

A mark-recapture experiment to estimate the abundance of Kuskokwim River sockeye, chum, and coho salmon, experiment to estimate the abundance of Kuskokwim River sockeye, chum, and coho salmon, 2003

Abstract: Abundance of sockeye, chum and coho salmon was estimated in 2003 representing salmon upstream from Kalskag (approximately 309 river km (rkm) on the Kuskokwim River using a two-part mark recapture experiment. Fish wheels and drift gillnets were used to capture, tag and recapture fish. Salmon were tagged with uniquely numbered spaghetti tags while a secondary mark was used to assess tag loss. At the Kalskag site, 1,349 sockeye, 8,395 chum, and 6,771 coho salmon were tagged. At the Aniak site, a total of 1,567 sockeye, 18,748 chum, and 17,251 coho salmon were inspected for tags or secondary marks of those 23 sockeye, 332 chum, and 170 coho salmon were recaptured, and 1,010 sockeye, 11,716 chum, and 11,374 coho salmon were tagged. Abundance estimates were 90,449 sockeye salmon (95% CI=54,842, 126,056; SE=18,167) using the Petersen estimator, 412,443 chum salmon (95% CI=351,765, 473,121; SE=30,958) using the Darroch estimator, and 849,494 coho salmon (95% CI=654,182,1,044,806; SE=99,649) using the Darroch estimator. Tags were recovered or observed at six escapement projects located upstream and downstream of the tagging sites. A total of 77 sockeye, 482 chum, and 1,511 coho tagged salmon were observed upstream of the tag sites and 6 sockeye, 14 chum, and 336 coho salmon were observed downstream of the tag sites. Cumulative percentages for tagged sockeye, chum, and coho salmon recovered at escapement projects above the tagging sites indicate that fish tagged earlier traveled further upstream than fish tagged later in the season. Travel speed of tagged sockeye, chum, and coho salmon recovered at upstream escapement projects were progressively faster for fish traveling further upstream.

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