



AYK SUSTAINABLE SALMON INITIATIVE

Project Synopsis

YUKON RIVER WATERSHED



(ADF&G Staff)

PROJECT 724

PRINCIPAL INVESTIGATOR

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of Fish and Game*

CONTRIBUTING ORGANIZATIONS

*Tanana Chiefs
Conference*

*United States
Geological Survey*

RESEARCH PERIOD

May 2007 -
June 2009

BUDGET

\$624,491.00

SPAWNING MAINLY ON THE MAINSTEM

Fall chum salmon originating in the Tanana River represent, on average, thirty percent of the total run within the Yukon River drainage. However, the river is heavily silted and extremely braided, making monitoring spawners and spawning areas difficult. In salmon management, mainstem river habitats are primarily viewed as adult migration corridors with little attention given to their possible role as spawning habitat. On the Tanana River, no other major spawning tributaries have been found, which suggests significant mainstem spawning by fall chum salmon. Thus far, little consideration has been given to recognition and protection of fall chum salmon spawners in the upper mainstem, while potential impacts on these spawners have been increasing.

OUR OBJECTIVES

Confirm that fall chum salmon were using the mainstem Tanana River for spawning, collect information to identify and characterize these mainstem spawning habitats, and determine relative contributions of mainstem spawners to overall upper Tanana fall chum salmon populations.

Collect information used to develop a model for predicting the location of mainstem spawning habitats and collect genetic material to assist in determining where further research should focus efforts on baseline sampling.

Provide estimates of stock-specific run timing, migration rates, and movement patterns.

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

SNAPSHOT

This project investigated fall chum salmon that spawn in the mainstem of the Tanana River.

Radio telemetry was used to track fish during the run, and aerial and ground surveys were used to identify and characterize mainstem spawning habitat.



(ADF&G Staff)



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HOW WE DID IT

We captured and radio tagged chum salmon at a site located between Manley and Old Minto on the mainstem Tanana River. Tagged fish were tracked by at least 12 remote tracking stations and numerous aerial surveys. During the first year of the study, we tested different types of radio transmitters. During year two the selected tag type was applied throughout the run. We measured coloration, scars, sex, and length of each tagged fish and collected tissue samples for genetic analysis. We conducted ground surveys of spawning areas and deployed inter-gravel monitors. We conducted aerial surveys during freeze-up to map open water which indicate areas of substantial upwelling that were compared with actual spawning sites to develop the habitat model.

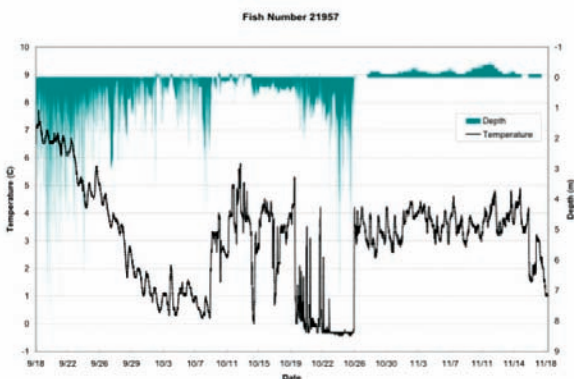
PRODUCTS AND OUTREACH

Several manuscripts from this project are in development.

WHAT'S NEXT?

An increase in winter research is particularly important in high latitude regions like Alaska. Transferring the methods used in this study across high latitude river systems has the potential to reduce costs associated with remote field work that identifies unfrozen habitats, and eliminate logistical challenges associated with working outdoors in the arctic environment.

Baseline information identified for arctic river systems is critical for monitoring changes in habitat. With a warming climate, this information could detect changes in riverine ecosystems, aid in better research and management decisions, and assist in the conservation of salmon in freshwater ecosystems.



Temperature and depth profile of an archival radio tagged chum salmon that spawned in the Delta River, 2008. (Borba, ADF&G)

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

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