

Indexing the inseason abundance of salmon in the lower reaches of the Copper River Delta, 2005 Annual Report, Annual Report No. FIS 04-506

The purpose of this three-year project (2004-2007) is to generate a daily inseason index of early run salmon abundance in the lower Copper River, and to estimate the travel time of salmon from the commercial fishing area (Copper River District) to the test fishery at Flag Point Channel and the Miles Lake sonar site. This will provide Alaska Department of Fish and Game (ADF&G) fisheries managers with more timely escapement information than is currently available from the Miles Lake sonar site alone. The project builds on the results of a study conducted in the previous three years (2001-2004), which compared the utility of acoustics and drift gillnets as test fishing tools, developed a cost-effective method for acoustic sampling, and provided insights into fish migratory behavior in the study area.

In 2004, acoustic sampling at Flag Point Channel started on 9 May, one week before the Miles Lake sonar site was fully operational and eight days before the first scheduled fishing period. Acoustic sampling continued until 1 June 2004. Despite considerable amounts of river ice passing through the sonar site early in the season, we were able to sample for at least 14 h each day from 10 May to 13 May. Apart from minor disruptions, sampling was essentially continuous from 14 May to 1 June. We did not encounter any of the difficulties experienced in 2003, many of which appeared to be related to sampling in very shallow water. Visual echo trace counts were generated from the echogram during the first 15 minutes of each hour. As in 2001 and 2002, salmon echo traces were easily distinguished from eulachon. Daily counts, calculated by summing and expanding 15-minute counts, totaled 19,216 salmon for the period sampled, with a peak of 2,590 fish on 21 May. Counts up to 0700 hours of the current day were reported to ADF&G daily by 0900 hours.

As in 2001, 2002 and the second half of the 2003 sampling period, acoustic counts of salmon for Flag Point Channel provided a presence/absence index of salmon abundance. The counts also tracked the general trends in salmon abundance observed at the Miles Lake sonar site. The catch efficiency at Flag Point Channel followed a pattern similar to 2002, starting at more than 200 fish and gradually declining before leveling out at about 50 fish per 1,000 fish counted at Miles Lake. This pattern, if consistent in future years, may be used for a more quantitative index than mere presence/absence. Similar to previous years, estimated travel time ranged from 1 – 3 days between the sampling site at Flag Point Channel and Miles Lake (approximately 30 km distance) and 1 – 2 days between the Copper River ocean fishing district and Flag Point Channel (approximately 20 km distance).

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