State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

FISHING SUCCESS ON CALIFORNIA WILD TROUT WATERS IN 1990-91: REPORTS FROM ANGLER BOX SURVEYS

by

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INTRODUCTION

The California Department of Fish and Game (Department) has historically relied largely upon fish population and angling surveys to select and manage California's quality wild trout waters. Since 1971, the number of waters designated for wild trout management has increased to over 50; as a result, it has become increasingly difficult to fund and conduct the needed surveys. In 1985, the Department began to recruit volunteers to assist in conducting fish population surveys. The program proved to be successful and has been used annually since that time.

To supplement angler surveys, a second experimental program, involving the use of mail-in angler-survey questionnaires, was also conducted in 1985. This program was limited to Hot Creek (Mono County) and was conducted in cooperation with the U.S. Forest Service. During their regular patrols of the area, personnel from the Mammoth Ranger District placed questionnaires on the windshields of vehicles belonging to anglers fishing the stream. This program also proved to be successful and has been conducted annually since 1985. However, the subsequent use of windshield questionnaires on three other waters was largely unsuccessful, because of distribution problems or low return rates.

The use of voluntarily completed and returned angler surveys on wild trout waters in California, with the exception of Hot Creek, was not tried again until 1989. That year, three angler survey boxes were installed at the primary trailheads leading into Bear Creek, a canyon stream in southern California. The project worked, and, in 1990, angler survey boxes were tried on 26 waters statewide. In 1991, an additional five waters were surveyed.

This report presents a two-page summary of results from each of the 31 waters surveyed in 1990-91, and was compiled for both Department biologists and anglers interested in wild trout waters. A second report is being prepared which will cover results statewide, rather than on individual waters, and will also present 1990-91 angler satisfaction data.

METHODS

Survey data were obtained at the end of a day's fishing by using questionnaires supplied through self-serve angler survey boxes. Data requested included date, number of hours fished, gear type used (i.e. bait, lure, fly), species and estimated lengths of trout kept or released, and ratings of personal satisfaction with the overall angling experience for the day, the number of trout caught, and the size of the trout caught (Figure 1). On some streams, anglers were asked to indicate the reach of water fished, or to record information only for a given reach. On lakes, the angling method used (i.e. shore, boat, or float tube) was requested.

Rubicon River Angler Survey

The Department of Fish and Game is conducting an evaluation of the wild trout fishery of the Rubicon River. We request your help in this evaluation by providing the following information in this survey. Please use this form for one day's fishing on the Rubicon River by one angler only.

Date fished _____ Number of hours fished_____

Check one gear used primarily: bait _____ lure _____ fly _____

Number of brown trout caught _____ kept _____ released _____

Number of rainbow trout caught _____ kept _____ released _____

SIZE OF FISH
Enter number of each species caught by sizes

	Brown Trout		Rainbow Trout	
	Kept	Released	Kept	Released
Less than 6"	_____	_____	_____	_____
6" - 7.9"	_____	_____	_____	_____
8" - 9.9"	_____	_____	_____	_____
10" - 11.9"	_____	_____	_____	_____
12" - 13.9"	_____	_____	_____	_____
14" and greater	_____	_____	_____	_____

Please indicate your satisfaction with the following statements regarding this fishery by circling the number which most closely reflects your feelings.

	Not satisfied				Satisfied
1. Overall angling experience this day	-2	-1	0	+1	+2
2. Size of trout	-2	-1	0	+1	+2
3. Number of trout	-2	-1	0	+1	+2

If you wish to provide additional comments please use the reverse side of this form.

Thank you for your cooperation

FIGURE 1. Typical angler box survey form.

The boxes used to distribute and collect survey forms were made of either 1/4- or 1/2-inch steel and mounted on a 4 X 4-inch steel post placed in concrete to reduce vandalism. The boxes were divided into an upper compartment containing forms and pencils and a lower compartment, into which the completed forms were deposited through a wide slot in the side of the box (Figure 2). The upper compartment was covered by a hinged overhanging lid. Access to the lower compartment was through a recessed, hinged floor secured by a padlock. Nuts, securing a U-bolt holding the box on the steel post, were inside the lower compartment. A sign on the front of the box requested anglers to fill out a form and place it into the box through the slot. The boxes were generally located at the access points to a stream or lake (i.e. trailheads, parking lots, boat ramps). One to three boxes were used per water depending upon the number of major access points. Boxes were maintained by volunteers from angler groups, personnel from other State or Federal agencies working in cooperation with the Department, or Department employees.

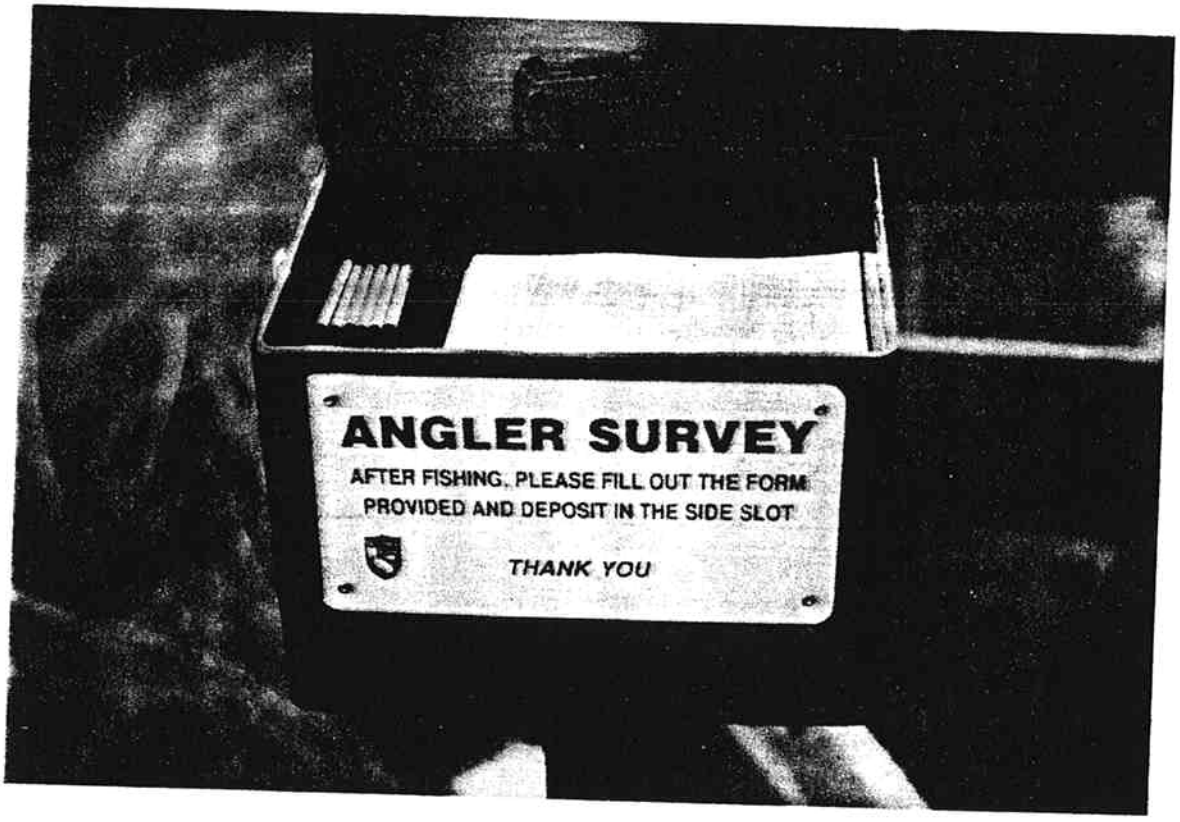


FIGURE 2. Angler survey box showing the instruction sign and top compartment.

Data from the questionnaires were entered and compiled using dBase IV. Incomplete or bogus forms were identified and separated at the time of entry. Bar graphs present in this report were created with Harvard Graphics version 2.3.

WEST SLOPE SIERRA NEVADA WATERS

The west slope of the Sierra Nevada extends over 300 miles from the Feather River drainage in the north to the Kern River drainage in the south (Figure 34). The 11 waters surveyed, two lakes and nine streams, are scattered through nine drainages. Eight of the 11 waters, the Rubicon River, North Fork Stanislaus River, Lake Eleanor, Tuolumne River, Middle Fork San Joaquin River, South Fork Kings River, Marble Fork Kaweah River, and the three reaches of the upper Kern River, are considered walk-in or trailside waters. Yellow Creek (Figure 35), Milton Lake and the majority of the upper Kings River are roadside waters.

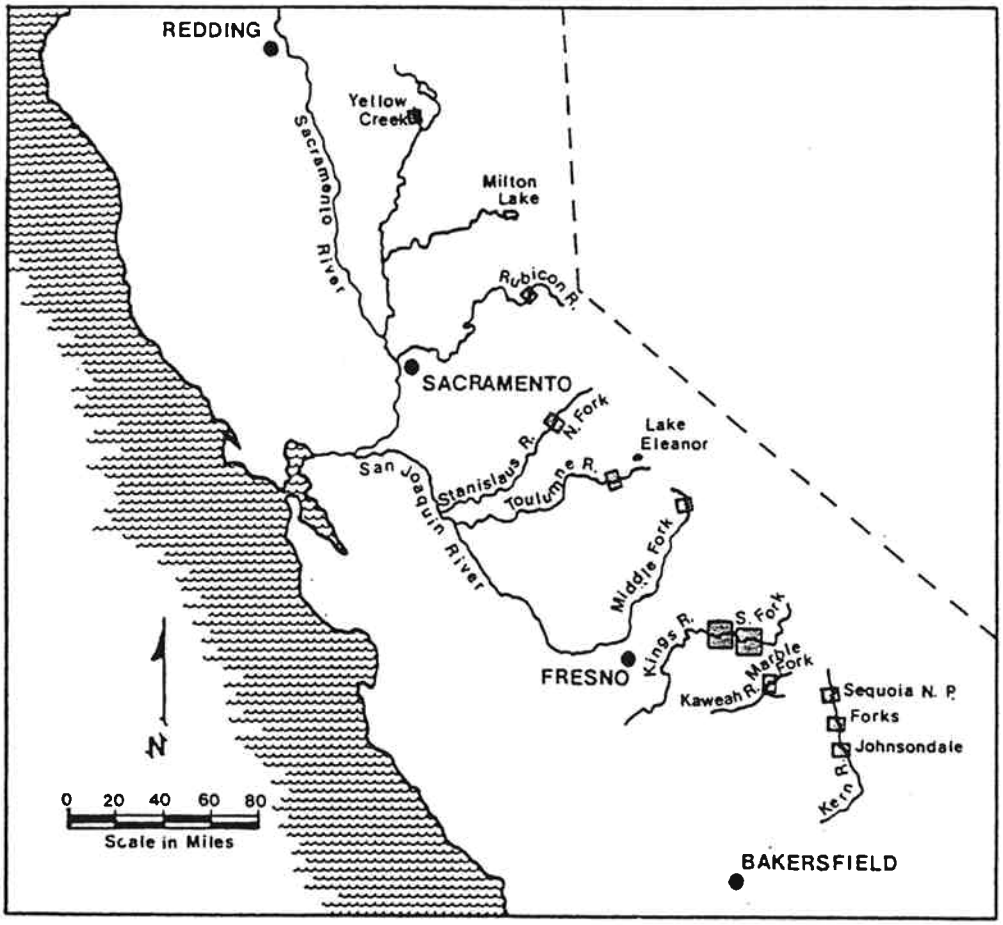


FIGURE 34. Locations of waters surveyed on the west slope of the Sierra Nevada.

Most west-slope waters offer both rainbow and brown trout angling. The upper Kern River (Figure 36) is home to a native subspecies of rainbow trout, the Kern River rainbow trout. With the exception of three trophy-trout waters, Milton Lake, Lake Eleanor, and the upper Kings River, the west slope fisheries generally provide angling for small- to medium-size trout.

Rubicon River

The Rubicon River has been designated as a Wild Trout Stream from its confluence with the Middle Fork American River upstream to Hell Hole Reservoir. The lack of roads into the area and the rugged nature of the river valley tend to keep angler use low. Most of the fishing occurs near Ellicotts Bridge and along the trail upstream to Parsley Bar. A single angler survey box has been installed at the trailhead just upstream of Ellicotts Bridge. The river contains healthy populations of brown and rainbow trout, but seemingly few of trophy size. There are no special regulations on the water. The river falls within the Department's Sierra District, so the fishing season is only open from the last Saturday in April through November 15.

Results. For 1990 and 1991 combined, the catch was almost evenly split between rainbow and brown trout (Table 10). Size structure also was similar between the years, with trout <12 inches comprising 95% of the 1990 catch and 93% of the 1991 catch (Figures 45, 46, and 47). Angler reports by gear used were evenly distributed amongst bait, lure, and fly categories in 1990. The number of reports from fly anglers remained essentially the same in 1991, while bait and lure fishing increased significantly (Table 10). There was also a relatively large number of multiple gear users in 1991. The catch rate for lure fishermen was nearly double that of the next highest category in both years. Anglers kept 49% of the ≥8-inch trout and 5% of the <8-inch trout caught in 1990-1991 (Figures 48 and 49). Six of the 72 anglers fishing in 1990-1991 caught >10 trout/day (Figure 50).

Table 10. Success by Bait, Lure, and Fly Anglers at Rubicon River in 1990 and 1991.

	Bait		Lure		Fly		Multiple		Combined	
	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991
Surveys received	7	12	8	17	8	9	-0-	11	23	49
Hours fished	34.5	55.25	23.2	63.5	27.25	30.5	-	36.75	84.95	186
Brown trout kept	3	5	5	7	1	0	-	1	9	13
Brown trout released	9	1	24	65	7	18	-	5	40	89
Total brown trout	12	6	29	72	8	18	-	6	49	102
Rainbow trout kept	12	9	4	11	0	3	-	1	16	24
Rainbow trout released	11	7	13	47	17	15	-	0	41	69
Total rainbow trout	23	16	17	58	17	18	-	1	57	93
Overall catch/hour	1.01	0.40	1.98	2.05	0.92	1.18	-	0.19	1.25	1.05
Mean trout/angler	5.0	1.8	5.8	7.6	3.1	4.0	-	0.6	4.6	4.0

Management Implications. The data indicate that anglers are keeping the majority of trout >10 inches. This will deplete the number of larger trout and suggests the need for a maximum size limit. A ban on bait fishing would then be appropriate to ensure better survival in released fish. The increased number of surveys received in 1991 was probably due to irregular survey box maintenance in 1990 and does not reflect increased angler use of the area. Further monitoring will be necessary to determine fish population and angler usage trends for the river.

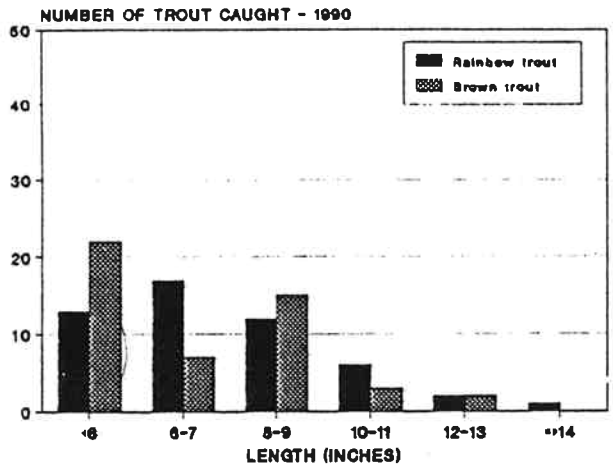


FIGURE 45. Number and lengths of rainbow and brown trout anglers reporting catching at the Rubicon River in 1990.

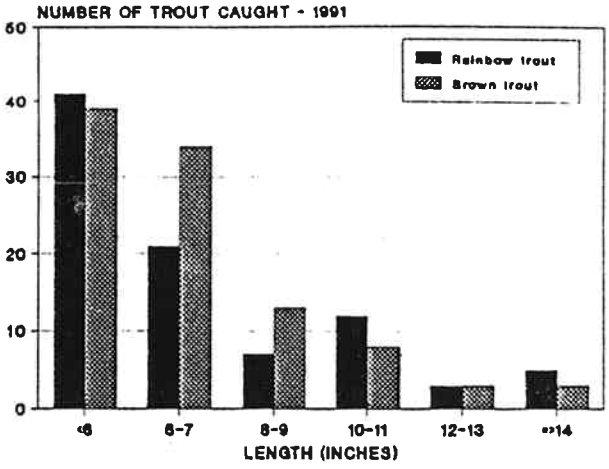


FIGURE 46. Number and lengths of rainbow and brown trout anglers reported catching on the Rubicon River in 1991.

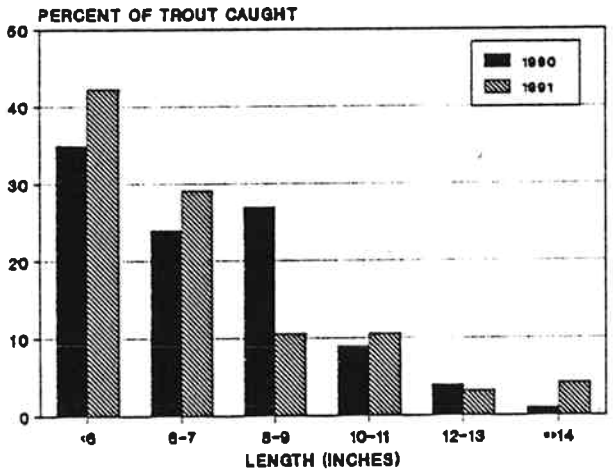


FIGURE 47. Comparison of the lengths of trout anglers reported catching on the Rubicon River in 1990 and 1991.

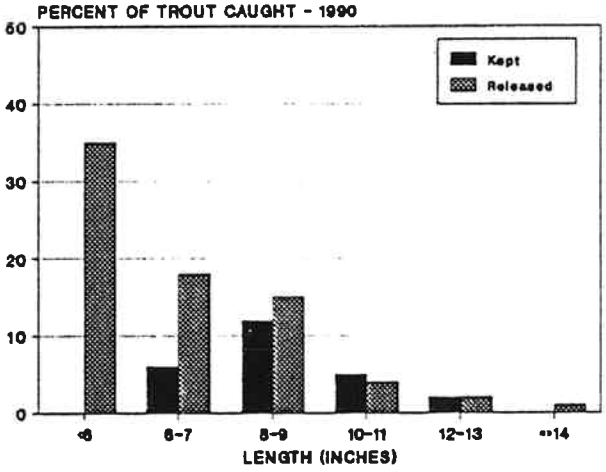


FIGURE 48. Number and lengths of trout anglers reported keeping or releasing at the Rubicon River in 1990.

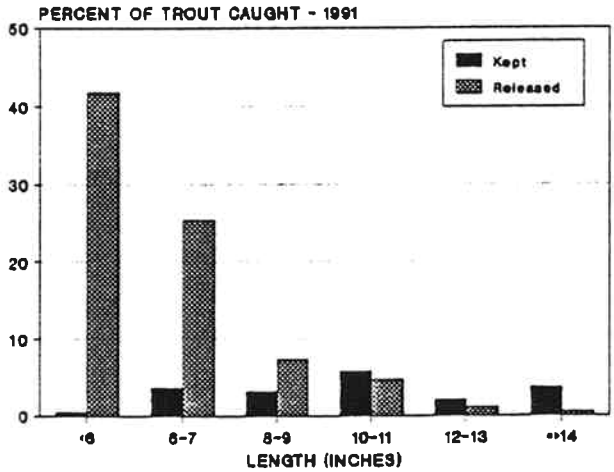


FIGURE 49. Number and lengths of trout anglers reported keeping or releasing at the Rubicon River in 1991.

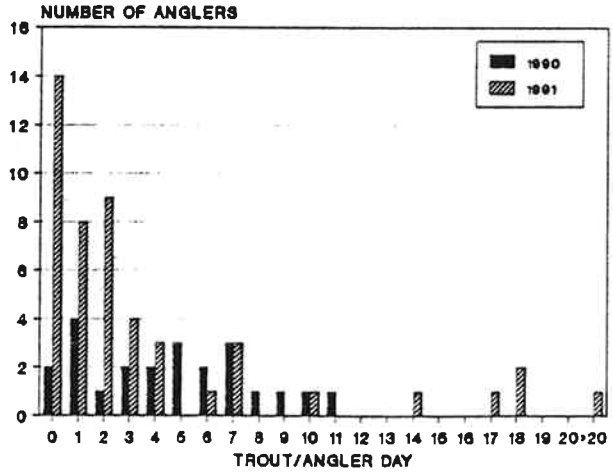
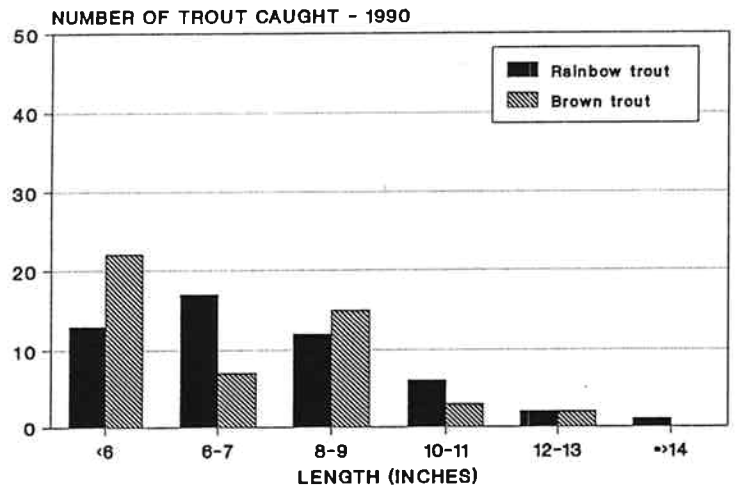
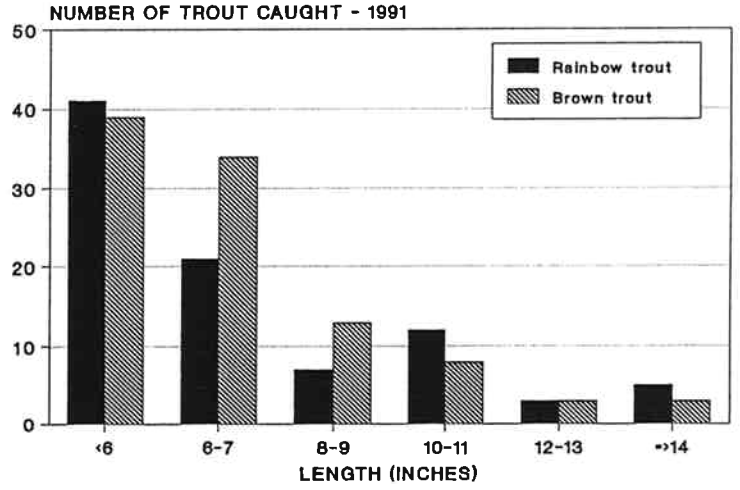


FIGURE 50. Percent of anglers reporting catches of zero to >20 trout per day on the Rubicon River in 1990 and 1991.

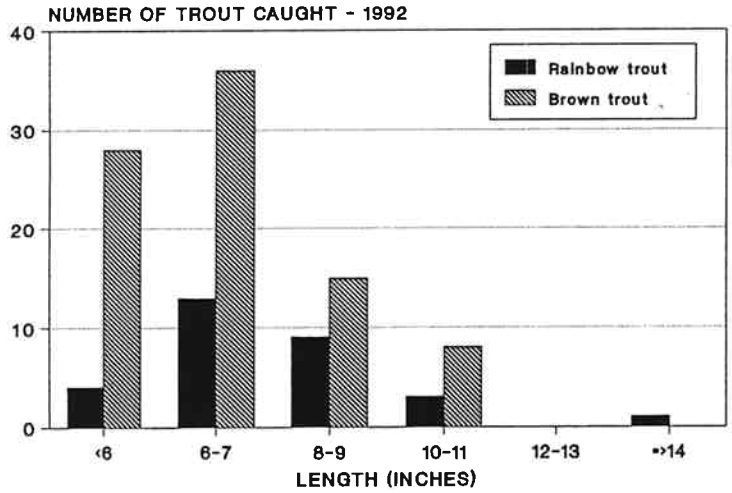
RUBICON RIVER - 1990
Lengths of Trout Caught



RUBICON RIVER - 1991
Lengths of Trout Caught



RUBICON RIVER - 1992
Lengths of Trout Caught



RUBICON RIVER - 1990-1992
Lengths of Trout Caught