

## **Limnological and Fisheries Investigation at Virginia Lake, Southeast Alaska, 2001**

**Abstract:** The Virginia Lake nutrient enrichment program was continued in 2001. Fertilizer was applied at 50% of the critical phosphorus load, using 20-5-0 liquid fertilizer that was applied weekly from mid-May to early September. Solid, controlled release fertilizer (CRF) was not added to the lake in 2001 as it had been in the two previous years. Limnological sampling showed that total phosphorus, chlorophyll a concentrations, and zooplankton density and biomass continued to be at low levels throughout the 2001 growing season. The fall rearing sockeye salmon *Oncorhynchus nerka* fry population was estimated at 56,000 fish on 1 October 2001. The ZB-EZD model predicted the lake could support an estimated 98,000 – 158,000 fall fry dependent on either optimum or maximum production values. The 2001 rearing fry were not planted but were progeny of the adults that returned naturally in 1999 and 2000 from the initial colonization program (1989 to 1996). Based on 12% marine survival, the predicted total return for 2002 is estimated at 8,754 adult sockeye.

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