

## ABSTRACT

The purpose of this project was to use fishwheels and two-sample mark-recapture methods to monitor sockeye salmon *Oncorhynchus nerka* escapement on the Copper River. This report summarizes results from the 2009 field season. The main objective in 2009 was to estimate the inriver abundance of sockeye salmon returning to the Copper River such that the estimate was within 25% of the true escapements 95% of the time. For the first sample event, up to three live-capture fishwheels were operated at Baird Canyon for a total of 3,490 h from 13 May to 2 August. During this period, 8,898 adult sockeye salmon were marked. For the second sample event, up to two fishwheels were operated at Canyon Creek near the lower end of Wood Canyon for 3,569 h from 19 May to 15 August. A total of 38,115 sockeye salmon were examined for marks, of which 472 were recaptures. Using a temporally stratified Darroch estimator, the estimated abundance of sockeye salmon that migrated upstream of Baird Canyon was 751,133 (SE = 36,623). The median travel time of sockeye salmon marked at Baird Canyon and recaptured at Canyon Creek (91 km upstream) was 9.5 d. This was the final year of this project, which was funded by the Fisheries Resource Monitoring Program (FRMP). This project was one component of a long-term monitoring program operated by the Native Village of Eyak.

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