

Estimating Chinook Salmon Escapement on the Copper River, 2006 Annual Report.

The purpose of this project was to use fishwheels and two-sample mark-recapture methods for long-term monitoring of Chinook salmon *Oncorhynchus tshawytscha* escapement on the Copper River. This report summarizes results from the 2006 field season, the sixth year since the project's inception. Objectives for 2006 were to: (1) estimate the annual, system-wide escapement of Chinook salmon to the Copper River using mark-recapture methods, such that the estimate was within 25% of the actual escapement 95% of the time; (2) develop a long-term monitoring program operated by the Native Village of Eyak (NVE). For the first sample event, three live-capture fishwheels were operated at Baird Canyon for 4,219 h from 21 May to 31 July. During this period, 4,569 adult Chinook salmon were captured and 4,035 fish were marked. For the second sample event, two fishwheels were operated at Canyon Creek near the lower end of Wood Canyon for 3,696 h from 23 May to 14 August. A total of 5,224 Chinook salmon were examined for marks, of which 377 were recaptures. Using a temporally stratified Darroch estimator, estimated abundance of Chinook salmon measuring 500 mm FL or greater that migrated upstream of Baird Canyon from 21 May to 31 July was 67,789 (SE = 4,779). The median travel time of fish marked at Baird Canyon and recaptured at Canyon Creek (~91 km upstream) was 13.2 d. With funding currently approved through 2009, this project has evolved into a successful and potentially long-term monitoring program that has made NVE an integral part of Copper River salmon research.

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