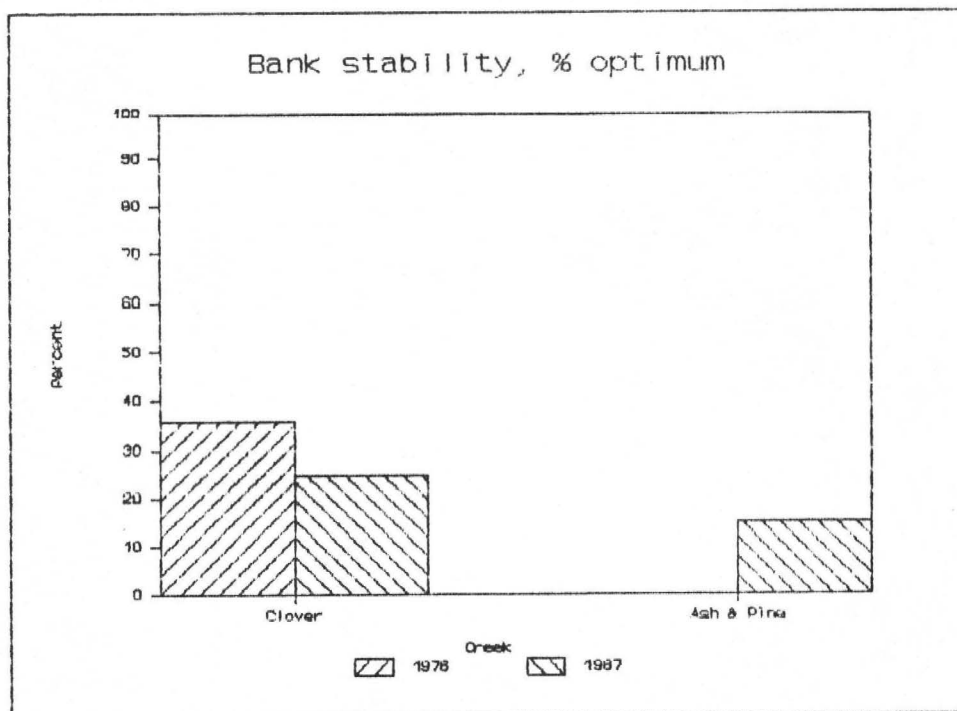


Figure 5

Percent Habitat Optimum:

The percent of habitat optimum is the average of Figures 1-5. Clover Creek experienced a drop of 15% between the 1976 survey (52%) and the 1987 survey (37%). Ash and Pine Creeks had a percent of habitat optimum of 27% for the 1987 survey.

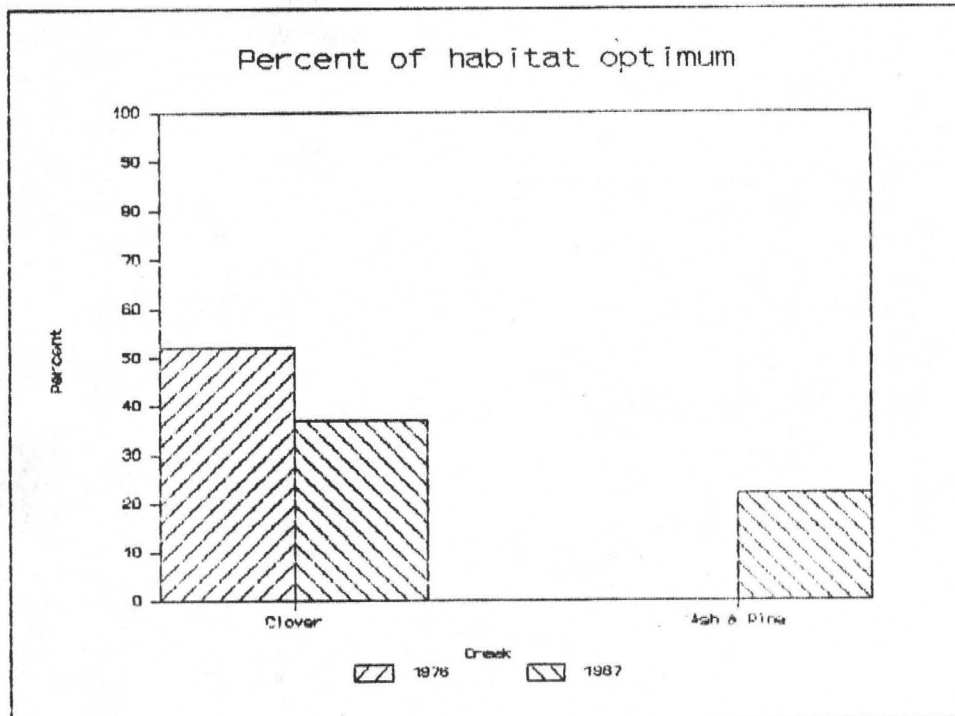


Figure 6

Figures 7-13 are identified as Priority "B" limiting factors - complimentary or supporting factors.

Percent Stream Shaded:

Data was collected at all the transects rather than just at the stations as was identified in the 6671 Manual for the 1987 survey. Shading for Clover Creek in 1987 was 19% with Clover Creek allotment being 23%, the Cottonwood allotment 20% and the Sheep Flat allotment shaded 12%. No percent stream shaded was determined for Clover Creek in the 1976 survey. Ash and Pine Creeks averaged 39% shaded in 1977 and 14% in 1987. Ash Creek averaged 44% in 1977 and 19% in 1987 with Pine Creek averaging 35% in 1977 and 10% in 1987.

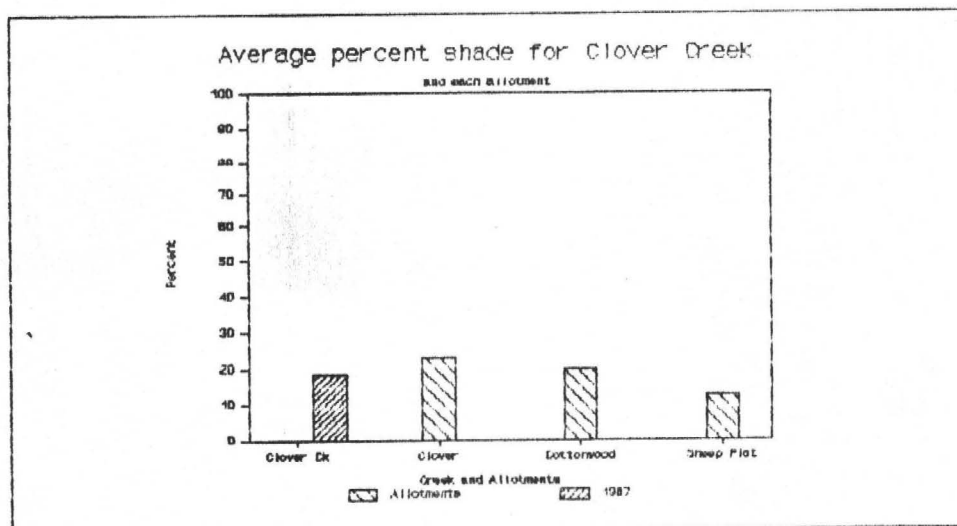


Figure 7

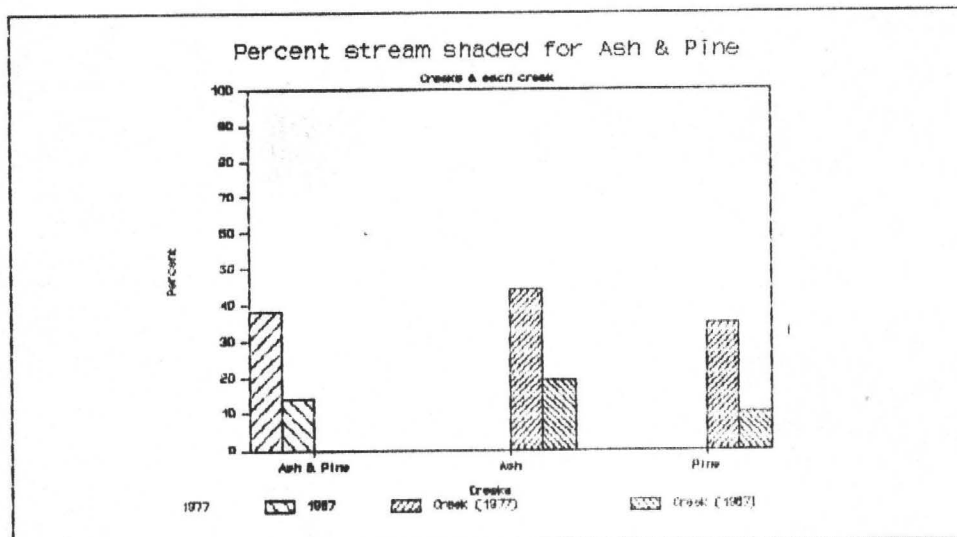


Figure 8

Average Ungulate Damage Rating:

Rating: Class 1 - banks stable and undamaged, Class 2 - bank damage less than 20%, Class 3 - bank damage 40% or less, Class 4 - bank damage excessive, greater than 40%.

The most serious damage caused by ungulate use are the sloughing of stream banks by trampling and removal of streambank vegetation by grazing. Ungulate damage averaged 3.25 for Clover Creek and 3.5 for Ash and Pine Creeks.

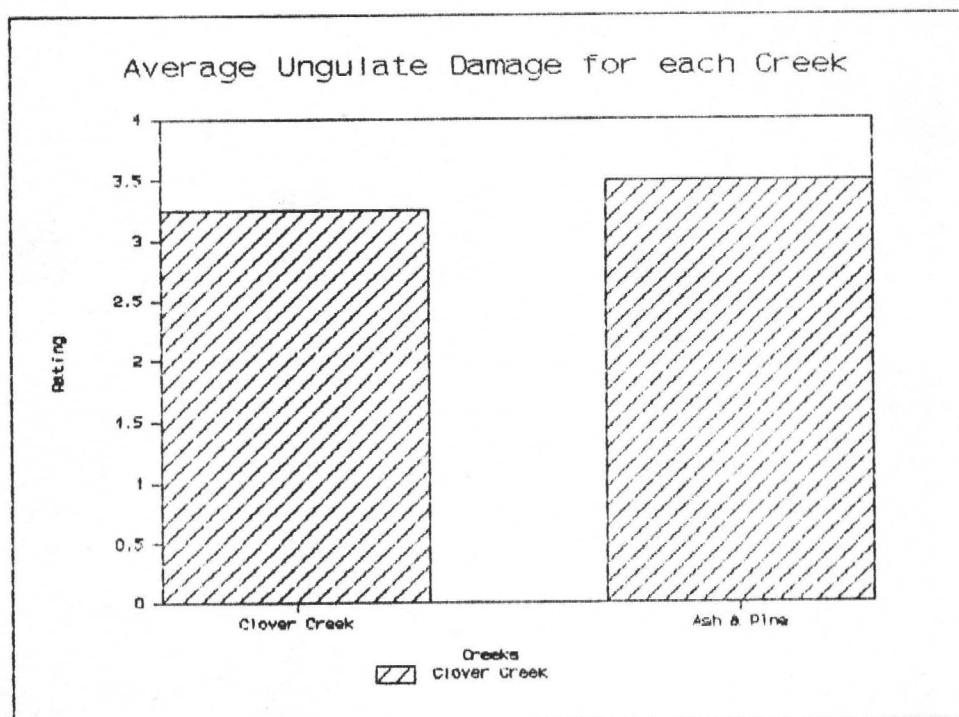


Figure 9

Average Stream Width and Depth:

The average width for Clover Creek was 9.8 feet in 1976 and 10.1 feet in 1987. Width for each allotment in 1987 was 13.2 feet for Clover Creek, 9.9 feet for Cottonwood and 7.3 feet for the Sheep Flat allotment. Ash and Pine Creeks average width in 1977 was 3.1 feet and 4.4 feet in 1987. Ash Creek in 1987 averaged 3.4 feet and Pine Creek averaged 5.1 feet.

Clover Creeks average depth was .5 feet for both 1977 and 1987. Each of the allotments had an average depth of .5 feet. Ash and Pine Creeks had an average depth of .16 feet in 1977 and .1 feet in 1987. Both creeks had an average depth of .1 feet in 1987.

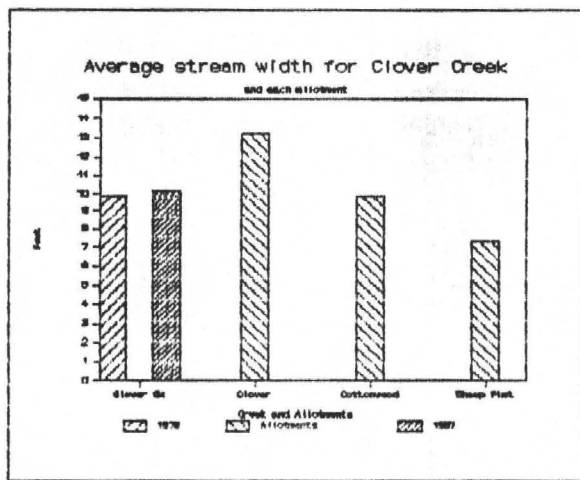


Figure 10

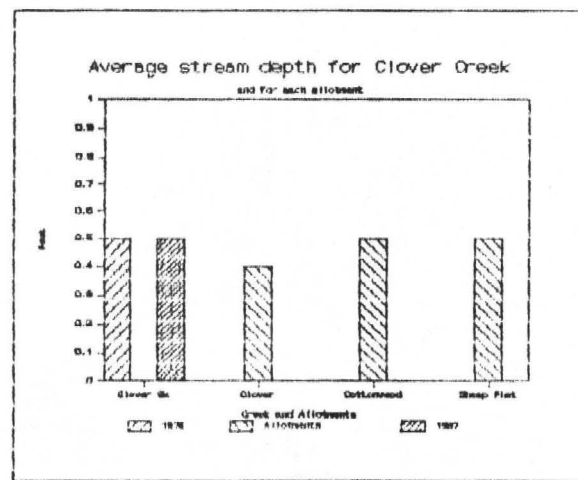


Figure 11

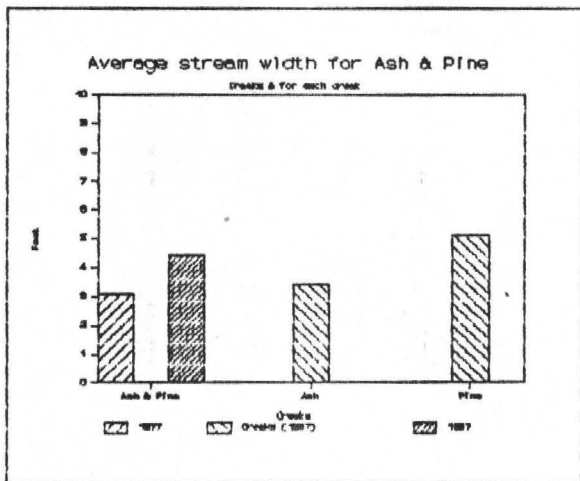


Figure 12

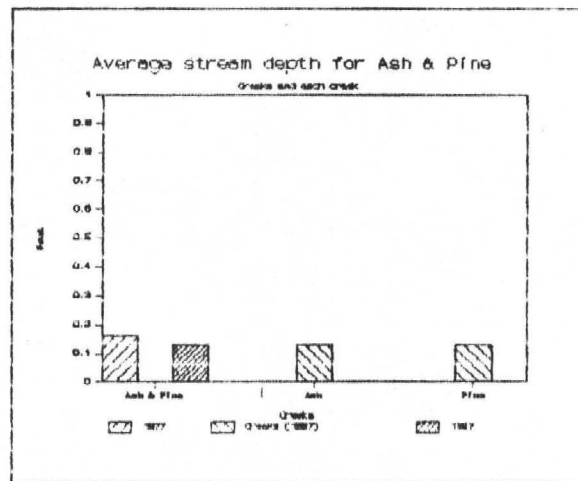


Figure 13

Figures 14-19 were measured using methodology from the U.S. Forest Service Methods for Evaluating Riparian Habitats with Applications to Management. These measurements were taken at every transect.

Average Vegetative Overhang:

Vegetative overhang along streams provide shade, temperature control, hiding cover for fish, bank stability through root systems and a place for insects to live and breed which indirectly provide a source of fish food as these insects fall into the stream. The average vegetative overhang varied from one allotment to another along Clover Creek. The Cottonwood allotment had the most overhang with 3.7 feet for the right bank and 2.2 feet for the left bank. Next was the Clover Creek allotment with 2.3 feet for the right bank and 1.4 feet for the left bank. The Sheep Flat allotment had the least overhang with .5 feet for the right bank and .4 feet for the left bank. Clover Creek as a whole averaged 1.75 feet of overhanging vegetation. Ash and Pine Creeks averaged .8 feet of overhanging vegetation with all coming from Ash Creek.

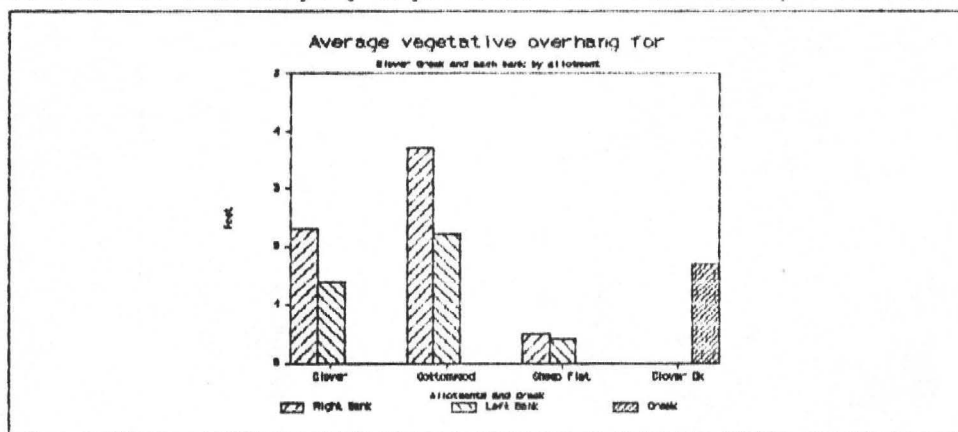


Figure 14

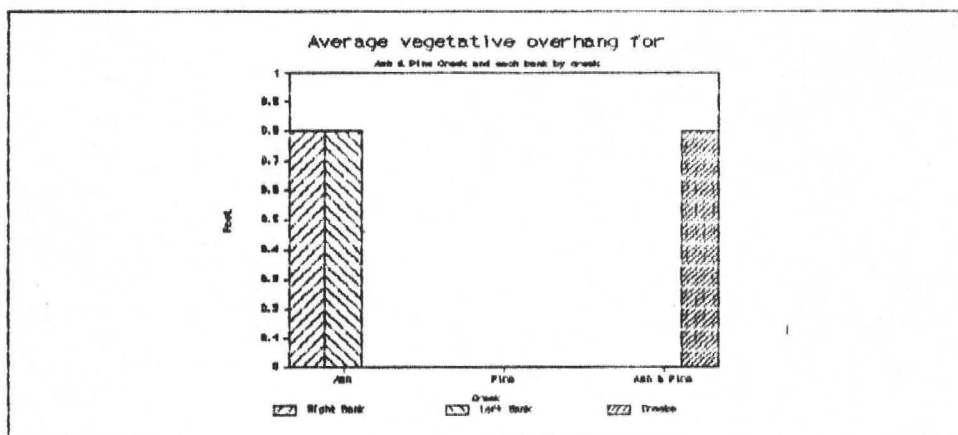


Figure 15

Average Right and Left Bank Angles:

When streambanks are undercut, the angle will be less than 90 degrees, but when banks are not undercut, the angle will be greater than 90 degrees. The bank angle for Clover Creek averaged 158 degrees. The individual allotment bank angles were 161 degrees for Clover Creek, 154 degrees for Cottonwood and 160 degrees for the Sheep Flat allotment. Ash and Pine Creeks averaged 162 degrees. Ash Creek averaged 161 degrees and Pine Creek averaged 164 degrees.

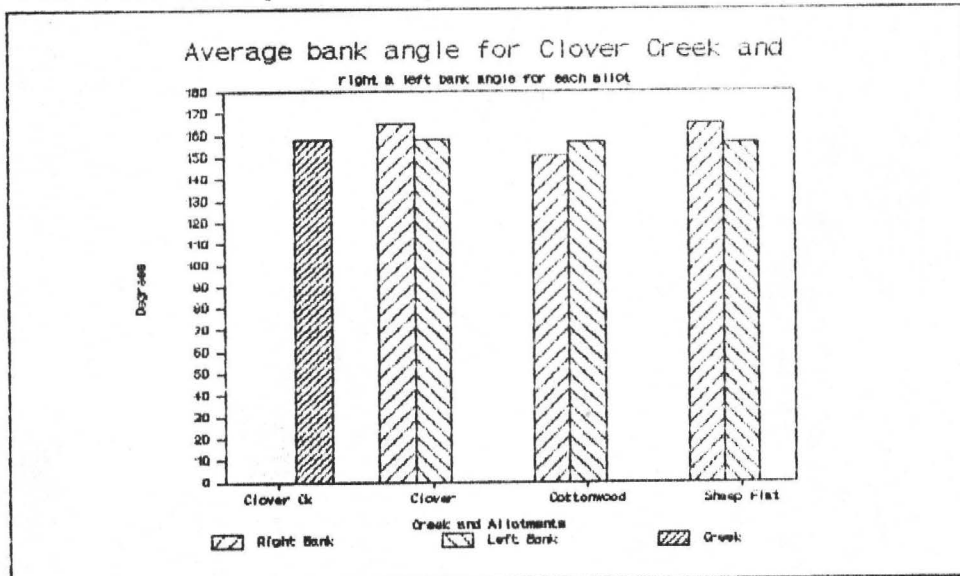


Figure 16

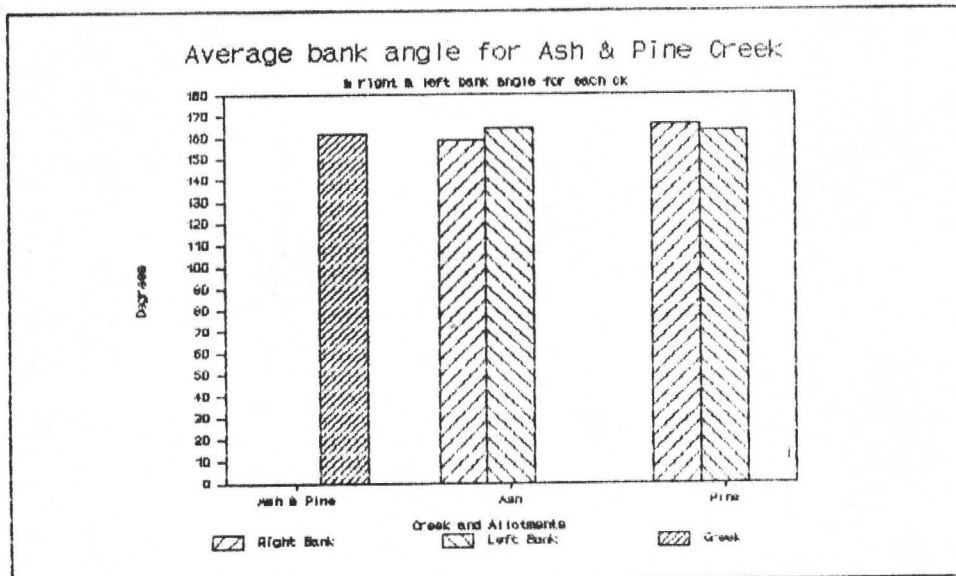


Figure 17

Percent of Undercut Banks and Average Depth of Undercut Banks

Undercut banks provide cover for fish and is a condition favorable to providing high fish biomass, especially in small streams. The percent of bank undercutting for Clover Creek was 2% with all of the bank undercutting occurring in the Cottonwood Allotment. Five percent of the banks in the Cottonwood allotment had bank undercutting. The average depth for both the right and left banks was .09 feet. There was no bank undercutting on Ash and Pine Creeks.

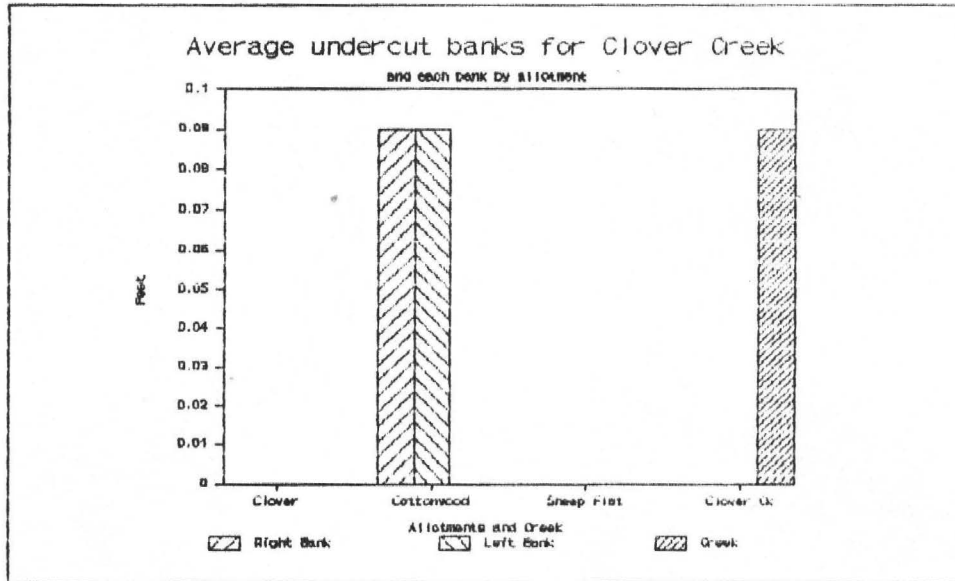


Figure 18

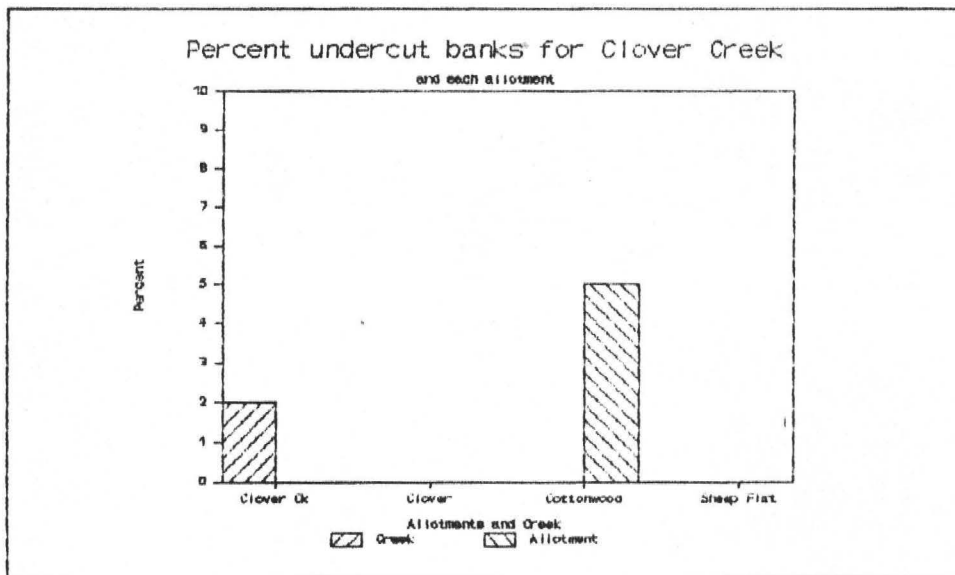


Figure 19

Average Utilization For Clover Creek

Since November of 1988 utilization levels have been read at various stations along Clover Creek before livestock are turned out on 5/1, while they are on the allotment and after they are taken off. Utilization levels are generally heavy in March: riparian grasses (78%), willow (74%), ash (80%) and bitterbrush (87%). In April utilization levels generally dropped except for Ash: riparian grasses (7%), willow (74%), ash (85%) and bitterbrush (81%). These drops, particularly riparian grasses, could be due to the spring growth. By June, a month after livestock are turned out, utilization on riparian grass has increased to 20%, willows remained approximately the same at 35%, ash, however, dropped to 40%, and bitterbrush increased to 87%. The drop in ash utilization could be due to livestock shifting to other species. Utilization on riparian grasses continued to increase throughout July, October and November (35%, 35% and 54% respectively). Willow utilization dropped in July to 16%, then increased to 45% in October and to 61% when the cows were pulled off in November. Utilization on Ash remained about the same in October and November (70% and 73% respectively). Bitterbrush utilization steadily increased in July from 50% to 64% in October to 80% in November. The increase in utilization levels from the time livestock are pulled off in November to when they are turned in on 5/1 could be due to wild horses and possibly deer.

The graphs for utilization on Clover Creek are on the following page.

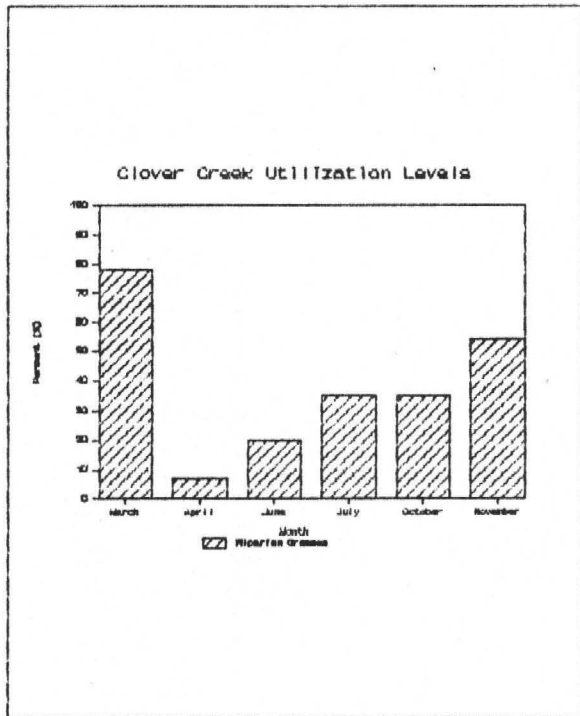


Figure 20

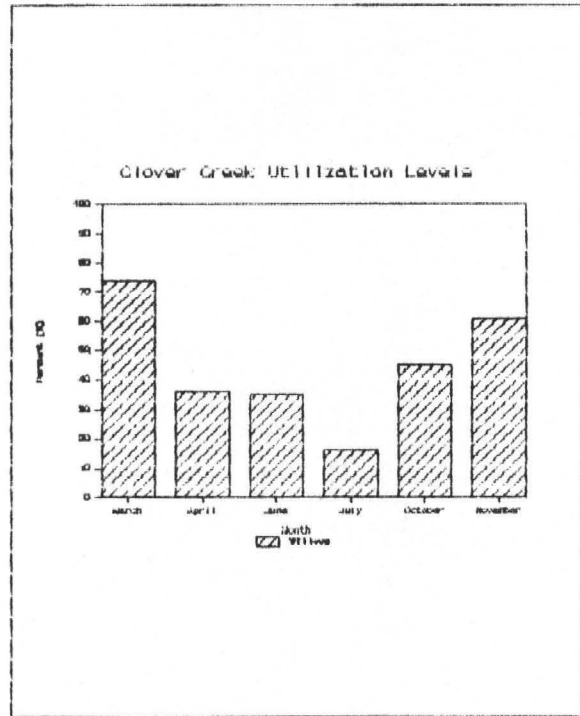


Figure 21

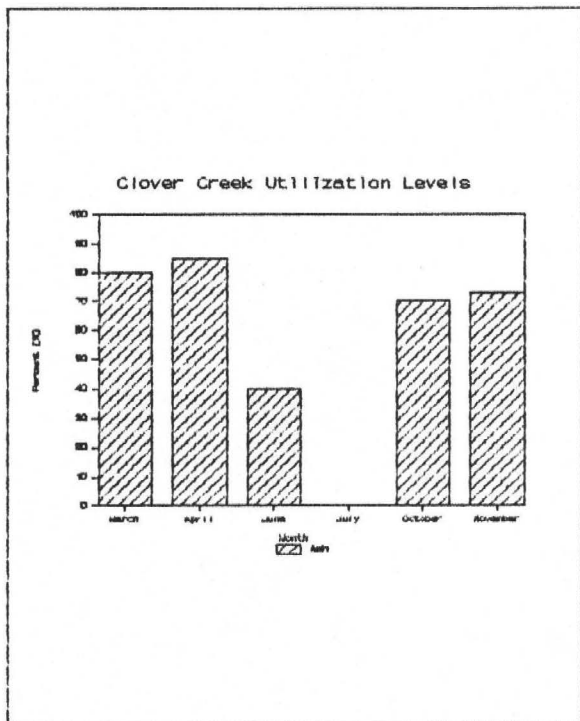


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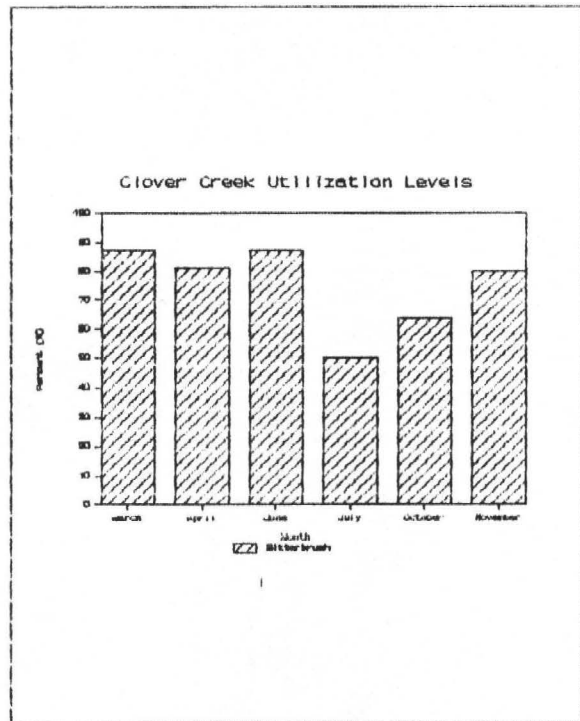


Figure 23

Appendix - Additional Measurements

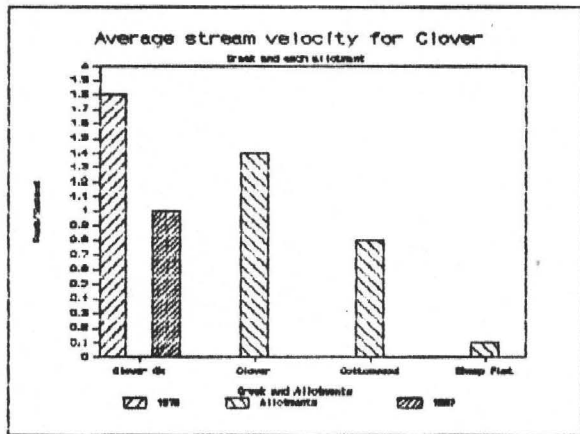


Figure 24

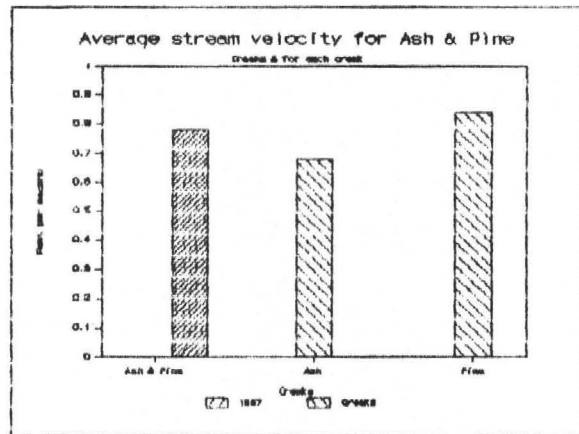


Figure 25

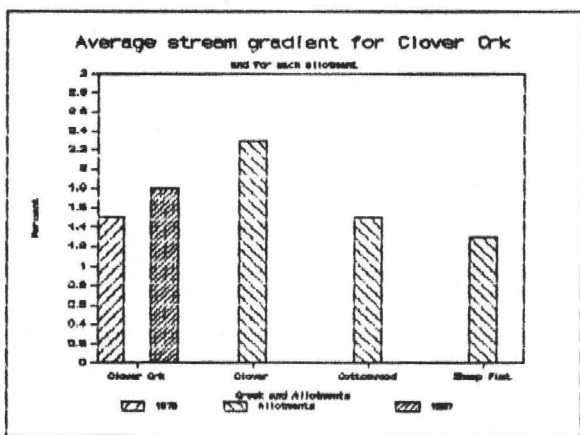


Figure 26

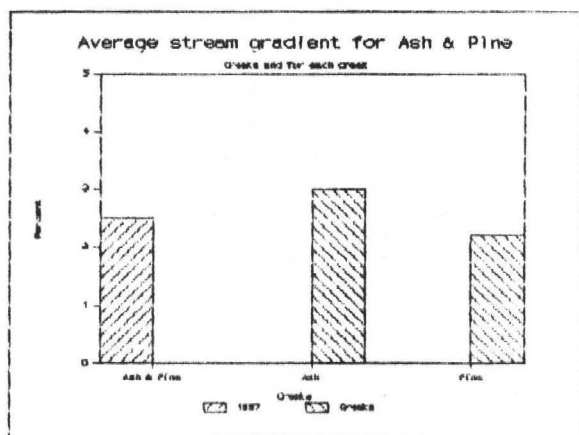


Figure 27

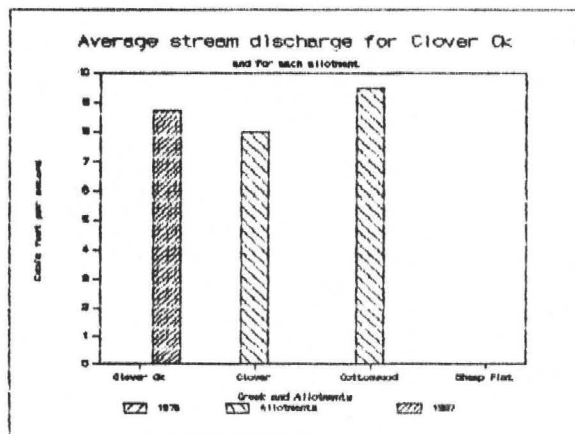


Figure 28

XIV. COORDINATION WITH OTHER BLM PROGRAMS

A. Range

Write an AMP for Cottonwood which will identify range improvements (water, fences and vegetative manipulations) to draw or restrict cattle away from Clover Canyon. The AMP should also develop a grazing system which will provide rest during the growing season in Cottonwood Canyon or change the season of use for the Cottonwood allotment. Achieve identified utilization levels within the riparian zones of the Sheep Flat, Cottonwood and Clover Creek allotments.

A monitoring program should be incorporated between the Wildlife, Range and Wild horse and burro programs to quantify to the extent possible, degree of impacts by each user to the riparian vegetation.

B. Recreation

Amend the Caliente Off Road Vehicle Designations to assure protection to riparian areas from competitive and non competitive ORV events.

C. Wild Horse and Burro

A monitoring program should be incorporated between the Wildlife, Range and Wild horse and burro programs to quantify to the extent possible, degree of impacts by each user to the riparian vegetation. The numbers of wild horses maintained on these two HMA's should be (consistent with the intent of this HMP) and in accordance with their ecological balance to the ecosystem. Although the HMA's as a whole may support a greater number of horses, the riparian areas may be the limiting factor due to the fact that they tend to draw animals and subsequently are impacted to a greater extent than the uplands.

} ?
— why single out
WH+B

XV. WILDLIFE ECONOMICS

The main categories of benefits from riparian rehabilitation will be soil and water quality improvement, increased range forage, higher numbers of fish and wildlife, and increased recreational use (Wagstaff 1987).

Fisheries will benefit from better streambank, riparian and water column conditions. Decreases in stream temperature by increasing streambank cover will vastly improve aquatic habitat on many streams. Salmonids will usually increase with the return of shade and cover and the lowering of water temperatures to more natural levels (Platts 1981).

A U.S. Forest Service Handbook (USDA 1982) gives fisherman-day values of \$14.70 for the Intermountain Region. Present estimation is that Clover Creek receives 7 fisherman-days/month. The meeting of the objectives in this HMP should increase fisherman-days to 15/month.

XVI. COORDINATION WITH OTHER AGENCIES AND ORGANIZATIONS

U.S. Fish and Wildlife Service

Nevada Department of Wildlife

Kevin Olsen	Permittee - Cottonwood allotment.
Hank Rice	Permittee - Cottonwood allotment.
National Mustang Association	Permittee - Clover Creek allotment.
Bruce Micheal	Permittee - Clover Creek allotment.
Frances Lytle	Permittee - Sheep Flat allotment.
J Bar P Cattle Co.	Permittee - Sheep Flat allotment.
Newby Cattle Co.	Permittee - Sheep Flat allotment.

XVII. BIBLIOGRAPHY

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- _____ 1989. Compatibility of Livestock Grazing Strategies with fisheries. USDA Forest Service. Forest Service Laboratory, Intermountain Research Station, Boise, Idaho.
- U.S. Department of Agriculture. 1982. Range Project Effectiveness Analysis Procedures. Handbook 2209.11. USDA Forest Service, Washington, D.C.
- U.S. Department of Agriculture. 1987. Methods for Evaluating Riparian Habitats with Applications to Management. USDA Forest Service, Washington, D.C.
- U.S. Department of the Interior. 1979. Caliente Environmental Statement. Proposed Domestic Livestock Grazing Management Program. USDI Bureau of Land Management, Las Vegas.
- Wagstaff, F.J. 1987. Economic Issues of Grazing and Riparian Area Management. USDA Forest Service, Intermountain Research Station, Provo Utah.

XVIII. CONCURRENCE AND APPROVAL

This HMP as written, meets with our concurrence and approval.

Area Manager, Caliente Resource Area
Bureau of Land Management

Date

Regional Supervisor, Region III
Nevada Department of Wildlife

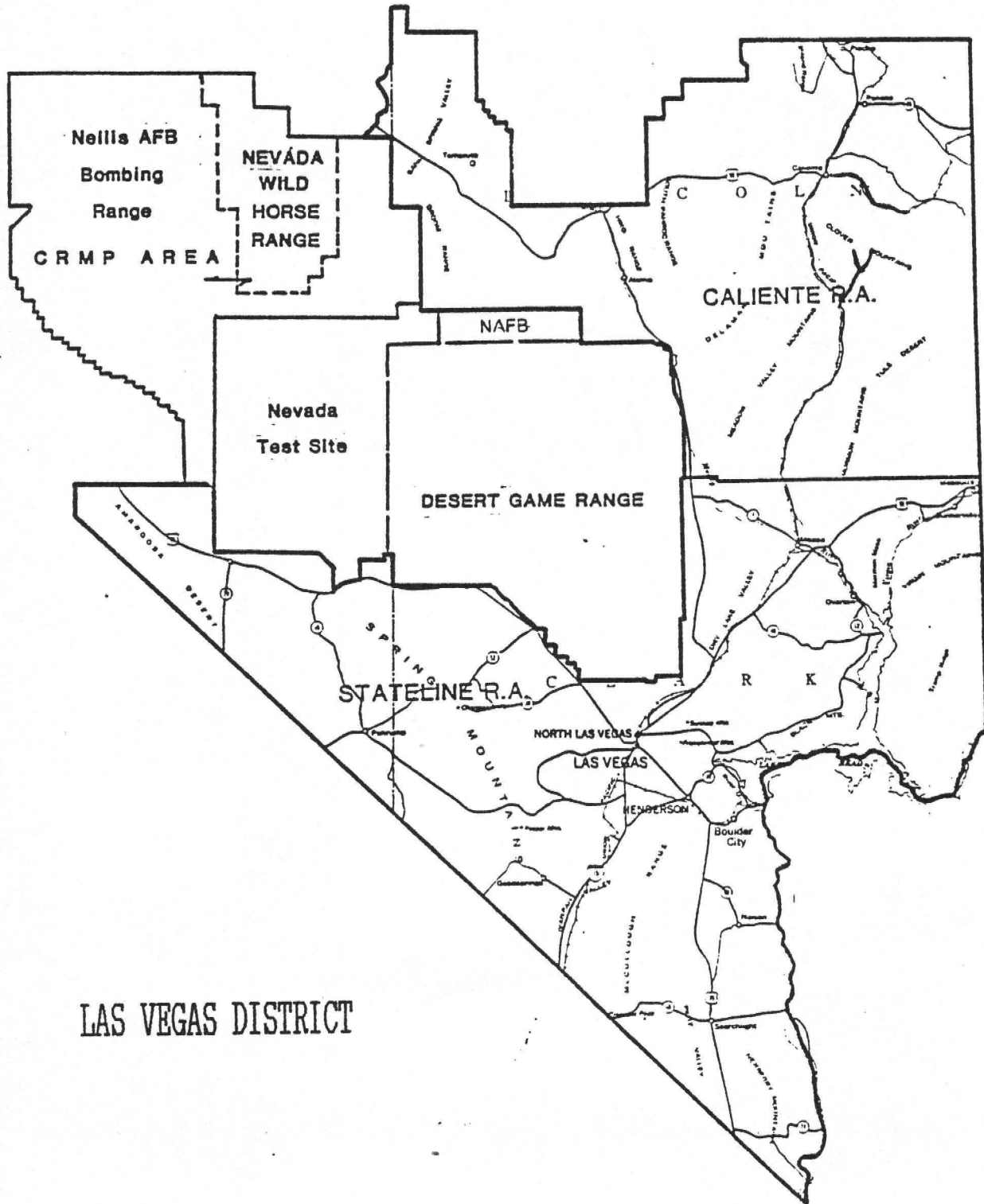
Date

District Manager, Las Vegas District
Bureau of Land Management

Date

MAP 1
LOCATION MAP

CLOVER CREEK HMP AREA
ASH/PINE CREEK HMP AREA





CLOVER CREEK ALLOT.

MUSTANG FLAT ALLOT.

COTTONWOOD ALLOT.

SHEEP FLAT ALLOT.

CLOVER CREEK HMP AREA

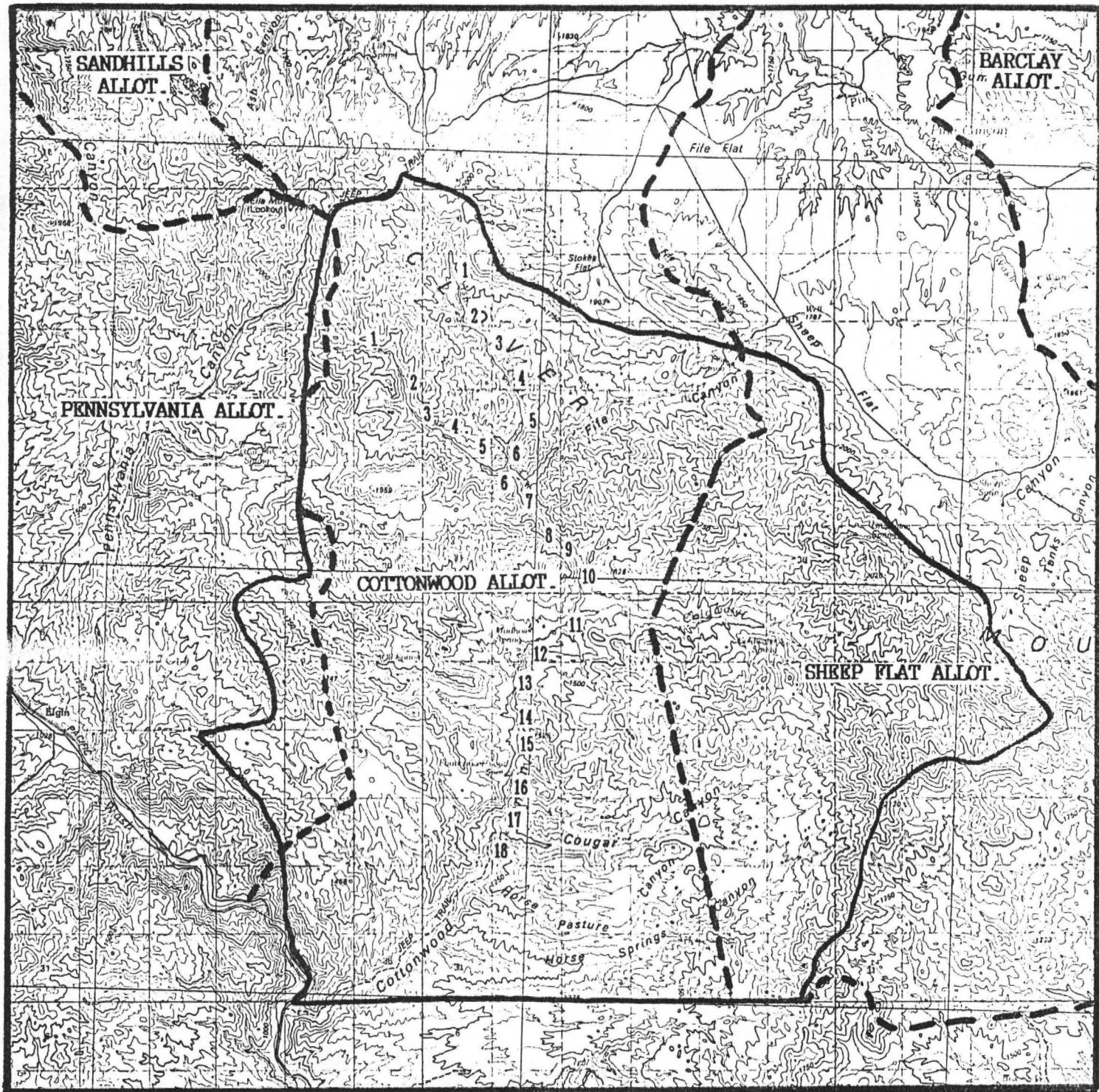
HMP BOUNDARY: —————

ALLOTMENT BOUNDARIES: - - - - -

LAND OWNERSHIP STATUS:
Public Water Reserves



STREAM SURVEY SITES: 1 - 13
BLM Manual 6671



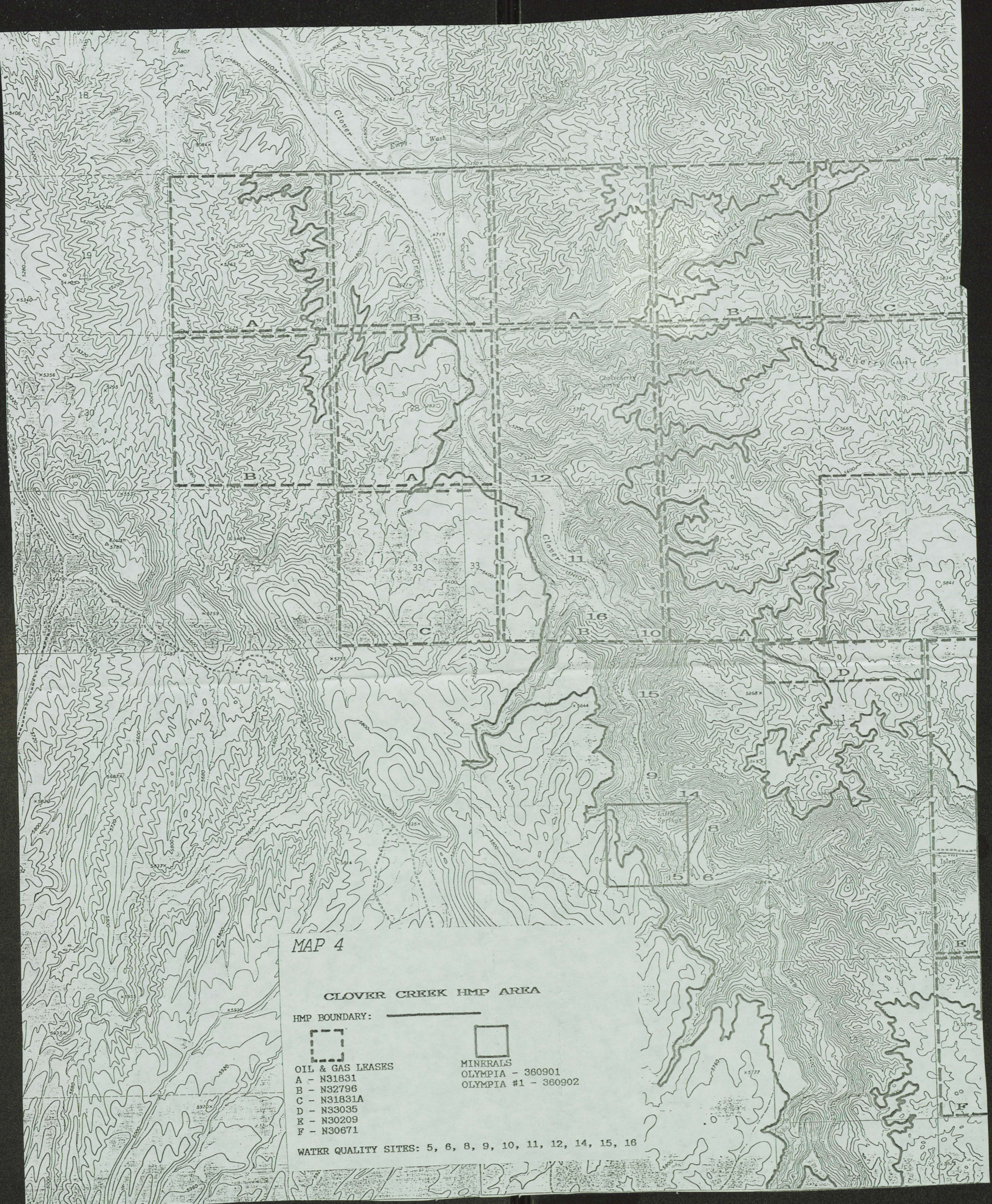
MAP 3

ASH/PINE CREEK HMP AREA

HMP BOUNDARY: —————

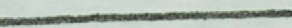
ALLOTMENT BOUNDARIES: - - - - -

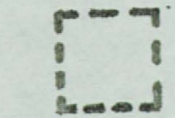
STREAM SURVEY SITES: 1 - 6 ASH CREEK
 BLM MANUAL 6671 1 - 18 PINE CREEK



MAP 4

CLOVER CREEK HMP AREA

HMP BOUNDARY: 



- OIL & GAS LEASES
A - N31831
B - N32796
C - N31831A
D - N33035
E - N30209
F - N30671



- MINERALS
OLYMPIA - 360901
OLYMPIA #1 - 360902

WATER QUALITY SITES: 5, 6, 8, 9, 10, 11, 12, 14, 15, 16

MAP 5

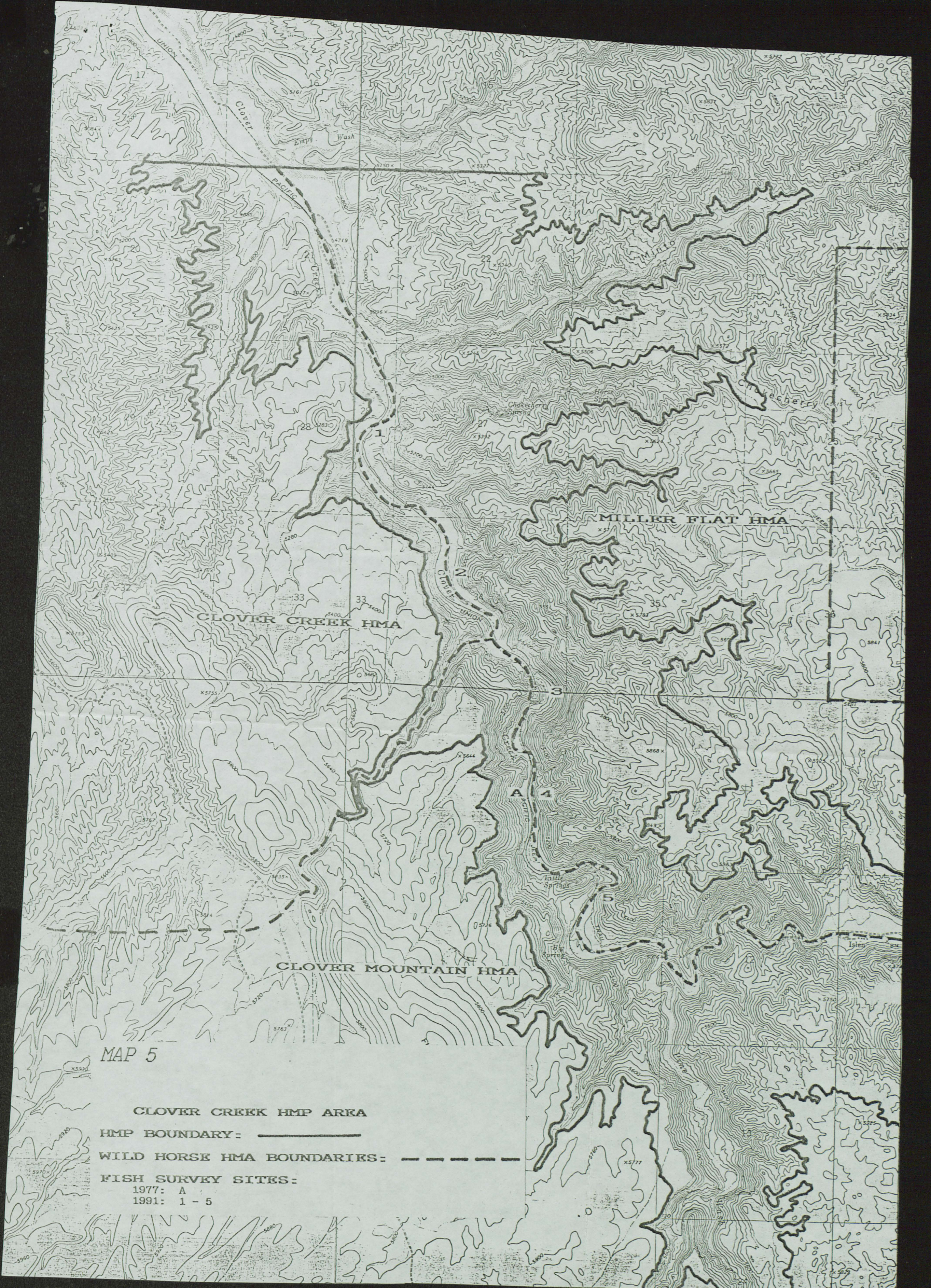
CLOVER CREEK HMP AREA

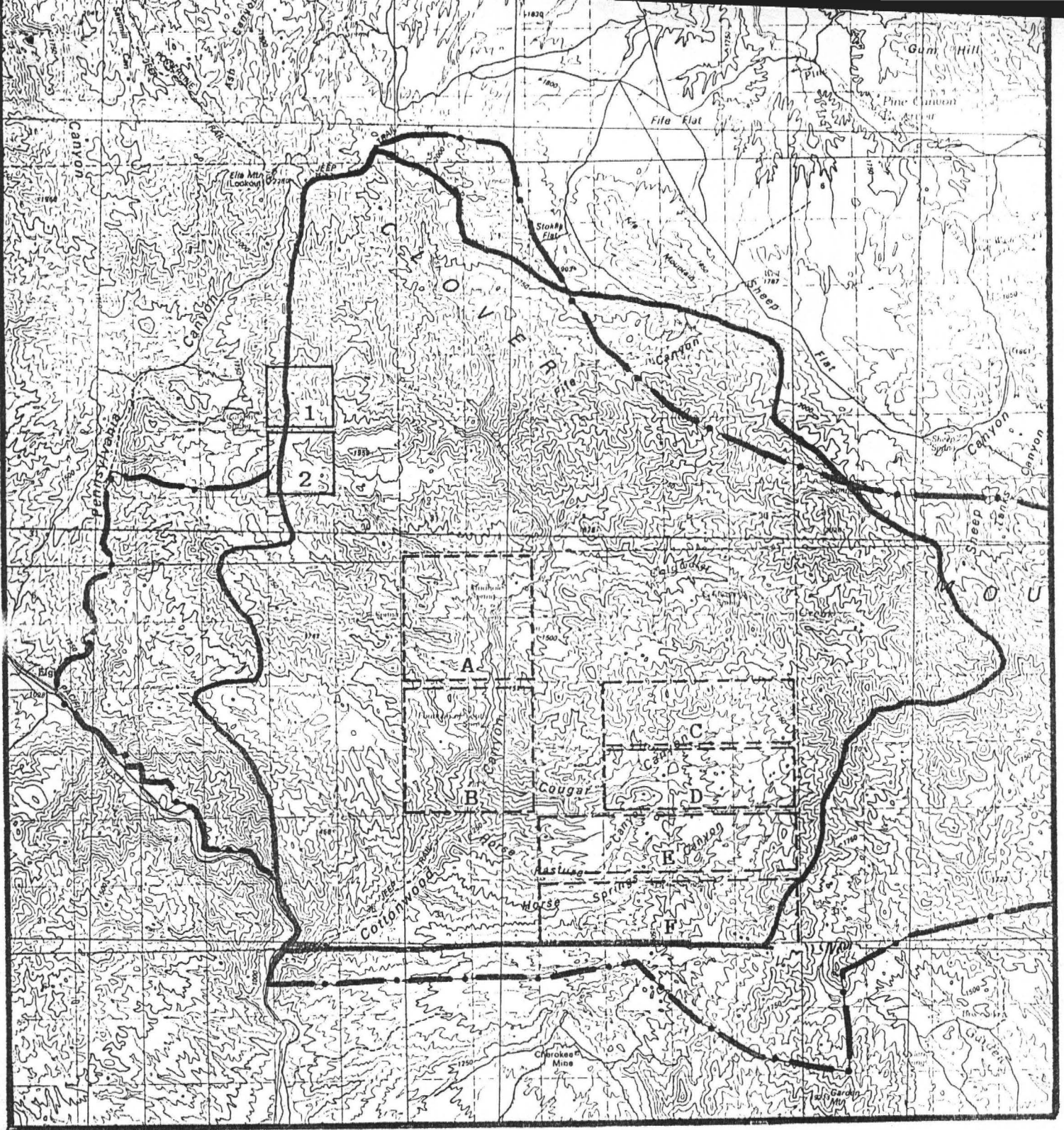
HMP BOUNDARY: —————

WILD HORSE HMA BOUNDARIES: - - - - -


FISH SURVEY SITES:

- 1977: A
- 1991: 1 - 5





 MINERALS:

 OIL AND GAS LEASES:


MAP 6

ASH/PINE CREEK HMP AREA

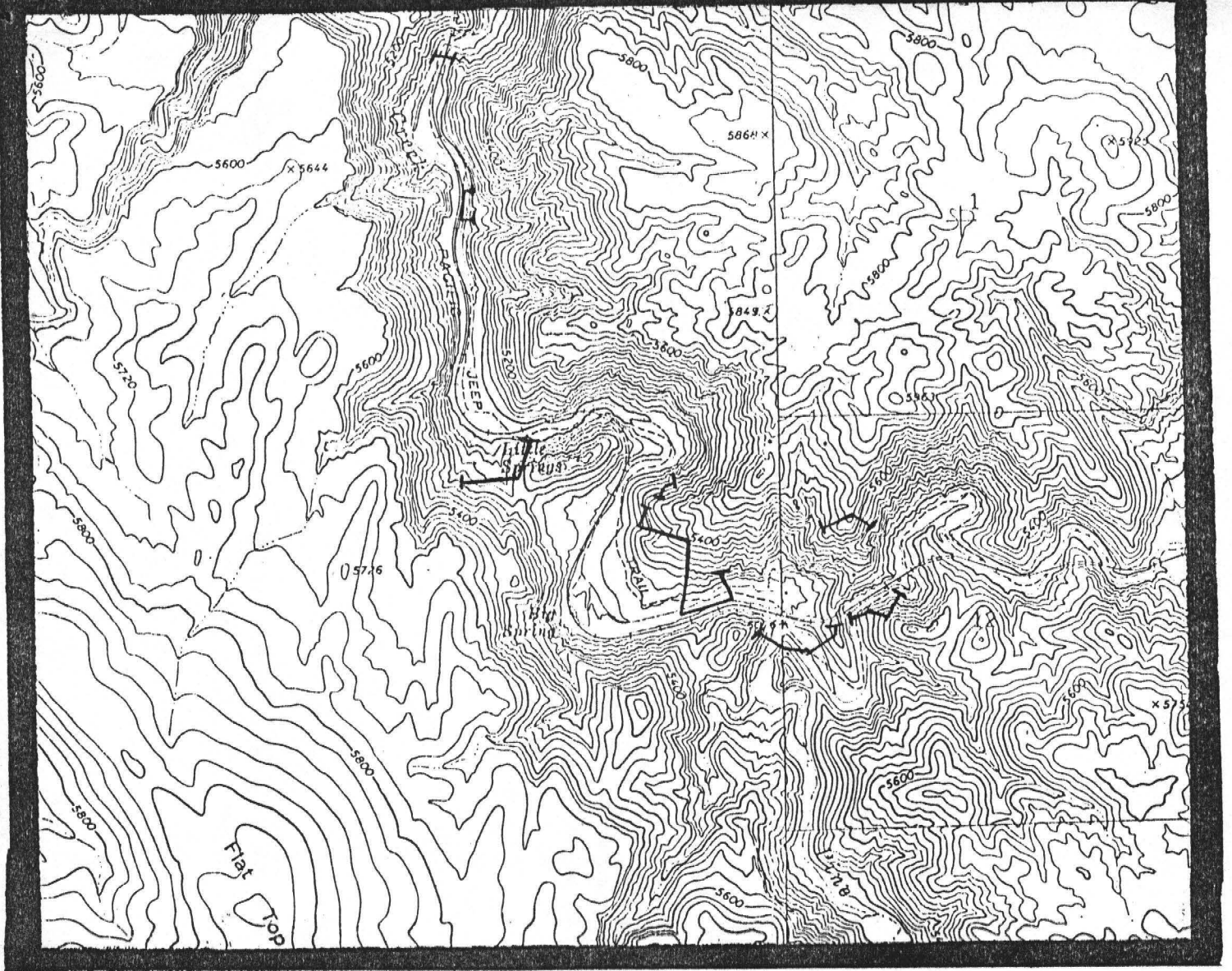
1 - T6S R67E SEC. 23 NW 363372 MER #23
 NW 363373 MER #24
 NW 363374 MER #25
 NW 363375 MER #26
 W1/2 363376 MER #27
 SW 363377 MER #28
 SW 363378 MER #29
 SW 363379 MER #30
 SW 472353 MER #70

A - W26111
 B - W26113
 C - W18498
 D - W18484
 E - W18493
 F - W18491

2 - T6S R67E SEC. 26 SW 197846 LINCOLN #201
 NW 472353 MER #70
 NW 472354 MER #71
 NW 472355 MER #73

HMP BOUNDARY: 

WILDERNESS BOUNDARY: 



MAP 7

CLOVER CREEK GAP FENCES - 

Note: These fences are for the Cottonwood allotment only. Fences for the Clover Creek allotment have not been designed yet. They will be similar to those in the Cottonwood allotment.

Environmental Assessment
for the
Clover Creek/Cottonwood Habitat Management Plan

EA# NV-055-00-34

Prepared by: Kyle Teel

Date: 8-20-91

Bureau of Land Management
Caliente Resource Area
Las Vegas District
Caliente, Nevada

I. INTRODUCTION

This Environmental Assessment (EA) assesses the environmental consequences of the proposed action, which is the implementation of the Clover Creek/Cottonwood Habitat Management Plan (HMP)(see Appendix 1), and the no action alternative.

II. PURPOSE AND NEED

The purpose and need of the proposed action is to carry out the Bureau of Land Management's (BLM) responsibilities under the Sikes Act of 1974, the Federal Land Policy and Management Act (FLPMA) of 1976, the BLM's Riparian Area Management Policy, and at least 30 Legislative Acts, 6 Executive Orders and several Bureau manual sections that provide direction for the management of aquatic resources on public lands. The Sikes Act is a mandate for the BLM to plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish and game, through the development and implementation of habitat management plans. FLPMA places fish and wildlife management on an equal footing with other traditional land uses and requires that part of grazing fees be spent for range betterment, including aquatic and terrestrial wildlife habitat enhancement, protection and maintenance where livestock use occurs. The BLM's Riparian Area Management Policy's objective is to maintain, restore, or improve riparian areas to achieve a healthy and productive ecological condition for maximum long-term benefits.

Both of the aquatic systems, Clover Creek and Ash and Pine Creeks, are located in Lincoln County, Nevada. Legal descriptions for the HMP areas are as follows:

Mount Diablo Meridian

Clover Creek

T. 4 S., R. 68 E., Secs. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 34, 35, 36; T. 5 S., R. 68 E., Secs. 1, 2, 3, 11, 12, 13, 14, 25, 26; and T. 5 S., R. 68 E., Secs. 6, 7, 18.

Ash and Pine Creeks

T. 5 S., R. 67 E., Sec. 36; T. 6 S., R. 67 E., Secs. 1, 2, 11, 14, 23, 26, 35, 36; T. 7 S., R. 67 E., Secs. 3, 10, 15, 16, 22, 26, 35, 36; T. 5 S., R. 68 E., Sec. 31; T. 6 S., R. 68 E., Secs. 6, 8, 9, 13, 14, 15, 16, 24, 25; T. 7 S., R. 68 E., Secs. 31, 32, 33, 34, 35, 36; T. 6 S., R. 69 E., Secs. 30, 31, 32 and T. 7 S., R. 69 E., Secs. 4, 9, 10, 16, 17, 18, 19, 30.

The proposed action is in compliance with Wildlife Decision 2.6 and 4.9 and Recreation Decision 1.10 of the Las Vegas District, Caliente Resource Area, Management Framework Plan, 1982.

This EA will analyze the planned and mitigative actions of the proposed action which have the potential to affect the human environment. This analysis will also address environmental impacts resulting from the no action alternative.

III. PROPOSED ACTION AND ALTERNATIVE:

The proposed action is the implementation of the Clover Creek/Cottonwood Habitat Management Plan. Appendix 1 contains the draft HMPs objectives, mitigation/protection actions and planned actions which include fencing, ORV redesignation and instream flow appropriation.

Alternative A, is the "No Action Alternative", which will maintain a status quo situation.

IV. AFFECTED ENVIRONMENT:

What about animal species in area?

Both of the aquatic systems, Clover Creek and Ash and Pine Creeks, are located in Lincoln County, Nevada. Clover Creek originates approximately 11 miles southeast of Caliente, Nevada and terminates in Caliente, where it meets the Meadow Valley Wash. Ash and Pine Creeks originate approximately 2 miles southeast of Ella Mountain in the Clover Mountains. Ash Creek is approximately 4 miles in length and joins with Pine Creek, which is approximately 8 miles in length. Both creeks drain into Cottonwood Canyon which also terminates in the Meadow Valley Wash.

In the Clover Creek riparian system, precipitation averages about 9 inches per year, with extreme averages being between 4 to 10 inches per year, most of which occurs as thundershowers and snow from late fall to early spring. Snowfall averages 6 to 12 inches during the winter months. Temperatures seldom exceed 100 degrees F. during the summer months, although they will drop below 0 degrees F. in the winter.

Precipitation in the Ash and Pine riparian system also averages about 9 inches per year, with extreme averages being between 4 to 10 inches per year, although the upper 2 miles of Ash and Pine can receive 8 to 16 inches per year. Most of the precipitation occurs as thundershowers and snow from late fall to early spring. Snowfall averages 6 to 24 inches during the winter months, depending on elevation. Temperatures will reach 100 degrees F. during mid summer in the lower stretches of Cottonwood Canyon and will drop below 0 degrees F. in the winter. Temperatures will vary significantly from the lower part of Cottonwood Canyon to the upper part due to differences in elevation.

Table 1 lists stream characteristics for these systems.

against Bureau Policy - does not assess cumulative impact assessment

Handwritten symbols: a triangle, a circle, a square, and a diamond.

Table 1 - Stream Characteristics

	<u>Clover Creek</u>	<u>Ash and Pine Creeks</u>
Elevation	5,200 to 4,720 feet	5,602 to 3,760 feet
Average Width	10 feet	4.5 feet
Average Depth	.46 feet	.13 feet
Width/Depth Ratio	22	35
Stream Velocity	.76 feet/second	.78 feet/second
Stream Discharge	8.75 cubic feet/second	.43 cubic feet/second
Average Stream Gradient	1.75%	2.6%
Sinuosity	1.4 (channel length divided by valley length)	

See the draft Clover Creek/Cottonwood HMP, 1991, for a complete description of wildlife and vegetative species which occur in the vicinity of the three creeks.

IV. ENVIRONMENTAL CONSEQUENCES:

Proposed Action: The following resources would not be affected by the proposed action: air quality, wild and scenic rivers, wastes (hazardous or solid), areas of critical environmental concern, farm lands (prime or unique) or forestry.

Cultural (historical and Paleontological) resources also will not be affected because a class III cultural resource inventory would be conducted prior to any surface disturbing activities proposed in the HMP. Appropriate mitigation measures would be developed for any identified significant cultural properties through Section 106 consultation prior to the authorization of such activities.

Alternative A: The following resources would not be affected by alternative A: air quality, cultural (historical and paleontological resources), wild and scenic rivers, areas of critical environmental concern, forestry, range, wild horses, recreation, visual resource management, socioeconomics and farm lands (prime or unique).

Recreation:

Proposed action: Implementation of the HMP objectives, planned actions and mitigation/protection actions would bring about an increase in the condition of the creek and associated riparian vegetation. These increases in condition of the aquatic system could improve the trout fisheries and increase fishing opportunities. Wildlife associated with riparian areas would also increase with the improvement in condition of the aquatic system. This could result in increased opportunities to view wildlife. Other recreational activities (hiking, photography, horseback riding, etc.) would become more aesthetically pleasing with the increase in aquatic conditions.

A planned action would amend the Caliente ORV designations from "open" to "limited" for the Clover Canyon watershed, as defined in the HMP. This change in designation could restrict seasons of use, course routes, and vehicle types

so why are we doing this?

for BLM-authorized competitive and non-competitive ORV events within the Clover Canyon watershed. Some promoters might lose participants or spectator interest as a result of these restrictions.

The planned action to determine if the UPR right-of-way can or can not be closed to recreational traffic could increase the recreational use of Clover Creek. If the right-of-way can not be closed to recreation traffic and a cooperative agreement can be developed with the UPR more of the public will be able to enjoy the recreational opportunities of Clover Creek.

Alternative A: The system would remain in a status quo situation or could worsen. This could cause the trout population to deteriorate and bring about a decrease in fishing opportunities. Other recreational activities would also become less appealing to conduct in a deteriorated riparian area.

ORV events proposed for the Clover Canyon watershed can be authorized throughout the year and for all types of ORV vehicles. Prior to the issuance of a Special Recreation Permit, an Environmental Assessment is prepared and mitigation actions are developed, as required. If such events continue to be permitted under an "open" designation, negative impacts on the riparian system, such as vegetation damage, increasing sediment input into the creek, and destruction of streambanks could occur.

The UPR right-of-way would remain closed to recreational traffic.

Riparian/Upland Vegetation:

Proposed Action: All of the HMP objectives and planned actions which relate to vegetation would positively impact both the riparian and upland vegetation. These objectives would assure, through certain restrictions placed on extent/type of use allowed, the viability of those species more associated with a healthy vegetative resource. The objective to increase ground cover, vegetative overhead and stream shading would positively impact the vegetative resource by increasing species diversity and composition. The planned action to develop a water in the uplands would provide an additional source of forage in the uplands and draw the animals off the riparian. The planned action to eradicate tamarisk from the Clover Creek HMA area would remove a major vegetation competitor and allow natural vegetation to flourish.

The proposed action to develop flood deterrent structures along critical areas of Clover Creek would eliminate the UPR having to build these devices at the spur of the moment during high flow events, thus protecting the riparian vegetation at these locations.

Alternative A: This alternative could cause the riparian/upland vegetation to remain at a status quo situation or decrease in condition. This could cause the loss of some species or the invasion of less desired species. The deterioration of the riparian vegetation could then bring about a decrease in the condition of the riparian system as a whole.

Also under this alternative riparian vegetation would continue to get destroyed by the UPR building these flood deterrent devices at a moments notice.

Threatened and Endangered:

Proposed Action: The implementation of the planned action to investigate the possibility of introducing the Federally threatened Big Spring spinedace into the Big Spring source could provide this species with an additional population. If found to be feasible, this new population would aid in removing the Big Spring spinedace from the threatened list.

Alternative A: The possibility of introducing the Big Spring spinedace to the Big Spring source would not be investigated.

Fisheries:

Proposed Action: The implementation of the HMP objectives, planned actions and mitigation/protection actions would increase the condition of the riparian system and, in turn, increase the condition of the fisheries. The objectives and planned actions would benefit trout populations by the following:
1. increase ground cover, 2. increase vegetative overhang, 3. increase pools, and 5. decrease stream temperature. The planned action to install enclosure fences to exclude livestock and wild horses from grazing the riparian area would increase the condition of the riparian vegetation and stream system thus increasing the productivity of the trout population. The planned action to construct stream improvement structures and conduct vegetation planting, if determined feasible, would improve the stream condition by increasing pools and vegetation along Clover Creek.

Alternative A: Under the No Action Alternative, the riparian system would continue to decline in condition, which could result in a declining trout population.

Water Quantity/Quality:

Proposed Action: The implementation of the planned action to remove livestock after reaching 50 percent vegetative utilization levels and the construction of enclosure fences to exclude livestock and wild horses would decrease the nutrient loading into the water. Increasing the ground cover and vegetation overhang would help stabilize the banks resulting in reduction of sedimentation and the trapping of sediments during high flow events. Increasing the percent stream shading would decrease the stream temperature providing better water quality/temperature for the trout. The planned action for the BLM to file for instream flow appropriations would assure the required volume of water to maintain the required habitat for the existing rainbow trout and desert sucker populations.

Alternative A: This alternative would retain a status quo situation, which has been documented as high fecal coliform when livestock and wild horses are present and high water temperatures.

Range:

Proposed Action: The objectives, planned actions and mitigation/protection actions identified within this HMP are designed to enhance certain habitat characteristics and will place restrictions on the livestock permittees within the three affected allotments. These restrictions could affect the length of

time and time of year that livestock would be permitted to graze within the riparian zone.

The planned action to install enclosure fences to exclude livestock and wild horses from the riparian would result in the elimination of grazing in the riparian area, except for designated water oaps, of the Clover Creek and Cottonwood allotments. These fences would also keep livestock and wild horses from entering or leaving the Sheep Flat allotment to or from the Cottonwood allotment. Impacts on the permittees would be an increase in workload as a result of herding and livestock management to keep the animals away from the riparian area. This could also result in slightly lower animal weights and lower profit margin as a result of the additional management practices.

The above restrictions and actions would affect the following acres or percentage of the total allotment in Clover Canyon.

Clover Creek: 115 acres or 0.5% of the total allotment.

Cottonwood: 104 acres or 0.1% of the total allotment.

Sheep Flat: 50 acres or 0.06% of the total allotment.

The planned action to develop an allotment management plan which calls for a season-of-use change or a grazing system for the Cottonwood allotment could cause some socioeconomic impacts in the short-term. During the first years of the plans implementation, the ranchers would have to change their current style of management. This may entail the rancher having to herd animals, haul them around or apply other management practices not currently being employed. This could result in a slight decrease in profit, as the result of some weight loss by the animals and increased management time.

The planned action to install enclosure fences to exclude livestock and wild horses from the riparian would result in the elimination of grazing along certain sections of Ash and Pine Creeks. These fences would not exclude grazing from the entire stream, only certain sections with higher potential for riparian recovery. The installation of these fences would not cause an increased workload for the permittee and livestock and wild horses would not be excluded from water.

Alternative A: Overgrazing of the riparian system would continue to occur and the riparian system as a whole would continue to decline in condition.

Soils:

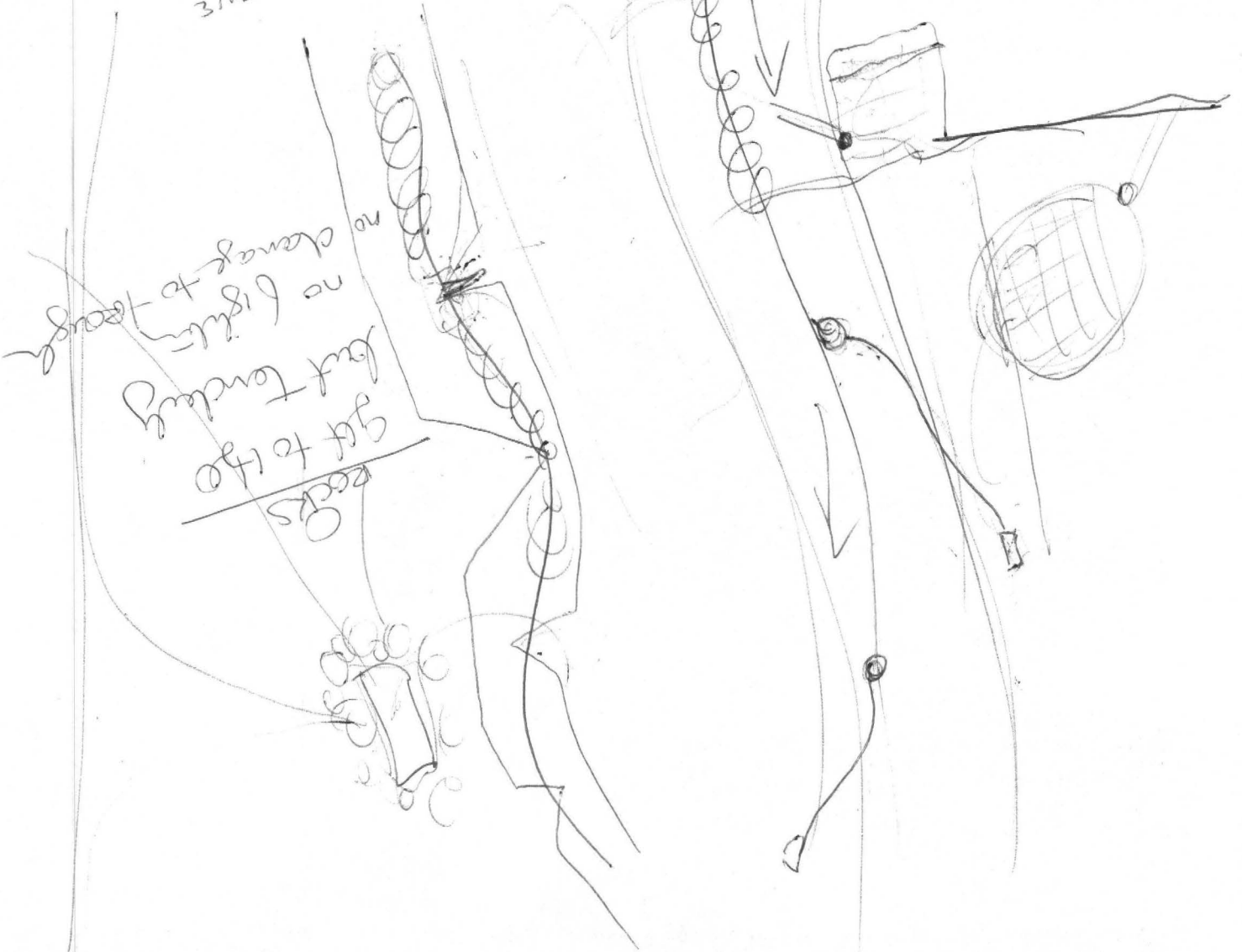
Proposed Action: Planned actions identified to increase ground cover and vegetation overhang would increase bank stabilization and decrease soils deposition into the water channel. The restriction placed on ORV races would result in maintaining soils stability and would assure no soils deposition into the water channel as a result of these activities.

Alternative A: Under this alternative, activities such as overgrazing and competitive and non-competitive ORV events would continue. Soil deposition, as well as high turbidity levels would continue and possibly increase. Bank undercutting and stream width and depth would likely remain static.

Other way available
to get the water
distribution in stream
water

Spilling weirs
w/ screens

add sediment to repair zones
high water - debris fence
more screens
less sediment



Wilderness:

Proposed Action: Ash and Pine Creeks are located within the Clover Mountain Wilderness Study Area. The planned action to install enclosure fences along certain segments of Ash and Pine Creek, to eliminate grazing, would result in the construction of fences within a WSA. The Interim Management Policy and Guidance for Lands Under Wilderness Review states that "Riparian, wetland, and aquatic enhancement activities may be permitted as long as their purpose is to protect or maintain natural conditions and to restore deteriorated habitat, and as long as they are substantially unnoticeable in the area as a whole. Protective fencing and planting of native riparian plant species are among these permitted activities. Any new structures must not require maintenance by motor vehicles if the area is designated as wilderness. Construction activities must satisfy the nonimpairment criteria.

Alternative A: No fence construction would take place and the Interim Management Policy and Guidelines for Lands Under Wilderness Review would apply to these creeks, until congressional determinations on their status are received.

Flood Plain:

Proposed Action: The implementation of the planned actions and mitigation/protection actions of this HMP would help to stabilize the flood plains of these systems, by increasing vegetative cover and decreasing soil erosion.

Alternative A: The flood plain could continue to deteriorate, as a result of overgrazing by livestock and wild horses, and cause the riparian system to decline in condition.

Wild Horses:

Proposed Action: The planned action to install enclosure fences to exclude livestock and wild horses from the riparian would result in the elimination of grazing in the riparian area, except for designated water gaps, of the Clover Creek and Cottonwood allotments. Clover Creek is the boundary between the Clover and Clover Mountain herd management areas. The enclosure fences would not affect any wild horse movement within each HMA. The placement of water gaps would allow wild horses from both HMAs access to water. Therefore, enclosure fence construction would not negatively impact wild horses.

Alternative A: This alternative would allow the riparian vegetation to be continuously overgrazed by livestock and wild horses, thereby continuing to degrade the affected systems. This degradation would negatively impact all species which depend on the water and vegetation of these systems.

Visual Resource Management:

Proposed Action: Clover Creek is classified as Class II VRM area. Regulations in Class II areas mandate that changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. Contrasts are seen, but must not attract attention. The enclosure fences, called for in the planned

does not block setting of HMA (p. 12)

EA must review what you propose in HMA

action, would be constructed according to BLM standards in order to meet these requirements.

Pine and Ash Creeks is in an area classified as VRM Class IV. Any fence construction in this area must meet nonimpairment criteria for wilderness study areas.

Alternative A: No fence construction would occur under the No Action Alternative and visual resource values would not be impacted.

Socioeconomics:

Proposed Action: The planned action to install enclosure fences to eliminate grazing in the riparian could cause some negative socioeconomic impacts in the short-term. During the first years of the plan's implementation, the ranchers would have to herd cattle that are accustomed to grazing in the riparian back up into the uplands to graze. Herding would continue until the cattle are trained to do it themselves. This could result in a slight decrease in profits, as the result of some weight loss by the animals and increased herding time.

The planned action to develop an allotment management plan which calls for a season-of-use change or a grazing system for the Cottonwood allotment could cause some socioeconomic impacts in the short-term. During the first years of the plan's implementation, the ranchers would have to change their current style of management. This may entail the rancher having to herd animals, hail them around or apply other management practices not currently being employed. This could result in a slight decrease in profit, as the result of some weight loss by the animals and increased management time.

A U.S. Forest Service Handbook (USDA 1982) gives fisherman day values of \$14.70 for the Intermountain Region. Present estimation is that Clover Creek receives 7 fisherman day/month. The implementation of the planned and mitigative/ protective actions should increase fisherman days to 15/month.

Alternative A: A status quo situation would continue, with no impacts to socioeconomics.

Irreversible and Irretrievable Impacts:

Proposed Action: There is no irreversible or irretrievable commitment of resources as a result of implementing this HMP and its associated objectives, planned actions or mitigation/protection actions.

Alternative A: Continuation of the no action alternative could result in the deterioration of the riparian system to a point where it is irreversible or the loss of certain aspects of the system which can not be retrieved.

Monitoring:

Proposed Action: As identified in the Clover Creek/Cottonwood HMP, the following monitoring activities would be conducted to assess the effectiveness of the planned action and mitigations:

The Riparian Transect Method would be implemented every 2 years or when circumstances warrant. This methodology is used to determine bank trampling, vegetative communities and the presence of woody species by number and age.

Vegetative utilization monitoring would be read at all the key areas before livestock go on in the spring (5/1), when the livestock come off (10/31) and at least twice while livestock are present to assure objectives are not surpassed.

The BLM 6671 Manual stream survey methodology and the U.S. Forest Service methodology would be read at 5 to 10 year intervals.

Infra red photos would be retaken along Clover Creek 5 years after the enclosure fences have been constructed to determine any improvement.

V. CONSULTATION AND COORDINATION:

Steve Flock	Lands/Minerals
Dawn Ferris	Cultural/Environmental Coordinator
Terry Smith	Supervisor Range Conservationist
Alan Shepherd	Range Conservationist
Trent Shaskan	Range Conservationist
Marc Pierce	Forester/Recreation
Jule Wadsworth	Wild Horse Specialist

VI. BIBLIOGRAPHY:

U.S. Department of Agriculture. 1982. Range Project Effectiveness Analysis Procedures. Handbook 2209.11. USDA Forest Service, Washington, D.C.

EA-NV-055-00-34
(NV-55.11)

RECORD OF DECISION AND
FINDING OF NO SIGNIFICANT IMPACT

The proposed action to implement the Clover Creek/Cottonwood Habitat Management Plan (HMP) and associated objectives, planned action and mitigation/protection actions as well as the no action alternative has been reviewed by appropriate Caliente Resource Area Staff specialists.

Both of the aquatic systems, Clover Creek and Ash and Pine Creeks, are located in Lincoln County Nevada. Legal descriptions for the HMP areas are as follows:

Mount Diablo Meridian

Clover Creek

T. 4 S., R. 68 E., Secs. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 34, 35, 36; T. 5 S., R. 68 E., Secs. 1, 2, 3, 11, 12, 13, 14, 25, 26; and T. 5 S., R. 68 E., Secs. 6, 7, 18.

Ash and Pine Creeks

T. 5 S., R. 67 E., Sec. 36; T. 6 S., R. 67 E., Secs. 1, 2, 11, 14, 23, 26, 35, 36; T. 7 S., R. 67 E., Secs. 3, 10, 15, 16, 22, 26, 35, 36; T. 5 S., R. 68 E., Sec. 31; T. 6 S., R. 68 E., Secs. 6, 8, 9, 13, 14, 15, 16, 24, 25; T. 7 S., R. 68 E., Secs. 31, 32, 33, 34, 35, 36; T. 6 S., R. 69 E., Secs. 30, 31, 32 and T. 7 S., R. 69 E., Secs. 4, 9, 10, 16, 17, 18, 19, 30.

The proposed implementation of Clover Creek/Cottonwood HMP will serve to carry out the responsibilities of the Bureau of Land Management, in relation to the BLM's Riparian Area Management Policy, the Sikes Act of 1974, the Federal Land Policy and Management Act of 1976 (FLPMA) and at least 30 Legislative Acts, 6 Executive Orders and several Bureau manual sections that provide direction to the BLM for the management of aquatic resources on public lands.

The Clover Creek/Cottonwood HMP and Environmental Assessment has been reviewed by affected parties.

The proposed action is in compliance with the Las Vegas District, Caliente Resource Area, Management Framework Plan, 1982.

The no action alternative has been evaluated and rejected. The implementation of the Clover Creek/Cottonwood HMP and associated objectives, planned actions and mitigation/protection actions has been determined to have no significant impact to the human environment, therefore, there is no need for an Environmental Impact Statement.

Any mitigation stipulations required for the construction of the gap fences will be developed in the Environmental Assessment for that action.

I recommend the approval of the proposed action:

Dawna Ferris
Archeologist/Environmental Coordinator

Date

I approve the proposed action:

Durtis G. Tucker
Area Manager, Caliente
Resource Area

Date

HABITAT MANAGEMENT PLAN OBJECTIVES/PLANNED ACTIONS

HMP Objectives

Implementation of HMP objectives, planned actions and facilitating actions will be scheduled as per "year of completion or implementation" with year 1 being the year that this HMP is signed.

Clover Creek

1. Within Clover Canyon, allow no more than 50% vegetative utilization, on current years growth, on an annual basis, at any one station (10-13). To be completed by year 3.

Date of completion _____

2. Within Clover Canyon (other than identified water gaps) - allow no more than 50% vegetative utilization, on current years growth, on an annual basis, at any one station (1-9). To be completed by year 3.

Date of completion _____

3. Within Clover Canyon, increase average cumulative vegetative ground cover of 33% to a minimum of 65% between stations (1-10) by year 4.

Date of completion _____

4. Within Clover Canyon, increase the average vegetative overhang from 1.85 feet for station (1-5) to a minimum of 4 feet, from 2.95 feet for stations (6-9) to a minimum of 5 feet and from .45 feet for stations (10-13) to a minimum of 2 feet by year 4.

Date of completion _____

5. Increase current percent of habitat optimum rating of 37, as identified in the 1987 stream habitat survey summary and analysis and averaged between stations (1-13) in Clover Canyon to 60 by year 10.

Date of completion _____

6. Within Clover Canyon, increase percent stream shade from 23% for stations (1-5) to 40%, from 20% for station (6-9) to 40%, and from 12% to 25% for stations (10-13) through the increase of desirable riparian vegetation by year 7.

Date of completion _____

7. Within Clover Canyon, increase the pool/riffle ratio percent optimum from 42% to 60% for stations (1-13) by year 7.

Date of completion _____

8. Within Clover Canyon, increase the current rainbow trout population from 521 fish per mile to 650 fish per mile for stations (1-10) by year 7.

Date of completion _____

9. Within Clover Canyon, decrease the average temperature from 24 C for stations (1-10) to an average of 20 C by year 7.

Date of completion _____

10. Within Clover Canyon, develop a desired plant community, consisting of the following vegetative groups for stations (1-13) by year 8:

	Herbaceous Vegetation	Present
<u>Distichlis</u> dominant group	46%	increase to 50%
<u>Eleocharis</u> dominant group	7%	increase to 10%
<u>Trifolium</u> dominant group	16%	decrease to 10%
Miscellaneous groups (<u>Bromus</u> , <u>Berula</u> , <u>Typha</u> etc.)	17%	increase to 20%
Miscellaneous groups (<u>Artemisia</u> , Unknowns, <u>Medicago</u> , bare ground etc.)	14%	decrease to 10%
	100%	100%

Date of Completion _____

11. Within Clover Canyon, at stations (1, 6 and 10) maintain current willow numbers and increase cottonwood numbers from a current average of 16 per 1/4 acre to 50 per 1/4 acre by year 8.

Date of Completion _____

12. Within Clover Canyon, at stations (3, 4 and 5) maintain current willow numbers and increase current ash numbers from an average of 36 per 1/4 acre to 50 per 1/4 acre by year 8.

Date of Completion _____

13. Within Clover Canyon, at stations (7, 8, 9 and 12) increase current willow numbers from an average of 73 per 1/4 acre to 150 per 1/4 acre. increase current ash numbers from an average of 12 per 1/4 acre to 50 per 1/4 acre and maintain the current cottonwood numbers by year 8.

Date of Completion _____

COTTONWOOD DRAINAGE

1. Within Cottonwood drainage (Ash and Pine Creek), of the Cottonwood allotment, allow no more than 50% vegetative utilization, on current years growth, on an annual basis at any on station (1-18) by year 3.

Date of completion _____

2. Increase the average cumulative vegetative ground cover of 10% to a minimum of 40% between stations 3-11 of the Cottonwood drainage of the Cottonwood allotment by year 7.

Date of completion _____

3. Within Cottonwood drainage, increase the average vegetative overhang from .8 feet to a minimum of 1.5 feet for stations (1-18) through the increase of desirable riparian vegetation by year 7.

Date of completion _____

4. Increase the current percent of habitat optimum of 27% as identified in the 1987 stream habitat survey summary and analysis and averaged between stations (1-18) in the Cottonwood drainage to 50% by year 10.

Date of completion _____

Planned Actions

The implementation of these planned actions depends on the availability of manpower and funding.

		To be completed or implemented by	Estimated cost
1.	<p>As identified in the Caliente LUP, initiate the development of an Allotment Management Plan (AMP) within the Cottonwood, Henrie and the Morrison Wengert allotments that emphasizes the management of the perennial streams within the Cottonwood allotment. This AMP should implement a season-of-use change for the Cottonwood allotment or implement a livestock grazing system that allows for periodic deferment during the vegetative growing season within the Cottonwood drainage. This AMP in association with range improvements would allow for a reasonable likelihood of the achievement of the objectives outlined in this HMP.</p> <p>Date of completion _____</p>	Year 2	5 WM
2.	<p>Install required gap fences to restrict livestock and wild horse impacts to the riparian zones within Clover Canyon (See Map 7).</p> <p>Date of completion _____</p>	Year 3	\$30,000
3.	<p>Once the gap fences have been installed along Clover Creek eliminate livestock grazing from Clover Creek, within the Cottonwood allotment. Grazing may be allowed at certain times when it is determined that it will enhance riparian habitat features.</p> <p>Date of completion _____</p>	Year 4	

- | | | | |
|----|--|---------|----------|
| 4. | Install gap fence along segments of Ash/Pine Creeks to exclude livestock and wild horse grazing. | Year 4 | \$50,000 |
| | Date of completion _____ | | |
| 5. | The Bureau should file for an instream flow appropriation within Clover Canyon to assure the required volume of water to maintain the required habitat for the existing Rainbow Trout and Desert Sucker populations. | Year 1 | 2 WM |
| | Date of completion _____ | | |
| 6. | Provide the necessary amendment to the Caliente ORV designation to identify "Limited" designation-organized competitive and non-competitive ORV events are not allowed within Clover Canyon. | Year 2 | 2WM |
| | Date of completion _____ | | |
| 7. | Develop a water source in the uplands through a well, spring development or quizzler to help draw livestock and wild horses off the riparian areas. | Year 3 | \$30,000 |
| | Date of completion _____ | | |
| 8. | Implement a tamarisk eradication program within the Clover Creek HMP area that will eliminate tamarisk as it is discovered. | Year 1 | 2 WM |
| | Date of completion _____ | | |
| 9. | Implement a riparian monitoring program within the Cottonwood allotment which will quantify, to the extent possible, levels of utilization on riparian vegetation by cattle, wild horses and mule deer. | Ongoing | |
| | Date of completion _____ | | |

- | | | | |
|-----|---|--------|----------|
| 11. | Determine the feasibility of constructing stream improvement structures and conduct vegetation plantings along Clover Creek to improve the habitat quality.

Date of completion _____ | Year 1 | 1 WPI |
| | If determined feasible construct stream improvement structures and conduct vegetation plantings along Clover Creek to improve the habitat quality.

Date of completion _____ | Year 2 | \$20,000 |
| 11. | Reconduct low level infrared photos along Clover Creek.

Date of Completion _____ | Year 8 | \$20,000 |
| 12. | With the cooperation of the railroad, develop flood deterrent structures at critical area along Clover Creek to help protect the railroad. This may be done by constructing berms or gabions or by creating a natural looking flood deterrent through the planting of dormant stubs. By developing these structures the railroad would not have to dredge material from the stream bed to construct these deterrents.

Date of completion _____ | Year 3 | \$25,000 |
| 13. | Determine if the UPR right-of-way road can be closed to recreational traffic. If they can not, then work out agreement for use of the ROW road.

Date of completion _____ | Year 1 | 2 WM |
| 14. | Investigate the possibility of introducing the Federally Threatened Rio Spring spinedace into the Rio Spring source.

Date of completion _____ | Year 2 | 1 WM |

Mitigation/Protection Actions

1. Assure compliance with minerals surface management regulations, 43 CFR 3802.3-2, (B & E) and 43 CFR 3809.2-2, (d).
2. Protect riparian zones from existing oil and gas lease activities through identification of mitigation during Environmental Assessment (EA) process.
3. Develop an AMP within the Cottonwood allotment which would eliminate grazing from the riparian zone within Clover Creek by providing water source(s) in the uplands and installing riparian gas fences along Clover Creek. These projects would help to attract livestock and wild horses and consequently keep them out of the riparian zone.

Clover Creek, within the Cottonwood allotment makes up the majority of perennial, higher quality (due to dependable water flow) trout habitat. Livestock grazing could be allowed to occur periodically when it is determined that it will enhance riparian habitat features. These situations should be handled on a case by case basis and in collaboration with all parties concerned.

4. A grazing system which would allow for periodic seasonal deferment during the vegetative growing season within Cottonwood Canyon (Ash and Pine Creek) or a season-of-use change for the entire Cottonwood allotment should be implemented. The LUP calls for an AMP for Cottonwood, Henrie and the Morrison Wendert allotments. This should seriously be explored as the three allotments contain either one or both permittees which run livestock on the Cottonwood allotment.
5. As exists presently, Ash, Pine and Clover Creek make up a small portion of the Cottonwood allotment but support and are impacted by a large number of cows and wild horses as a result of their frequency of use and time of year the use occurs. All efforts should be made to distribute these animals away from the riparian zone.



COMMISSION FOR THE
PRESERVATION OF WILD HORSES

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September 12, 1991

Curtis Tucker, Area Manager
BLM-Caliente Resource Area
P.O. Box 237
Caliente, Nevada 89008

Dear Mr. Tucker,

Thank you for the opportunity to comment on the "draft" Clover Creek/Cottonwood Habitat Management Plan and associated Environmental Assessment.

To begin, this document has left me quite confused. Correct me if I am wrong but a HMP is a Habitat Management Plan which basically should be the management plans for wildlife and how the plans will fit into the entire multiple use objectives. A HMAP is a Herd Management Area Plan which addresses specifically wild horses. Why then are changes in wild horse and burro management in this HMP? This document seems to be reversing the intent of a HMP, which is to address the integration of the wildlife objectives into multiple use objectives. It seems this HMP is intended to present the wildlife objectives and how the wild horses can be changed to fit into those objectives.

In addition, all of your references on page 19, are 10 years old. You mention; "manage current estimated numbers (FY81)," "develop by FY 1982," and "Beginning in FY 82." Is 10 year old data the most recent data that you are using? Has the area gone without monitoring for the last 10 years and not been updated? How can objectives for wild horse and burro management be presented with such outdated material.

You mention "Unless determined otherwise through the CRMP process, manage current estimated numbers (FY 81) of wild horses and burros within the following herd management areas." You also mention "desirable numbers" throughout. Through the IBLA rulings, numbers can't be managed for except by setting "appropriate management levels (AML). Those AML's must be set by monitoring data. The HMP states you will be managing for 9 horses in Clover Creek and 55 horses in Clover Mountain. Unless you are setting AML through monitoring data managing for these 10 year old numbers is in direct violation of the IBLA decision.

Both of the Decisions (1.1 and 1.2), you have included in this document (pg 19), are invalid and not consistent with current BLM policy or law. The paragraph you have inserted between the decision paragraphs is in contradiction to the decisions you have stated. The paragraph quoting the IBLA ruling is stating that you cannot do decisions 1.1 and 1.2. With these

Curtis Tucker, Area Manager
September 12, 1991
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contradictions it is impossible to determine what your intent is. The objectives are in violation of the policy and law.

I would like to suggest that you update your material in a HMAP to make the objectives for wild horse and burro management in Clover Creek and Clover Mountain consistent with current policy and law and then include those objectives along with multiple use objectives for wildlife in your HMP. If it has been 10 years since those areas have been reviewed I would suggest you review them as soon as possible.

The EA, "IV. Affected Environment," is against Bureau policy, it does not address the cumulative impacts. In addition, the proposed action for wild horses does not relate back to setting AML as outlined in the HMP (pg 19). The EA must review what you propose in the HMP.

In conclusion, I would like to request that page 19 of the HMP be re-drafted and that the EA include a review of the HMP. I reserve the right to comment on this HMP and associated EA when the information has been made consistent with current Bureau policy and IBLA law.

If you have any questions, please feel free to call.

Sincerely,

CATHERINE BARCOMB
Executive Director

9/27/91

IN REPLY REFER TO:



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CALIENTE RESOURCE AREA

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Caliente, Nevada 89008

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(702) 726-3141

Catherine Barcomb
Commission for the Preservation
of Wild Horses
Stewart Facility
Capitol Complex
Carson City, Nevada 89710

NOV 27 1991

Dear Ms. Barcomb:

Thank you for your comments on the "draft" Clover Creek/Cottonwood Habitat Management Plan and associated Environmental Assessment. It is the intent of this letter to clarify your concerns about the habitat management plan and environmental assessment.

To begin, you are correct in assuming that a habitat management plan is a plan for wildlife and a herd management area plan addresses wild horses and burros. In turn, both of these plans will incorporate multiple use objectives. This habitat management plan did not change wild horse and burro management.

Your main concern with the habitat management plan seemed to be that Decisions 1.1 and 1.2 on page 19 were 10 years old and that we were using these decisions to set horse management numbers without current monitoring data and in violation of an IBLA decision. You felt that the decisions on page 19 were invalid and not consistent with current BLM policy or law and that the paragraph inserted between the decision paragraphs is in contradiction to the decisions.

The decisions were taken from the Caliente Management Framework Plan (1982), which is the current guidance for the Caliente Resource Area. The paragraph which was inserted between the decisions was to state the IBLA decision that made these decisions invalid. The reason these decisions were included in the habitat management plan is that they are in our Management Framework Plan and must be included in documents like this. These decisions are not being followed at this time. The habitat management plan does not set any wild horse numbers to be managed. The following is a re-write of page 19 in the hopes to make it more understandable:

Decision 1.1:

Unless determined otherwise through the CRMP process, manage current estimated numbers (FY81) of wild horses and burros within the following herd management areas:

- Clover Creek - 9
- Clover Mountain - 55

Determine, through a range monitoring system and the CRMP process, desirable numbers in each area. Develop herd management area plans for each area in the fiscal year shown. Where it becomes necessary to take immediate action to effectively implement management, appropriate survey, utilization, actual use, etc., data can be obtained to initiate a beginning point in the number of animals on the public lands. Through the CRMP process, develop by FY 1982 a set of criteria to be applied in establishing desirable numbers of wild horses and burros.

Decision 1.2:

Beginning in FY 82, periodically remove wild horses and burros in excess of current numbers (FY81) in the 12 herd management areas. Concurrent with the final livestock adjustments to attain balance of grazing use, manage for desirable numbers of wild horses and burros within the herd management areas, utilizing CRMP and range monitoring. Remove excess animals as necessary to reach and maintain desirable numbers.

Note: Decisions 1.1 and 1.2 were taken from the finalized 1982 Caliente Resource Area Management Framework Plan (MFP). In 1989 a Interior Board of Land Appeals (IBLA) decision over rode these decisions. This June 7, 1989 IBLA decision stated that the removal of horses from herd management areas would be based on an appropriate determination that removal is necessary to restore the range to a thriving natural ecological balance and prevent deterioration of the range, in accordance with the Wild Free - Roaming Horse and Burro Act. In this decision, IBLA also stated that "an allowable management level (AML) established purely for administrative reasons because it was the level of wild horse use at a particular point in time cannot be justified under the statute."

To address your concern about the environmental assessment not being complete, the following cumulative impacts section has been added:

Cumulative Impacts

Fisheries

The result of constructing approximately one mile of gap fences along Clover Creek would protect 219 acres of aquatic/riparian habitat from livestock and wild horse grazing. The protection of this habitat would allow it to recover and in turn improve the fisheries.

The construction of stream improvement structures along Clover Creek will improve the habitat conditions of the fisheries.

Riparian Vegetation

The construction of approximately one mile of gap fences along Clover Creek would allow 219 acres of riparian vegetation to improve as the result of protection from grazing.

The planting of vegetation along Clover Creek will help improve the quality and quantity of riparian vegetation.

The elimination of tamarisk within the Clover Creek Habitat Management Area will decrease tamarisk, but allow native riparian vegetation to increase.

Recreation

Improvement of the fisheries along Clover Creek as a result of the construction of approximately one mile of gap fences, constructing stream improvement structures and conducting vegetation plantings could bring an increase in fisherman-days to 15 per month.

Range

The construction of approximately one mile of gap fences along Clover Creek would restrict grazing on 219 acres within the Clover Creek and Cottonwood allotments. This accounts for .6 percent of the total acres of both allotments.

Visual Resource Management

Visual resources would be affected by the construction of approximately one mile of gap fences along Clover Creek. These fences would be constructed in such a way as to minimize visual impacts.

Soils

The construction of approximately one mile of gap fences along Clover Creek, construction of stream improvement projects, planting riparian vegetation and the elimination of tamarisk would disturb up to 1.5 acres of soil as a result of construction activities.

Wild Horses

The construction of approximately one mile of gap fences along Clover Creek would restrict wild horse grazing on 219 acres within the Miller Flat, Clover Creek, and Clover Mountain Herd Management Areas. This accounts for .07 percent of the total acres of all three herd management areas.

Thank you again for providing comments on the Clover Creek/Cottonwood Habitat Management Plan and associated Environmental Assessment. I hope that this letter has clarified your concerns about the document. If you have any questions please feel free to call Kyle Teel, at the above mentioned number.

Sincerely yours,

Curtis G. Tucker

Curtis G. Tucker
Area Manager