

# Anvik Sonar Site Relocation; RM-15-10

## R&M# 15-10

**Project Proponent:** Bruce McIntosh, Alaska Dept. of Fish and Game – Commercial, Fisheries Division, 1300 College Rd., Fairbanks, AK 99701, bruce.mcintosh@alaska.gov

**Project Partners:** USFWS Office of Subsistence Management provides partial funding for the Anvik River sonar project.

### 1. Introduction:

#### *Summary:*

This project employs DIDSON sonar equipment on the Anvik River to generate timely, in-season escapement estimates of summer chum salmon. Chum salmon are generally the dominant salmon species, with strong even year returns of pink salmon and a small Chinook component. Visual surveys from fixed location towers are used to apportion sonar counts to species. The project is currently located approximately 76 km from the mouth of the Anvik River and operates continuously from approximately June 18 through July 26.

The current site is at a location susceptible to high water levels and flooding, on occasion making operations difficult or impossible. The distance between the current site and the city of Anvik makes logistics both difficult and expensive, and excessive travel times for salmon to reach the sonar site can impact the timeliness of estimates needed in managing local fisheries. Alternative sites closer to the mouth may cut this distance in half or more. This project funded detailed bathymetric surveys of these alternative sites.

#### *Objectives:*

The primary objective of this project is to increase the accuracy of summer chum salmon passage estimates generated at the Anvik River sonar project by relocating the project site closer to the mouth of the Anvik River. This proposal addresses the following priorities:

#### Assess and achieve fishery management objectives

3. Improve in-season run size and stock specific estimates at the mouth of the Yukon River.
4. Monitor salmon escapements by Alaskan Geographic Units.

**2. Study Area:** Anvik River; approx. 76 km upriver of Anvik, AK



**Figure 1.** Sites surveyed on Anvik River, June 22-23, 2010. RM = River Mile. The current sonar site is located at RM 37.1.

### 3. Results:

In 2009 Anvik River sonar staff identified several preliminary areas of the lower river to begin surveying, located approximately between river miles 20 to 25. Prior to the 2010 field season, additional areas of interest were identified from satellite imagery. A total of 6 candidate sites were considered between river-mile 13.9 and river-mile 25 (Figure 1). During the 2010 field season detailed assessments were conducted at these sites between July 21 and July 24, documenting bottom profiles using a Lowrance combination gps-depth sounder with recording capabilities. Multiple transects were made at each site, 30 in all.

Each site has some potential as an alternative location, based on bottom profiles, although the width of the river at most is marginal. Relative to the current site, each of the alternatives is both wider and deeper. The DIDSON units currently employed have a useful range of approximately 40 m. The alternative sites range in width from 80 m to 120 m or greater. Site 2 at river-mile 22.3 had the most consistent profile and, although deeper than the current site, shows perhaps the greatest promise as a sonar site (Figure 2). Unfortunately the depth there would present problems for the flash panels used for visual species apportionment. A separate suitable site would have to be identified nearby to continue using them.

Further development of a new site has been suspended for the 2011 season. No compelling choice was found in these surveys to warrant pursuing the relocation this year. Before a decision can be made, it is felt that the sonar equipment should be thoroughly tested at any new site and an evaluation of the surrounding area will required for potential fishing locations. A workable location would also need to be identified for installing the flashpanels.

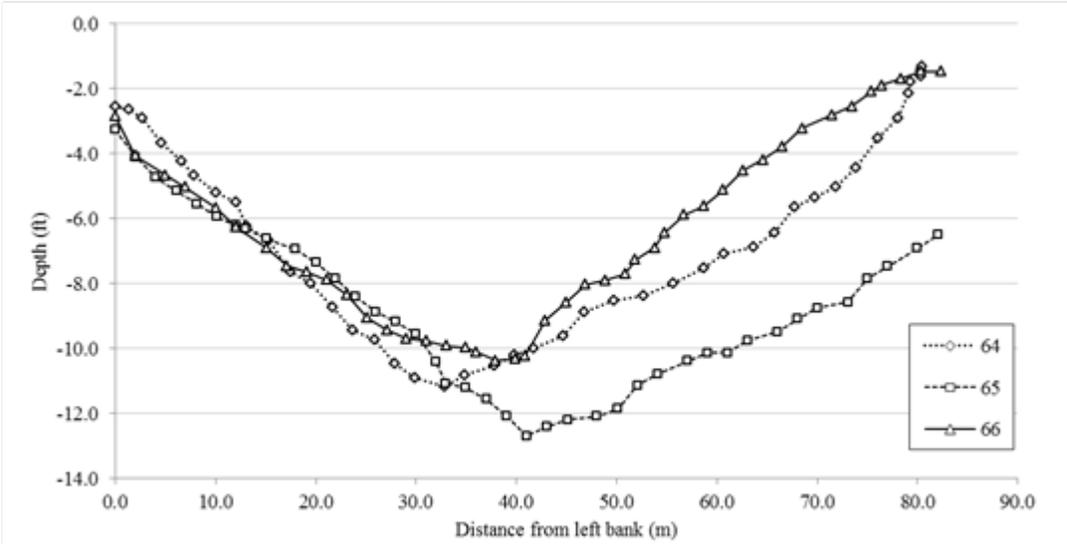


Figure 2. Representative profiles from transects made at site 2.