



Watershed Resiliency & Restoration Program



Riparian Areas & Ranching: A Hands-On Guide for Producers

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The Lakeland Agricultural Research Association Watershed Resiliency and Restoration Program

Lakeland Agricultural Research Association (LARA) delivers the Watershed Resiliency and Restoration Program (WRRP) to help producers in the Lakeland region protect water resources, strengthen drought and flood resilience, and support healthy, productive grazing lands. Through on-farm projects such as riparian fencing, off-site watering systems, wetland enhancements, and improved wintering-site management, LARA works directly with cattle producers to improve both land and herd outcomes. This program is made possible through the support of our partnering funders, including the Government of Alberta's Watershed Resiliency and Restoration Program, along with our local municipal partners (the MD of Bonnyville, County of St. Paul and Smoky Lake County) and the agricultural stakeholders who share our commitment to sustainable, resilient land management across northeastern Alberta.



Guide Overview

This guide is meant to be a practical, easy-to-use resource for cattle producers in the Lakeland region. It breaks down the key concepts behind watershed resiliency and shows how small management changes can lead to healthier cattle, stronger pastures, and more reliable water sources—especially during dry years.

The following sections highlight what you can expect to learn and apply on your own operation:

- Identify what healthy riparian areas look like and why they matter
- Understand how water quality affects cattle health and performance
- Recognize how cattle interact with natural water bodies and where problems can occur
- Explore practical tools like off-site watering, fencing, and managed access
- Improve wintering-site placement to protect water quality
- Consider wetland enhancement options for drought resilience
- Learn from real producer examples and local case studies



Why Water and Riparian Areas Matter for your Cattle and your Land

Healthy water sources and riparian areas matter because they directly support both cattle performance and long-term land productivity—especially in Alberta, where frequent drought cycles and intense summer heat put pressure on every acre. Riparian zones act like natural water reservoirs, holding moisture longer into the season, and providing some of the highest-quality forage on the ranch. Clean, reliable water improves cattle intake, gains, fertility, and overall herd health, while well-managed riparian areas reduce erosion, filter runoff, and keep banks stable even after sudden rain events. Protecting these areas isn't just an environmental practice—it's a practical investment in drought resilience, pasture longevity, and healthier cattle.



Riparian areas matter because they directly support both cattle performance and long-term land productivity.

What is a Riparian Area?

A riparian area is the green strip of land directly adjacent to still, flowing or seasonal waterbodies.

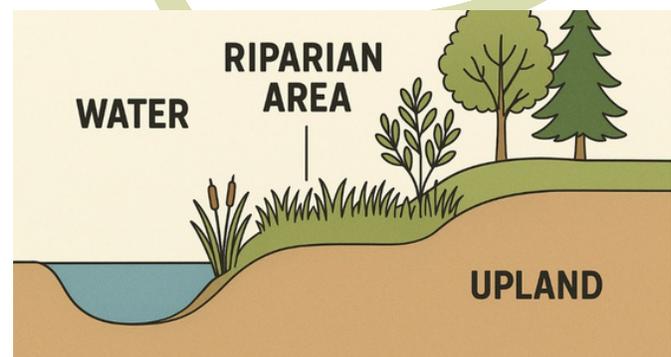
It's where water meets land—and it's one of the most productive parts of a ranch.

Riparian soils stay wetter, support deeper roots, and support plants like willows, sedges, cattails, rushes, and native grasses. These plants slow water, hold banks together, and filter sediment and nutrients.



Key Environmental Functions of Riparian Areas:

- Filter water
- Trap and store sediment
- Build and stabilize banks
- Slow flow and erosion
- Recharge groundwater
- Maintain biodiversity
- Supporting wildlife, pollinators, and fish
- Storing moisture in drought and slowing floodwaters



Riparian areas are the green strip of vegetation around waterbodies.

Why **Cows Love** Riparian Areas



For cattle, riparian areas are comfortable, productive places that meet multiple needs at once.

- Riparian areas offer lush, **high-quality forage** that stays greener longer in dry conditions
- They offer **shade, cooler temperatures**, and relief from the heat
- **Water** is readily available, making these spots natural gathering areas
- **Shelter** from wind and weather

How Cattle Interact With Natural Water Bodies

Cattle consistently show preference for clean, pumped water in troughs over drinking from ponds, rivers or dugouts. When they do access natural water bodies they generally prefer to stand on firm ground and drink from the edge. However, water levels too low to comfortably access from the water's edge and unstable ground will result in cattle stepping down into the channel, wetland or pond to access water. Once a cow enters the water several predictable processes occur:



1. Direct Deposition of Urine and Feces

As cows drink, they frequently urinate and defecate simultaneously. This introduces:

- E. coli and other pathogenic bacteria
- excess nutrients like nitrogen and phosphorus
- organic matter (manure particles)

The result is increased microbial loads and chemical changes that contribute to poor water quality.

2. Splashing and Contamination of Udder and Hide

As cows stand in deeper water, their udders get splashed and coated with muddy water. When calves nurse, whatever is on the udder—bacteria, suspended solids, parasites, organic debris—is transferred straight into their mouths. This increases the risk of:

- scours
- overall reduced immunity and growth

When a cow enters a water channel several predictable processes occur.

3. Increased “Total Suspended Solids”

Every step a cow takes in soft mud stirs up sediment. This increases what’s called Total Suspended Solids (TSS)—fine particles of soil, manure, and organic debris floating in the water.

Higher TSS means:

- murkier water
- reduced oxygen levels
- higher bacterial growth
- more material sticking to hides and udders

4. Bank Compaction and Erosion

Repeated entry and exit in a concentrated spot compacts soil and damages root structure. Vegetation is trampled, and roots no longer bind soil, banks begin to breakdown and slump- over time this leads to accelerated erosion.

- banks become compacted
- vegetation is trampled
- roots no longer hold the soil
- stream edges break down and slump
- erosion accelerates



5. Chemical Changes and Total Dissolved Solids (TDS)

4

Beyond sediment, dissolved substances such as nutrients, salts, and minerals – collectively measured as total dissolved solids (TDS). **TDS tends to change more slowly but cumulatively.** Inputs from urine and the breakdown of organic matter increase these dissolved constituents over time. Higher TDS affects water palatability and quality and can influence animal health if levels become elevated.

Unmanaged herd access to a riparian area becomes a downward spiral that affects both herd and riparian area health.

Water & Cattle Health

What Every Producer Should Know

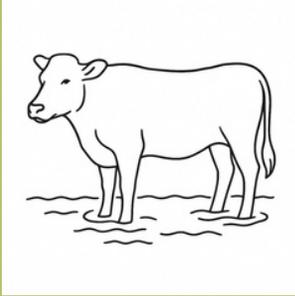


According to the research compiled by the **Beef Cattle Research Council (BCRC)**, water is not merely a basic requirement – for beef cattle, it is a critical driver of growth, production, and overall herd health. Cattle water consumption varies by weight, physiological state (e.g. lactating, growing), diet and environmental conditions such as temperature and humidity.

However, quality matters as much as quantity. Poor-quality water – defined by factors such as high salinity, total dissolved solids, sulphates, nitrates, bacterial contamination, or harmful algae – can reduce water intake because cattle often find it unpalatable. Reduced water intake tends to go hand in hand with lower feed intake, impaired digestion and nutrient absorption, leading to slower growth, reduced milk production, and sometimes illness or even death in extreme cases.

Source: Beef Cattle Research Council

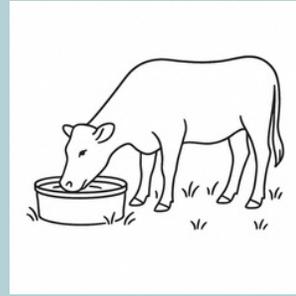
Cleaner Water = **Healthier Cattle**



Decreased
water quality



Decreased
cattle
performance



Increased
water quality



Increased
cattle
performance

Water quality affects cattle intake, growth, and overall health.



Riparian plants act as a natural filtration system by slowing down runoff, which reduces its energy and allows sediment, manure, and other contaminants to settle out before reaching the water. Dense vegetation—grasses, shrubs, and willows—creates friction that improves infiltration and traps soil particles and organic matter. As water moves through this vegetated buffer, plant roots absorb excess nutrients like nitrogen and phosphorus, preventing them from entering waterways where they could fuel algae growth or degrade water quality.



Below ground, riparian soils are rich in microbes that break down manure, organic matter, and contaminants, further purifying water before it reaches a water body. Deep-rooted shrubs and trees stabilize streambanks, reducing erosion and keeping sediment out of the channel. Together, these processes—slowing water, absorbing nutrients, supporting microbial breakdown, and stabilizing banks—make riparian vegetation essential for protecting clean, healthy water and functioning riparian area.

Tools That Help the Land and Herd

Tools that Help the Land and Herd: A collection of practical riparian management tools—such as exclusion fencing, controlled access points, off-site watering systems, and targeted vegetation planting—demonstrate how simple, well-placed practices can improve ecosystem health while supporting efficient, productive livestock management.

Solutions
for land
and herd.



1. Offsite Watering Systems

Off-site watering systems are often the single most impactful watershed improvement a rancher can make.



By offering clean water away from the stream or pond:

- cattle stop entering the water body
- manure and urine stay on land where soil microbes can break them down
- udder health improves
- calves avoid ingesting contaminated sediment
- banks stabilize and vegetation recovers
- TSS & TDS lower
- overall water quality improves dramatically

Benefits to the Environment



- Less bank trampling
- Reduced sedimentation
- Clearer, healthier water
- Stronger riparian area vegetation

Benefits to the Operation



- Long-term pasture productivity
- Lower vet and treatment bills
- Less damage to riparian area

Benefits to the Herd



- Cleaner drinking water
- Better weight gain
- Reduced hoof rot
- Reduced hoof and leg injuries

2. Riparian Fencing & Managed Access

Fencing riparian areas is essential because it protects some of the most sensitive and productive zones on a landscape—where water, soil, and vegetation interact to support biodiversity and bank stability. By keeping livestock out during vulnerable periods, fencing prevents trampling of soft, saturated soils, reduces bank erosion, and allows vegetation to recover and anchor streambanks. Healthy riparian plants filter sediment and nutrients, improving water quality and increasing resilience to floods and drought. Fencing doesn't have to exclude cattle completely, but it provides the option to control timing and intensity of use so grazing occurs only when conditions are safe for both the land and the animals.



Fencing doesn't have to exclude cattle entirely; rather, it provides the flexibility to restrict access during ecologically sensitive periods.



Continuous Grazing

Continuous grazing allows livestock free access to riparian zones throughout the grazing season.

- Vegetation decline
- Bank erosion
- Reduced water quality
- Lower forage productivity
- Livestock risks

Continuous grazing prioritizes convenience but increases long-term risk to water quality, forage productivity, and herd health. Exclusion management protects the riparian zone during vulnerable periods, promotes recovery, and supports both ecological and agricultural recovery. During spring melt and following precipitation are the most vulnerable times for a riparian area due to high moisture creating soft soils, and unstable banks. The same periods are also the most dangerous for cattle, with higher risk of slips, bogging, and hoof problems, making separation a win for both herd and habitat.

Exclusion Management

Exclusion management uses fencing to limit or fully restrict livestock access to riparian zones during sensitive times (spring thaw, wet soils, regrowth periods).

- Vegetation recovery
- Improved water quality
- Channel stabilization
- Forage gains
- Operational Flexibility

Riparian areas are most vulnerable during wet conditions – soft, wet soils and unstable banks – they are also risky for cattle, making separation a win for both herd and habitat.



3. Stream and River Crossings

Using designated stream and river crossings provides clear benefits for cattle by offering a safe, stable route across watercourses. Natural banks are often soft, slick, or steep—particularly after rainfall—creating a higher risk of slips, bogging, and leg or hoof injuries. Hardened crossings, bridges, or culverts supply firm footing that minimizes these hazards and reduces exposure to muddy or contaminated water, which can contribute to foot rot and other health issues. By guiding livestock to a secure crossing point, producers can improve animal safety, support herd health, and maintain efficient movement across the landscape.



4. Wintering Site Relocations

Wintering sites are often chosen simply because they already exist — a yard, a sheltered corner near buildings, or a spot where water, electricity, and bedding are close at hand. Convenience and infrastructure matter, especially in winter. However, long-standing sites aren't always the best locations for protecting water quality, maintaining healthy soils, or supporting cattle health. Evaluating the site through both environmental best practices and herd health principles can help producers keep what works while improving areas that cause long-term problems.

• Topography & Soil Drainage

- Choose higher ground or gentle slopes rather than low, flat or poorly drained land. This helps avoid ponding, mud, excessive soil compaction, and runoff that can damage soils or carry manure into waterways.
- Avoid areas with steep runoff paths, or close proximity to natural drainage channels — especially near sensitive water bodies or riparian zones.

• Proximity to Water — and Water Management

- Ensure a reliable source of clean, accessible water. In winter, snow alone may not suffice for water— especially for cows that are lactating, newly weaned, or in poor body condition.
- Avoid placing wintering sites too close to streams, wells, springs or water bodies. Setbacks help prevent contamination from manure or runoff, protecting surface and groundwater quality.

• Shelter and Wind Protection

- Wind and cold are major stressors for cattle in Alberta winters: winter sites should offer natural windbreaks (trees, coulees, terrain) or allow construction of portable or permanent windbreaks/shelterbelts if natural shelter is lacking.
- Orientation and placement matter: windbreaks should ideally be perpendicular to prevailing winds (in Alberta often from the northwest) to maximize shelter efficiency.



Producers need winter efficiency — but convenience can place cattle too close to wetlands, drainage swales, or low-lying areas that funnel nutrients toward water bodies.

Evaluating your current site provides the baseline for improvement, not a reason to scrap everything.



• **Manure & Bedding Management, Environmental Risk**

- Under regulations for seasonal feeding and wintering sites (e.g. under the Agricultural Operation Practices Act – AOPA), you must consider nutrient runoff risk. Placing wintering sites where manure builds up near water or on poorly drained soils can threaten water quality.
- Use bedding areas, and, if possible, rotate feeding or bedding locations each winter to avoid nutrient over-concentration and soil degradation. Manure build-up should be managed so spring melt or runoff doesn't wash nutrients into water bodies.

• **Herd Health — Feed, Water, Shelter, Body Condition**

- Cattle need adequate feed and water to maintain energy through cold weather; poor site selection that complicates feed/water access will reduce animal performance or even risk health.
- Snow as a water source can work — but only if it's clean, loose (non-crusting), and sufficiently deep. For lactating or vulnerable animals (new calves, thin cows), snow alone is often inadequate.

• **Long-Term, Legal, and Environmental Considerations**

- Site selection isn't just about one winter — you should evaluate long-term impacts: soil compaction, vegetation loss, riparian degradation, water quality, and compliance with local environmental laws/regulations (e.g. AOPA).
- Consider future flexibility: your herd size may change, and environmental conditions vary. A site that works one winter might be unsuitable the next — plan for rotation or alternative sites if possible.

Ideal wintering sites are well drained, upland areas that minimize environmental risk.

5. Wetland Enhancement

Wetland enhancement involves restoring or improving the natural functions of a wetland so it can better support water quality, wildlife habitat, and landscape resilience. This often includes actions like re-establishing native vegetation, slowing and spreading water through small structures or topographic adjustments, and reducing disturbances such as unmanaged livestock access. Enhanced wetlands store more water during wet periods, release it slowly during dry spells, filter sediments and nutrients, and provide critical breeding, nesting, and foraging areas for a wide range of species. In agricultural regions, wetland enhancement can also contribute to drought preparedness and flood mitigation, creating a healthier, more resilient watershed while supporting productive working landscapes.



Planting moisture-loving native trees and shrubs along riparian areas helps stabilize banks, filter runoff and provide shade for livestock and wildlife.

Try Before You Buy: Producer Support Tools

Did you know that LARA offers a try-before-you-buy program designed to help livestock owners explore innovative tools that enhance both herd health and riparian area management? Through this program, producers can borrow two excellent tools — a solar-powered livestock watering system and the Razer Grazer portable fencing unit — for up to one month at no cost. This hands-on opportunity allows producers to see how the systems function under real ranch conditions, evaluate their fit for existing operations, and experience the benefits of improved water quality and grazing management firsthand.

Solar Water Systems – Summer and Winter Systems available!

Solar livestock watering systems pump surface or groundwater to a trough or tank at the point of use. They are ideal for off-site watering where grid power isn't available, reducing the need for livestock to access dugouts or ponds directly. When cattle drink from muddy or stagnant dugouts, water quality and palatability often decline, which can reduce intake and overall performance.



Razer Grazer Portable Fencing – Manage Grazing and Protect Riparian Areas

The Razer Grazer is an all-in-one portable fencing solution that makes rotational grazing and riparian protection easy. Compact and solar-friendly, it allows producers to create temporary paddocks, restrict access to sensitive riparian areas, and direct cattle toward off-site watering systems.



LARA

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Contact LARA to reserve (780) 826-7260

Producer Case Studies

The following case studies highlight real producers from across the Lakeland Agricultural Research Association region—including the MD of Bonnyville, the County of St. Paul, and Smoky Lake County—who are implementing practical, on-the-ground solutions to riparian and grazing management challenges. These are real people working in real conditions, adapting their operations, testing new tools, and learning along the way. Their experiences offer valuable insights, successes, and lessons learned that can help other producers save time, avoid common pitfalls, and feel confident exploring similar strategies on their own operations.

Real
producers.
Real
challenges.
Real
solutions
worth
sharing.

Producer Case Study: Becky Boychuk



Tools Implemented

The Boychuk farm is in Smoky Lake County. In 2023 they installed fencing along a riparian area on their farm. Prior to fencing, years of cultivation had extended into the vegetative buffer, and the riparian zone had dried and lost many of its natural plant indicators. The fencing was installed to restore riparian function, reduce bank disturbance, and protect water quality.

A smooth top wire was intentionally used to reduce harm to wildlife—particularly elk—crossing the fence. Becky also learned that temporary electric fencing can be a valuable tool before installing a permanent fence. By shifting temporary fence lines for a few seasons, producers can better identify the true high-water mark, bank-full width, and the space needed for riparian vegetation to recover.

“Wherever you think the water is going to be – give yourself more room, because its going to go up.”

– Becky Boychuk

On fence location selection for degraded riparian areas

Producer Case Study: Becky Boychuk cont.

The
formally
dry zones
began
holding
water
again.

How it worked

The Boychuks were surprised at how much riparian vegetation returned once the area was excluded from cultivation and livestock access. Native sedges, rushes, and moisture-loving shrubs re-established quickly, and the formerly dry zone began holding more water again. This change also led to an increase in wildlife species frequenting the area.

One practical lesson learned was to set the fence farther back than you initially think. The high-water mark is often underestimated, and riparian vegetation needs more space than expected—especially in systems that have been cultivated into the floodplain.



Advice for Other Producers

- Give yourself more room than you think. Whatever you believe the high-water mark is—go farther back. Riparian vegetation needs space, and once restored, the zone can expand significantly.
- Consider using temporary electric fence first. A few seasons of trial spacing will help identify where the permanent fence should realistically go.
- Expect wildlife interactions. If you have elk, plan for fence repairs and choose wildlife-friendly designs. Smooth top wire, flexible materials, and wider wire spacing can help reduce breakage.
- The restoration benefits are worth it. The Boychuks now see lush vegetation, more water retention, and greater wildlife diversity in previously degraded areas. Watching the system come back to life has been one of the most rewarding outcomes of the project.

Producer Case Study: Valerie & Alex Krill



Tools Implemented

In 2022, Valerie and Alex Krill installed a **riparian fence** along the Beaver River to improve both herd management and public safety. Although the north-facing slope of the riverbank is naturally thick with brush, cattle occasionally found their way down to the water. During periods of low river flow, animals could cross onto exposed riverbed areas, creating potential risks for the public and adding unnecessary challenges to herd supervision. Seasonal water level fluctuations—especially during calving—further complicated cattle monitoring, as dense vegetation made locating animals time-consuming.

The riparian fence now creates a clear and reliable boundary between the herd and the river. While routine maintenance is still required, overall fence checking and herd monitoring have become significantly more efficient. With the ability to drive a side-by-side along the fenceline, Valerie and Alex can easily inspect infrastructure and visually confirm the location and condition of their cattle, greatly reducing stress and time spent searching through heavy brush.

How it worked

Since installing the riparian fence, Valerie and Alex have seen noticeable improvements in day-to-day herd management. The fence effectively prevents cattle from accessing the river, reducing the risk of animals wandering onto exposed riverbed during low flows or becoming a concern for public users of the Beaver River. It has also eliminated the need to repeatedly check dense brush along the riverbank for missing cows, particularly during calving season when water levels can fluctuate quickly.

The ability to travel the fence line by side-by-side has streamlined monitoring and made maintenance more manageable. Instead of navigating thick vegetation on foot, they can efficiently inspect posts, wire tension, and gates while keeping an eye on the herd. Overall, the fence has added predictability and peace of mind to their grazing system.

Producer Case Study: Valerie & Alex Krill cont.

Their Message to Other Producers

Valerie and Alex encourage other producers to consider riparian fencing as a worthwhile investment in both herd management and operational efficiency. They note that while any fence requires some upkeep, the time saved in monitoring cattle—and the reduced stress of searching for animals along a heavily treed riverbank—far outweigh the maintenance effort.

They also emphasize the importance of designing a fence line that is accessible by equipment such as a side-by-side, as this greatly simplifies long-term checking and repairs. In their experience, keeping cattle out of the river has improved safety for both livestock and the public, and has made their overall management smoother and more predictable.

The
Riparian
area fence
relieves
the worry
of cattle
crossing
the river.



Producer Case Study: Jay Cory

“Cows & calves prefer drinking from an off-site trough.”



Tools Implemented

Jay Cory farms in the Municipal District of Bonnyville, where maintaining reliable and clean water access for cattle is a continual priority. To improve water quality and support herd health, Jay installed a **solar-powered off-site watering system**.

This system allows cattle to drink from a trough supplied by a floating pump, reducing direct access to surface water.

How it worked

The solar watering system has been effective overall, but it does require daily monitoring, particularly when the natural water source is fenced off. Jay notes several challenges and lessons learned:

- Equipment damage: Cattle have chewed wiring and damaged hoses, and on one occasion, an animal—possibly a beaver—chewed through the hose beneath the floating pump.
- System placement: When water sources are not fenced, cattle tend to walk on the hose, pushing it into mud, which makes the pump extremely difficult to retrieve or maintain.

Producer Case Study: Jay Cory Cont.

- Electrical reliability: Most system issues Jay has encountered stem from poor or loose electrical connections, a common weak point in many solar watering systems.
- Water availability: The pump requires a minimum water depth to operate. Ensuring the source does not dry up is essential for system longevity and animal access.

Despite these challenges, Jay reports that the system has been a positive addition to his operation. With regular checks and proactive maintenance, the solar waterer has reliably delivered clean drinking water to his herd.

Advice for Other Producers

His main advice for other producers includes:

- Plan for daily checks. Off-site watering systems work well, but they are not “set-and-forget.” A quick daily inspection prevents most major issues.
- Protect infrastructure from livestock. Fencing around the hose runs significantly reduces damage and system downtime.
- Secure all electrical connections. Simple fixes—tightening wires, ensuring clean contacts—solve most performance problems.
- Monitor natural water levels. A drying creek or dugout will quickly compromise pumping capacity.



Jay has added several off-site watering units to his operation and his father followed suit.

Producer Case Study: Nicole Mathes

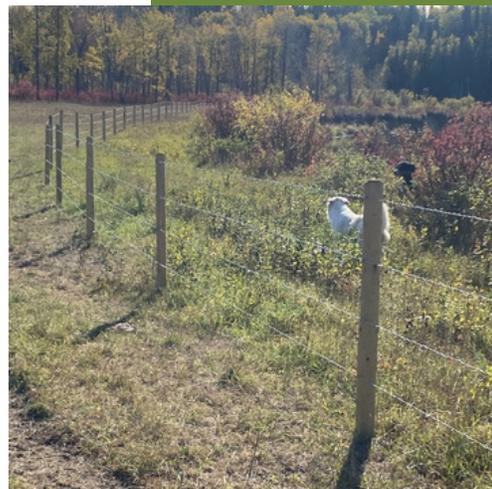
Tools Implemented

The Mathes family farms along the Beaver River, where cattle historically accessed the river for drinking and the river itself once functioned as a natural barrier. However, with recent low water conditions, cattle were increasingly able to cross, prompting concern for both herd management and riparian area health. A riparian area **exclusion fence** was installed in 2025. The fence was placed above the river's high-water mark to fully keep cattle out of the riparian zone and prevent direct impacts on the banks and waterbody.

Mathes' operation includes pastures on both sides of the river. Gates were added to the fence to maintain grazing rotation. A formal cattle river crossing was considered but deemed infeasible due to the river's size, steep banks, and legislative requirements. A former rock bridge built in the 1970s was not reinstated, as such structures pose significant hoof and leg injury risks and are unsuitable for modern riparian management.

To support off-stream watering, the family purchased a **portable solar water system**. Its mobility allows it to serve both the river-adjacent pasture and a dugout, depending on cattle location, making it a practical long-term water management tool. The family also hopes the fencing will encourage natural regeneration of bank vegetation lost during a high-water event roughly 10 years ago.

The river once acted as a natural barrier, but the low water now allows cattle to cross – making the fencing a practical choice for both herd management and riparian area protection.



Producer Case Study: Nicole Mathes cont.

How it worked

The riparian fence effectively eliminated cattle access to the river, reducing trampling, bank disturbance, and direct manure inputs. Cattle adapted quickly to the new boundaries, and early signs of natural vegetation recovery are already visible. Although a river crossing could not be installed, the integrated gates support functional rotation without compromising riparian protection.

The portable solar water system has performed well across multiple locations, providing reliable, clean water and reducing pressure on the river. Together, the fencing and water system improved herd management while setting the stage for long-term riparian recovery and improved water quality.

Their Message to Other Producers

The Mathes family recommends carefully assessing site conditions and regulatory requirements before considering river crossings, as these structures may be more complex than expected. They found that fencing paired with a flexible off-stream water source offered a simpler, safer, and highly effective solution.

They encourage other producers to invest in portable watering systems, noting their adaptability across pastures and value during dry years. Their key message: keeping cattle out of riparian areas and supporting off-stream watering protects both the river and herd health, and natural recovery follows quickly once pressure is removed.



Producer Case Study: Darren & Valerie Pratch

Tools Implemented

Darren & Valerie Pratch farm in the County of St. Paul. To improve water quality and support herd health, the Pratches installed a **solar-powered off-site watering system and riparian exclusion fencing.**

Fencing the waterbodies keeps cattle out of the water and helps protect water quality. From our perspective as landowners, this project matters because healthy ecosystems protect water sources, reduce the risk of contamination, and allow plants and wildlife to continue doing their job on the landscape.



How it worked

Overall, the system works very well, but installation details really matter. Cattle will find exposed wiring or water lines and damage them if they can, so everything needs to be well protected. We saw clear benefits from providing clean water — the cows definitely do better. Fencing the waterbody also helped protect them by preventing bank damage and contamination. With several years of drought, finding reliable water was getting harder, and this system helped take some of that pressure off.

Fencing water
bodies
prevents bank
damage and
contamination

Producer Case Study: Darren & Valerie Pratch cont.

Advice for Other Producers

- If you fence off a dugout, it's important to have a way to check your water system every day.
- We strongly recommend using a camera system that lets you check water from your phone, because if the system goes down, cattle are out of water.
- Our main takeaway is to protect all wiring and lines.
- Don't underestimate how much clean water helps cattle.
- Fencing waterbodies is just as much about long-term protection of your water source.

Use a camera
to monitor
your water
system.



All wiring and lines need to be
well protected from cattle.

Case Study: LARA Research Farm



Pond Rejuvenation Project

Location: LARA Research Farm, Municipal District of Bonnyville No. 87

Partners: LICA Environmental Stewards, Alberta's Iron Horse Trail, Strathcona Resources Ltd., Municipal District of Bonnyville No. 87, Bonnyville Forestry Nursery Inc.

The LARA Pond Rejuvenation Project is a collaborative educational and ecological initiative designed to showcase riparian area management in action. By enhancing the fishpond and adjacent stream corridor, the site now functions as a "living classroom" for students, producers, and the community. The project demonstrates practical tools that support healthy land and water, improved ecosystem function, and long-term agricultural productivity.

The Pond Rejuvenation Project transformed LARA's fishpond into a living classroom, showcasing practical riparian solutions

Case Study: LARA Research Farm cont.

Interpretive signs throughout the site help visitors understand how riparian areas function and the practical tools producers can use to manage them.

Tools Implemented

1. Exclusion Fencing and Controlled Access
2. Stream/River Crossing
3. Wetland Enhancement & Riparian Planting
4. Solar Water System Demonstration
5. Razor Grazer Demonstration



Interpretive Learning

Interpretive signs placed throughout the pond site guide visitors through the core functions of riparian areas and the practical tools used to protect them. Each sign breaks down concepts like vegetation roles, bank stability, water quality, and grazing impacts in clear, accessible language, while also highlighting management techniques such as exclusion fencing, controlled crossings, and off-site watering. By pairing real-world examples with on-site explanation, the area helps visitors build a deeper understanding of how riparian systems work and how producers can support their long-term health.

Watershed Resiliency – Why it **Matters**

A resilient watershed is one that can handle drought, heavy rain, runoff, and managed grazing without breaking down.



For ranchers, watershed resiliency means:

- More reliable water sources
- Safer, cleaner access for livestock
- More productive pastures
- Reduced erosion and mud
- Less risk to herd and riparian area during spring melt or storms
- Better long-term forage and soil health

Watershed health isn't just environmental—it's operational. Small improvements often lead to major gains in herd health, grazing distribution, and long-term costs.



Resources

1. Cows & Fish – Riparian Health & Grazing Management

Website: cowsandfish.org

- Key Producer Tools:
 - Riparian Health Assessment Scorecards – Simple, hands-on tools to evaluate riparian function.
 - Managing Cattle and Riparian Areas – Guidance on grazing timing, bank protection, and herd management.
 - Fencing & Off-Site Watering Options – Approaches for managing access without removing cattle from the landscape.
 - Case Studies & Videos – Alberta-based examples of successful riparian improvements.

2. Beef Cattle Research Council (BCRC) – Watering Systems & Cattle Health

Website: www.beefresearch.ca

- Key Producer Tools:
 - Off-Site Watering System Guides – Designs, costs, and equipment options.
 - Water Quality & Cattle Performance – Research on how clean water increases intake and weight gain.
 - Environmental Stewardship & Grazing Resources – Riparian grazing impacts and BMPs.
 - Decision Tools – Water system calculators and grazing management tools.



Resources

3. Environmental Farm Plan (EFP) – Alberta

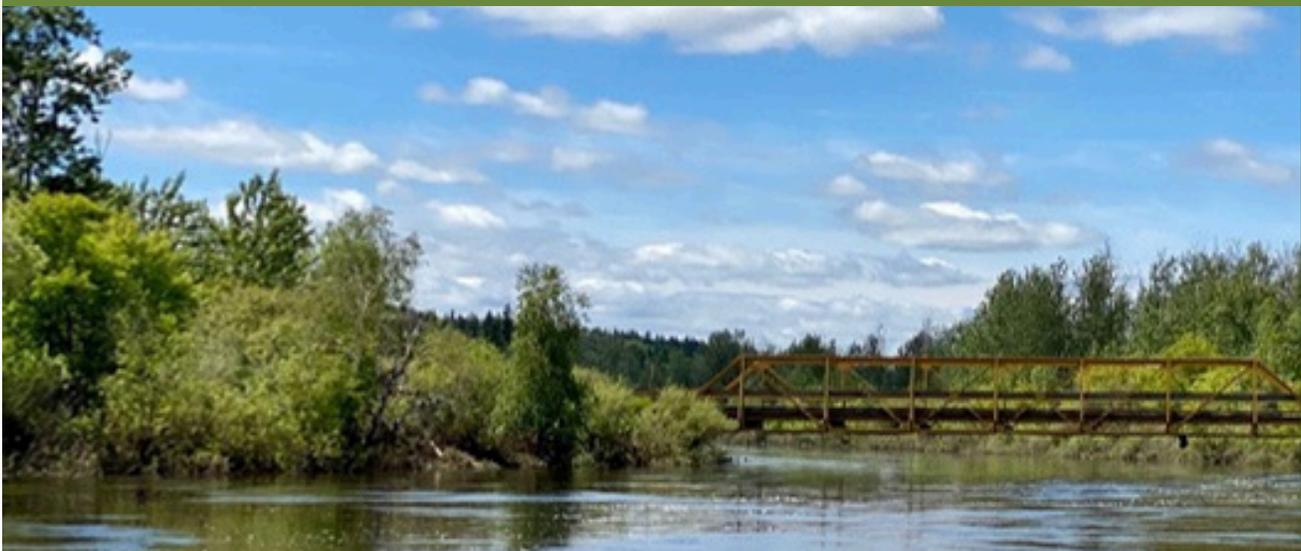
Website: www.albertaefp.com

- Key Services for Producers:
 - An EFP helps producers identify potential risks and opportunities on their farm, including wintering sites, riparian buffers, water systems, manure management, and grazing practices.
 - It is also commonly required for many provincial and federal grants.
 - LARA regularly supports producers with EFP completion through one-on-one assistance and workshops.

4. LARA (Lakeland Agricultural Research Association) – Local Support & Education

Website: www.laraonline.ca

- Key Services for Producers:
 - Grant Assistance:
 - Help navigating funding streams including 310-FARM supports
 - programs that require an EFP.
 - Workshops and seminars



Resources

5. Alberta Riparian Web Portal

Website: [Riparian Area Health Checklist](#)

- A centralized Alberta resource offering:
 - Riparian education
 - Provincial mapping tools
 - Restoration and stewardship guides
 - Examples of successful riparian projects
 - Links to partner organizations and technical resources

6. 310-FARM (Alberta Ag Knowledge Centre) – Provincial Producer Support

Phone: 310-3276 (FARM)

Website: www.alberta.ca/310-farm

- Key Services for Producers:
 - Watering systems
 - Grazing and forage management
 - Riparian issues
 - Bank erosion
 - Vegetation establishment
 - Manure and wintering site management
 - Current grant and cost-share program information



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This project would not have been possible without the dedication, expertise, and collaboration of many individuals and partner organizations. We extend our sincere gratitude to everyone who contributed their time, knowledge, and support throughout each stage of this work.

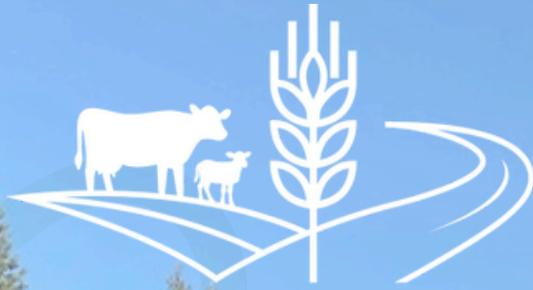
Thank you to our project partners and collaborators whose technical guidance and on-the-ground experience strengthened the quality and impact of this initiative. We appreciate the contributions of local producers and land stewards who shared their perspectives and opened their operations to learning and demonstration. Special thanks to the teams from Cows & Fish, the municipalities we serve, and our provincial and regional agricultural networks for providing insight, resources, and encouragement along the way.

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Finally, we acknowledge the funders whose financial support made this project possible. Your investment in community-based learning and applied agricultural stewardship continues to create meaningful, lasting impact.

To each person involved—thank you. This project reflects the strength of collaboration and the shared commitment to sustainable agriculture and resilient ecosystems.





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Riparian areas directly support both cattle performance and long-term land productivity.