

The Cows and Fish Spring 2022 Newsletter

Cows and Fish



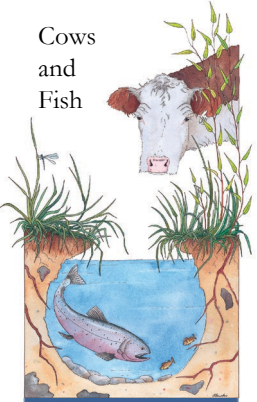
VOLUME 14

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Caring for the Green Zone

Cows
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Cows and Fish

Cows and Fish and Bees and Buffers

By Emily Purvis, MSc, Riparian/Range Specialist



A bee bounces through a thicket of willows growing alongside a creek. She stops by every few tasseled heads to collect pollen. When she's collected enough, she dutifully heads back to her nest and packs the pollen away so when her eggs hatch, their food is ready.

During the process of collecting pollen, bees transfer pollen from one willow to another—a practise that allows willows to reproduce too. Over many generations of bees, willows and other insect-pollinated plants spread along the bank, such as red-osier dogwood and chokecherry that rely on bees to reproduce. High arching branches from riparian shrubs provide cover for wildlife and shade the soil below, retaining moisture that other plants will use, and their deep, soil-binding roots plunge into the banks, preventing erosion and sedimentation into the creek.



Sweat bees visiting a chokecherry shrub

The bee visits other plants too. The purple heads of harebells bob up and down as she reaches for pollen within. She dips between the blanket flower and bergamot that brighten the field and provide a lovely treat. What would happen to riparian areas if bees disappeared? Can you imagine a meadow without the colours of spring wildflowers?

A creek runs through a crop field, where vivid yellow canola extends over the landscape each July. The farmer chose not to seed right up to the creek. The space left between the canola field and the creek is called a riparian buffer. The farmer left a buffer zone because they appreciate the value of riparian areas, such as filtering and cleaning water as it enters the creek, stabilizing banks to prevent erosion cutting away at the crop field, providing habitat for wildlife, like bees, and more.

In turn, bees pollinate the canola during summer blooms. They help increase germination and yield of canola crops through their work. Bees all around the world do this—in fact, it is estimated that

[one third of the world's crops depend on animal pollination.](#)

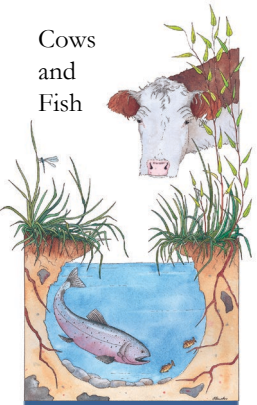
Unfortunately, canola is only available for a short time and the bees need food for the whole growing season. Without natural areas present on the landscape, like riparian buffers, where a diversity of flowering plants may bloom continuously through the season, these bees are less likely to survive. Bees do their part enabling our food production, but we don't always do ours to protect bees. Wild bee populations are declining around the world and in our own backyard, as four native bee species in Alberta are considered at risk, including the Western Bumble Bee, the Yellow-banded Bumble Bee, the Gypsy Cuckoo Bumble Bee, and Suckley's Cuckoo Bumble Bee. It is not just bumble bees that are in trouble either. Alberta is home to over 300 wild bee species, with only around 20 of



A species of sweat bee (Agapostemon) on a gaillardia flower.

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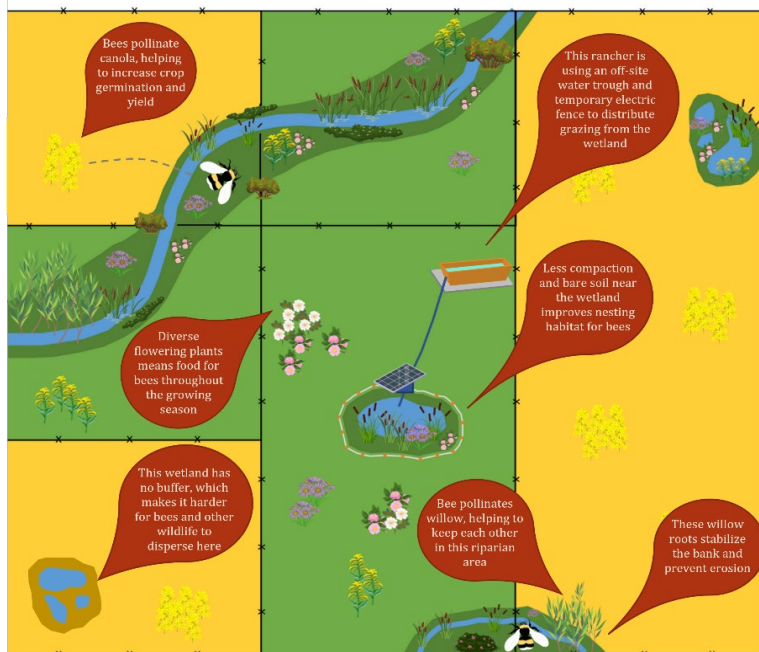
these being bumble bees, and with many of the other wild bee species also showing patterns of population decline. These species are threatened by a suite of factors including climate change, pathogens from managed bee species, pesticides, and habitat loss. By being stewards of the landscape we are embedded within, we can help alleviate some of these threats.

For landowners and managers, being stewards of native habitat is essential for wild bee success. Wild bees need both food and nesting resources to survive and reproduce. Suitable food resources include diverse and abundant flowering plants, which cater to diverse bee species with differing dietary needs and preferences. The presence of diverse flowering plant species also means variation in bloom time, so food is available all season. As for nesting resources, most prairie bee species nest underground—some excavate their own burrows and others establish nests in pre-made cavities like rodent holes. Factors such as the amount of bare ground and soil compaction can influence the quality of nesting habitat. For example, if soil is too compacted, it may be difficult for a bee to dig its nest. Additionally, wild bees also benefit when habitats with suitable food and nesting resources are distributed across a landscape, creating habitat connectivity. This means bees are able to travel throughout the landscape to different habitat patches and disperse the pollen they carry to these areas.



An Andrena bee visiting a Sandbar Willow

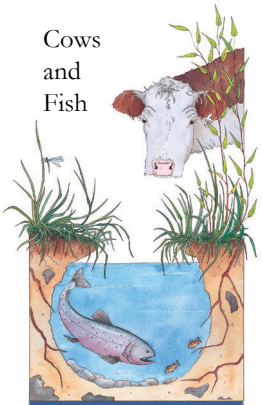
Providing suitable habitat for bees is as simple as keeping natural habitat on the landscape and not contributing to its loss or degradation. At Cows and Fish, we work with producers and landholders that enact this stewardship on the land they use every day, even if they may not be aware of the benefit their actions have on wild bees specifically. In a cropping situation, actions such as leaving buffers of natural habitat, like riparian areas or uncropped field margins, can help support wild bee populations. In a ranching situation, actions such as following the principles of grazing management and learning about the health of riparian areas can further improve habitat for bees.



All of us and our actions, are connected to our landscape. This infographic, created by Emily Purvis includes some ways to support bees. Can you include any new practices in your field or yard to support bees and keep our spring bright?

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Where have we been?

By Norine Ambrose, Executive Director



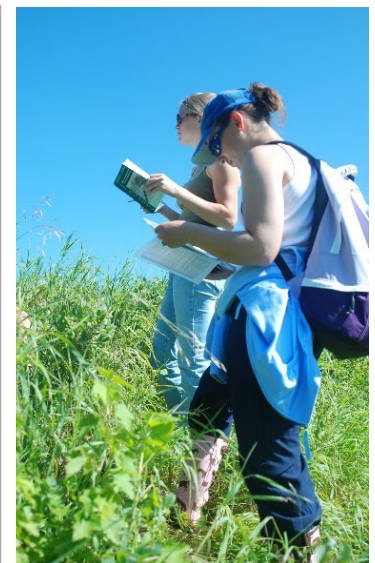
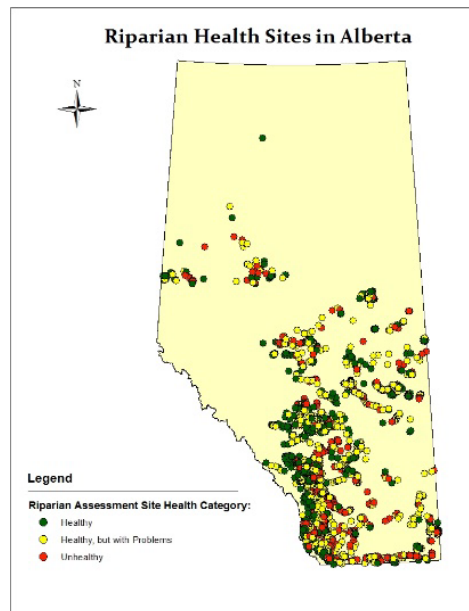
Since 1992
we've...

Put on
4,400
extension events

Spoken to
112,000
people at extension events

It turns out, we've been a lot of places across Alberta, and quite a few places further afield. Not only have we done a lot of riparian health inventories and assessments on streams, rivers, lakes and wetlands, from as far north as Fort Vermilion, to as far south as the Lost River (aptly named!), but we've driven a lot of miles to talk to community groups in local community halls, deliver our youth game to kids at agricultural and environmental fairs and class rooms, and use our riparian health field workbooks to assess the health of riparian areas in hands-on field days.

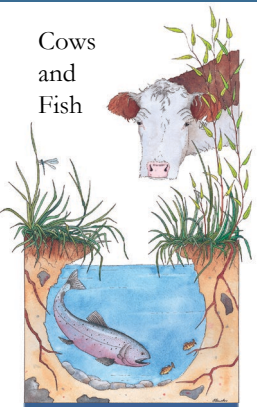
I've often wished I had added all the roads I've driven as part of my work to one map—I know I started it, at one point, but my tattered Alberta road maps didn't hold up more than a few years at a time, from folding and refolding. They have since been replaced with a digital map to navigate most of the time, but it is still useful to have that paper map for country roads and to find the right farm yard.



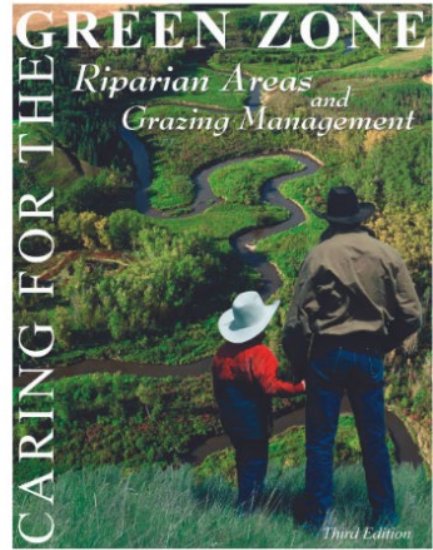
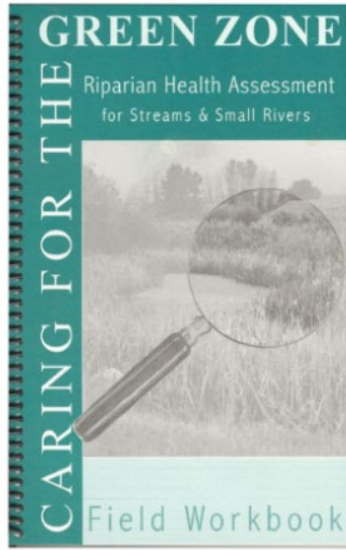
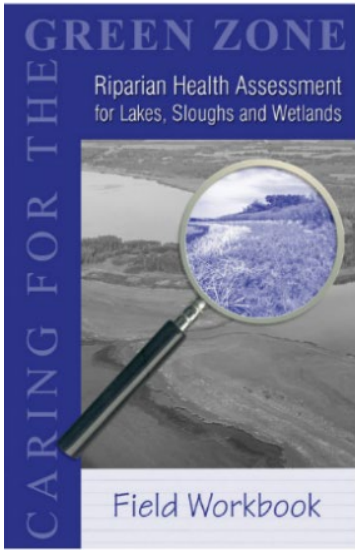
We have distributed 22,120 riparian health assessment field workbooks, many at hands on field days

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Since 1992, we have distributed 62,350 copies!

Beyond the physical travels, we've been through some challenging times, when we were not sure grants would come through, as we have learned to work with new audiences, such as lakefront residents, and in more recent years, off-highway recreational clubs. Recently, with the pandemic, shifting to online, has reduced our opportunity for in-person activities, but also really helped us strengthen our online presence. In all these travels, virtual, or otherwise, there has been a constant opportunity for learning, from those that invite us into their communities and homes, from partners and supporters. My strongest sense is a feeling of warmth and appreciation for being part of something bigger, that after 23 years with Cows and Fish, I sometimes only see the fruits of past work, when we run into someone from a decade ago—knowing that where we have been, and left our impact, continues, in our absence, is a very good feeling.

YOU CAN HELP INSPIRE CHANGE IN YOUR WATERSHED

HAVE YOU REACHED YOUR RIPARIAN HEALTH GOALS?

We can help!

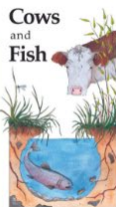
Our services include: riparian grazing management, off-stream watering, riparian restoration, riparian buffers, riparian planting/restoration, healthy lakeshores, hands-on field days and riparian health assessment. Best management practice funding is available in some localities!

Have you worked with us in the past?

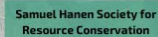
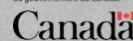
We would like to hear from you! Help inspire change in your watershed by sharing your story.

Contact us today:

At cowsandfish.org or at (403) 381-5538 / riparian@cowsandfish.org

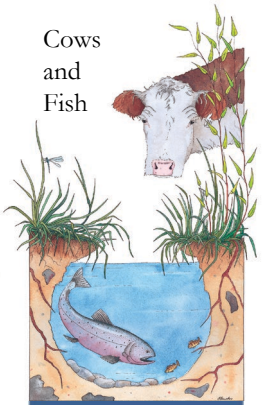


This project was undertaken with the financial support of the Government of Canada.
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.



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Good Mud, Bad Mud!

By Norine Ambrose, Executive Director

I love spring, particularly the early part of spring, when bubbles get trapped in the frozen layers of small puddles. I recall the joy I felt liberating those bubbles and muddy water from winter's icy grip on the dirt driveway of the farm where I grew up. Although now lining the gutters of the paved street where I live today, I am still compelled to jump on those crisp frozen layers to release the puddle of muddy water underneath with a satisfying crunch and splash-celebrating 'spring is here'!



Norine Ambrose in a stream west of Longview, AB

Recently, I was reminded by my family that I started playing in mud puddles from a very young age. While I have dawned rubber boots for as long as I can remember and they have become an essential accessory for my career, apparently I wasn't always appropriately outfitted for field work, especially at ages 2 and 3 when puddle jumping in my not-white-for-much longer dresses. The dirt paths on the farm growing up weren't just a place where I developed a fascination for mud, but led me to the work I do today. Following little rivulets created by melting snow that carved squiggles in the soil as they ran downhill along the tire track that headed from one part of the farm yard to another, led to my fascination with erosion and deposition. As water moves, it picks up dirt particles from one place (erosion) and then drops them off at another (deposition). Now I am still tromping around in the mud of wetlands (you may know them as sloughs) and streams on the look out for *good mud*.

How can there be '*good mud*'? Most people probably understand that we don't want a lot of mud in our streams and lakes, which is generally not good for water quality-whether we are drinking it, or fish are trying to live in it, that would be '*bad mud*'. Also, that excess soil, not in the water, must have come from somewhere where it was needed, such as a stream bank, a farmers' field, or a road. So, whether mud is good or bad, depends on the location. Mud trapped in grasses and shrubs on the floodplain, rather than suspended in the water, is referred to as '*good mud*' because it is helping build soil and improves the aquatic habitat. This deposited soil creates opportunities for new plants to establish and grow.

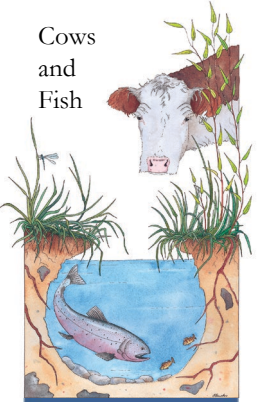
Bad mud, found in a stream, where it isn't supposed to be, might be burying fish eggs and may contain pathogens, metals, and excess nutrients, increasing the cost of water treatment, or clogging the gills of fish and other aquatic organisms.



An example of 'Good Mud'

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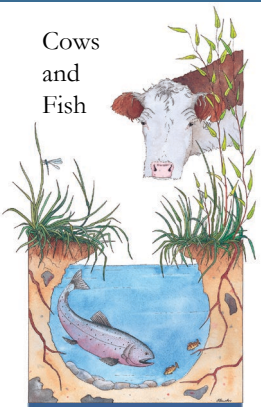
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The key to increasing *good mud* compared to *bad mud* is keeping more plants on the land. Plants slow down water that flows over and through them, increasing friction and making it harder for those soil particles to stay suspended in the water, resulting in deposition. However, it isn't just about plants on the edges of streambanks or shores – it is having plant cover across the landscape. From hill tops to valley bottoms, urban or rural, if we have a well-vegetated world around us, less soil is eroded, and if soil does erode, there is more opportunity for it to become trapped. From an urban yard, a lakefront with a beach, a forested backcountry campsite, or a farmer's field – reducing erosion benefits water quality. Of course, plants are important for more than just holding soil, such as providing habitat for wildlife and forage for livestock, to name a few important co-benefits.



An example of 'bad mud'

Over the years, my skills to navigate playing in the mud have progressed. I have learned to avoid the deep deposits of *good mud* on a streambank after a flood and instead appreciate them from firmer footing nearby.



RIPARIAN AREAS & GRAZING

Range 101



Healthy riparian areas are a foundation for your livestock operation. It begins with an understanding of the principles of range management and applying those principles to build and maintain the riparian foundation. Good range management practices imitate the natural system and foster healthy native plant communities.

The 4 Principles of Grazing Management.

1 BALANCE ANIMAL DEMAND WITH THE AVAILABLE FORAGE SUPPLY

- This means harvesting forage but leaving enough carryover or grass residue to protect plants and soil, conserve moisture, plus trap sediment.
- It's about understanding carrying capacity and setting annual stocking rates that don't exceed the available forage.

2 DISTRIBUTE LIVESTOCK EVENLY

- This means choosing from a long list of management tools to spread the grazing load over the landscape.
- It's about not allowing livestock to linger and overuse an area.



3 AVOID OR MINIMIZE GRAZING THE RANGE OR PASTURE DURING VULNERABLE TIMES

- For riparian areas this may be when streambanks or shorelines are saturated with moisture and vulnerable to trampling.
- It could include times, like late summer or autumn when grasses have cured and woody plants are still green, palatable and vulnerable to overuse.

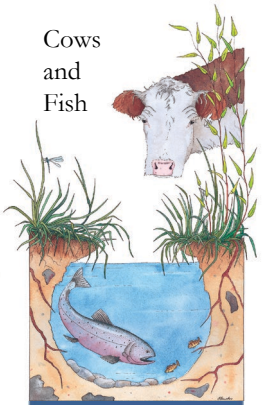
4 PROVIDE EFFECTIVE REST AFTER GRAZING

- Give plants time to rest when growing conditions are favourable to rebuild roots, energy supply and vigour.
- Energy stored in the roots of plants is needed to initiate growth in the spring.
- To be effective, rest has to occur during the growing season, not before or after the growth period.



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Cows and Fish Ice Sculpture Competition

Written by Logan Peters, Communications Coordinator, with contributions from staff



The Calgary team cheered to our 30th year with their ice sculpture.

Amidst the Covid-19 pandemic, the Cows and Fish team decided to get creative and embark on an outdoor team-building exercise. Despite some seasonally warm temperatures in February, staff were split into teams based on their locations around Alberta and tasked with building a 30th anniversary themed Cows and Fish ice sculpture. After voting on our favourite sculptures, there were three that stood out in terms of design, and we wanted to share them with you.

Calgary Team

Amy McLeod, Norine Ambrose, Tawnee Dupuis, and Lecia Givogue Stevenson took to the ice (or lack there of) in Calgary and put together a stunning display. Being from Chinook country, their ice sculpture was inspired by wind chimes. They used natural elements such as bark, leaves, berries, and wood, as well incorporating colours, green and blue to symbolize riparian areas, the areas connecting land and water.

Red Deer Team

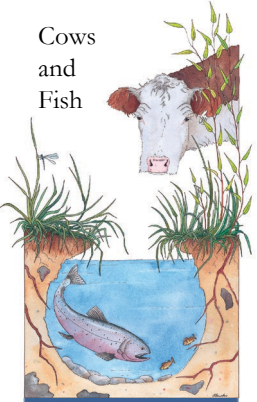
Angie Quist, Kelsey Spicer-Rawe, Jean Tooley, and Carolyn Ross' sculpture depicted the creation of a watershed. Blocks of ice, which were dyed various shades of blue, were used to form a stream flowing from the headwaters in the mountains to the lowlands in the prairies. A hand-felted native Westslope cutthroat trout crowned the mountain tops representing the importance of the Eastern Slopes habitat for native trout species. While native riparian plants frozen in ice created wetlands were crucial to trapping and storing water and improving water quality. Cattle, which were made using frozen blocks the size of milk cartons, with twigs for horns, graze the pasture adjacent to the riparian area of the stream, demonstrating that it is possible that both Cows and Fish can coexist.



The Red Deer team created riparian areas frozen in ice in their beautiful display.

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Edmonton Team

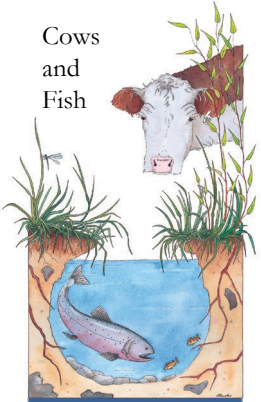
Tonya Lwiwski, Kerri O'Shaughnessy, Kathryn Romanchuk, and Kate Spencer certainly had an advantage as being one of the only teams with sufficient snow, which they used in abundance to create a "beaver-scape," which won them the gold. They used wood, which was very befitting for the beaver theme, and it was used to give the beaver dam structure, as well as cleverly crafted teeth. They also used ice – dyed with food colouring – to help add some details (eyes, nose, and tails) and depth (shimmering water) to the scene. They did not plan the sculpture beforehand, other than the idea of creating a beaver, which meant they were as busy as the aforementioned critter as they gnawed away at creating their scene.



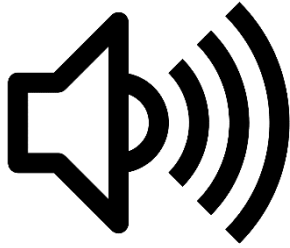
The Edmonton team even featured a pond leveller as part of their sculpture.

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Riparian Fun Fact

By Emily Purvis, MSc, Riparian/Range Specialist

[Do you know what makes this sound?](#)

You guessed it, the Greater Sage-Grouse! Greater Sage-Grouse is a species that relies on the health of both riparian and upland areas throughout their life cycle.

Greater Sage-Grouse need sagebrush in the uplands, but they also need riparian vegetation too! During the spring, males will gather on dawn-lit mornings to dance and attract mates on a lek (an open area in the sagebrush). Year after year, they return to enact this time-honored ritual, completed with the otherworldly popping call linked above. Females will lay eggs away from leks, in areas with tall sagebrush to conceal their nests.



Greater Sage-Grouse

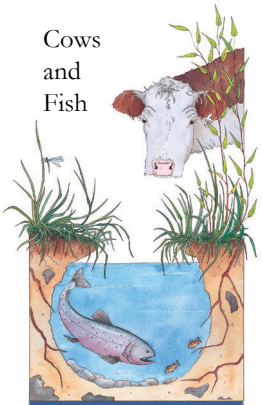
They leave the nests for only short periods of time to feed on sagebrush leaves nearby, which make up nearly the entire diet of an adult sage-grouse. Sage-grouse are just one of numerous wildlife species that rely on sagebrush for food and cover, with many of these species—like pronghorn, sage thrasher, Brewer’s sparrow, and more—unable to survive without it. Carryover or litter is also important to sage-grouse for nest concealment, in addition to its value for retaining soil moisture and contributing to overall range health.

Sage-grouse know how to live in harsh environments. As the lush uplands of spring dry out, sage-grouse and their young move to wet meadows and riparian areas where leafy plants, wildflowers, and insects remain abundant. Sage-grouse young rely more heavily on these broad-leaved plants and insects while they’re still growing. Riparian areas provide a refuge for sage-grouse in late summer while uplands dry in the unforgiving prairie sun. Greater sage-grouse depend on riparian areas in late summer, much like they depend on leks to dance on spring mornings or sagebrush to conceal their nests in the uplands. These birds are just one example of a species that connects several habitats in our unique prairie landscape.



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Upcoming Events

Riparian 101 – Connecting Land & Water



Date: April 28, 2022

Time: 6:30 pm - 8:45 pm

Location: C-Plex in Wainwright

Description: Whether you are a landowner with a lake, creek or slough/wetland, cabin owner, or recreational user of waterbodies, this informational session will provide you with the basics you need to understand their importance and enjoy them responsibly.

Register by noon on April 28th by emailing Shelby at soracheski@mdwainwright.ca or by calling 780-842-4454

Land Forms Multi-Media Showcase



Date: May 5, 2022

Time: 7:00 pm - 8:30 pm

Location: Online

Description: Join us for an online multi-media showcase, which celebrates our connection to the environment in ways that move beyond measurements and math, towards expressions of creativity and passion.

[Register here](#)

SAVE THE DATE

- May 25 @ 6:30pm-8pm:

Grazing Management for Small Landholdings Webinar

- May 26 @ 1pm-5pm:

Living with Beavers in Our Landscape Workshop - County of Grande Prairie

- July 12 @ 1pm-5pm:

Tuning your eyes to healthy water ways and adjacent lands – riparian health assessment workshop for landowners - County of Grande Prairie

- July 13 & 14 @ 9am-4pm:

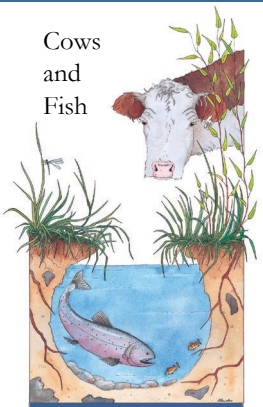
Cows and Fish Train-the-Trainer Riparian health assessment field day - Grande Prairie area

- August (date tbd) @ 9am-4pm:

Cows and Fish Train-the-Trainer Riparian health assessment field day - south/central eastern slopes area

REGISTRATION COMING SOON.

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Digital Stories

Did you know that we have a [digital stories](#) library?

Cows and Fish has partnered with the [Centre for Digital Storytelling](#) to continue to enhance our storytelling skills and engage audiences with meaningful messages. Digital storytelling is the art of using digital media to craft, record, share, and value the stories of individuals and communities, in ways that improve all our lives.



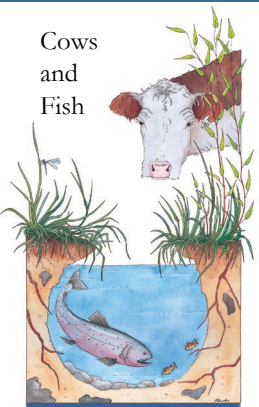
Original development of our newsletter was graciously supported by **Alberta Ecotrust Foundation**, along with our many core [funders and supporters](#). As you may know, we rely upon grants to do much of the work we do, so if you want to suggest an opportunity, collaboration, or make a donation, please do!

[DONATE](#)

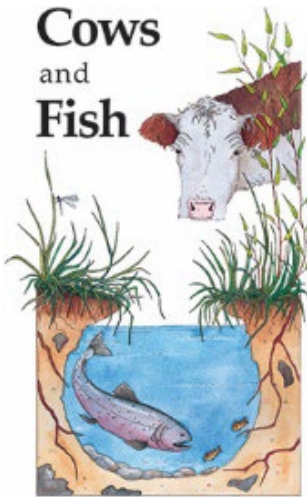
[SUBSCRIBE](#)

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Have you worked with Cows & 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. [Find out how here....](#)

We love hearing from you!

Please contact Norine Ambrose nambrose@cowandfish.org or any Riparian Specialist, to follow up on any items in this newsletter. For full contact information, visit our website at: <https://cowandfish.org/contact-us/>

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