Alberta Conservation Association
2011/12 Project Summary Report

Project Name: *Edson River Riparian Conservation*

Fisheries Program Manager: Peter Aku

Project Leader: Brendan Ganton

Primary ACA staff on project:

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Partnerships

Fisheries and Oceans Canada
Penn West Energy
Royal Bank of Canada

Key Findings

- Developed best management practices for haying with local leaseholder; delineated 30 m 'setback' for haying operations near riparian areas.
- Pursuing exclusion fencing and off-site watering project with local landowner (spring 2012).
- No water quality variable exceeded federal guidelines for protection of aquatic life.

Introduction

The ecological integrity of Alberta's rivers, streams and surrounding landscapes is threatened by ongoing human development. Degraded areas require considerable rehabilitation efforts to recover their health and function. In 2010, Alberta Conservation Association (ACA) identified the Edson River watershed as a priority for riparian conservation. Located in the northwestern foothills region of Alberta, degradation of riparian habitats due to land conversion, agricultural practices, resource extraction and urban development has contributed to reduced overall river health and ecological integrity. An aerial survey of riparian health conducted by ACA in 2010 showed almost half (49%) of the riparian areas associated with the mainstem Edson River were degraded, with the majority of the impacted sites having poor riparian health and integrity. Through rehabilitation and enhancement of these impacted areas, the Edson River Riparian Conservation project aims to improve riparian conditions to the benefit of sport fish populations, wildlife, livestock and users of the waterbody.

Methods

We approached local landowners and solicited interest in delivery of riparian enhancement projects. We presented information on the current condition of the drainage and outlined our

interest in assisting landowners to enhance riparian areas. We worked with willing landowners to create a plan to enhance the riparian areas associated with their properties.

As part of our long-term monitoring protocol, we conducted water quality and macroinvertebrate analyses at five and 10 locations, respectively. We collected water quality 'grab' samples once in spring and once in late summer, and upon taking grab samples we collected in-stream data with a handheld YSI multimeter. We submitted sample bottles to Maxxam Analytics in Edmonton for a suite of chemical and physical tests. We sampled macroinvertebrates with a D-frame dip net following the USEPA multi-habitat protocol (Barbour et al. 1999); we sampled different habitat types proportionately to their representation in a 100-m long site. We preserved samples in a 75% ethanol solution and identified macroinvertebrates to the family level.

Results

In 2011/12, we worked with two landowners to plan and deliver riparian enhancements on their properties. In one case, we worked with a leaseholder to create a 30-m setback for haying near riparian areas, which will create a vegetated buffer between hayfields and the river. In a second case, we planned an exclusion fencing and off-site watering project that will immediately protect the riparian area from livestock damage. After several years of rest this excluded area will create a riparian pasture that will continue to protect the riparian area while allowing the landowner more options for livestock rotation and management. These two projects have the potential to improve more than 4 km of riparian habitat in three quarter sections, and will help encourage greater landowner participation in the upcoming years.

No water quality variable exceeded Alberta Environment's guidelines for protection of aquatic life. We collected a total of 5,913 macroinvertebrates and identified them to the family level. The total number of families sampled was 54 and the average number of families per site was 22 ± 4. The two most common families present were Baetidae (order: Ephemeroptera) and Chironomidae (order: Diptera).

Conclusions

Delivery of on-the-ground projects has been slower than hoped. However, the participation of two landowners starting in fall 2011 is encouraging, and should lead to greater comfort and participation from other landowners. Baseline conditions have been identified allowing us to evaluate the impacts and benefits of our future enhancements.

Communications

N/A

Literature Cited

Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid bioassessment protocols for use in streams and wadeable rivers: periphyton, benthic macroinvertebrates and fish, second edition. EPA 841-B-99-002. U.S. Environmental Protection Agency, Office of Water, Washington, D.C, USA.

An eroded bank within a proposed riparian pasture showing bank slumping and invasive weeds, a product of livestock grazing. (Photo: Troy Furukawa)

Alberta Conservation Association biologist, Brendan Ganton, indicates the location of an installed temperature monitoring device during collection of water quality samples, Edson River, Spring 2011. (Photo: Emily Turton)

Aerial photo of the upper Edson River shows a contrast of relatively undisturbed, forested public land (right) to heavily impacted, cleared and grazed private lands (left). (Photo: Walker Environmental)