Yukon River Sonar – Pilot Station Extended Operations, August 31 to September 7, 2008

R&M# 19-08

Project Proponent: Holly Carroll**,** Alaska Department of Fish and Game, Commercial Fisheries Division, 1300 College Rd. Fairbanks, AK 99071

Project Partners: Current partners in the project include the Association of Village Council Presidents (AVCP) and USFWS who work together to provide a fisheries technician. Additionally, the Yukon Delta Fisheries Development Association (YDFDA) funds early start-up so that sonar can be running typically by June 1 each season.

1. Introduction:

Objectives:

The primary goal of this project is to accurately estimate daily fish passage, by species, during upstream migration past the sonar site. Project objectives were to:

1. Provide managers with timely estimates, and associated confidence intervals, of daily and seasonal passage of adult Chinook, chum and coho salmon;
2. Collect biological data from all fish captured in the test-fishery, including species, sex, length, and scales as appropriate;
3. Assist in the collection of Chinook and chum salmon tissue samples for separate genetic stock identification projects; and
4. Collect water temperature data representative of the ensonified areas of the river.

The primary objective of the extended operations funded by R&M is to increase the accuracy of fall chum salmon passage estimates generated at the Pilot Station sonar project by extending field operations one week, from August 31 until September 7. This provides managers with greater confidence in both abundance and MSA estimates for the late season fall chum salmon run.

Summary:

In 2008, crew began working to set up camp on May 25, and sonar was operational on both banks from June 1 through September 7, with camp breakdown completed by September 10.

Fish passage estimates at Pilot Station are based upon a sampling design in which the sonar equipment is operated daily during three 3-hour intervals, and drift gillnets are fished twice each day between sonar periods to apportion the sonar counts to species.

An assortment of gillnets, 25 fathoms long with mesh sizes ranging from 7.0 cm to 21.6 cm (2.75 in to 8.5 in), were drifted through the sonar sampling areas twice daily between sonar data

collection periods. Drift gillnetting resulted in a catch of 9,620 fish including: 728 Chinook salmon; 3,166 summer chum salmon; 2,406 fall chum salmon; 844 coho salmon; and 2,460 other species. Chinook salmon were sampled for age, sex and length and genetic samples were taken from both Chinook and chum salmon. Any captured fish not successfully released were distributed daily to nearby residents in Pilot Station.

Cumulative passage estimates for each targeted species, through September 7, were: 106,708 large Chinook salmon; 23,935 small Chinook salmon; 1,665,667 summer chum salmon; and 615,127 fall chum salmon. Additionally, passage estimates for non-target targeted fish species include 135,570 coho salmon and 1,143,353 other fish species.

This project provided daily and seasonal estimates of salmon passage by species for Chinook, summer chum, fall chum, and coho salmon, therefore the project met its objectives satisfactorily. Seasonal estimates of passage are compared with other estimates of run strength such as total catch and escapement for summer and fall chum salmon, mark-recapture estimates of Chinook salmon abundance, and test fishery indices.

An estimated 12,684 fall chum passed the sonar site during the period of extended operations from September 1 to September 7. This increased accuracy of the overall estimate of fall chum salmon was beneficial to fishery managers and met the goal and objective of the R&M extended operations funding.

2. Study Area:

This project is located approximately 197 km from the mouth of the Yukon River and 1.5 km upstream from the village of Pilot Station.