
Upper Fording River Westslope Cutthroat Trout Study — May 2013 Update

Introduction

In 2012, Teck commissioned a multi-year project to better understand the status of Westslope cutthroat trout (WCT) population in the upper Fording River watershed upstream of Josephine Falls. This fish population is recognized as being particularly vulnerable to water quality challenges such as selenium. The goal of the project is to determine whether the upper Fording WCT population is healthy, robust and sustainable.

Westslope Fisheries Ltd., in partnership with the Canadian Columbia River Inter-tribal Fisheries Commission were retained by Teck to undertake the project, under the guidance and direction of a Steering Committee, consisting of representatives from the Ktunaxa Nation Council, B.C. Ministry of Forests, Lands and Natural Resource Operations, Fisheries and Oceans Canada, Dr. Carl Schwarz (Simon Fraser University), and Teck.



Westslope cutthroat trout are a provincially blue-listed species in BC, and are listed as a species of special concern under the federal Species at Risk Act. This is because there has been a drastic decline of WCT populations in their traditional range due to many factors including over-harvest, habitat degradation and the introduction of non-native fish species; and WCT readily cross-breed with non-native rainbow trout.

Project Overview

The initial study design was planned and developed through three Steering Committee workshops and one public information session held in 2012. The key questions that the project team is seeking to answer are:

1. What is a viable WCT population?
2. Is the WCT population sustainable?
3. Are the fish healthy (based on physical condition)?
4. Is it one interconnected population or multiple populations?
5. What are the habitats (critical and overall)?
6. What are the movement patterns and why?
7. What is the WCT distribution seasonally?

The study area is the upper Fording River watershed, above Josephine Falls. The project extends from 2012 to 2015, and includes:

- Radio telemetry work to assist in understanding fish movement patterns, seasonal distribution, habitat use and life history.
- Telemetry involves tracking fish that have been implanted with radio transmitters;
- Population monitoring to obtain information on the size and age structure of the population; and
- Habitat mapping and characterization to determine the amount of habitat available, how it is used, and to identify critical habitat.

Work Completed in 2012

Field work began in August 2012:

- 60 sub-adult and adult fish were implanted with radio transmitters over a 52 km long area, and tracked on a monthly basis.
- 211 fish were marked with coloured tags for the purposes of obtaining an estimate of the population size during the annual September snorkel surveys.
- All captured fish were examined externally for physical condition and the 60 fish implanted with transmitters were also examined internally.
- Habitat measurements and water temperature were also recorded.



Dynamic ice conditions, the presence or absence of surface water (e.g., channel dewatering) and groundwater, and water depths appear to be influencing over-winter habitat selection by sub-adult and adult fish.

Work Planned for 2013

The following work is planned for 2013:

- 2012 aerial photographs are currently being used to map available fish habitat in the study area.
- The work completed in 2012 to implant radio transmitters and tag fish will be repeated on an additional suite of fish. Fish tracking will continue on a monthly basis and weekly during the spring staging and spawning season (May 15 to July 30).
- Juvenile and sub-adult/adult population monitoring.
- The physical condition of fish, habitat measurements, and water temperature will continue to be recorded.

Progress on answering the key study questions:

1. What is a viable WCT population?

Based on a literature review of viability analysis, a viable population of WCT can range between 470 and 4,600 adults.

2. Is the WCT population sustainable?

The 2012 snorkel surveys produced a population estimate of approximately 2,600 subadult and adult fish which is within the range expected for a headwater population within the upper Kootenay River watershed. These preliminary results indicate that with suitable management strategies, the upper Fording River WCT population could be self-sustaining.

3. Are the fish healthy?

Based on physical examinations of mature fish, the fish appear to be in good condition and robust compared to similar populations elsewhere in the region.

4. Is it one interconnected population or multiple populations?

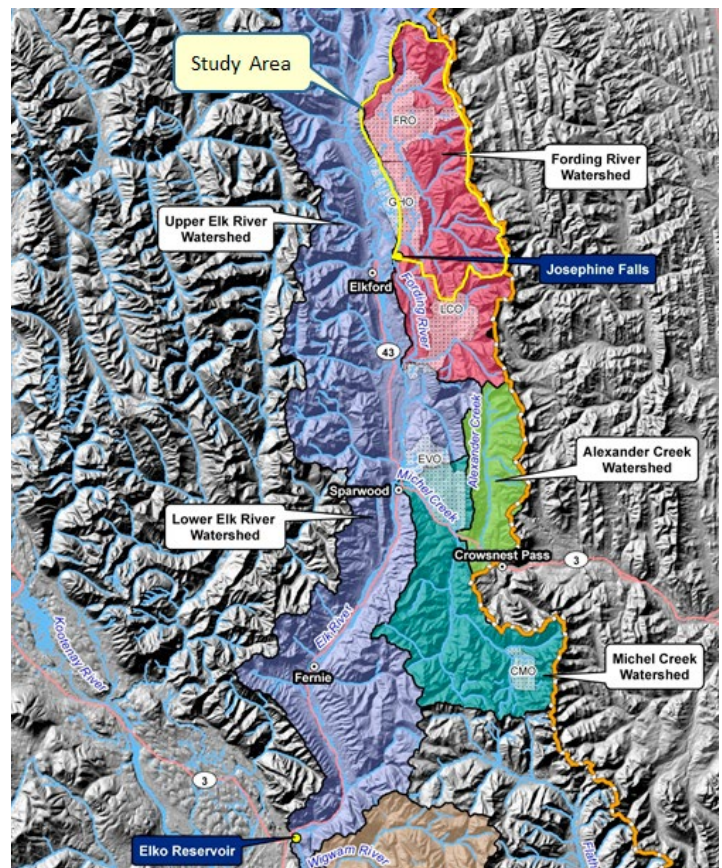
The telemetry work conducted to date on sub-adult and adult fish supports existing genetic studies that show that this is one interconnected cutthroat population. Additional work in the mainstem, headwater reaches, and tributaries of the upper Fording River, is being done to address the question.

5. What are the habitats (critical and overall)?

The evaluation of critical habitat is in the early stages of investigation. However, some notable observations were made in 2012, including a high proportion of tagged fish overwintering in three deep, slow, pools with possible groundwater influence; two of the pools are part of constructed habitat on the Fording River Operations property.

6/7. What are the movement patterns and why? What is the WCT distribution seasonally?

The evaluation of movement patterns and distribution is in the preliminary stages of investigation. Seasonal movement patterns between summer rearing and over-wintering habitat are meeting expectations for a migratory fluvial behaviour.



Contact Information

Should you have any questions, concerns or feedback regarding the Upper Fording River Westslope Cutthroat Trout Study, please contact Glenda Fratton at glenda.fratton@teck.com