

## ABSTRACT

The Takotna River is a tributary of the upper Kuskokwim River that supports runs of Pacific salmon *Oncorhynchus spp.* A weir operated on the Takotna River 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 provides a means to track trends in escapement that should be monitored and considered in harvest management decisions. To this end, Takotna River weir has been operated annually since 2000 to determine daily and total salmon escapements; to estimate age, sex, and length compositions of Chinook, chum, and coho salmon escapement; to monitor environmental variables that influence salmon productivity; and to serve as 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 but success was limited 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). Historically, the Takotna River weir has maintained an excellent performance record, and in 2007 it suffered only one brief inoperative period from 6 to 8 August. Total annual escapement for the 2007 target operational period included 418 Chinook *O. tshawytscha*, 8,900 chum *O. keta*, 14 sockeye *O. nerka*, and 2,853 coho salmon *O. kisutch*. Age-sex-length (ASL) samples were obtained from 64.4% of the Chinook escapement, 10.6% of the chum escapement, and 15.5% of the coho escapement. The Chinook salmon escapement comprised 50.4% age-1.2 fish, 33.9% age-1.3 fish, 14.7% age-1.4 fish, 0.8% age-1.5 fish, 0.3% age-2.3 fish, and 12.9% females. The chum salmon escapement comprised 60.1% age-0.3 fish, 33.7% age-0.4 fish, 3.4% age-0.2 fish, 2.7% age-0.5 fish, and 47.8% females. The coho salmon escapement comprised 92.5% age-2.1 fish, 5.2% of age-3.1 fish, 2.2% of age-1.1 fish, and 52.3% females. In addition to enumerating escapement and estimating ASL composition the weir served as a platform for 2 other projects: *Kuskokwim River Chinook Salmon Run Reconstruction* and *Kuskokwim River Sockeye Salmon Investigations*. The Takotna River weir successfully contributed to each of these projects in 2007.

Key words: Chinook salmon, *Oncorhynchus tshawytscha*, chum salmon, *O. keta*, coho salmon, *O. kisutch*, longnose suckers, *Catostomus catostomus*, escapement, ASL, age-sex-length, salmon age composition, salmon sex composition, salmon length composition, Takotna River, Kuskokwim River, resistance board weir, radiotelemetry, mark-recapture, genetic stock identification, stock specific run-timing.