Alberta Conservation Association
2013/14 Project Summary Report

Project Name: Muskeg River Core Area Bull Trout Status

Fisheries Program Manager: Peter Aku

Project Leader: Mike Rodtka

Primary ACA staff on project:

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Partnerships

Alberta Environment and Sustainable Resource Development
Alberta Stream Watch Conservation Coalition
TD Friends of the Environment Foundation

Key Findings

- We captured 10 bull trout ranging in size from 257 to 543 mm fork length in two study reaches of the Muskeg River sampled in 2013/14.
- Our low catch prevented us from estimating bull trout abundance at the study reaches.
- We angled 34 bull trout ranging in size from 238 to 475 mm fork length while scouting upstream of the study reaches.
- We suspect flooding prior to our sampling impacted bull trout distribution in the river.

Introduction

Bull trout is a sport fish native to the eastern slopes of Alberta. In response to alarming declines in abundance and distribution, a province-wide zero bag limit for the species was imposed by the provincial government in 1995. In review of their bull trout management plan, Alberta Environment and Sustainable Resource Development (ESRD) used a modification of the Natural Heritage Network ranking system to rank bull trout population trends in the province (Alberta Sustainable Resource Development and Alberta Conservation Association 2009). This ranking system divides watersheds into core areas that provide habitat and the necessary requirements for long-term survival of bull trout. Core areas are ranked according to adult population size, area of occupancy, short-term trends and threats to the core area (Fredenberg et al. 2005; United States Fish and Wildlife Service 2008). The majority of core areas in Alberta have bull trout populations that are considered *At Risk* or at *High Risk* of extirpation. We applied methods developed in the Clearwater River core area, which include a cost-effective, defensible, quantitative, standard approach to assessing lotic bull trout populations, to the Muskeg River core area. This study allows us to test these methods in another *High Risk* core area and provides current information on the status of this bull trout population to fisheries managers. Our objective in 2013/14 was to estimate abundance of adult bull trout in the Muskeg River.

Methods

We used angling and raft electrofishing gear to capture bull trout for mark-recapture abundance estimates at two reaches (14 river kilometres total) on the Muskeg River from June 27 to June 30, 2013 (Figure 1). These reaches have previously been used for monitoring bull trout abundance. We angled approximately 2 km of suitable habitat upstream of the reaches while scouting to determine where bull trout occur outside these reaches. We fin-clipped and implanted adult bull trout (i.e., ≥250 mm fork length) with passive integrated transponder (PIT) tags for future identification before returning them to the river.

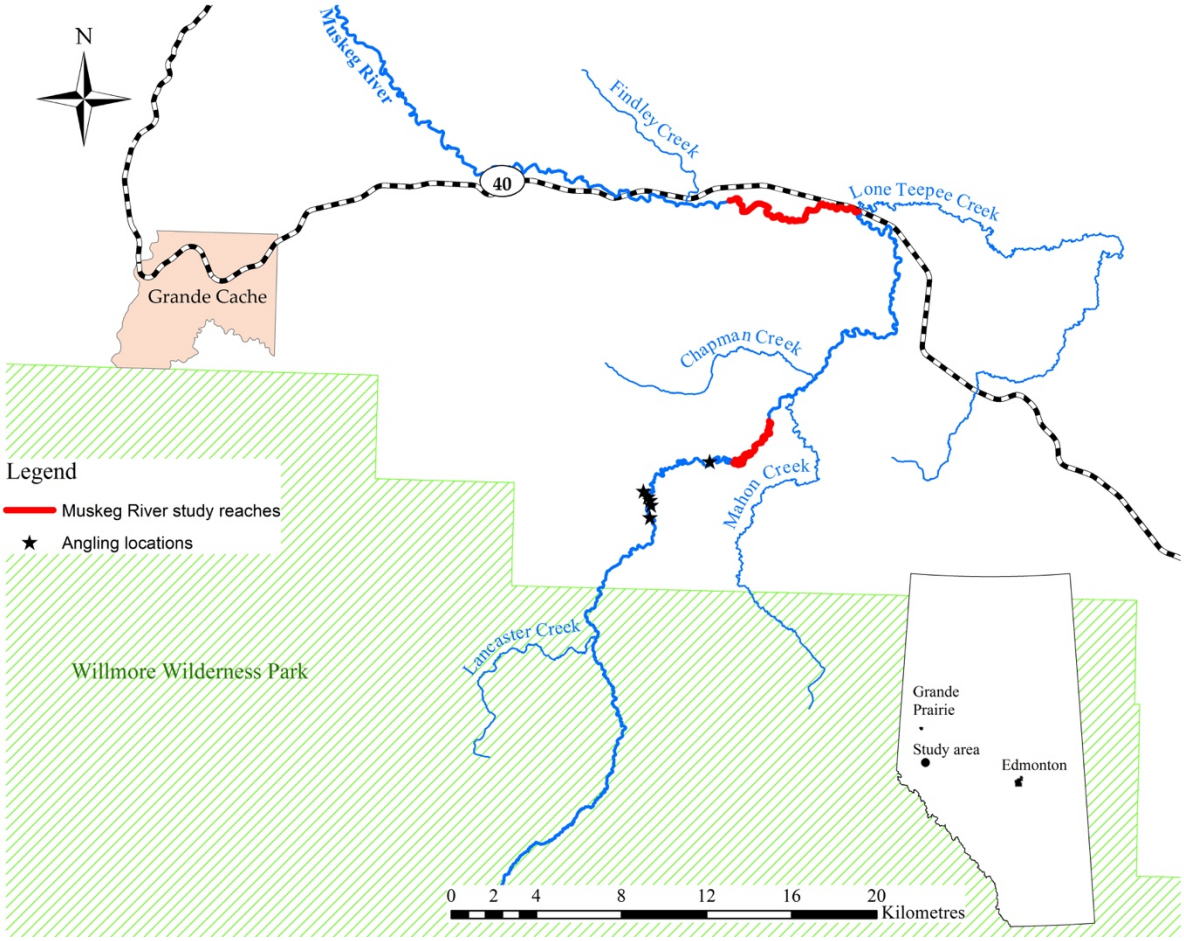

Figure 1. Location of sample reaches in the Muskeg River core area, June 27 to 30, 2013.

Results

We angled for four hours and electrofished for 47 minutes in the two reaches, resulting in captures of 10 bull trout. Our catch ranged in size from 257 to 543 mm fork length. We also captured one brook trout and one suspected *brook trout x bull trout* hybrid. Our low catch prevented us from estimating bull trout abundance. We angled for four hours upstream of the

study reaches and captured 34 bull trout ranging in size from 238 to 475 mm fork length. We suspect flooding prior to our sampling impacted bull trout distribution in the river.

Conclusions

We captured 10 bull trout in two reaches of the Muskeg River using angling and electrofishing gear. We did not capture enough bull trout in these reaches for valid abundance estimates. We did capture 34 bull trout while scouting upstream of these reaches. We suspect flooding prior to our sampling impacted bull trout distribution in the river. We will attempt to estimate abundance again in 2014/15 and to describe the distribution of juvenile bull trout throughout the Muskeg River core area.

Communications

- Delivered presentation to Alberta Environment and Sustainable Resource Development on project delivery and results.
- Presented project objectives to Aseniwuche Winewak Nation.

Literature Cited

Alberta Sustainable Resource Development and Alberta Conservation Association. 2009. Status of the bull trout (*Salvelinus confluentus*) in Alberta: update 2009. Alberta Sustainable Resource Development, Wildlife Status Report No. 39 (Update 2009), Edmonton, Alberta, Canada. 48 pp.

Fredenberg, W., J. Chan, and J. Young. 2005. Bull trout core area conservation status assessment. U.S. Fish and Wildlife Service, Portland, Oregon, USA. 94 pp + App.

United States Fish and Wildlife Service. 2008. Bull trout recovery: monitoring and evaluation guidance. Report prepared for the U.S. Fish and Wildlife Service by the Bull Trout Recovery and Monitoring Technical Group, Portland, Oregon, USA. Version 1. 74 pp.

Photo Captions

Alberta Conservation Association biologists Chad Judd and Mike Rodtka electrofishing the Muskeg River. Photo: Kevin Fitzsimmons
[filename: Photo1_MuskegRiver_2013-14_Kevin Fitzsimmons.JPG]

Alberta Conservation Association biologists Chad Judd and Kevin Fitzsimmons angling for bull trout in the Muskeg River. Photo: Mike Rodtka
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