

Peace River Site C Hydro Project

Stage 2 - Environmental Studies

Study Outline: Peace River Tributary Fisheries Study

Introduction

There have been numerous fisheries and aquatic studies in the Peace River and its tributaries, in the area from the Peace Canyon Dam to the B.C.-Alberta border, over the last two decades.

The purpose of fisheries studies conducted in 2005 to 2007 was to provide information related to fish distribution and relative abundance, habitat utilization and spawning migrations in the Peace River and its tributaries. The purposes of the 2008 Peace River Tributary Fisheries Study are to develop a more robust data-set based on the sampling design and methods from the 2005–2006 program, allow for between-year comparisons, and to add a new fall migration component.

Study Objective

The objectives of the Tributary Fisheries Study that will be conducted during Stage 2, Project Definition and Consultation, are to:

- Determine the species composition, timing, and relative magnitude of spring spawning migrations in Peace River tributaries upstream of the potential Site C dam
- Determine the species composition, timing, and relative magnitude of fall spawning runs in Peace River tributaries upstream of the potential Site C dam
- Determine the species composition, distribution and relative abundance of rearing juveniles and characterization of critical rearing habitats in Peace River tributaries upstream of the potential Site C dam
- Develop a preliminary effects assessment approach and identify specific study plans and models necessary for assessing the potential effects of the potential Site C project to tributary fish and fish habitat
- Engage First Nations and government agencies to review study results, discuss potential concerns, and assess future field programs

Scope of Work

The spatial extent of the 2008 Tributary Fisheries Study will include the Halfway River, Moberly River, Wilder Creek, Cache Creek, Red Creek, Farrell Creek, Lynx Creek and Maurice Creek.

The focus of the spawning migration component of the study includes sport fish species, Arctic grayling, rainbow trout, bull trout and mountain whitefish. The spawning sampling periods will correspond to the tributary migration timing for each target fish species – spring, late spring, summer and fall respectively. The tributary fish rearing habitat assessment will be performed in discrete habitat types during the summer.

Methodologies

Spring and Fall Migration

- Install hoop nets at the mouth of the selected tributaries and conduct daily monitoring to determine the magnitude, duration and timing of upstream migrations;
- Electrofish upstream and downstream of hoop net sites in each tributary to determine if spawning migration has begun prior to net installation and assess potential catch biases; and
- Develop stage-discharge relationships with flow metering and staff gauges, and install temperature loggers in ungauged tributaries.

Summer Juvenile Surveys

- Conduct boat and backpack electrofishing surveys in discrete habitat units

Modifications to previous methodologies

- Conduct a bull trout spawner survey using previous Minister of Environment spawner assessment methodology
- The bull trout spawner assessment will include visual redd and mobile surveys in the upper Halfway River
- The mountain whitefish spawner assessment will test the use of egg count surveys using kick nets to identify spawning areas in the Halfway and Moberly Rivers
- The use of drift nets to collect larval fish has been discontinued

Additional Fisheries Studies

In addition to the Tributary Fisheries Study and Fish Movement Studies, the Site C project will use information from BC Hydro's Peace River Large River Fish Indexing Program (ongoing since 2002). This program provides a long term study of fish species composition and abundance in the mainstream Peace River. Final reports for this program are available annually.

BC Hydro is also collecting DNA/genetic samples and tissue samples through the various fish studies in order to gather data that will contribute to future assessments of fish passage needs and current levels of methyl mercury in fish tissues.

In consultation with First Nations and government fisheries agencies, BC Hydro will review completed fisheries studies and assess the future studies needed.

Reporting

The 2008 Peace River Tributary Fisheries Study Final Report will be available at the completion of Stage 2.