

## **Lake Clark Sockeye Salmon Escapement and Population Monitoring, 2004-2007**

**Abstract:** Sockeye salmon originating from the Kvichak River watershed have historically dominated valuable subsistence, sport, and commercial fisheries in Bristol Bay, Alaska. Obtaining reliable estimates of spawning escapement over time from important subsistence stocks is the number one priority identified by the Subsistence Fisheries Resource Monitoring Program for Bristol Bay. This report describes findings from a salmon enumeration project conducted on the Newhalen River from 2004 – 2007. Specific objectives were to 1) estimate sockeye salmon escapement to Lake Clark and 2) determine the age and size composition of the Lake Clark escapement. Estimates of sockeye salmon escapement were made at river kilometer 36 on the Newhalen River using the same tower site and protocols that were used in previous studies. Sockeye salmon age and size were determined from otoliths collected from the Sixmile Lake subsistence fishery and from post-spawning fish at Lake Clark spawning areas. Total Lake Clark escapement, based on expanded counts averaged 592,059 fish and ranged from a low of 445,620 fish in 2005 to a high of 700,524 fish in 2006. The 2004 – 2007 mean escapement to Lake Clark was 274% higher than the recent (2000 – 2003) mean of 215,922, but 48% lower than the mean escapement of 1,135,464 during 1980 – 1984. During the study period, the Lake Clark escapement comprised, on average, 19% of the total Kvichak River escapement, which was similar to previous years. Run timing was also similar to previous years, although the 2006 run was approximately seven days later than average. Sampled fish were predominately ages 1.2 (46%) and 1.3 (38%), while ages 2.2 (11%), and 2.3 (5%) comprised the remainder.

**Citation:** Young, D.B., and C.A. Woody. 2009. Lake Clark sockeye salmon escapement and population monitoring, 2004-2007. U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 05-402). National Park Service, Lake Clark National Park and Preserve, Port Alsworth, Alaska.