

Estimation of Sockeye Salmon Escapement in Mortensens Creek, Izembek National Wildlife Refuge, 2006; and 2001 to 2006 Run Comparisons

Abstract: A fixed picket weir and underwater video monitoring station was operated on Mortensens Creek from 18 June to 16 September 2006. Sockeye salmon *Oncorhynchus nerka* were the most abundant species counted through the weir ($N = 14,788$) followed by coho salmon *O. kisutch* ($N = 5,003$) and Dolly Varden *Salvelinus malma* ($N = 890$). Most sockeye salmon passed the weir at night during the high tide cycle. The weir was removed prior to the peak coho salmon run in 2006 because of budget constraints; therefore, our estimate is a minimum number. Sockeye salmon sampled at the weir were predominantly male (53%) and age 1.3 fish comprised 67% of the run. Female sockeye salmon sampled at the weir ranged in length from 504 to 581 mm and males ranged from 526 to 626 mm. Age, sex, and length data were not collected from coho salmon in 2006 because we were unable to sample the entire run. In 2006 we compared counts from motion-triggered video files to counts made by reviewing continuously recorded video files; counts were nearly identical. Motion detection functioned well except for times of high fish passage (> 300 fish/h) when small breaks in recording made it difficult to accurately count fish; continuously recorded video files were used to enumerate escapement during times of high fish passage. From 2001 to 2006, sockeye salmon escapement at the Mortensens Creek weir ranged from 4,268 to 21,703 (mean = 11,664) and coho salmon escapement ranged from 3,836 to 8,184 (mean = 5,478). The sex ratio of sockeye salmon varied over the years of the project, but no trends were apparent; age composition for sockeye salmon was similar over all years with age 1.3 predominant. Mean lengths of sockeye salmon were similar over all years of the project. Coho salmon sex composition also varied over project years without any apparent trends and age 2.1 fish were predominant each year. Mean lengths of coho salmon appeared to decline in 2004 and 2005, but we did not measure length in 2006 and did not determine if this trend continued. Sockeye and coho salmon populations in Mortensens Creek can continue to support harvest by all user groups at current levels, although the commercial fishery has the potential to overharvest this small sockeye salmon run.

Citation: Hildreth, D. R. and C.A. Dion. . Estimation of sockeye and coho salmon escapement in Mortensens Creek, Izembek National Wildlife Refuge, 2006. U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 04-402). U. S. Fish and Wildlife Service, King Salmon Fish and Wildlife Field Office, Alaska Fisheries Data Series Report Number 2007-7, King Salmon, Alaska.