

Neva, Pavlof, and Hoktaheen sockeye salmon stock assessment.

Abstract: Sockeye salmon (*Oncorhynchus nerka*) returns to Neva, Pavlof, and Hoktaheen Lakes have long been an important subsistence resource for Tlingit families living in Hoonah and other areas of northern Southeast Alaska. This annual report summarizes the sockeye stock assessment project findings from the first year, 2002, of a three-year cooperative Hoonah Indian Association, Alaska Department of Fish and Game, and U.S. Forest Service study. This project uses a weir and mark-recapture methods to estimate the sockeye escapement into Neva Lake, a fishpass trap and mark-recapture to estimate the sockeye escapement into Pavlof Lake, and mark-recapture to index the sockeye escapement in Hoktaheen Lake. Age, sex, and length data and limnology data were also collected to help assess the status of these stocks. The Neva sockeye escapement was 4,951 (CV = 8%) - 3,738 (CV = 6%) were adults and 1,213 (CV = 12%) were jacks. They migrated into the lake from mid-June through mid-September and the midpoint of the run was in early August. The early running fish spawned in the main inlet stream and the later running fish were beach spawners. Ninety-five percent of the Neva sockeye escapement was age-1.-. The Pavlof sockeye escapement was 1,350 (CV = 6%). The run extended from the third week in June to the third week in July with a midpoint around July 3. Less than half the sockeye salmon used the fishpass to migrate into the lake. The sockeye spawned in the lower part of the main inlet stream from late-July to mid-August. Age-1.3 fish dominated the escapement. Estimates of the abundance of sockeye salmon in the upper Hoktaheen Lake were 737, 763, and 156 on September 6, 7, and 18 in the main inlet stream index area and 139 and 233 on September 7 and 18 in the outlet index area. Only a few spawning sockeye were observed outside of these two index areas. Age-1.2, 1.3, and 2.2 fish each comprised about one-third of the sockeye sampled. The dominant zooplankton was *Daphnia* sp. in Neva Lake, *Cyclops* sp. in Pavlof, and *Bosmina* sp. in Hoktaheen. The weighted "seasonal" biomass of zooplankton was 402, 1, and 618 mg m⁻², respectively, in Neva, Pavlof, and Hoktaheen Lakes and euphotic zone depths were 12.1, 4.9, and 4.2 m.

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