

Movements of Yukon River Chinook salmon - Auke Bay Laboratories

A radio telemetry study was conducted on Yukon River Chinook salmon (*Oncorhynchus tshawytscha*) during 2002-2004 to provide information on migration patterns. During 2002, 768 adult Chinook salmon returning to the basin to spawn were radio tagged in the lower Yukon River near the villages of Marshall and Russian Mission. Most (751, 97.8%) resumed upriver movements, with 270 fish harvested in fisheries and 481 fish tracked to upriver areas using remote tracking stations and aerial surveys. Movement rates for radio-tagged fish averaged 51 km/day. Middle and upper basin stocks traveling through reaches of the Yukon River main stem averaged 54-61 km/day, although slower swimming speeds were recorded as the fish approached their natal streams. Movement rates for lower basin stocks were substantially less, averaging from 31 km/day to 37 km/day, possibly due to the shorter distances traveled to reach their spawning areas. During 2003, 1,097 fish were radio tagged in the lower Yukon River near the village of Russian Mission during 2003. After tagging, most (1,081; 98.5%) fish resumed upriver movements, with 271 fish harvested in fisheries and 810 fish tracked to upriver areas using remote tracking stations and aerial surveys. Movement rates for radio-tagged fish averaged 50.9 km/day, although regional differences were observed. Middle and upper basin fish traveled an average of 48.0 km/day and 54.7 km/day, respectively. However, these stocks exhibited comparable movement rates in reaches of the Yukon River main stem, while slower swimming speeds were recorded as the fish approached their natal streams. Movement rates for lower basin stocks were substantially less, averaging 31.2 km/day, possibly due to the shorter distances traveled to reach their spawning areas. During 2004, 995 fish were radio tagged in the lower Yukon River near the village of Russian Mission during 2004. After tagging, most (958, 96.3%) fish resumed upriver movements, with 329 fish harvested in fisheries and 629 fish tracked to upriver areas using remote tracking stations and aerial surveys. Movement rates for radio-tagged fish averaged 51.8 km/day. Middle and upper basin stocks averaged 46.4 km/day and 55.1 km/day, respectively. However, these stocks exhibited comparable movement rates in reaches of the Yukon River main stem, while slower swimming speeds were recorded as the fish approached their natal streams. Movement rates for lower basin stocks were substantially less, averaging from 34.6 km/day, possibly due to the shorter distances traveled to reach their spawning areas. Understanding the movement patterns exhibited by Chinook salmon during their upriver migration can provide valuable insight into the biology, run dynamics, and management of Chinook salmon returns and their associated fisheries. The data collected during the 2002-2004 study is being analyzed to determine if the observed movements and associated factors within different reaches of the basin can be used to better understand and predict Chinook salmon migratory behavior.