

LAKE CHELAN HYDROELECTRIC PROJECT AQUATIC RESOURCE STUDIES

As part of the environmental studies related to the relicensing of the Lake Chelan Dam in Washington state, EES Consulting staff evaluated the effect of project operations and lake level fluctuations on native and planted tributary spawning fish over a two-year period. Analysis of the alluvial fans in the drawdown zone was conducted in late April 1999, when the lake reached its lowest annual elevation.



Surveys of emergent trout were conducted in the spring and summer of 1999 and 2000 to determine the spawning timing for rainbow and cutthroat trout. EES Consulting staff conducted a study to document those species that potentially could be entrained at the project intake on Lake Chelan, using gillnets, Oneida traps and hook and line. EES Consulting staff conducted extensive creel surveys on Lake Chelan throughout the fishing season, for kokanee, cutthroat, rainbow and lake trout and Chinook salmon, in order to estimate population abundance and to determine the species composition, and distribution in relation to the sports fishery in Lake Chelan.

EES Consulting staff also investigated abundance and distribution of Chinook and kokanee spawners in the Stehekin River, as well as examining the potential for introgression between cutthroat and rainbow trout.

EES Consulting staff assessed fish habitat, populations, and spawning timing in 9 tributaries to Lake Chelan as well as the Stehekin River. Spawning timing was determined by back calculating from fry emergence, which requires recording stream temperature from early spring through summer. Presence of spawning fish was determined by snorkeling in the tributaries at two-week intervals. Spawning timing of Chinook salmon and kokanee was determined in the selected side channels of the Stehekin River. Genetic samples were taken from captured and creel fish from Lake Chelan and the Stehekin River.