

CONSERVATION

The official publication of Alberta Conservation Association

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ALBERTA'S TOUGHEST TREES ENDANGERED?



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SPRING/SUMMER 2014





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CONSERVATION



Conserving Alberta's Wild Side

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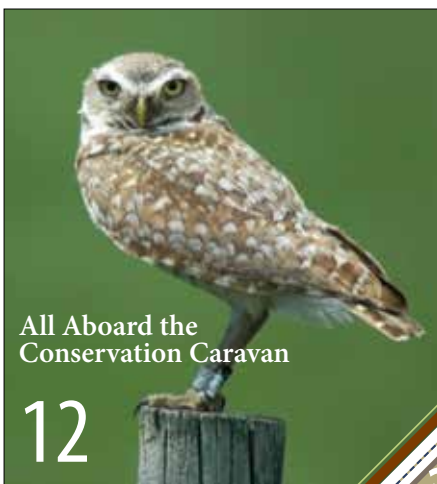
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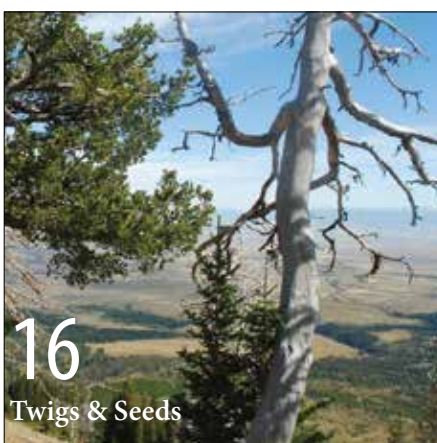
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14 The Wild Table
Shaggylicious!





Conserving Alberta's Wild Side
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About Us. Conserving Alberta's wild species and spaces requires commitment and passion, something we have plenty of. For 17 years, we have scaled mountains, navigated wild waters, fought off flies, endured hours in helicopters, and walked three quarters of the way around the planet—studying, assessing, counting and conserving some of Alberta's most common and iconic species and their habitat. Superheroes we are not, but there are times we feel a bit like one when we know we've made a difference.

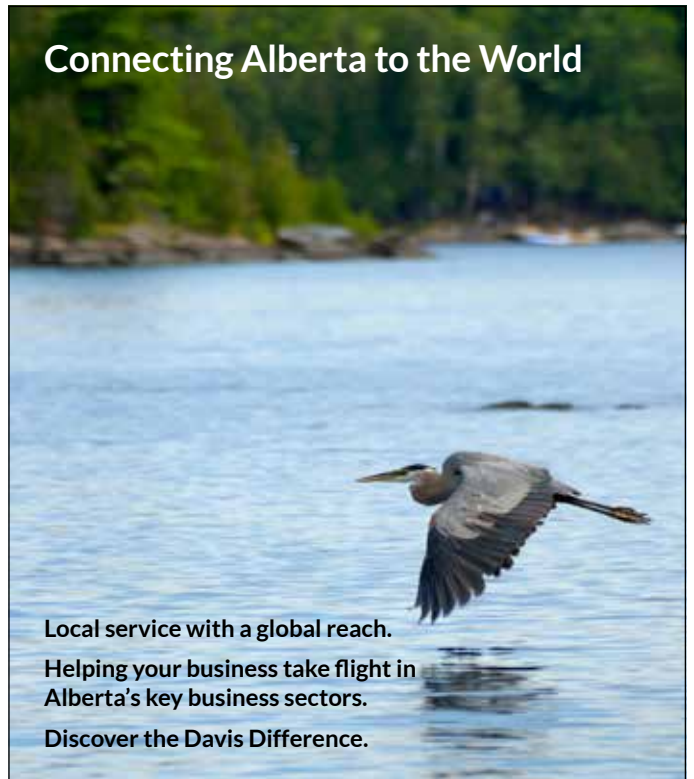
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From the Editor

A transformation happens at our offices this time of year. After months under fluorescent lights, staff emerge like butterflies from a cocoon, eager to embrace the fresh air and sunshine. Today, they are busy loading trucks with supplies. It is the much anticipated start of field season.

A significant amount of planning is required before anyone heads out; safety, equipment, budgeting, permits, timelines and staff requirements to complete the work. Another component worthy of mention is food. For some, whether it's a day or a week in the field, culinary comforts can add enjoyment after gruelling hours spent in whatever Mother Nature throws at you. It reminds me of when I set out on a project with Lance, one of our experienced biologists.

Our itinerary for the day; hike 5 km around a muddy alkaline lake on an unusually hot Alberta summer day, in search of new piping plover nests. We were equipped with enclosure fencing, tools, cameras, binoculars, a tripod, plenty of water and well... lunch. No one is the same when it comes to packing a lunch or backpack, even at our office. So you can imagine the difference in the packs of a seasoned field biologist, and biologist turned editor, excited to get out for the day.

Half way around the lake, we found a somewhat shady spot to park ourselves, scrape a couple pounds of mud off our boots and eat lunch. Lance takes out a compact, skilfully prepared PBJ sandwich and an apple. I unloaded and lovingly laid out a full feast of roasted Greek potatoes, pita bread, fruit and homemade brownies.

Reading "Hike like a Biologist" on page 21, brought me back to that day. I'm not sure I would have changed the contents of my pack. Lunch seemed more satisfying out there and the jokes still abound about the pound of potatoes I lugged around. At the end of the day, my boots were heavier and the weight in my pack was replaced with garbage collected along the way. My appreciation for our staff, the work they do and the knowledge they have about Alberta's wild places and animals that live here was heightened.

Savouring your time outdoors is about the whole experience, as long as your overstuffed backpack doesn't slow you or others down!

Lisa

photo: ACA, Lisa Monsees

Letters to the Editor: Address letters to the Conservation Magazine editor by e-mail, fax or mail. Include your name, address and daytime telephone number. Letters may be edited for clarity and length.

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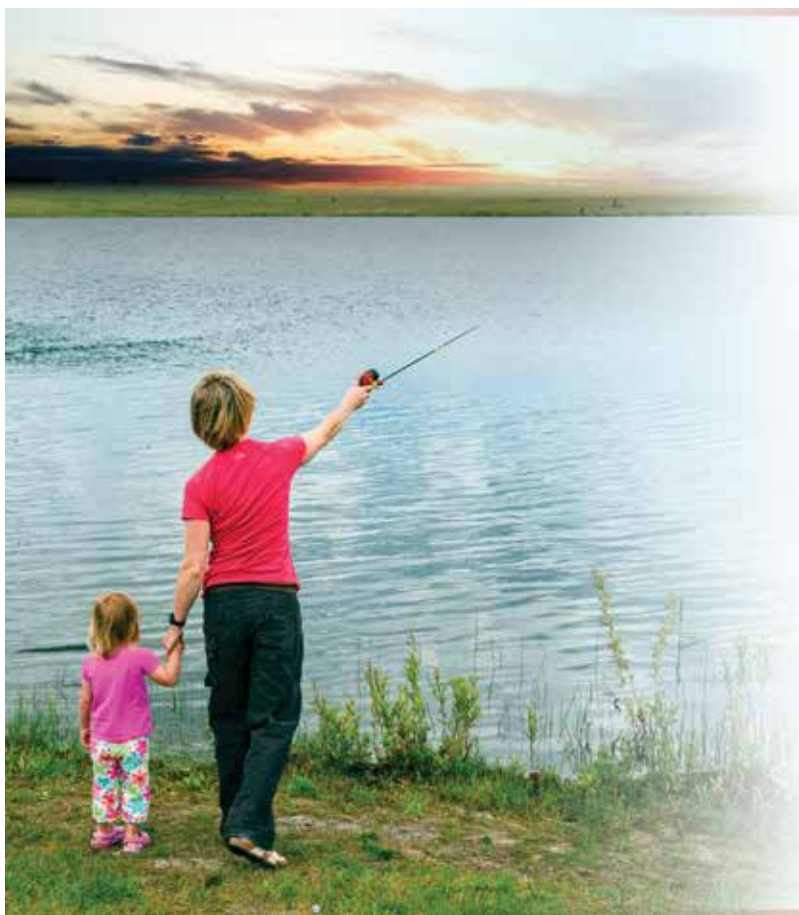
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Centennial Park Pond
Cipperley's Reservoir
Daysland Pond
Dewitt's Pond
East Stormwater Pond
Echo Dale Park
Emerson (High River)
Enchant Trout Pond
Foremost Reservoir
Fort Lions Community Fish Pond
at West River's Edge
Gibbons Pond
Goldspring Park
Gooseberry Park Pond
Granum Pond
Hansen Reservoir
Hermitage Park Ponds
Innisfree Trout Pond
Irma Fish and Game Pond
Kraft (Wimborne) Pond
Lacombe Park Pond
Lamont Pond
Legal Reservoir
Len Thompson Pond
Lougheed Trout Pond
Magrath Children's Pond
McQuillan Reservoir
McVinnie
Midway Reservoir
Mirror Reservoir
Morinville Fish and Game Pond

Morinville Lake
Mound Red Reservoir
Niemela Reservoir
Nuggent Pond
Oyen (Concrete Plant)
Parlby (Tees) Reservoir
Pleasure Island (Twomey)
Pro Alta Pond
Radway Fish Pond
Stirling Children's Pond
Strathmore Children's Pond
Telegraph Park Pond
Two Hills Pond
Vegreville Children's Pond
Vermillion Park Pond
Viking (Castaway) Pond
Wallace Park Pond
Waskasoo Park Pond
Westlock Recreational Pond
Wetaskiwin Pond
Windsor Lake

AERATED AND STOCKED

Beaver Lake
Birch Lake
Cecil Thompson Pond
Coleman Fish & Game Pond
East Dollar Lake
Fiesta Lake
Figure Eight Lake
Hansen Reservoir
Ironside Pond
Millers Lake
Mitchell Lake
Muir Lake
Spring Lake (Grande Prairie)
Spring Lake (Stony Plain)
Sulphur Lake
Swan Lake



Dow is proud to support projects that create and sustain ecosystems in our plant communities. In partnership with the Alberta Conservation Association and the City of Fort Saskatchewan, we're working together to make the Lion's Club Fish Pond a fun place for families to enjoy together today - while preserving the area for future generations of anglers in our community.



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Don't Miss the Boat: How to Ditch Invasive Mussels

► by Kate Wilson, Alberta Environment and Sustainable Resource Development

So you bought a boat...in the United States...and got a great deal! You're driving it back to Alberta. There is a boat inspection station. You wonder if you need to stop. You wonder what could happen if you don't...



photo: Alberta Environment & Sustainable Resource Development

AQUATIC INVASIVE SPECIES are common stowaways and pose one of the greatest threats to freshwater resources. They can change the aquatic ecosystem by competing with native fish species and removing vital nutrients needed for their survival. They also pose substantial risks to the economy by clogging pipes and intakes, decreasing property values, and changing native fisheries that are important to Albertans.

Tiny critters: terrible consequences

While there are many species that threaten Alberta waters, quagga and zebra mussels are a significant concern. These small freshwater invasive mollusks can have major negative impacts on the aquatic environment and impair the function of water-related infrastructure. You've probably heard of these mussels in the Great Lakes. Over

30 years of research is demonstrating that these invasive mussels are linked to creating toxic algae blooms, filtering vital nutrients out of the water, changing the ecosystem, increasing botulism-related bird kills, and causing billions of dollars in annual costs for repair and maintenance. An economic impact assessment conservatively estimates that annual costs to Alberta in the case of an invasive mussel infestation are over \$75 million dollars a year. And this is a real threat because these mussels could survive in the majority of Alberta's lakes and reservoirs.

Hitchhiker haven: Alberta bound

Several mussel-fouled boats destined for Alberta were intercepted in 2013, bound for Sylvan Lake, Pigeon Lake, Wabumun Lake, Gull Lake, Whitefish Lake, Slave Lake, and Hay River (NWT)—demonstrating that the risk is province-wide and largely dependent

on recreational boat traffic. These mussels can live up to a month out of the water; just think how far you could haul a boat in 30 days!

Prevention is the best management strategy for invasive species, as control options are limited and very expensive. Most jurisdictions in the United States and Canada have aquatic invasive species prevention programs. Common components of these programs include boat inspections, lake monitoring, education, policy, and emergency response. Parts of these components were initiated last summer as an Alberta pilot project. They will continue to be developed into an all-encompassing provincial program, led by Alberta Environment and Sustainable Resource Development's Fish and Wildlife Policy Branch.

No mussels, yet...

Over 50 lakes and reservoirs across the province were sampled in 2013 for invasive mussels; all samples have come back negative! Monitoring efforts must continue to ensure that prevention activities are working. If we have "missed the boat," so to speak, we need to know immediately so that we can keep them from spreading to other waterbodies.

While many of the mussel-fouled boats to date have come from the southwestern United States, the infested lakes are getting closer. "On October 18th, 2013, zebra mussels were detected for the first time in Lake Winnipeg, Manitoba," says provincial habitat biologist Gavin Berg. "This signals the first invasive mussel infestation in a prairie province, which means the threat just got a lot closer to Alberta waters."



photo: U.S. National Park Service (Lake Mead National Park)



photo: Alberta Environment & Sustainable Resource Development

3 ways to rid your boat and equipment of mussels

→ CLEAN

- Remove all plants, animals and mud at the access area or dock.
- Soak your gear in a two per cent bleach solution for one minute (20 millilitres of bleach per litre of water).
- Rinse, scrub or pressure wash your boat away from storm drains, ditches or waterways.

→ DRAIN

- On land before leaving the waterbody, drain all water from bait buckets, ballasts, bilges, coolers, internal compartments, livewells, transom motors.
- Never release live bait into a waterbody or transfer aquatic plants or animals from one waterbody to another.
- Drain paddle boats by inverting or tilting the watercraft, opening compartments and removing seats, if necessary.

→ DRY

- Dry the watercraft and gear completely between trips and allow the wet areas of your boat to air dry.
- Leave compartments open, and sponge out standing water.

1-855-336-BOAT(2628) Alberta's invasive species hotline

This hotline operates 24/7 and provides other states, provinces, as well as the public with a means of reporting aquatic invasive species on watercraft or in waterbodies. Operators triage calls into "inquiry" or "emergency" situations, depending on whether a call may require an immediate response.

Call the hotline with any kind of inquiry or report. This includes scheduling an inspection, to learn how to inspect your boat, or if you suspect mussels or any other invasive species are attached to your boat or equipment.

Any attached mussel is an invasive mussel, and must be reported right away. Any time a boat leaves the province, it should be inspected to ensure it is CLEAN, DRAINED, and DRY before launching in Alberta waters again.

Spread the word

The more boaters and anglers understand this issue and the steps that can be taken to stop the spread of aquatic invasive species, the better off we will be. *Do your part to help protect Alberta's freshwater resources for now and the future.* ■

Kate Wilson is the aquatic invasive species program coordinator at Alberta Environment and Sustainable Resource Development. Get in touch with her at 780-427-7791 or kathryn.wilson@gov.ab.ca.

Operation Grassland Community (OGC), a stewardship program working with Alberta ranchers to protect prairie wildlife habitat, wants to wonder about the relationship between the food you eat and the land it was grown on. And about how the ranchers who raised the cattle that you consume treated their land.

Enter a short film called *Conservation Caravan*, recently produced by OGC with support from Alberta Conservation Association's Grant Eligible Conservation Fund. *Conservation Caravan* captures the beauty of the southern Alberta landscape. It takes viewers on a prairie road trip, but it's not a nostalgic Laura Ingalls Wilder sort of journey. Instead, it's a trip to the big backyards of Alberta ranchers who are working hard to bring food to your table in a way that doesn't short-change the wildlife living on their land.

Why is the *Conservation Caravan's* message so necessary and timely? Alberta's grasslands are the setting for quite a conundrum: the grasslands house more than 75 percent of Alberta's species at risk, despite being only 14 percent of

► by Sue Peters, ACA

All aboard the Conservation Caravan

When you enjoy a warm slice of whole-wheat bread or a tender beef steak, do you stop and think about where those grains grew or cattle grazed?



Alberta's landbase. About three-quarters of that landbase has been converted to agriculture, industry, cities, towns and roads. Add to this a growing predicament—the increasing demand for *sustainable* food production that values the land for more than just food production. It's a long-term, big-picture approach that nurtures the core values of our prairies. But this puts increasing costs on the shoulders of ranchers. In *Conservation Caravan*, OGC communicates the reality of these costs to consumers. As it turns out, many people are willing to pay extra for food produced locally and sustainably.

So, how does a cattle rancher or grain farmer also conserve wildlife habitat? Imagine a patchwork quilt. It's a good way to think about the different

but connected natural areas (habitats) that are important to the species sharing the prairie landscape. Choosing to keep natural groves of trees and shrub patches provides nesting places for ferruginous hawks and loggerhead shrikes, and foraging areas for sharp-tailed grouse. In turn, the hawks keep a rancher's ground squirrel (gopher) population under control. Patches of native prairie make great habitat for grassland songbirds, especially if the rancher limits spring grazing to allow for the sensitive nesting period. Leaving cliffs, sandhills, coulee slopes and rocky outcrops undisturbed provides homes for unique species like short-horned lizards, prairie rattlesnakes, prairie falcons, and rare plants like western spiderwort. Choosing not to disturb the

vegetation surrounding streams and wetlands benefits the many species—like northern leopard frogs—that use those areas. Free erosion control and nutrient filtering are added benefits. Habitat-friendly choices are limitless and have pay-off for ranchers.

The ranch families profiled in *Conservation Caravan* are clearly pleased to host many wildlife species on their land resulting from their practical, habitat-friendly choices. They're a great example of how Alberta's ranchers can positively impact wildlife habitat and support a functioning prairie ecosystem, where cattle and wildlife both benefit. *Conservation Caravan* tells their stories, and should get us all talking about where our food comes from.

OGC has been tapping into the vast potential for ranchers to play the role of grassland stewards for 20 years. Since 2002, ACA has supported OGC through the Grant Eligible Conservation Fund. If you own a ranch or are interested in species at risk, contact OGC (grasslandcommunity.org) and Multiple Species At Risk (multisar.ca). ■

Western spiderwort
photo: ACA, Sue Peters



Ranchers relish the opportunity to see unique native species such as burrowing owls on their land. These little birds happily share the grasslands with grazing cattle. They just need a nest burrow and pesticide-free, tall grass where they can hunt small mammals.

Burrowing owl
photo: Janet Ng



Loggerhead shrike
photo: ACA, Mike Jokinen



Sprague's pipit nestlings
photo: Steve Davis



Ferruginous hawk nest
photo: Randy McCulloch





The wild table  from field to fork

Shaggylicious Baby!

Shaggy Parasol

If there was such a thing as a “big game” mushroom, shaggy parasol (*Lepiota rhacodes*) would surely qualify—the largest I’ve harvested had a cap just shy of a foot across, and stood a foot tall. As if that wasn’t enough, they usually come accompanied by friends, often a dozen or more at a time. They also happen to be one of the choicest edible mushrooms to enter my kitchen.

► photos & text by Kevin Kossowan

Look before you leap

As with all things mushroom, you’re silly to put anything in your mouth without being as educated as possible about it. Lean heavily on well-reputed mushroom books before taking any mycological leap. In addition to diligent ID’ing—spore printing included in this case—a couple general rules the Alberta Mycological Society taught me:

1. Don’t eat wild mushrooms raw.
2. Only eat tiny quantities when exploring new territory.

Keep an eye on your spot

Generally speaking, a shaggy parasol looks like a portobello or similar agaric mushrooms you’d be familiar with. The “shaggy” part of the name refers to distinctive scales on the cap. The shaggy parasol patches I frequent are either in a deciduous wooded area or very close to one. Once you’ve found a spot, and ID’d them with confidence, the beauty is that they return—not only year after year, but multiple times per year. I’ve tried to put a finger on when exactly to watch for them, but weather and moisture trumps patterning them. I’m lucky enough to have a few in my yard and when I see them emerge, I know my big patches in the bush need to be visited ASAP.

In the kitchen

If you can work with a portobello, you can work with a shaggy parasol. Just know that old specimens get pungently stinky—harvest them when they’re really moist and at their prime. Forget slicing the caps at prep time, as they’re easy and gratifying to pull apart into pieces. The stems are huge and valuable, but not for fresh eating as they’re pretty tough. In our kitchen they’re prized for drying.

Dry them

As with all wild mushrooms, when you score pounds at a time, it’s unwise for your general wellbeing to feast on your fresh yield—a bit counterintuitive for the seasonal eater. All things in moderation, especially wild mushrooms. So what to do with them all? Dry them. Lay them out on some cardboard and let them air-dry. Simple as that. When they’re light as a feather and dry as paper, they’re ready to go into any air-tight long term storage vessel or bag for use throughout the year. I pull cap pieces off to put into stocks, and grate the stems into a powder to season game meats. ■

Kevin Kossowan is a local food writer deeply involved in Alberta’s urban agriculture and foraging communities. He believes wild foods are critical to our regional food culture. Join us every issue as he celebrates Alberta’s regional foods with tips, recipes and fresh ideas.

Shaggy parasol frittata

A classic culinary approach to celebrating the nuances of any mushroom species is to pair them with eggs. *Highly recommended.* Frittatas are simply a scrambled egg concoction that’s cooked in a hot oven, which puts a soufflé-esque loft on the eggs.

- Start by frying shaggy parasols in butter with some aromatics, my favorite combo being nodding onion and wild thyme.
- Add some top-quality whipped-up eggs.
- Season with salt and pepper and toss the pan into a hot oven.
- Cook through but be careful not to let it go dry; this happens quickly once done.

I finish mine with a walk around the yard, snagging whatever fun greens and edible blossoms are at their peak.

WILD ON THE WEB

magazine.ab-conservation.com/shaggyparasol

For the seasoned mushroom forager, Kevin’s wild mushroom soup recipe is a must-try!

The wild table & from field to fork

Twigs & Seeds

► Contributing writers:

Elize Uniat and Darren Dorge (ACA), Alberta Environment and Sustainable Resource Development

Secret sanctuary

Potter's Seep on a hot summer's day is an unexpected oasis. After a 15-minute hike along a fence line with pretty sloughs along one side and a hill on the other, a right-ish turn up a gradual slope yields a narrow zigzag passage to squeeze through. As the path curves into the tall trees, the air changes from hot and dry to cool and humid. A welcoming picnic table and a cathedral of high balsam poplars reward you for the hot hike from the road. Birds flit through the 100-year old grove's green tranquility. Moose, mule and white-tailed deer, and coyote tracks dot the muddy areas. A spring, once used by pioneers, is what keeps the air so humid and allows the trees to grow to their exceptional sizes.

The seep is named for Jim Potter, long-time Alberta Conservation Association employee, and his brother Steve, who discovered that it was full of nails, spikes, barbed wire and even old stoves. They cleaned up the area and turned it into the haven it is today. Potter's Seep was recognized as significant by the Heritage Tree Foundation of Canada—look for the plaque on the picnic table.

Getting there: Travel east on Highway 53 from Bashaw. Turn south on Highway 56 and travel 8.5 km to the site located on the west side of the highway.

GPS coordinates:
12U 384785E 5818082N

Other attractions: Potter's Seep is part of the 1,120 acre Buffalo Lake Moraine Conservation Area, also well worth exploring. Expect everything, from berry picking and birdwatching to big game encounters. More on albertadiscoverguide.com.



photos: ACA, Colin Eyo

Squirrels **NOT** allowed!

Deep in a nest of trees about 15 minutes outside the town of Smoky Lake sits a large concrete bunker, built into the hillside. With 16-inch walls and no windows, it looks foreboding—passersby would be forgiven for assuming that it housed high-tech weapons or state secrets. But in fact, something less tantalizing lurks behind those walls—unless you're a squirrel, in which case the bunker might as well be Fort Knox.

Housed inside the bunker, in freezer compartments held at -18 C, is 53,000 kilograms of tree, shrub, and grass seed. Like any bunker, it is locked down tight and has a top-notch security system—monitored 24/7 by the Alberta Government Protection Services for temperature changes, mechanical failure, fire, intruders, and anything else that might disturb the safety of the precious cargo stored within.

-from Alberta Environment and Sustainable Resource Development's blog (aesrd.wordpress.com)



Alberta's reforestation bunker. In just a couple of years, reclamation using seeds from the bunker can turn a completely clear-cut area into an oasis.

DID YOU KNOW?

Widespread throughout Alberta, the trembling aspen (*Populus tremuloides*) makes a lovely whispery sound in even the faintest of breezes. What appears to be multiple trees is often part of one genetic individual (the trees are clones). They all share the same root system. In autumn, you can tell because each stand in the same area will have different coloured leaves from the ones next door.

Aspen requires disturbance for the clones to be healthy and working properly. Since aspen ecosystems make great homes for at least 55 mammal species and 135 bird species, they are very important. Fire used to be a natural disruptor, but fire suppression is common these days, making other methods like mechanical clearing necessary. Too much disturbance, like intensive livestock grazing and conversion (clearing aspen for agriculture or oil and gas

exploration), isn't good either. And disturbance shouldn't happen all at once. Staggering it is essential because it creates diversity. Different wildlife species depend on aspens of various ages and their understories for food and cover. If we wait too long before implementing some form of disturbance, older aspen stands start dying. Too many dead trees in an older stand means the rootstock will eventually weaken until regeneration will no longer

happen. So, if diversity is the end goal, aspen stands require careful management and monitoring.

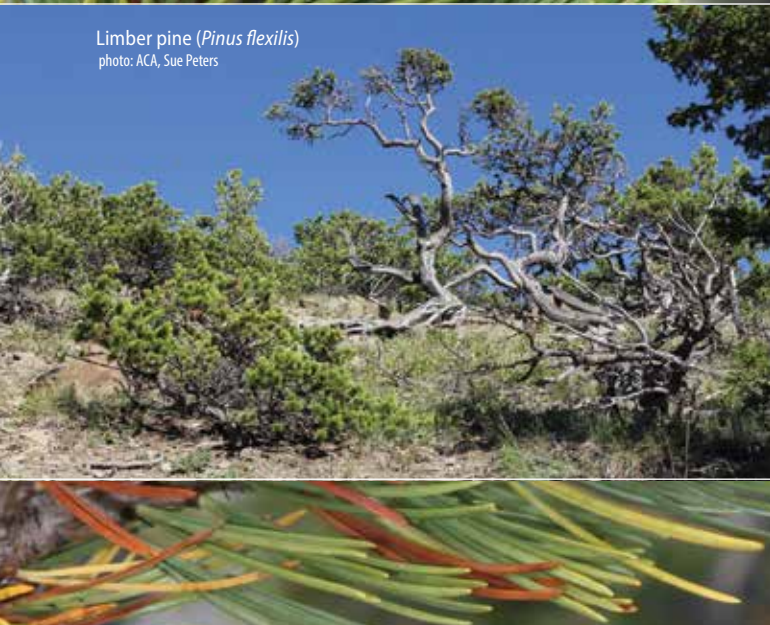
In the next few years here at Alberta Conservation Association, we will be looking at the age structure of aspen clones and the overall diversity on our Conservation Sites. If required, we may implement a cutting strategy to maintain healthy aspen ecosystems. It's just one more way we are working to conserve Alberta's diverse natural areas.



Tree-spiration Alberta artist, Igor Woroniuk, often finds himself painting trees. For more of his work, visit igorworoniuk.com.



Whitebark pine (*Pinus albicaulis*)
Photo: ©2010 Walter Siegmund



Limber pine (*Pinus flexilis*)
photo: ACA, Sue Peters

Alberta's Toughest Trees are... ***Endangered?***

Yes. Whitebark pine (*Pinus albicaulis*) and limber pine (*Pinus flexilis*) are Alberta's two *Endangered* trees. Both species grow high in the mountains under harsher conditions than most other trees can bear. That gives some of them a gnarled, shrubby look (hint: lots of atmospheric photography opportunities). These trees have interesting and important relationships with black and grizzly bears, Clark's nutcracker, fire, and snowmelt. In fact, without the Clark's nutcracker, limber and whitebark pine would have an almost impossible time surviving! The birds are the main seed dispersers and cache the large pine seeds to eat during winter and spring. Seeds that aren't eaten have a chance of germinating into new trees.

Both whitebark and limber pine face similar threats from blister rust (a fungal disease that both kills trees directly and reduces seed production in mature trees by killing branches), mountain pine beetles (these attack and kill any species of pine), and habitat loss from decades of fire suppression and climate change. Understanding more about these threats and how they interact is very important if we want the trees to survive.

The situation for both species is serious, and the Alberta government is working on recovery plans for each of them.

The whitebark plan has recently been approved and the limber plan is projected to be there by this summer. Whitebark pine is also listed federally as *Endangered* under the *Species at Risk Act*. The hope is that limber pine will also be listed federally in the next two years. ■

WILD ON THE WEB


magazine.ab-conservation.com/trees

What does fire have to do with their survival? And how do they affect entire watersheds? Read more on our website.

"The planting of a tree, especially one of the long-living hardwood trees, is a gift which you can make to posterity at almost no cost and with almost no trouble, and if the tree takes root it will far outlive the visible effect of any of your other actions, good or evil."

- George Orwell from a 1946 essay, "A Good Word for the Vicar of Bray"

A respected neighbour with a commitment to the environment

A man wearing a straw hat, a red shirt, and waders is standing in a lake, fly fishing. He is holding a fishing rod and a line. The background shows a dense forest of evergreen trees and some reeds in the water.

We share the same connection to the land as our neighbours and those who love Alberta's natural spaces.

You can count on us to honour that commitment.



ACCESS
PIPELINE

A respected neighbour

www.accesspipeline.com

Meet the Landowner

► by Karen D. Crowdis

West

of Parkland County, there is a quiet quarter section of land seemingly orphaned into governmental custody. It has been on title to Parkland County and previous governing bodies for as long as records have been kept. This parcel of boreal forest has cycled through seasons and remained relatively untouched, inviting visitors to take a step back in time and enjoy nature as it once was.

Locals value this space. They use it as a nature retreat. Voluntarily, neighbours keep watch over the place where they come to hike and bird watch. When they notice misuse, they do not hesitate to record and report the changes to Parkland County officials.

Axing the red tape

As reports of increasing ATV use funneled in, the County did what many would expect. They met, reviewed the reports and discussed what to do. Where some governing bodies get bogged down in studies and reviews, Parkland County instead moved into action.

"The land, in its present state, was being used in a manner that wasn't ecologically responsible or compatible with the County's conservation philosophy," says Gabriel Clarke, Parkland County sustainability coordinator. "At that point the decision was made to contact a conservation group to manage the reclamation of the land."

Parkland contacted Alberta Fish and Game Association (AFGA) for a proposal. Not all land is suitable for donation to reclamation programs. Site assessments are a critical component of gifted land acquisitions. AFGA's assessment was favourable; and so, after a successful initial proposal, they invited Alberta Conservation Association (ACA) to share in the stewardship.

The two groups have a long collaborative history, so it was a natural fit to join efforts on this parcel says Brad Fenson, AFGA's habitat development coordinator. Combining their resources brings expanded expertise to the reclamation process and streamlines efforts, protecting this area for wildlife and responsible recreation. Ultimately, Parkland County accepted a joint stewardship proposal and the transfer of the parcel to its new keepers was completed in September of 2013.

photo: ACA, Marco Fontana



Natural value

This donation is unique in that a municipality made the decision to place a higher value on habitat and natural space than other land uses. Perhaps the success of volunteer philanthropic programs, like Alternative Land Use Services, have eased the way for governing bodies to recognize the value of natural spaces as supportive of economic ventures. Surrounded by lakes and popular campgrounds, people seek out this area for the wildlife viewing opportunities. Keeping this parcel natural supports that attraction to the region.

"As a conservation group, it is exciting that other identities, such as governing bodies, are recognizing habitat importance," says Fenson. "That Parkland County recognizes the land as valuable habitat and sees the need to manage and protect it in perpetuity could indicate a changing tide in the way governments view and value land and natural areas."

Year round diversity

The land is a stunning example of boreal forest consisting of varied layers of growth and a body of water. Its vast biodiversity is home to a significant variety of wildlife. Fenson observed at least 13 different bird species on a spring trek through the site. Black bears, wolves, elk, moose, grouse and several woodpecker species also call this area home both seasonally and permanently.

"When an area has this many species thriving and returning to reproduce successfully, it is an important site for Alberta wildlife," states Fenson. Still, there is work to be done to allow it to regenerate. This kind of ecosystem is not easily recreated, which is why AFGA is grateful to have a solid base of volunteer stewards to help in the process.

Locally, an awareness campaign to inform residents and visitors of the new status of protected

habitat, combined with regular inspections, will ensure reclamation is on track. Outdoor enthusiasts will have access by foot and a chance to experience this historical eco-snapshot of Alberta's natural diversity and abundance.

Orphaned no more and protected from overuse, Parkland County Conservation Site will continue to do what it has always done. It will cycle through seasons and host a multitude of wildlife species year over year to the benefit of all Albertans.

photo: ACA, Lisa Monsees



If you want to step back in time into this boreal snapshot and observe wildlife, please remember to be respectful, travel on foot and pack out garbage whether it is yours or left behind by someone else. To visit the Parkland Conservation Site, have a look at the ACA Annual Outdoor Adventure Guide (albertadiscoverguide.com) for directions and any visitation restrictions.



About Alternative Land Use Services (ALUS)

ALUS is a voluntary national organization with branches across Canada. It combines conservation initiatives with farmer knowledge. The group partners with several organizations to help ease the financial impact of integrating conservation areas with functional farm land. In cooperation with farmers, conservation projects like exclusion fencing and hen houses for nesting waterfowl are strategically implemented on working farms. County partners, like Parkland County, have received matching funds, expanding their ability to do more conservation work within the community. According to Gabriel Clarke, it is a great testament of how non-regulated, voluntary programs can make positive changes when farmers are consulted. After all, they are the experts on their land.

WILD ON THE WEB

magazine.ab-conservation.com/landowner
Read more inspiring Meet the Landowner stories.



Behind the Scenes

► by Diana Rung, ACA

HOW OLD IS THAT FISH?



photo: Linda Zimmerling

It's been a great day of fishing—perfect weather, beautiful lake and just the right angler's touch. You have just landed a feisty northern pike that anyone would be proud to brag about. Have you ever caught a fish and wondered how old it is?

The size of a fish is generally associated with age, but there are many factors that affect their growth including food availability, water quality, habitat, gender, general health and genetics. Like the annual rings in the core of a tree, fish produce similar marks on various bony structures. These marks, or annuli, can be viewed and counted under a microscope. The annuli are formed during a period of slow growth in the winter followed by a phase of rapid growth in the summer. A fish's age is determined by assigning one year to each winter and summer growth period.

Biology basics

Biologist often use scales, fin rays, otoliths, teeth and other bony structures to find out how old a fish is. Fish scales have long been the most common way to age many species. The scale collection technique is quick as well as non-lethal. Once in a laboratory, scales are cleaned, mounted and viewed under a microscope. With a microfiche reader at a magnification of approximately 25X.

Fin ray collection is another non-lethal method that involves the removal of part of a fish's pelvic fin. Fin rays are sectioned using a jeweller's saw, mounted and viewed in a similar manner to scales.

Otoliths are tiny ear bones that are located behind a fish's brain. The otoliths are removed and sectioned in order to view the annuli. Though this is a lethal method, it is one of the most accurate techniques for aging fish species like Alberta's walleye and lake whitefish.

But it can be tricky for even an experienced biologist to obtain an accurate age from a single scale. So how can we make sure our aging results are accurate? By sampling more than one structure from the same fish. Taking the otolith from the same fish and comparing it to the scale, an accurate age can be more readily obtained.

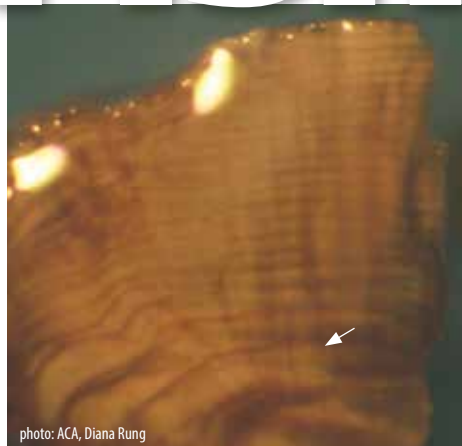


photo: ACA, Diana Rung



photo: Kevin Koosavan

The annuli are clear on this 21-year-old lake whitefish otolith (left), but they are unclear on the scale (right). This is why it is important to use multiple structures to age fish, or to use the part proven to be the most accurate for that species of fish.

WILD ON THE WEB

albertadiscoverguide.com/stockedlakes

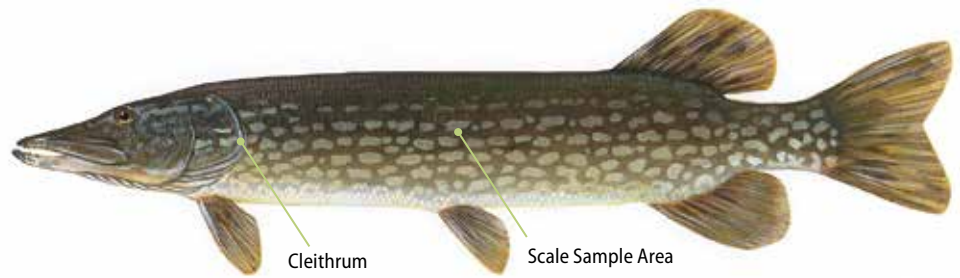
Does all this talk about fish have you itching to wet a line? Try out a stocked lake!

Now, let's take a look at that northern pike you caught!

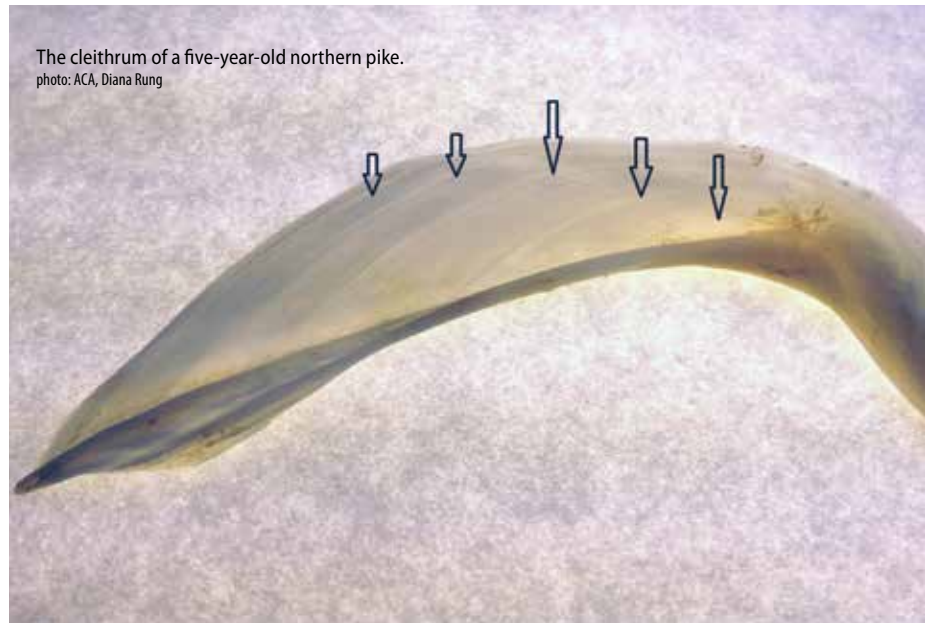
Scales can also be used to determine a pike's age. However, a more accurate aging structure for pike is the cleithrum. Cleithrum (singular) or cleithra (plural) are paired, crescent shaped, flat bones that are situated in a pike's lower jaw. While it is a lethal method, when cleithra are removed, cleaned and viewed with a low-power microscope, the annuli are clearly visible and easily counted. As with all fish, the growth rates of pike can vary greatly. In a 2010 ACA test-angling and sport harvest study of Winagami Lake, the average northern pike was estimated to reach 63 cm between the ages of five and six years. Comparatively, in a 2012 study of Forty Mile Reservoir, the average northern pike reached the same size at the ages of four and five.

So why do researchers age fish?

Not only are the results interesting to anglers, but biologists can understand many aspects about fish populations—like spawning success, growth rates, mortality rates and population age structures—by collecting and analyzing this type of data. Having this knowledge helps biologists monitor and manage our precious fish stocks. ■



The cleithrum of a five-year-old northern pike.
photo: ACA, Diana Rung



Bears are curious animals with big appetites. To a hungry bear, garbage, human food and harvested fish or game make an easy meal. Be BearSmart when in bear territory.

- Always carry bear spray and a noise deterrent, such as an air horn. Know how to use them and carry them in a belt or chest holster, not in your backpack.
- Avoid going out alone. Staying in groups helps create noise that alerts bears of your presence.
- Minimize odours by storing food and garbage in air tight containers. Pack out all garbage.
- Be cautious wherever bears may feed, such as berry patches, grain fields, garbage pits, beehives and carcass sites.



Alberta
Government

If wildlife pose a public safety concern,
call the nearest Fish and Wildlife office
at 310-0000.

www.bearsmart.alberta.ca





A COLLECTION OF TIPS FROM OUR SEASONED FIELD STAFF WILL HAVE YOU DRESSED, PACKED AND READY TO HIKE ALL DAY!

→ DRESS CODE

- **Comfort:** "Wear comfortable clothing, ideally something that would dry easily." – Shevenell
- **Layer:** Avoid cotton clothes. Rather layer synthetics and even wools.
- **Pants:** Light, quick-dry field pants, a little loose or with some stretch, work the best. No jeans! "Nothing worse than trying to lift your leg over a huge fallen tree when it's 30 C and your field pants are stuck to your skin." – Stefanie
- **Socks:** Good quality hiking socks are expensive but so worth it. Sore feet will ruin even the best adventure. "I never thought I'd pay \$20 for a pair of socks in my life, but some things ARE worth their weight in gold. Merino wool socks come in LOTS of thicknesses and warmth ratings—they keep you cool in the summer (true thing) and warm in the winter (also true thing) and they stay DRY! Wow!" – Stefanie
- **Boots:** Worn in, tried-and-true boots that don't give you blisters.
- **Hat:** Shade-maker or heat-conserver, depending on the situation.

→ BACKPACK MUST-HAVES

- Water & snacks
- Sunscreen & bug spray
- Bear spray: Clip it on your belt or backpack so you can reach it quickly.
- Shell: A water and windproof layer, along with extra socks, is ALWAYS a good idea, even if it never comes out of your pack.
- Waterproof matches (flint is also a good backup)
- Maps or GPS (remember extra batteries) & compass
- Whistle (attach it to your backpack)
- Pocket knife
- First aid/survival kit
- Small headlamp

ACA Intermediate biologist, Mike Verhage
photo: ACA, Paul Jones

"Don't forget to bring your celebratory drink/snack reward for making it to your destination!!" – Mike



photo: ACA, Shevenell Webb

→ PRO TIPS

"If you remember to put your chocolate-chip cookies on the dash of your vehicle before you head off in the morning, they'll be warm and gooey when you return (just like right out of the oven)!" – Sue

"Be quiet and see the forest for the trees." – Bill

"Always have a plan detailing your route and schedule. Leave this with someone reliable so that action can be taken should something go awry." – Corey

"Bring way more snacks than you'd normally eat, especially if you're hiking with kids. Fresh air makes everybody hungry. And a handful of gummy bears will motivate any kid (or adult) to keep hiking uphill." – Sue

"TP (in a Ziploc bag) is worth its weight in gold and can be traded for many things." – Corey

→ ROOKIE MISTAKES

Not testing out your new pack and boots for comfort on a few shorter hikes before you hit a longer trail.

Getting a pack that is too small or too big. You tend to overpack with a large backpack. "Overpacking isn't as big a deal... but sharing the load with your hiking partners is!" – Stefanie

"Bringing multiple changes of clothes (it's okay to get dirty and wet)!" – Bill

Lugging along a gigantic SLR or video camera (unless photography is the point of your hike). They're heavy! Take a super compact digital camera.

"Most people will not want to carry the extra weight and bulk of safety equipment and supplies. But in my mind, it's like taking the spare tire out of your car to reduce weight to increase gas mileage or not wearing a seatbelt because you find it uncomfortable. If you don't get a flat or into an accident, the decision seems wise, but if something happens you'll be regretting it." – Kris

"Don't forget WATER! That's happened before, and while I have a sharing kind of a spirit, some things you just want to ration all to yourself." – Stefanie

WILD ON THE WEB

magazine.ab-conservation.com/hiking

Find some favourite hikes and field guides online.

→ FOOD

"It's really about what makes you happy to eat and gives you fuel. And when you're hungry, everything is tasty!"

– Stefanie

Great:

Classic peanut butter sandwich—good energy, doesn't get soggy, and doesn't matter if it gets warm in the sun.

Bagels are durable and full of energy.

Cheese, crackers and pepperoni is always a good choice for lunch.

Apples, oranges, fruit cups, and fruit bars.

Trail mix, granola bars—dried fruit and nuts give you protein and some much-needed sugar. Plus, they don't freeze when it's cold, or get mushy when it's hot.

V8 cans, juiceboxes, drink powder to make water more interesting and a water filter.

Questionable:

Chocolate gets mixed reviews. Great in cooler weather, but not so great when it's a hot, melty mess in your pack on a summer day.

Canned goods—super heavy, produces garbage, not compactable, needs cooking or heating.

Sandwiches are good, but maybe skip the mayo and put the tomato on the side, or you'll be faced with a soggy (but not impractical) lunch.

Don't do it!

Liquids: Leaking + backpack = bad.

Squishy: Bananas get mashed and smear everywhere in no time.

◆ Crazy:

In the words of one of our contributors:

"Bringing a watermelon (and not a mini melon either).

What was I thinking?" – Anonymous

Thanks to Sue, Mike V., Shevenell, Bill, Kris, Stefanie, Corey, and John who contributed their know-how from long days spent in the field. ■

→ BACKPACK NICE-TO-HAVES

- More food & water
- Pre-packaged wet wipes/hand sanitizer
- A large sealable, leak-proof bag for garbage
- Gaiters if hiking in wet areas: "Gaiters are a must-have for me, because I hate getting grass seed in my boots, plus they provide a little bit of added warmth." – Mike
- Tissues/toilet paper
- Camera: It's debatable whether or not this belongs in the must-have category... you never know what you might see.
- Binoculars
- Field guides

Forever Young

► by Kris Kendell, ACA

The tiger salamander is a secretive creature. Perhaps their cagey behaviour has to do with the fact that some of them are hiding a secret aging loophole. We might even call these special salamanders the Peter Pans of the amphibian world! But is it true? Has the tiger salamander found the fountain of youth?

Imagine if you could choose...

The tiger salamander emerges for brief periods during rainy weather; or as they make their way to breeding ponds in the spring and leave them in the fall. Adult tiger salamanders are about 15 – 25 cm long, although slightly larger ones have been spotted. These cute carnivores are found in the aspen parkland and prairie ecoregions of Alberta in small animal burrows, under objects near water, and burrowing in loose soil.

Growing up can be hard to do

Normally, the tiger salamander undergoes a spring breeding ritual, which is followed by the changing of larvae into smaller versions of the adults. On rare occasions, some larvae don't become adults, keeping their youthful features such as feathery external gills, wide dorsal and ventral tail fins. However, they do have the ability to produce young. *This is known as neoteny.*

Depending on the family and species of salamander, neoteny can be forever or short-term. The outcome is determined by a variety of factors including genetics and conditions such as water temperature, water chemistry and food availability. For example, the long-toed salamander found at high elevations or in waterbodies with low temperatures shows slowed growth.

Choosing the good life

We can't say for sure that a salamander makes the choice to transform into an adult, even though it might appear that way. A salamander can avoid life-threatening environmental conditions by making the choice. For example, neotenic tiger salamanders are often found in waterbodies without predatory fish. If large carnivorous fish are present, being able to scamper onto land to avoid becoming fish food is a good motivator to grow some legs.

Similarly, if life outside the water looks grim, the young salamander may be inspired to forgo the hassle of growing limbs. Conditions such as dry and arid weather, lack of cover, shortage of food, and competition with other species may prompt the salamander too cleverly and perhaps permanently remain in its tadpole-life form.

Identifying a neotenic

So how does one determine if a tiger salamander larva is an actual neotenic, or simply hasn't made the life cycle leap? If you find a tiger salamander approaching 30 cm in total length, it can be considered neotenic and capable of reproduction. Although exceptionally large larval size may simply reflect favourable growing conditions, it still remains one of the best indicators.

A salamander's fountain of youth

While the tiger salamander may not have found the mythical fountain of youth, in a way, they have found their fountain of youth. The conditions responsible for these instances are still under investigation. We hope that through continued research and greater public involvement in reporting sightings, we will better understand this fascinating natural phenomenon.



Tiger salamander
photo: ACA, Kris Kendell



Left: Neotonic tiger salamander with feathery gills and wide dorsal and ventral fins.
Illustration: Brian Huffman

Long-toed salamander
photo: ACA, Mike Jokinen

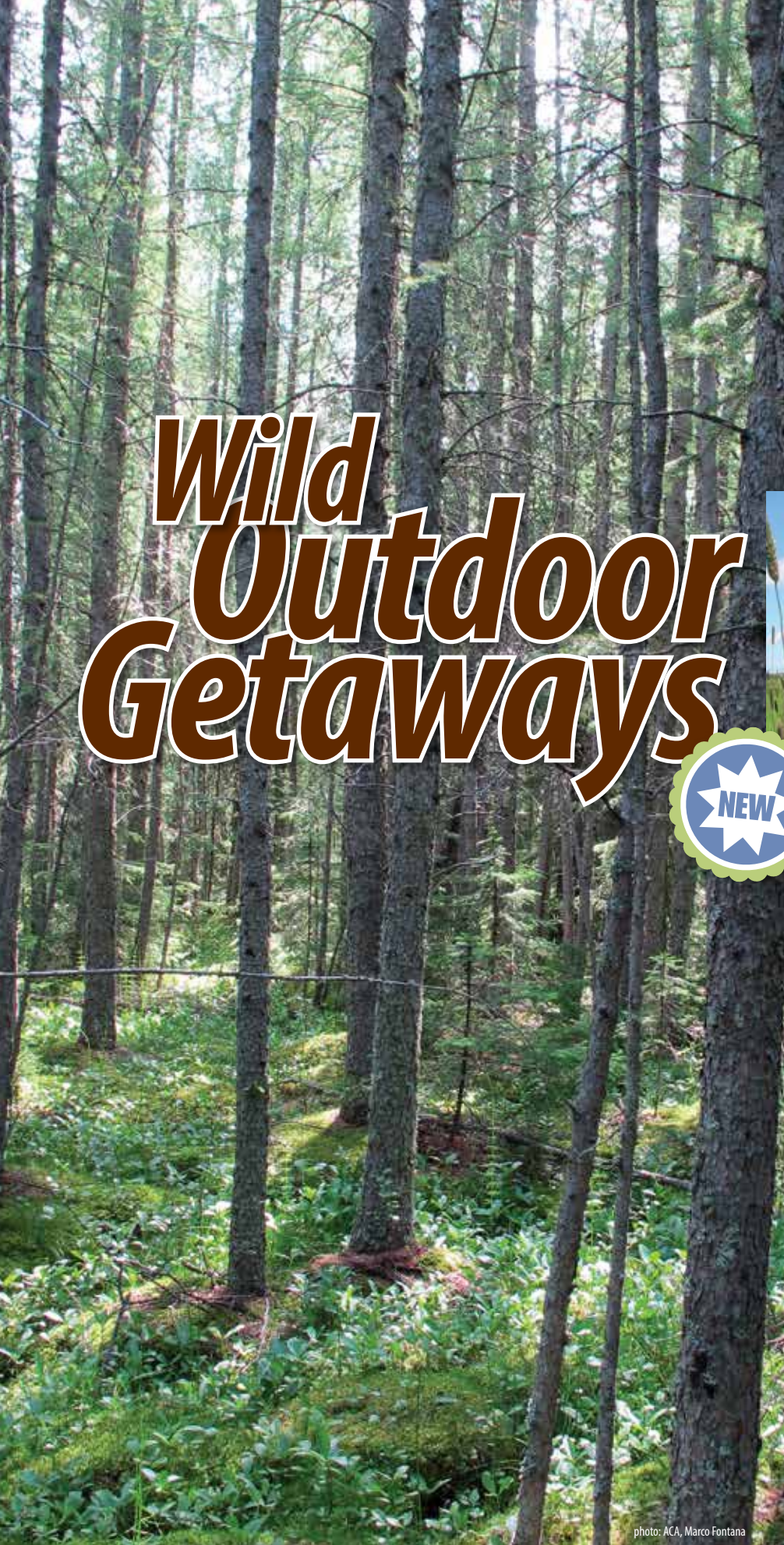


Did you know?

The tiger salamander (*Ambystoma mavortium*) is one of Alberta's two salamander species belonging to the Mole Salamander family (Ambystomatidae). The tiger salamander is larger than its relative, the long-toed salamander (*Ambystoma macrodactylum*), Alberta's other salamander species. ■



photo: Danna Shock



Wild Outdoor Getaways



► by Karen D. Crowdis

No reservations are required to take your free Alberta getaway. Three new destinations will feed your love of the outdoors. You could see some pretty cool wildlife along the way. Break free from cabin fever at these or any of the 746 plus great outdoor destinations found in the *Discover Alberta's Wild Side: Annual Outdoor Adventure Guide*.



photo: ACA, Marco Fontana

Larches



Gettin' boggy with it – Larches is teeming with wet and wild diversity. Rubber boots are recommended attire as forest gives way to boggy habitats, ideal conditions for ungulates like moose, mule and white-tailed deer. Adventurous voyagers could squish their way to possible viewing of rare Canadian toads through the cattails. The curious could pick some bittersweet buffaloberries, considered by some to be the next superfruit. Relatively untouched despite area development, this is a central Alberta gem.



Size: 148 acres

Site Partners: Alberta Conservation Association, Alberta Fish & Game Association and Western Sky Land Trust



Directions: From Sundre, head north on Highway 22 for about 18 km. Head east on Highway 587 to RR 5-1, travel north about 1.6 km to access the southeast corner of the site.



Check it out: Rare toads, other wildlife, wet and diversely forested landscapes, berry picking.

photo: ACA, Marco Fontana



Bull Trail



photo: Alberta Fish and Game Association

No plain prairie – Rolling grasslands suddenly break the flatlands, inviting visitors to explore these front ranges of the Cypress Hills within Bull Trail. Home to elk, white-tailed and mule deer, and several types of waterfowl, as well as at-risk species like the *Threatened* Sprague's pipit, wildlife viewing opportunities abound. The topographical mosaic includes a small spring-fed tributary that links it to Ross Creek and shouldn't be overlooked. Ideally located close to Cypress Hills Provincial Park and Medicine Hat, this is a "don't miss" attraction on any southern Alberta jaunt.



Size: 530 acres

Site Partners: Alberta Conservation Association, Alberta Fish & Game Association, Ducks Unlimited Canada, Government of Canada – Habitat Stewardship Program for Species at Risk, Pheasants Forever – Calgary and Chinook, and Wild Elk Federation

Directions: From Medicine Hat, travel east on Highway 1 past the Ross Creek Conservation Site, then travel south (~19 km) on Highway 41 towards Cypress Hills Provincial Park. Turn east on Secondary Highway 515 to Bull Trail, approximately 6.5 km. Turn south on Bull Trail for about 7 km to reach the northeast corner of the site.

Check it out: At risk species, native grass- and wetland, abundant wildlife, serene and scenic, waterfowl.



photo: ACA, Jon Van Dijk



Northern starflower

photo: ACA, Garret McKen

Northstar



Guided to the Northstar – A shining example of boreal forest habitat, this site boasts open areas, forest and wetlands to satisfy anyone's getaway desires. Populations of elk, white-tailed and mule deer, and moose share the richness of the region. Bring your pail as saskatoon berry picking is abundant. This parcel offers recreational opportunities in a tranquil setting, and visitors will enjoy the variety of terrain and wildlife viewing that makes Northstar a true escape destination.



Size: 955 acres

Site Partners: Alberta Conservation Association, Alberta Fish & Game Association and Suncor Energy Foundation



Directions: From Manning, travel south on Highway 35 for approximately 6.4 km, turn at Northstar (Twp Road 910) heading west and travel approximately 8 km. Turn south onto RR 243 and travel for 1.6 km. The site is located on the right side.



Check it out: Berry picking, forested, open and wetland landscapes with varied wildlife viewing opportunities. ■



Discover maps, driving directions and more to 746 Conservation Sites with the free *Alberta Outdoor Adventure Guide* app for iPhone. Access the Guide online at albertadiscoverguide.com. The website offers the same information as the app. Request a free hard copy at 1-877-969-9091.

Always refer to the Alberta hunting and sportfishing regulations.



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Can we do more and use less?



Our answer is Yes.

We're all part of something bigger. In the next 20 years the global demand for energy is expected to grow by more than one-third. So how do we find better ways to responsibly provide the energy we need so everyone can benefit from a healthy environment today and tomorrow?

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Thinking up a mulch more natural road.

When recent access needed to be built in a forested area, instead of cutting traditional 20-metre wide roads, we cut much smaller 10-metre roads. And then ‘paved’ them with mulch from the cut trees, reducing the footprint by as much as 50% and dramatically improving natural recovery.

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Commitment Runs Deep

