Abundance and Run Timing of Adult Salmon in Long Lake in the Wrangell-St. Elias National Park and Preserve. Study No. 04-501 2004

The Upper Copper River drainage provides spawning habitat for sockeye salmon, *Oncorhynchus nerka*, coho salmon *Oncorhynchus kistuch*, and chinook salmon *Oncorhynchus tshawytscha*. Significant numbers of adult salmon are harvested in commercial drift gillnet operations near the mouth of the Copper River from mid-May to September. Salmon escapement into the Upper Copper River system contributes to federal and state subsistence fishing through September each year. The monitoring and evaluation of these runs is essential to ensure that Wrangell - St. Elias National Park and Preserve (WRST) maintains natural and healthy populations of fish as required by the Alaska National Interest Lands Conservation Act (ANILCA).

Accurate assessment of yearly run strength and migratory timing in tributaries to the Copper River is essential to the development of a management strategy that meets the mandates of ANILCA. The Upper Copper River sockeye salmon populations are of particular importance to both federally qualified and state subsistence users. The primary assessment of inriver abundance for Copper River sockeye salmon occurs at the Miles Lake sonar. However, migratory timing of sockeye salmon into the Copper River is prolonged (May-August); and subsequent assessment of escapement into some drainages is needed to determine spawning distribution.

Thirty years of weir data show annual variations in abundance of Long Lake runs ranging from 4,400 to over 50,000 sockeye. This is the longest running data set of weir counts of salmon in the Copper River drainage. The sockeye salmon stock that spawns within Long Lake is the largest salmon stock within the Chitina River drainage. In 2002 the Long Lake stock composed six percent of the estimated salmon return to the entire Copper River. However, in other years it has composed less than four tenths of a percent of the entire Copper River return (Table 1). This demonstrates the need for stock specific monitoring sites in addition to broad scale sonar sites estimating mixed stock returns.

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