

1993
LITTLE SALMON RIVER, IDAHO
SPRING CHINOOK (ONCHORHYNCUS TSHAWYTSCHA)
SPORT HARVEST REPORT

By

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ABSTRACT

A spring chinook salmon (Onchorhynchus tshawytscha) sport harvest was held from May 22 through June 21, 1993, on the Little Salmon River, Idaho. A harvest quota of 750 fish was set prior to the season. We used a roving creel survey using a stratified sampling design to estimate daily angler effort and harvest. During the 31 day, 1993 chinook salmon season we estimated that 423 fish were harvested. During the twenty-one weekdays of the season, 3,647 hours were spent to harvest 313 chinook. During the ten weekend days of the season 3,426 hours were spent to harvest 110 fish. An estimated 52% of the fish harvest were females and 48% were males. We found 13.7% of the fish examined to be adipose fin clipped.

INTRODUCTION

A spring chinook (Onchorhynchus tshawytscha) sport harvest season was held in 1993, on the Little Salmon River (LSR) and ran from May 22 through June 21. The fish harvested were the product of the Rapid River Fish Hatchery. A description of this hatchery program is given in a previous report (Hassemer, 1991). A harvest quota of 750 fish was set prior to the season. The quota was based on a harvestable surplus of the predicted run to the Rapid River Hatchery and harvest sharing with the Nez Perce Tribe. The fishery was limited to a 3.5 mile section of the LSR from the mouth of Rapid River downstream to the Salmon River Road Bridge, approximately 0.5 mile upstream of the mouth of the LSR. Daily fishing hours were 0500 hrs. to 1800 hrs. MDT.

CREEL SURVEY METHODS

We used a roving creel survey (Neuhold and Lu, 1957) using a stratified sampling design to estimate daily angler effort and harvest. The length of a fishing day was 13 hrs. (0500 hrs. to 1800 hrs.).

For the creel survey, we divided each fishing day into three - 3 hour periods (strata) within which angler counts and interviews were conducted. The 3 hour periods were from 0500 to 0800 hrs., 1000 to 1300 hrs., and 1500 to 1800 hrs. Count and interview periods were conducted during two of the three - 3 hour strata each day. We made angler counts at the beginning and end of each stratum, with angler interviews conducted between the counts in each stratum. All angler counts were completed within one hour and were considered to be instantaneous counts. The two strata to be sampled on the first day of the fishing season were randomly chosen. On the second and subsequent survey days, the one strata not sampled on the previous survey day was automatically selected to be sampled on that survey day. The second strata to be sampled on a survey day was randomly selected from the other two remaining strata. All weekend days and three weekday days were sampled in a given week.

Data collected from daily angler interviews included: Number of anglers in a party, total fishing time, and catch. Angler interview data were then used to estimate fishing effort, catch and harvest rates and total harvest. Due to increased angler effort on weekends, estimates of effort, catch rates, and harvest were stratified by weekend and weekday periods, with holidays considered as weekend days. Total effort and harvest for the season were obtained by summing the weekend and weekday effort and harvest estimates.

Angler interviews were conducted to contact 25% of the anglers in each survey strata. Survey personnel interviewed every fourth angler encountered during the survey. Using this interview scheme the number of interviews conducted was proportional to the amount of effort expended in each survey strata (Neuhold and LU, 1957).

Sex of fish encountered was determined only in cases where the angler in possession allowed the creel person to internally examine the gonads of the fish. Chinook not sexed were listed as "unknown" in relation to sex. Creel clerks also examined fish for an adipose fin clip, which indicated the

presence of a coded wire tag in the snout of the fish. When a clip was encountered the snout was removed, if the angler allowed, and preserved for future tag removal.

Each fish encountered was measured to the nearest cm and then assigned an age according to the following classification system described by Hassemer (1991). Spring chinook 54 cm and less were classified as "jacks" or 3-year olds (one year in the ocean), 55 cm to 79 cm fish were 4 year olds (two years in the ocean), and those 80 cm and greater fish were 5 year olds (three years in the ocean).

Methods described in this report and the formulas used to calculate angler hours, mean catch rates, and harvest are the same as those described for the 1986 creel survey by Hassemer (1991).

RESULTS

During the 31 day, 1993 chinook salmon season we estimated that a total of 423 fish were harvested. We estimated that a total of 3,647 hours were spent to harvest 313 chinook in the twenty-one weekdays of the season. A total of 3,426 hours were spent to harvest 110 fish during the ten weekend days of the season (Table 1). Catch rates were 0.026 and 0.029 (fish/hour) for weekend days and weekdays respectively.

Table 1. Estimates of total fishing pressure, harvest, and catch rates for the 1993 Little Salmon River spring chinook sport fishing season, May 22 thru June 21 (\pm 95% confidence intervals).

	Total # of days	Total # of Interviews	Total estimated hours fished	Total estimated fish harvested	Harv. rate (fish/hr)	Hours/ fish
Weekend	10	271	3,426 (1,287)	110 (127)	0.032	31
Weekday	21	179	3,647 (1,353)	313 (146)	0.086	12
Total	31	450	7,073 (1,868)	423 (196)	0.060	17

A total of 226 chinook salmon were encountered in the creel survey. Of this total the creel clerks sexed 119 fish of which, 67 (56%) were males and 52 (44%) were females. Of the 226 fish encountered, 199 were measured for fork length. Age class breakdowns for those fish were: 2 (1%) "jacks" or three year old fish, 156 (78.4%) four year olds, and 41 (20.6%) five year olds. Of the total estimated fish harvest of 423 we estimated 48% (203) were males and 52% (220) were females. (There is a large difference in sex ratios between fish examined and the total estimate for the season. This is not an error. More females than males were found upon examination but more males were observed on days when more fish were harvested resulting in a larger number of males for the total estimate.) Of the 226 fish encountered, 168 were examined for an adipose fin clip. A total of 23 or 13.7% of the fish

examined were clipped.

DISCUSSION

The 1993 chinook sport fishery on the LSR was marked by high water conditions combined with cool weather and late arriving fish. In spite of these conditions, interest in the chance to catch a salmon was high. The 1993 salmon catch was 423 fish in 31 days compared to 499 fish in nine days in 1992 (Janssen 1993). However, anglers in 1993 spent less hours/fish (17) than did the 1992 anglers (19.6). Anglers spent more total hours fishing in 1992 (9,691) in a shorter season to catch more fish than did anglers in 1993.

LITERATURE CITED

Hassemer, P. 1991. Little Salmon River Spring Chinook (Onchorhynchus tshawytscha) Sport Harvest, 1986-1990. Idaho Dept of Fish and Game and Idaho Power.

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Neuhold, J.M. and K.H. Lu. 1957. Creel Census Methods. Utah State Dept. of Fish and Game Publication 8. Salt Lake City, Utah.