

**Alberta Conservation Association
2007/08 Project Summary Report**

Project name: *North Saskatchewan and Ram Rivers Fish Inventories - Phase 1*

Project leader: Mike Rodtka

Primary ACA staff on this project: Kevin Gardiner, Kelly Hooey, Chad Judd, Mike Rodtka, Shevenell Webb, and Thomas Winter

Partnerships:

Alberta Streamwatch Conservation Coalition
Alberta Sustainable Resource Development
Shell Canada Energy
Forest Resource Improvement Association of Alberta

Key findings

- Bull trout, brown trout, cutthroat trout, longnose dace, longnose sucker, mountain sucker, mountain whitefish, walleye and white sucker were captured in the North Saskatchewan River downstream of the confluence of the Ram River.
- An estimated 50 - 110 bull trout spawned in Fall Creek in 2007 including a fish originally tagged in the Ram River.
- The origin of the bull trout spawning run into Fall Creek remains largely unknown. Project partners were sought to help fund an expansion of the project, a bull trout movement study; Shell Canada Energy and the Forest Resource Improvement Association of Alberta have joined as project partners.

Introduction

Baseline fish community composition and catch data for the North Saskatchewan and Ram rivers is required for the development of an *Integrated Watershed Management Plan* through the *Water for Life Strategy*. The goal of the current project was to gather baseline catch data for the undocumented reaches, information that would feed directly into developing the watershed management plan, the provincial bull trout (*Salvelinus confluentus*) management and recovery plan, and day-to-day area fisheries management activities. The project will also generate preliminary (i.e., act as phase 1 project) data on a bull trout spawning and movement study in the Fall Creek, a tributary to the Ram River that receives intense recreational and industrial use. Anglers report catching large, presumably migratory, bull trout in Fall Creek during the autumn and significant opportunity exists for remediation of off-highway vehicle and industrial impacts to the watershed; a bull trout movement study will help prioritize conservation efforts within the watershed.

Methods

To generate fish community and composition data, we electrofished and/or angled reaches around the confluence of the North Saskatchewan and Ram rivers. We sampled approximately 12 km of the North Saskatchewan River and 24 km of the Ram River and obtained catch-per-unit-effort data for nine fish species. For all species, we recorded number captured, length, and weight. We monitored Fall Creek from August to October 2007 for evidence of bull trout spawning activity. Monitoring methods included observation from the bank or instream using snorkel gear and angling. Water temperature can be a primary factor determining species presence, as well as the timing of bull trout migration, so we monitored water temperature in Fall Creek and the Ram River. All bull trout captured were given an adipose fin clip and fish > 299 mm fork length (FL) were tagged with colour-coded, externally visible spaghetti tags. In total, we tagged 38 bull trout throughout the study area (one in the North Saskatchewan River, 11 in the Ram River, and 26 in Fall Creek).

Results

We captured eight species comprising six genera and three families during the survey (Table 1). Mountain whitefish (75%) and longnose sucker (12%) were the most commonly encountered species; bull trout and mountain sucker were the least common (Table 1). We observed bull trout actively digging redds (the gravel nest of trout) in Fall Creek in September. The bull trout observed in Fall Creek were relatively large (up to 3 kg) and we suspected to be migratory; a single tagged fish, originally captured in the Ram River, was observed spawning in the creek. We counted a total of 40 redds in the creek. This information along with tagging data lead us to estimate approximately 50 - 110 bull trout spawned in Fall Creek in 2007.

Table 1. Species composition and mean (\pm SD) electrofishing catch (catch/km and catch/100s) from six, 1-km reaches of the North Saskatchewan River around the confluence of the Ram River.

Family	Species	Common name	Number captured	Percentage composition	Mean catch/km	Mean catch/100s
Salmonidae	<i>Salvelinus confluentus</i>	Bull trout	3	1.1	0.5 \pm 1.2	0.08 \pm 0.2
	<i>Salmo trutta</i>	Brown trout	11	3.9	1.9 \pm 0.7	0.3 \pm 0.1
	<i>Oncorhncus mykiss</i>	Cutthroat trout	5	1.8	0.8 \pm 0.8	0.1 \pm 0.1
	<i>Prosopium williamsoni</i>	Mountain whitefish	212	75.4	35.8 \pm 13.1	5.5 \pm 1.8
Catostomidae	<i>Catostomus catostomus</i>	Longnose sucker	34	12.1	5.7 \pm 5.1	1.8 \pm 2.9
	<i>Catostotomus platyrhynchus</i>	Mountain sucker	3	1.1	0.5 \pm 0.8	0.07 \pm 0.1
	<i>Catostomus commersoni</i>	White sucker	4	1.4	0.7 \pm 1.2	0.1 \pm 0.2

Conclusion

We collected baseline fish species composition and relative abundance information from the North Saskatchewan and Ram rivers (near their confluence). Bull trout spawning behaviour was documented in Fall Creek. None of this information was available prior to our study. Based on results from the 2007 phase 1 study, we will be pursuing a bull trout movement study in the area in 2008. Shell Canada Energy and the Forest Resource Improvement Association of Alberta have joined as project partners.

Communications

- Project summary information was distributed to project partners.
- A funding proposal for phase 2 work was distributed to potential partners.
- Presentations were given to managers at Sundre Forest Products and Alberta Sustainable Resource Development.



Shevenell Webb conducting a redd survey on Fall Creek (note redd). (Photo: Mike Rodtka)



Mike Rodtka measuring a Ram River bull trout. (Photo: Robin McDonald)



Angling the Ram River. (Photo: Robin McDonald)