

## ENVIRONMENT AND SOCIO-ECONOMIC

### Fish and Aquatic Habitat

**Report:** Site C Fisheries Studies – Halfway River and Moberly River Summer Fish Survey 2009

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**Summary:** A number of investigations completed between 2005 and 2008 described fish communities and fish habitats of several Peace River tributaries. This work suggested that the Moberly River and Halfway River were potentially important recruitment sources for Peace River fish populations. Because previous investigations were restricted to the lower section of each tributary, there was a lack of current information that described the fish community in large sections of each system. The main goal of the present study was to improve our understanding of the fish communities in the upstream portions of each river.

The purpose of the study was to collect baseline information to describe fish communities of the mainstem Moberly River and mainstem Halfway River, with the primary focus being young sportfish. The work was completed in August 2009 and included approximately 100 km of each watercourse from the headwaters to the confluence with the Peace River. On each tributary, ten evenly distributed sections were sampled using beach seine, backpack electrofisher, and small fish boat electrofisher fish capture methods.

The investigation documented environmental conditions (general water quality, water temperature, and discharge), measured physical characteristics of sampled habitats, and described the small fish community (composition, distribution, and abundance).

Environmental and physical characteristics of the tributaries influenced the availability and quality of fish habitats, and likely were factors that controlled fish species diversity, distribution, and abundance recorded in each study area. The environmental and physical characteristics of the Moberly River and Halfway River, within the areas investigated, were different as were the fish communities.

Notable findings of the Moberly River study were as follows:

1. Young mountain whitefish were the most abundant fish followed by young longnose sucker.
2. Young Arctic grayling were present, but were not abundant.
3. Age 0 Arctic grayling, burbot, mountain whitefish, and northern pike were present indicating use of the system for spawning and early rearing.
4. The study area was not used by bull trout and rainbow trout for spawning and early rearing.
5. Substantial numbers of burbot were recorded suggesting that the system is important for this species.
6. Adult fish of all sportfish and sucker species were recorded suggesting that the study area supports resident large-fish populations.

Notable findings of the Halfway River study were as follows:

1. Young mountain whitefish were the most abundant fish in the study area followed by young longnose sucker.
2. Young Arctic grayling, bull trout, and rainbow trout were most abundant and widespread upstream of the Cameron River confluence.
3. Age 0 bull trout and Age 0 rainbow trout were not recorded in the mainstem river indicating that Halfway River tributaries were used for spawning and rearing.
4. Sucker and minnow species were most prominent downstream of the Cameron River confluence.