

Sockeye salmon escapement estimation for the Alagnak River drainage

Abstract: The recent decline in sockeye salmon runs to Bristol Bay has caused economic hardship and raised concerns among local subsistence users and federal managers. Setting, evaluating, and monitoring spawning escapement is the basis of sustainable salmon management. While most Bristol Bay sockeye salmon runs are adequately monitored, some escapement monitoring projects have been discontinued due to reductions in State funding. Counting tower operations on the Alagnak River, a major tributary of the Kvichak River, were discontinued in 1977. The counting site used for this study was about one mile upriver from the site used previously. Initial project funding was for counting in 2001 and 2002, but due to a shortened season in 2002, surplus funds were available and the tower was also operated in 2003. The project was intended to count Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, chum *O. keta*, coho *O. kisutch*, and pink *O. gorbuscha* salmon. However, due to unfavorable counting conditions for Chinook and coho and increases in field operating costs, the project goal shifted to concentrate on sockeye salmon. Total sockeye salmon passage estimates at the tower site were 615,114 in 2001, 766,962 in 2002, and 3,676,146 in 2003. Counting conditions were good in all years; however, the consistency and accuracy of 2001 counts may have been affected by several changes in field employees over the course of the season. Age composition information for all years was obtained from otoliths collected from carcasses sampled in four main spawning areas within the system: Kulik, Battle, Moraine, and Nanuktuk Creeks. Some scales for aging were collected from sockeye salmon passing the tower site in 2003, but high water conditions prevented sampling at the tower site in both 2001 and 2002. Bristol Bay Native Association, Alaska Department of Fish and Game, and National Park Service jointly developed this study in consultation with various local and regional organizations.

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