

Peace River Site C Hydro Project

Stage 2 - Environmental Studies

Study Outline: Peace River and Tributary Fisheries Study (2009)

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 2008 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 2009 Peace River and Tributary Fisheries Study are to develop a more robust data-set based on the sampling design and methods from the 2005–2008 programs, allow for between-year comparisons, and to expand on fish community interactions.

Study Objectives

The 2009 Tributary Fisheries Study that will be conducted during Stage 2, Project Definition and Consultation, will seek to:

- Determine the species composition, timing, and relative magnitude of spring and fall spawning migrations in Peace River tributaries upstream of the potential Site C dam
- Determine the species composition, timing, and relative magnitude of tributary fish movements from the Halfway, Moberly and Maurice systems
- Determine the species composition, distribution and relative abundance of adults and rearing juveniles and characterization of critical habitats in Peace River and its tributaries upstream of the potential Site C dam

Scope of Work

The spatial extent of the 2009 Peace River and Tributary Fisheries Study will focus on the Peace River, Halfway River, Moberly River, 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 Peace River and tributary fish rearing habitat assessment will be performed in discrete habitat types during the spring, summer and fall.

Methodologies

- Install fish traps at the mouth of the selected tributaries and conduct daily monitoring to determine the magnitude, duration and timing of migrations;
- Develop stage-discharge relationships with flow metering and staff gauges, and install temperature loggers in ungauged tributaries.
- Conduct boat and backpack electrofishing surveys in discrete habitat units
- Conduct a bull trout spawner survey using previous Ministry of Environment spawner assessment methodology
- The bull trout spawner assessment will include visual egg nest and snorkle surveys in the upper Halfway River
- The mountain whitefish spawner assessment will also use egg count surveys using kick nets to identify spawning areas in the Peace, Halfway and Moberly Rivers
- Engage First Nations and government agencies to review study results, discuss potential concerns, and assess future field programs

Additional Fisheries Studies

In addition to the Peace River and Tributary Fisheries Studies 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.

As part of the tributary studies, BC Hydro has also collected genetic samples and fish 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 agencies, BC Hydro will review completed fisheries studies and assess the future studies needed.

Reporting

The 2008 Peace River and Tributary Fisheries Study Final Reports will be available at the completion of Stage 2. The 2009 study reports are expected to be available in 2010.