NATURE ALBERTA

MAGAZINE

SUMMER 2020
VOLUME 50 | NUMBER 2
NATURE ALBERTA

A COMMUNITY CONNECTED BY A LOVE OF NATURE

A Promise Betrayed: Alberta's Shifting Environmental Policy

Bull Trout Can't Get No Respect

Underground with Richardson's Ground Squirrels

Restructuring Eden

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Managing Editor Jason Switner
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The Magazine Editorial Committee, which consists of dedicated volunteers, who all have a passion for nature, lend their respective experience and expertise to developing editorial outlines, commissioning articles and reviewing/vetting article submissions for the magazine. The committee includes:

Lu Carbyn
Linda Howitt-Taylor
Kim MacKenzie
Valerie Miller
Richard Schneider

Content editor@naturealberta.ca
Subscriptions circulation@naturealberta.ca

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Nature Alberta
11759 Groat Rd NW
Edmonton, AB T5M 3K6
P. (780) 427-8124
E. info@naturealberta.ca

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About Nature Alberta
Alberta is home to incredible natural spaces comprised of beautiful and varied landscapes, and rich biodiversity reflected in our abundant and diverse flora and fauna. Across the province, natural history clubs and their members are engaging Albertans in the conservation and appreciation of this natural heritage. Nature Alberta represents a network of these natural history organizations in Alberta.

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FROM A PRESIDENT'S PERSPECTIVE

When I became Nature Alberta President in 2017 and began writing this column encouraging — or perhaps predicting — change, I had little idea of just how much change we would all experience, here in Alberta and around the world.

We have all been affected by the enormous disruptions of COVID-19 to our personal and business lives. We are navigating unfamiliar territory, and worry and wonder if our clubs and organizations will survive, as the ways we're used to enjoying and exploring nature together have changed as well.

The Board of Nature Alberta has embraced change at many levels: in the way we operate, and in the way we seek to cooperate and communicate with our members, clubs, and with similarly aligned organizations who also seek to preserve our natural heritage. For all the change the COVID crisis has wrought, it has also given us a reprieve of a kind — a period of time we are using to examine and implement strategies that will make us more responsive to our members and strengthen our ties with member clubs, to better serve our mandate to provide a unified voice for nature conservation across the province.

A dedicated core group of volunteers, some of whom are Board Members and some who are not, have stepped forward to assist Nature Alberta through an exciting shift in thinking about the way we do things. We spent much of the past year re-examining and rewriting Nature Alberta's by-laws and strategic plan to provide us with a map for moving forward.

We have a new but familiar Acting Executor Director in Richard Schneider, formerly our Vice-President, who has bravely taken on this administrative role on a temporary basis. We have welcomed an experienced, lively, and professional communications team to work with our Board communications volunteer team. Our staff member Zoe MacDougall remains as Program Coordinator of Nature Kids. Birds and Biodiversity Coordinator Kelsie Norton will be completing her urban nature assignment in October, which promises all kinds of surprises and pointers for those of us who live in urban areas (read more about it on page 3). Janet Melnychuk, our longtime bookkeeper, remains with us to assist Richard and our treasurer.

We are looking at ways to engage with you directly, in the hope that you will join us in exploring how we can best serve our members, as our members serve and learn from Nature herself.

In the meantime, I'm enjoying the interactions of the many creatures in my space. I've noticed more varieties than ever before. But I wonder if they are really more plentiful or if they are being shifted into shrinking spaces. I'm keeping my eyes open and my binoculars close at hand. How about you?

LINDA HOWITT-TAYLOR

Nature Alberta News

Board Opportunity — Nature Alberta is Searching for a Treasurer

If you have a background in business or accounting and a passion for nature, consider volunteering with Nature Alberta as our Treasurer. You will be part of a dynamic team helping to educate Albertans about nature and advancing the conservation of Alberta's wildlife and ecosystems. What better way to use your knowledge and skills to promote a good cause?

General accounting is handled by our bookkeeper. As Treasurer, your role will be to provide board-level oversight of Nature Alberta's financial affairs. This includes serving as a counter-signatory on expense payments as well as regularly reporting to the board on our financial position relative to the annual budget. You will also be responsible for overseeing the annual financial audit and preparing annual returns for Service Alberta and the like. There is also an opportunity to contribute to the growth of the organization by providing business and financial guidance for our programs and our capacity-building efforts.

Aside from the annual reporting, the time requirements are relatively low — typically a few hours a month. You would also need to be able to attend meetings outside of normal business hours, as is the nature of volunteer-run non-profit organizations.

If you are interested and would like to learn more or apply, please contact Nature Alberta President Linda Howitt-Taylor at president@naturealberta.ca

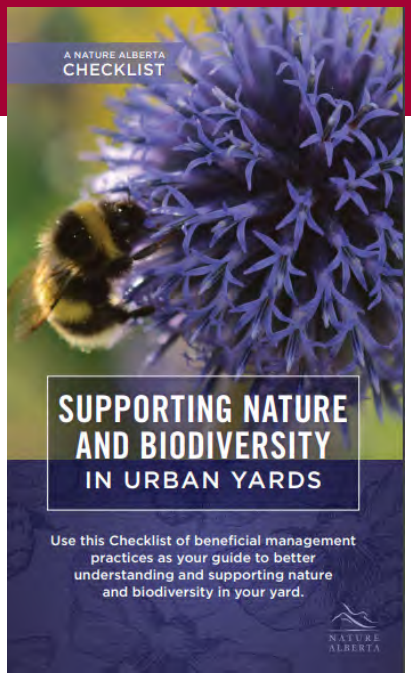
Supporting Nature in Our Own Backyards — Urban Nature Initiative

Habitat loss and fragmentation are the greatest threats to biodiversity in the world. As urban areas grow, we have a collective responsibility to support and provide habitat for Alberta flora and fauna. Nature Alberta firmly believes that nature has a purpose and a place within an urban environment. It doesn't have to be cordoned off into parks; we can support biodiversity right in our own backyards.

Feedback from the Keep Cats Safe and Save Bird Lives initiative in Edmonton provided insight into a knowledge gap that some homeowners have around backyard biodiversity. Graciously funded by the Edmonton Community Foundation, we were able to launch our new Edmonton-based pilot project, the Urban Nature Initiative (UNI).

The goal of the UNI is to inspire urban homeowners to take action in their yards, encouraging them to implement beneficial management practices (BMPs) that support nature and increase biodiversity. If homeowners are encouraged and share their story, it will create a ripple effect of positive benefits for biodiversity in Edmonton.

We are excited to exhibit the UNI's checklist, packed full of a variety of BMPs, good yard habits, and additional resources. This checklist will guide homeowners through short- and long-term goals and projects to support nature in their own yards. The booklet contains



advice on landscaping for biodiversity, attracting pollinators, even making bats welcome!

You can read the checklist booklet online and begin your own urban nature journey at: **bit.ly/uni-checklist**

To broaden the reach of this initiative, the UNI Coordinator is currently working directly with ten homeowners throughout Edmonton to create a demonstration site showcasing various projects from the checklist being put into action. This will culminate in the creation of a digital story that will delve into the homeowners' UNI experiences. We look forward to sharing this all with you in the coming summer months, so stay tuned!

Nature Kids — Family Nature Nights

Due to COVID-19 precautions, Family Nature Nights have been cancelled for this summer. In lieu of large gatherings, we will be posting resources on this summer's six themes for families to get out and do their own DIY nature nights. Check **facebook.com/NatureAB** on Wednesdays to join in the fun!

Rabbits and Hares

BY MYRNA PEARMAN

It has been my good fortune to have spent, over the past few years, some quality time in the company of each of Alberta's three native "bunny" species. All three species — which include two hares and one rabbit — have adapted well to human habitation, taking up residence in farmyards, towns, and cities across the province. Unfortunately, feral bunnies — domestic rabbits released into the wild by irresponsible pet owners — are causing serious problems in some areas of the province. Releasing domestic rabbits (or any other pets) into the wild is illegal, inhumane, unethical, and can be ecologically destructive.

Rabbits and hares belong to the Lagomorph family, a family that also includes the mountain-dwelling pika. One of the interesting characteristics of this family is that individuals produce two types of fecal pellets: dry and moist. The dry ones are expelled and left behind. The moist pellets, called cecotropes, are expelled but immediately re-ingested so remaining nutrients can be absorbed.

While all Lagomorphs share certain characteristics, such as huge hind feet, there are several traits that distinguish rabbits from hares. Baby rabbits (called bunnies) are born hairless and blind, whereas baby hares (called leverets) are born with fur, can see, and are mobile within an hour of birth. Hares tend to be larger than rabbits, and have longer hind legs and longer ears. Rabbits do not change colour over the seasons; hares change from brown in the summer to white in the winter. Rabbits tend to eat softer materials, while hares will readily dine on bark and twigs. Neither rabbits nor

Above and left: Mountain cottontails, Alberta's only true rabbits, in the snow.
MYRNA PEARMAN

Above: Snowshoe hare in summer coat. MYRNA PEARMAN

Left: Snowshoe hare leveret. MYRNA PEARMAN

hares keep a customary den, but both will find or dig out shallow depressions (called forms) for resting and birthing their young. Both will hide among and under rocks, outbuildings, hollow logs, and other covered spaces. When faced with danger, rabbits tend to freeze and/or run for cover, while hares usually try to run away and outmanoeuvre their pursuer. Finally, rabbits tend to be more sociable than hares and can often be found in the company of other rabbits; hares tend to pair up only to mate (or to play, as described below).

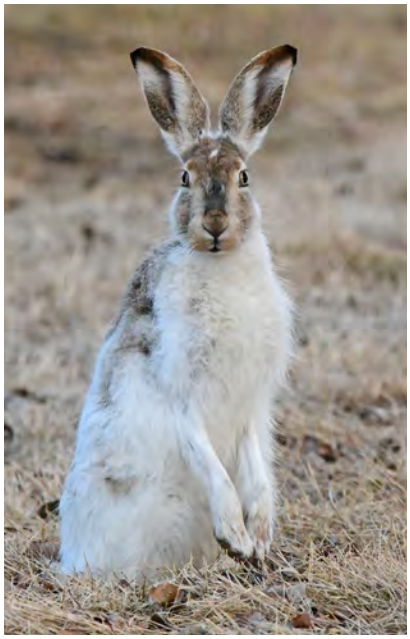
The only true rabbit in Alberta is the mountain cottontail. Despite its name, it is not actually found in our mountains. It is restricted to the prairie regions of the province, where it can be found in areas with sufficient brushy cover. It is interesting to see them in the winter, as their brown pelage contrasts starkly against a snowy white landscape. They can be seen in many parks and urban areas, but anyone with a burning desire to see or photograph these diminutive rabbits should consider a trip to Empress, Alberta, where a healthy population thrives in and around the village.

White-tailed jackrabbits are our largest hares and are widely distributed across the prairie and parkland regions of the province. They have found cities so much to their liking that university campuses, parks, and most urban neighbourhoods (even in large cities) now support large populations. The reappearance of bobcats in Calgary is no doubt linked to an abundance of jackrabbits. These hares are nocturnal, passing the daylight hours resting in shallow depressions hidden under vegetation. They can run up to 55 km/h and can leap up to five metres!

One of Alberta's most eloquent naturalists, the late Fred Schutz, told me a story (and wrote about his experience in his book *West of the Blindman*) about observing eight jackrabbits "playing" with each other one winter's night. He was returning home on a full-moon evening with his team of horses when he happened upon a small clearing where the hares were jumping about and chasing each other, apparently just for "fun."

Snowshoe hares are found across the province, in all but the southernmost prairie region. They are also found in

Snowshoe hare, seen here in its winter coat. MYRNA PEARMAN



Middle: White-tailed jackrabbit keenly listening. MYRNA PEARMAN

Bottom: White-tailed jackrabbit leveret tucked away under an outcropping. MYRNA PEARMAN

cities and towns. While they are most active at night, and at dawn and dusk, they will become more active during daytime in the breeding season. Their breeding season, which in Alberta occurs from March to August, is stimulated by the appearance of new vegetation. Snowshoe hares prevent predators from following their scent to the litter by approaching and departing the nesting site in a series of large bounds, sometimes even moving at right angles to their previous direction.

Over two hundred years ago, trappers observed that there was a close relationship between the population density of snowshoe hares and their main predator, the Canada lynx. These observations were subsequently confirmed by scientific study, although it is still not fully understood what drives the snowshoe hare population cycles and their synchrony across vast areas.

Ellis Bird Farm has supported a small population of snowshoe hares for the past several years. Thanks to our patient gardener, the relationship with them has been mostly peaceful. However, a non-toxic deterrent using cayenne pepper and garlic powder is required in the spring to keep them away from the most delicious plants. Our resident great horned owls help keep the hare population in check. There is always great delight when a tiny leveret appears, and it is interesting to observe them going about their lives. They are fun to photograph, especially when their predetermined colour change is out of sync with their environment; that is, when they are still white after the snow has melted. ■

Myrna Pearman is the Biologist and Site Services Manager at Ellis Bird Farm (ellisbirdfarm.ca). She can be reached at mpearman@ellisbirdfarm.ca

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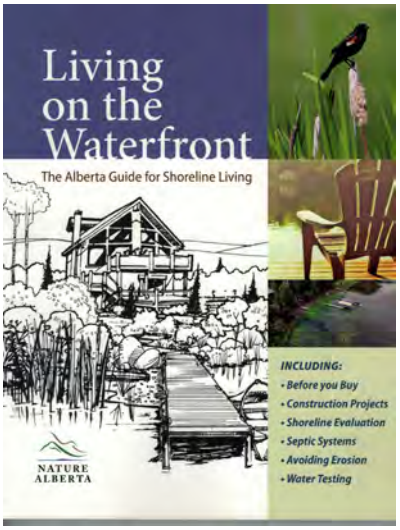

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Alberta's Bull Trout Need Our Respect — and Our Help

BY JENNIFER EARLE

Waiparous Creek. K. NEUFELD

Bull trout seem to be the Rodney Dangerfield of fish — they get no respect. They are the official provincial fish of Alberta, yet this distinction hasn't served them particularly well. They are listed as Threatened under both provincial and federal legislation. So how did we get here?

Bull trout are native to western North America and they are the only native char to historically occupy all the drainages of Alberta's Eastern Slopes.[1] In Alberta, they can grow to over 80 cm in length and 8 kg in weight — an impressive feat considering they live in cold northern waters.

One of my first encounters with bull trout was in the mid-1990s in the Smoky River watershed near Grande Cache. I'm a sucker for mountains and the combination of tenacious fish and jaw-dropping scenery drew me to this part of Alberta. I was working for an environmental consulting company at the time and bull trout were the primary species we encountered in most streams. We caught bull trout in spots where no fish had a right to be — above waterfalls, in turbulent alpine and subalpine waters, and in headwater streams where you could literally watch the stream's journey begin as a spring bubbling straight out of the ground. These are beautiful places on warm August days, but harsh as heck for most of the year. In many places, bull trout were the only species we caught and while they may not be the showiest of fish, they get the job done with a quiet competence and perfect design. I find that both fascinating and admirable.

I think bull trout are the most undervalued and misunderstood native fish in the province. If you heard your grandfather say, "We should kill them, they eat more valuable fish," you are not alone. Sadly, these attitudes originated over a hundred years ago and persist, in some circles, to this day. If you are not already a supporter, I hope to convince you that bull trout are a fish that deserve to be valued, protected, and restored to some degree of past exuberance.

Colpitts[2] provides a historical perspective of conservation policies in the early 20th century, particularly in relation to bull trout. These policies largely favoured the introduction, through stocking, of non-native trout species that were considered more desirable because they were supposedly more "handsome" and provided greater sport for anglers. These policies increased disdain for bull trout and also encouraged attempts to eradicate the species.

Unfortunately for the bull trout, they are readily caught by anglers because they are opportunistic feeders. They also have a late age at maturity (5–7

years), which means they are vulnerable to angling long before they can spawn. Although catch-and-release fishing has been mandatory in Alberta for this species since 1995, studies have shown that where angling effort or hooking mortality are high enough, even zero-harvest policies may not be enough to allow population recovery.[3]

Bull trout aren't immune from other risks in the watershed either. Water quality (e.g., sediment and phosphorus inputs) and barriers to fish passage (e.g., dams and culverts) are the most common key threats limiting bull trout populations.[4] As an example, road density, which leads to higher habitat fragmentation, sedimentation, and increased public access, is frequently correlated with reduced bull trout occurrence.[5]

To understand the impacts of habitat fragmentation, it helps to know that bull trout have three main life history types: stream resident (residing within the tributaries in which they were reared), fluvial (spawning in tributaries but residing in larger rivers), and adfluvial (spawning in tributaries but residing in lakes or reservoirs). The migratory nature of these fish demonstrates the diversity of habitat types, scale of movement, and connectivity that is required to carry out their life cycle.

Some of the reasons I find bull trout so interesting also explain why they are in trouble. Remember when I mentioned that some people believe bull trout are not a handsome fish? I disagree but, as they say, "beauty is in the eye of the beholder." As part of salmonid identification testing we did in 2005–2006, bull trout was the species most often incorrectly identified by anglers — 54% of the time.[6] This surprised me, since bull trout are characterized not by the presence of consistent distinctive features, but rather by a lack thereof. For example, they lack the black spots or dark markings on the dorsal fin and body found on other char and trout species, and lack the red throat slash of the cutthroat trout. It appears that this lack of distinctive features confuses people into thinking the bull trout looks a little bit like everything else. This makes it more susceptible to unintentional harvest as it may be mistaken for a fish that can be legally harvested.

One of the most common misconceptions I hear about bull trout is that they eat more "valuable" fish, and will cause the complete demise of our native west-slope cutthroat trout, another species at risk in the province. However, Nelson and Paetz[7] suggest that both bull and cutthroat trout used the same routes to recolonize Alberta's waters from their glacial refugia in the last Ice Age. I like to picture them fin to fin, boldly swimming forward to this new and exciting landscape. Flights of fantasy aside, this means that both species — and indeed many others — have coexisted for a long time. Getting eaten by each other has never been cited as a threat to the recovery of either species. In fact, apart from hybridization, cutthroat trout are faced with the same major threats as their long-ago travel partners.

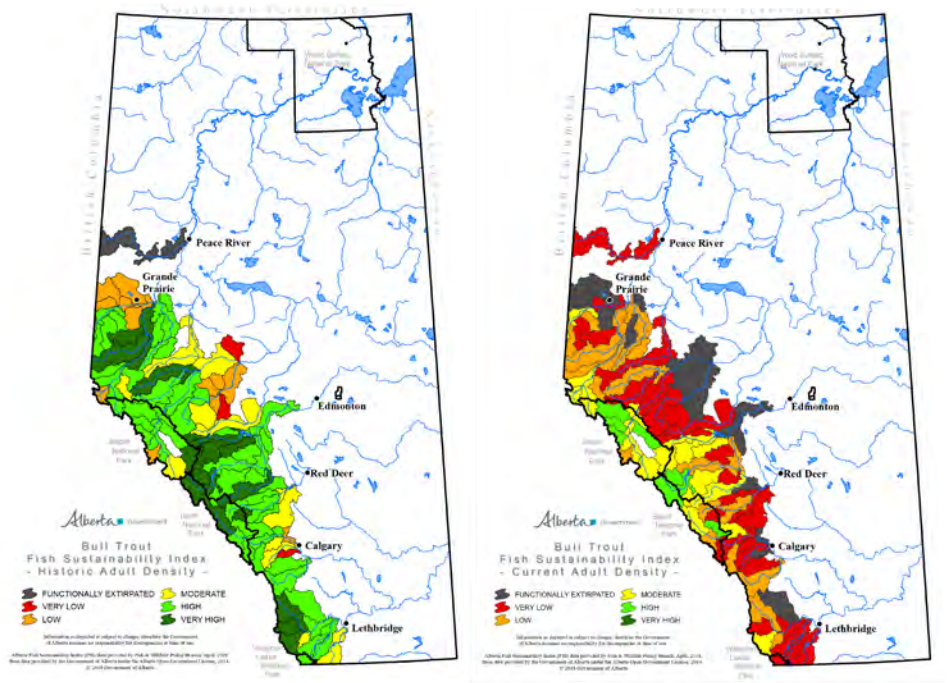
Bull trout are opportunistic foragers. Juveniles commonly feed on aquatic insects, while adults will eat fish as well as benthic invertebrates. Their relatively large mouth enables them to consume prey up to 50% of their own length. In 2011, we did a netting survey in the Kananaskis Lakes and found that a large proportion of the adult bull trout were consuming a wide variety of invertebrate species. The number of bull trout that had evidence of fish remains in their stomachs was comparatively low. It was a fascinating exercise; a little gory, but it opened my eyes to the variety of diet and the ability of this fish to self-regulate by distributing the prey items across different taxa in the same lake.

Juvenile bull trout showing lack of black spots or markings on body or dorsal fin. J. STELFOX

This brings me to what prompted me to write this article in the first place. Did you know that our bull trout can live to a ripe old age? Previous data from Lower Kananaskis Lake's adfluvial population revealed a substantial and continuous decline in bull trout numbers from 1954 to 1992. It was thought that the primary reason for this was overfishing[8].

To support recovery efforts, studies were undertaken from 1991–2002[9] that involved marking bull trout with external numbered tags. Anglers continued to call us for years afterwards with reports of catching these tagged bull trout. We were able to look up the tag number and let them know when it had been tagged, how much the fish had grown, and its approximate age.

Several years ago, those calls stopped — until December 2019. An angler ice fishing on the lake caught a tagged fish and forwarded the information to us. I thought it had to be a mistake as it implied a fish much older than com-



Comparison of the historical (left) and current (right) Fish Sustainability Index adult density scores (2013) for bull trout populations (HUC 8) range in Alberta.

monly reported for the species. While some reports suggest a maximum age for bull trout of 20 years (with a record of up to 24 years in British Columbia[10]), 10 to 13 years appears to be more common across their range. Based on previous tag returns we knew we had bull trout living in the lake for 16 to 20 years, but was an even more venerable specimen possible?

From our records, we know this fish was mature (i.e., in spawning condition) when first caught and tagged in 2000, so it was likely at least five years old at that time. Add the time until it was caught in 2019, and we have a fish that is at least 24 years old, perhaps older. To put that in perspective, this fish was probably hatched a few scant years after the back-to-back World Series wins of the Toronto Blue Jays (sympathies to present-day Jays fans).

What We Can Do To Help

There are a number of ways we can help alleviate threats and promote recovery for this species. You are doing one of them right now. By learning more about Alberta's native trout, you can help spread the word and be bull trout boosters!

In the case of Lower Kananaskis Lake, changes to address overharvest, including closing the spawning tributary to angling and implementing mandatory catch-and-release fishing, made a substantial difference towards recovery of this population. As an angler, you can help by knowing your species so as to properly identify your catch, following safe handling and release practices (such as those outlined at keepemwet.org), and by avoiding targeting bull trout in watersheds where populations are at high risk.

As an individual, you may not think there is much you can do to address large landscape threats such as sedimentation and man-made barriers to fish passage. As part of a group, however, you can get involved in stewardship initiatives that help champion these issues and effect change at a local scale through volunteer projects. There are many worthwhile provincial and local watershed groups that would welcome your assistance.

I hope I have convinced you that native fish species such as bull trout have value. Their presence (or absence) tells us something about the health of our watersheds. Our native species are an important part of our heritage and fundamental to what makes Alberta's natural resources unique. We may have a legal obligation to restore species at risk and maintain biodiversity, but I would argue we also have a moral one. Please give our bull trout the respect they deserve! ■

Top: Upper Ghost River JENNIFER EARLE

Bottom: K. NEUFELD

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Jennifer Earle has spent a lifetime being fascinated by all manner of creatures living in and near water. She is a professional biologist and currently works as a Fisheries Biologist for Alberta Environment and Parks.

To Inspire and Engage in Environmental Education

BY VALERIE MILLER

Testing day at the Alberta Envirothon starts early. For students, it's a scramble of last-minute prep. For volunteers, it's setting up the testing stations scattered around the Hinton Training Centre and preparing for the rush of teams. Rain or shine — sometimes even snow — the day starts with the blast of an air horn.

The Envirothon is an annual international competition for high school students focused on the environment. It includes a series of written tests, hands-on skills, and a team presentation testing their knowledge on five key topics: soils and land use, aquatics, wildlife, forestry, and a special topic that changes each year. Past topics have included urban/community forestry, invasive species, and agriculture and the environment.

Environmental science is limited in most high school curricula, touched on tangentially, but often lacking a focus. Envirothon encourages students to work with each other and experts in their communities and schools to study the environment, how we use it, and how we can protect it. One of the primary goals of the Alberta Envirothon is to develop dedicated, knowledgeable, and skilled citizens who can act as stewards of the environment. As Kerri O'Shaughnessy, Riparian Specialist at Cows and Fish and Envirothon board member since 2014, explains: "I got involved to share knowledge with up-and-coming decision-makers and land users — the students — about riparian areas, their value, and how human decisions can impact the natural benefits they can provide for current and future generations."

Envirothon also builds a community. Students can find others in their school, their province, and across the world who are just as passionate about the environment as they are. It does the same for the organizers. Brian Lambert, Reclamation and Remediation Policy Specialist at Alberta Environment and Parks, got involved ten years ago when he was recruited to replace the soils expert who was leaving. "I was pretty much thrown into the deep end, but everyone with Alberta Envirothon was really friendly and supportive from the start. It's been a good way to network and gain additional expertise from avid folks who are inspired and knowledgeable."

Envirothon began in 1979 when the Pennsylvania Soil and Water Conservation Districts created an "Environmental Olympics." The goal was to encourage high school students to have

Students hard at work on testing day. TREVOR NICHOLS

Participants and volunteers of the 2019 Alberta Envirothon, where the current issue was Agriculture and the Environment: Knowledge and Technology to Feed the World. TREVOR NICHOLS

a greater interest in the environment, conservation, and natural resources management. Later shortened to Enviro-Olympics, the event's popularity grew quickly and soon spread to neighbouring states. By 1988, it was renamed as Envirothon and the first multi-state national competition took place. Four short years later, the first Canadian team, from Nova Scotia, joined. From its humble beginnings to now, over 10 million people have participated in the Envirothon, with over 50,000 people from 4,000 schools involved each year. Now known as the NCF (National Conservation Foundation)-Envirothon, it is a not-for-profit focused on delivery of environmental education for high school students internationally.

In Alberta, the Envirothon began in 1997 as a regional endeavour focused in the western part of the province. In 2009–2010, a board was established to run the Alberta Envirothon and it was designated a not-for-profit. Up to 13 teams have participated in the annual competition, held in May at the Hinton Training Centre since 2013. Teams have come from across the province, as well as Saskatchewan and the Northwest Territories.

More than just a competition, the Alberta Envirothon is a training program. Students participate in a series of hands-on and lecture-based training sessions, on topics as diverse as how to hand-texture soil; identifying animal pelts, prints, and scat; as well as the ever-changing annual theme. At a trade show held over the multi-day event, students get to meet experts in their fields, learn about potential career and training opportunities, and explore their futures. And we can never forget the fun: the students enjoy improv shows, hypnotists, campfires, and just playing around outside — building friendships and memories that last a lifetime.

The most recent Alberta Envirothon was held May 23–24, 2019. Most 2020 Envirothon competitions were

cancelled due to COVID-19, however volunteers and students are anxious to return. We have already started planning for 2021 and are working to provide content and training opportunities online until we can again gather and explore the environment that we all love.

To get involved with the Alberta Envirothon, as a participant, funder, or board member, contact **AlbertaEnvirothonOfficial@gmail.com.**

Valerie Miller, PhD, has been involved with Envirothon since her own high school days in Ontario as a participant. After moving to Alberta for her PhD in land reclamation, she became a member of the board of Alberta Envirothon in 2014. Now the Outreach and Engagement Coordinator for Future Energy Systems and the Land Reclamation International Graduate School at the University of Alberta, she champions the value of environmental awareness programs every day.

Underground Life

Did you know that Richardson's ground squirrels spend most of their life hibernating?

BY GAIL MICHENER

When I came to Canada from Australia years ago, I had never heard of Richardson's ground squirrels, not even by their more vernacular name of "gopher." To me, these prairie residents were exotic animals, and I wanted to know about them.

I soon learned that Richardson's ground squirrels are regularly seen above ground during daylight hours for seven to eight months of the year, but rarely from late October through late February, generating the perception that they hibernate for a four-month period encompassing winter. However, that perception is only partially accurate. Long-term studies reveal that juvenile males do indeed hibernate for four months, but their sisters, mother, and father all spend seven to eight months in hibernation. Winter does not last that long, so what accounts for such extraordinarily long hibernation seasons?

Teasing apart who hibernates when requires daily censusing of individually recognizable animals. Richardson's ground squirrels can tell each other apart by a combination of odour and behaviour, but to us they all look alike. With no natural identifying features comparable to whisker patterns in lions or dorsal fin shape in orcas, I depend on a two-step identification system for my studies. A uniquely numbered earring in each ear provides lifetime identification, but the numerals are too small to be readable at a distance. A unique mark dyed on the fur facilitates identification for observational purposes, but requires renewal after each moult. In combination, these techniques ensure that I always know who is who and which individuals are present or absent.

Daily censuses quickly reveal four groupings of squirrels with dramatically different times of entry into hibernation. The first to hibernate are adult males, followed by adult females about two weeks later. Juvenile females do not hibernate for another five to six weeks, and a further two months later the juvenile males finally enter hibernation. Astonishingly, the majority of ground squirrels start hibernation when temperatures are increasing over summer.

Left: Deep in torpor. This torpid ground squirrel is rolled into the typical hibernation posture. GAIL MICHENER

Above: Ready to be censused. This adult female has earrings and a dye mark that uniquely identify her so she can be censused daily for presence or absence. GAIL MICHENER

Ready to hibernate. Gail Michener holding an obese, ready-to-hibernate adult male weighing a near-record 710 g. He immerged two days later on 21 June and emerged from hibernation the next year on 12 February weighing 360 g. GAIL MICHENER

Sex determines onset of hibernation. Age at commencement of hibernation for these three 30-day-old siblings depends on their sex. Females start hibernation at 120–130 days old, but their brothers start at 180–200 days old. GAIL MICHENER

From 25 years of censusing a population of Richardson's ground squirrels near Lethbridge, I calculated the average dates that are most representative of the onset of hibernation in a typical year in southern Alberta. These dates are June 22 for adult males, July 4 for adult females, August 10 for juvenile females, and October 15 for young males. Calendar dates vary somewhat within cohorts, across years, and with geographic location, but everywhere in every year, adult males, adult females, and juvenile females enter hibernation in the summer months.

Hibernating as early as June seems preposterous. To be certain that summer-immerging animals were really going into hibernation, I radio-collared ground squirrels with units that emit a signal indicative both of underground location and body temperature. Within one or two days of cessation of above-ground activity, body temperature declines dramatically from the usual mammalian value of 37°C to closely match deep soil temperature. Typical body temperature of torpid squirrels in late June and July is 15–18°C, a temperature at which all bodily functions are very slow and the squirrel is inactive. The soil, and consequently the ground squirrel, grows gradually cooler through late summer, autumn, and into the depth of winter. Eventually body temperature during torpor levels off to near 0°C until emergence in spring.

Although the overall trend is for body temperature to decline steadily with soil temperature during hibernation, an important — and still not fully understood — phenomenon found in all hibernating ground-dwelling squirrels is for body temperature to rise to 37°C for about 12 hours every two to three weeks. Collectively these brief rewarming events account for only 5–10% of hibernation; the remainder of the time the squirrel is in cold torpor. Squirrels mostly sleep during the short inter-torpor intervals; they do not eat or leave the hibernation chamber.

Location data from radio-telemetry reveals that every individual hibernates alone in a dedicated site that is prepared in advance but reserved for hibernation. Because hibernacula are not reused, I can excavate and map architecture post-hibernation without depriving the owner. The hibernaculum system consists of a grass-lined spherical chamber 22–25 cm in diameter located about 55 cm deep. The chamber has a single opening connected to a tunnel that splits. One portion angles downward to a dead end and serves as a drain. The other portion curves upwards to about 12–15 cm below the surface, ending in a vertical "chimney" that connects to the surface. This connection is blocked with soil prior

Federal Government Bans Strychnine Use to Kill Richardson's Ground Squirrels

BY LU CARBYN

Under the authority of the Pest Control Products Act, Health Canada is cancelling the registration of strychnine used to control Richardson's ground squirrels. The ban was announced in March 2020 and will be implemented in stages, allowing retailers and farmers till 2023 to use up existing supplies.

Use of this poison has always been controversial. Strychnine was first registered in Canada in 1928; however, its use actually goes back to 1912. It was banned in 1993 and brought back for controlled (registered) use in 2007.

The use of this rodenticide has been associated with dramatic declines of Richardson's ground squirrels within grassland ecosystems all over Alberta and Saskatchewan. Moreover, the ecological effects of this poison extend far beyond the ground squirrels themselves. Ground squirrels are prey for a wide variety of prairie species, including badgers, weasels, and a variety of hawks. Removal of such a critical food source has ripple effects throughout the ecosystem. Ground squirrel burrows also provide a refuge for many species, such as burrowing owls, salamanders, voles, and many invertebrates.

Another problem with the use of strychnine to control ground squirrels is the poisoning of non-target species. This was the main reason cited by Health Canada in its decision to enact a ban. A study by the Saskatchewan Ministry of Agriculture found that one ground squirrel carcass was found on the surface of a treated site for every 15 burrows that were baited.[1] Analysis of the carcasses showed that 73% tested positive for the presence of strychnine, presenting a danger to other species.

Many of the species affected by strychnine use, either through the reduction in ground squirrel populations or through indirect poisoning, are species at risk. These include the swift fox, ferruginous hawk, burrowing owl, and long-tailed weasel. The use of strychnine to poison ground squirrels is incompatible with the recovery of these species.

The main source of opposition to the ban is the agricultural community. The Canadian Cattlemen's Association has fought hard to promote the continued regulated use of strychnine. So have the crop industries. The Departments of Agriculture in Alberta and Saskatchewan have also voiced concerns about large potential losses to producers if ground squirrel populations are not controlled.

As is often the case in our modern world, we are at a crossroads of popular opinion. Some view elements in nature in a negative way, particularly when economic returns are affected, while others see nature and biodiversity as worthy of protection. The Richardson's ground squirrel is a species that, more than any other, symbolizes that divide. ■

1. Health Canada, 2020. Re-evaluation Decision: RVD2020-06, Strychnine and Its Associated End-use Products (Richardson's Ground Squirrels)

Lu Carbyn is an adjunct professor at the University of Alberta, a retired Canadian Wildlife Service biologist, and past president of Nature Alberta.

to beginning hibernation, completely entombing the hibernating squirrel.

Hibernation ends when the squirrel terminates torpor, excavates the route to the surface, and begins daily above-ground activity. The pattern of emergence from hibernation is simpler than that of immergence. Just two groups are identifiable. Males emerge first, with no distinction between older males that started hibernation in late June and young males that entered hibernation four months later in mid-October. About 15–20 days after male emergence, all females appear above ground more or less simultaneously, regardless of age. The typical calendar dates for emergence of males and females are February 22 and March 11, respectively.

Putting all the immergence and emergence dates from my southern Alberta population together, we can calculate the typical lengths of the active and hibernation seasons. Adult males and adult females have an active season of 115–125 days and a hibernation season of 240–250 days. Regardless of sex, adult Richardson's ground squirrels spend two-thirds of their life hibernating.

In contrast to adults, durations of the active and hibernation seasons of juveniles differ greatly by sex. Juvenile females first enter hibernation at 120–130 days old, but their brothers wait until they are 180–200 days old. Hibernation lasts for 205–220 days

for young females, accounting for two-thirds of the first year of life. For young males hibernation lasts only 120–140 days, about 40% of their first year.

Why do most Richardson's ground squirrels spend the majority of their life in hibernation and why does each cohort have a different schedule?

The architecture of the hibernation system is a clue to the advantages of lengthy hibernation seasons that last longer than winter. Once interred underground in the closed system, Richardson's ground squirrels no longer need to be wary of aerial predators such as Swainson's hawks, surface predators such as coyotes, or underground predators such as long-tailed weasels. They are in a stable environment safe from all disturbances except badger predation, which can take a heavy toll on hibernating squirrels but only occurs about once or twice a decade. In the absence of badgers, 90% or more usually survive the hibernation season. An unintended benefit of underground seclusion is that hibernating ground squirrels are also safe from most control methods used by landowners.

The unifying factor that explains the four-month span of hibernation onset is the timing of the most energetically demanding period for each group: mating in March for adult males, lactation in April for adult females, growth until July for juvenile females, growth until September for juvenile males. When energy is no longer required for reproduction or growth, the rule is: fatten up and hibernate as quickly as possible. Why? Because hibernation offers the greatest security.

Nature obligingly provided me with a natural experiment that tests the notion that fattening to prepare for hibernation occurs as soon as there is no other large energetic demand. A few adult females experience reproductive loss; compared with mothers that wean a litter, those litterless females fatten and immerge in late June, in synchrony with adult males.

The energetic-demand hypothesis accounts for the four-month variation in immergence dates, but what accounts for the difference in emergence dates between sexes? Males use that two-week period to build up their body weight and strength and become fertile, all in readiness for the rigours of male-male competition for mates, which begins as soon as females emerge from hibernation.

Richardson's ground squirrels are not unique among ground-dwelling squirrels in having several age and sex cohorts on different timetables, but they are exceptional in the extent of asynchrony. As a consequence, the only time of year when all Richardson's ground squirrels are simultaneously visible is the six- to eight-week interval after litters emerge from the natal burrow in early May and before adult males immerge into hibernation in late June. Although we cannot readily distinguish a given squirrel's age or sex at a distance, familiarity with the underground schedule provides clues to the knowledgeable observer as to who is active above ground. ■

In the hibernaculum. This 3-year-old female died of natural causes during hibernation. Her underground location was known from radio-telemetry. She is in the typical posture of an animal in cold torpor. GAIL MICHENER

Gail Michener received her B.Sc. from the University of Adelaide, Australia, and her PhD from the University of Saskatchewan. Aside from a couple of years teaching in Ghana, Gail has devoted her career to studying Richardson's ground squirrels, mostly adjacent to her husband's pedigreed seed farm in southern Alberta, while a faculty member at the University of Lethbridge.

Making Sense of Recent Shifts in Environmental Policy — And What To Do About It

BY RICHARD R. SCHNEIDER

Twelve years ago, Alberta had an epiphany. We came to understand that the future we were constructing was not the future we wanted to live in. This idea was crystallized in a groundbreaking document called the *Alberta Land-Use Framework*, which contained the following preamble:

> What worked for us when our population was only one or two million will not get the job done with four, and soon five million. We have reached a tipping point, where sticking with the old rules will not produce the quality of life we have come to expect. If we want our children to enjoy the same quality of life that current generations have, we need a new land-use system.[1]

A Promise Made

The *Land-Use Framework* was the culmination of more than a decade of effort involving a wide range of stakeholders, land managers, planners, and researchers. A landscape modeling effort, led by Brad Stelfox, was a pivotal contribution. It allowed stakeholders and managers to understand the future consequences of existing land-use practices and to explore alternative paths.

The *Land-Use Framework* formally acknowledged that "our watersheds, airsheds and landscapes have a finite carrying capacity." By analogy, rather than seeing the land as an all-you-can-eat buffet, as we did in the past, we saw a pie. The *Land-Use Framework* was a guide for dividing this pie in a balanced and fair way to achieve economic, environmental, and social goals — the so-called triple bottom line.

The *Land-Use Framework* also captured the idea of working toward a desired future through regional planning rather than simply accepting the unintended and

unhappy consequences of unstructured development. In a finite landscape, we can't "have it all." But we can make optimal choices by identifying trade-offs at an early stage and dealing with them proactively. This is particularly important for managing the effects of cumulative industrial impacts, which are not easily unwound once ecological tipping points are reached. Planning also provides the opportunity for integrating competing viewpoints in a structured and constructive way.

In practical terms, the *Land-Use Framework* divided the province into seven regions and established guidelines for developing integrated plans within these regions (Fig. 1). It called for the implementation of a cumulative effects management approach, with defined limits on the effects of development on the air, land, water, and biodiversity of the region. Within these limits, industry would be encouraged to innovate in order to maximize economic opportunity. It also called for extensive consultation in the development of these regional plans.

In summary, the *Land-Use Framework* embodied a promise. With government providing leadership and support, we would work together to achieve the best possible outcomes for Albertans, both current and future, by balancing economic, environmental, and social objectives within the limits of a finite landscape.

A Promise Deferred

The *Land-Use Framework* was released in 2008 and the first regional plan, involving the Lower Athabasca Region, followed in 2012. This initial plan was intended to serve as a template for future plans, which were expected to follow in quick succession.

Because the Lower Athabasca Region contained most of Alberta's oilsands deposits, considerable planning had already been done, giving the planning team a running start. Nevertheless, the intention to tackle fundamental trade-offs was never realized. In the end, the Lower Athabasca Regional Plan became a "plan to plan." For example, it deferred the management of air, water, and biodiversity to a set of future management frameworks that would set targets for selected indicators and established triggers for proactive intervention. In other words, the difficult bits were kicked on down the road.

The notable exception to this pattern of decision deferment was the identification of new protected areas. In an effort to offset environmental damage arising from oilsands development and other industrial activity in the southern half of the planning region, several new protected areas were identified in the northern half of the region, mostly in lands adjacent to Wood Buffalo National Park. When these sites finally received legal designation in 2018, the combination of new and existing sites formed the largest contiguous boreal protected area in the world. This stands as a notable achievement of the planning effort.

Management frameworks for air quality and for the quality and flow of water in the Athabasca River were quickly developed, drawing on preliminary frameworks that were already in existence. The frameworks for biodiversity and cumulative effects did not fare as well. Like a car running out of gas, these planning initiatives sputtered on for a bit and then eventually ground to a halt.

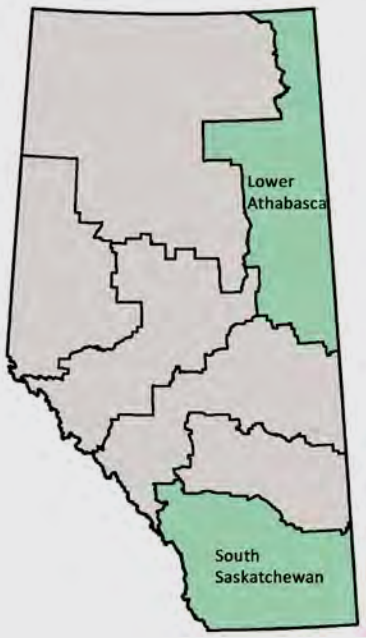


Fig. 1. The *Land-Use Framework* divided the province into seven planning regions. Regional plans have only been completed for two regions, shown in green.

All that was accomplished was a draft framework of biodiversity indicators. The difficult task of identifying biodiversity targets that balanced regional environmental and economic goals was never addressed. Nor was a management plan for cumulative effects ever developed, despite the explicit commitments and deadlines in the Lower Athabasca Regional Plan.

As for the rest of the province, the only other plan to be completed was for the South Saskatchewan Region, in 2014. Like its northern counterpart, it was again a "plan to plan" that deferred difficult trade-off decisions to future management frameworks. Work on a biodiversity framework for the region was started but never completed.

A Promise Betrayed

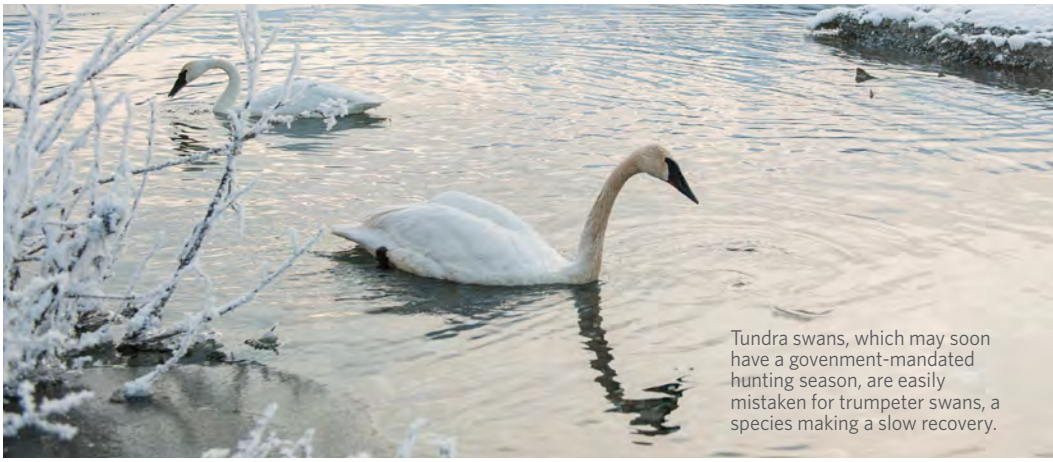
When the NDP came to power in 2015, many believed their commitment to environmental protection would manifest as renewed attention to regional planning. It didn't happen. The regional planning process remained in limbo throughout their tenure. In fact, when the NDP launched habitat protection initiatives in northwest Alberta and in the foothills (i.e., the Bighorn), they completely bypassed the regional planning process.

The election of the UCP in 2019, marked an abrupt change. The new government launched a virtual tsunami of policy changes related to environmental management. Land-use planning is now no longer in limbo — it is in full-scale retreat. The key changes are as follows:

1. **Removing parks.** In a press release titled "Optimizing Alberta Parks," the government announced the removal of 164 parks from the Alberta parks system. The list included 12 provincial parks — three of which face complete closure — and nine natural areas. The removal was characterized as a cost-saving measure; however, the $5 million in expected savings amounts to just 0.009% of the provincial budget — an essentially inconsequential amount. Moreover, while the establishment of the parks system entailed decades of effort and extensive public consultation, the decision to remove parks from the system involved no public consultation whatsoever. Had the government spoken to Albertans, they would have discovered that 69% were opposed to the closures.[2]
2. **Selling public lands.** From a conservation perspective, the retention of public lands is sacrosanct. These lands are our natural capital, held in trust for future generations. Moreover, it's not replaceable — we can't make more land. Once public land is sold, decisions about how it is managed fall to the private owners. In theory, measures to maintain biodiversity can be mandated through government regulations. But in practice, this rarely happens, even when the habitat of endangered species is involved. The Kenney government seems unconcerned with these issues and is instead reviving attitudes prevalent in the 1980s, where the economic potential of land is the only metric that matters. This has manifested in the promotion of Crown land sales in the Peace Country and in the southern prairies. These land sales are occurring without public consultation or even notification.
3. **Increasing forest harvesting.** In a news release on May 4, 2020, the government announced a 13% increase in annual allowable cut across Alberta's forests. The title of the announcement was "Increased access to fibre helps protect jobs." Displaying a mastery of political doublespeak, the release also stated, "When done sustainably, forest management can be used to help restore critical wildlife habitat over the long term." There was no examination of the ecological effects of the increase in forest harvesting and there was no public consultation about the changes.
4. **Rescinding the Coal Policy.** The Rocky Mountains and adjacent foothills are Alberta's ecological crown jewels. This is one of the few remaining places where large mammal communities remain intact. Recognizing the special nature of this region, the Alberta government enacted the Coal Policy in 1976 to maintain its integrity. Four management zones were created, describing different levels of environmental sensitivity and tailored restrictions on development. On June 1, with no public consultation, this policy was rescinded. Open pit mines will now be permitted in 1.4 million hectares of environmentally sensitive Category 2 lands, where they had previously

been prohibited. Robin Campbell, president of the Coal Association of Canada, estimates there are "at least a half a dozen" companies currently looking at developing mines on lands where it would have been previously prohibited and "there will be more."[3] According to the government, the Coal Policy was no longer required "because of decades of improved policy, planning, and regulatory processes."[4] The reality is that we have had decades of false starts, but little meaningful progress in planning within the region.

5. **Reducing environmental oversight.** The dismantling of environmental oversight is also evident in the recently announced Bill 22, the Red Tape Reduction Implementation Act. The idea underpinning this act is that industrial development is being hindered by unnecessary rules. According to Minister Grant Hunter, the goal is to speed up the process and "take politics out of the regulatory decision-making process."[5] But of course, land-use decision-making is inherently political, as it involves navigating trade-offs among competing societal objectives. Much of the "red tape" the government is keen on sidestepping represents constraints that were put in place to balance economic and environmental objectives. With this act, the government is signaling its rejection of the triple bottom line as a guiding principle and is instead reverting to a narrow focus on development at any cost.
6. **Hunting cranes and swans.** Sandhill cranes and tundra swans have never been considered game species in Alberta. Yet, the Minister of Environment and Parks, Jason Nixon, recently asked his department to look into establishing hunting seasons for both species.[6] The danger here is that sandhill cranes are easily mistaken for whooping cranes and tundra swans are easily mistaken for trumpeter swans. The slow, painstaking recovery of whooping cranes and trumpeter swans may therefore be jeopardized. Given the lack of broad public support for this initiative, or even strong demand within the hunting community, why is the government pursuing this? According to Hugh Wollis, a retired Alberta Fish and Wildlife biologist, the demand for a hunting season is being driven mainly by outfitters eager to serve their U.S. clientele. It would appear that a small but effective lobby is overriding the broad public interest, which the minister has made no attempt to gauge.



Tundra swans, which may soon have a govenment-mandated hunting season, are easily mistaken for trumpeter swans, a species making a slow recovery.

Making Sense of It All

Land-use policy changes in Alberta over the past 15 years can be divided into three distinct phases.

In the first phase, a broad range of stakeholders became increasingly concerned about the cumulative effects of unmanaged development. These stakeholders included not only environmental advocates but also prominent industrial players who saw that their social licence to operate depended on sustainable industrial practices that balanced economic, environmental, and social objectives. It was clear to everyone that no individual company or sector could tackle this issue independently. What was needed was a common set of land-use objectives and a system of integrated planning.

As the issue rose to prominence, the government became engaged, and when Ed Stelmach was elected as premier in 2006, regional planning became a cross-ministry priority. Under Stelmach's direction, extensive public consultations about land-use objectives took place, leading to the paradigm shift described at the beginning of this article.

The defining features of this first phase of policy change were concern and support from a broad range of stakeholders for tackling cumulative effects and a government that was willing to listen and take action. In short, the issue had political momentum and a champion.

The second phase of policy change began during the final stages of the development of the *Land-Use Framework*. During this period, several factors conspired to hinder the regional planning process and eventually bring it to a halt. To begin, the scope of the process was allowed to expand too broadly. What began as an initiative to integrate industrial activities and manage cumulative effects became a catch-all for everything from economic diversification to providing recreational opportunities. As a result, the process became bogged down in complexity, leading to the deferment of key decisions.

The initiative also struggled against internal government divisions and resistance to change, particularly from the proponents of economic development. Moreover, the governance system needed for integration at the regional scale was lacking. Finally, the emergence of the Wild Rose Party, and its misinformation campaign about regional planning (farmers and ranchers beware: they are trying to take away your rights!), turned the *Land-Use Framework* into a political liability instead of an asset.

When Stelmach resigned as premier in 2011, the initiative lost its champion and political attention drifted elsewhere. The hope that the NDP would revive the regional planning process after their election was not fulfilled. When it came to environmental issues, their focus was on climate change. Also, as a new government, they may have seen regional planning as beyond their capacity. Or perhaps they distrusted a process so closely associated with the previous government. Whatever the case, planning came to a complete halt under their watch.

"Current circumstances demand that we stand up and defend what we love. Environmental decline is not the legacy we want to leave for future generations."

In summary, the second phase was characterized by a progressive loss of political will accompanied by flagging stakeholder interest, as it became apparent that substantive change was not going to happen. The government maintained its commitment to the principles of the *Land-Use Framework*, but there was no gas left in the tank for implementation.

The third phase of land-use change began with the election of the UCP government in 2019. The policy changes in this phase, characterized by a hard shift away from environmental protection and planning in general, are hardest to understand. Though fiscal prudence was a core element of the UCP platform, cost-cutting is at best only a partial explanation for the abrupt change in direction. For example, the decision to close parks will have no discernible effect on the overall provincial budget. Nor will incrementally selling public land or shooting swans. Fiscal prudence also fails to explain the consistent pattern of avoiding public consultation or the willingness to undertake actions contrary to the broad public interest.

One possible explanation is simple vindictiveness. The Kenney government is clearly incensed by opposition to pipeline construction, which they perceive as being driven by environmental groups. In what amounts to blind fury, they seem to be lashing out at anything related to environmental protection.

Another possible explanation is that the recent policy changes reflect political strategy. The UCP knows its primary vulnerability is not from the NDP, but from vote splitting with a right-wing party, as happened in 2015. Therefore, taking a page from Donald Trump's playbook, the best strategy is

to cater to the far-right elements of your base and ignore everyone else. Rational decision-making and serving the broad public interest are not requirements under this approach. The key is to serve your base by tapping into grievances, providing scapegoats, and offering solutions that resonate with preconceived ideas, whether or not they are likely to succeed.

What to Do?

The pattern of policy changes in recent months suggests that the commitments made in 2008 to balance economic, environmental, and social goals through regional planning have been abandoned. We have regressed to the 1980s, when economic development was all that mattered. However, the problems with unfettered development that were acknowledged in the *Land-Use Framework* have not gone away. Things are only getting worse.

Turning the ship around will not be easy. Kenney's government seems intransigent and quite prepared to ignore public opinion. But there are already indications that this approach is untenable. According to a recent poll, a majority of Albertans feel that the province would be better off with a different premier — a disapproval rating far higher than for any other premier in Canada.[7] Clearly, ignoring the broad public interest is not a sound long-term strategy.

Naturalists are generally a quiet, reflective lot, preferring to spend their time in the field, interacting with nature, rather than marching in the street. But current circumstances demand that we stand up and defend what we love. It's time to raise our collective voice in support of nature. We are not foreign interests bent on destroying Alberta's economy. We are home-grown Albertans who know that sacrificing the health of our environment in the name of development is not a recipe for prosperity. This is not the legacy we want to leave for future generations.

Please write to Premier Jason Kenney (premier@gov.ab.ca) and Minister of Environment and Parks Jason Nixon (aep.minister@gov.ab.ca) and let them know your thoughts on the recent spate of policy changes. Remind them of the importance of balancing economic growth with environmental protection. And ask them to revive the regional planning initiatives and public consultations required to achieve that balance. A short 12 years ago, these topics held a prominent position on the political agenda. If enough people speak up now, it can happen again. It has to. ■

Richard Schneider is a conservation biologist with over 25 years experience working on land-use policy in Alberta. He is now serving as the Executive Director of Nature Alberta. Kaytlin Lee contributed background research for this article.

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Federation's Founding Father

BY JASON SWITNER

In the spring of 1937, a five-year-old boy exploring the English countryside near Oxford came across a nest of newly hatched moorhen chicks. This encounter ignited a passion for the natural world, and a devotion to conservation, that would span not only his lifetime, but also the lives of those he would go on to teach and inspire.

A celebration of Nature Alberta's 50th anniversary cannot go by without special acknowledgment of the man at the heart of its formation, Dr. Miles Timothy Myres — Tim to his friends and colleagues.

During his undergraduate studies at Cambridge, Myres held several positions with natural history societies. Combining his passion for ornithology with a knack for meticulous observation and record keeping, he spent much of 1953–54 analyzing some 9,000 nest records of three species of British thrush submitted by amateur naturalists. This established in the young student's mind the importance of public engagement and the contribution of citizen science in data gathering and conservation efforts.

He pursued graduate studies at the University of British Columbia, earning his MA in 1957 and PhD in 1960 researching goldeneyes and other sea-ducks. His experience with the British nest records scheme led to Myres, along with Dr. Miklos D.F. Udvardy, establishing the British Columbia Nest Records Scheme, the first program of its kind in North America, in 1955. The volunteer-based program inspired the formation of similar nest record schemes across Canada and the United States.

Myres took a position at the University of Calgary in 1963, teaching courses on introductory zoology, principles of wildlife management, and ornithology. At this time, academics were discouraged from taking time away from research to pursue conservation activities. But Myres remained a tireless advocate for the contribution amateur naturalists could make towards both data gathering and conservation. He became involved with the Calgary Bird Club, later known as the Calgary Field Naturalists' Society, serving as editor of its bulletin from 1964–67 and president from 1965–67.

Tom Sadler was one of Myres' undergraduate students in his introductory zoology class. "He was a mentor to me as well as many others. He got us started right from the beginning at university with involvement with the Calgary Bird Club. He always encouraged amateurs to become involved in all of the activities." Noting a kindred passion for

"He left a legacy of people who carried on with promoting conservation in Alberta."

Ian Halladay

ornithology, Myres involved Sadler in the compilation and editing of a decade's worth of observations from across Alberta, including those of the Alberta Birds Record Committee, Calgary Bird Record Scheme, and Prairie Nest Record Scheme. The resulting publication, bearing both Sadler and Myres' names, was *Alberta Birds 1961–1970*. Tom Sadler would go on to teach himself, and eventually become a field biologist and area manager with Ducks Unlimited.

Sadler says he was one of many whom Myres encouraged to engage in an approach to nature studies that best suited their interests and talents. "He always said that the best naturalists were never the best university students. The youngsters that had been very keen on natural history and knew a great deal about the outdoors and birds and whatnot, when they hit university and the confines of the city, did not adapt well. But he kept them all involved. He used to get undergraduate students to assist his graduate students in their field work. He got involved in virtually everything to do with the natural history societies that he could and encouraged all of us younger people to become involved as well. He brought us into that line of it rather than the pure research end of it."

Having met as fellow members of the Calgary Field Naturalists' Society, Ian Halladay recalls Myres' drive to bring together naturalist groups across the province. "He recognized that the natural world was taking a beating" to make way for expanding development. "He recognized that naturalists in Alberta did not have a voice speaking in unison on conservation themes. He recognized that forming an organization that could speak with one voice for the naturalist community would carry a lot more weight than an individual group speaking on its own behalf."

Myres functioned as a go-between for correspondence among various regional groups. Through no small effort, he persuaded these groups that a unified voice would strengthen them all, and he allayed concerns clubs had about becoming part of a larger group.

In April 1970, representatives from six naturalist groups met at the University of Calgary: the Red Deer-based Alberta Natural History Society, Banff's Bow Valley Naturalists, the Calgary Field Naturalists' Society, the Edmonton Bird Club, the Edmonton Natural History Club, and the Lethbridge Natural History Society. This would become the inauguration meeting of the Federation of Alberta Naturalists (FAN) — the organization that would eventually become Nature Alberta.

In light of the effort Myres put in to get these groups together — Sadler would later refer to him as FAN's "founding father" — he was the clear choice for the new federation's first President, serving 1970–71. He also edited the first three issues of the FAN newsletter, the publication that would evolve into Alberta Naturalist and later this very magazine.

Halladay served alongside Myres as FAN's first Secretary. "There was at that time a groundswell of support for conservation issues in Alberta, which FAN tapped into. Tim got the organization off on a firm footing. He really could be considered to be the spokesman for a lot of the original conservation movement in Alberta. He kept us oriented toward conservation and making sure governments recognized their role in preserving our natural environment."

While President of FAN, Myres helped the Ontario-based Canadian Audubon Society expand its scope to become a truly national Canadian Nature Federation (now known as Nature Canada), serving as one of its first national directors from 1972 to 1974. Myres also helped

set up and served on the Alberta Ornithological Records Committee under FAN to help ensure the integrity of amateur observations and records.

In 1986, FAN presented Myres with the Loran Goulden Memorial Award in recognition of his exceptional contributions to the field of natural history in Alberta — a lifetime of fostering amateur study, sharing knowledge, and pioneering conservation.

Myres retired from the University of Calgary in 1987, moving to the British island of Jersey with his family. He participated in historical research and continued to be involved with local conservation activities.

He passed away in 2009, leaving a legacy of what Halladay describes as "enthusiasm for natural history" — inspired and active participants in the field, both professional and amateur.

Myers held that government ornithological research centred too much on birds destined for the dinner table. He encouraged a broader interest among his students, supervising a generation of graduate students in studies of wild species: falcons, grassland songbirds, gulls, grebes, shorebirds, and more. Consistently, these studies focused on not only biological and behavioural aspects, but also the effects of human activity on these species.

"Tim required all his graduate students be part of the local natural history groups, and that they take an active part," says Halladay. "He left a legacy of people who carried on with promoting conservation in Alberta."

"He never put his own research first," says Sadler, "he put his work with the naturalists first. That was really his great love."

Perhaps Myres' motivation to bring together naturalists of all interests and inclinations is best summarized in his own words. In praising a variety of individual achievements of FAN members through the federation's first ten years, Myres stated: "This diversity of talents, each applied in its own way to bettering our natural environment, is the genius of naturalists. It explains why naturalists are so idiosyncratic, and gatherings of them so eye-opening." ■

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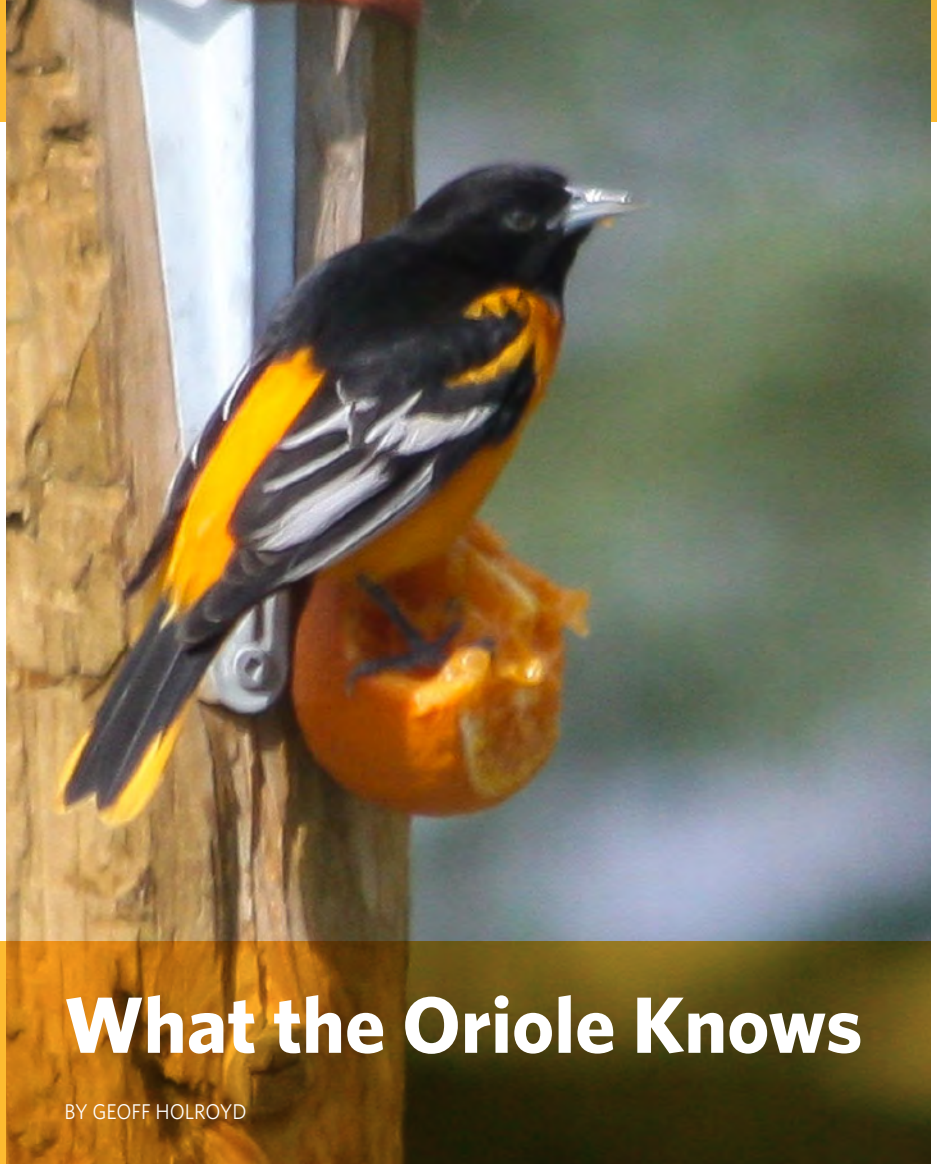


What the Oriole Knows

BY GEOFF HOLROYD

If you are familiar with the book *What the Robin Knows: How Birds Reveal the Secrets of the Natural World* by Jon Young (2012), you know about interspecies communication and the benefits of sitting quietly and observing. Young describes how we can learn about our natural environment from bird vocalizations and behaviour. He recommends sitting, watching, and listening to the messages that are all around us. In his book *Chasing Doctor Dolittle: Learning the Language of Animals*, Con Slobodchikoff reviews examples of communication in many species, both within species and between species. Once we recognize the various forms of communication, we can gain insights into the worlds of birds and mammals.

I often enjoy sitting at my dock on Islet Lake or on my back deck where my bird feeders are visible. The limitations of activities demanded by the COVID-19 pandemic have created more time for this quiet endeavour. In my backyard, I have three posts with bird feeders and squirrel guards. In total, eleven feeders provide seeds and suet for birds to enjoy.

In mid-May, I was sitting on my back deck when a northern oriole, the first I had seen at the feeders this spring, flew to one of my feeder posts and looked up and down at all the feeders. After a couple scans of the feeders, he looked at me and started to chatter. He then alternated looking at me and looking up and down the feeders, chattering all the time. He was clearly "talking" to me. His persistent scans and then stops to look at me left no doubt that he was saying something was missing.

I have tried putting half oranges out for orioles before with no luck. But this visitor seemed quite insistent. So I cut an orange open and stuck it on the nail where unsuccessful past attempts had been placed. A short while later, the oriole was there to enjoy the (literal) fruits of his communicative efforts. He had an expectation learned elsewhere and told me quite explicitly what he wanted. I had a new COVID friend!

Over the next few days, rose-breasted grosbeaks joined him. An immature male oriole fed on subsequent oranges. I added a bunch of old green grapes to the avian cuisine. With another nail beside the orange, both grosbeaks and orioles enjoyed the mixed fare. About a week later, a yellow-bellied sapsucker went after another bunch of grapes but never did enjoy fresh orange.

By early June, some of these birds either moved on or found other items to enjoy. Activity at the orange halves and grape bunches dropped off. But my memory and photos of the oriole's message linger on.

After reading Jon Young's book and learning from the oriole, I listen and watch with a new appreciation for the insights and pleasure gained from this quiet art of sitting. If you want to read another book about animal communication, I suggest another book by Con Slobodchikoff which is more specific to a mammal: *Prairie Dogs: Communication and Community in an Animal Society*. I recommend all three of the aforementioned books to anyone interested in critter communication. ■

Geoff Holroyd is the Chair of the Beaverhill Bird Observatory (geoffholroyd@gmail.com).

Nature Kids

My BIG Alberta Backyard

Introducing Bunchberry Meadows

BY KATELYN CEH, NATURE CONSERVANCY OF CANADA
DIRECTOR OF CONSERVATION PARKLAND AND GRASSLAND

Bunchberry Meadows Conservation Area

Alberta is a great place to live. It's a big beautiful province full of all kinds of natural wonders. This is where we introduce you to the diversity of wildlife, and unique and interesting wild spaces, that are part of your Big Alberta Backyard. This time, let's explore the Bunchberry Meadows Conservation Area near Edmonton.

Bunchberry Meadows is owned by the Nature Conservancy of Canada (NCC) and the Edmonton and Area Land Trust (EALT). It is located 30 minutes southwest of downtown Edmonton and is open to the public year-round for hiking, cross-country skiing, and snowshoeing.

History

Before NCC and EALT purchased the property, Bunchberry was owned and cared for by five families. They used the property for walking, cross-country skiing, and horseback riding. Many of the trails visitors enjoy today were skied and hiked by the families for years.

When the families decided it was time to sell the land, they felt the property should be conserved and kept wild for others to enjoy and connect with nature. They chose to work with NCC and EALT to make sure Bunchberry would always be protected for wildlife, and to provide a place for people to escape the city and experience nature. Without the generosity of these families, and their love for Bunchberry Meadows, we wouldn't have this amazing place to explore.

What Makes It Special

There are many kinds of plants, animals and birds that make Bunchberry Meadows an interesting and wonderful place to visit. A walk along the eight kilometres of trails will take you through several different habitat types and you might even be lucky enough to see some wildlife along the way! There are several different types of forests, including jack pine, aspen, larch, and paper birch, which provide homes for moose, great horned owls, and porcupines. The open meadows are visited by coyotes, deer, and red fox, and in the wetlands you can hear boreal chorus frogs and wood frogs calling in the spring. You can see so much in a short, easy hike!

Some of the best parts of Bunchberry are the birch forest, which has lots of tall paper birch trees with bright white peeling bark, and the jack pine trees, where you might see porcupines munching on the bark if you look way up. (Did you know porcupines were tree climbers?) The trail through the larch trees is unique because the ground is squishy and covered in last year's needles, making your footsteps silent as you walk. These areas are so different from one another, but all

You'll see so many different types of trees along the trail at Bunchberry Meadows.
KYLE MARQUARDT

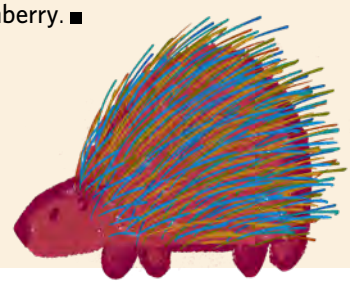
make up important parts of the ecosystem and provide habitat for wildlife with different needs.

It's important that everyone does their part to take care of and protect our wild spaces, not only for the plants and animals who call them home, but also so we can explore and enjoy them. We hope you can get out to Bunchberry this summer!

If you would like to visit Bunchberry Meadows, you can find the directions and map to the area on the Nature Conservancy of Canada website at **bit.ly/ncc-bunchberry**. ■

Look up high and you might see birds like this barred owl in the forest...
KYLE MARQUARDT

... And look down low for mushrooms (and of course the bunchberries that give this area its name!) along the trail.
KYLE MARQUARDT



Nature Kids

Out and About

Bird Window Decals

These colourful decals are easy to make, look lovely when the sun shines through your window, and help our feathered friends avoid accidentally flying into the clear glass.

What you need:

- ✓ Colourful tissue paper
- ✓ Card stock paper
- ✓ Black marker
- ✓ Scissors
- ✓ Glue stick and/or scotch tape

What to do:

1. The first thing you will need to do is figure out what shape of bird you would like your decal to be. You can keep it simple by just drawing the outline of a simple bird (see Photo A) or you can get creative! Maybe your bird is sitting in a nest, or maybe it's soaring!

2. Use your black marker to draw the outline of your bird. (You might want to draw it in pencil first then trace over it.) You will need to make the black outline nice and wide in order to have a good base for your tissue paper.

3. Use your scissors (or get a parent or guardian to help) and cut out the wide outline of the bird. You will need to cut the bird out along the outer edges and along the inside edge of your outline, too (see Photo B).

4. Now that you have your outline cut out, what colour (or colours) would you like your bird to be? You can cut up different colours of tissue paper to make a beautiful multicoloured bird.

5. Now you can glue or tape your tissue paper to the bird outline in whatever pattern you would like. A glue stick is the easiest type of glue to use for this. Be careful, the tissue paper rips easily!

6. Once the glue has dried, you can put your bird up in your window (your bedroom, living room, anywhere!) and it will help prevent real birds from hitting your window.

Thank you for helping out our wonderful bird friends! We hope you decorate your windows full of bird decals. They also make great gifts for friends and family to put up in their windows too! ■

Nature Kids

Ask Stuart

ZOE MACDOUGALL, NATURE KIDS PROGRAM COORDINATOR

St. Lawrence Tiger Moth.
KELSIE NORTON

Welcome to Ask Stuart, a regular feature in which Stuart, our Nature Kids mascot (who just happens to be a swift fox) responds to questions asked by kids across Alberta. From time to time Stuart will also ask local experts to help him answer these questions. If you have a question you would like to ask Stuart, send it along to our Nature Kids Program Coordinator at **naturekids@naturealberta.ca** and it may be featured in a future issue.

Q Why are ladybugs called LADYbugs if there are both females and males?

Interestingly enough, ladybugs are not actually "true bugs." True bugs have sucking, beak-like mouth parts and go from egg to nymph to adult, with no larva stage. Ladybugs don't have the right mouth parts and they do have a larva stage, so they instead fall into the beetle family. These little critters have a hard shell-like exterior that protects their delicate wings, just like all beetles do, so they should more properly be called "ladybeetles" instead of ladybugs.

But why do we call them LADYbeetles? There are several legends or stories as to how the ladybeetle got its name. As one of the stories goes, a long time ago in Europe, farmers' crops were being destroyed by other insects, like aphids, and they prayed to the Virgin Mary for help with these pests. Swarms of ladybeetles arrived and ate all the aphids, so the farmers named the helpful creature "Our Lady's beetle." Also, the Virgin Mary was traditionally depicted wearing a red cloak, which in turn looks like the red shell of the ladybeetle.

Thank you to John Acorn for helping Stuart answer this question! Have you heard other stories of how this beetle got its name? If so, we would love to hear them. Send your story to **naturekids@naturealberta.ca** ■

Information gathered from:

http://www.todayifoundout.com/index.php/2015/04/ladybugs-called/

http://www.lostladybug.org/files/9%20LLP%20All%20About%20Lady-bugsPDF.pdf

Q What is the difference between a cocoon and a chrysalis?

Moths and butterflies go through a four-stage life cycle: egg – larva – pupa – adult. They undergo a significant change in appearance along the way. The larva, or caterpillar, that emerges from the egg looks very different from the adult butterfly or moth it will become. It eats, sheds or moults its skin several times as it grows, and finally reaches a stage when it's ready to change into its adult form. This transformation, called metamorphosis, occurs in a special protective case in the pupa stage of the life cycle.

When butterfly caterpillars moult for the last time, instead of producing another layer of skin they form a hard case called a chrysalis. The chrysalis is attached to a solid surface and protects the caterpillar inside as it transforms into a beautiful butterfly. The moth caterpillar, on the other hand, produces silk from glands and spins a silky covering around itself before it forms a hard inner case in which it transforms into the adult form. The silky coat and inner hard case is called a cocoon and protects the moth caterpillar as it transforms into a magnificent moth!

To sum up, butterfly caterpillars make chrysalises and moth caterpillars make cocoons. Thank you to Vic Romanyshyn from the Alberta Lepidopterists' Guild for answering our question! ■

Restructuring Eden:
Shifting Our Benchmarks

BY LORNE FITCH, P. BIOL.

Porcupine Ridge. COLYNN

A friend, now retired from National Parks, has more backcountry travel experience than most of us could dream of — some of which we might have nightmares about. As in life, these trips harbored no free lunches, only the heavy ones he packed along. Food preparation was both a physical and psychological effort, so the food choices for a given day were based on his principle: "Eat your best food first."

This means that, whatever stage of the journey you're at, you eat the best of what's available. Of what remains, what you eat next is the best food left. Near the end of the trek, when the food pack contains only oatmeal dust and tiny jerky fragments, it is still your best food. This strategy has the continuing effect of buoying one up with the thought of the best left, not about how little there is to eat.

"Eat your best food first" could be a metaphor for the concept of shifting ecological benchmarks. We believe we're seeing the world just fine until it's called to our attention we're not. Declines in quality and quantity persist until some tipping point of recognition is reached. Before that point is reached, we think we have at our disposal all available resources; a "full pie."

Full Pie, or Only a Slice Left?

We have never had, in modern times, the luxury of starting with a "full pie." Our "starting" points include the complex legacy of past actions, choices, and decisions that have divided, used, spoiled, or erased the cornucopia of things on the landscape — altering our perception of how the landscape now looks, responds, and feels. We don't have an accurate image of what the land was like before our arrival. Even by the time early explorers began to chronicle landscape features, changes were underway, with the introduction of disease, horses, improved weaponry, and trade.

Life is lived forward, but understood backward.

Baseline fisheries inventories that constitute the benchmark for population management usually happened three to five decades after exploitation of the fish began and changes to the watershed from development started. Some Alberta lakes, with early fur trading posts on their shores, were fished heavily beginning in the late 1700s, a century or more before baseline inventories. A benchmark of "natural" fish population levels and composition was not established until long after changes happened.

My grandparents homesteaded at the turn of the 20th century west of Red Deer, named for the region's once abundant herds of elk. If not for the journals of Anthony Henday, Peter Fidler, and David Thompson, I would have no idea what this ecological landscape was once like. Growing up some 60 years after settlement, my experience of the area's wildlife included English sparrows, magpies, and the occasional white-tailed deer. This was my "normal." But the fact is, a rich assemblage of wildlife, present for millennia, had disappeared.

Many of our landscapes have been disturbed and subject to change for so long it appears to the uninitiated as the norm. Our benchmarks of landscape health have shifted to one of disturbance, without realizing the impacts on aesthetics and ecosystem services, attributes and benefits. Our image shifts to the lower common denominator because we lack a reference point.

My sister-in-law recalls her father, of Icelandic origins, harvesting fish from several Medicine River tributaries in the 1940s and early 1950s. They were

likely pike and suckers, ground up to make fish cakes. Today, it is difficult to find water in these streams, let alone fish in quantities that would allow subsistence. We are resigned to eating fish sticks from ocean stocks without ever realizing what we've lost from our own backyards.

This shift in benchmarks, the loss of spaces and species, sometimes occurs beyond our awareness and reckoning. We think, in our blindness and ignorance, that the landscape and resources of today represent a "full pie." The reality is today's pie is a mere slice of yesterday's. And so it goes; without an appreciation of the progressive thinning of the remaining slice, it can and will eventually disappear.

Shifting benchmarks cause us (unconsciously or otherwise) to continually redefine what a natural baseline was and, in so doing, carve up the remaining, diminished pie even more. It is like the Cheshire Cat in Alice's Wonderland, which "vanished quite slowly, beginning with the end of the tail, and ending with the grin, which remained sometime after the rest of it had gone."

Looking Back, To See Ahead Clearly

As neuroscientist David Eagleman relates: "Not only is our perception of the world a construction that does not accurately represent the outside, but additionally we have the false impression of a full, rich picture when in fact we see only what we need to know, and no more." It's the resource that shifts, but not our perception of the resource. Perception does not mirror reality. (In my mind I have a 30-inch waist; my body begs to differ.)

We create our own benchmarks that are accurate and useful. Many homes have a door jamb with incremental pencil marks for children's height carefully preserved. Those marks, of a child growing up, are family reference points; tangible memories of changes over time. (These memories can be very poignant; good friends of mine took their marked door jamb with them when they moved to a new house, to preserve that memory.)

Sadly, the landscape is largely without these tangible marks. Most measurements of landscape health and of fish and wildlife populations are a few decades old. And most of our history (as European settlers) spans little more than a century. Anything that happened before, any metric of the landscape before us, is *terra incognita*.

A benchmark is a place in time and space where we have made a point of noticing and noting a variety of parameters, as exactly as possible, so we can say in the future, "That is how things were then." It is a pencil mark of landscape health, biodiversity, and productivity; a mark against which we measure change.

Cutthroat trout catch, upper Oldman, circa 1930s. BERT RIGGALL

Oldman River at Gap in Livingstone Range. LORNE FITCH

I was stunned by the observation of an elderly angler I once interviewed. He said, "I would consider your best day of fishing today as one of my worst from my memory of past experiences." His long memory, tempered with reflection, enabled him to clearly see the changes and be objective about the present. It reminded me that by comparison, my memory was limited in scope. Benchmarks can shift between individuals; in our own memories; from one generation to the next.

In *The Last Refuge*, a history of the Cypress Hills and surrounding area, J.G. Nelson reflected: "Our memory of what we have done to the land is short and incomplete. Yet, without such knowledge, we cannot really understand how much we have changed the world and how much more we are likely to change it if present trends continue."

A threshold is only valid with an eye on the past, being grounded in the present, and with a view to the future. Otherwise, the line shifts as we forget yesterday, are blissfully ignorant about

today, and ignore where we might be headed tomorrow.

Aldo Leopold wrote: "A sense of history should be the most precious gift in science..." If our tenure on the landscape was measured in millennia, like it is for bull trout, antelope and rough fescue, instead of geologic minutes, we might be able to grasp the losses incurred by a little more than a century of occupancy.

Change occurs incrementally, additively, and often gradually. Because of this our ability to perceive it happening diminishes over time. The parallax of time, nostalgia, lack of critical review, imperfect memory, and forgetfulness all distort our impressions of the past. Life is lived forward, but understood backward. We need to stop and look back to comprehend the changes that have brought us to the present. If not, the process of forgetting begins with limitless things reduced first to memory, then to obscurity, and finally to fable.

Case in Point: Planning for the Livingstone-Porcupine Hills

If we have problems recognizing the changes and shifts from the past to today, we also fail to project things forward. Dr. Brad Stelfox, a landscape ecologist, reminds us the footprint of today's industrial, urban, and agricultural activity might be considered a prelude or "pre-treatment" when viewed over the context of time and considering the trajectory of past activity.

If we do cast forward to speculate about the future, we rarely cast back to see what might be an appropriate starting point. Where we start is inevitably where we are, not where we were. We can't know our future because we don't remember our past.

Porcupine Hills. SAM WIRZBA

Planning for the future of part of southwestern Alberta, the Livingstone-Porcupine Hills region, has been a study in neglecting what the past can tell us and shifting the benchmarks. Within living history, much of the planning area was virtually roadless, the realm of the horseman and the determined hiker. Now, anyone with the strength and agility to fit a key into an ignition can access, in hours, what used to take days, on a myriad of industry-created roads and trails.

Within memory this region has seen wild sheep chased off an isolated mountain in favour of a coal strip mine, extirpation of caribou, and the marked reduction or extirpation of bull trout and cutthroat trout from local watersheds. The area is laced with old coal mines, logging clear cuts, pipelines, power lines, and a road network that exceeds any recognized threshold for maintaining water quality or wildlife.

A previous "Integrated Resource Plan" entrenched economic interests, with a small nod to environmental protection. This is the "business as usual" approach which largely ignores landscape integrity.

A quick assessment of changes to past benchmarks signals that the region has suffered significant losses to ecosystem integrity. The Livingstone-Porcupine Hills is a pressure cooker that has been simmering away with a mix of land-use ingredients: unsustainable logging, rampant off-highway vehicle use, new coal exploration. Steam is escaping from the relief valve, signaling with a scream that too much is going on. We need to reduce the heat, not add to it.

From this example of current planning, it would seem we have lost the capacity to mourn the losses. If we understand where we came from, rather

than picking where we are as a baseline, we can reasonably plan for the future. If today is the baseline, we lose the motivation to stop the downward spiral of landscape integrity.

An appreciation for history, of shifting benchmarks, could help us in planning the future of this landscape. If we have the capability to develop and build, we also have the choice to restore and to set back the clock. It is a matter of will, not ability. If the past trajectory of losses and impairment don't cause us to reconsider present land-use levels, how will current planning position us, and our descendants, for the future?

The Past Didn't Go Anywhere

Utah Phillips, folk singer and commentator, said: "Yes, the long memory is the most radical idea in this country. It is the loss of that long memory which deprives our people of that connective flow of thoughts and events that clarifies our vision, not of where we're going, but where we want to go." While speaking on the attributes of memory, Phillips' thought applies in the context of shifting benchmarks.

As our memory of the past dims, our perception of the present suggests we have lost nothing, and our vision of the future is we can keep it all. Many of our land-use decisions are transitory in nature and provide ever-diminishing returns. We end up satisfied with less and less, deluded that we are achieving more and more. Our gaze is firmly fixed on today, forgetting there was a yesterday and that the past will influence our tomorrow. Collective amnesia does not serve us well.

Our society may be so numbed by environmental degradation that we have lost our ability to see and be appalled by it.

Winston Churchill remarked, "The further you can see back, the more you can see forward." In the context of shifting benchmarks, another Churchill observation rings painfully true: "When the situation was manageable it was neglected, and now that it is thoroughly out of hand we apply too late the remedies which then might have effected a cure."

One of the compelling reasons for parks and protected areas representative of Alberta's landscape diversity is to show us what was, and what could be in the realm of possibility for other lands. These are living museums, providing a tangible perspective, clarity of vision, and a hedge against the tendency for our benchmarks to shift. Often these are the only examples of landscape health left to provide a reference point to assess and restore disturbed sites.

Losing something is one thing — forgetting what you've lost is something else. Our society may be so numbed by environmental degradation that we have lost our ability to see and be appalled by it. But as we run our Eden through the development chopper, there is the strong probability of additional, cumulative changes and losses, many of which could be averted by understanding the inherent dangers in our disconnect with the past.

The past didn't go anywhere, it's still with us and can be a reminder of where we were at one point in time. We don't have to settle for a progressively depauperate landscape with diminished quality of water, biodiversity, and essential ecological services. Rather than be resigned to loss, or worse, be forgetful of loss, we can aspire to a choice of beauty, richness, and complexity. We can be empowered to remember and to act, to seize and shape a future that will otherwise slip away. ■

Lorne Fitch is a Professional Biologist, a retired Fish and Wildlife Biologist and a former Adjunct Professor with the University of Calgary.

MEET A MEMBER CLUB

BY MARGOT HERVIEUX

Peace Parkland Naturalists

Nature Alberta is proud to support a diverse range of naturalist organizations, representing people passionate about all things nature — birds and reptiles, plants and mushrooms, butterflies and beyond. In this issue, we're delighted to feature one of our long-standing clubs, the Peace Parkland Naturalists.

The Peace Parkland Naturalists (PPN) formed in Grande Prairie in 1989 and became a member of Nature Alberta shortly after. Like naturalist groups everywhere, the PPN offer field trips, guest speakers, and a newsletter. Members actively participate in bird, plant, and butterfly counts.

The southern Peace region is a great locale for a naturalists club.

Four of Alberta's six natural region classifications lie within a 100-km radius of Grande Prairie, and the Peace River Parkland exists nowhere else.

The Peace River Parkland, the club's namesake, is a unique mosaic of grassland, aspen woods, and wetlands that is found nowhere else in the country. Because of agricultural conversion and industrial activities, less than half of one percent of this habitat remains intact. It is home to many plants, birds, and butterflies that are more commonly associated with the southern prairies. The club takes regular trips to sites like the Kleskun Hills to see prickly-pear cactus, upland sandpipers, and western meadowlarks.

Since its formation, the PPN have been involved in various advocacy projects, particularly those associated with habitat conservation and protected areas. Members of the club have served as stewards of natural areas and also provide input into provincial, municipal, and industrial planning when opportunities arise.

Nature education is also an important role for the club and its members. In the late 1990s, the group published guidebooks to two important local natural areas: Kleskun Hill and Saskatoon Mountain. During the 17 years of the annual Swan Festival at Saskatoon Island Provincial Park, members have also led bus tours and assisted with trumpeter swan education activities. In the last few years, a Nature Kids chapter started up in Grande Prairie and PPN members regularly assist with field trips and events like BioBlitzes, engaging the public in collecting species data and learning about local biodiversity.

Northern Alberta has far more wild places than the rest of the province but there are also far fewer residents who, like the Lorax, will "speak for the trees." PPN members should be proud of the fact that they are recognized not only as a source for answers to questions about birds and bugs, but also as a credible voice for habitat conservation in the region. ■

Margot Hervieux is a founding member of the Peace Parkland Naturalists and a longtime Nature Alberta board member.

May Plant Count

BY CARLIE LEWIS

This year I had the opportunity to join the May Plant Count for the first time. A joint initiative by the Alberta Native Plants Council (ANPC) and Nature Alberta, the May Plant Count is an annual event where volunteers have the chance to contribute important vegetation data to our body of research in Alberta. Plant identification surveys are completed, and their data submitted to the ANPC for future publication and conservation efforts across the province.

The goal of the May Plant Count is to identify the species within a study area and record the life stage, or phenology, of each species. This allows us to get a snapshot of not only the species present in the area, but an indicator of climate as well, giving us a picture of how they both change over time. This means identifying everything from floor to canopy. If you have ever been in the field with an identification key then you know how much fun and, at times, how challenging it can be, but the sense of accomplishment is real when you finally figure out that species you have never seen before. It feels like solving a mystery.

I was grateful to be able to take part in this event because recently my world seemed to have gotten a lot smaller while practicing social distancing. It was nice to be able to get out into nature and share an experience with other people. Although, like many volunteers this year, I was only able to survey the natural areas in the urban centres that I could easily access.

I had the good fortune to be able to take part in two plant counts, which yielded two very different experiences. My day started with surveying with a fellow novice volunteer and ended with a survey with a retired professional forester. My colleague and I used almost every plant key the ANPC has to offer, and many Internet searches, to figure out the forest floor of the Mill Creek Ravine here in Edmonton. It was a little difficult and time consuming but it also showed me the beauty of the May Plant Count: you don't need a PhD in plant identification to contribute to the body of data that helps us understand our landscape and how to conserve it. All it takes is a little perseverance.

Spotted coral root. RICHARD SCHNEIDER

Next, I got to survey a familiar urban natural area just beside the house where I grew up. My seasoned teammate was naming plants from memory faster than I could record their phenology stage. It felt like we were cracking the code to the forest.

The 2020 May Plant Count was a great experience and I gained valuable insight into the nature on my doorstep. Before the count, I could name most of the major trees and shrubs in a boreal ecosystem, but now when I walk through the woods near my house, I can recognize more plant communities there and I feel more connected to them. ■

Scarlet globemallow. TREVOR FLOREANI

Carlie Lewis is an Alberta-based biologist and an active volunteer for the Alberta Native Plants Council (ANPC), Canadian Parks and Wilderness Society (CPAWS), and Women in Science, Engineering & Research (WiSER).

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