

Alberta Conservation Association (ACA)

Date: 2014-2015

Project Name: Riparian Conservation

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Project Leaders: Stefanie Fenson (Northeast Region, Riparian Conservation Program Lead), Marco Fontana (Central Region, Raven River), Lenore Stone (Northwest Region, Beaverlodge River), Juanna Thompson (Northeast Region, Edson River) and Mike Uchikura (Southern Region, South Riparian)

Primary ACA staff on project:

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Partnerships

- Alberta Environment and Sustainable Resource Development
- Alberta Riparian Habitat Management Society (Cows and Fish)
- ConocoPhillips
- County of Grande Prairie
- County of Lethbridge
- Enerplus
- Fisheries and Oceans Canada
- Government of Canada EcoAction Community Funding Program
- Landowners
- MULTISAR
- Municipal District of Foothills
- Nature Conservancy of Canada
- Oldman Watershed Council
- Pincher Creek Watershed Group
- Syncrude Canada Ltd.
- Trout Unlimited Canada
- West County Watershed Society

Key Findings

- Delivered 12 riparian enhancement activities: 4 agreements, 3 fencing projects, 3 livestock-watering initiatives and 2 tree-planting events.
- Conserved 34 acres through riparian habitat lease agreements and installed 3.9 km of wildlife-friendly fences.

- Conducted 14 riparian health inventories or assessments and collected water samples from 11 sites as part of baseline data collection or ongoing monitoring.
- Planted 5,000 trees and shrubs.
- Partnered with 17 groups and organizations to enhance and facilitate the maintenance of healthy riparian habitat across the province.

Introduction

The ecological integrity and health of Alberta's rivers, streams and surrounding landscapes are often negatively affected by ongoing human development. Aquatic and terrestrial habitats have been degraded by activities such as agriculture, land conversion, forestry, oil and gas exploration, and urban and rural community development. Significant conservation efforts are needed to restore the ecological function of these impacted areas. Alberta Conservation Association's (ACA) Riparian Conservation Program (RCP) identifies priority watersheds for focused conservation efforts to give these areas the best potential for successful restoration. Within these focal areas, the primary goal is to improve the health of riparian areas, which in turn improves the health of associated wildlife and fish communities through enhanced ecosystem processes. ACA collaborates with community-level watershed groups, landowners, government and industry to implement best management practices and deliver on-the-ground projects. Our objectives for 2014/15 were to 1) deliver on-the-ground restoration projects, 2) collect baseline information on new project sites and monitor existing ones, and 3) engage landowners, the public and other stakeholders in community outreach and education activities. In 2014/15, the RCP consisted of the following riparian conservation projects delivered throughout the province: Beaverlodge River (Northwest Region), Edson River (Northeast Region), Owl River (Northeast Region), Raven River (Central Region), and South Riparian (Southern Region).

Methods

The RCP encompasses activities that conserve, protect and enhance wildlife and fish habitat and increase consumptive and non-consumptive recreational opportunities, including angling and hunting. This provincial program is delivered at a regional level and is designed to ensure provincial standards are adhered to by Land Management staff. The Land Management team and program manager are responsible for the provincial coordination of this program, while each project's watershed-specific on-the-ground project components are delivered regionally.

On-the-ground riparian projects are delivered as described in the *Guiding Document for ACA's Riparian Conservation Program* (draft). Depending on project-specific site requirements, we use various tools, such as wildlife-friendly livestock exclusion fencing, off-site watering systems, spring developments, bioengineering, riparian pasture management, tree planting, landowner agreements, and outreach and educational activities, to improve riparian health and offset various environmental impacts. We maintain long-term relationships with landowners and other partners, and we provide technical advice and support for riparian initiatives led by other agencies. In most project areas, we collaborate with several stewardship groups to promote riparian conservation, implement a variety of enhancements, and install signage on project sites. We use aerial videography, water sampling, photographic benchmarks and riparian health

inventories/assessments to gather baseline data where appropriate and monitor project progress and effectiveness.

Many watersheds potentially require conservation programming; however, we focus our conservation efforts in areas where riparian cover may be degraded by agricultural practices and where fisheries may have declined over the past decades. The RCP identified the following priority watersheds to focus conservation efforts in 2014/15: Beaverlodge, Edson, Owl, Raven, North Raven and Oldman rivers, and Clear, Todd, Beaver, Drywood, Yarrow, Lyndon, Pincher and Indianfarm creeks and their associated tributaries. Our riparian program is delivered under an adaptive management (or conservation) framework. This framework allows for the continual improvement of conservation practices through learning from the outcomes of existing projects in support of program objectives.

Results

We completed 12 riparian habitat enhancement activities across five projects throughout the province (Table 1). On-the-ground restoration projects were delivered using a variety of management tools, including landowner habitat lease agreements, livestock exclusion fencing (Figure 1) and alternate watering sources to reduce or eliminate grazing pressure, and riparian and upland tree planting. Monitoring initiatives included water sampling at permanent sample sites to monitor water quality, and riparian health inventories and assessments using Cows and Fish sampling methods (Fitch et al. 2001).

Table 1. Riparian enhancement and monitoring initiatives throughout the province by project in 2014/15.

Project Name (Region)	Number of New Enhancement Projects and Activities	Monitoring Activities	Outreach Activities
Owl River (Northeast)	–	<ul style="list-style-type: none"> • Aerial videography conducted on entire river (46 km) 	–
Raven River (Central)	4 <ul style="list-style-type: none"> • 2 landowner agreements • 2 wildlife-friendly livestock exclusion fencing projects (2.3 km installed) • 30 acres riparian area conserved through landowner lease agreements 	–	–
Beaverlodge River (Northwest)	6 <ul style="list-style-type: none"> • 2 landowner agreements • 4,400 spruce seedlings and 600 willow stakes planted • 1 wildlife-friendly livestock exclusion fencing project (1.6 km installed) • 4 acres riparian area conserved through landowner lease agreements • 1 solar-powered off-site watering system 	<ul style="list-style-type: none"> • 9 riparian health inventories or assessments • 6 water sampling sites 	<ul style="list-style-type: none"> • Engaged 50 student volunteers • Delivered presentations and participated in demonstration sites • Maintained membership on Redwillow Watershed Restoration Team
Edson River (Northeast)	–	<ul style="list-style-type: none"> • 5 riparian habitat assessments • 5 water sampling sites 	<ul style="list-style-type: none"> • Published information ad in <i>Edson Leader</i> newspaper • Featured participating landowner in ACA's <i>Conservation Magazine</i>
South Riparian (Southern)	2 <ul style="list-style-type: none"> • Assisted with construction of 2 dugouts for better livestock distribution 	–	<ul style="list-style-type: none"> • Maintained active membership on Oldman Watershed Council Rural Team • Assisted with the Holding the Reins landowner workshop
TOTAL	12		

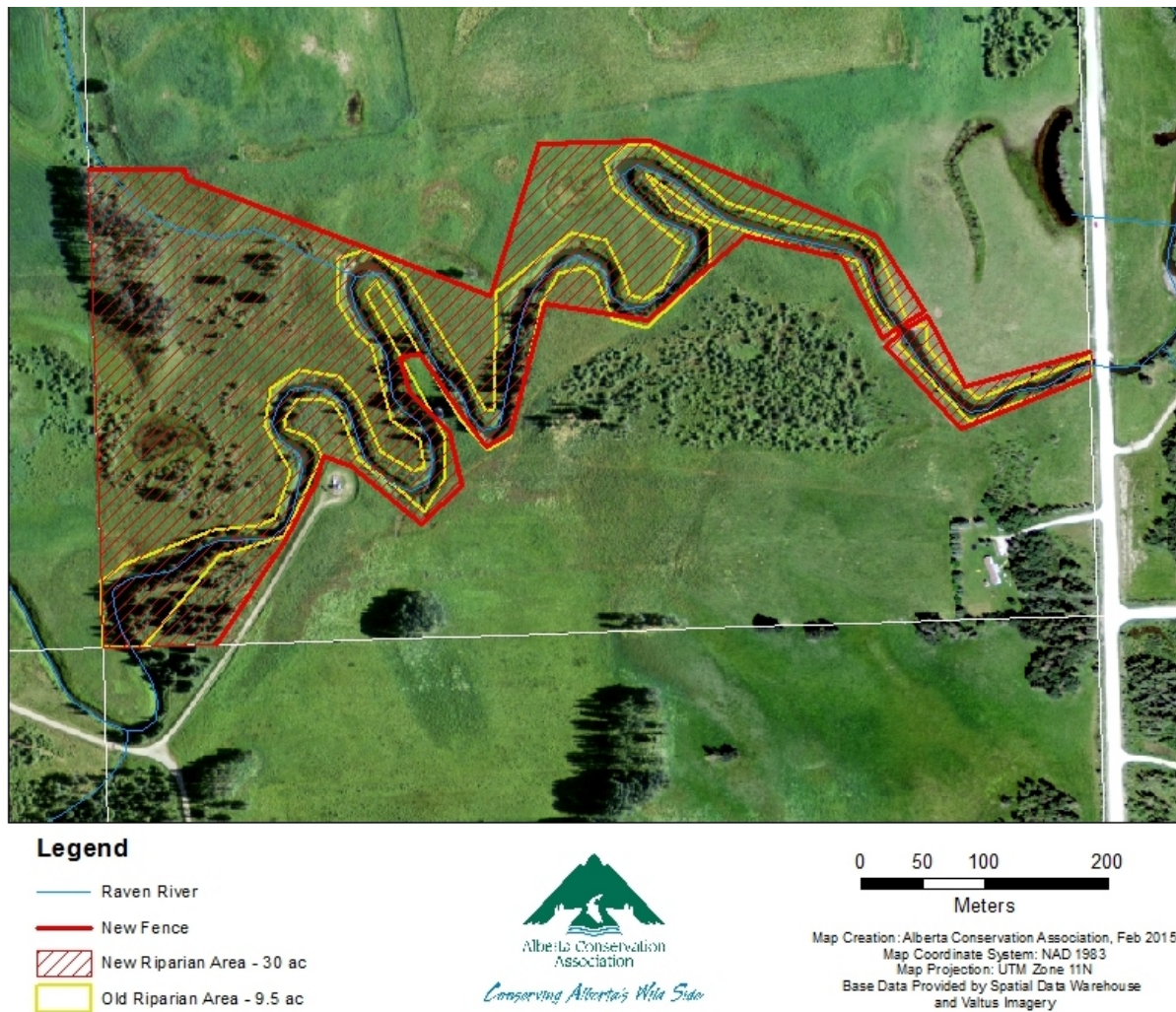


Figure 1. An example of a project area and associated riparian acres conserved using landowner lease agreements where exclusion fencing is installed.

In total, we conducted water sampling at 11 sites across two projects. Where water was sampled along the Edson River ($n = 5$), no water quality variables from either spring or fall sampling efforts exceeded recommended guidelines for protection of aquatic life (CCME 2010). Water quality variables consistently met the guidelines over the last three years, except for 2012/13 fall water quality monitoring where total coliforms exceeded guideline limits at two of the five sample stations. Similar to previous years, water quality in the Beaverlodge drainage continued to be assessed as poor; several parameters, including total coliforms at all sample sites ($n = 6$) and total phosphorous at half the sites, exceeded water quality guidelines (ESRD 2014; CCME 2010).

We used aerial videography to assess riparian health for the Owl River project and processed videos using the ACA Aerial Videography Lotic Riparian Assessment Scorecard adapted from Cows and Fish (Ambrose et al. 2004; Fitch et al. 2001). Results of this assessment indicated some improvement in riparian health from poor to fair condition, specifically in areas where livestock exclusion fencing was installed in 2012. In total, we conducted 14 riparian health

assessments or inventories, including first-time baseline riparian health assessments on Edson River (n = 5) and Beaverlodge River (n = 3). Of the six follow-up riparian assessments on Beaverlodge River, five sites remained *healthy* and one improved from *healthy with problems* to *healthy* (Fitch et al. 2001).

We negotiated four landowner habitat agreements with terms up to 20 years and installed 3.9 km of fencing, effectively conserving 34 acres of riparian and upland areas. We continued to be active in community outreach and educational activities, delivering a presentation to high school students and assisting with a workshop and a demonstration site. We also provided technical support as members of two watershed groups, the Redwillow Watershed Restoration Team and the Oldman Watershed Council Rural Team.

Conclusions

We led riparian conservation activities in the Raven/North Raven, Beaverlodge, Edson and Owl river systems through a variety of activities. We provided technical advice and support to several landowners and watershed groups in the Oldman River basin. We delivered 12 new enhancement projects throughout the province and led or participated in several community outreach and educational events. Monitoring data collected during 2014/15 for new and pre-existing projects have been archived for future evaluation of the riparian program. Our efforts have contributed to incremental improvements in riparian habitat health and have positively influenced the stewardship approach of landowners and leaseholders.

We will continue to monitor water quality and riparian health to help us evaluate the impacts of our conservation efforts, collaborate with landowners on riparian enhancement activities, and communicate our program initiatives to the community.

One focus of the provincial RCP is to develop standardized project delivery protocols and implement this process within each region in support of the program's overarching goal to conserve riparian habitat throughout Alberta.

Communications

- Delivered presentation to Beaverlodge and Elmworth High School students at Spring Event.
- ACA Communications program promoted a public survey created by the Redwillow Watershed Restoration Team.
- Promoted the Edson River Riparian Conservation project through an advertisement in the local newspaper (*Edson Leader*).
- Published *Meet the Landowner* article in ACA's *Conservation Magazine* featuring the Edson River Riparian Conservation project.
- Participated in and assisted with Holding the Reins landowner workshop with Oldman Watershed Council Rural Team.

Literature Cited

Alberta Environment and Sustainable Resource Development (ESRD). 2014. Environmental quality guidelines for Alberta surface waters. Water Policy Branch, Policy Division, Edmonton, Alberta, Canada. 48 pp.

Ambrose, N., G. Ehlert, and K. Spicer-Rawe. 2004. Riparian health assessment for lakes, sloughs, and wetlands; field workbook. Produced by Cows and Fish Program, Lethbridge, Alberta, Canada. 90 pp.

Canadian Council of Ministers of the Environment (CCME). 2010. Canadian water quality guidelines for the protection of aquatic life: Ammonia. *In*: Canadian water quality guidelines, 1999. Canadian Council of Ministers of the Environment, Winnipeg, Manitoba, Canada.

Fitch, L, B.W. Adams, and G. Hale (eds.). 2001. Riparian health assessment for streams and small rivers – field workbook. Cows and Fish Program, Alberta Riparian Habitat Management Program, Lethbridge, Alberta, Canada.

Photos



Alberta Conservation Association staff member Melissa Buchholtz inspects a lodgepole pine planted in 2008 along Beaverlodge River. Photo: Lenore Stone



Sign installed on project site promoting landowner and partner participation. Photo: Garret Mcken



Alberta Conservation Association biologist Dan Sturgess conducting a riparian health assessment on the Edson River. Photo: Juanna Thompson



Riparian fencing project as part of a habitat lease agreement on Raven River. Photo: Erin VanderMarel