

## **Inriver abundance of Chinook salmon in the Kuskokwim River, 2005.**

A two-sample mark-recapture experiment was conducted to estimate inriver abundance of Chinook salmon *Oncorhynchus tshawytscha* in the middle and upper Kuskokwim River and associated tributaries using radiotelemetry techniques from June to August in 2005. An attempt was made to distribute radio tags over the total run such that the radio-tagged fish would be representative of the entire run with respect to temporal abundance, size, sex, and stock composition. Fish were sampled using drift gillnets and fish wheels at various locations above and below Kalskag. Chinook salmon that were captured and radio-tagged constituted the first sample and fish counted at four weirs on tributaries of the Kuskokwim River constituted the second sample. Radio-tagged Chinook salmon that migrated past the weirs and were recorded by stationary tracking stations constituted the recaptured portion. Approximately 98% of radio-tagged fish were detected by a combination of two aerial surveys and 15 stationary tracking stations. Similar to previous years, Aniak River bound Chinook salmon were censored from the final estimate due to strong evidence of bank orientation. An estimate was also calculated for Holitna River bound Chinook salmon using a subset of these data. The estimate of abundance for Chinook salmon  $\geq 450$  mm MEF for the Kuskokwim River upstream of the Aniak River was 145,373 (SE=15,528) and 72,690 (SE=8,510) for those bound for the Holitna River. The majority of radio-tagged Chinook salmon entered the Holitna and Aniak rivers. In general, radio-tagged fish that migrated farther upriver to spawn were captured at the tagging site earlier than those bound for nearby systems.

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