

ENVIRONMENT AND SOCIO-ECONOMIC

Fish and Aquatic Habitat

Report: Site C Fisheries Studies – Peace River Fish Inventory 2009

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Summary: The purpose of this 2009 study was to collect baseline information to describe the fish community in the Peace River from Peace Canyon Dam to the Alberta border. In order to achieve this goal the study used several fish capture methods in a variety of fish habitats during three seasons. It also coordinated efforts with the WLR 2009 Peace River Large Fish Indexing Program in order to maximize sampling efficiencies and to enhance the data set. The study examined environmental conditions, fish community structure, fish abundance, population characteristics, and fish health. Fish also were marked with permanent tags to monitor future growth and movement patterns.

The program was successful in achieving its goal. The Peace River supports a diverse fish community that includes cold water and cool water sportfish, suckers, minnows, and sculpins. Fish community structure is not constant within the 151 km study area. There is a gradual shift from a cold water sportfish community dominated by mountain whitefish in the upstream area, to a more diverse fish community in the downstream area that is represented by multiple fish groups and species. This shift in fish community structure represents a transition from a cold, clear water fish community to a cool water fish community that contains species that are more tolerant of adverse environmental conditions (e.g., elevated fine sediment levels).

The majority of sportfish species were most abundant and resided in main channel habitats of the Peace River. A limited number of species (spottail shiner, northern pike, and yellow perch) appear to rely heavily on side channel habitats. Sucker species and many minnow species were abundant at tributary confluences, suggesting that tributaries are focal points for these populations.

Preliminary evidence suggests that most species in the study

area are represented by viable, self sustaining fish populations. The majority likely spawn and rear in tributaries, before recruiting to Peace River populations. Data from only one species, mountain whitefish, indicated widespread spawning in the mainstem Peace River. Other large fish species (northern pike and yellow perch) rely heavily on protected side channel habitats for spawning and early rearing. A limited number of populations may be maintained by recruitment via entrainment through the PCN Dam. These include kokanee, lake trout, and lake whitefish. Only one species, goldeye, appears to be represented exclusively by adult fish, suggesting recruitment from downstream sources.

This one year of study provides a good description of the Peace River fish community. Additional work will be used to confirm these findings and to increase the certainty around future interpretation of the baseline data.