

State of California
The Resources Agency
Department of Water Resources
Northern District

RECREATION USE SURVEY OF
LITTLE LAST CHANCE CREEK, PLUMAS COUNTY

1992

Technical Information Report No. 97-2

Prepared under the direction of

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by

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This report was prepared to summarize information collected under Work Order 1500-4704 (formerly 1501-0100) to document streamside recreation and fishing in Little Last Chance Creek below Frenchman Reservoir. This report has received only limited review; it is intended for internal use and should be considered preliminary and subject to revision.

December 1997

TABLE OF CONTENTS

SUMMARY	1
INTRODUCTION	2
DESCRIPTION OF STUDY AREA	4
METHODS	6
Recreation Use Counts	6
Creel Census and Recreation Interviews	6
RESULTS	8
Recreation Use	8
Creel Census Data and Angler Success	12
DISCUSSION	14
Limitations of Use Counts and Creel Census	14
Comparison of 1992 Survey Results with 1988 Survey	15
Comparison of Survey Results with Previous Estimates	16
ACKNOWLEDGMENTS	19
REFERENCES	20

TABLES

1 Recreation Hours by Activity, Little Last Chance Creek, 1992	8
2 Comparison of Recreation Hours by Activity at Little Last Chance Creek 1988 and 1992	16
3 Comparison of General Recreation , Fishing Use, and Angling Quality on Little Last Chance Creek and other local SWP Facilities	17
4 Estimated and Actual Recreation Use of Frenchman Lake and Little Last Chance Creek (in recreation days)	18

FIGURES

1	Frenchman Reservoir and Little Last Chance Creek, Plumas County	3
2	Little Last Chance Creek Visitor Origin by County Groups, 1992	11
3	Little Last Chance Creek Angler Origin by County Groups, 1992	13

APPENDICES

I	Recreation Survey Schedule for Little Last Chance Creek, 1992	21
II	1992 Use Count Schedule for Little Last Chance Creek	22
III	Length-Frequency of Censused Rainbow Trout, Little Last Chance Creek, 1992	23

SUMMARY

A recreation use survey of Little Last Chance Creek in Plumas County was conducted during 1992 to estimate the amounts and types of streamside recreation use and angler success. A similar study was conducted at Little Last Chance Creek in 1988.

A stratified random sampling procedure was used to sample five miles of Little Last Chance Creek, from Frenchman Dam downstream to the Guidici Ranch Road. Interviews of recreationists, roving use counts, and a creel census were combined to gather information on recreation activities, visitor origin, and angler success.

There were an estimated 70,000 hours of recreation on Little Last Chance Creek between April 25 and November 15, 1992. The most frequently observed activities were camping, relaxing, fishing, wading/swimming, and a variety of games and nature related activities. About three-quarters of the observed use occurred at Chilcoot Campground. Anglers caught an estimated 900 rainbow trout (0.28 trout per hour) in 3,500 hours of fishing. The mean length of angler-caught fish was 30.3 cm (11.9 in).

A majority of recreational visitors to Little Last Chance Creek came from Nevada (about 57 percent). Visitors also came from 21 California counties. The places of residence for anglers and recreational visitors were very similar. About 56 percent of anglers came from Nevada while 14 percent came from the Northeast counties and 14 percent came from the Sacramento Valley.

INTRODUCTION

Frenchman Dam was built in 1961, by the Department of Water Resources, as part of the State Water Project (Figure 1). Its purpose was to regulate Little Last Chance Creek for irrigation in Sierra Valley and to enhance local recreation opportunities (DWR, 1957). The downstream release was intended to maintain but not enhance the stream fishery. The reservoir is regulated essentially to supply downstream water rights and some water contracts.

This report describes the second recreation use survey of Little Last Chance Creek conducted since Frenchman Dam was built. The purpose of this survey was to estimate the amounts and types of recreation use and angler success occurring along the creek with augmented flow from Frenchman Reservoir, and to compare use with that observed during the first survey conducted in 1988 (J. Brown, 1989).

Using a stratified random sampling procedure, the survey combined roving use counts with interviews of recreationists in order to gather information on recreation activities, visitor origin, and angler success. Estimates of use were made for the period of April 25, 1992 to November 15, 1992 (the 1992 Sierra District stream trout-fishing season). This report describes the recreation use survey, creel census, and results. A separate report, prepared by the Department of Fish and Game (DFG), Contract Services Section, described a fish population survey conducted in October 1992 (Brown, 1993).

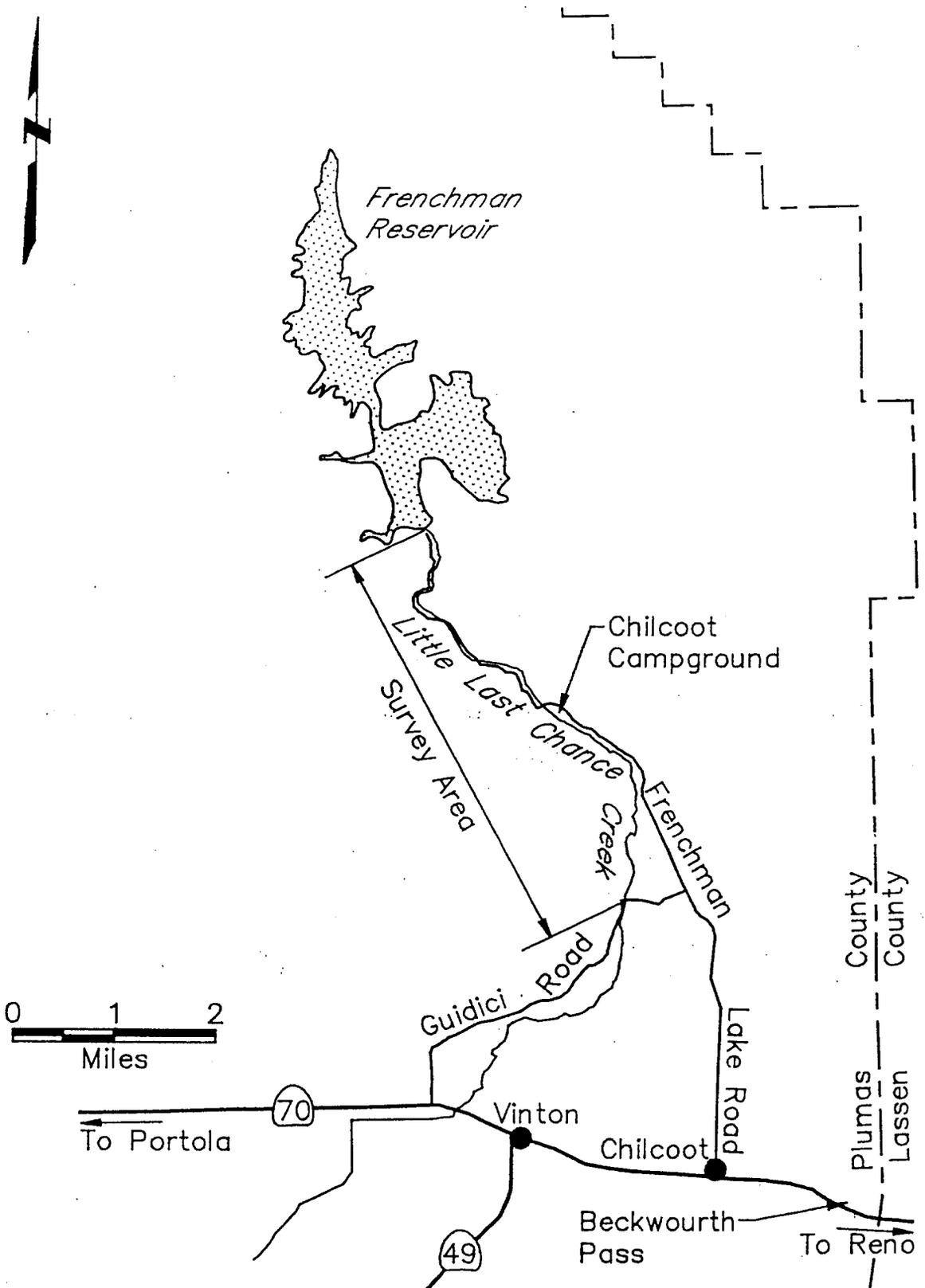


Figure 1 – Frenchman Reservoir and Little Last Chance Creek, Plumas County

DESCRIPTION OF STUDY AREA

Little Last Chance Creek is a tributary of the Middle Fork Feather River which feeds Frenchman Reservoir. Below Frenchman Dam, Little Last Chance Creek winds through a steep, lava-rock canyon for about four miles, and then flows through the sagebrush country of the northern Sierra Valley. Average annual runoff from the watershed upstream from the dam (81 sq. mi.) is about 27,000 acre-feet. The survey area included about five miles of Little Last Chance Creek from Frenchman Dam (elevation 5,500 feet) downstream to the Guidici Ranch Road (elevation 5,000 feet).

Frenchman Lake Road (State Highway 284) closely follows the creek and provides easy access to it and to camping facilities in Chilcoot Campground, operated by a concessionaire of the U. S. Forest Service. Chilcoot Campground is located about 3 miles downstream from Frenchman Reservoir and offers 40 campsites (35 drive-in and 5 walk-in), potable water, and restroom facilities in an attractive setting. It is the only developed (and legal) camping area on the creek.

Summer streamflows in Little Last Chance Creek below Frenchman Dam fluctuate widely depending on available water supply and irrigation demands in Sierra Valley. In 1992 Frenchman Reservoir did not completely fill and therefore did not spill. Flows varied from a peak of 80 cubic feet per second (cfs) in early May to a minimum flow of 0.3 cfs after September 1. Streamflow was 18 cfs for opening weekend of the trout season. The flows gradually increased for the next 14 days to the peak flow of 80 cfs. It remained at 80 cfs for 4 days, May 7 through 10, and was decreased to 13 cfs by the end of the month. During June and July flows ranged between 0.3 cfs to 34 cfs and averaged about 15 cfs. In August the flows varied from 0.3 cfs to 14 cfs and averaged 5 cfs. After September 1, flows were reduced to 0.3 cfs and remained there through November.

Frenchman Reservoir was chemically treated by the California Department of Fish and Game to eradicate Northern pike in the spring of 1991. During this project virtually all

of Little Last Chance Creek below the dam was poisoned as well. The Department of Fish and Game later restocked the creek with rainbow and brown trout. During subsequent electroshocking studies from 1991 through 1997 DWR and DFG determined that at least 2 additional species of fish now occur in Little Last Chance Creek: Sacramento sucker (Catostomus occidentalis), and Lahontan redbside (Rhinichthys osculus) (Brown 1992, 1997).

METHODS

Recreation Use Counts

Use counts were made on randomly selected dates within ten survey strata using the optimum allocation method described by Abramson and Tolladay (1959). Thirty days of the 205-day period from April 25 through November 15, 1992 (the Sierra District stream trout season) were surveyed. Five 1-hour counts of recreation use were made in the study area each survey day at regular periods, scheduled according to the number of daylight hours (Appendices I and II).

The surveys were made from vehicle or on foot, as necessary, to check access and recreation sites. Recreationists (and their vehicles) were counted and recorded by recreation activity. The five daily counts were totaled and multiplied by factors that accounted for recreation use in the daylight periods not counted. Similarly, the resulting daily figures were expanded to estimate total recreation hours for all days in each stratum. Adding the stratum totals provided an estimate of recreation hours for the study period.

Creel Census and Recreation Interviews

Between use counts, recreation and angler success data were collected through personal interviews. Interviews were conducted on a per-vehicle basis. Length of stay was rounded to whole hours for day users, and nights plus one for overnight users. The activities recreationists intended to participate in, and their home zip codes, were also recorded.

Anglers along Little Last Chance Creek were contacted during 23 of the 30 recreation surveys to determine fishing success (during seven of the recreation surveys no anglers were available for interview). The county of residence and length of time spent fishing so far that day (rounded to the nearest quarter hour) were recorded for each

angler contacted. Fish censused were counted, measured (fork length to nearest 0.5 centimeter), and identified to species.

To determine total catch, the average catch per hour (derived from the creel census) was multiplied by estimated total hours of fishing for each stratum. Total weight of trout caught was estimated from stocking information from the Department of Fish and Game (Ron Decoto, pers. comm.).

RESULTS

Recreation Use

Total recreation use on Little Last Chance Creek below Frenchman Reservoir was estimated at 70,000 recreation hours ($\pm 14,000$ hours) for the period April 25 to November 15, 1992. With adjustments to account for the high proportion of overnight use, this is about 14,000 recreation days, or 8,000 12-hour visitor days. Based on counts of recreationists, camping and relaxing were the major activities, followed by fishing, swimming and wading, and a variety of campground-related uses (Table 1). About three-fourths of the observed use occurred at Chilcoot Campground. Use counts reflect what people were doing when we counted them, and the approximate number of hours spent on each major activity. They do not provide data on other activities that people pursued at other times during their stay.

Table 1

Recreation Hours by Activity
Little Last Chance Creek, 1992

Activity	Recreation Hours	Percent
Camping	46,000	67
Relaxing	10,600	15
Fishing	3,500	5
Wading/Swimming	2,600	3
Sight-seeing	1,500	2
Walking	1,300	2
Miscellaneous*	4,500	6
Total	70,000	100

* Miscellaneous category includes hunting, picnicking, children playing, and various other activities.

Interviews conducted during the 205-day survey period totaled 379, representing 1,091 people. The interviews provided more detailed information on activity participation and visitor characteristics. Interviews of campers at Chilcoot Campground numbered 336 and represented 971 people. Day-use interviews numbered 31 and represented 88 people. The average number of visitors per vehicle was 2.9.

About 56 percent of the people interviewed said they were "just relaxing", and 25 percent stated that they fished in the creek. Twenty-five percent also swam or waded in the creek, and about 18 percent said they were sightseeing. About 15 percent rode bicycles or motorcycles and nearly 9 percent hunted. Almost 4 percent picnicked somewhere along the creek. About 12 percent of those interviewed mentioned various other activities including various outdoor games and sports, photography, rock and plant collecting, and other nature related activities. These percentages total more than 100 percent because many people engage in more than one activity during their visit.

Ninety-two percent (1,003) of the visitors interviewed camped overnight along the creek (all but 1 of these were at Chilcoot Campground). The average length of stay was three days (2 nights). Eleven percent (120) of the visitors interviewed used the stream corridor for day use, but did not stay overnight along the creek. About 27 percent of these day users stayed overnight somewhere in the general area, while the remainder returned home that night. The average length of day-use visits was 1.3 hours.

Of those who stayed overnight in the area, about 84 percent camped at Frenchman Reservoir or Lake Davis, 13 percent stayed with friends or relatives, and 3 percent stayed at private campgrounds, motels, or resorts. The average length of stay for those who stayed in the area was also 3 days.

Forty-seven percent of the campers said they used tents as their overnight accommodations. Thirty-seven percent used travel trailers, 16 percent used a

motorhome, van, or bus, 10 percent used pickup campers, 4 percent used tent trailers, and 3 percent slept out.

The majority (58 percent) of recreational visitors to Little Last Chance Creek came from Nevada, mostly Reno, Sparks, and Carson City. Visitors also came from 21 California counties, with the highest percentage (11 percent) from Plumas County (Figure 2). Of those visitors camping at Chilcoot Campground, 63 percent came from Nevada, with 20 California counties represented among the remaining 37 percent. Fifty-nine percent of the day users came from Nevada and seven California counties were represented in the remainder.

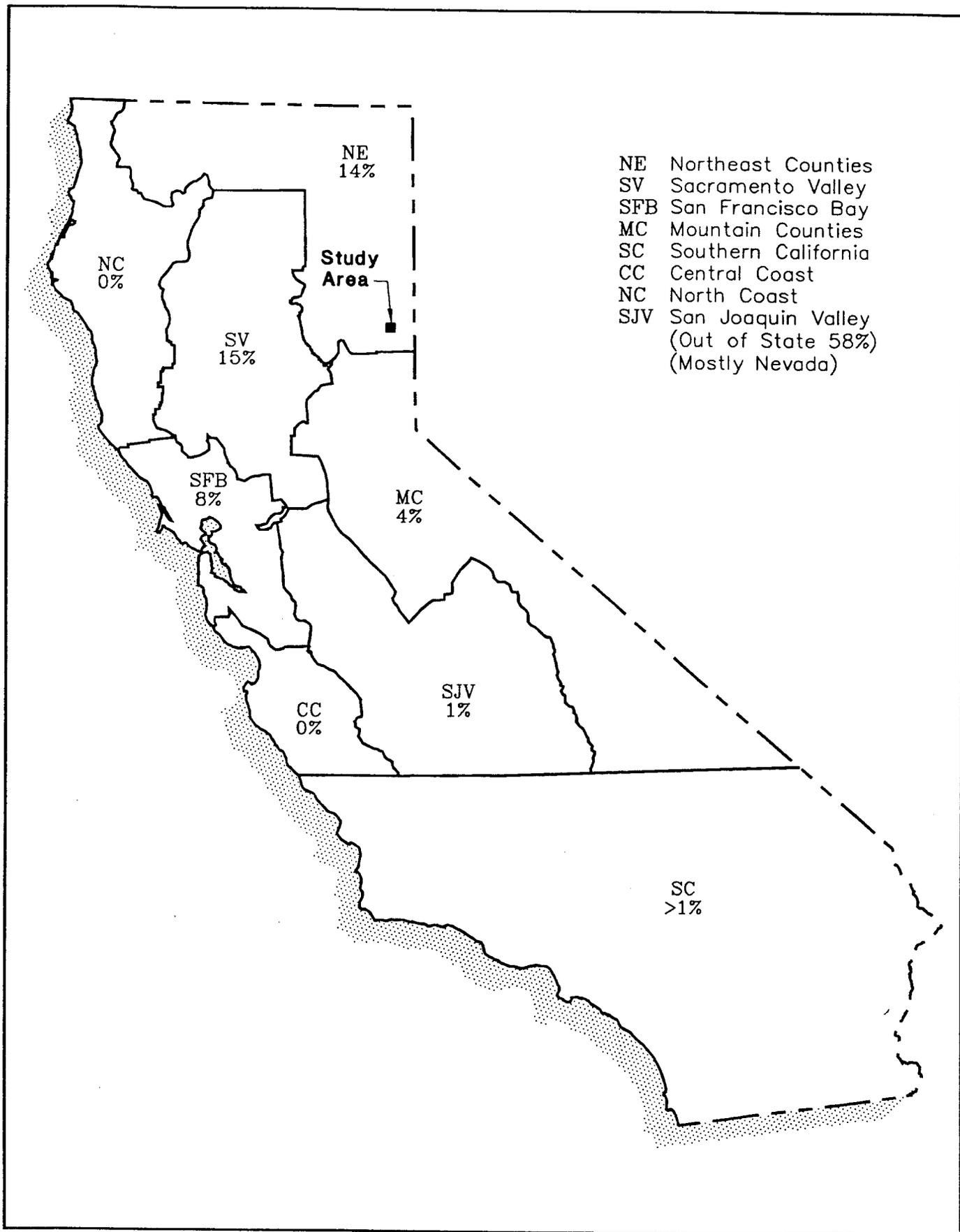


Figure 2 - Little Last Chance Creek Visitor Origin By County Groups in 1992.

Creel Census Data and Angler Success

One hundred and seventy-three anglers were censused. They had fished a total of 296.5 hours and creeled 115 rainbow trout. Sixty-six other trout were either reported caught, or reported caught and then released back into the creek. Observed catch per hour (excluding fish caught and released) for individual anglers ranged from none to 3.7. About 94 percent of the anglers fished with bait, 14 percent with lures, and 5 percent with flies. These totals add up to more than 100 percent because 13 percent of the anglers tried more than one type of terminal gear.

Total fishing use was estimated at 3,500 hours ($\pm 1,500$ hours) or about 2,100 angler-days, with an estimated catch of 900 rainbow trout (0.28 trout per hour). No brown trout were observed in the catch (more than 1,300 were planted in summer 1991). Based on the number of fish anglers reported catching, and reported catching and releasing, as many as 450 additional trout may have been caught and/or caught and released. Including all fish caught, reported caught, or reported caught and released, angler success was 0.42 fish per hour.

The mean length of rainbow trout in the creel was 30.3 cm (11.9 inches). The largest fish observed was a rainbow trout measuring 35.5 cm fork length (14 inches), which was caught on opening weekend. The initial plants of catchable trout following the 1991 chemical treatment consisted of rainbow trout of approximately 1 pound each in weight (R. Decoto, pers.comm.), thus about 900 lbs. of trout were caught and removed from Little Last Chance Creek by anglers.

The places of residence for anglers at Little Last Chance Creek was generally the same as that of the general recreationists. About 56 percent were from Nevada. Residents of the Northeast Counties made up 14 percent, with 14 percent also coming from the Sacramento Valley and 12 percent from the San Francisco Bay Area (Figure 3).

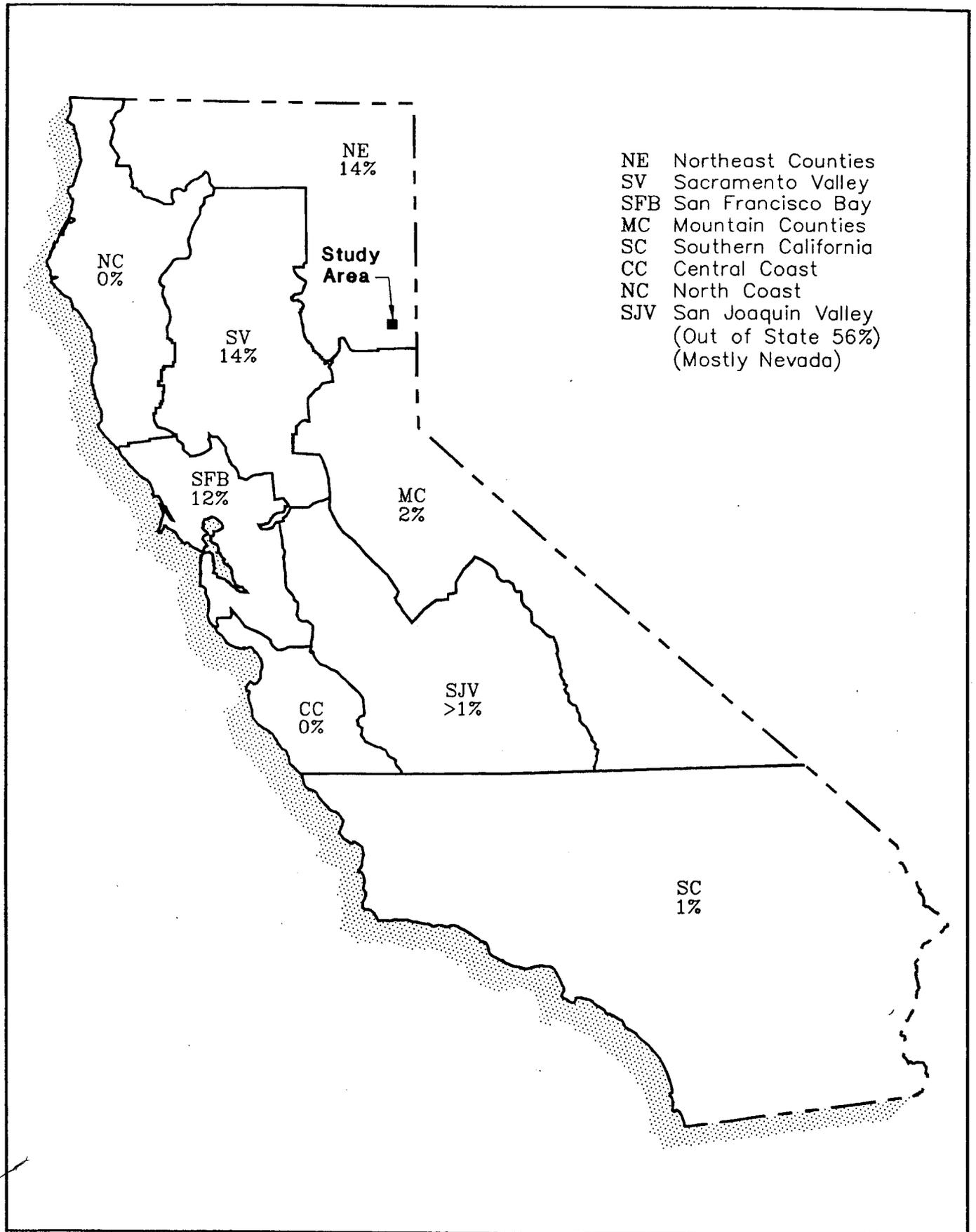


Figure 3 - Little Last Chance Creek Angler Origin By County Groups in 1992.

DISCUSSION

Understanding the limitations of the recreation use survey and the creel census helps put the data obtained in the proper perspective. This section describes the survey limitations and compares estimates of recreation use at Frenchman Reservoir and Little Last Chance Creek with the forecasts that were made when the project was planned more than 30 years ago. The 1991 rotenone treatment and a persistent drought are also two significant factors which affected the use and fishery of the creek and these are discussed below.

Limitations of Use Counts and Creel Census

Most recreationists using the creek were easily observed during the use counts. The most difficulty we encountered in making the use counts was at Chilcoot Campground, because not everyone there was always visible. Some people may have been temporarily out of sight during use count periods; perhaps inside travel trailers, restrooms, or other locations not visible to the surveyor.

Most vehicles along Little Last Chance Creek can be associated with recreationists, construction workers, or U.S. Forest Service workers. However, people were not found for some vehicles during the use count periods. We interviewed about 23 percent of the recreationists we saw at Little Last Chance Creek during 1992 and censused about 9 percent of the estimated hours of fishing use.

In general, it was our impression that much of the recreation use at Chilcoot Campground was not directly related to Little Last Chance Creek. To a large degree, the campground is a place to "get away" and "relax" for residents of the greater Reno/Sparks urban area.

Recreation surveys that DWR conducted at Big Grizzly Creek (J. Brown 1992) and Indian Creek (J. Brown 1990) in earlier years showed that a large proportion of visitors to these creeks were from Plumas County (64 and about 30 percent, respectively). Plumas County visitors to Little Last Chance Creek in 1992 totaled only 11 percent of the general recreationists and 8 percent of the anglers.

Comparison of 1992 Survey Results with 1988 Survey

The sport fishery of Little Last Chance Creek was completely destroyed in 1991. To eradicate a population of northern pike found in Frenchman Reservoir, the Department of Fish and Game chose to chemically treat the reservoir and subsequently Little Last Chance Creek. The treatment affected the entire length of the creek on June 12, 1991.

Stream recreation use was dramatically less in 1992 than in 1988 (Table 2). Total recreation hours for 1988 were 113,000. This fell to 70,000 hours in 1992, a decline of 31 percent. Fishing hours fell from 7,400 to 3,500, a decline of 53 percent. Estimated catch for 1992 was 900 rainbow trout (0.28 trout per hour) and no brown trout. Total estimated catch for 1988 was 3,230 rainbow trout (0.44 trout per hour) and 840 brown trout (0.11 trout per hour).

Over 1,800 catchable rainbow and brown trout were planted in July 1991. Another 1,000 catchable rainbow trout were planted by DFG on April 17, 1992 in preparation for opening weekend of trout season. This would account for the increase in average size of rainbow trout caught in 1992, which was 30.3 cm (11.9 in), compared to an average of 21.4 cm (8.4 in.) In 1988. The absence of browns in the creel census has not been explained (over 1,300 were planted in summer 1991). However, the estimated 1992 catch of 900 rainbow trout represents a surprisingly high percentage of planted fish recovered by anglers.

Overall, recreation for Little Last Chance Creek in 1992 reflected the loss of angling related use and its influence on other activities. Camping at the creek was about the

same, but all other significant activities showed less participation. Day use by people not camping along the creek fell from 36 percent of total use in 1988 to 8 percent in 1992. Activities such as swimming, wading, and walking for pleasure have all decreased according to the 1992 recreation survey (Table 2). These decreases probably reflect both decreased angling quality/success and lower flows resulting from drought conditions.

Table 2
Comparison of Recreation Hours by Activity
at Little Last Chance Creek 1988 and 1992

Activity	Recreation Hours - 1988	Recreation Hours - 1992
Camping	46,000	46,000
Relaxing	45,000	10,600
Fishing	7,400	3,500
Wading/Swimming	3,700	2,600
Sightseeing	2,900	1,500
Walking	2,200	1,300
Miscellaneous	5,800	4,500
Total	113,000	70,000

Comparison of Survey Results with Previous Estimates

In general, recreation use at the Upper Feather River reservoirs (Antelope, Davis, and Frenchman) has far exceeded the estimates made when these projects were planned (DWR 1974 and DWR 1989). For example, the cumulative total use at Frenchman Reservoir from 1962 through 1992 is about 7.5 million recreation days. The planning estimates for the same period total only 3.4 million recreation days. Thus, the actual use to date has more than doubled the predicted use.

Since Frenchman Reservoir was not operated specifically for downstream fishery and recreation purposes, the lower reaches of Little Last Chance Creek were expected to provide poor angling and associated recreation under project conditions (DWR, 1957). Consequently, stream recreation use was expected to be minimal. The loss of recreation potential here was expected to be replaced by the increased stream recreation potential provided by the Indian Creek Project (Antelope, Abbey Bridge, and Dixie Refuge Reservoirs).

However, Little Last Chance Creek has proven to be a significant recreation resource. Construction of Chilcoot Campground about 1970 provided a facility for people who preferred to camp or picnic there rather than at Frenchman Reservoir. In addition, the stream fishery proved to be better than expected, considering the relatively erratic flow releases required to meet irrigation needs.

Table 3

Comparison of General Recreation, Fishing Use, and Angling Quality on Little Last Chance Creek and other local SWP Facilities

	1992 LLC Creek	1990 Indian Creek	1991 Big Grizzly Creek
Recreation Use (Hours)	70,000	15,700	3,700
Fishing Use (Hours)	3,500	6,200	800
Angling Quality (trout caught per hour)	0.34	0.63	1.22

- Estimates for Little Last Chance Creek from Pages 8-10 of this report and based on 5.2 miles of stream.
- Estimates for Indian Creek from J. Brown (1990) (TIR No. 90-1) and based on 11.1 miles of stream.
- Estimates for Big Grizzly Creek from J. Brown (1992) (TIR No. 92-2) and based on 4.25 miles of stream.

Planning estimates of recreation use at Frenchman Reservoir and Little Last Chance Creek with and without the project are summarized in Table 4. Estimated use for Little Last Chance Creek includes the use on the several miles of stream inundated by the reservoir.

Table 4
Estimated and Actual Recreation Use of Frenchman Lake and
Little Last Chance Creek (in recreation days)

Year	Frenchman Reservoir		Little Last Chance Creek	
	Estimated Use	Actual Use	Estimated Use	Actual Use
1962	32,000	30,000	1,400	Unknown
1963	61,000	105,000	1,500	Unknown
1970	100,000	397,000	2,000	Unknown
1975	114,000*	148,000	2,500*	Unknown
1980	127,000	188,000	3,000	Unknown
1985	136,000*	289,000	4,000*	Unknown
1988	142,000*	230,000	4,600	18,000
1990	146,000	240,000	5,000	Unknown
1992	150,000*	300,000	5,200*	14,000

* Interpolated figures.

Sources:

- Frenchman Reservoir and Little Last Chance Creek estimated use from DWR (1968). Little Last Chance Creek estimates represent streamside recreation use without the project. Estimated streamside use with the project was expected to be minimal.
- Frenchman Reservoir actual use from DWR (1989) and subsequent updated data.
- Little Last Chance Creek actual use from Page 8 of this report.

ACKNOWLEDGMENTS

Student Assistant Julie Brown conducted most of the use counts, creel census and interviews. Environmental Specialist Douglas Rischbieter and Volunteer Student Assistant/Intern Grant Blinn collected this data on several survey dates. Thanks to Mike Serna for preparing the figures and Lori Miles who typed the text and tables.

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Appendix I

Recreation Survey Schedule for Little Last Chance Creek

April 25, 1992 to November 15, 1992

Date	Holiday Period (HD) Normal Weekend (WE) Normal Weekday (ED)	Survey Stratum
April 25 April 26 April 30	WE WE WD	I I IV
May 5 May 23 May 24 May 29 May 30 May 31	WD HD HD WD WE WE	IV II II IV III III
June 5 June 13 June 16 June 21 June 25	WD WE WD WE WD	IV III IV III IV
July 4 July 13 July 14 July 25 July 26 July 27	HD WD WD WE WE WD	IX VI VI V V VI
August 2 August 10 August 14	WE WD WD	V VI VI
September 6 September 11 September 12	HD WD WE	IX VIII VII
October 3 October 4 October 23 October 24	WE WE WD WE	X X VIII VII

Appendix II

1992 Use Count Schedule

for Little Last Chance Creek

Date	Daylight Hours	Use Counts		Creel Census Time (approx.)
		Count	Time	
April-August PDT	16-1/2	1st	0700-0800	0800-1300
		2nd	1000-1100	
		3rd	1300-1400	
		4th	1600-1700	
		5th	1900-2000	
September PDT	14	1st	0730-0830	0830-1230
		2nd	1000-1100	1330-1730
		3rd	1230-1330	
		4th	1500-1600	
		5th	1730-1830	
October PDT	13	1st	0800-0900	0900-1230
		2nd	1000-1100	1300-1700
		3rd	1230-1330	
		4th	1500-1600	
		5th	1700-1800	
November	No counts were scheduled in November, although the study period continued through November 15.			

Appendix III

CREELED RAINBOW TROUT

LITTLE LAST CHANCE CREEK 1992

