

**Alberta Conservation Association
2020/21 Project Summary Report**

Project Name: Riparian Conservation Program

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Partnerships

Agroforestry & Woodlot Extension Society
Alberta Environment and Parks
Alberta Fish & Game Association
Cenovus Energy
County of Grande Prairie
Cows and Fish – Alberta Riparian Habitat
Management Society
Critical Mass
Environment and Climate Change Canada
Fisheries and Oceans Canada
Give Back Contracting Ltd.
Huvar Construction

Landowners
Mighty Peace Watershed Alliance
Milk River Watershed Council of Canada
Oldman Watershed Council
Ovintiv Inc.
Red Deer River Watershed Alliance
Sinopec Canada
Syncrude Canada Ltd.
Tree Time Services Inc.
Trout Unlimited Canada
West County Watershed Society

Key Findings

- Delivered 13 riparian enhancement projects: Three fencing projects, five off-site livestock watering initiatives, three bioengineering projects, one erosion control project, and one livestock crossing (Table 1).
- Conserved 142 acres (57.5 ha) through new riparian habitat lease agreements and installed 10.7 km of new wildlife-friendly fencing.
- Monitored 38 existing agreements that conserves 8,654.7 ac (3,502.6 ha) of riparian and adjacent upland habitat lands throughout the province.
- Planted 2080 white spruce, 500 balsam poplar, and 500 willow stakes over three enhancement projects.
- Deployed three water temperature loggers on the Beaverlodge River, Redwillow River & Beavertail Creek.
- Applied bank stabilization and restoration methods by hydroseeding 0.6 km of streambank on an existing habitat agreement.
- Collaborated with the Fisheries Program in collecting redd survey data on the Raven River system and conducting a literature review on beaver-trout interactions.
- Collaborated with 22 groups and organizations to enhance and facilitate the maintenance of healthy riparian habitat across the province.

Abstract

The ecological integrity and health of Alberta's rivers, streams, and surrounding landscapes are often negatively affected by ongoing human development. Riparian areas are complex ecosystems that provide important ecological functions and are critical to maintaining watershed health. Proper management of this sensitive habitat is essential to maintain water quality and habitat integrity. The primary goal of ACA's Riparian Conservation Program is to protect and restore riparian habitat in priority watersheds through on-the-ground habitat restoration projects by engaging landowners, the public, and other stakeholders through community outreach and education activities. Our collaborative partnerships with landowners, industry, government, watershed groups, and other stakeholders are an integral component of project delivery. In 2020/21, we focused conservation efforts in the following priority watersheds: Beaverlodge,

Heart, Raven, and North Raven rivers; and Beaver, Clear, Dogpound, Todd, Sharples, and Five Mile creeks (including their associated tributaries). We delivered 13 enhancement projects using a variety of management tools, including implementing agreements to conserve 142 acres (57.5 ha) of riparian and associated upland habitat, five off-site watering systems, three bioengineering projects, one erosion control projects, and installing 10.7 km of wildlife-friendly fencing to protect important riparian habitat as part of new and existing agreements. We also monitored water quality and riparian health on three systems to help evaluate the effectiveness of riparian enhancements, supported landowners with riparian enhancement activities, and communicated our Riparian Conservation Program to various communities. Our efforts have contributed to improvements in riparian habitat health and have positively influenced the stewardship approach of many landowners and leaseholders.

Introduction

In 2020, Alberta's economy continued to struggle due in part to the COVID-19 pandemic. The oil and gas industry showed little signs of gaining strength and the unemployment rate remained high. Despite the unknown economic future, the population in the province increased to 4.43 million, up from 4.37 million in 2020. Alberta's natural land base continues to be under intense pressure from a variety of sources related to its population growth, including agricultural, municipal, and industrial development. Significant conservation efforts are needed to restore the ecological function of these impacted areas. Alberta Conservation Association's (ACA's) Riparian Conservation Program (RCP) identifies priority watersheds for focused conservation efforts to enhance their potential for successful restoration. Within these focal areas, the primary goal is to improve overall 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 are 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 through community outreach and education activities. In 2020/21, the RCP consisted of the following riparian conservation projects delivered throughout the province: Beaverlodge, Heart, and

Raven/North Raven river systems, and Clear, Dogpound, Five-Mile, Sharples, and Todd creek systems.

Methods

The RCP encompasses activities that conserve, protect, and enhance fish and wildlife 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 Program (LMP) staff. The LMP team and program manager are responsible for the provincial coordination of this program, while each project's watershed-specific, on-the-ground 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 to improve riparian health and offset various environmental impacts, 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. We maintain long-term relationships with landowners and other partners and 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 acquired through helicopter or drone surveys, water sampling, photographic benchmarks, and riparian health inventories and assessments to gather baseline data and monitor project progress and effectiveness.

Many watersheds potentially require conservation initiatives; however, we focus our conservation efforts in areas where riparian habitat may be degraded by agricultural practices and where fisheries may have declined over past decades. The RCP identified the following priority watersheds for focused conservation efforts in 2020/21: Beaverlodge, Owl, and Raven/North Raven river systems, and Beaver, Clear, Five Mile, Sharples, and Todd creek systems and their associated tributaries. Our riparian program is delivered under an adaptive management (or conservation) framework. This framework allows for continual improvement in

conservation practices through learning from the outcomes of existing projects in support of program objectives.

Results

We currently manage 38 active RCP agreements that conserves 8,654.7 ac (3,502.6 ha) of riparian and adjacent upland habitat lands in Alberta. In 2020/21, we completed 13 new riparian habitat enhancement projects throughout the province (Table 1). On-the-ground restoration projects were delivered using a variety of management tools, including riparian and upland tree planting, landowner habitat lease agreements, livestock exclusion fencing, livestock crossings, and alternate watering sources to reduce or eliminate grazing pressure on riparian habitat. Monitoring initiatives included water sampling at permanent sample sites on the Beaverlodge River to monitor water quality and riparian health assessments using methods by Fitch et al. (2001).

We did not initiate new projects on the Owl River as ACA and Alberta Environment and Parks continue to identify priority sections of the river and review current land-use designations.

We completed two new riparian habitat enhancement agreements (RHEA) with terms up to ten years and installed 10.7 km of fencing, effectively conserving 142 acres (57.5 ha) of riparian and upland habitat. In addition, we incorporated five off-site watering systems, to further reduce the intensity of grazing impacts by attracting cattle away from streams. We assisted with erosion control on the Raven River system. We also completed three bioengineering projects consisting of planting 2,080 white spruce and 500 balsam poplar, and live staking 500 willows.

Water quality in the Beaverlodge drainage continued to be assessed at the weir to monitor changes in water quality from the weir's construction. Water quality parameters assessed were favourable for conditions required by Arctic grayling. Monitoring for compliance was completed for active RHEAs throughout the regions.

Table 1. Riparian enhancement and monitoring initiatives throughout the province by project in 2020/21.

Region/Project Name	# of Partners	# of Enhancements Projects	Enhancements Projects Summary	Monitoring Highlights	Outreach activities
Northeast / Owl River	2	0	No enhancements completed in 2020-21	No monitoring completed in 2020-21	Meetings with AEP Public Lands/Range Agrologist to discuss moving forward with working with grazing lease holders
Central / Raven River	6	6	<ul style="list-style-type: none"> • 1 new landowner agreement • 1 wildlife-friendly livestock exclusion fencing projects (5.7 km installed) • 2 off-site watering system upgrades (1 solar-powered, 1 permanent) • 44 ac riparian and associated upland area conserved through landowner lease agreements • 3.8 km of riverfront habitat conserved • 2 tree planting projects totalling 2,580 trees covering 2.8 ac • 1 bank stabilization project (hydroseeding) spanning 0.6 km 	<ul style="list-style-type: none"> • 24 existing landowner lease agreements 	<ul style="list-style-type: none"> • Attended numerous webinars and courses related to riparian conservation • Technical advisor to Red Deer County's ALUS Program
Northwest / Beaverlodge River	5	3	<ul style="list-style-type: none"> • 1 new landowner agreement • 1 wildlife-friendly livestock exclusion fencing project (3 km installed) • 1 livestock crossing installed • 1 portable off-site watering system installed • 43 acres riparian and associated upland area conserved through landowner lease agreements • 2.5 km of riverfront habitat conserved 	<ul style="list-style-type: none"> • 3 Water temperature loggers deployed on Beaverlodge River, Redwillow River & Beavertail Creek 	<ul style="list-style-type: none"> • 2 Newspaper ads • Online spring tour presentation delivered to students via Zoom • Active member of the Heart River Watershed Advisory Committee • Active member of the Redwillow Watershed Restoration Team • Attended MPWA Annual General Meeting in Peace River • Attended West County Watershed Annual General Meeting • Hosted an online video release event highlighting the success of the Powell property restoration efforts with MPWA, Cows and Fish, The County of Grande Prairie, and AWES (80 attendees)
South	5	4	<ul style="list-style-type: none"> • 1 new landowner agreement • 1 wildlife-friendly livestock exclusion fencing projects (2 km portable electric fence) • 2 portable off-site watering systems installed • 55 ac riparian and associated upland area conserved • 2.2 km of riverfront habitat conserved • 1 tree planting projects totalling 500 willow stakes on Five Mile Creek 	<ul style="list-style-type: none"> • 7 existing landowner lease agreements 	<ul style="list-style-type: none"> • Maintained active membership on Oldman Watershed Council Rural Team • Maintained active membership on the Milk River Watershed Council of Canada. • Attend landowner working group meeting with OWC, Cows and Fish and Landowners on Todd Creek.

We continued to be active in community outreach and educational activities through advertising in local newspapers and by delivering online presentations to Beaverlodge Regional High School, the West County Watershed Society, and as part of a Riparian Management Workshop directed at landowners in the area. We also provided technical support as members of seven watershed groups: the Redwillow Watershed Restoration Team, the Oldman Watershed Council Rural Team, the Milk River Watershed Council of Canada, the Sturgeon River Watershed

Alliance, Mighty Peace Watershed Alliance, West Country Watershed Alliance, and Parkland County Alternative Land Use Services (ALUS) Program.

Conclusions

We led riparian conservation projects in the Beaverlodge, Heart River, and Raven/North Raven river systems, and Beaver, Clear, Dogpound, Five Mile, Sharples, and Todd creek systems. We provided technical advice and support to several landowners and watershed groups in the Milk, Oldman, Red Deer, and Beaverlodge river basins. We delivered 13 new riparian enhancement projects throughout the province and led or participated in several community outreach and educational events. Monitoring data collected during 2020/21 for new and existing projects will be used for future evaluation of project success and to develop monitoring protocols for our riparian program as a whole. Our efforts have contributed to enhanced awareness and improvements in riparian habitat health and have positively influenced the stewardship approach of many landowners and leaseholders.

We will continue to monitor water quality and riparian health to help us assess the effectiveness of our conservation efforts. We recognize the importance of collaborating with landowners on riparian conservation efforts and we will continue to communicate the success of our riparian projects to local communities and our stakeholders.

Communications

- Delivered online presentations to Beaverlodge Regional High School students and the West County Watershed Society.
- Spring and autumn newspaper ads in the *Grande Prairie Town and Country News*.
- Active member of the Redwillow Watershed Restoration team.
- Active member of the Oldman Watershed Council Rural Team.
- Active member of the Mighty Peace Watershed Alliance.
- Active member of the Milk River Watershed Council of Canada.
- Active member of the Red Deer Watershed Alliance.
- Active member of the Heart River Watershed Alliance.

Literature Cited

- 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.
- Kipp, S. 2002. *On the living edge: your guide for waterfront living*. Federation of Alberta Naturalists. Edmonton, Alberta, Canada. 148 pp.

Photos



RHEA agreement on Beaverlodge River in place since 2006. Photo: Sarah Bradley



New RHEA on Beaverlodge River. Photo: Garret McKen



Habitat lands on new RHEA located on Dogpound Creek. Photo: Erin Vandermarel



Tree planting on RHEA project within the Dogpound Creek system. Photo: Erin Vandermarel



New RHEA on Dogpound Creek. Photo: Erin VanderMarel



Habitat conserved under RHEA on Raven River. Photo: Erin VanderMarel



Habitat lands on Beaver Creek under new RHEA. Photo: Jeff Forsyth



The headwaters of Todd Creek, conserved with a RHEA, shows off fall colours. Photo: Jeff Forsyth