

Takotna River Salmon Studies, 2005

The Takotna River is a major tributary of the Kuskokwim River that currently supports modest runs of Pacific salmon *Oncorhynchus spp.* compared to other tributaries in the drainage. The Takotna River weir is one of several projects operated in the Kuskokwim Area that form an integrated geographic array of escapement monitoring projects. Collectively, and in accordance with the State of Alaska's Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), this array of projects is a tool to ensure appropriate geographic and temporal distribution of spawners, and provide a means to assess trends in escapement that should be monitored and considered in harvest management decisions. Towards this end, Takotna River weir has been operated annually since 2000 to determine daily and total salmon escapements for the target operational period of 24 June through 20 September; to estimate age, sex, and length compositions of Chinook *O. tshawytscha*, chum *O. keta*, and coho *O. kisutch* salmon escapement; to monitor environmental variables that influence salmon productivity; to investigate geographic distribution and length patterns of juvenile Chinook and coho salmon in the Takotna River drainage; and to provide part of an integrated platform in support of other Kuskokwim Area fisheries projects.

In 1995, the Alaska Department of Fish and Game (ADF&G) established an escapement monitoring program on the Takotna River approximately 835 river kilometers (rkm) from the mouth of the Kuskokwim River. A counting tower was used to enumerate fish from 1995 to 1999 with limited success, and the project transitioned to a resistance board weir in 2000. Since its inception, the weir has been jointly operated by ADF&G Division of Commercial Fisheries and the Takotna Tribal Council (TTC). In 2005, the weir was operational for the entire target operational period of 24 June to 20 September. Total annual escapement for the 2005 target operational period included 499 Chinook, 6,458 chum, 2,216 coho, and 34 sockeye salmon *O. nerka*. Age, sex, and length (ASL) samples were taken from 34.1% of the Chinook escapement, 12.9% of the chum escapement, and 24.6% of the coho escapement. Though the number of Chinook samples was insufficient to estimate the ASL composition of the total escapement, the Chinook sample composition included 55.9% age-1.3 fish, 24.2% age-1.4 fish, 19.4% age-1.2 fish, and 29.4% females. The chum salmon escapement was comprised of 89.9% age-0.3 fish, 8.6% age-0.4 fish, 1.5% age-0.2 fish, and 51.3% females. The coho salmon escapement was comprised of 87.7% age-2.1 fish, 12.0% of age-3.1 fish, and 48.1% females. Juvenile fish were captured using beach seines, dip nets, minnow traps, and a stationary net deployed in the Takotna River during January through December. Captures included 509 juvenile Chinook, 119 juvenile chum, and 159 juvenile coho salmon. Most juvenile Chinook and coho salmon were captured using minnow traps in Gold Creek and in Big Creek (lower), respectively. Most juvenile chum salmon captures were in Fourth of July Creek using a beach seine. In addition to enumerating escapement, estimating ASL composition, and investigating juvenile salmon distribution, the weir served as a platform for several other projects including *Inriver Abundance of Chinook Salmon in the Kuskokwim River* (FIS 02-015), *Kuskokwim River Sockeye Salmon Radiotelemetry Feasibility Study*, *Kuskokwim River Salmon Mark-Recapture Project* (FIS 04-308), *Genetic diversity of Chinook salmon from the Kuskokwim River* (FIS 01-070), and *Body Condition and Feeding Ecology of Kuskokwim River Chum Salmon Fry during Freshwater Outmigration*.

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