



**COWS
& FISH**

CARING FOR THE GREEN ZONE

Image by Riparian Specialist
Maddy Skinner

The Newsletter

- 1 Creative Cattle Watering Solutions
- 3 2025 Restoration Highlights
- 7 2025 Year in Review: Riparian Health Fieldwork
- 8 Riparian Fun Fact: Frazil Ice
- 9 Upcoming Events
- 10 Special Features

CREATIVE CATTLE WATERING SOLUTIONS

Written by Marnel Muller, Riparian Specialist and Norine Ambrose, Executive Director

If you are a livestock producer and have ever received a Riparian Health Summary report from Cows and Fish, you might have seen some variation of the management recommendation “Consider using off-stream water troughs to minimize cattle use in sensitive riparian areas...”

Sometimes, things are easier said than done. With drought conditions in many areas, we've been hearing about how much harder it is to find and access water, let alone pump it and move it around to use as a livestock distribution tool. Despite conditions being stuck on “hard mode,” we are always inspired by producer's ingenuity. Today, we'd like to share examples from two producers who have come up with a system that works for them, despite various challenges.

WHY DO WE OFTEN RECOMMEND OFF-SITE WATERING?

Your livestock's drinking source is a high-traffic area, prone to being trampled. When water is provided to livestock on stable, drier upland areas, you limit compaction of the relatively soft, sensitive, and often moist soils in riparian areas. Plus, if you can move your trough or alternate use of troughs, cattle will spend more time in those areas, giving portions of your pasture more rest while other areas are used more heavily without needing miles of fencing.

Cattle behaviour research shows that they prefer to use water troughs rather than drink directly from a stream or dugout. There are several reasons cattle likely prefer troughs. While no one can get inside their head, we do know that troughs provide easy, consistent access to water, which is usually cleaner, because livestock spend less time standing in the water, churning up the soil and leaving less urine and manure too. Researchers have found that drinking from off-site watering systems can result in significant calf weight gains compared to drinking directly from a dugout or stream. This has been experienced by many Albertan producers like Anne Stevick in our digital story [“Passion for Grass.”](#)

An agricultural family in the Cypress Hills area trusted in the benefits of off-stream waterers and set a goal for their cows to winter and calve in their upland fields. However, when their dugout went dry, they were forced to turn to the stream for water instead. Unfortunately, the stream's steep banks and valley sides made it hard for the cows, heavy with calf, to return up top to the non-riparian pasture after drinking, resulting in too much time spent in the valley bottom. Their first attempt at providing water to the cows in the upland field failed: they drilled a well but it was dry. Persisting with what they knew was still a good approach for their cows and the creek, they decided to revise their plan. Eventually, they successfully drilled a well in their lowland pasture on the opposite side of the stream, where the bank was less steep and the cows could move out of the riparian area easier.



Before directional drilling to the upland pasture, this off-site watering set-up gave the cows an alternative to drinking from the creek. The set-up boasts a motion-sensor wildlife camera repurposed to remotely check on the trough's water levels. Photo by Marnel Muller

This portion of the stream was fenced off to reduce overuse, and they set up a portable trough with a wildlife camera overhead. This motion-sensor camera was a clever makeshift trough monitoring system, allowing the family to check that the water trough remained full and working.

Some might have considered this solution “good enough,” but the family stayed focused on their goal of moving their calving grounds fully out of the low-lying riparian pasture to their upland field. This is where their persistence and creative problem solving truly shines. With support from a Watershed Resiliency and Restoration Program (WRRP) grant through the Southeast Alberta Watershed Alliance (SEAWA), they were able to directionally drill through the steep-side bank of the stream, down under the stream and to their well site. Now they can finally pump water to a trough for the cows and calves in their upland pasture!

“Researchers have found that drinking from off-site watering systems can result in significant calf weight gains compared to drinking directly from a dugout or stream”

Our second story of creative problem solving starts with an iconic blue portable solar watering system that’s set up on the banks of the North Milk River. This producer found that solar alone was not enough to keep the pump powered for the demanding 1 km of pumping distance with considerable lift needed to fill his water trough. He approached us and the Milk River Watershed Council of Canada with a unique pitch: help him set up a wind turbine on top of an old school bus to supplement the solar power for his water pump. With our Canada Nature Fund for Aquatic Species at Risk (CNFASAR) grant from Fisheries and Oceans Canada, we were happy to support him.

Agreement in hand, the producer started on his custom wind-powered water pump. The old school bus was his ingenious – and very fun! – way of protecting the batteries from the elements and setting up the solar panels; some on one side and more on the roof. Now the bus’s look is complete with a wind turbine on its hood. It’s quite a delight to see, and we were happy to hear it’s been a delight to use too – keeping cattle watered and the riparian areas healthy, in style.



Photo by Tim Romanow

This repurposed old school bus is now the powerhouse for the ranch’s off-site waterer. The wind turbine and solar panels keep the batteries charged no matter the weather, providing energy for the waterer’s pump, moving water 1 km. Another benefit to off-site watering systems is keeping livestock out of our natural water bodies to protect fish, their eggs, and their aquatic habitat. The North Milk River is home to a few provincially and federally at-risk fish, including the federally threatened Rocky Mountain sculpin. Which is why this off-site watering system project was a great fit for our “Little Fish, Big Stewardship” project.

Trying to figure out what kind of watering system might be worth it for you? Try out the Beef Cattle Research Council’s [Economics of Water Systems Calculator](#)

Hopefully these examples spark your own creativity. Like the producers in this article, you might need some out-of-the-box thinking to adapt a more typical approach to fit your unique situation. We are here to help you brainstorm and would love to hear what you come up with. [Visit our contact us page](#) to find a riparian specialist in your area.

2025 RESTORATION HIGHLIGHTS



Volunteers and partners were all smiles after a rewarding day of stewardship along Fish Creek!

Written by some of our Riparian Specialists: Kelsey Spicer-Rawe, Maddy Skinner, Marnel Muller, and Kerri O'Shaughnessy

Willow, aspen, and balsam poplar leaves drop each fall as these trees and shrubs settle into dormancy for the long, cold winter, signalling a resting stage in their life cycle, halting above-ground growth and saving energy to bud and bloom in the spring.

Unlike these deciduous trees and shrubs, for Cows and Fish staff, the drop in temperature and waning daylight signal the opportunity to extend the field-work season and stretch our skills into the field of riparian restoration. Each year, throughout the province, a variety of riparian restoration projects are undertaken with each one needing its own particular restoration techniques. Read on to learn more about the breadth of restoration projects our staff and partners are implementing to nudge the bar higher for healthier riparian areas and watersheds.

INVASIVE RUSSIAN OLIVE REMOVAL IN THE MILK RIVER WATERSHED: REDUCING COMPETITION FROM NON-NATIVE PLANTS TO ALLOW SPACE FOR RIPARIAN RESTORATION.

Russian olive shrubs (*Elaeagnus angustifolia*) were introduced to Alberta as part of shelterbelt programs and as ornamentals. While they may look lovely, Russian

olive shrubs threaten to out-compete native cottonwood trees in riparian areas and limit the success of native shrub establishment. Native trees and shrubs have co-evolved with our fish and wildlife to provide for their needs, like food and shelter, including small at-risk fish species like western silvery minnow and stonecat.

Appreciating the connection between riparian health and aquatic habitat quality, the Little Fish, Big Stewardship project is helping a stewardship-minded landowner on the Milk River work towards their vision of removing invasive Russian olive and replacing them with native trees and shrubs.



The landowner standing amongst the Russian olive trees before they were removed. They are an incredibly fast-growing species, growing taller than a person in just a few years.



BEFORE REMOVAL



AFTER REMOVAL

This past April, the County of Warner brought their skid steer mulcher and chain saw to remove Russian olive shrubs growing along the Milk River beside a private recreational trail. In addition to tools to cut and mulch, certified herbicide applicators from the County were present to treat the Russian olive stumps and prevent them from resprouting. About 500 meters of riverbank were cleared of young Russian olives, including a couple of very dense stands.

In October 2025, Cows and Fish and Milk River Watershed Council Canada – the partners leading the Little Fish, Big Stewardship project – returned with volunteers to plant about 700 native tree and shrub plugs, including cottonwoods, balsam poplar, chokecherry, saskatoon, two willow species – and more!

When we arrived to plant in the fall, we were surprised to see some Russian olives resprouting, with some having grown up to a meter tall in just one season. We suspect the resprouting is from stumps that were missed during the herbicide application in the spring. It may be worthwhile, in future, to try applying herbicide to the stumps in fall instead of spring, when shrubs are pulling their resources down into their roots for the dormant season – something to consider for future projects. Despite some regrowth, there were still far more dead stumps, which means there will be significantly fewer Russian olives for the new plantings to compete with.

We are grateful for all the volunteers who planted with us and for support from partners like Milk River Watershed Council Canada and the County of Warner, who were integral to making this project happen. We are also thankful for the financial contributions from Fisheries and Oceans Canada's (DFO's) Canada Nature Fund for Aquatic Species at Risk.

WILLOW STAKE HARVESTING AND PLANTING IN THE UPPER FISH CREEK WATERSHED: PARTNERING WITH WATERSHED GROUPS TO EQUIP LOCAL COMMUNITIES WITH RESTORATION SKILLS

Local watershed groups work throughout our province, leaving little room for doubt about the strong stewardship ethic of Albertans for protecting our streams and rivers. These groups are made up of community members living within a watershed, and anybody with a passion for protecting their local area is welcome. Cows and Fish works with many such groups, providing technical expertise and support. One such partner is the [Fish Creek Watershed Association \(FCWA\)](#) based in and around Priddis, that focus on stewardship of the upper Fish Creek watershed, a stream that eventually flows into the Bow River. In the fall, Cows and Fish partnered with FCWA to deliver a workshop to interested community members about willow harvesting and live staking techniques for riparian restoration.

The brisk October day began with a welcome around a campfire thanks to the graciousness of FCWA's David Swann. Cows and Fish then led a walk alongside Fish Creek, demonstrating how to select and harvest willow stakes to give them the best chance of thriving come spring.



All in all, 11 community members worked together to stake 300 willows and plant 67 poplar trees.

We then moved to a property ever so slightly upstream, where a few of us from Cows and Fish and FCWA had stashed several hundred locally harvested willow stakes the day before. Community volunteers got hands-on experience with several restoration techniques: live staking willow cuttings to restore habitat complexity and protect banks against erosion, weaving willow stakes into wattle fences to capture sediment, and planting balsam poplar seedlings. Volunteers came with a keen interest and many questions about technique – some with the intention to experiment with staking on their own properties this coming spring! The workshop was a resounding success, showcasing the timeless value of local communities coming together in partnership for a common cause: namely, building skills, making connections, and caring for the waters that ultimately unite us all, from mountain peaks to prairie flats and everywhere in between. For more information on live willow staking check out the Cows and Fish [Growing Restoration factsheet](#).

ROOT WADS ON THE REDWILLOW RIVER: LARGE WOODY DEBRIS AS A TOOL FOR BANK PROTECTION AND FISH HABITAT IMPROVEMENT

The Redwillow River naturally meanders through its valley in the Peace River Region of Alberta with erosion happening on outside curves or banks where water moves faster, while inside bends or lobes capture sediment because water moves slower. Trees and shrubs are an important component of the Redwillow River system, adding deep binding roots and structure to resist the erosive water energy and help slow the natural processes of erosion and encourage more deposition. Often where forests are growing right up to the edge of the channel, large trees naturally fall into the river, their trunks creating speed bumps for water and contributing to instream fish habitat.



Photo facing southwest of the eroded driveway and bank after the 2020 flood. Photo by A. Norris, MPWA.

On an early summer day in 2020, the Redwillow River was rising after some heavy rains, resulting in the second highest discharge and highest maximum instantaneous flow on record – a lot of water in a short time! In the blink of an eye, the driveway into one riverside property was no longer on solid ground and a portion of it slid into the river. This steep outside curve of the river had been slowly eroding over time, as they naturally do, but this high flow was the last straw for the driveway.

With the riverbank cut to a new location, the top of the high cutbank was lawn grass and most of the trees and shrubs with deep binding roots were gone, likely from a combination of river action over time and historical clearing for pasture or from when the driveway was put in.

After the waters receded, the resident relocated the driveway, moved the pasture and put out a call for help with a desire to "do something more" to protect the bank. The Redwillow Watershed Project Team answered the call. The Redwillow Watershed Project Team is a group of conservation-minded organizations including the County of Grande Prairie, Mighty Peace Watershed Alliance (MPWA), Agroforestry and Woodlot Extension Society (AWES), Alberta Conservation Association (ACA), and Cows and Fish. This group is dedicated to working with watershed residents and stewardship groups on improving riparian and upland habitats for the benefit of people as well as native fish like arctic grayling.

In the fall of 2022, a bank stabilization project got underway with thousands of willow, balsam poplar, and red-osier dogwood live stakes (dormant thumb-width branches up to 1 m long) being planted up and down the length and height of the high cut bank. The following spring, the stakes planted lower on the bank, and closer to the water table, were showing more success than those planted higher up the bank.



Photo of initial live staking in the fall of 2022. The stakes planted lower on the bank were more successful than those planted higher up.

The following year, nursery-rooted tree and shrub seedlings of the same species were planted into some of the lower portions of the bank. These initial attempts at re-foresting the bank were an excellent start towards stabilizing the soil and keeping it in place, but larger material was going to be needed for more protection, given the size of the bank and the potential volume of water that can flow down this river. Historical flow records suggest that another high flow event could be expected, so this project is thinking forward in preparation.

In the fall of 2025, large trees with their root wads intact were harvested from a nearby location on the property. The branches were removed from the trees, leaving the trunk and root wad to be placed along the bank as large woody debris. The trees were laid horizontally with the top trunk end into the bank and the root wad sticking out towards the water. Fist-size diameter live poplar stakes 3 meters or greater in length, were driven alongside the exposed trunks and root wad to help secure the large woody debris in place creating palisades.

The use of large woody debris provides a dynamic and resilient technique to slow or reduce erosion and adds structure to the bank that can support fish habitat. Everyone involved in this project will be keeping an eye on it this coming year to see what happens, curious with questions like – will we see sediment being trapped in the large woody debris? Will there be new growth from the palisades and previous plantings and live staking? Will the health of this riparian area begin to improve?

This project was funded in part by the Government of Canada and the Government of Alberta's Watershed Resiliency and Restoration Program (WRRP).



Canada
Water Agency

Agence de l'eau
du Canada

As spring arrives, either as a proverbial 'lion or a lamb,' these restoration projects are on our minds and will be under our watchful eye to monitor success. We wait (sometimes not so patiently) and hope for roots and watch for shoots on live willow stakes, for banks that will hold fast during the spring melt, and for native plantings to bud and bloom and add structural complexity to the canopy. The immediate 'lion' of winter may still be ahead of us but we've received glimpses of the 'lamb' of spring that bring our thoughts back to these restoration projects and how they may not only restore the function of the land but contribute to community partnerships that add resilience and health to the land as well.



Photo facing southwest on March 31, 2025. In the foreground a developing terrace is visible, and the top of the bank continues to erode bringing the bank closer to repose. Photo by A. Norris, MPWA.



Photo facing southwest on September 22, 2025. On the left are multiple large woody debris trunks with root wads and palisades installed to protect the bank and enhance fish habitat. Photo by A. Norris, MPWA.

2025

Year In Review: Riparian Health Fieldwork

The 2025 field season was a busy one, and our fantastic field staff traversed the province capturing riparian health data. Here's a snapshot in numbers of what our field crew got up to this year.



Compiled by Riparian Resource Analyst/Specialist Christy Sikina, Riparian Specialist Maddy Skinner, and Communications Coordinator Logan Peters

423.3 hectares
of riparian habitat assessed

323.6 km
of riparian habitat walked

127 Sites assessed
Public land sites: 65
Private land sites: 62

30 Prohibited noxious weed
occurrences reported to
land managers

23 Municipal Districts
/Counties worked in

16 Unique rare plant
species recorded

10 Assessed sites in collaboration
with 10 different watershed &
conservation groups

Cows & Fish

Riparian Fun Fact

FRAZIL ICE

Written by Kristina Boehler, Riparian Specialist

Have you ever grabbed a bottle of water from your fridge freezer and when you go to pour it, it rapidly changes into a slushy? This can happen when you have supercooled water, water that is actually below 0 degrees but remains in its liquid form until it is disturbed. Something similar can happen in our streams and rivers, and when it does, we get the formation of what's called frazil ice. Tiny little ice crystals form in the water as it's flowing which can result in a slushier texture. Although this seems neat, it can actually be very harmful to fish since the ice is very sticky, coating their fins and gills and making it difficult for them to swim or breathe. Luckily, our native fish species like westslope cutthroat trout and bull trout aren't frazzled and have adapted to our winter climate by migrating to deeper or warmer reaches in the winter where frazil ice is less likely to occur.



Bull Trout watercolour by artist [Terra Lottermoser](#)

Cows & Fish

Upcoming Events

THE LIFE & TIMES OF THE VERMILION RIVER WEBINAR

Join us for a journey through the history, imagery, and stories of the Vermilion River watershed. Our very own Kerri O'Shaughnessy will tell the story of this vital tributary of the North Saskatchewan River, and the conservation history of its surrounding landscape. This event is hosted by the North Saskatchewan Watershed Alliance.

DATE & TIME

March 4, 2026
12:00pm - 1:00pm MST

LOCATION

Online

REGISTER NOW

[Click here to register](#)

THE GOOD BEAVER

This presentation by our very own Kerri O'Shaughnessy will offer an overview of beaver biology, ecology, and behaviour.

DATE & TIME

April 15, 2026
7:00pm - 8:00pm MST

LOCATION

Online

REGISTER NOW

[Click here to register](#)

LEAVE IT TO BEAVERS: BUILDING RESILIENCE WITH BEAVER DAM ANALOGUES

This two-part webinar series explores BDAs from both a big-picture and hands-on perspective. Part 1 covered how BDAs work, where they're most effective, and the range of hydrologic and ecological benefits they provide. Part 2 dives into implementation, including design basics, materials, site selection, and key considerations for success.

DATE & TIME

February 26 (complete)
& March 5, 2026
10:00am - 11:30am CT

LOCATION

Online

REGISTER NOW

[Click here to register](#)

ALBERTA NATIVE TROUT WORKSHOPS

Celebrate the success of the Alberta Native Trout Collaborative with us at two workshops this March! The first workshop on March 10th is geared towards the public and the second workshop on March 12 is tailored towards a technical audience/working professionals in the fisheries field.

LOCATION FOR BOTH EVENTS

Bridgeland Riverside Community Association, Calgary AB

PUBLIC WORKSHOP

March 10, 2026
6:00pm-9:00pm

REGISTER NOW

[Click here](#)

PROFESSIONAL WORKSHOP

March 12, 2026
2:00pm-4:30pm MST

REGISTER NOW

[Click here](#)

Cows & Fish

Special Features

NEW YEAR, NEW BEAVER RESOURCES

Our friends at the [Miistakis Institute](#) recently released a [newsletter](#) featuring new resources on our [Working with Beavers website](#).

NEW TOOLS INCLUDE:

- Nature's Engineers in the City of Red Deer [Case Study](#)
- Lessons Learned: Beaver Coexistence Tools [Write-Up](#)
- Beaver Dam Analogue (BDA) [webpage update](#) and addition of the BDA Project Field Work Plan [Template](#)
- [New Report](#): Permitting Flow Devices for Beaver Management in the US and Canada co-authored by our very own Kerri O'Shaughnessy



Amy Berlando, Provincial Riparian Specialist building one of 20 BDAs in the Ann & Sandy Cross Conservation Area. [Click here](#) to watch an Instagram reel about the install day, and [click here](#) to watch a reel filmed one week after the BDAs were installed.

STAFF RETREAT MEMORIES

With Cows and Fish staff working and living around the province, it's not everyday that the team can get together! For our February staff retreat this year, we spent time in beautiful Kananaskis, Alberta.

By day, we embarked on a snowshoe adventure to Troll and Marmot Falls, and by night we played trivia that included skill-testing questions about plant identification, Canadian geography, and... Disney music.



Photo by Maddy Skinner



Photo by Kristina Boehler



Photo by Maddy Skinner

Cows & Fish

Connecting land & water

HAVE YOU WORKED WITH COWS AND FISH IN THE PAST?

- Have you wondered how your riparian area scores now?
- Wanted to have an extension event in your local community?
- Have a riparian management story to share?

To increase the broader community's riparian awareness and expertise, we will deliver extension events with local partners, bringing together neighbours and sharing successes. If you are a landowner we worked with in the past, and want to reconnect with us, give us a call or email. Visit our [contact us](#) page for more information.

WE LOVE HEARING FROM YOU!

Please contact Norine Ambrose: nambrose@cowssandfish.org or any Riparian Specialist, to follow up on any items in this newsletter. For full contact information, visit our [contact us](#) page.

COWS AND FISH

Unit 10, Avail Building
530-8th Street South,
Lethbridge, AB, T1J 2J8
Ph: 403-381-5538



Riparian areas, the areas connecting land and water, help clean our water, create drought and flood resiliency, and provide habitat for fish and wildlife.

Cows and Fish's mission is to promote healthy landscapes by fostering riparian stewardship.

MEET OUR BOARD OF DIRECTORS

The Cows and Fish Board of Directors and Members include local producer and community representatives.

Cows and Fish members provide the input, support, and guidance needed to achieve Cows and Fish's mission. We also rely on financial and in-kind support from Donors and Funding Sources to accomplish our goals. Visit our [support page](#) to make a donation.

CONNECT WITH US

Find a riparian specialist in your area or send us a general inquiry

NORINE AMBROSE, EXECUTIVE DIRECTOR

Unit 10, Avail Building
530 - 8th Street South
Lethbridge, Alberta,
Canada T1J 2J8
(403) 381 5538
nambrose@cowssandfish.org

LOGAN PETERS, COMMUNICATIONS COORDINATOR

Fully Remote
(403) 606 5134
lpeters@cowssandfish.org

AMY BERLANDO, PROVINCIAL RIPARIAN SPECIALIST

#120, 7777 10 ST NE
Calgary, Alberta, Canada T2E 8X2
(403) 978 5814
aberlando@cowssandfish.org

VISIT OUR CONTACT US PAGE

[cowssandfish.org/contact-us/](https://www.cowssandfish.org/contact-us/)

This newsletter was done completely by real, live humans, without generative AI. Enjoy!