

Characterization of Tuluksak Chinook Salmon Subsistence Harvests, 2008 and 2009

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Abstract

Chinook salmon *Oncorhynchus tshawytscha* are an important species in the Kuskokwim River subsistence fishery and to the overall ecology of the drainage. Harvest pressures are intense with an average of 76,000 Chinook salmon harvested annually by subsistence fishers. There are no restrictions on the gill net mesh size used in the subsistence fishery, and a larger proportion of harvested female Chinook salmon are thought to be captured with large meshed nets. The goal of this study was to characterize the subsistence fishery near the confluence of the Tuluksak and Kuskokwim rivers by separating harvest locations into three zones based on their proximity to the mouth of the Tuluksak River. Age, sex, and length information was collected from subsistence caught fish within each zone during 2008 and 2009. Age-sex compositions and length for each age-sex category were tested for significant differences among zones as well as samples collected from the Tuluksak River weir. Female Chinook salmon comprised 29% and 30% of the total subsistence catch sampled during 2008 and 2009, respectively. In contrast, females comprised 40% of the Chinook salmon passing the weir during 2008 and 44% during 2009. Age-sex composition was not significantly different between the weir escapement and the subsistence fishery ($P = 0.1314$) during 2008 with the exception of zone 1 ($P < 0.001$). Chinook salmon sampled from zone 1 during 2008 were significantly younger and comprised of more males. Significant differences in age-sex composition were detected between the escapement samples and the harvest samples in 2009 ($P = 0.029$). Lengths of subsistence caught fish were significantly larger for age-4 males during 2008 ($P=0.009$) and age-5 males during 2009 ($P=0.022$) than the same sex and age of fish sampled at the weir. Large mesh nets (≥ 20.3 cm) accounted for only 30% and 31% of fish sampled during 2008 and 2009, respectively.