

YUKON RIVER SALMON TAGGING STUDIES

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Yukon Tagging Program

The objective of this investigation is to estimate the population size, racial composition and the utilization of the chum salmon run, the largest salmon run in the Yukon River. This is to be accomplished by an intensive tag and recovery program on the Lower Yukon coupled with a survey of the subsistence fishery. The program began in April 1961 and will terminate December 1962.

This project is supported by Federal Government funds and is one of several emergency salmon research studies being conducted in the state. Information resulting from this investigation will be used at the International North Pacific Fisheries Commission meeting in 1963 when North Pacific problems involving treaty matters will be discussed by a commission of representatives from Japan, Canada and the United States.

The 1961 field season was concerned mainly with gear experimentation and testing of various fishing locations, while the main tag and recovery effort is scheduled in 1962. Fishwheels were placed between St. Marys and Mt. Village, approximately 87 miles upstream from the mouth. A total of 1,097 chums, 30 kings, 22 pinks and 14 cohos were tagged with Petersen disc tags. Salmon species other than chum salmon were tagged utilizing state funds. Lengths and sex were

determined and scale samples were taken from tagged salmon. A reward of \$1.00 was paid for recovered tags.

There were two distinct runs of chum salmon that passed through the Lower Yukon, referred to in this report as the early-run and late-run chums. The early-run chums appeared in the Lower Yukon from early June through July and the late-run chums from July through September. Many of the late-run chums migrate for at least a portion of their upstream migration under the ice. The late-run chums were on the average larger, of a more robust condition and had not developed secondary sex characteristics to the degree present in most of the early-run chums.

A total of 344 recoveries of tagged chum salmon were made representing a 31% recovery of all tagged chums. Tagged fish were recovered by both the commercial and subsistence fishery with gill nets and fishwheels. Thirty (30%) per cent of the recoveries were made downstream and 70% were made upstream from the tagging site. The majority of downstream recoveries, however, were made at Mt. Village, an intense fishing area located 9 miles below the tagging site. This movement downstream has been noted in other river tagging studies. The farthest downstream recovery was made at Sheldons

Point (South Mouth) and the farthest upstream recovery has been from Dawson City in Canada, some 1,220 miles above the tagging site.

Of the early-run chums recovered, less than 1% were recovered above Koyukuk (500 miles upstream from mouth) while 33% of late-run recoveries were made above Koyukuk. Therefore, although relatively few late-run chums were tagged and subsequently recovered, it appears that most of them are traveling farther upstream to spawn than their earlier-run counterparts.

Migration rates for early-run chums ranged from 8.7 to 26.1 miles a day with an average rate of travel of 18.6 miles a day. Late-run chums traveled from 4.2 to 20.7 miles a day with an average rate of travel of 13.3 miles a day.

By use of a tag and recovery program in 1962 an all out attempt will be made to estimate the number of chum salmon that migrate up the Yukon River. Six fishwheels in the vicinity of Mt. Village will be used to capture salmon. An upriver fishing village, to be selected, will serve as a recovery site. Alaska Department of Fish and Game personnel will live in the village and tabulate the numbers of tagged and untagged salmon taken by the native fishermen. By

knowing the tagged to untagged ratio of salmon recovered and the number of salmon tagged, an estimate of the number of salmon that passed through the tagging area can be made. A total of 10 seasonal employees and two Alaska Department of Fish and Game biologists will comprise the project personnel.