

Klag Bay/Lake sockeye salmon stock assessment

Abstract: The return of adult sockeye salmon to Klag Lake in 2001 was estimated through a survey of subsistence and sport harvest in the terminal area at Klag Bay, and weir counts, verified with a mark-recapture study. Age, length, and sex composition of the escapement was estimated using standard measurements and scale sampling and analysis. Sockeye salmon fry populations in each lake were estimated using hydroacoustic and trawl sampling. Baseline information was collected on the physical characteristics and productivity of lake rearing habitat in each system using standard limnological sampling procedures. A healthy return of adult sockeye salmon was documented, with a total harvest estimate of about 1,700 fish, comprising 12–14% of the total return, and an escapement estimate of about 12,000 fish. The mark-recapture estimate validated the weir count and indicated that few sockeye salmon passed through the weir uncounted. The exception may have been some jacks that slipped through the weir pickets early in the season; the problem was detected and corrected about midway through the run. According to results of age and length analysis, about 10% of the adult sockeye salmon sampled at the weir were jacks. The dominant age class was age-1.3, representing 56% of the fish sampled. The next largest class was age-1.2, representing 25% of the fish sampled. Sockeye salmon fry density was only moderate, compared to that in similar Southeast Alaska sockeye salmon rearing lakes. Klag Lake has a large population of sticklebacks; according to trawl sample results, they comprised about 80% the fish detected during the hydroacoustic survey, and may be significant competitors with the sockeye salmon fry. Klag Lake has a shallow euphotic zone, averaging 4.5 m in 2001, and a thermocline at about 8 m. Good baseline information was obtained in 2001, but since little previous data exists on the Klag Lake sockeye salmon population, it is too early to draw conclusions regarding optimum harvest and escapement sizes. More years of data will be needed to show trends in population and lake productivity over time.

Citation: Conitz, J., and M. Cartwright. 2002. Klag Bay/Lake sockeye salmon stock assessment. U. S. Fish and Wildlife, Office of Subsistence Management, Fisheries Resource Monitoring Program, Fisheries Resource Monitoring Program, 2001 Annual Report (Study No. 01-128). Alaska Department of Fish and Game, Division of Commercial Fisheries. Regional Information Report No. 1J02-28, Douglas, Alaska.