

## **A Mark–recapture Study of Kuskokwim River Sockeye, Chum, and Coho Salmon, 2004**

Spaghetti tags were deployed on sockeye *Oncorhynchus nerka*, chum *O. keta*, and coho *O. kisutch* salmon caught in the mainstem Kuskokwim River and recovered upstream in the mainstem and at several tributaries to determine stock-specific run timing, stock-specific travel speed, and to estimate total coho salmon run abundance using a two-sample mark–recapture design. Fish were captured downstream of Lower Kalskag using fish wheels and drift gillnets, and then fitted with uniquely numbered spaghetti tags. Tags were then recovered, or at least observed, at five upstream tributary escapement projects (Takotna, Tatlawiksuk, Kogrukuk, and George River weirs, and Aniak River sonar). Recoveries were also made from fish wheels and gillnets operated in the mainstem Kuskokwim River below Aniak and from opportunistic voluntary tag returns. Tag deployment in 2004 included 1,885 sockeye, 5,276 chum, and 2,971 coho salmon. Tag recovery included 108 sockeye, 632 chum, and 81 coho salmon recaptured in the Kuskokwim River and 52 sockeye, 78 chum, and 115 coho salmon observed at upstream tributary projects. Overall, salmon run timing past Kalskag was earliest for stocks traveling to tributaries farthest upstream and progressively later for stocks traveling to less distant tributaries, which is consistent with findings from previous years. Average stock-specific travel speed for coho and chum salmon was greatest for salmon traveling farthest upstream, and progressively slower for fish traveling to less distant tributaries. Coho salmon abundance upstream from Lower Kalskag in 2004 was estimated to be 386,743 coho salmon (95% CI=303,995; 469,492) using the Darroch estimator.

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