

Abstract

In 2006, we continued series of annual estimates of escapement of sockeye salmon (*Oncorhynchus nerka*) started in 2001 for Kanalku Lake and in 1996 for Sitkoh Lake. In each lake, we used mark-recapture methods and visual surveys to estimate sockeye escapement, and we estimated the age, sex, and length composition of the escapement from samples collected on the spawning grounds. Some very low escapements into Kanalku Lake in recent years, after several years of high subsistence harvests in the 1990s, raised concerns about the future productivity of Kanalku Lake sockeye stocks. Nevertheless, the estimated escapement into Kanalku Lake in 2006 was 1,300 sockeye salmon, making this the third consecutive year with sockeye escapements over 1,000 fish, an encouraging change after the extremely low escapements in 2001 and 2003. Most of the returning sockeye salmon (97%) were age-1.2 from the 2002 brood year. In 2006, the Alaska Department of Fish and Game (ADF&G) and the Angoon community agreed to no longer attempt the voluntary fishing moratorium proposed by some community members in 2002. Instead, subsistence fishing for sockeye salmon in Kanalku Bay continued under a shortened season. In Sitkoh Lake the estimated escapement of 14,800 sockeye salmon was the third largest in that system since 1996. Due to its apparently healthy sockeye runs, Sitkoh Bay continues to be a good alternative for subsistence fishing for residents Angoon who are able to cross Chatham Strait to fish. Because of its close proximity to Angoon, Kanalku Bay is still the preferred subsistence fishing area for most Angoon residents. However, considering the average annual subsistence harvest reported by Kanalku permit-holders in 1994–2001 was over 1,500 sockeye salmon, current sockeye escapement levels are probably not yet high enough to support a subsistence fishery at those former harvest levels.

Keywords: sockeye salmon, *Oncorhynchus nerka*, subsistence, Kanalku Lake, Sitkoh Lake, escapement, mark-recapture

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