



AYK SUSTAINABLE SALMON INITIATIVE

Project Synopsis

YUKON RIVER WATERSHED



(John Eiler)

PROJECT 314

PRINCIPAL INVESTIGATOR

Ted R. Spencer
*Alaska Department
of Fish and Game*

CONTRIBUTING ORGANIZATION

*National Oceanic
and Atmospheric
Administration*

RESEARCH PERIOD

April 2003 -
June 2004

BUDGET

\$170,000.00

COUNTING YUKON RIVER CHINOOK SALMON

Chinook salmon returning to the Yukon River support important commercial and subsistence fisheries in the United States and Canada. However, Yukon River Chinook salmon runs have declined dramatically in recent years. Under terms of the Yukon River Salmon Treaty, the U.S. and Canada agreed to conduct cooperative research to determine the migratory patterns and population status of Yukon River salmon returns. As part of this effort, we conducted a drainage-wide, radio telemetry study to better understand Chinook salmon of the Yukon River.

OUR OBJECTIVES

Use radio telemetry to determine stock composition and timing, country of origin, migration patterns, and location of important spawning areas.

Estimate the abundance of Chinook salmon upriver of our tagging site at Russian Mission and the proportion of the total run returning to major tributaries.

Estimate stock-specific run timing, migration rates, and migration characteristics.

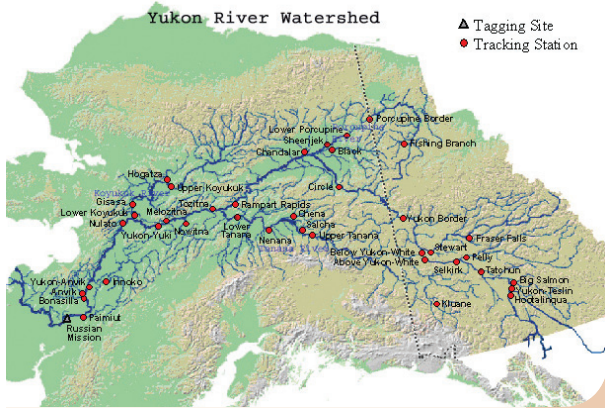
HOW WE DID IT

At Russian Mission, 1,097 fish were caught and tagged during day and night shifts from early June to mid-July, 2003. Radio transmitters were inserted into the

**RESEARCH
FRAMEWORK:**
SALMON LIFE CYCLE -
PRIORITY #2

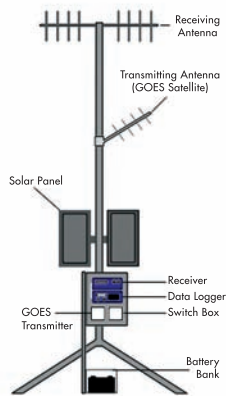
SNAPSHOT

Radio telemetry was used to track tagged Chinook salmon as they migrated throughout the Yukon River basin, allowing researchers to determine the migratory characteristics, abundance, and escapement distribution.



Map of the Yukon River drainage showing the location of the tagging site and remote tracking stations used to track the upriver movements of radio-tagged Chinook salmon, 2003. (Eiler, NMFS)

REMOTE TRACKING STATION (RTS)



Remote tracking station used to collect and access telemetry data for radio-tagged Chinook salmon in the Yukon River basin. (Eiler, NMFS)

fishes' stomachs, and they were externally marked with spaghetti tags. Thirty-nine remote tracking stations were located throughout the basin upriver from the tagging site. Additionally, aerial surveys were conducted in selected reaches of the drainage to locate fish that traveled to areas between station sites and upriver of stations on terminal tributaries. We recovered tagged fish from monitoring projects throughout the basin and from subsistence, sport, and commercial fishers.

WHAT WE DISCOVERED

While Chinook salmon traveled throughout the basin, the majority migrated to the upper basin areas. Canadian fish comprised a slight majority of the total sample. Tanana River drainage fish also comprised a significant portion. Movement rates averaged 51.1 km/day, and we found differences between stocks and regions with upper basin stocks moving faster. We were able to successfully estimate abundance using mark-recapture methods.

PRODUCTS AND OUTREACH

The results of our study have been published in several ADF&G management reports. We presented our research at several in-region public meetings, councils, and teleconferences.

WHAT'S NEXT?

Information from this study has identified new spawning areas, identified relative importance of known spawning areas, expanded the genetic stock identification baseline, and provided population estimates, which have been used to address conservation issues and evaluate abundance estimates from other projects in the basin. Additional information is needed to further address questions related to study findings and annual variation.

AYK SSI Mission: To collaboratively develop and implement a comprehensive research plan to understand the causes of the declines and recoveries of AYK salmon.

ARCTIC-YUKON-KUSKOKWIM SUSTAINABLE SALMON INITIATIVE

BERING SEA FISHERMEN'S ASSOCIATION
110 W. 15TH AVENUE
ANCHORAGE, AK 99501
(907) 279-6519