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CENTRAL VALLEY SALMON AND STEELHEAD SPORT CATCH, 1964-65 1/

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SUMMARY

The Marine Resources Branch conducted a salmon sport catch census in the Central Valley during the 1964-65 season. A steelhead sport catch census was conducted on the Sacramento River. Sampling was conducted on a predetermined, systematic pattern.

The major part of the Sacramento River salmon sport catch was landed at 50 fishing resorts and 10 public boat launching ramps in the Keswick Dam - Clarksburg area. All of these resorts and ramps, plus five major bank fishing sites, were included in the census.

The number of salmon and steelhead landed each month was the sum of landings reported by all resort operators, plus estimates of landings at boat ramps and bank fishing sites sampled.

Angling effort and success was obtained by sampling at public boat ramps, bank fishing sites and fishing resorts (October - December).

Sacramento River salmon landings were 15,800 fish, including 9,980 fall-run and 5,820 winter and spring-run salmon. There were 72,400 angler-days spent in pursuit of salmon.

Estimated fall-run salmon landings in other streams included in the census were as follows:

Feather River	865	Mokelumne River	80
American River	170	San Joaquin River	25

Spring-run salmon landings in Butte Creek were 270 fish.

Sacramento River adult steelhead landings were 15,470 fish. There were 74,450 angler-days spent in pursuit of steelhead.

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Marine Resources Administrative Report No. 66-5

by
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INTRODUCTION

This paper presents the results of a king salmon, Oncorhynchus tshawytscha, and steelhead rainbow trout, Salmo gairdnerii gairdnerii sport catch census conducted in the Central Valley during the 1964-65 season. Sampling was conducted on a predetermined, systematic pattern.

METHODS

The Sacramento River was divided into the following sampling areas: Keswick Dam to Anderson, Anderson to Red Bluff, Red Bluff to Hamilton City, Hamilton City to Knights Landing, and Knights Landing to Clarksburg. Each area contained at least one public boat launching ramp. Except for the Keswick Dam to Anderson area, each also contained a number of privately-owned fishing resorts. Three areas contained major bank fishing sites.

There were 50 fishing resorts and 10 public boat launching ramps which salmon and steelhead anglers used in the Keswick Dam - Clarksburg area. All of these resorts and ramps were included in the census. Landings at five major bank fishing sites were also sampled.

From about the middle of September through December, two samplers were assigned to the Anderson - Red Bluff area because it contained three public boat ramps and two major bank fishing sites. One of these samplers was later assigned to the Keswick Dam - Anderson area when it was opened to salmon fishing on January 1. One sampler was assigned to each of the three other areas. From about the middle of September 1964 through April 1965, five samplers were assigned to the Sacramento River. During the rest of the year, two samplers were assigned to the river.

Samplers spent three days each week - Saturday, Sunday and one weekday - interviewing salmon and steelhead anglers at public boat ramps and bank fishing sites. Fishing effort and success was determined by sampling at these locations. On Monday and Friday of each week, samplers visited fishing resorts to obtain the operators' count of salmon and steelhead landed since the sampler's last visit. Many resort operators kept records of salmon and steelhead landed by their customers as a matter of interest, and were pleased to make these records available to the samplers. However, resort operators did not record angling effort. During the fall, additional samplers interviewed anglers at fishing resorts as part of a study on the economic values of Sacramento River salmon and steelhead

sport fishing. One sampler was used in October and two samplers were used during November and December. Effort and success of some resort anglers was obtained during this period. During the rest of the year, angling effort at resorts was estimated from information collected at boat ramps and bank fishing sites. Salmon and steelhead landings at boat ramps and bank fishing sites were determined by sampling on a systematic pattern. Generally, landings were sampled at each boat ramp and bank fishing site on every other Saturday and Sunday, and on at least one weekday each week. Landings on weekends when samples were not taken were determined by averaging the landings on the Saturday and Sunday in the previous and subsequent weeks. Holidays were considered equal to Sundays with respect to angler success.

Landings for the five weekdays in each week were determined from the one weekday that was sampled; i.e., angler success on all weekdays in a particular week was considered equal. Landings for weekdays, during a week in which a weekday was not sampled, were determined by averaging the landings on the weekdays sampled in the previous and subsequent weeks.

Sampling in other Central Valley streams was conducted on a limited creel census and spot check pattern because of the comparatively light fishing pressure on some of the streams. One sampler was assigned to the American, Feather, Yuba, San Joaquin, Mokelumne and Tuolumne Rivers. One sampler was assigned to Butte Creek.

Salmon landings in the above streams were sampled at public boat ramps when present, and at bank fishing sites. Counts of salmon landed at fishing resorts were obtained when available. Salmon landings on days when no sample was taken were determined by the method used for estimating Sacramento River landings.

SALMON FISHERY

The number of salmon landed each month in the Sacramento River was the sum of counts reported by all resort operators plus estimated landings at all public boat ramps and bank fishing sites sampled (Table 1).

Angling effort and success, derived from sampling at boat ramps, bank fishing sites and fishing resorts (October - December) was used to compute angler-days from total salmon landings.

December 31 was chosen as the end of fall-run salmon landings because most fall-run salmon have spawned and died by that time. Landings of winter and spring-run salmon were not separated. Salmon fishing was curtailed by high, muddy water and bad weather during most of January and February.

Salmon landings in other Central Valley streams were estimated from spot checks and limited creel census (Table 2).

STEELHEAD FISHERY

The number of steelhead landed each month in the Sacramento River was the sum of counts reported by all resort operators plus estimates of landings at all public boat ramps and bank fishing sites sampled (Table 3).

TABLE 1
ESTIMATED SACRAMENTO RIVER SALMON SPORT CATCH AND ANGLING EFFORT, 1964-65

Month	Anglers interviewed	Hours fished	Salmon landed by anglers interviewed	Average catch per angler-day	Average hours per completed angler-day	Total salmon landed	Days per salmon	Angler-days
July 1964	12	80	8	-	-	180	-	1,260*
August	214	1,010	32	.14	4.4	700	7	4,900
September	362	1,720	134	.37	4.8	2,310	3	6,930
October	1,062	5,440	246	.23	5.1	4,500	4	18,000
November	462	1,820	73	.16	4.1	1,440	6	8,640
December	194	830	21	.11	4.3	850	9	7,650
FALL RUN:								
Totals	2,306	10,900	514	-	-	9,980	-	47,380
Averages (from totals)	-	-	-	.22	4.7	-	4	-
January 1965	105	330	23	.21	3.0	110	5	550
February	162	610	24	.10	2.5	420	10	4,200
March	838	3,830	182	.22	4.6	3,780	4	15,120
April	583	2,670	188	.32	4.5	1,200	3	3,600
May	125	530	25	.19	4.1	250	5	1,250
June	16	50	-	-	2.9	60	-	300**
WINTER AND SPRING RUN:								
Totals	1,829	8,020	442	-	-	5,820	-	25,020
Averages (from totals)	-	-	-	.23	4.2	-	4	-
SEASON:								
Totals	4,135	18,920	956	-	-	15,800	-	72,400
Averages	-	-	-	.23	4.5	-	4	-

* Based on 7 days per salmon.

** Based on 5 days per salmon.

TABLE 2

ESTIMATED SALMON SPORT CATCH IN OTHER CENTRAL VALLEY STREAMS, 1964-65

Month	Butte Creek <u>1/</u>	Feather River <u>2/</u>	Yuba River <u>3/</u>	American River <u>4/</u>	Mokelumne River <u>5/</u>	San Joaquin River <u>6/</u>	Tuolumne River <u>7/</u>
Sept. 1964	-	150	-	-	-	-	-
Oct.	-	700	-	170	70	20	-
Nov.	-	15	Closed Oct. 16- Dec. 15	0	10	5	-
Dec.	-	0	-	0	0	0	-
Jan. 1965	-	-	-	-	-	-	-
Feb.	15	-	-	-	-	-	-
Mar.	200	-	-	-	-	-	-
Apr.	55	-	-	-	-	-	-
Totals	270	865	-	170	80	25	-

0 Indicates sampling and no fish.

- Indicates no fishing or no sampling.

- 1/ The area between Durham and Centerville Powerhouse was covered by car on Saturday, Sunday and three weekdays each week. The area downstream from Durham was covered by car at least once a week. Salmon landings were sampled at major access points. Salmon reported landed but not seen by the sampler were included.
- 2/ Landings were sampled at major access points and public boat ramps every third Saturday and Sunday, and one weekday each week. Landings reported by the caretakers at two public ramps near Yuba City were included.
- 3/ Spot checks revealed no landings, and no landings were reported.
- 4/ The area from Jibboom St. to Arden Way was covered by car every third Saturday and Sunday, and one weekday each week. Landings were sampled at major access points. Salmon landed by boat fishermen in the lower American River and recorded at fishing resorts or sampled at public boat ramps on the Sacramento River were not included. Some salmon landed in the lower American River are included in Sacramento River landings.
- 5/ Salmon landings were sampled at major access points in the Woodbridge - Thornton area on the days that San Joaquin River landings were sampled. Counts of salmon landed at fishing resorts near Thornton were obtained each week.
- 6/ Salmon landings were sampled at major access points every third Saturday and Sunday, and one weekday each week. Counts of salmon landed at fishing resorts in the Mossdale - Vernalis area were obtained each week.
- 7/ Spot checks revealed no landings, and no landings were reported.

TABLE 3
ESTIMATED SACRAMENTO RIVER STEELHEAD SPORT CATCH AND ANGLING EFFORT, 1964-65

Month	Anglers interviewed	Hours fished	Steelhead ^{1/} landed by anglers interviewed	Average catch per angler-day	Average hours per completed angler-day	Total steelhead landed	Days per steelhead	Angler-days
July 1964	39	180	-	-	4.6	10	-	90*
August	86	340	-	-	4.0	110	-	990*
September	175	640	19	.11	3.6	1,140	9	10,260
October	405	1,640	120	.28	3.9	3,370	4	13,480
November	475	1,580	128	.29	3.6	2,840	3	8,520
December	153	520	25	.16	3.4	1,190	6	7,140
January 1965	24	70	4	.16	2.8	50	6	300
February	56	160	2	-	3.0	110	-	770**
March	141	430	6	-	2.2	240	-	1,630**
April	64	210	9	.14	3.3	120	7	840
May	90	320	16	.18	3.5	90	6	540
June	45	180	-	-	4.1	10	-	60***
Totals	1,753	6,270	329	-	-	9,280	-	44,670
Averages (from totals)	-	-	-	.19	3.6	-	5	-
Adjusted seasonal totals ^{2/}	-	-	-	-	-	15,470	-	74,450

^{1/} Fish 14 inches and over in fork length.

^{2/} Seasonal steelhead landings were increased by two thirds to include landings by anglers from private boat docks and those using automobiles to reach the fishing area.

* Based on 9 days per steelhead.

** Based on 7 days per steelhead.

*** Based on 6 days per steelhead.

Angling effort and success derived from sampling at boat ramps, bank fishing sites and fishing resorts (October - December) was used to compute angler-days from total steelhead landings.

While most of the salmon are landed by anglers from fishing resorts and by anglers using public boat ramps, many steelhead are landed by anglers who either walk or drive to riffles and fish from shore. These steelhead anglers were not sampled. Dralle (1965) estimated that these shore anglers and those using private boat docks take 40 percent of all steelhead landed. Adjusted steelhead landings were obtained by increasing the seasonal total by two-thirds 3/(i.e., boat catch=60%, shore catch=40%) (Table 3).

RESULTS

During the 1964-65 season, Sacramento River salmon landings were 15,800 fish. This includes 9,980 fall-run and 5,820 winter and spring-run salmon. The average salmon angler fished 4.5 hours per day and four days per salmon landed. There were 72,400 angler-days spent in pursuit of salmon.

Total Sacramento River salmon landings were up 860 fish from 1963-64 landings. Fall-run landings were up 3,160 (46 percent) salmon from the previous year, while winter and spring-run landings were down 2,300 (28 percent) fish from the previous year. Fishing pressure was light on winter-run salmon during January and February because of high water. During the 1963-64 season, salmon anglers fished 122,740 days while landing 14,940 salmon.

Estimated fall-run salmon landings in other streams included in the census were as follows:

Feather River	865	Mokelumne River	80
American River	170	San Joaquin River	25

Landings in Butte Creek were 270 spring-run salmon.

Sacramento River adult steelhead landings were 15,470 fish. The average steelhead angler fished 3.6 hours per day and approximately five days per steelhead landed. There were 74,450 angler-days spent in pursuit of steelhead.

Steelhead landings were up 4,750 (44 percent) fish from the previous year. During the 1963-64 season, steelhead anglers fished 73,880 days while landing 10,720 steelhead.

^{3/} Dralle, 1965, and Van Woert, 1965, each increased the steelhead catch as described above but incorrectly referred to the process as increasing the catch by 40%.

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