A publication of Alberta Conservation Association

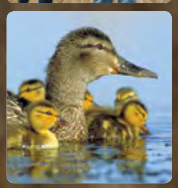
Conservation

BANDAID
What 80 million birds have taught us

Bull Trout
Down but not out

FALL/WINTER 2018

GAME ON!



Whether you're a hunter, hiker or birdwatcher, Ducks Unlimited Canada (DUC) conservation projects are your playing field. In Alberta, DUC has secured more than 2.3 million acres since 1938 and has 2,132 habitat projects. That's a lot of turf, so get in the game. **Wherever you live in Alberta, you're invited to get outdoors and play!**

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80 Years of Conservation Excellence

Gary and Cooper McLaughlin at Bunchberry Meadows (Photo by Brent Calver)

NATURE CONSERVANCY CANADA

Our country is filled with some of the most amazing natural habitats in the world. It's what makes Canada, Canada – and it's why we've spent more than 50 years protecting our irreplaceable natural spaces and the wildlife that they sustain.

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Fish and Wildlife Officers

PAGE 13

Down But Not Out

The tough and hardy bull trout—our provincial fish

PAGE 32

More Than Digging A Hole

Rebuilding Alberta's Wetlands

PAGE 20

content

Back to Our Roots

Milk River Ridge Reservoir Water Quality Stewardship Initiative

PAGE 10

Alberta Conservation Association

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Alberta Conservation Association

Follow our work on:

Our Vision

An Alberta with an abundance and diversity of wildlife, fish and their habitats; where future generations continue to use, enjoy and value our rich outdoor heritage.

Our Mission

ACA conserves, protects and enhances fish and wildlife populations and their habitats for Albertans to enjoy, value and use.

Project: Upland Gamebird Studies
Photo: ACA, Aiden Bateman

Photo: ACA, Todd Zimmerling

From the President

Fall is here. In fact for many people it might even feel like winter already, but we are going to stay positive and assume the early September snowfall is going to melt and we are still going to see at least a few more days of warm fall weather before old-man winter takes a full grip. I think I would consider fall to be my favorite time of year. The mornings are crisp and clear and the afternoons can be bright and warm. You can still get out on a lake to catch a few walleye or even wet a fly on a few streams. And while you are doing that you can listen to thousands of geese flying overhead or elk bugling in the next valley over. If you are into the outdoors, fall has everything to offer: fishing, hunting, berry picking, and all with no, or at least fewer, mosquitoes.

For me and my family, fall starts with our traditional September long-weekend waterfowl hunt. My kids aren't really kids anymore, but they are still willing to set this time aside to spend the weekend with Mom and Dad. Some years we are fairly successful and harvest a significant amount of great-tasting waterfowl; other years not so much, but regardless of the number of birds we harvest, the real measure of success is how much time we get to spend together. You can find out a lot about your kid's future plans by sitting in a goose blind for an hour before sunrise. It also turns out that time can be used to teach an old guy how to use his new cell phone…not that I am advocating cells phones in a hunting blind.

If you are looking for some ideas for fall adventures, check out the articles in this edition of *Conservation Magazine*. We have a new conservation site to explore; you can learn about brown trout and how to catch them (or not), and you can find out about bird banding and how you can help with conservation efforts if you harvest a banded duck or goose.

Regardless of what your outdoor passion is, I encourage you to take some time this fall to spend with your family: hunt, fish, forage, or just simply go for a walk and enjoy the sights and sounds of fall in Alberta, and time with loved ones.

Todd Zimmerling
President and CEO
Alberta Conservation Association

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workout
The latest from the field.

The Nature of Learning

The pronghorn is truly a unique mammal—and one that is unfortunately experiencing a unique problem. Since pronghorn don't jump, miles of barbed-wire fencing have impeded essential travel routes across their range (which includes Alberta, Montana, and Saskatchewan). ACA, Alberta Fish & Game Association, and other groups have been chipping away at it for years, installing wildlife-friendlier fencing, as well taking on other initiatives to help the grasslands ecosystem.

Now the pronghorn project might get the attention it deserves—being featured on *The Nature of Things*. Director Alex Burr says it has been a special opportunity to spend such concentrated time and energy in the grasslands, which is now considered the most threatened ecosystem in Canada. In fact, it was an earlier project here that had him gravitating toward pronghorn.

"We are particularly interested in the maternity group structure of the pronghorn and how that helps to reinforce social bonds of the young fawns," says Burr. "Of course, there is certainly a strong conservation message."

Out in the field, we're always learning, and it was no different for the film crew. "We had an opportunity to film with a cattle rancher working directly with Grasslands National Park to improve biodiversity with grazing. Such a surprising conservation partnership was amazing to see in action," says Burr. "It's been amazing to see how people step up to be stewards of the land."

Whether it's fencing or filming, it's quite something to be where the pronghorn are. "We're in this spot," says Burr, "where we're right at the center of the problem *and* the solution."

photos: ACA, Paul Jones

One Fish, Two Fish... No, Four.

Just a short drive from Moonshine Lake Provincial Park, you'll find the Shell True North Pond—a family friendly destination for brook trout fishing.

"It's a bit of hidden gem," says Scott Seward, ACA Biologist. "Campers staying at the nearby park already have access to rainbow trout, brown trout, and tiger trout. With the fish stocking at Shell True North Pond, anglers can also fish for brook trout." And it's only a nine-kilometre drive from the park.

That's four species of fish for anglers to catch—and all easily accessible. To sweeten the deal, ACA's land management team has been working hard to improve the site. You'll soon see a casting dock, garbage cans, picnic tables, and even better shoreline access.

It's come a long a way, considering only a couple years ago ACA was doing preliminary assessments and acquiring stocking permits. Stocking began in 2017 with 640 brook trout. That was a successful summer, and the plan for now is to stock the pond every year with brook trout.

Parking is available along the eastern shore of the pond. Show up with your tackle in hand, and while you're there, enjoy the remainder of the conservation site—1,700-acre Shell True North Forest.

Thanks to partners Shell Canada and Saddle Hills County for helping make Alberta angling even more fun.

photos: ACA, Nikita Lebedynski

Geese and… Dinosaurs?

The Philip J. Currie Dinosaur Museum, 15 minutes west of Grand Prairie, has welcomed ACA into its front wing. We'll take up residence, designing and creating interactive displays. It's a perfect opportunity to better exercise our mandate to share our findings from research and multi-year conservation efforts.

Still…does a conservation group working on the sustainability of fish, wildlife, and habitat have a place in a museum that's all about extinct animals? "We are constantly looking for new ways of reaching young people with our conservation messaging," says ACA President and CEO, Todd Zimmerling. "We saw an opportunity to add to the educational programs at the museum by bringing in information regarding contemporary species. Much of what children will learn regarding the dinosaurs will centre around the wide range of dinosaur species, their habitats, their behaviours, and ultimately their extinction. We get to talk about our modern-day species, their behaviours, human impacts on the species, and what we can do from a management perspective to avoid their extinction."

photo: ACA

ACA is designing the Conservation Education Room so students, teachers, and parents can have an interactive experience. The first 12 months will be dedicated to arctic goose conservation, with a focus on snow geese and their recent population explosion. Whether it's too many of a species or none at all, the museum is the hub to learn about it.

An App for That

Sometimes it feels like fish and wildlife officers have to be everywhere at once. Alberta has a lot of ground to cover, and up until recently, every single licence search was forced to run through one control centre.

But with some digital design and a smartphone on every officer, the entire field process has been streamlined. By using the *Law Enforcement Mobile* app, officers have the ability to quickly scan licences, directly on the spot no matter where they may be. It takes mere seconds to find most of the information they need to help with hunter and angler licence compliance. Best of all, the app alleviates major pressure off of Control—in part thanks to peace officers having the ability to scan and run licences too.

Fish and Wildlife can find what they need by not only scanning a licence, but also by typing in an individual's name (if he or she isn't carrying their licence), or by entering a WIN card number.

"It simply makes the job easier," says Alex Bolland, a Fish and Wildlife Officer who has been familiar with the app since its beginnings. "I've been using it for a couple years, including the trial run. It's reliable and tells us exactly what we need to know on the spot."

In 2017, almost 15,000 Alberta hunters were checked for tag and licence validity with a simple scan. By ensuring compliance with regulations, officers are addressing public safety, respect for property, and that we care about the legal harvest of game. After all, we know that most of us are proud to be responsible hunters and anglers.


photo: ACA, Jeff Forsyth

Landowner, Meet Hunter

It's the reality of being a landowner—donating a lot of time to recreational users requesting access. Says Jeff Forsyth, ACA Biologist, "I know of one ranch where they figure they donate an equivalent to one full-time employee for a month each year to deal with access," This is especially true with huge tracts of land.

The time suck has caused frustration, with some landowners closing their property completely. But whenever land is scratched off the map, it magnifies the density of recreational users elsewhere—compounding the issue for another landowner.

So how do we make sure hunters aren't all circling the same few fields? Enter the Recreational Opportunity Enhancement program. It provides opportunity to hunters and anglers (and people who enjoy hiking, canoeing, or birdwatching too) while recognizing the considerable amount of effort landowners put in to facilitate it all.

"Part of the program is a hunter access sign-in system, which was adopted from local fish & game clubs," explains Forsyth. "It is designed to facilitate recreational access to private lands in a manner that users do not interfere with the operation of the land, while ensuring everyone's safety."

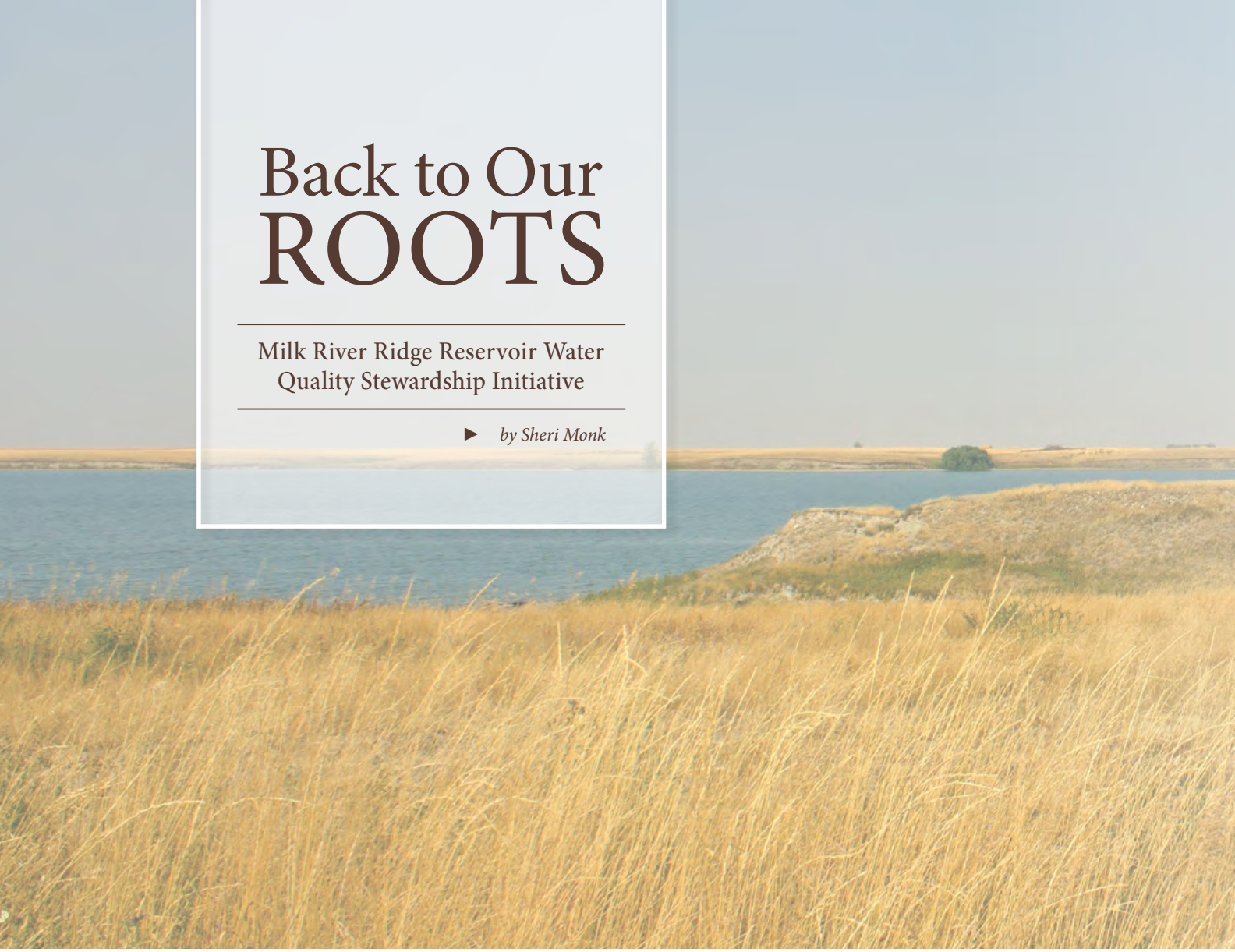
The sign-in system includes site-specific information determined through meetings with the landowners. ACA passes on this information to the recreational user, who must fill out a registration card before accessing the land. The Recreational Opportunity Enhancement Program also helps facilitate access to Crown lands through private lands, provides landowners with informational signage, and connects landowners experiencing crop depredation because of ungulates with hunters.

Over 90,000 acres are enrolled, and we hope the trend will grow beyond the southern region of the province. If you're a landowner interested in the program, please email: jeff.forsyth@ab-conservation.com.

Back to Our ROOTS

Milk River Ridge Reservoir Water Quality Stewardship Initiative

▶ *by Sheri Monk*



The southern Alberta landscape was re-sculpted by extensive irrigation canals and water reservoirs, anchoring the province's economic powerhouse—agriculture. These feats of human engineering also provided recreational opportunities for Albertans and continue to act as a draw to sparsely populated areas that enjoy the resulting economic spill-off.

The Milk River Ridge Reservoir (MRRR), located roughly 30 minutes south of Lethbridge, is an important part of Alberta's irrigation system, and also supplies drinking water to the towns of Raymond and Stirling. Residents began noticing the water tasted off, and pressure began mounting to address the root cause. As it turned out, the cause was in the roots—or the lack thereof.

"It wasn't until water quality became an issue that it was really noticed," says Mike Uchikura, Biologist with Alberta Conservation Association (ACA). "Farming and grazing practices over the past few decades had eroded the riparian buffer zone."

The Milk River Ridge drains down its north side, and the runoff eventually ends up in the irrigation system. "Because of the landscape, it's collecting a lot of nutrients, whether manure, fertilizer, or pesticides—there's a lot of nutrients coming into the system," explains Uchikura.

Normally, the plant life within a healthy riparian ecosystem would mitigate the problem, acting as a mega-filter. But over the decades, the buffer zone on the Crown land bordering the irrigation system was eclipsed by agricultural sprawl; it was cultivated or grazed until there was virtually no buffer zone remaining in many spots. And not only was the water quality diminishing, important wildlife habitat was lost. In 2013, ACA, the County of Warner, and Alberta Environment and Parks started working together to fix the problem.

"We are in a partnership with the government, the county, and with the landowners. We aren't pointing a finger at anyone, but we are realizing that there is an issue and we have to address it to move forward," says Uchikura. "The first step was providing some education and awareness to the surrounding landowners. A year before any groundwork happened, the government did send out letters and the county talked to some of the landowners to let them know what was coming down the pipe. Many meetings and consultations with the landowners were also held."

The next step was for the government to survey boundaries and re-stake out its land,

then finally build long-needed fences (which are mostly wildlife-friendly). "There are some cases where bank erosion has eroded all of the public land and is now eroding private land, and so the government has to buy back some land to create the boundary," he adds.

Once the buffer zone was established, the land—more than 1,000 acres in total—would have to be painstakingly reclaimed. But before that could happen, a mosaic of funding had to be achieved and with all multi-year projects, there were always moving pieces to manage. "By coordinating with the county and Alberta Environment and Parks, budgets were adjusted to accommodate new projects, grants were successfully applied for, and other partner dollars were brought in the picture.

Uchikura says ACA played a crucial role in getting other partners to come to the table and work together toward a common goal. ACA staff has attended many meetings with organizations such as Calgary Pheasants Forever, Lethbridge Pheasants Forever, Lethbridge Fish & Game, Magrath Rod and Gun Club, and the Southern Alberta Bowhunters Association. Later, Irrican Power, St. Mary River Irrigation District, Taber Irrigation District, Raymond Irrigation District, and the New Dayton Rod and Gun Club came on board—and now other counties are interested in similar undertakings.

"It was really about creating partnerships and building trust. ACA's goal is to literally create more habitat and find opportunities to create more habitat," Uchikura explains.

"That's been the highlight of the whole project—the partnerships," says Layne Seward, ACA Biologist.

"Everything that happens between the shoreline and the fence, that's where we come in and we are managing all of that. The County of Warner has played a critical role in this whole project. They are our main contractor that we have help out whenever we do habitat projects. They have been invaluable," Uchikura says. "There's a lot of maintenance with the shelter belts and the permanent cover planting that we've done, and they have the resources and expertise to help out with that."

By October 2015, more than 200 acres of permanent cover has been reseeded along the reservoir and canals, more than 25 km of fencing has been completed to protect the corridor lands, and nearly 15,000 shrubs have been planted to provide additional habitat structure for wildlife.

photo: Milk River Ridge: ACA, Aiden Bateman

Nutrient settling pond
photo: ACA Drone

photo: Sheri Monk

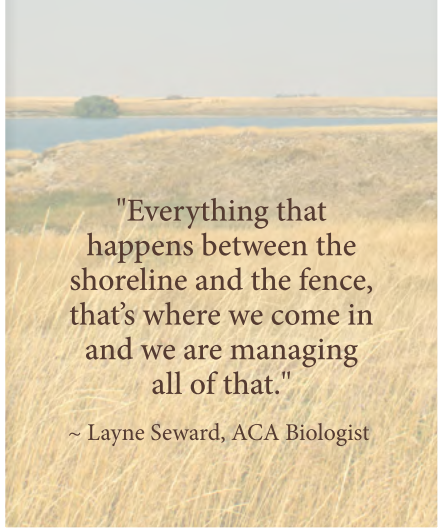
photo: Sheri Monk

Shrub planting
photo: Sheri Monk

photo: Sheri Monk


Milk River Ridge shoreline before grazing reduction
photo: ACA


Milk River Ridge shoreline after grazing reduction
photo: ACA



A shrub planting day organized by the County of Warner had Raymond High School students and ACA staff plant over 1,800 shrubs along the south shore in 2016. "To see kids and communities become involved like that was one of the best parts of the project," said Seward.

In 2016, another major restorative effort took place—the construction of a nutrient settling pond. Located at the west end of the reservoir, it captures runoff from one of the primary and most nutrient-loaded drainages, allowing for filtration and settlement before draining into the main reservoir. Cattails and bulrushes were planted throughout the area, which provides excellent habitat—especially wintering habitat—for pheasants and other wildlife, and willows and shrubs were planted along the shore.

"Construction started in August, and most of the structure was completed by December," says Uchikura. "This included the installation of a canal intake and waterline to the wetland which will provide the opportunity to supplement the wetland with water during dry years, the excavation of the main wetland body, and construction of the outlet-overflow structure leading into Milk River Ridge Reservoir."

Their hard work was rewarded during the spring of 2017, when runoff events filled the main body, retained the water, and then allowed a controlled flow through the outlet structure and they could see their success.

"Alberta Environment and Parks also plans to carry on this initiative into Cardston County, following the canal system west to Jensen Reservoir and eventually to the St. Mary Reservoir. The benefits of water quality and wildlife habitat with this project are far reaching—this corridor following the waterways will address water quality issues within a wide stretch of the southern Alberta irrigation districts and play a critical role in creating and connecting areas of wildlife habitat running west to east throughout the southern part of the province," Uchikura explains.

The newly-planted grasses and shrubs are a mix of native and non-native species to address the project's unique needs. The reservoir and canals are disturbed land, so an entirely native solution wasn't going to work.

The goals to improve the water quality and habitat around the manmade environment required an innovative and adaptive approach. "We beat the pavement pretty hard selling this project just because it is so local. We all come out here to hunt and fish and so the fact that there is a local project of this magnitude here, the support has been unbelievable. Everyone is loving the fact that they have a project they believe in, that they've supported, and now they can just drive out here and see what has been done," says Uchikura. "When I was in college, this used to be the place to go and then over the years that vegetative buffer began to shrink until you were basically walking along the edge of the canal looking for birds. As soon as the grass started coming up, the deer and the birds started coming back. It's pretty neat to put my feet back on this landscape and work to improve it."

Fish and **Wildlife** OFFICERS

by Nyree Sharp

In order to protect Alberta's rich diversity of wild species, fish and wildlife officers, employed by the provincial government, are peace officers with the mandate to ensure compliance with resource law *(Wildlife Act, Fisheries [Alberta] Act, Alberta Fishery Regulations)* through education, prevention, and enforcement—and a fair amount of community spirit.

photo: Government of Alberta

photo: Government of Alberta


photo: ACA, Colin Eyo

Fish and Wildlife OFFICERS

ensure that stakeholders—including anglers, hunters, trappers, landowners, researchers, commercial users, and industry—understand the relevant legislation. They inform the public about wildlife management and also visit schools, fish & game clubs, and other interested groups. Alberta fish and wildlife officers have had extra help recently with public education and awareness through social media: a stuffed moose named Mr. Moosey who has toured the U.S. and now Alberta to visit officers of all kinds. Check out the Alberta Fish and Wildlife Enforcement Facebook page for the adventures Mr. Moosey had in our province.

A key part of prevention is compliance checks, where fish and wildlife officers verify that hunters and anglers have the proper licences and are following the pertinent regulations and safety procedures. Officers also operate check stops, often in partnership with other enforcement agencies, to ensure compliance. They help individuals with the acquisition of import and export permits for wildlife, and conduct periodic inspections of businesses that handle wildlife, such as taxidermists, meat processors, tanneries, furriers, and big-game outfitters.

While their primary mandate is to ensure compliance and combat poaching, as peace officers, fish and wildlife officers have the authority to enforce a wider range of provincial and federal regulations when necessary, from the provincial *Traffic Safety Act* to the *Controlled Drugs and Substances Act* of Canada. Enforcement is not only preparing and serving warrants and summonses, issuing tickets, and delivering warnings, fish and wildlife officers also conduct investigations. They have a dedicated undercover unit so that officers can infiltrate illegal wildlife and fish trafficking rings, which helps stop both buyers and sellers who are putting a price tag on our wild species.

Evidence and crime scenes from across the province are analysed by the forensic unit—the "CSI" part of the service. District Officer for Wetaskiwin, Darren Unreiner, describes


photo: Government of Alberta

Are fish and wildlife officers the same as conservation officers?

no

Conservation officers only work within Alberta's parks and protected areas, to ensure that visitors have a safe and enjoyable experience. Fish and wildlife officers have a much wider jurisdiction—all of Alberta.

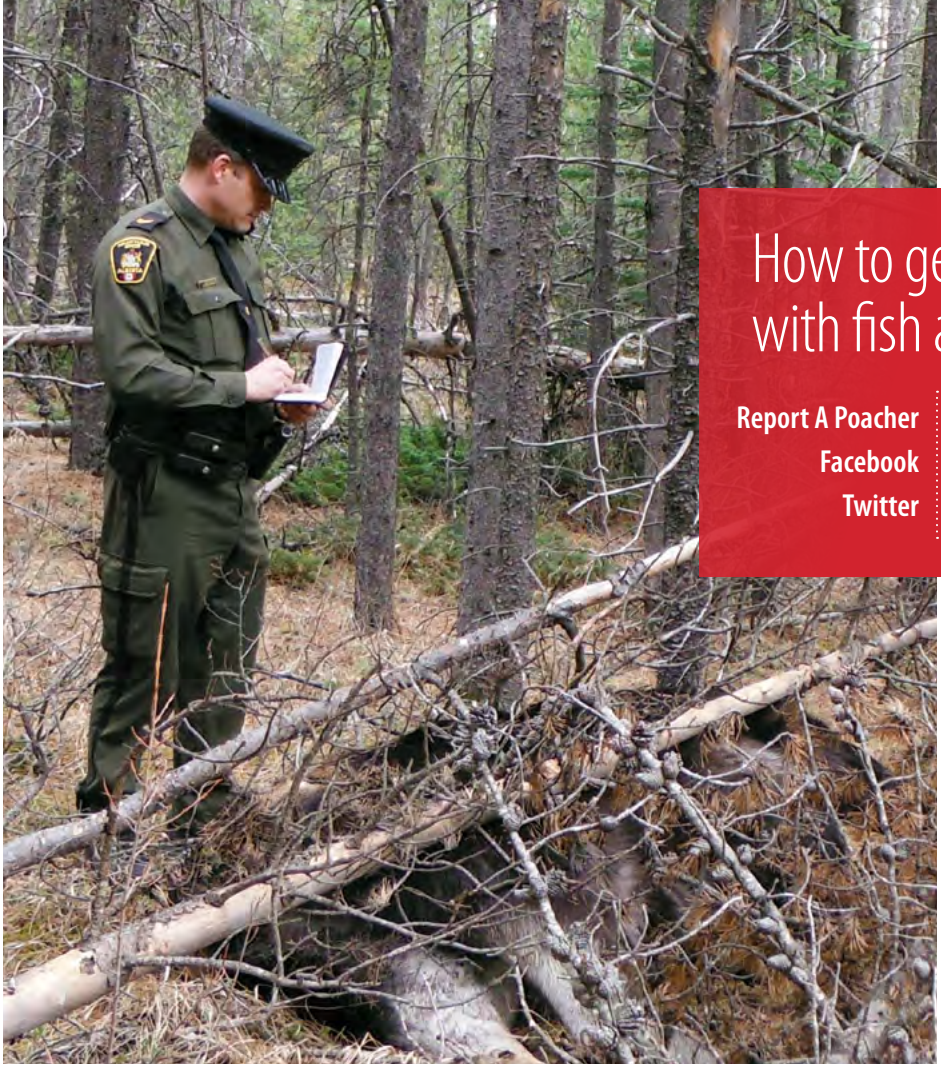


photo: Government of Alberta

How to get in touch with fish and wildlife officers:

Report A Poacher	**1-800-642-3800 or www.reportapoacher.com**
Facebook	**Alberta Fish and Wildlife Enforcement**
Twitter	**@FWEnforcement**

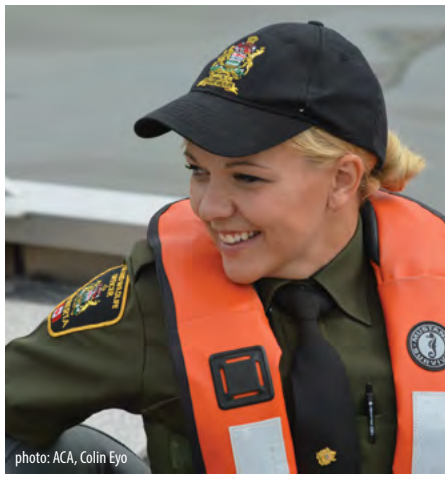


photo: ACA, Colin Eyo

REPORT A POACHER
www.reportapoacher.com
1-800-642-3800

the unit as a "fantastic resource": one drop of blood from a kill site can provide enough information to successfully investigate a violation. A fillet from an illegally caught fish can tell a forensic investigator the length and age of a fish, and even what body of water it came from.

Beyond the protection of our fish and wildlife resources, public safety is a key concern for fish and wildlife officers. They address this through conflict management, investigations, and assisting with search and rescue efforts. In early July, officers assisted in three water rescues in central Alberta. First, a father and son were rescued after their canoe capsized. Two days later, 28 rafters were brought safely to shore, and then two paddlers were rescued shortly thereafter.

Fish and wildlife officers manage conflicts between people and dangerous wildlife. They respond to conflicts that pose a safety concern, advise landowners and industry representatives about effective wildlife control measures, and investigate reports of property damaged by wildlife. The livestock compensation program is also part of this, as officers are able to investigate and determine circumstances such as the type of predator involved by examining wounds inflicted on the livestock.

In urban areas, moose are frequent visitors—Officer Berscheid reports having dealt with four in Edmonton just between February and August this year. Moose are unpredictable and can pose a danger to the public. As with some other species, attempting to tranquilize a moose can sometimes increase the danger to the public. When a moose is excited or stressed, the drug may not be enough to put it to sleep and attempting to dart it could cause it to become more hostile, or to run into traffic. Therefore, officers have to evaluate each situation to determine the best course of action, which may instead be to leave the animal alone, to herd it in a certain direction, or to put it down if other options are unsuccessful or not feasible.

Fish and wildlife officers get involved in the community as much as their busy schedules will allow, attending youth group meetings, presenting seminars at fish & game clubs, attending boat and sportsman shows, and participating in Alberta Rural Crime Watch Association programs. They also take part in ACA's Kids Can Catch program, which encourages fish conservation, responsible angling, and fun through free family fishing events at stocked lakes and ponds. Schools are another great point of contact, where officers will get involved with read-in weeks and career days. Officer Unreiner describes it as "the best job in the world," with work days feeling like they're only a few hours long (with the possible exception of the paperwork).

stocking a phantom

the elusive brown trout

► *by Andrew Clough*

There is a ghost living in some of Alberta's waterbodies. Streaks of yellow-spotted red haunt logjams, weed beds, and the deep cover of these waterbodies. The brown trout is as elusive as it is beautiful.

First stocked in Newfoundland in 1883, they have since been placed in lakes, rivers, and streams across the country to provide anglers with a chance at one of these beautiful, aggressive, and fast-growing trout. SInce 1924 Alberta has been home to the brown trout in a few foothills streams in the eastern slopes. Alberta's most famous brown trout fishery, the Bow River, came by its population in an interesting way: a hatchery truck broke down on its way to Banff with a load of brown trout. The driver dumped them into Carrot Creek, a tributary outside of Canmore, rather than let them die in the truck.

Though Alberta now has a self-sustaining population and they have been stocked throughout the province, brown trout can be a tricky fish to get on the line. They have learned to be easily spooked, hide in deep water and cover, and not take a fly or lure as easily as our native trout such as the eager cutthroat trout and wily bull trout. As a result, the hard fighting and finicky brown trout are prized by anglers.

Over the past few years, Alberta Conservation Association (ACA) has increased its stocking of brown trout to seven waterbodies to help create more opportunities to catch these beautiful fish. Thousands of brown trout are stocked yearly alongside rainbow trout and brook trout creating multi-species fisheries that are easily accessible to large urban centres.

Where ACA stocks brown trout:

Edmonton Area:

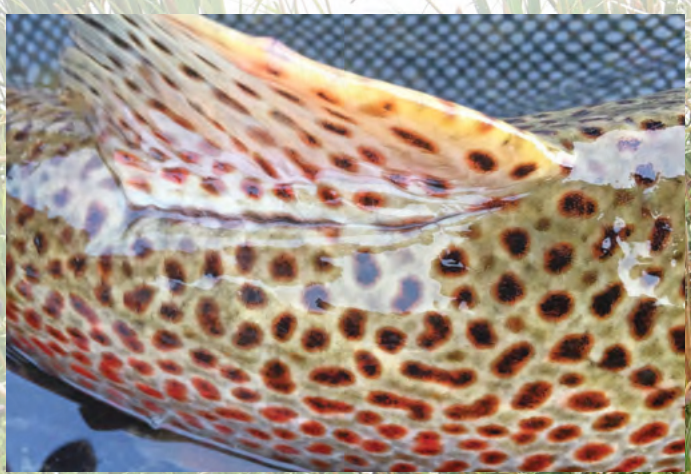
- Beaumont Pond
- Morinville Fish and Game Pond
- Telegraph Park Pond
- Pleasure Island Pond

Calgary Area:

- Dewitt's Pond
- Emerson Lake
- Mitford Ponds

Pond locations can be found in the *Alberta Discover Guide* www.albertadiscoverguide.com

Check out our new Porter Conservation Site for world-class brown trout fishing along the Raven River.



Left: Author at Telegraph Park Pond
photo: ACA, Rhianna Wrubleski

How to Catch Brown Trout

Brown trout start their lives in our stocked ponds at a catchable 20 cm but can grow to be huge in Alberta, up to a whopping 9.9 kilograms (almost 22 pounds). This record has not been standing for a long time; surprisingly, this particular fish was caught in 2012 out of the Waterton Reservoir.

After only three seasons, these fish can grow to an excess of 40 cm and these ponds have the possibility of multiple year classes. Check the latest Alberta fishing regulations for rules for the specific waterbody.

They are best fished in early morning or late evening in spring and fall when cooler waters draw the fish into the shallows to feed. They can be caught on both flies and lures.

Tried and true options

Flies:

Wooly Bugger – Black, olive, or brown—a true classic. These flies are legendary; they catch fish! Try them on sink-line trolling or cast them along weed lines and close to cover.

Balanced micro leech – A balanced leech hung below an indicator is always a good choice. In spring and fall use the leech one to four feet below, and in summer fish close to the bottom. Be prepared to adjust the depth if needed.

Chironomids – There are few stillwater flies that outfish chironomids. These tiny larvae from midges, mosquitos, and other insects are an available food source all year. Chironomids are easiest fished close to the bottom below an indicator. Try zebra midges, blood midges, and ice cream cones.

Dry flies – If the fish are rising, try a dry. A variety of Adams, stimulators, blue wing olives, and midges are a great start. Just try to match the hatch and chase the rings of rising fish around the shorelines.

Lures:

Rapala CountDown – The lure looks like a mini brown trout and these fish are cannibals! Try casting them along weed edges and watch as the big trout shoot out from cover for the attack.

Panther Martin spinners – Spinners are one of the best all-around trout lures. You can cover water quickly in hopes of finding an aggressive fish. Easy to fish: just cast and retrieve.

Black Curly Tail jigs – Brown trout love black. A Curly Tail jig will entice any large brown that comes across it. Cast out and slowly bounce the jig back along the bottom.

Bait – Where allowed, bait is very effective for brown trout. If you're looking to relax on a dock, this is the way to go. Just set your bobber about three feet above a small hook baited with a worm, minnow, leech, or even powerbait and wait for the twitch of the bobber. Pickerel rigs are also effective.

photos, left to right: ACA, Mike Jokinen ACA, Colin Eyo ACA, Colin Eyo ACA, Rhianna Wrubleski

Band Practice

What 80 million birds have taught us

Jewelry. Bracelets. Leg irons. Hardware. By any name, leg bands have long stood as a peripheral trophy for duck and goose hunters to be worn proudly on call lanyards. But waterfowl and other birds that wear bands do so for reasons far more impactful than the "bling" value.

► *by Ken Bailey*

The history of bird banding is built on a foundation of wildlife management, with the first records traced to 200 years B.C., when coloured threads were tied on the legs of swallows. In the 1500s, Marco Polo reported Chinese aristocrats marked their hunting falcons with engraved silver tablets that would facilitate lost birds being returned to their rightful owner. North America's first banding efforts (in 1803) are attributed to artist and naturalist, John James Audubon who tied silver cords to the legs of songbirds, allowing him to identify nestlings when they returned the following spring.

Across North America, bird banding took on a more coordinated look following the passage of the *Migratory Bird Convention Act* in 1916. By 1923, the U.S. Bureau of Biological Survey (the precursor to today's U.S. Fish and Wildlife Service) and the Canadian Wildlife Service (CWS) were working together in an effort to record all banding data through a centralized system housed in Washington D.C. Nearly 100 years later, some 80 million birds have been banded across North America, including roughly 20 million waterfowl.

Why band waterfowl and other birds? According to Lesley Howes, a Biologist with CWS who oversees the administration of Canada's bird banding office, data collected from band returns provides valuable insight into productivity, life spans and survival rates, migratory patterns, habitat use, and population trends.

"It's long been a simple and affordable way to gather significant information about North America's birds," she says. "The data has meaningful application in making wildlife management decisions. As one example, band-return data plays a role in setting targets for the hunting of game birds, particularly waterfowl. Band-return data has also been very influential in establishing species at risk recovery strategies."

And therein lies the rub. The success of the program hinges on bands being collected and returned. Waterfowl bands represent roughly 70 percent of the bands returned, most of those by hunters. In total, Howes says, about ten percent of waterfowl bands are eventually encountered and reported, while for other species it's generally less than one percent.

Notwithstanding the low rates of return, the data that is collected is fascinating and provides revealing information about how Canada's birds live out their lives. "As might be expected," says Howes, "most of our band reports come from the U.S. and Canada, but we've also had returns from Central and South America, Great Britain, Russia, Africa, Australia, and Asia. It's clear that some birds that spend part of their lives in Canada move globally."

Howes related a story of a red knot, a medium-sized shorebird banded in Argentina that breeds in the Canadian arctic and winters in Tierra del Fuego. "It was 14 years old when its band was recovered and reported," said Howes. "Do the math and over its lifetime, that bird flew the equivalent of a trip from the earth to the moon and halfway back. I find that astounding!"

Joining the Band

The vast majority of bird banding is conducted by wildlife agencies, university researchers, and bird observatories, but avocational birders are also eligible to band, provided they meet the stringent requirements established by Howes' office. Those seeking a banding permit must have significant banding experience and training, be proficient in managing the equipment required, and be able to accurately identify, sex, and age birds.

"Applicants must have a meaningful reason for requesting a banding permit, "Howes relates. "That means their project must be science-based and describe the numbers and species of birds they intend to band. We assess their experience and ability to band, and they require two references before we'll consider issuing a permit."

For those concerned about potential harm to birds in the banding process, Howes says Canada's banding protocols regularly undergo a rigorous review by an animal care committee. "We demand the highest ethical standards from banders to ensure we're minimizing risk to the birds."

There was a time when *the more the merrier* was the mantra with respect to bird banding, but that's no longer the case.

"Banding is no longer the best way to get all the answers we're seeking," Howes advises. "Emerging technology, including satellite transmitters and other types of electronic devices, allow us to track bird movements in ways we've not previously been able to. Banding remains a cost-effective way for collecting some types of data but for many studies, other options are better suited."

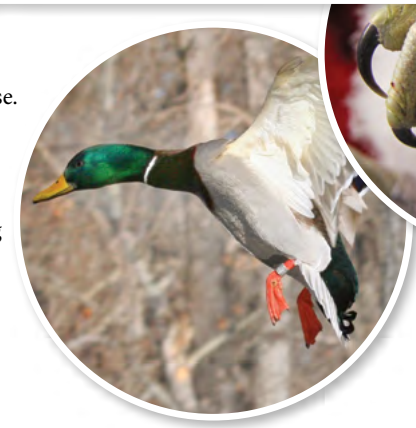
Following the Band

Shooting a banded duck or goose, or finding any banded bird, is always cause for excitement. It leads to speculation about its origins and life history, especially if the band is well worn, indicating a bird that's put on a few years and miles. Howes encourages all who recover a band to report it online at (**www.reportband.gov**). Alternatively, phone in your band recovery information to **1-800-327-2263**. Either way you'll receive a certificate of appreciation along with information describing where and when your bird was banded along with confirmation of its species, sex, and age. Some hunters have called in band reports from the field with their cell phones and have discovered the bird's banding history before their hunt was over.

If you're one of the fortunate few to harvest or find a banded bird, or if you see a bird with a visual marker such as a coloured neck collar or wing tag, take time to report it.

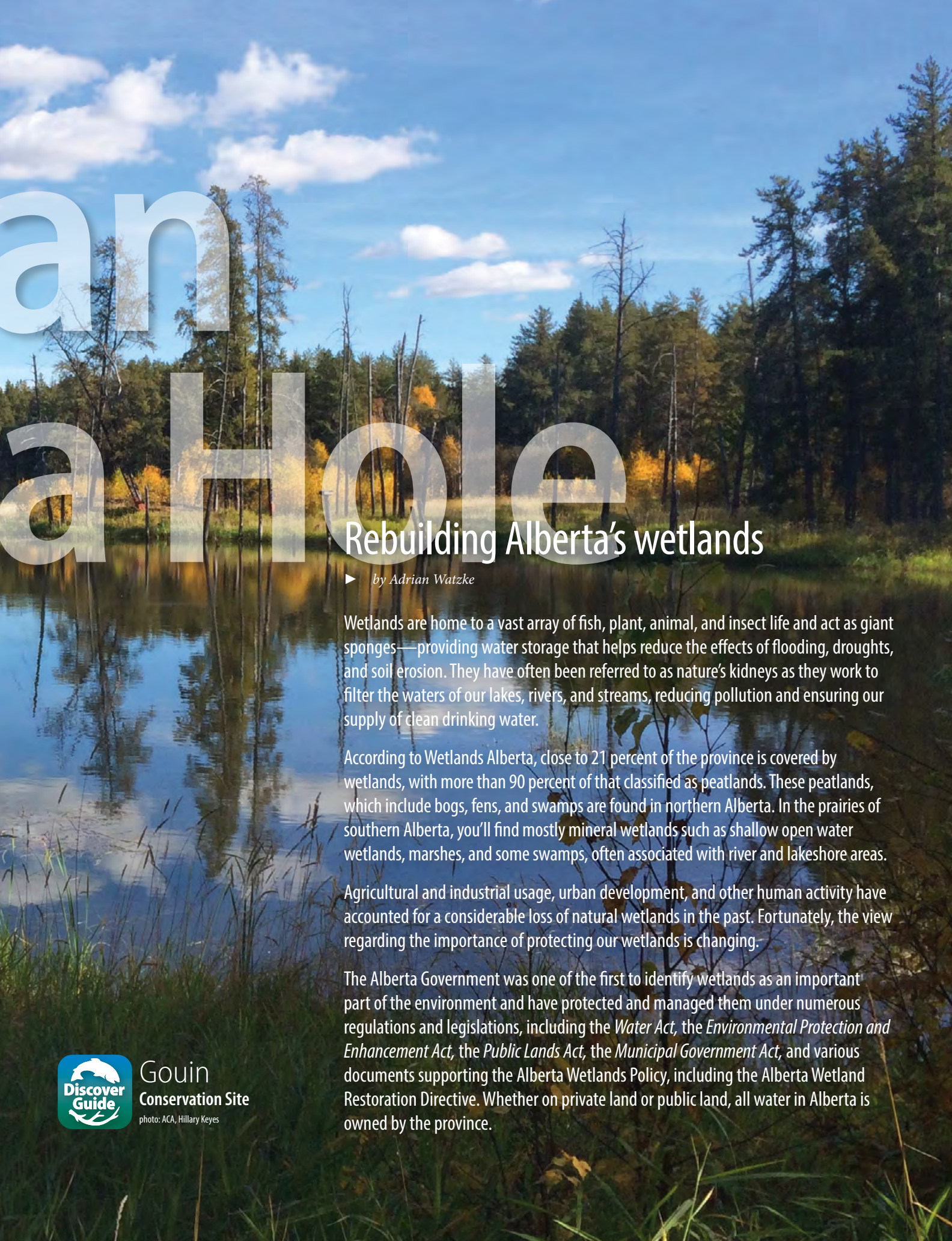
As sportspeople, it's both our responsibility and our obligation, and is another small but impactful way we can give back to the resource.

> "The data has meaningful application in making wildlife management decisions."
>
> ~ Lesley Howes



photos left: Jim Kroshus
photos right: top: ACA middle: ACA, Colin Eyo bottom: Brad Fenson


More Th
Digging



Rebuilding Alberta's wetlands

by Adrian Watzke

Wetlands are home to a vast array of fish, plant, animal, and insect life and act as giant sponges—providing water storage that helps reduce the effects of flooding, droughts, and soil erosion. They have often been referred to as nature's kidneys as they work to filter the waters of our lakes, rivers, and streams, reducing pollution and ensuring our supply of clean drinking water.

According to Wetlands Alberta, close to 21 percent of the province is covered by wetlands, with more than 90 percent of that classified as peatlands. These peatlands, which include bogs, fens, and swamps are found in northern Alberta. In the prairies of southern Alberta, you'll find mostly mineral wetlands such as shallow open water wetlands, marshes, and some swamps, often associated with river and lakeshore areas.

Agricultural and industrial usage, urban development, and other human activity have accounted for a considerable loss of natural wetlands in the past. Fortunately, the view regarding the importance of protecting our wetlands is changing.

The Alberta Government was one of the first to identify wetlands as an important part of the environment and have protected and managed them under numerous regulations and legislations, including the *Water Act,* the *Environmental Protection and Enhancement Act,* the *Public Lands Act,* the *Municipal Government Act,* and various documents supporting the Alberta Wetlands Policy, including the Alberta Wetland Restoration Directive. Whether on private land or public land, all water in Alberta is owned by the province.

Discover Guide

Gouin
Conservation Site
photo: ACA, Hillary Keyes

As a result of significant wetland losses across Alberta, we have seen a concerted effort toward the protection of existing wetlands and the creation of constructed wetlands. The creation of wetlands involves new construction or the enhancement and rehabilitation of existing previously impacted wetlands.

The focus is primarily on establishing plant and animal habitat, carbon sequestration and storage, as well as flood mitigation. The costs of constructing these wetlands depend on their size and complexity. While they might not take a great deal of time to construct, human-made wetlands often require many years to reach their full capabilities and functionality similar to natural wetlands.

Building a wetland

Building, or in some cases restoring, a wetland is much more than just digging a hole and letting nature take its course. If only it was that easy. Truth be told, there is a great deal of science and planning involved in developing a detailed wetland design.

Specific project goals need to be identified as to the use of the wetlands and what options and limitations exist with the site in terms of watershed sustainability and drainage. Soil and groundwater assessments are conducted and other environmental data are collected to determine potential water depths and the duration of seasonal inundation of the wetland. Also identified is if the wetland is fed by natural water sources such as springs, surface water flow, or groundwater, or supplemented by treated stormwater.

The team involved in designing the wetland brings together a diverse range of skills, and can include environmental planners, hydrogeologists, landscape architects, ecologists, environmental scientists, soil scientists, biologists, engineers, and water quality specialists. Following the identification of potential sites, preliminary designs are developed that outline key design parameters such as biodiversification and habitat improvement measures and opportunities, as well as drainage options for inlet and outlet structures, if needed.

The next step involves a detailed design, revegetation strategy, and wildlife habitat design. This is all put together in a report that also includes pre-tendering, and then is sent out for review and for construction engineering drawings. After tendering is complete, then the digging of holes can begin.

Wetlands can be constructed just about anywhere including urban settings. Dr. Markus Thormann, P.Biol., PWS, Senior Wetland and Aquatic Ecologist for Matrix Solutions says the biggest difference between natural and human-made wetlands is one of functionality. "The primary purpose of constructed wetlands in urban settings is to provide stormwater management." These wetlands can use natural features to create a desired ecological function, such as providing a habitat for plants and wildlife, while mitigating potential flooding, storing water, and providing an aesthetically pleasing water feature in neighbourhoods.

Some other examples of constructed wetlands include integrated enhancement wetlands which have natural features that incorporate a functional purpose. These are often undertaken by communities to enhance lakes, rivers, or streams for use by area residents. In areas of problematic pollutant loadings, engineered treatment wetlands will use natural features to replicate ecological functions—though these constructed wetlands are not intended for ecological compensation, but rather to meet regulatory discharge criteria. "Ultimately, the purpose of the wetland drives the design," says Thormann. "Some of my current clients are creating wetlands for replacement purposes, where wetlands were impacted by prior developments, and the replacement fees collected are now being used to create wetlands where there weren't any before."

Preserving existing natural wetlands should always be the first choice but creating constructed wetlands can still provide benefits for native plant and animal species. It's more work than just digging a hole in the ground, but worth every bit of effort.

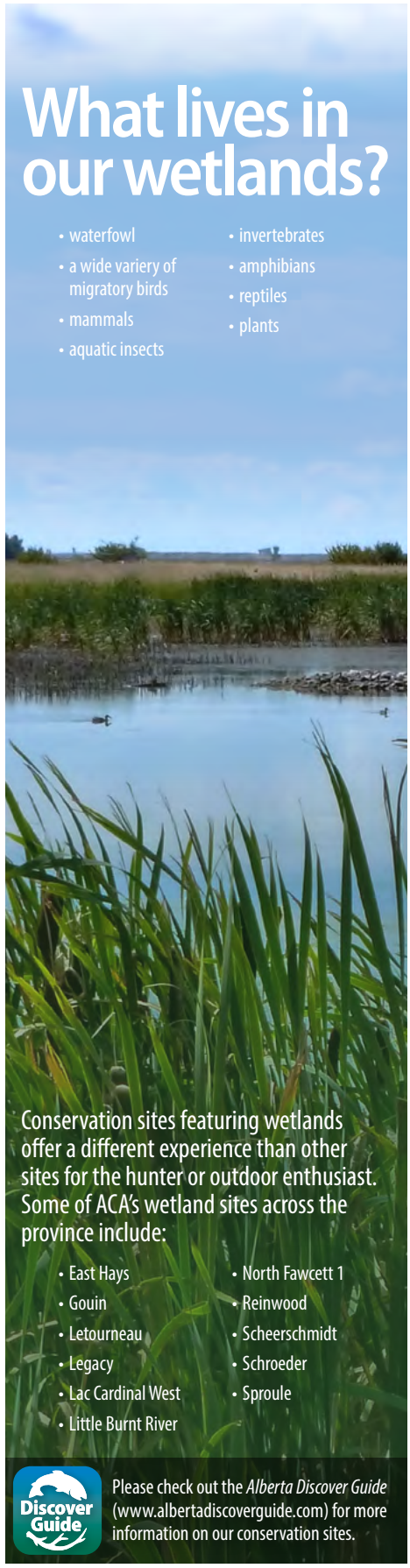


photo: Sproule Conservation Site, ACA

Nature-politan

Conservation in urban centres

► *by Mel Priestley*

photo: ACA, Kris Kendell

We usually think conservation is only in remote, rural settings, but there are many conservation activities happening right in city dwellers' backyards—literally. More people are choosing natural yards over grass monocultures to support a variety of pollinators and other insects, birds, and even amphibians and reptiles; urban fisheries are coming into focus as both recreation and conservation opportunities; and there are even programs that need citizen volunteers to monitor species like amphibians, reptiles, and peregrine falcons.

Buzzing with Activity

One of the simplest things that city dwellers can do to support wildlife is to replace grass with a natural option in order to attract and support various pollinators and other urban wildlife species. Natural yards replace lawn with a combination of native and non-native (but not invasive) plant species. They do require some initial planning and installation in order to establish the plants and keep weeds to a minimum, but once established they are much less work than conventional lawns—and much more beautiful.

Kris Kendell, a Biologist with Alberta Conservation Association (ACA) converted his front yard to a pollinator garden four years ago. "I was a slave to my lawn and it annoyed me," Kendell says. "It took a lot of my time and resources to maintain a healthy lawn. And my reward for a nice-looking lawn was work, because I had to cut it."

"Now my front yard is exciting," he says. "There's motion. Bees and butterflies move between flowers, plant stems sway in the breeze, and there are species of bees that I've never seen before. Even hummingbirds come to sip nectar. Colours and smells change too, as different plants come into bloom during the growing season."

Some tips for those seeking to create a pollinator-friendly yard:

- Choose simple rather than showy flowers that lets pollinators access pollen and nectar more easily—good examples include yarrow, coneflower, daisy, sunflower, bee balm, and borage.
- Try to provide pollinators with a constant source of food by selecting plants that bloom through as many different seasons as possible.
- Plant single species in mass plantings so pollinators can visit many flowers quickly.
- Become involved in your local gardening community to obtain free or inexpensive plants and seeds that survive well in your climate, especially native species.
- Create a watering station for pollinators by placing a flat, shallow container of water in your garden. Be sure to fill it with pebbles and small stones for pollinators to stand on to access the water and drink safely.
- Leave leaf litter on the ground in autumn to provide overwintering habitat for certain pollinators and other beneficial insects like ladybugs.
- Avoid purchasing seeds and plants that are treated with neonicotinoid pesticide that harms pollinators (ask greenhouse staff or check the label if you are unsure).

Amphibians and Reptiles

Believe it or not, cities can be home to frogs, toads, and salamanders, as well as some reptiles such as garter snakes. But you probably won't see frogs or snakes on your property if you live smack in the middle of a city—you have to be adjacent or close to natural spaces, especially those with a water source such as ravines, natural wetlands, or stormwater ponds. This means that properties on the edges of the city are particularly well-suited to having natural yards that may support amphibians and reptiles, providing habitat for species displaced by new developments.

"A pollinator garden that is free of chemicals is actually supportive of amphibians," Kendell says, whose work with ACA focuses on amphibians and reptiles. "Untamed yards can provide them refuge, plentiful prey, and cover from predators. In an urban environment, amphibians living on land have relatively few regular predators, apart from adaptable species like magpies and skunks that may share our neighbourhoods; however, feral and free-roaming cats can be serious unnatural predators."

The best way to support amphibians and reptiles on your property is by creating a natural yard combined with a fishless water feature, with variable depths and a boggy, natural shoreline.

Even if you don't have a natural yard, part of urban conservation is reducing or eliminating your use of pesticides, herbicides, fertilizers, and other chemicals. Anything you apply to your property ends up getting washed down storm drains when it rains, ultimately ending up in a waterbody.

City Fish

Cities have spread the message about the problems caused by dumping fats, grease, paint, and other toxic substances down the drain, but this messaging focuses on the impact to humans: contaminating our drinking water supply or clogging up pipes and sewer lines. These substances are also harmful to fisheries, both in the city and downstream.

Even if you never plan to eat fish from a local fishery, urban fisheries provide great recreation opportunities for city dwellers. For example, the New Lakes program creates new fisheries in or near urban areas. So far, they've created fisheries in Taber and near Grande Prairie and Spirit River.

"It's an opportunity to expose different walks of life to something that they might not otherwise see or experience," says Scott Seward, Fisheries Biologist with ACA.

There are many conservation activities happening right in city dwellers' backyards—literally.

Check with your local municipality to see how you can get involved with urban conservation

photos 1, 3, 4, 7, 8: ACA, Kris Kendell
photos 2, 5: ACA, Ken Kranrod
photo 6: ACA, Mike Jokinen
photo 9: ACA, peregrine cam

One More Way: Time

Some urban conservation efforts rely on citizen science. One is the Alberta Volunteer Amphibian Monitoring Program (AVAMP), which allows participants to help conserve amphibian populations by reporting toad, frog, and salamander observations. Another is Fledgewatch, a program that runs every summer to monitor peregrine falcons in Edmonton. There are peregrine nesting sites that a small team of volunteers monitor every year to ensure that the birds are safe from disease, predators, and other pitfalls of living in an urban area—such as fledglings falling onto busy roadways.

Marge Krowchynski has been a Fledgewatch volunteer since 2015, spending a few days each summer watching the peregrine nest box on the roof of the Clinical Sciences building at the University of Alberta. Other volunteers continuously monitor the peregrines via webcams in the boxes.

"I really didn't think of it so much in terms of conservation, as just helping out the peregrines," Krowchynski says. "Which I suppose is conservation! Any bit of help that you can do to mitigate the impact of humans on the rest of the planet and how we impact the animal world—I'm interested in that. And I've certainly gotten to be more interested in that since getting started with Fledgewatch."

Whether you're an avid amateur naturalist, looking for an interesting new hobby, or simply want to beautify your space, there are many ways to participate in urban conservation efforts. Edmonton, Calgary, and other municipalities have conservation plans in place, such as Edmonton's *Natural Connections Integrated Conservation Plan* and Calgary's *Our Natural Area Management Plan*. Nonetheless, it's up to citizens to become informed, active, and engaged in urban conservation to protect even tiny pieces of natural area.

Because We Can

► *by Karen D. Crowdis*

Occasionally, doing the right thing chooses you. Kamala Patel and her husband, Keith Kostuchowski (Keith Kost, professionally), found themselves in the role of accidental conservationists when they purchased "Duck's Hollow." Looking for a reprieve from the din of the city, they wanted property to enjoy the beauty of the night sky and birdwatch. The land whispered of potential for rebuilding biodiversity. Kamala and Keith listened, beginning the journey to restore its historical glory.

ACA: Why conserve this piece of land?

Kamala: We have always had a strong appreciation for the natural world and humans as part of that. Respecting the needs of both is important so we adapted to the land. This place was natural, with native grasses and a wetland. We also knew we could protect it. We understand the privilege we have of not requiring the land to produce our livelihood. For us it has become about stewardship. Knowing it requires grazing—but focusing on *how* it is grazed makes all the difference.

ACA: How did you get started?

Kamala: An agricultural officer assessed the land indicating some areas were very healthy, but the land was overgrazed and needed a year to recover. It was recommended that we fence off the natural spring and the front of the wetland where hummocking was evident. We also determined not to have spring grazing in the wetland to protect it and the breeding season for birds. Then I attended a two-day "Grazing School for Women" program and learned to do some assessment myself.

ACA: What challenges have you faced?

Kamala: Likely the biggest challenge is with neighbours and conflicting priorities. Grazing has always happened a particular way and we were changing that, which was difficult at first. We disrupted their calm, so we needed to keep the conversations going while standing our ground on what we believed to be necessary. Realizing how important neighbours are, being prepared to face challenges when a difference of opinion occurs, and balancing their needs with ours were hurdles to overcome.

ACA: Has anything surprised you?

Kamala: How much I care about the land. Our neighbours work their butts off and we get to spend our "free" time on this project. The sense of accomplishment from seeing the land come back. Witnessing the importance of the natural world for kids—it offers a place to appreciate the world is bigger than just their location in the city.

ACA: What other actions have you taken?

Kamala: We have learned about movable electric fences, hand-pulled Canadian thistle, and walked with backpack-sprayers throughout the property to spray invasive weeds. Beyond the time spent walking the property, we did significant research into what chemical treatments we could use that would not jeopardize birds, frogs, or any species using the land. So far we've sprayed about 30 backpacks and continue our invasive species management.

ACA: Are you seeing tangible results?

Kamala: Most definitely. A big win for us is that the northern leopard frog, a *Threatened* species, has returned to our wetland since it was fenced off. We've successfully cleared invasive plant species from certain areas with a few patches to go. The choke cherries and saskatoon berry plants are coming back in as well. It gives us pleasure and satisfaction to see the land recovering—there will be scars, but the prognosis is good.

ACA: What is next?

Kamala: Short term: we will continue to get a handle on invasive weeds and work with neighbours on grazing management schedules. Long term: ultimately, we want to build a home there, but only on the permanently damaged land. The home would have a sustainability purpose. We are learning more about solar power as well.

ACA: What are the most important points to consider in land conservation, particularly for new landowners?

Kamala: First, always get expert advice from multiple sources. Science moves and changes, so there is no immutable truth. Know about the past, but consider what has changed and what we know now that we didn't before. Understand that the purchase is more than the closing costs. Land is living and it needs caring for—find out about the care and feeding of the land. What they put into it, they will get out of it.

The Zombies are…Here

Prussian carp invade Alberta's waterways

► *by Kelley Stark*

The Prussian carp's ability to stay alive–even under the absolute worst condition–is nearly unbelievable. Unfortunately, this invasive species has been found in Alberta, and is threatening our native fish populations. Alberta Conservation Association (ACA), along with the Alberta Government, is invested in not spreading the problem to other provinces or states.

Prussian carp can live in a wide variety of temperatures and habitats. "The problems that we're having with Prussian carp is that they have the ability to survive in super-low oxygen—generally poor water quality areas," says Janine Higgins, Community Engagement Lead with Alberta Environment and Parks. Further to that, the fish can survive out of water for quite some time. "We call them zombie fish," she adds.

They can handle really high and really low water temperatures and they can spawn without male Prussian carp. "They have this amazing reproductive mode called 'gynogenesis,' which allows females to reproduce without males around," explains Britt Schmidt, ACA Fisheries Biologist. "All that the carp needs is sperm from some Alberta minnow species to activate spawning without sharing genetic material. The females can produce clones of themselves." Prussian carp can reproduce three times a year. The population grows very quickly.

Because they multiply so fast, they outcompete native fish for food and habitat. Additionally, they are known to stir up the mud at the bottom of the waterbody, which can influence the water quality. According to Higgins, "Once they get into an area, not only are they eating all the food and competing for space, they're making a less desirable habitat for the fish that could be living there as well."

Although it seems unlikely that landlocked Alberta has the first recorded Prussian carp confirmation in North America, they've been found in the Red Deer and Bow rivers. While it is obviously illegal to move fish from one waterbody to another, fish can enter waterways in other unnatural ways too. They may have been flushed, flooded out of an ornamental pond, or worst of all, been placed purposely in the river system because "they're fun to fish."

The Alberta government's "Catch It, Kill It" campaign encourages anglers to dispose of Prussian carp if they catch them. Don't throw these fish back into the waterbody, and don't just leave them on shore either. Throw it in the garbage. Remember: zombie fish.

ACA's Prussian Carp Project

ACA is currently working on a project to determine how far Prussian carp have spread in Alberta and if they are in areas we haven't yet identified. "One of the ways that we're doing that, in an effort to try to get to as much of the province as possible, is by sampling water and testing it for the presence of Prussian carp DNA," says Schmidt.

The plan is to collect water samples from different locations across the province where the fish have been seen (according to government reports and anglers on outdoor forums). The collected water is filtered, then sent to a lab where it's tested for Prussian carp DNA. After double-checking the known places, ACA will expand to other waterbodies to see if those places have also been invaded. "It's a way for us to blitz the province as quickly as possible and as far-reaching as we can with the resources we have," Schmidt adds. "It's less invasive to other fish species too because we don't have to net or electrofish."

The results from the lab will reveal if the distribution came from one spot and slowly spread out or if the fish were put in multiple places. ACA's biologists will also be looking at possible reasons they haven't expanded to certain spots—barriers, for example.

From there, we're hoping to widely distribute what we've learned. It's important that all Albertans know the effects of putting an invasive fish species into a waterbody.

There are a few places, like the North Saskatchewan River, that don't connect to waterbodies where Prussian carp are currently found. Keeping them that way would be beneficial.

Unfortunately, getting rid of the ones the province has already been infected with might be too difficult. "There's not a feasible, economical way to get rid of them," says Higgins. "It's more about preventing the spread of them from one place to another."

photo: AEP, Jason Cooper

Chinook
CONSERVATION SITE

Split THE Bill

► *by Ariana Tourneur*

Purchasing land and morphing it into a conservation site can be complicated. But we're happy to report it's not a thankless job, and it's certainly not a lonely endeavour. When we get the right people involved, work becomes lighter, and let's be real, it also makes conserving habitat more affordable.

It's a major consideration since land is only increasing in value. "We can't do these things alone," says Tyler Johns, ACA Biologist in Lethbridge who is instrumental in helping secure land for conservation in Southern Alberta. "Land prices are getting more and more expensive, and we've got some great partners that make these types of conservation initiatives possible."

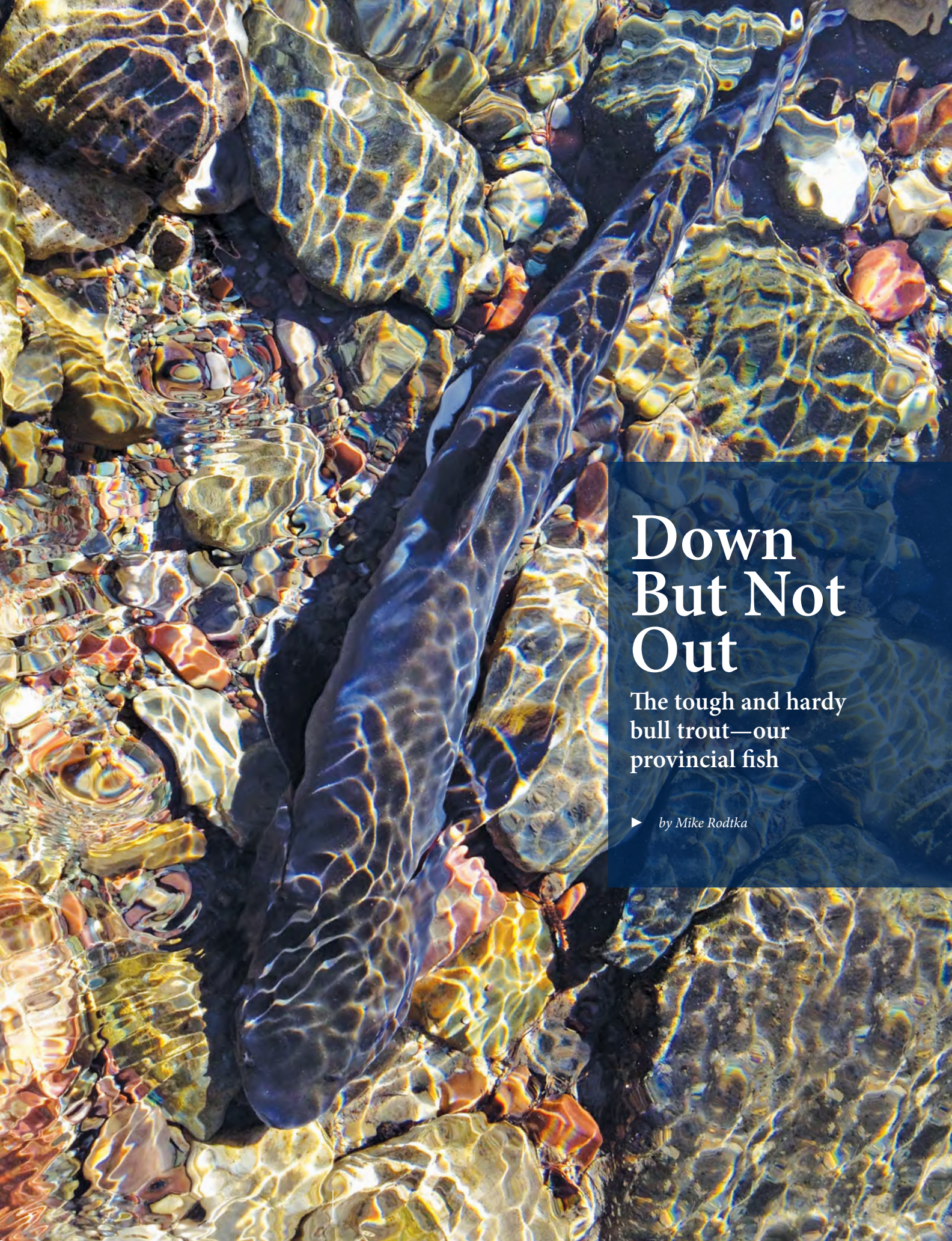
That's exactly the story behind securing the new Chinook Conservation Site. This site is 464 acres and is located southeast of Medicine Hat along Ross Creek, this property is a model conservation partner success story. The Government of Canada through the Federal Department of Environment and Climate Change (federal funding) was huge in this particular purchase, but we also had great support from Chinook and Calgary Pheasants Forever Chapters as well as Alberta Fish & Game Association and Wild Elk Federation.

Aside from moving a house and cleaning up the rest of the site, the work is only beginning. Still, everyone involved can already see the fantastic opportunities attached to the site. Before any sort of serious physical transformation gets underway—a full management plan is always first priority—the MULTISAR (Multiple Species-Multiple Agencies-Multiple Resources) team goes in and does a full assessment of the property. There are bird, wildlife, and grass surveys too. The results help us determine what type of enhancements would best benefit species at risk or the existing wildlife in general.

We already know the coulee habitat attracts a variety of upland species including ungulates, the riparian area along the creek (not surprisingly) is thriving with various wildlife, and once we identify habitat enhancement opportunities on the hay land area, we'll be looking at prime upland game bird habitat. The multi-use site will become an excellent spot for hiking, berry picking, hunting, and simply enjoying a variety of wildlife.

We are looking forward to working with our partners closely on this conservation site, who are keen, very active, and will be assisting with implementing activities associated with our management plan. Together is how we make conservation better.

photos: ACA, Tyler Johns



Down But Not Out

The tough and hardy bull trout—our provincial fish

by Mike Rodtka

Facts

- Bull trout were designated Alberta's provincial fish May 2, 1995. A province-wide catch-and-release regulation for bull trout was implemented that same year.
- Bull trout in the North and South Saskatchewan River drainages of Alberta were designated as *Threatened* by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2012.
- Bull trout have one of the lowest thermal tolerances of North American salmonids (trout, charr, and other species of fish of the family *Salmonidae)*.
- Bull trout and brook trout hybridize but the resulting offspring are sterile.
- Cannibalism can be one of the main factors structuring lake populations of bull trout when prey species are limited.

Flood, wildfire, recession, it's been a tough decade for Albertans but through it all we have shown ourselves to be resilient and adaptable survivors. Knowing this, it seems especially fitting that we adopted bull trout as our provincial fish more than two decades ago. It was 1995 and the species was on the ropes in Alberta, suffering from decades of "too much." Too much harvest by anglers, too much development of the watersheds they called home, and too much competition with invasive, non-native trout. The future was grim. Designating bull trout our provincial fish, so the thinking went, would raise the public's awareness of this fact. Fast forward nearly a quarter-century and bull trout are still in the fight of their lives, but although they may be down, they are certainly not out. Turns out bull trout are survivors too.

Bull trout swam into Alberta on the receding tide of the last ice age some 10,000 years ago and if there was ever a fish that could be said to have ice water in its veins, it is the bull trout. Despite the harsh environment, they have thrived in the relatively cold, unproductive waters of our eastern slopes. Food can be scarce in streams that rarely top fifteen degrees so bull trout have learned to treat every meal like their last, attacking it with gusto. Likewise, they often migrate great distances each autumn seeking out groundwater fed, freestone streams to spawn. By depositing their eggs in the sediment-free gravels of these precious streams, bull trout ensure the incubating eggs remain protected and well oxygenated. The groundwater bathes the developing eggs, keeping them relatively warm over the harsh winter months. For millennia these behaviours were key to bull trout success in the province, but what were once assets have now become liabilities.

The willingness of bull trout to take a hook is legendary among anglers, many have a story about catching the same bull trout multiple times when fishing a pool. Bull trout are so obliging that even catch-and-release regulations may not protect populations that are heavily fished if hooking mortality is too high. Degrade or block access to their spawning habitats, an all too common by-product of the Alberta advantage, and it is also game over for bull trout.

Alberta Conservation Association has been at the forefront of bull trout conservation in the province since its inception in 1997. Our biologists have tracked fish on their spawning migrations, identifying habitats necessary for creation of future generations of bull trout and working with land-use planners to protect those habitats. We have documented bull trout occurrence and abundance up and down the eastern slopes, refining inventory methods while collecting data crucial to management of the species. More recently we have turned our attention to describing Alberta's river fisheries for bull trout. Given their propensity to bite a hook, knowing angler effort and catch in these fisheries is vital. We are also putting our years of field experience to good use gathering some of the only population trend data available for the species in the province enabling assessment of ongoing conservation initiatives.

So far, Albertans and bull trout are both survivors and hopefully the compassion Albertan's have displayed time-and-time-again in the face of adversity extends to bull trout. Their future might very well rest in our hands.

photos: left: Let's Go Outdoors, Michael Short
right: Stock photo illustration: Government of Alberta bottom: Sherri Sullivan

photos, top right: Tyler Johns bottm right: ACA, Andrew Clough

Tools of the Trade

Some of the methods ACA biologists use to study bull trout:

Electrofishing: Pulsed, direct-current (DC) electricity from backpack, raft, boat, or barge-mounted electrofishing units that cause involuntary muscle contractions in fish resulting in a swimming action toward the electrofisher but with no long-term harm to fish (when operated correctly). Electrofishing is used primarily during surveys of bull trout abundance and distribution in a watershed.

Redd Surveys: Redds are the gravel nests created by female bull trout when depositing their eggs during the autumn spawning season. The number of redds in a stream is an index of adult bull trout abundance in the population.

Fish Counters and Fences: Electronic or physical fences placed across a stream or small river that allow biologists to intercept migrating bull trout. Electronic counters require the fish be implanted with a tiny (no larger than a grain of rice) tag for detection.

Telemetry: Electronic tags that transmit location information to a satellite or handheld receiving device allowing detailed tracking of animal movement. Often used to describe the extent of bull trout migration and identify important spawning and overwintering habitats.

DNA: A rapidly developing field that allows the identification and description of populations based on genetic material in tissue samples. Samples are obtained from individual bull trout or even from the waters they inhabit.

Seeing the Forest for the… Fish?

► *by Kelley Stark*

Conserving wildlife, fish, and their habitats is important work and Alberta Conservation Association (ACA) is proud to do it. Without the dedication and support of our partners, our work would not be as impressive as it is. Our Corporate Partners in Conservation Program recognizes these partners.

With their help

Since 1998, Sundre Forest Products has provided both in-kind and financial support for a variety of fishery inventories. Hundreds of sample sites on dozens of previously unstudied streams in the Sundre Forest Products operating area have been completed. The information collected is publicly available and has been incorporated into planning initiatives, including timber harvest plans. Repair or replacement of numerous problem stream crossings has been spurred by the dataset, reconnecting many kilometres of fish habitat, and previously unknown bull trout spawning habitat has been identified and protected.

Yet another project Sundre Forest Products has supported, by providing detailed land-use information, is the Clearwater Core Area Bull Trout Status project between 2010 and 2014. The results of the study are that bull trout remain *at risk* in the Clearwater drainage. Based on project results, provincial fisheries managers are working with stakeholders to mitigate the threats. Most recently, Trout Unlimited and Alberta Environment and Parks have restored 31 sites over 20 kilometres of Rocky Creek, a tributary to the Clearwater River, degraded by unrestricted off-highway vehicles use.

Since 1998, Sundre Forest Products, a Division of West Fraser Mills Ltd., has been a part of our fisheries projects. Not only do they financially support ACA projects, they also use the project data to actively conserve fish habitat in their forestry activities.

Tom Daniels, Forestry Superintendent with Sundre Forest Products, has the philosophy that the company needs to know what's there in order to manage it. "We've been able to identify which fish are present in which streams and what some of the critical habitats are within those streams so we can better manage for that fish population over all."

As an active angler, Kelsey Kure, Water Resources Technician with Sundre Forest Products, is especially interested in the results from a fish management perspective. The information provided by different ACA projects helps him design better crossings.

Most recently, Sundre Forest Products supported ACA's project: North Saskatchewan River Drainage Fish Sustainability Index Data Gaps. It's a mouthful to say, but all it means is we tried finding out where the bull trout live. Bull trout, Alberta's provincial fish, is classified as *Threatened* in the province. Using backpack electrofishing gear, we sampled previously unstudied waters, or waters that haven't been sampled in a long time. Sites were located in the Baptiste River, Pineneedle Creek and surrounding streams, and Trout Creek. These waters were thought to at least have a chance of containing bull trout, but out of the 648 fish caught, only seven were bull trout. We also found 502 brook trout, 121 brown trout, and small numbers of longnose dace, mountain whitefish, spoonhead sculpin, and white sucker. The information from this study will be used to minimize land-use impacts to fish, evaluate bull trout status, prioritize conservation efforts, and otherwise balance the diverse values of the North Saskatchewan River watershed.

Our project wouldn't mean quite as much without the involvement of companies like Sundre Forest Products. Mike Rodtka, Fisheries Biologist with ACA, says of the partnership, "We always appreciate support from our partners, but it's rare for the connection between data gathering and conservation to be so direct; I know Sundre Forest Products uses our data to conserve fish habitat." That's a great feeling for everyone involved. Thanks partner, and here's to the next 20 years!

West Fraser

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Alberta

Grant Deadlines

Alberta Conservation Association is accepting applications for the following grants:

ACA Research Grants fund high quality projects carried out by professional researchers (not students) that inform the effective management of wildlife and fish populations and habitat in Alberta. Applications are accepted from **November 1 - 30, 2018**.

The ACA Grants in Biodiversity for Graduate Students is administered by the University of Alberta. Application deadline is **November 30, 2018**. *This grant is supported by Syncrude Canada Ltd.*

ACA Conservation, Community, and Education Grants fund hunter, trapper, or angler retention and recruitment, conservation education in Alberta, and non-research activities that help conserve, protect, and enhance fish, wildlife, and habitat. Applications accepted **January 1 - 25, 2019**.

For more information and to download application forms, go to **ab-conservation.com/gecf.**

photo: Battle River Watershed Alliance, Nathalie Stanley

The Only Constant

by Dr. Lee Foote

There is a rhythm and style to the hunting stories I grew up with.

"The glistening tines moved jerkily through the tall sage as my finger tightened the .308's trigger. . ." then the next paragraph starts at the beginning of the hunt, postponing the fateful trigger-pull until the last paragraph.

The format is as comfortable and tired as old shoes. We hunters who grew up with army surplus camo and Redwing boots devoured these stories like popcorn. Today, however, younger, hipper folks snatch their hunting stories in 280-character bites on a toast-sized screen. The story is bait, the hook is the advertising, both of which are bottomless and available 24/7 with no last-page remorse at finishing a glossy magazine. Our archetypal outdoor magazine stories and center spreads may have varied with time but this adaption to change unites the age differences between hunters.

What do readers under 40 want? Old guys are not allowed to know so I channeled my 16- and 21-year-old children to redefine a good modern story. They said: be inclusive, respect pronouns, stay self-effacing, and challenge conventional thought. Every generation forges their own creativity and individuality, and these are aspects that are key to inciting change.

Considering the hunting stories, unfolding technology, and voting patterns, I must ask: is change inevitable?

The jukebox and pie-social generation might find more stimulation than is comfortable. Is anything constant? Are graphite fly rods mandatory? Must we GPS all our hunting routes? Provide instantaneous comments on hunting stories? Truthfully, what is constant is change. Resisting change leads to stagnation, which in turn leads to the absence of creativity and invention.

During the 1970's, a generational change occurred with the invasion of the trike, quad, and dirt bike, causing a lot of grumbling amongst my dad's generation even though I relished racing dirt bikes and quads around muddy pastures and woods trails. In 2018, we see a return to hunters using self-propulsion skis, paddles, boots, and bikes to reconnect with the environment in ways that cause my knees and shoulders to balk.

Yet, at their core, we share much joy and meaning in hunting including anticipation, planning, pursuit, accomplishment, and reliving stories.

On one pre-dawn trek to a local grouse hunting spot, I grumbled when camo-clad mountain bikes raced past. My hunting companion called me out though, saying "Hey, they are on our side so cut them some slack." She was right. I was being unthinkingly critical or maybe I was jealous of their youth and agility. Their license-purchases, votes, voices, and hunting stories (on those tiny screens!) actually help perpetuate my field activities too.

Now the end paragraph where I pull the trigger: change scares us spitless because it is unmanageable and carries us into an uncharted future. Embracing change requires mental nimbleness, adaptability, and much work. But the effort to seek beneficial change in resource use is where it's at for conservation. Abandon the echo chamber and talk to newer hunters, share stories, and maybe read what is happening on their tiny screens. Not your way or my way, rather both ways.

photo: Jim Potter

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Shell has worked closely with conservation groups to protect over 31,000 acres of land across Canada.

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photo: ACA, Colin Eyo

TransAlta™ Proud Sponsor

With peregrines making the power plants home for years, the environmental teams at TransAlta have learned a lot about the birds. The company officially became a major sponsor of the peregrine falcon camera initiative in 2016. Since then, their contributions have helped ACA stream live video through web cameras to capture the various peregrine nesting sites in Edmonton and area.

TransAlta's support of ACA started "when we got involved in Wabamun's Kids Can Catch, which is a terrific event that we've seen grow," says Cheryl McNeil, Senior Advisor of Stakeholder Relations at TransAlta. "In my ongoing conversations with ACA, I started to understand more about the peregrine cameras initiative, and thought, 'Wow! That could be a really great fit.'"

The peregrine cams are an exceptional educational tool. Anyone can see into the life of this species at risk, from nesting in the spring to hatching and fledging in the summer. With so much interest across the province, TransAlta is excited to see the amazing birds engage people of all ages.

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