

**Alberta Conservation Association
2021/22 Project Summary Report**

Project Name: Riparian Conservation Program

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Partnerships

Agroforestry and Woodlot Extension

Society

Alberta Environment and Parks

Alberta Fish & Game Association

Cenovus Energy Inc.

County of Grande Prairie

Cows and Fish – Alberta Riparian Habitat

Management Society

Critical Mass

Environment and Climate Change Canada

Fisheries and Oceans Canada

Foothills Forage and Grazing Association

Give Back Contracting Ltd.

Grey Wooded Forage Association

HUVAN Construction

Landowners

Mighty Peace Watershed Alliance

Milk River Watershed Council Canada

Mountain View County

Oldman Watershed Council

Ovintiv Inc.

Red Deer River Watershed Alliance

Sinopec Canada

Synchrude Canada Ltd.

TC Energy Corporation

Tree Time Services Inc.

Trout Unlimited Canada

West County Watershed Society

Wood PLC

Key Findings

- Delivered 14 riparian enhancement projects: five fencing projects, four landowner agreements, three off-site livestock watering initiatives, one bioengineering projects, and one livestock crossing (Table 1).
- Conserved 184.6 acres (74.7 ha) through new riparian habitat lease agreements, and installed 10.2 km of new wildlife-friendly fencing.
- Monitored 42 existing agreements that conserves 8,796.7 acres (3,559.9 ha) of riparian and adjacent upland habitat lands throughout the province.
- Planted 500 willow stakes at Five Mile Creek.
- Conducted 67 Riparian Quality Indexes on the Owl River.
- Monitored eight locations on the Owl River for water quality.
- Collaborated with 27 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 2021/22, we focused conservation efforts in the following priority watersheds: Beaverlodge, Heart, Raven, Owl and North Raven rivers; and Beaver, Clear, Dogpound, Todd, Sharples, and Five Mile creeks (including their associated tributaries). We delivered 14 enhancement projects using a variety of management tools, including implementing agreements to conserve 184.6 acres (74.7 ha) of riparian and associated upland habitat: five off-site watering systems, four landowner agreements, three bioengineering projects, one erosion control projects; and installing

10.2 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 2021, 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 4.44 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) 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 2021/22, the RCP consisted of the following riparian conservation projects delivered throughout the province: Beaverlodge, Heart, Raven, and North Raven rivers; and Clear, Dogpound, Five Mile, Sharples, and Todd creeks.

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 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 2021/22: Beaverlodge, Heart, Owl, Raven, and North Raven rivers; and Beaver, Clear, Five Mile, Sharples, and Todd creeks 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 42 active RCP agreements that conserves 8,796.7 acres (3,559.9 ha) of riparian and adjacent upland habitat lands in Alberta. In 2021/22, we completed 14 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. (2009).

We completed five new riparian habitat enhancement agreements (RHEA) with terms from ten to 25 years and installed 10.2 km of fencing, effectively conserving 184.6 acres (74.7 ha) of riparian and upland habitat. In addition, we incorporated three off-site watering systems to further reduce the intensity of grazing impacts by attracting cattle away from streams. We assisted with a livestock crossing on the Beaverlodge River to minimize broad scale impacts to sensitive riparian habitat. We also completed a bioengineering project consisting of live staking 500 willows at Five Mile Creek.

Water quality in the Beaverlodge River 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.

In partnership with ACA's Fisheries Program, eight locations were monitored for water quality on the Owl River. In addition to water quality monitoring, 67 Riparian Quality Indexes were complete by PLC Wood in support of the Owl River Project.

Table 1. Riparian enhancement and monitoring initiatives throughout the province by project in 2021/22.

Region/Project Name	# of Partners	# of Enhancements Projects	Enhancements Projects Summary	Monitoring Highlights	Outreach Activities
Northeast / Owl River	4	2	<ul style="list-style-type: none"> • 1 new landowner agreement completed. • 1 wildlife-friendly livestock exclusion fencing project (3.4 km) installed. • 62.5 ac riparian and associated upland area conserved through landowner lease agreements. • 2.3 km of riverfront habitat conserved. 	<ul style="list-style-type: none"> • Aerial videography conducted on ~48 km of the Owl River and 11.5 km of the Piche River. • Riparian Quality Index assessments conducted on 67 reaches of the Owl River. • Fisheries staff monitored eight locations on the Owl River for water quality. 	<ul style="list-style-type: none"> • Presented at Owl River Recreation Centre for Healthy Waters Lac La Biche. • Contacted eight landowners along the Owl River to gauge interests in participation with ACA's Riparian Conservation Program. • Two landowner meetings proposed to discuss potential new projects along the Owl River.
Central / Raven River	6	3	<ul style="list-style-type: none"> • 1 new landowner agreement completed. • 1 wildlife-friendly livestock exclusion fencing project (0.9 km) installed. • 1 off-site watering system purchased and installed. • 13 ac riparian and associated upland area conserved through landowner lease agreements. • 1.4 km of riverfront habitat conserved. 	<ul style="list-style-type: none"> • 26 existing landowner lease agreements. • Riparian Health Inventories conducted on two properties by Cows and Fish. 	<ul style="list-style-type: none"> • Let's Go Outdoors Interview on Dogpound Creek. • Maintained active membership on Red Deer Watershed Alliance. • Assisted with Invasive Plants Webinar Series planning with Mountain View County, Grey Wooded Forage Association, and Foothills Forage and Grazing Association. • Dogpound Riparian Project presented to Mountain View County.

Region/Project Name	# of Partners	# of Enhancements Projects	Enhancements Projects Summary	Monitoring Highlights	Outreach Activities
Northwest / Beaverlodge River	8	4	<ul style="list-style-type: none"> • 1 new landowner agreement completed. • 1 wildlife-friendly livestock exclusion fencing project (2.7 km) installed. • 1 livestock crossing installed. • 1 portable off-site watering system installed. • 43 ac riparian and associated upland area conserved through landowner lease agreements. • 2.5 km of riverfront habitat conserved. 	<ul style="list-style-type: none"> • Aerial videography captured on the Beaverlodge River and tributaries. • Riparian Health Inventory completed by Cows and Fish. • Completed site visits to eight properties for ten-year follow ups. 	<ul style="list-style-type: none"> • Advertising in 2 newspapers. • Online spring tour presentation delivered to students via Zoom. • Maintained active membership on the Heart River Watershed Advisory Committee. • Maintained active membership on the Redwillow Watershed Restoration Project 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 MPWA¹, Cows and Fish, County of Grande Prairie, and AWES² (80 attendees).
South	5	5	<ul style="list-style-type: none"> • 2 new landowner agreements completed. • 2 wildlife-friendly livestock exclusion fencing projects (3.2 km portable electric fence) installed. • 1 portable off-site watering systems installed. • 66.1 ac riparian and associated upland area conserved. • 3.5 km of riverfront habitat conserved. • 1 tree planting project totaling 500 willow stakes at Five Mile Creek. 	<ul style="list-style-type: none"> • 8 existing landowner lease agreements. • Riparian Health Assessments conducted on two properties. 	<ul style="list-style-type: none"> • Maintained active membership on Oldman Watershed Council Rural Team. • Maintained active membership on the Milk River Watershed Council Canada. • Presented at Foothills Forage and Grazing Association tour on Timber Ridge Conservation Site. • Interview with <i>Country Guide</i> magazine regarding riparian conservation.
Total	23	14			

¹ Mighty Peace Watershed Alliance (MPWA)

² Agroforestry and Woodlot Extension Society (AWES)

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, 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: Redwillow Watershed Restoration Project Team, Oldman Watershed Council Rural Team, Milk River Watershed Council Canada, Red Deer Watershed Alliance, Mighty Peace Watershed Alliance, West County Watershed Society, and Parkland County Alternative Land Use Services (ALUS) Program.

Conclusions

We led riparian conservation projects in the Beaverlodge, Heart, Raven, and North Raven rivers; and Beaver, Clear, Dogpound, Five Mile, Sharples, and Todd creeks. We provided technical advice and support to several landowners and watershed groups in the Beaverlodge, Milk, Oldman, and Red Deer rivers basins. We delivered 14 new riparian enhancement projects throughout the province and led or participated in several community outreach and educational events. Monitoring data collected during 2021/22 for new and existing projects will be used for future evaluation of project success and to develop monitoring protocols for ACA's RCP. 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.
- Advertised in spring and autumn editions of *Grande Prairie Town and Country News*.
- Maintained active membership on the Redwillow Watershed Restoration Project Team.
- Maintained active membership on the Oldman Watershed Council Rural Team.

- Maintained active membership on the Mighty Peace Watershed Alliance.
- Maintained active membership on the Milk River Watershed Council Canada.
- Maintained active membership on the Red Deer Watershed Alliance.
- Maintained active membership on the Heart River Watershed Advisory Committee.

Literature Cited

Fitch, L., B.W. Adams, and G. Hale. 2009. *Riparian Health Assessment for Streams & Small Rivers - Field Workbook: Caring for the Green Zone*. Second Edition. Lethbridge, Alberta. Cows and Fish Program. 94 pp.

Photos



Photo 1. Habitat Lands on new RHEA agreement on Dogpound Creek.

Photo: Erin VanderMarel



Photo 2. Project sign installed on new RHEA agreement on Dogpound Creek.

Photo: Erin VanderMarel



Photo 3. Habitat lands on new RHEA located on Dogpound Creek. Photo: Taylor Lund



Photo 4. Tree planting on RHEA project within the Dogpound Creek system.
Photo: Adam Norris



Photo 5. New RHEA on Dogpound Creek. Photo: Garret McKen



Photo 6. Habitat conserved under RHEA on Raven River. Photo: Mike Ranger



Photo 7. Habitat lands on Todd Creek existing agreement. Photo: Jeff Forsyth



Photo 8. Habitat lands on new RHEA agreement on Beaver Creek. Photo: Jeff Forsyth