

DEF 910371

State of California
The Resources Agency
Department of Fish and Game
Marine Resources Branch

Survey Fall

LOWER SMITH RIVER ESTUARY CREEL CENSUS, 1965 1/

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SUMMARY

During the fall of 1965, a creel census was conducted in the lower Smith River estuary, Del Norte County. The primary objective was to estimate the total angler use and catch of salmon. The secondary objective was to determine if silver salmon (Oncorhynchus kisutch), planted during the summer months as catchables, migrated to the sea and returned as adults.

It was estimated that 47,536 hours were spent to catch 2,971 king salmon (Oncorhynchus tshawytscha) and 157 silver salmon between September 1 and November 30, 1965. Based upon limited data, the results indicate that silver salmon catchables migrated to the ocean and returned as adults.

(Complete report available upon request.)

1/ Marine Resources Administrative Report No. 68-3.

2/ Presently Associate Water Quality Biologist in Region 5.

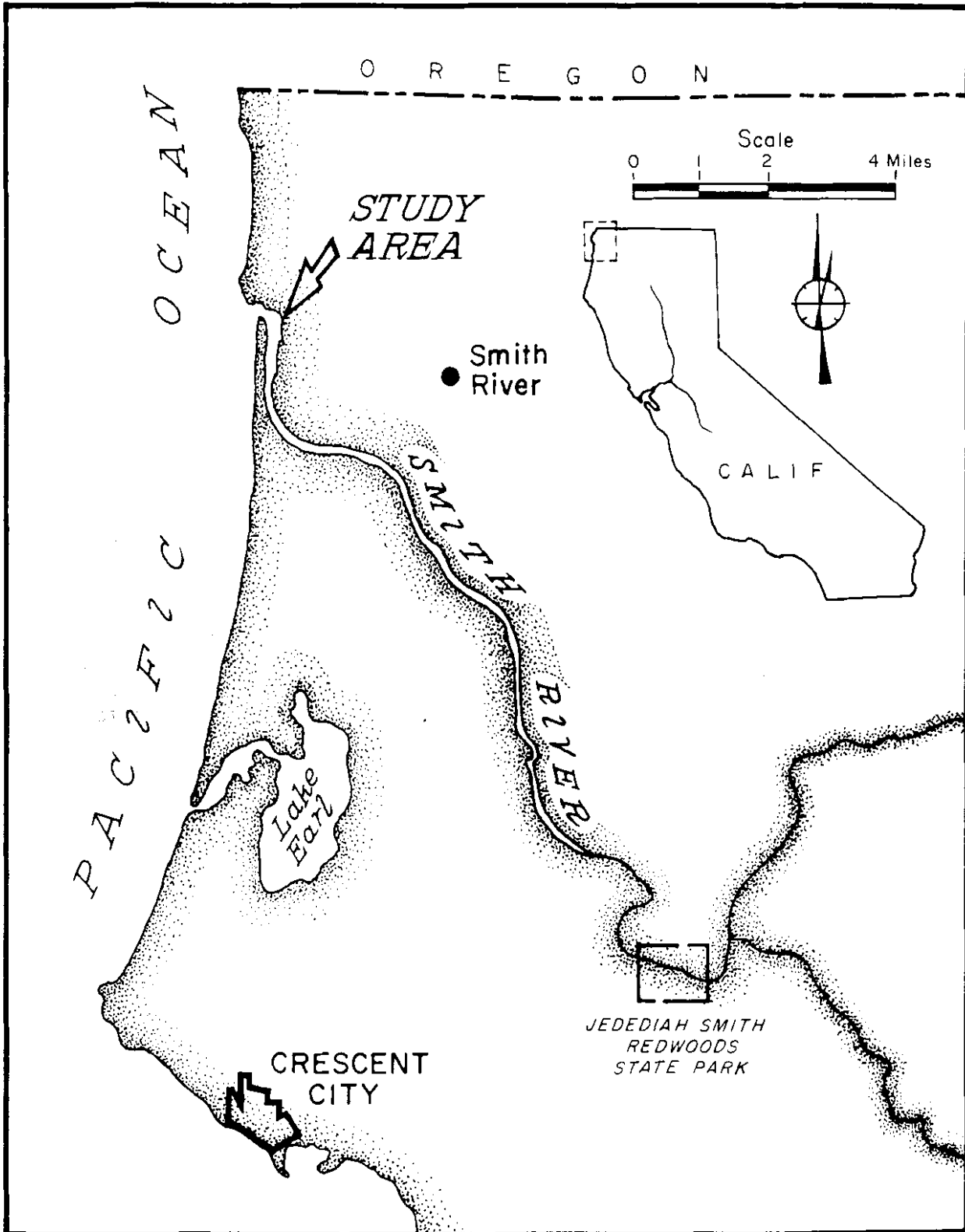


FIGURE 1. Map showing study area.

TABLE 1

Creel Census Data, Lower Smith River Estuary, 1965

	Boat	Shore	Total
Anglers interviewed	4,007	218	-
Angler-hours in sample	16,804	589	-
Catch per angler-hour ^{1/}			
King salmon	0.0596	0.0883	-
Silver salmon	0.0033	0.0034	-
Estimated total angler-hours	42,707	4,829	47,536
Estimated total catch			
King salmon adults	2,545	426	2,971
King salmon grilse ^{2/}	-	-	670
Silver salmon adults	141	16	157
Silver salmon grilse (under 23.0 inches fork-length)			100
Mark recoveries - silver salmon			
Adipose (Ad) ^{3/}	-	-	27
Right maxillary (RM) ^{4/}	-	-	4
Left maxillary (LM) ^{5/}	-	-	2
Greatest instantaneous use count of anglers- October 11, 1965 at 1600	204	47	-

Average angler day: 4 hours

Average number anglers per boat: 2

^{1/} Includes grilse.

^{2/} Included in estimated total catch.

^{3/} This mark was also used on silver salmon released in other California streams. California release 1963 Klaskanine strain brood-year, released February 1965.

^{4/} Smith River release 1962 Klaskanine strain brood-year, released summer 1964

^{5/} Smith River release 1963 Klaskanine strain brood-year catchables, released summer 1965.

INTRODUCTION

The Smith River estuary supports an important salmon sport fishery. Each fall, anglers gather at the mouth and lower estuary to fish for king salmon (Figure 1). This fishery is becoming more valuable as tourism and recreation activities increase on the North Coast of California.

Water development and levee building projects are scheduled for North Coast streams. It is essential that basic knowledge about these streams be obtained. To gain a segment of the basic knowledge, a creel census at the mouth of the Smith River was undertaken by Region 1 fisheries' personnel in 1965.

The primary objective of the census was to obtain an estimate of the total angler use and catch of salmon in the lower estuary area.

The secondary objective was to determine if marked silver salmon, released during the summer into the Smith River as catchable "trout", returned from the sea as adults.

METHODS

Creel Census

The census was begun on September 1, 1965 and was conducted daily through November 30, 1965. Angler interviews and use counts were conducted in the lower half-mile of estuary area. Boat anglers were interviewed one-quarter mile from the mouth at Ship-A-Shore Resort; shore anglers were interviewed at the north side of the mouth. Use counts were taken every two hours, between 0800 and 1800; anglers were interviewed between use counts. Two teams of one man each were used on an alternating basis to conduct the creel census. The estimate of total hours was derived by multiplying the total use count by two (two-hour count interval). The estimated total catch was derived by multiplying the catch per hour by the total estimated angling hours.

RESULTS

During the census 4,007 boat anglers and 218 shore anglers were interviewed. These boat anglers caught 1,002 king and 55 silver salmon and expended 16,804 angler-hours. The shore anglers expended 589 hours to catch 52 king and 2 silver salmon. The catch per hour was approximately 0.06 for kings by boat anglers and 0.09 by shore anglers. The catch per hour for silvers was roughly 0.003 for both groups (Table 1).

The estimated total fishing effort was 42,707 hours for boat anglers and 4,829 hours for shore anglers. This effort resulted in an estimated catch of 2,971 king and 157 silver salmon.

Six marked silvers released as catchables were checked. Four were adults which had been released in the summer of 1964 and two were fish from the 1965 summer release.

DISCUSSION

Census Accuracy

The results of the study indicate that the census takers sampled approximately one-third of the estimated total catch of king salmon. This high ratio of sampled catch to estimated catch is due to the heavy use of Ship-A-Shore Resort by boat anglers. Census takers easily checked large numbers of anglers at this location.

Use counts were also easily obtained because of the relatively small fishing area.

The peak of the king salmon fishing in terms of both catch and effort occurred during the first two weeks of October. Silver salmon usually run later than the kings and it is possible that the relatively low catch of silvers during the census period does not give a true picture of the total catch.

Quality of the Fishery

The total estimated salmon catch was not as large as expected and the resort owners considered the 1965 fishery to be poor. This belief appears to be justified by the low catch per hour of 0.06 for boat anglers and 0.09 for shore anglers. In contrast, during 1963, resort owners at the mouth of the Klamath River considered the salmon fishery to be good, and according to Mr. Earl Gibbs (personal communication), the catch per angler-hour was 0.1 salmon.

Silver Salmon Mark Recoveries

Catchables

During the summer of 1964, a catchable silver salmon program was initiated for the Middle Fork of the Smith River (Woodhull and King, 1965). This program was the result of Assembly Concurrent Resolution Number 99 (1963) which requested the Department to assume the responsibility of planting trout in the Smith River.

To comply with the resolution, the Department selected yearling silver salmon to provide a "trout" fishery. Silver salmon were chosen for the following reasons:

1. Silvers not caught by fishermen could migrate to the ocean and complete their normal life cycle.
2. Silvers were compatible with Fish and Game Commission Policy in regard to planting streams supporting anadromous fish populations.

Silver salmon planted during the summers of 1964 and 1965 were marked so an evaluation of the summer fishery could be undertaken. The 1964 plants which ranged in size from 5.2 to 6.0 fish per pound received a right maxillary (RM) clip; the 1965 releases which ranged from 5.3 to 6.5 fish per pound received a left maxillary (LM) clip. A total of 20,000 marked silvers was released each year. The release sites were from 15 to 40 miles above the mouth.

During the estuary census of 1965, a total of 19 adult silver salmon were checked. Among these, four were marked RM and 15 were unmarked.

Census clerks also recovered two LM marked silvers that measured 11 inches (fork-length). These fish were caught in the mouth of the river.

Even though the supporting data are limited, the information gathered indicates that catchable silvers escaping the summer fishery do migrate to the ocean and return as adults.

1963 Klaskanine Strain Brood Year

All 1963 brood-year silver salmon released in California were marked with an adipose (Ad) fin clip. The Smith River system received a plant of 40,000 Ad marked silver salmon in February of 1965.

Census takers observed 38 silver salmon jacks in the 1965 catch. Of the total, 27 had an Ad mark. This marked-to-unmarked ratio indicates that California hatchery-produced fish contributed significantly to the silver salmon jack fishery.

REFERENCES

Woodhull, Chester A., and Vernon King. 1965. Catchable trout management from intensive creel checks in Region 1, 1964. California Department of Fish and Game, Inland Fisheries Adm. Report No. 65-18; 26 pp. (mimeo.).