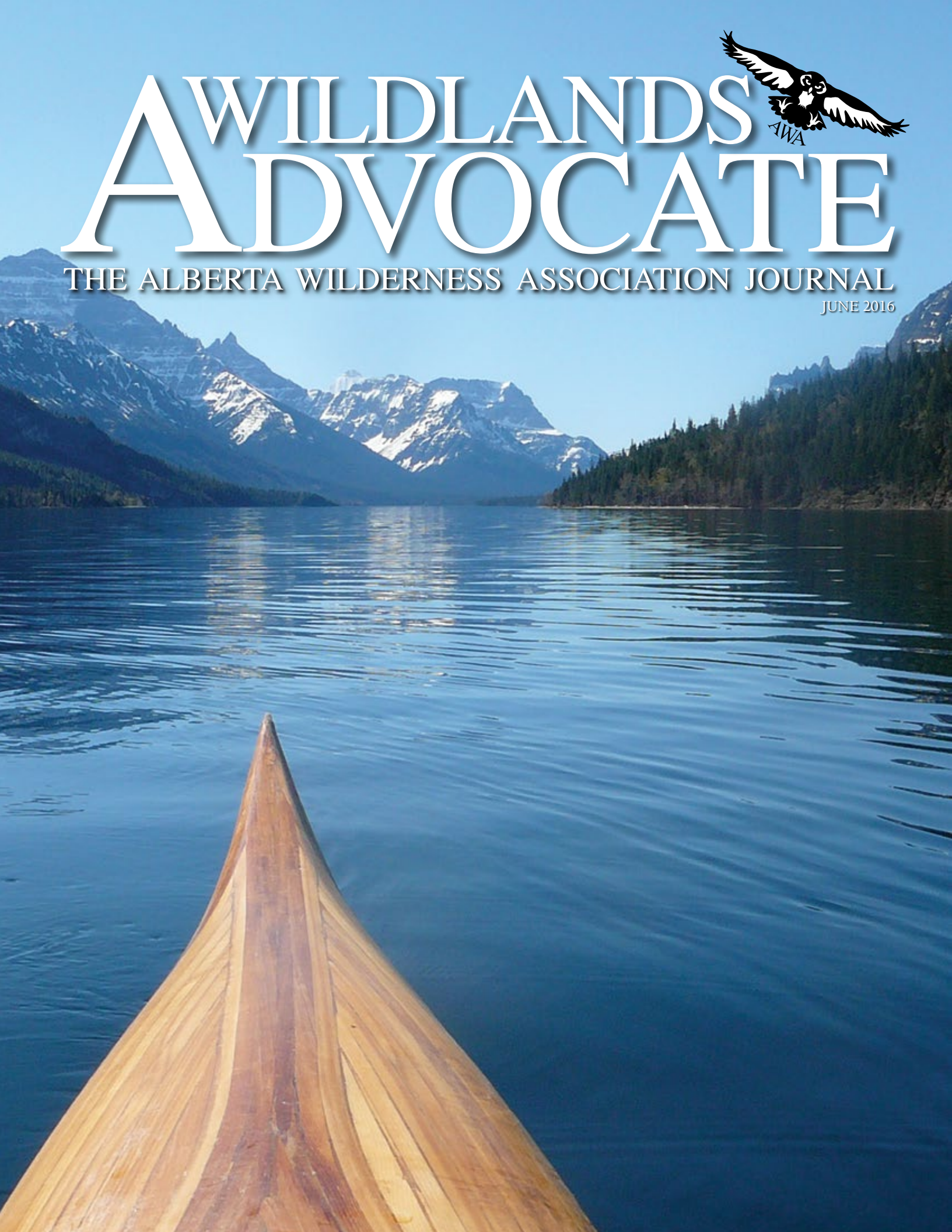
WILDLANDS ADVOCATE

THE ALBERTA WILDERNESS ASSOCIATION JOURNAL

JUNE 2016



CONTENTS

JUNE 2016 • VOL. 24, NO. 3

Features

Association News

Wilderness Watch

Events

Cover Photo

James Tweedie's photo from his kayak on Waterton Lake. Magnificent. Serene.

Featured Artist: Michael Mott

Michael was born in London England in 1948 and emigrated to Canada in 1967. Michael is basically self-taught in the watercolour medium. Michael has been involved with the arts community in one way or another since coming to Edmonton in 1968. He worked for the University of Alberta Fine Arts department as a technician in Sculpture from 1968 to 1977. In 1992 Michael picked up a watercolour brush and has been painting in this medium ever since. Michael's favourite place to paint is Banff National Park's Johnston Canyon with its many waterfalls. Encounters with the open spaces and big skies of the Alberta prairie also have captured his imagination. Michael's work can be found in many private collections. He currently lives on an acreage overlooking Lake Wabumun where he enjoys his other passion – sailing. If you would like to contact Michael about his work please send him an email at emm648@xplornet.com

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ALBERTA WILDERNESS ASSOCIATION

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Too Many Places to Experience, Too Little Time?

It's that time of the year again. It's the time most likely to find us out and about in search of enjoyment in Alberta's many landscapes. Much of this issue of *Wild Lands Advocate* is dedicated to why we care so deeply for what happens to the portions of the natural world that surround us.

Andrea Johancsik first takes us on a trip to Dinosaur Provincial Park, one of the four UNESCO World Heritage sites we are blessed to have in Alberta. Andrea shares some of the experiences she had while working as a park interpreter there. What can you expect to see if you look through this window into the Cretaceous period, a period that ended a mere 65.5 million years ago. Her general message that protection of rare landforms and education/enjoyment can coexist is vital and the Alberta government should be congratulated for striving to strike this balance.

Carolyn Campbell next takes you hundreds of kilometres to the north to tell you about one of her memorable outdoor experiences as a member of AWA's team – canoeing in McClelland Lake. Carolyn's story is a bittersweet one. Many pleasures – such as camping by a rare sinkhole lake, exploring the wetland complex's stunning patterned fen, and discovering pitcher plants – were to be experienced in this special part of Alberta's boreal forest. They were tempered though by the designs of oil sands miners who, through the Fort Hills project, plan to start operating an open-pit bitumen mine in the last quarter of 2017.

Esther Bogorov is up next as she introduces you to a modern form of wilderness that's as old as the universe itself – the stars and dark sky preserves. Esther offers us at least as many lessons in her article as there are planets and meteor showers waiting to be observed in the night sky this summer.

Joanna Skrajny looks at one of the recreation issues – trail rehabilitation – that the government tried to address in the aftermath of the 2013 floods. AWA doesn't dispute the need to rehabilitate trails but Joanna's article points out that this need could be executed more effectively than has so far been the case. This is certainly the case in the Castle and Joanna offers some needed constructive criticism of how the province's trail rehabilitation program is being implemented.

If you haven't yet taken advantage of AWA's hikes program you really should do so. That's the theme I try to develop in my account of going on AWA's Ghost View ridge hike last June. It was a very enjoyable experience – one that I've been very pleased to introduce to my family since I roamed that area for the first time.

The future of public support for protecting Alberta's landscapes and the creatures who depend on them hinges vitally on what we teach our children about nature. Three pieces in this issue explore giving our children and grandchildren the experiences they need to treasure nature and to become stewards of our natural heritage. Lea Komaromi writes about what children may learn about nature and themselves in forestry school; Esther Bogorov interviews Gareth Thomson of Alberta's Council on Environmental Education about the mandate and activities of that organization; finally, Niki Wilson tells us how important the wilderness is to the transformation of her son Dylan from being a little boy to becoming a young man.

Finally, regular readers of the *Advocate* know I haven't been much of a fan of the activities the provincial government seems intent on allowing in the Castle parks. According to the government's website it's as intent on allowing OHVs, recreational hunting, and other abominations in those parks now as it was when we were served the "full protection" for the Castle promise last fall. Meatball, my English bulldog, has had enough of my complaining and urges me to join her in embracing what the Alberta government calls its "modern take on the provincial park class." See what she has to say and let me know if you're as convinced by her argument as I am.

Until August then…get out and enjoy responsibly some of the natural delights our province has to offer.

-Ian Urquhart, Editor

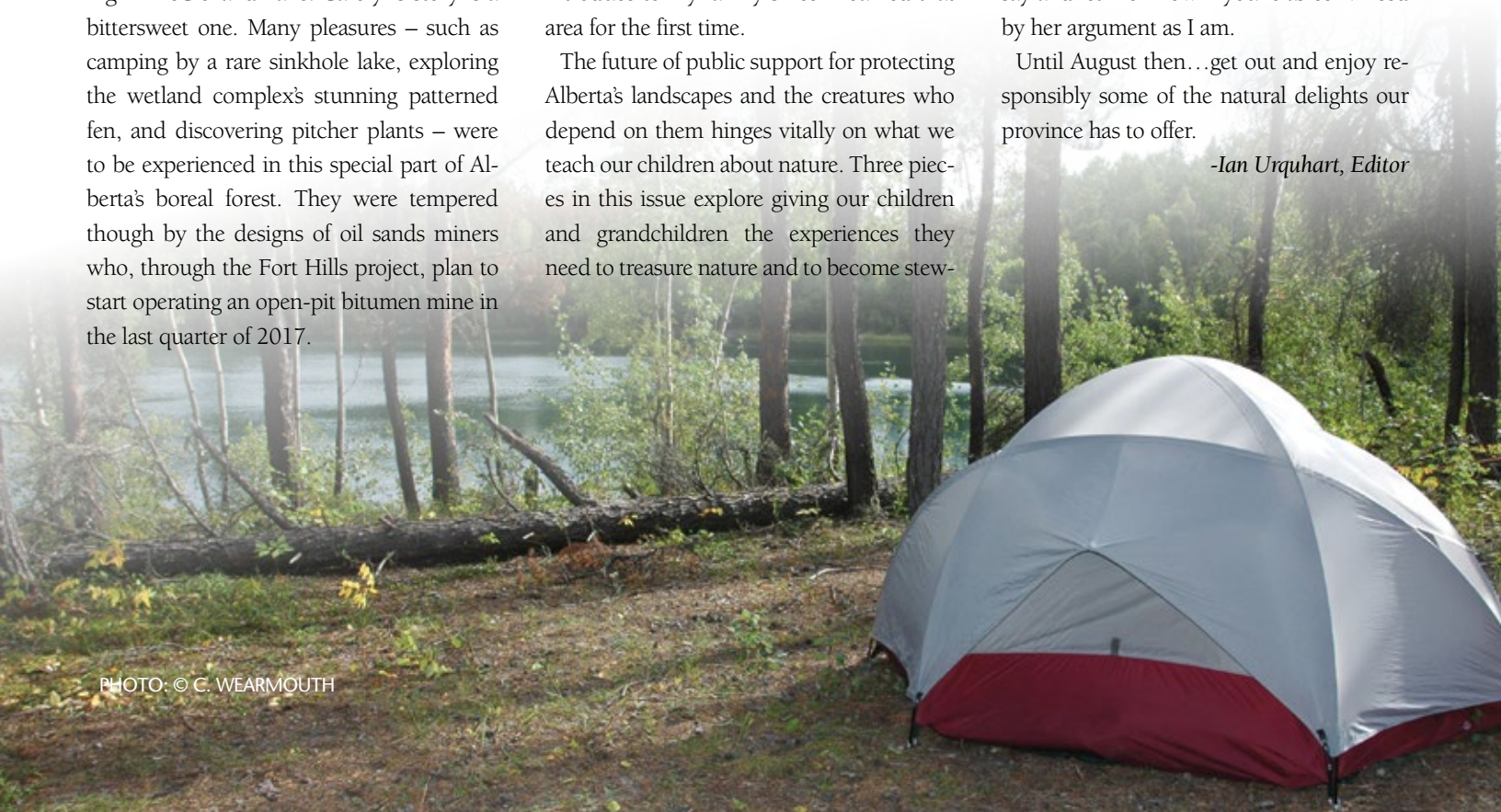


PHOTO: © C. WEARMOUTH

Walking Among Ancient Giants:

Preserving the Riches of Dinosaur Provincial Park

By Andrea Johancsik, *AWA Conservation Specialist*

In the distance, a child cries out: "I found a bone! I found a bone!" I catch myself thinking that our young visitor to Dinosaur Provincial Park instead probably found a piece of bone-shaped sandstone. I'm guiding two dozen people through the park and I'm trying to listen in all directions to manage my tour. I hastily postpone trying to explain 76 million years of local geological history to a very curious parent in three sentences or less – not an easy task. "I'll be right back I say apologetically as more screams echo in the sandstone valley. "ANDREA!" "Com'ere!" "I found a bone!"

Dinosaurs spark our imaginations and dinosaur fossils are one of the most exciting discoveries for children and adults alike. During my summer as an interpreter, I was able to live that excitement every day through guided tours. The history of dinosaurs also reminds us of the precariousness of life. As we piece together stories about the rise and fall of dinosaurs, we should reflect on the story we are writing and leaving for future generations to discover.

Though fossils are abundant across sediment in North America, they're only accessible where erosion has swept away some surface rock. Alberta's environment in the late Cretaceous (145.5 to 65.5 million years ago) was more like Vancouver's wet temperate forest, full of braided streams and rich in vegetation. When the creatures died from the dog-eat-do—er... dinosaur-eat-dinosaur world, some were quickly buried in wet, oxygen-free sediment where their bodies were not eaten or decomposed; this preserved them for fossilization. Unique chemical conditions in surface water slowly transformed once-living material into rock. Millions of years later after the last ice age and long after the terrestrial dinosaur extinction, continental glaciers retreated and uncovered late Cretaceous sedimentary rock. Now, the Red Deer River Valley opens a window into that geologic time by revealing fossils from dinosaurs and other creatures.

A commonly found fossil in Dinosaur Provincial Park PHOTO: © C. JOHANCSIK

As I suspected, my young guest found only an oddly shaped piece of sandstone. But on a tour at Dinosaur Provincial Park, it would only be a matter of minutes before I would run over and respond, "yes, that's a fossil!"

Protecting an unparalleled fossil resource

Interpreters at Dinosaur Provincial Park have the privilege and challenge to show this unique resource to tours of up to 24 people. Visitors take a bus into the 'Natural Preserve,' a large area open only to guided tours, staff, park rangers, and paleontological excursions. I was lucky enough to attend

Overlooking the Red Deer River from the coulee edge near the entrance to Dinosaur Provincial Park. Staff housing in on the shoreline. PHOTO: © A. JOHANCSIK

one such excursion with a paleontology student and a couple other parks staff. Walking through the Natural Preserve, we found a micro-site (a concentration of small fossils such as teeth and fish scales) that had never been documented.

Zoning is a management technique used in numerous parks across Canada and around the world. It restricts certain uses in order to protect spiritual, ecological, geological, or historical values. Dinosaur Park's Natural Preserve is an example of zoning. Another example of zoning in Alberta provincial parks is found in Writing-on-Stone Provincial Park on the Milk River in southern Alberta. Writing-on-Stone has a large restricted area known as an 'Archeological Preserve.' A large concentration of very fragile ancient petroglyphs (rock carvings) and pictographs (rock paintings) are found there. Sadly, vandalism from the time of the earliest European settlers through to the mid-1900s destroyed or damaged much of the rock art before the Preserve was established. In Canada's National Parks, zoned areas that receive the highest level of protection are usually small and localized to safeguard a particular feature, such as the Cave and Basin Marsh in Banff National Park. Large areas that exclude people entirely, such as Dinosaur Park's Natural Preserve, are rare. The main reason for the Natural Preserve is to protect the fossil resource, as fossils in Dinosaur Park are fragile and can crumble under a single footstep.

Crumbling fossils aren't the problem in and of themselves. After all, paleontologists can only find fossils once they're already exposed and beginning to weather. The motivation for protecting most of Dinosaur Park came as visitation increased and it received a World Heritage Site designation in 1979. Jarrid Jenkins, Visitor Services Program Head in the Parks Division at Dinosaur Provincial Park, remembers the days when people could wander anywhere they wanted. "My grandparents used to take visitors down to the badlands to have picnics at the clam beds," he says, referring to areas of layered fossil clam shells that now can't even be accessed on guided tours. "People remember the 'good old days,' when they could walk around and explore and bring fossils home with them, but there were also many less visitors then." Now, Dinosaur Park welcomes 100,000 visitors through its gates each year, many of whom are international travelers checking off a box on their World Heritage Site bucket list.

In Dinosaur Park, any constant wear on the ground, whether caused by hundreds of human footprints or motorized recreation, would cause rapid erosion of the fossils and hoodoos. Everything about this area is fragile, even the grassland areas. On one of the tours, I showed my guests a wagon trail still imprinted in the native grass that was made by settlers or explorers over 100 years ago. Most were shocked that a simple wagon trail could have such a long-lasting impact on the landscape.

Wagon Trail PHOTO: © D. LLOYD

Without people, what happens?

Alberta's Provincial Parks Act and *Historical Resources Act* provide the legal mechanisms to restrict access in the Natural Preserve. In addition to protecting fossils there are other benefits to Dinosaur Park's Natural Preserve. According to Jenkins, public safety is a major consideration. Anyone accessing the preserve must bring a radio for safety reasons, as there is no cellphone service. The harsh badlands environment poses a variety of potential threats or dangers, including lack of water, sinkholes, crumbling slopes, and cactus. For the unprepared, the preserve can be a disaster in the waiting – and there are park legends to prove it.

The Natural Preserve also provides ecological benefits, such as letting coyotes, snakes, and migratory birds live free from human interference. For researchers, this intact and representative ecosystem is perfect for studying bats, rattlesnakes, and other poorly understood wildlife. The river valley's extensive riparian areas provide essential habitat for species like beaver, moose, and threatened/at-risk birds such as ferruginous hawk, short-eared owl, and Sprague's pipit while the badlands are home to scorpions

Public access to Dinosaur Provincial Park's Natural Preserve area generally is restricted. PHOTO: © A. JOHANCSIK

and cactus, found in very few places in Canada.

Educating children about parks is also easy when the distinction between protected and non-protected areas is so obvious. School groups go on a guided tour in the public area and then travel by bus to the Natural Preserve. The difference in abundance of fossils between the two places is dramatic. It's easy to understand why: fossils in the campgrounds and publicly accessible badlands have been trampled, pocketed, or simply eroded by visitors. "Kids see huge fossils and micro-sites [in the Natural Preserve] that they wouldn't see anywhere else," says Jenkins. "It demonstrates why we have parks, which is preserving resources for the future. Going into the protected area helps people understand why we're protecting it."

Can Tourism and Restricted Access Coexist?

Understandably, adventurous visitors may be frustrated or disappointed to not have access to the beautiful valley bottoms they can see from the coulee edges on prairie level. But, on the other hand, some visitors may place more value on restricted areas because it becomes a privilege to enter them. This can help tourism boom while keeping ecological and historical values intact.

On balance I hope most people realize that since Dinosaur Provincial Park has so many unique features, and because the 'badlands' are difficult to live in, the current level of restricted access should be maintained. It's important to recognize that protection doesn't mean absolute exclusion or expulsion; rather, it means exclusion of certain uses and limitations of how much use is allowed. E.O. Wilson, one of the world's most renowned evolutionary biologists, suggests in his recent book *Half Earth* that 50 percent of the world's surface must be protected in order to save the planet from, as the expression goes, going the way of the dinosaurs. At the same time I think he recognizes that human visitation and use may be compatible with that goal. As he states, effective conservation includes "the necessity of accommodating people living within those reserves."

There are some people who remember Dinosaur Park when it wasn't so precisely managed. The only Dinosaur Park I've known is one that has a world-class visitor centre and display houses, but it still has the charm of a back-country destination. Dinosaur's best chance of staying authentic is to recognize the reason why people come: fragile fossils, delicate wildlife habitat, and constantly weathering rocks. Showing this sensitive environment to people is important, so long as accessing it doesn't compromise its integrity. Incorporating a Natural Preserve in Dinosaur Park is crucial to making the park a great example of successful ecotourism, with benefits for environment, the economy, and the people.

The Cretaceous-Paleogene mass extinction that is known for the death of the dinosaurs was the fifth mass extinction in earth's history. E.O. Wilson and other scientists say we are in the midst of a sixth, the Holocene extinction, and the best way to avoid this is to protect and value the habitat and biodiversity we have left. Dinosaur Provincial Park affirms Wilson's hope. Though the dinosaurs that roamed its landscape have been gone for millions of years, these ancient giants will continue to teach us the importance of life well into the future.

Memorable McClelland Lake Wetlands

By Carolyn Campbell, *AWA Conservation Specialist*

Growing up in Calgary, my sense of Alberta was mountains, foothills, and prairie. I knew there was a northern boreal area somewhere beyond Edmonton. Once, in Grade 10, I briefly visited northern Alberta in winter thanks to the good people from Chevron's Calgary office who had mentored me and other teens in a Junior Achievement company. That was during the boom-time era of the late 1970s when, as high school students, we were flown up on a company plane on a grey snowy day and shown an oil well drilling facility. It was eye-opening to see that side of the energy industry but I still hadn't any sense of northern forests, wetlands, wildlife, or long-term indigenous residents. As a third-generation Albertan, I had no concept of the two-thirds of Alberta that is boreal forest.

That soon changed when I began working for Alberta Wilderness Association on our northeast Alberta areas of concern. As I think now of all my memorable AWA boreal trips, a standout was in the late summer of 2008 when I went paddling and hiking with three other people in and around the magnificent McClelland Lake wetland complex.

McClelland Lake is situated just east of the Athabasca River, about 90 kilometres north of Fort McMurray. The Lake is an integral part of a unique system of wetlands, the McClelland Lake Wetland Complex. The area's ecological significance is due both to its important wildlife habitat and its biophysical features, which include rare sinkhole lakes and a large, spectacular 'patterned fen' that makes up part of the wetland complex (a fen is a peat wetland fed by groundwater). Then, as now, the biggest threat to the McClelland Lake Wetland Complex is from the Fort Hills oil sands mine. The key difference though is what was a proposal then is a reality now. I needed to get to know this area.

Three of us, Chris, George, and I arrived in Fort McMurray in late August 2008. The forecast was for rain, and Saturday morning was indeed quite rainy, but we headed off optimistically. Our guide was a paddler from Fort McMurray who had previously explored the McClelland area. He provided transport, two canoes, skillful navigation on land and water, and camp gear to supplement our own. I will be forever grateful to him for so generously sharing his time and resources with us.

We drove north on the highway following the route of the Athabasca River valley, past the mine pits and tailing ponds of the oldest tar sands operations. I hadn't realized how near the surface the bitumen could be. We stopped at an exposed deposit by the roadside, where I easily picked up a chunk of bitumen sands; it has since been inspected by a Texas climate change conference audience and Calgary elemen-

We set up camp beside one of the 12 lovely, rare circular sinkhole lakes in the McClelland watershed.
PHOTO: © C. CAMPBELL

We paddled into the edge of the McClelland patterned fen. Groundwater flows over the 8,000 years since the last glaciation created upland 'flark' ridges that support small trees, separated by 'string' pools rich in aquatic vegetation. PHOTO: © C. WEARMOUTH

tary school kids. The roads exposed fine sands beneath a fairly thin layer of vegetation and shallow soil. We continued north beyond the pavement on the sandy road that is the winter road to Fort Chipewyan. Each winter this road is traditionally iced to make a solid surface for vehicle travel. Then we turned off that road and headed through a myriad of exploration and forestry roads.

As the rain continued to fall, our guide jokingly told us he realized he had forgotten to bring "quadder currency." This was six packs of beer: very helpful if we got stuck on any trails in the rainy weather and needed help getting out. We actually met very few quadders on our way in or out. No currency was needed in any case since the rain soon stopped and the rest of our trip only saw occasional light showers.

We set up our tents and tarp at a site by a lovely sinkhole lake in the McClelland watershed, west of McClelland Lake itself. These circular sinkhole lakes are formed from 'karst' erosion: over time, surface water and groundwater wears into the Devonian-era limestone formation at or below ground level, causing collapses in the limestone which are termed karst topography or geology. Karst lakes are rare in Alberta's boreal mixedwood forest, and the string of 12 karst lakes in the McClelland watershed earned these lakes a provincial Environmentally Significant Area (ESA) designation in both 1997 and 2009. In more recent years, karst and other erosion processes affecting the Devonian formation in the wider oilsands region have greatly interested the Alberta Geological Survey. Uneven erosion processes influence the thickness of the bitumen-bearing McMurray formation below the Devonian; they also affect the connectivity of saline and freshwater aquifers and the integrity of caprock overlying oil sands deposits that are subjected to high pressure steaming in the in-situ oilsands area.

After setting up camp we were ready for our first exploratory paddle on McClelland Lake and drove a short distance to the launch site our guide had scouted. On an overcast afternoon, we put our canoes into the Lake. Almost immediately, we passed near some tall aquatic grasses, which to my astonishment appeared to be bearing wild rice. I loosened the grains from a strand or two to taste the crunchy grains. Later I read that wild rice was introduced into northern Saskatchewan lakes from water bodies in eastern Canada, initially to boost muskrat populations, then for commercial harvest. I do not know the source of these aquatic grasses in McClelland Lake, whether native or introduced, but I do know that, at the moment we discovered them, it seemed the lake was offering a most generous autumn greeting.

Paddling west along the lakeshore we saw abundant floating lily pads and grassy aquatic vegetation. McClelland is relatively shallow and fed by shallow groundwater and surface water that flows northeast through its large wetland complex. It doesn't support fish populations, but is rich in bird life. Its 1997 provincial ESA designation noted it as a hydrologically important lake, an important waterfowl staging area, and an important bald eagle nesting area.

The lake is the largest natural water body between Fort McMurray and the Athabasca River delta. It is strategically located on the Athabasca River Valley migratory bird flyway about 100 kilometres upstream

The jack pine forest is carpeted with reindeer lichen. PHOTO: © C. CAMPBELL

of the Peace Athabasca Delta, one of the world's largest inland freshwater deltas. Two hundred and five bird species have been recorded within or in the vicinity of McClelland Lake, of which about 115 stay to breed. That late August day we surprised several immature greater white-fronted geese into flight, paddled past a pair of cormorants, and encountered a group of ring-billed gulls, several of which were curious enough to briefly escort our canoes.

We paddled to the lake's western edge. Our goal was to enter as far as possible into the patterned fen known as the McClelland fen. Patterned fens form on gently sloped landscapes fed by groundwater: over thousands of years, complex water and possibly ice actions push up narrow ridges of peaty soil at right angles to the water flow. These ridges, called strings, can eventually support small trees. They are separated by long, narrow, shallow pools of water, called flarks.

The McClelland Lake fen has built up over 8,000 years since the last glacial retreat. In some areas its peat layers are five metres deep. It is intricately and beautifully patterned, with hundreds of flarks and strings. The 1997 ESA called the McClelland fen one of the most significant and largest patterned fens in Alberta, citing its rare and significant plant species and a sandhill crane nesting area. Since then, endangered whooping cranes have been documented landing there on several occasions. The fen is also home to other species of concern, including the Canadian toad, yellow rail, black tern, and short-eared owl.

Leaving the lake's open water, we paddled into narrow water fingers but it wasn't long before the fen's dense aquatic vegetation blocked our way. We retreated back to open water and found an access point where we could stand on a string ridge. We walked a short distance, uncertain how much farther our weight could be supported on the delicate structure. We looked across what appeared to be a deceptively solid ground meadow, knowing it was all floating plants. We retreated again and paddled back to our launch site, satisfied with our exploration of this unusual water-land transition zone.

After our meal that evening, we walked in the beautiful jack pine forest near our camp and discovered a patch of ripe blueberries. Soon we were tasting the excellent vintage of the year. In amongst the blueberries was the odd bog cranberry, deliciously tart. As we made plans for the next day back at camp, the tree trunks glowed reddish brown in the setting sun.

The next morning we set off for an exploratory hike farther south at an edge of the fen. We wondered how far we could walk from the solid upland forests towards the aquatic fen. We also wanted to see if we could find pitcher plants. The pitcher plant *(Sarracenia purpurea)* is a vulnerable species according to the Alberta Conservation Information and Management System. Pitcher plants are fascinating insectivorous plants that thrive in some nutrient-poor wetland areas by attracting insects into their bright red-veined pitcher-shaped leaves. The insects are trapped by the downward pointing hairs and slippery surface of the leaves and drown in the water that collects at the base of the leaves.

We saw what were likely wolf prints in the sandy road, and enjoyed the graceful shapes of the jack pine forest. The understory in this forest was sparser than what I

was used to. Sometimes there was shrubby ground cover, sometimes low green mosses, but most striking was the forest floor of white reindeer lichen, which resembled an early season snowfall from a distance. The drier jack pine areas gave way to black spruce, which tolerate much wetter soils. Closer to water-logged ground, we began picking our way carefully, letting the taller vegetation guide us to more solid footing. We could still stand for a time on the open moss-carpeted ground, but water would gradually penetrate into the area compressed by our bootprints, so we shifted weight, keeping our eyes on the ground. Suddenly Chris yelled out, "Pitcher plants!" We found several photogenic clusters. A few more steps, and the ground took on a wavy water mattress character, so we again retreated.

The next morning we went for a final exploratory paddle eastward along the lake. McClelland Lake is on the northern edge of the mineable oil sands area and for now it remains a safe stopover for birds, in contrast to nearby projects' growing tailings ponds. The area is within an aboriginal trap line area and indigenous communities' traditional land use territories. This extraordinarily beautiful, ecologically valuable and sensitive place should be protected for future generations to marvel at, rather than be destroyed by the Fort Hills mine (see Inset).

We found these colourful insectivorous pitcher plants near the edge of the McClelland fen. PHOTO: © C. WEARMOUTH

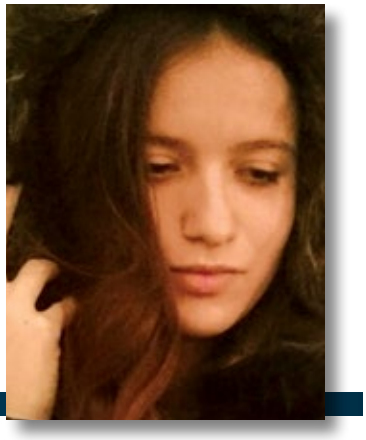
We drove out of that beautiful forest with a small water bottle full of wild blueberries to share with the others in our Calgary office and the chunk of roadside bitumen. Those two souvenirs sum up the paradox and challenge of our industrial society – to learn to live within ecological limits so that all species can thrive. Alberta's northeast boreal forest reveals itself in many ways through the seasons, but I will always cherish my first trip to the McClelland wetlands.

Blueberry picking. PHOTO: © C. WEARMOUTH

Fort Hills oilsands mine and McClelland Wetland Complex

AWA took part in a four-year sub-regional planning process that in 1994 resulted in protection of the McClelland wetland complex from oil sands surface access. However, in 2002 the sub-regional plan rules changed suddenly at the request of Koch Industries' subsidiary True North Energy, which had acquired the leases in 1998, after the plan rules were clearly in place. The amended plan allowed mining in about half of the wetland complex, provided that "surface mining … shall maintain the water table, water chemistry and water flow within limits as indicated by natural fluctuations to maintain ecosystem diversity and function of the McClelland Lake wetland complex where surface mining is not allowed." A few months later during Fort Hills project application hearing, Alberta's Energy Utilities Board accepted True North Energy's request to withdraw the portion of its EIA describing impacts to the wetland complex. This EIA had stated that water table disruptions from mine dewatering and other lease disturbances would likely kill peat-forming mosses, ending peat production on the fen. Instead, the EUB granted True North Energy its request to develop a plan prepared by a company-led committee of regulators and stakeholders to mitigate the mine's effects on the unmined portion of the wetland complex. AWA has not joined this committee, which we regard as a means to legitimize the wetland complex's destruction. As of June 2016, with Suncor Energy now the lead operator at Fort Hills, there is still no approved plan to mine in the McClelland watershed.

Finding Wilderness in the Stars



By Esther Bogorov, *AWA Conservation Specialist*

You pack up your hiking boots, water bottles, and After-Bite and head out to Jasper National Park, hoping to spot some wildlife you haven't yet had the luck to see. When the sun sets and takes the warmth with it, you curl up in your sleeping bag deep inside your tent to get ready for the next day. Perhaps, this summer, you'll try something different: pack your sleep mask, pitch your tent in the late morning, sleep through the day, and then wake up with the sunset. When darkness sets in, you'll look up and see the stars revealed in our northern sky. Through the night, the sky will change as we on Earth make half of a rotation on our axis, one tiny fraction of our orbit around the sun, and a much tinier fraction of our flight around the centre of our Milky Way galaxy. That nighttime darkness you'll witness is a part of true wilderness.

Dark Sky Preserves

Jasper National Park is the second largest dark sky preserve in the world, second only to Wood Buffalo National Park. A dark sky preserve is a place where the nighttime sky is pristine. On clear nights it's awash with starlight, thanks to preventing any necessary artificial light sources from spilling up into the sky. Alan Dyer, astronomy author and photographer based in southern Alberta, has been travelling the world chasing solar eclipses and watching stars for decades. Dyer reflects on the value of these preserves, saying: "As our cities become more brightly lit, the sky itself becomes an endangered species. Yet today, interest in the night sky is higher than ever before." This means the chance to see the stars is attracting more visitors to these preserves, drawing people to wild spaces they might otherwise never experience. Dyer goes on to say, "in the last decade, park officials have worked with astronomers to create the system of dark sky preserves. Having this designation is now sought after by parks as it helps attract a new class of visitor: the astronomy tourist."

Alberta has great night sky viewing opportunities and there are some big events you can attend to experience them in good company. Jasper hosts an annual festival in October. The Rothney Astrophysical Observatory in Calgary hosts special open houses for the general public. But if you want to just get out there and get into it, enthusiasts and scientists gather at the many star parties that happen all around the province. These events offer great ways to meet space experts and use their tools to see details and features the naked eye cannot detect. Field telescopes and massive digital observatories show details of the night sky that you literally have to see to believe.

If you plan on being out this June or July but don't have a telescope, there are a few special celestial objects much closer to Earth that you can see with the naked eye. Jupiter, Mars, and Saturn all should be visible on clear, light pollution-free nights. A particularly good time to see them in Edmonton will be at the beginning of July during the new moon. Jupiter is the first to rise – most of its journey across the skies will be during daylight hours. But, you should be able to see it before it sets at 12:30 a.m. Mars will be in the sky until just after 2:00 a.m. and Saturn will be vis-

Orion, one of the easiest constellations to spot in the winter, hovering over the Hoodoos near Drumheller, Alberta. PHOTO: © ALAN DYER /amazingsky.com

As Earth rotates through the evening, the stars appear to spin over our heads. The North Star is unique in that, as shown in the photo taken on the solstice at Dinosaur Provincial Park, it appears to remain stuck in place at all times. PHOTO: © Alan Dyer /amazingsky.com

ible until 3:30 a.m. Look for them above at altitudes of roughly 15 degrees above the horizon in the southeastern to southwestern parts of the sky. Towards dawn, you might catch a glimpse of Mercury. Venus, often the easiest to spot, will only become visible again in August. This kind of information, and much more about the planets, stars and constellations, is readily available through endless online resources. Just a quick search for "night sky map" can provide the link between knowledge and magical experience. Vito Technology's mobile app called Star Walk lets you take a map of the sky with you into the field. Another good place to start is at www.timeanddate.com/astronomy. Type in a mid-size or larger city for your reference point and you'll get a plethora of astronomical information. Ironically, perhaps, Vulcan Alberta isn't included…

Dark sky preserves aren't the only way to promote star visibility: having a strong community working to keep their part of the sky dark helps. North of Edmonton, Bon Accord is the first town in Canada to be recognized internationally as a dark sky community for their efforts. According to the International Dark-Sky Association, the town, municipality, or city vying for recognition must use proper outdoor lighting, offer dark sky education programs, and most importantly, have citizen participation. A few years ago, the town committed to building an observatory park and encouraging businesses to operate under a culturally and environmentally-conscious ethic. They thus succeeded in making Bon Accord another Alberta destination for astronomy tourism. It is set to open to the public in the summer of 2017. Dark sky stewardship is an effort to not only promote responsible living locally, but to set an example for other communities.

Light Pollution

Light pollution, of course, does not only get in the way of our view. In addition to the aesthetic and recreational value of dark skies, they deliver significant health benefits for humans. Artificial light at night has led to disturbances in our natural, daily clock and has been blamed for increased insomnia in the developed world. More broadly, leaking, bleeding light hurts nature; it disturbs the wildlife that depends on darkness. Not only does light at night increase stress for birds, bats, amphibians, insects, and many more creatures, but it can alter their behaviour, orientation, and mating habits. This will inevitably affect the entire ecosystem and its valuable biodiversity.

A case study published this year in ***Biological Conservation*** looked at how terrestrial vertebrates' behaviour changed with different light intensity during the nighttime. The researchers treated passage structures such as vegetated over- and underpasses with different light intensity over the course of several weeks. They concluded that lit areas served as deterrents for some of the animals they tracked, including mule deer and deer mice. The passages are designed to increase wildlife connectivity, but the lit areas were habitat disturbances that decreased animal use of these structures. For light-averse species light pollution means the populations will suffer from the decreased connectivity and may contribute to increased disease susceptibility and reduced genetic diversity.

These types of studies are presented annually at the Artificial Light at Night (ALAN) conference. People gather here to discuss all aspects of the problematic effects of artificial light, from technology and mapping to the social, economic, and environmental implications of light and darkness. By developing informed and strong regulations, cities, towns, and wild lands can all contribute to a healthier ecosystem. The public has the opportunity to help planners and politicians make ecologically informed, economically wise, and socially acceptable decisions across urban and rural human-dominated landscapes. By starting on our streets, something as simple as redesigned light fixtures can help nocturnal creatures survive while improving human quality of life.

Learning from Star Gazing

The effects of light on wildlife in particular inform how the Royal Astronomical Society determines what a truly dark sky should look like. By learning just how dark it needs to be for animals to thrive, we have protected lands that are also great locations for building important tools for astronomy. Telescopes first proved the heliocentric model of our universe, which explains that the sun is the centre of our solar system. This explained why it seemed that some of the bright dots in the sky, now called planets, did not act like the rest of them. Modern, digitized telescopes are now showing us the age and the size of our expanding universe. We learn that, by looking at the stars, we are looking into the past.

The brightest star in the northern hemisphere is Sirius, found in the dog constellation, busy chasing Orion the hunter across the sky. It gives off light that reaches our naked eye from about nine light years away. That means that the starlight, traveling at the speed of light, left the surface of the star nine years ago and just some of it is finally reaching us here. The countless other stars, some even closer than Sirius, do not appear to shine as brightly as this one from our vantage point on Earth.

While the speed of light alone is enough to blow our minds, not every mission to dig deep into space and into the past has been in the best interest of people. In April 2015, the Canadian government committed millions of dollars to invest in the Thirty Metre Telelescope (TMT). The TMT was planned to be built on Mauna Kea, a mountain in Hawaii. The mountain already hosts a few smaller telescopes because of the darkness and absence of cloud cover. This time, however, protests erupted. The mountain is sacred, and the proposal to further colonize the land of the Ancient Hawaiians ultimately resulted in land claims disputes. Later last spring, the courts of Hawaii ruled against the project. The researchers and developers are now looking for an uncontested site, eyeing a town in India.

The grassroots protests in Mauna Kea left the peak of the mountain free for star-gazers to view the sky the way humans have for thousands of years. While sometimes it

The Andromeda galaxy, 2.5 million light years away from Earth. PHOTO: © ALAN DYER /amazingsky.com

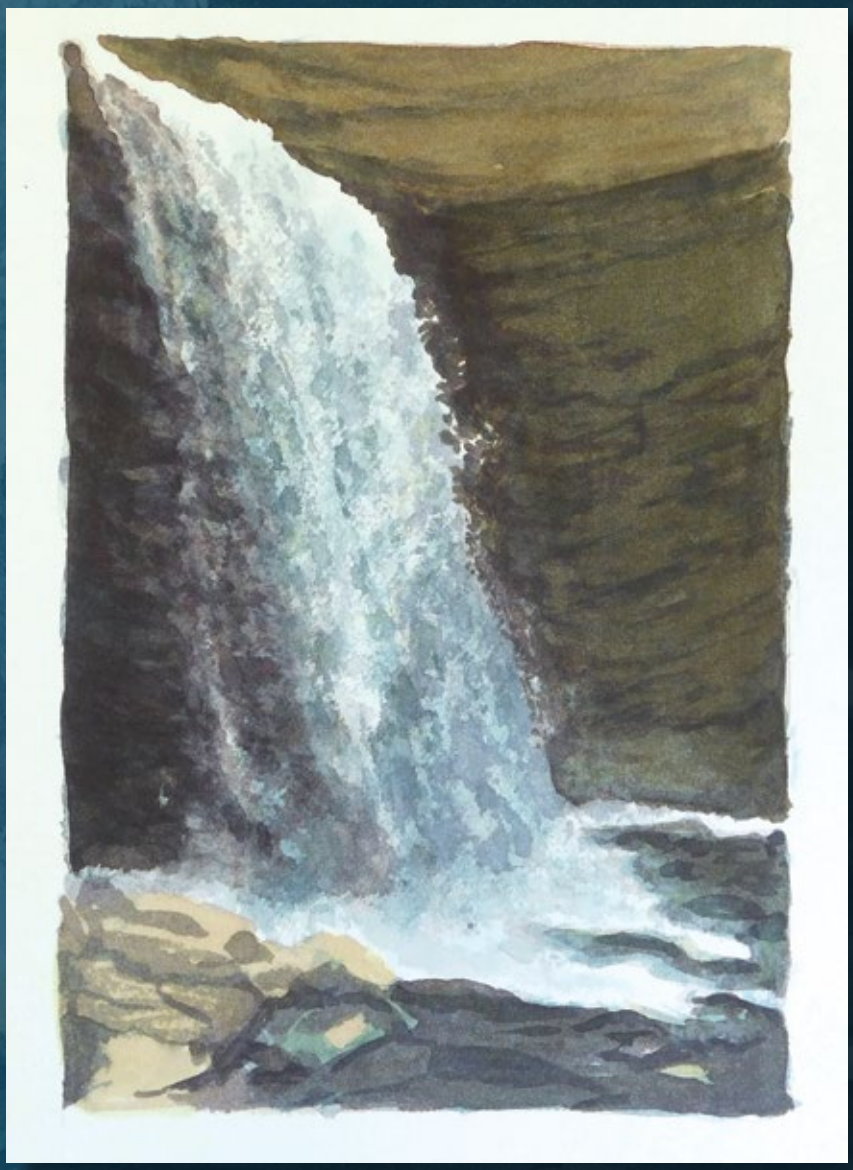
is valuable to look at the sky through massive machines to witness the past up close, it is also important to have the freedom to lay down, look up, and hope for an asteroid to fly into our atmosphere, leaving behind a trail that looks like a shooting star. (If you look to the northeast sky, you will see the Perseid meteor shower peaking this year on August 12 and 13. The challenge will be seeing it through the light of the waxing gibbous Moon.)

The sky taught us that our sun is a star, that there 100 billion stars in our galaxy, and that there are 100 billion galaxies in our universe. Our telescopes and careful calculations taught us that Earth is one of eight planets in our system, along with another five dwarf planets, including Pluto. And as we continue to learn, we've discovered that many of those countless stars are suns themselves, surrounded by evermore countless planets.

Yet the deeper into space we look, the more we realize how unique planet Earth really is: we have not found life anywhere else but right here around us. Protecting the dark skies that have inspired us since ancient times also protects our home planet and the life that defines it. Our work as wilderness defenders is not only to make sure that our land stays wild and our skies stay dark, but to give our descendants the same chance to look up in wonder. As astronomer Dyer says: "It is so important to have parks and wild areas where not only the earthly environment is preserved, but also the celestial. The night sky is as much a part of nature as are the flora and fauna." It is a noble duty to make sure we can tell the story of how, over the course of billions of years, stars grew and died and sent enough stardust across the universe to collect in rock, plant, and animal here on Earth, including you.

Author's note: I would like to thank Alan Dyer, who taught me my first real lessons about the Milky Way and our night sky with his planetarium productions, Gary Trithart for giving me the technical support to help me follow my curiosity, and Barry Thorson for enabling me to learn more about the stars than I ever thought I would.

Featured Artist
Michael Mott



Marguerite Falls
30cm x 20cm
Watercolour

Trail Rehabilitation in the Castle

By Joanna Skrajny, *AWA Conservation Specialist*

During the 2013 floods in Alberta, many trail systems were washed out by overflowing rivers and creeks. In order to help restore and repair these backcountry trail systems, $10 million from a federal disaster relief fund was allocated to establish the *Backcountry Trail Flood Rehabilitation Program* (BTFRP) in 2014. The program is intended to run until March 2017.

The mission of the program is as follows:

"Environment and Sustainable Resource Development, in collaboration with users, will restore priority recreational trails on Public Lands that were damaged by the 2013 flood event to ensure sustainable trail access is restored for user enjoyment. At the same time, environmental conditions in and around the flood damaged potions of these trail system will be maintained or improved. [...] It is acknowledged that while the Backcountry Trail Flood Rehabilitation program is a discrete program with a defined end date, this program will inform the long term management regime for trails and recreation on Public Lands. "

> "The left hand didn't seem to know what the right hand was doing"
>
> *- Peter Sherrington, Vice-President of the Castle-Crown Wilderness Coalition*

It is indisputable that the intentions of this program are positive – who isn't in favour of helping to re-establish washed out trails so that Albertans can sustainably recreate outdoors? Problems arise though when decisions to create new bridges or rehabilitate trails are made without considering the future plans for an area, and when there are no checks and balances to determine whether there should be a trail there in the first place.

In the Castle, the flood trail rehabilitation program has spent considerable resources, with projects ***still happening*** to repair and/or construct motorized vehicle trails. This is despite the fact the area has been newly designated as a Castle Provincial Park and Castle Wildland Provincial Park.

Currently, designated trail networks within the two proposed Castle parks total more than 500 km. In 2011, overall linear disturbance in the Castle Special Management Area Forest Land Use Zone totaled 1,283 km, for an average density of 1.3 km/km². This density is ***more than double*** the scientifically-established thresholds of 0.6 km/km² recommended in the grizzly bear and westslope cutthroat trout (WSCT) recovery

Many ATVs don't fit ATV bridges. Trying to do right thing, this one got stuck. After backing out, he forded threatened cutthroat trout designated critical habitat during the spawning period when eggs could have been incubating in the gravel at this site. PHOTO: © D. MAYHOOD

Freshly-used OHV ford over Lynx Creek, within designated westslope cutthroat trout critical habitat, immediately beside a brand new OHV bridge.
PHOTO: © D. MAYHOOD

strategies for the survival of those species.

For specific populations of westslope cutthroat trout and grizzly bear to survive and thrive in the Castle, the extent of the OHV trail network needs to be drastically reduced and in many cases eliminated. These trails have multiple impacts on the forest ecology and the resident plant and wildlife species. Trails disrupt and fragment habitat, provide a vector for the introduction of invasive plant species, and bring increased human use deep into the backcountry where conflicts can occur with existing wildlife populations.

In the Recovery Plan for westslope cutthroat trout (WSCT), for example, "forest harvest, linear disturbance, grazing, OHVs, recreational access, instream construction, municipal runoff" are documented to contribute to sedimentation and therefore adversely affect WSCT habitat. Bridges do not alleviate erosion and do not prevent damage to native fish from the sediment that the trails themselves deliver to streams. Although bridges may reduce sediment delivery at ford crossings, they do not reduce sediment delivery on either side of the bridge and elsewhere along the stream.

Sediment can harm WSCT and other native fish by causing direct mortality. Even small amounts of suspended sediment can kill eggs and larvae if the low concentrations are sustained for periods as short as several days (less than 1 week). Sediment that settles out can suffocate eggs, larvae, and small juveniles that may be overwintering among cobbles and large gravel on the stream bottom. It can embed and cement in the bottom gravels. Sediment also threatens cutthroats by reducing habitat and food availability.

The recovery plan for westslope cutthroat trout emphasizes that "the focus of recovery efforts should be on protecting habitat of existing pure populations." In order to protect the remaining habitat of pure WSCT populations, all motorized trails and roads that have damaged, are damaging, or threaten to damage WSCT critical habitat need to be closed – permanently. No new development (e.g. roads, trails, transmission lines, pipelines, well sites, buildings, fences, bridges) should be allowed in areas that may damage critical habitat. Reallocating funds from trail rebuilding to trail restoration would make a significant contribution to protecting habitat.

AWA remains concerned that BTFRP work is going ahead in the proposed Castle Provincial Park and Castle Wildland Provincial Park before management plans for the parks are in place. Repairing trails to enable access is not an efficient use of resources when the question of whether or not those trails will be closed in the Castle Parks has not been answered by an open and transparent public consultation. Taxpayer dollars are being spent repairing and upgrading trails in what is to become a provincial park, for vehicles that should not be allowed in any of Alberta's provincial parks. A large number of trails will have to be removed, now at even greater expense and environmental damage. These resources would be better used if they tackled erosion control and the removing and rehabilitating of trails that have damaged the post-flood landscape.

We should be concerned that building these trails will further entrench and legitimize motorized recreation on the landscape before it has been determined whether these uses are even scientifically sustainable on the landscape. In the case of the Castle, the science is pretty clear that motorized recreation cannot be sustainably managed.

The Castle is over-roaded and over-developed; today's landscape damage is the result and the area is in dire need of restoration. This restoration is vitally important and must be a primary focus of management planning.

In the future, careful reconsideration has to be given to rebuilding any trail that has failed because of flooding and heavy rains. The ecosystem's integrity and the security of our headwaters and our watersheds must be considered first; only after priorities are safeguarded is it appropriate to decide what types of recreation should occur and where they should be allowed on the landscape.

Featured Artist Michael Mott

Mountain Landscape
122cm x 50cm
Watercolour

Don't Give Up the Ghost:

An AWA Summer Hike

By Ian Urquhart

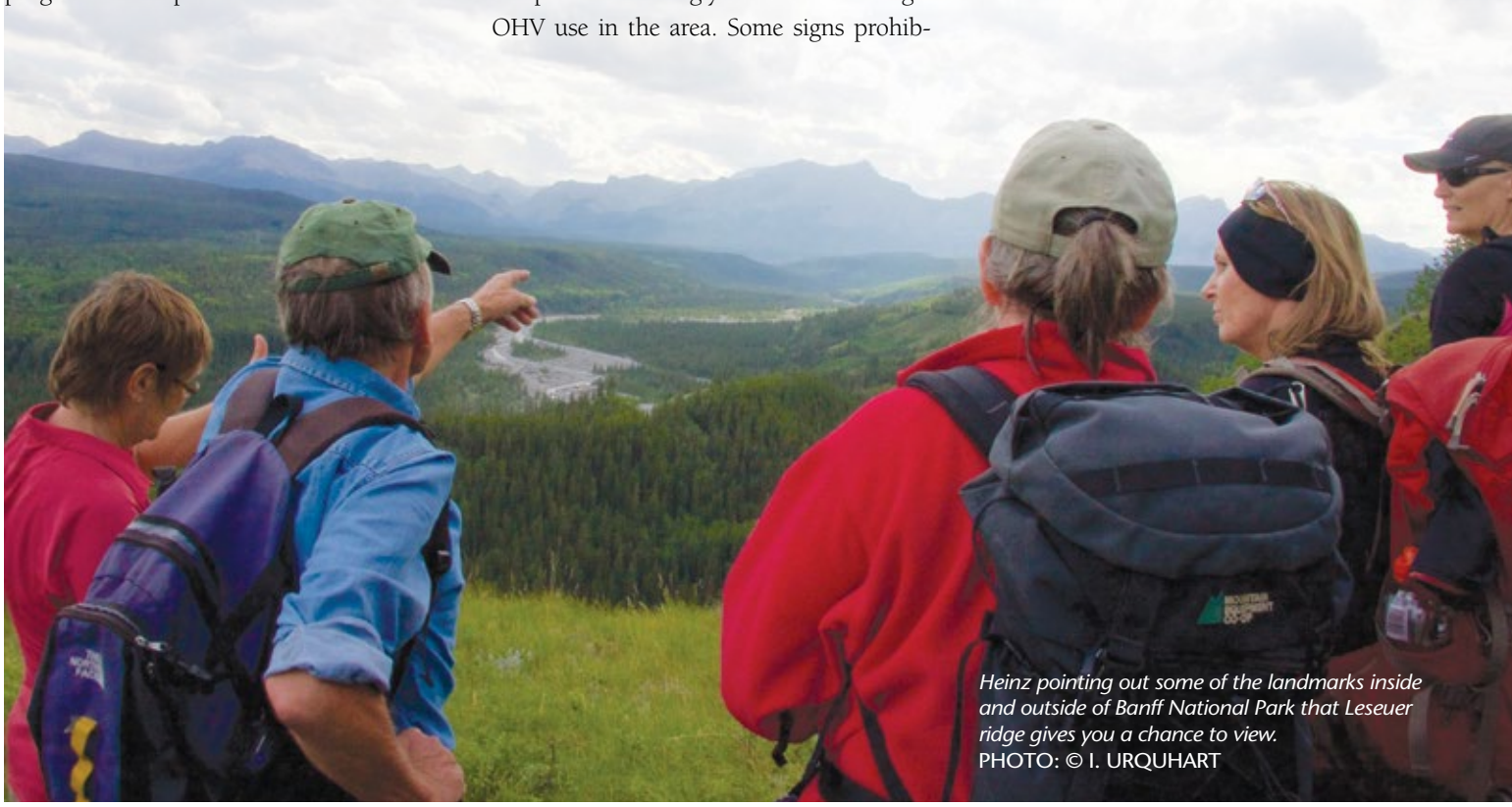
As I drove towards Cochrane I was trying to recall all of the reasons I've had over the years for hiking. There were the times, years ago, when my friends and I were speed freaks – we weren't concerned with much more than how quickly we could complete a route such as the trail from the abandoned Molly Gibson mine site to Slocan Chief Cabin in Kokanee Provincial Park. Now discovering new landscapes, revisiting familiar ones, finding solitude, learning about the flora, fauna, and histories of the land are the motives most likely to get me out of the city and onto the land.

Last June, I was headed northwest of Cochrane to take advantage of AWA's hikes program and explore some new terrain. I joined AWA Past-President and our group leader Heinz Unger, AWA Conservation Specialist Brittany Verbeek, and a handful of AWA members on the late afternoon/early evening Ghost View Ridge hike to Leseuer ridge.

I really wasn't sure what to expect. On the one hand, the Ghost didn't have a good reputation in my mind. My impression was formed by the newspaper reports of May long weekends in the Ghost-Waiparous where offroaders might have given film director James DeMonaco the idea for his movie "The Purge" – many reportedly behaved as if the law didn't matter. That impression wasn't soothed by the solitary soul we met at the trailhead. He had set up camp there seemingly to document illegal OHV use in the area. Some signs prohibiting OHV use on the trails displayed the kinds of wounds you could imagine would be inflicted by those who didn't think there should be limits on their freedom to ride where they wanted to.

On the other hand, I couldn't see Heinz (or AWA too) taking a group to hike an unsightly route. For Heinz, part of his motivation for volunteering his time to lead this hike was to correct the impression of people such as myself. He wanted to show people just how impressive the Ghost could be, that it really was an underappreciated gem on Calgary's doorstep. We'd see.

The first part of the trail wove its way higher through a mixed forest of fir and aspen. After about 15 minutes Heinz stopped



Heinz pointing out some of the landmarks inside and outside of Banff National Park that Leseuer ridge gives you a chance to view.
PHOTO: © I. URQUHART

Hiking atop Leseuer ridge. PHOTO: © B. VERBEEK

us beside an old fenceline that the trail parallels on the bottom section. He wanted to draw our attention to some post-logging regrowth. About twelve years ago part of the area on the other side of the fence had been logged; now young firs were establishing themselves between aspens that had not been felled.

Descending from the ridge to the valley trail
PHOTO: © B. VERBEEK

It's at, or very close, to this point where the trail branched in two directions. The valley trail, as its name suggests, stayed close to the valley floor while the much steeper ridge trail beckoned us higher. Recent days had been dry and I was glad for that as we headed up the trail. I could imagine how slippery the trail could be if the ground had tasted rain recently. Wood lilies joined paintbrushes and at least three members of the sunflower family, blanketflower, hairy arnica, and showy aster, in bordering the trail as we made our way towards the ridge. If the hike through the forest and atop a steep slope of grasses wasn't reward enough the westerly views from the ridge top certainly were. The viewscape set before us was a panorama of the front range of the Rockies. From the southwest to the northwest Heinz pointed out some of the notable landmarks: Devil's Head, Blackrock Mountain, Mount Aylmer, and the valley where Lake Minnewanka would be found. The remains of a lean-to rested in the trees just behind us – whoever had built it had chosen well if they wanted a spot with great views.

From the ridgetop we descended the steep slope to find the valley trail. Care and attention were called for in order not to lose your footing on some portions of the trail. Once on the valley trail we headed back to the junction with the ridge trail. I was struck at this point by how abruptly the vegetation changed over a very short distance. The steep, south facing slope we had just came down had few conifers, few aspen; grasses dominated. Just across Leseuer creek, quite literally within spitting distance of where we were walking, the vegetation was completely different. There the land was thick with conifers. To this layperson I think this vantage point exemplified what Downing and Pettapiece identified as a key feature of the montane natural subregion in their 2006 report for Alberta's Natural Regions Committee. Different aspects, slope positions, and wind exposures combine to generate very variable microclimates that, in turn, produce abrupt changes in vegetation patterns.

As twilight deepened and the colours became richer a hawk called out from the valley ahead as if to hurry us along. For me, by this point in time, Heinz's impression of the Ghost had triumphed.

Recently I asked Heinz again about his interest in introducing people to the Ghost.

Early fall family picnic along the valley trail. Yes…I've been back. PHOTO: © I. URQUHART

Heinz and his wife Marilyn have lived in the Ghost for 15 years now. Part of Heinz's inspiration goes back to when they were recent arrivals to the area. Then some of Heinz's new neighbours shared their knowledge of the area and this particular trail with him. "It was the local knowledge passed on to a newcomer…so the discovery was very special to me." That spirit, of sharing something special with others, is so important to Heinz. It's a spirit I'm sure anyone who has hiked to the ridge feels. Heinz told me that one of our group from last year brought her hiking club to the Ghost to hike the ridge trail. Now dozens more people can tell their hiking friends about the delight that sits on Calgary's western doorstep.

Some comments from hikers on the 2015 Ghost View Ridge hike:

"As an avid hiker,it was great to experience another lovely trail in the Glorious Ghost. This is an area close to Calgary but not known to many hikers and they are missing out on an excellent hike."

– Ann

"I loved the late afternoon sun finding its way to us through the aspens and highlighting the tall green grass. Everything was so lush and green! Dear Nature – thank you for the paintbrush and wild roses!"

– Brenda

"Wow, what an amazing night we had! Thank you so much for putting on this hike so we can explore a unique and beautiful area in Alberta. Everyone was so pleasant and friendly it made for a very relaxed, enjoyable evening. Heinz your passion for the wilderness and the outdoors came through as you led us onto the ridge with amazing views of the Rocky Mountain range. I so appreciated your knowledge and history of the area and taking the time to explain the vegetation, flowers and names of the mountains and passes we saw. I learned so much! What great hosts! This was my very first AWA hike but it definitely won't be my last!"

– Lynn

"It was a great time with a nice group of people, and a great way to spend the evening! Our guide was very knowledgeable about the area and it was nice to have the sites pointed out from a local resident!"

– Ryan

"What a pleasure to be out and about in fresh mountain air and gorgeous wildland with a group of conscientious people."

– Sara

Adventurous Play in Forest School

By Lea Komaromi

If there is one reservation about Forest School, it is the risks involved. As the director of Upstream Forest School, a Forest School for kids ages three and up in downtown Calgary, I get questions such as: What will you do in winter? Won't they get tired? Aren't you afraid of someone getting hurt? Can you trust them with sticks, let alone tools? Who will take responsibility for injuries? As Tim Gill reflects in his book, *No Fear: Growing up in a Risk Averse Society*, these worries come from an underlying and common view that children are weak and vulnerable and it is the adult's responsibility to protect them from all harm. A 'risk' is anything that could potentially be a harm to the child.

Forest Schools are based on the Reggio Emilia approach to education, named after a city in Italy and developed after WWII. In this model, teachers view the children as being full of knowledge and potential; they are capable of making informed decisions. In Forest School, we see children as both resilient and on a search for meaning. We also make an important distinction between 'good risk' and 'bad risk'. Good risks are ones calculated with the children involved and when the benefits outweigh the potential hazards. A bad risk is one where there is no obvious benefit and the children may not be able to assess it themselves. Every day when children go out to the site, we evaluate it for potential hazards and discuss what should be done about them. Forest School Canada releases publications that detail instructions for any such program across the country.

At Upstream Forest School, when we get to our location on McHugh Bluff in Calgary, I ask the children what potential dangers they see. We observe things like sticks poking out, dogs in the park, garbage, the weather, and then discuss how to be careful or avoid getting hurt or in trouble. The children know, for example, that when an off-leash dog approaches, they should stay still with their hands at their sides. If they get scared, they can come behind me and I will keep the dog away from them. A bad risk is one where there is no obvious benefit, and the children may not be able to assess it themselves. When all risks are thoroughly avoided, children are deprived of an opportunity to learn and be challenged. Learning from mistakes as well as successes of all kinds, including physical ones, is so important in life.

Risk management is very important at Forest School. All sites are assessed prior to starting to ensure that the good risks will outweigh the bad. Anytime the weather or season changes, a complete site assessment takes place by the practitioner, sometimes accompanied by the children. Once the conditions for a safe learning and growing environment are met, an experience assessment is undertaken for new activities that include shelter building, fire building, and the use of real tools.

When we, as educators, see children as competent and able to navigate risks and hazards, we acknowledge this as a crucial part of their development and learning. Forest School and outdoor learning helps children self-regulate and determine for themselves when something feels safe or something is off. Children learn to follow their 'gut' after practising how to evaluate risks and tuning in to themselves. On the ground at my Forest School, I have seen how different children approach the task of tree-climbing differently. Some children love climbing trees and will attempt a tree that is leaning and doesn't have many branches to hold on to. Some know they can do it, some ask to have me close by, and some only go to the closest branch. They are following their instinct of what they are capable of and are willing to attempt. Because children living in the city have so little exposure to natural experiences, tree climbing can be a new activity that many schools and parents would consider too risky. Richard Louv has termed this *nature deficit disorder*, which might have serious effects on physical and mental health.

Listening to a child's opinion about what kind of play they would like is a fundamental right: the Convention of the Rights of the Child is a United Nations treaty that, when it came into force in 1990, must be upheld by the nations that ratified it (Canada ratified the Convention in 1991). Article 12 of this Convention states that children have a right to their opinion, to be heard, and have their opinion be taken into account. This means listening to children when they ask for their play to be more challenging, for this is what they crave and need as developing learners. In today's urban centres, children spend less and less time outdoors. This is partly because it is not seen as 'real' learning – real learning only happens inside the classroom. But what does the little outdoor time most students have at their school actually represent? As Gill writes in

his book: "School playgrounds give many children their only opportunity to socialise and spend time with their friends and peers face to face in a relatively adult-free space." As part of a growing risk-averse society, playgrounds are becoming more and more 'safe,' which students see as less fun. Some children are asking for less shelter and the freedom to take on new challenges, unconsciously tuning in to their need to learn how to manage risk. Our society too often denies them these lessons, often due to fear of litigation.

Some of the children I spend time with in Forest School are very comfortable in the outdoors and love to be creative outside. Others are very unsure of what the forest offers. Some of these city children took six weeks to feel comfortable sitting on the forest floor. For them, this was a risk they were willing to take only after feeling safe and having positive experiences in the forest. Others are quite comfortable in the forest and challenge themselves in other ways; one is building a dam by breaking and using sticks, an activity that is banned at his local public school. Another girl is building confidence by learning saw skills, which in turn has made her less shy and more connected with the other children. These kinds of tool skills always require adult help, but the help is offered with the belief that the children are capable of learning to use the tool safely. Without these opportunities, these children would not have grown in the ways they have.

How can our children be given the chance to explore and use their abilities to manage risks is a deliberate way? A first step is to create more opportunities in the schools for free, creative, and challenging play. In one school in Calgary, with a beautiful natural area in their yard, children are not allowed to touch sticks, climb anything, dig, build or even run when it is slippery. Children are inadvertently being taught that they are vulnerable and unable to manage their own bodies. When children are given the tools to manage risk themselves, they learn to trust their instinct and inner voice, which is very valuable in the long run. As it turns out, life is not without risk and danger.

A second step is to resist risk aversion. Advocating for Forest Schools in public schools is a start, just one way to have children challenge themselves intellectually, socially, and physically. Another way to resist risk aversion is to understand the reality of risks. Becoming familiar with the actual risks, not the perceived ones, can put the limits where they belong. As adults, it is important to be honest with ourselves about what children deserve. It is not honourable or necessary to literally and figuratively take your child by the hand everywhere you go. As difficult as it may be, it is important that guardians and educators let the children take the reins themselves sometimes. Once we get over our own fears as adults, we will empower our children. A good step to take would be creating more walkable and livable cities while building more spaces where our children can play, learn, and maybe even get some scrapes and bruises.

Seeing the children as resilient and capable of making decisions about their bodies, experiences, and education will change the way we program their time. Outdoor time every day is an absolute must, as well as allowing children to take risks that push them beyond their 'edge.' This is when their intellectual learning will take off, and when we, as guardians from a safe distance, will be in awe of what our children can accomplish.

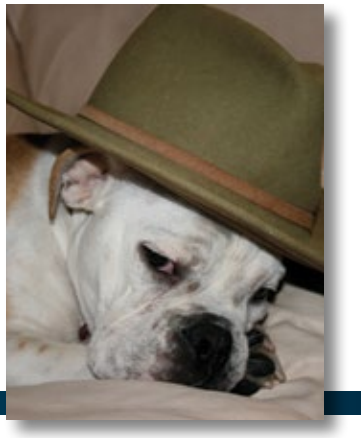
Lea Komaromi is a teacher at Upstream Forest School in Calgary who sometimes likes to try things that may make her nervous. Her latest adventure was making and sleeping in a quinzee in the mountains. She recommends it!

Featured Artist Michael Mott

West of Red Deer 34cm x 24cm Watercolour

Prairie landscape 24cm x 19cm Watercolour

Meatball, the Castle, and Alberta's "Modern Take" on Provincial Parks



By Meatball

Discouraged. Frustrated. Angry. Those are some of the adjectives your species might use to sum up how this magazine's editor often has felt since the provincial government announced more than 10 months ago its commitment to "fully protect" the Castle wilderness. Ian was giddy in early September 2015. "Fully protect," he told me over a bowl of kibble, had to mean the Castle Provincial Park would receive at least the same level of protection as other Alberta provincial parks. It wouldn't be any less than what a previous Progressive Conservative government set when it created Sheep River Provincial Park in Kananaskis Country in 2001. Hikers, cyclists, fishers, and horseback riders would be welcome there in the summer; cross-country skiiers and skaters could enjoy the park in winter. Off-highway vehicle users and hunters would have to find other public lands for them to enjoy those activities on. He also thought this is the approach the government would take to the Wildland Provincial Park. After all, he said, the Don Getty Wildland Provincial Park north of Canmore created in 2001 doesn't allow OHVs.

He seems to think that keeping recreational hunting and motorized recreation out of provincial parks is a good idea. I'm compelled to write this today to tell Ian he's wrong, that he's married to an old-fashioned idea about what provincial parks are for and what recreational activities should take place within their boundaries. We're in the 21st Century now and it is high time fossils like Ian embraced a modern perspective on what a provincial park should be.

Being modern and giving the people what they want – that's what the government preaches on its "Enhancing the Protection of the Castle area" website (*http://www.albertaparks.ca/albertaparksca/about-us/public-consultations/archives/enhancing-the-protection-of-the-castle-area/*). Read what Alberta Environment and Parks says in the "Frequently Asked Questions" link on that webpage: "The new provincial park in the Castle would be *a modern take on the provincial park class* and create space for the types of experiences people are looking for – such as hunting and off-highway vehicle use." (Meatball's emphasis)

Ian thinks he's progressive. If he really was then he should join me and applaud the government for its commitment to a modern interpretation of what provincial parks should be. Unlike Ian I'm sure that, if the government ever releases the results of its poorly designed Castle public consultation survey from last September, the vast majority of respondents will favour hunting and OHV use in the provincial park. I think I speak for the silenced majority in my imagination when I say I'd much rather ride shotgun in an OHV on the trails in the Castle than walk them (walking, to this svelte English bulldog, is not recreation – it's work).

And, speaking of shotguns, I think Ian should appreciate the educational opportunities recreational hunting will offer his grandson. He should think about what

PHOTO: © I. URQUHART

he could teach Benji about grouse in the Castle if he had the chance to kill a few so he could give Benji a really close look at them. Ian also shouldn't forget that maybe others who would be out for a fall hike in the Castle could benefit from the government giving him the opportunity to hunt in a provincial park. Those park visitors too might appreciate a close up view of a dead grouse or maybe a freshly shot elk, moose, or deer.

What Ian might appreciate if he stopped looking in the rearview mirror is that this proposed modern take on the provincial park class could be a real commercial boon for southwestern Alberta. Ian claims that his preliminary research on provincial parks in B.C., Saskatchewan, and Ontario as well as his research on state parks in Washington, Idaho, and Montana shows how out of sync those governments are with what a modern take on parks should look like. None of those governments dedicates provincial or state parks to OHV users.

In Ontario, OHVs generally are prohibited in all provincial parks except, as one official told him, "in rare circumstances." (one such rare circumstance is in Kawartha Highlands Provincial Park where a private land owner uses an ATV to access the owner's property, surrounded as it is by the park). The fact OHVs are generally prohibited (see section 34 Ontario Regulation 347/07: Provincial Parks: General Provisions) likely arises from the purpose of Ontario's *Provincial Parks and Conservation Reserves Act, 2006*. When it comes to recreation the purpose of the Act is to provide "opportunities for compatible, ecologically sustainable recreation." B.C., for its part, doesn't appear to allow OHVs in any of its hundreds of Class A provincial parks; Saskatchewan permits OHVs in two parks.

South of the border, the state of Washington has 141 state parks. Riverside State Park is the only park where OHVs are allowed. In this 14,000 acre park only a measly 600 acres – hardly enough room to crank up my Yamaha – are open to OHVs. Where can you ride OHVs in Montana's State Parks? Nowhere, OHVs are prohibited in all Montana state parks; in Idaho only three state parks allow OHVs.

CREDIT: © D. URSENBACH

The conclusion I urge you to take from this research is one I hope Ian will see too. None of these other governments has yet recognized what a modern take on a park offers. People, opportunity is knocking. If we open up the Castle Parks to OHVs southwest Alberta could become a Mecca for off-highway vehicle users. If we market the Castle well – I'm thinking of an advertising campaign based on the accompanying cartoon – we could become a destination for a type of recreational activity that out-of-touch Ontarians, British Columbians, and Montanans don't seem to believe is ecologically sustainable. Let them live in the past.

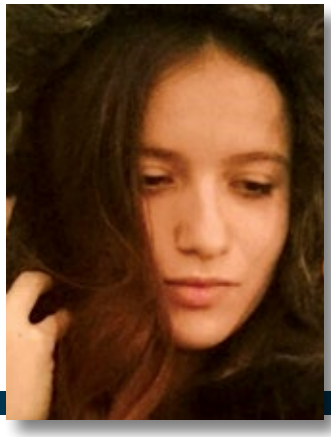
Like the government, I'm confident a modern take on provincial parks will improve tourism and increase the amount of motorized recreation that graces the Castle. Here's what the department hopes for: "The Castle's proximity to large population centres and its natural amenities could offer a similar draw for visitors as Waterton-Glacier International Peace Park, Kananaskis Country and Banff National Park." Other than the fact that visitors to the National Parks and any provincial park in K-Country can't be drawn there to ride OHVs I think the analogy here is brilliant.

Instead of fuming about the government's apparent intent to embrace modern times and ideas of what parks should be I wish Ian would just jump on my OHV, sight in his .308 Winchester, and welcome a new normal when it comes to provincial parks in Alberta.

Meatball is the canine member of the Urquhart clan. Her current project is a book of fiction entitled "Defending the Modern Interpretation of Provincial Parks in Alberta."

Environmental Education:

Esther Bogorov Interviews Gareth Thomson, Executive Director of Alberta Council for Environmental Education



By Esther Bogorov

EB: Let's start with the basics. What is environmental education?

GT: Environmental education is a process that seeks to help a student become environmentally literate. In a sentence, environmental literacy is an understanding of how the planet works and how to take care of it. How to care for the planet comes from developing critical thinking and action skills. One of my heroes David Orr says, "Hope is a verb with its sleeves rolled up." We owe it to students to give them the experience to help them make the world a better place.

Environmental education helps students with how to think, not what to think. In my experience, if we're doing a debate or simulation, they almost always choose conservation in the end. Without helping students take action the implicit message is that "there is trouble in the world, and there is nothing you can do about it." That is wrong.

EB: Tell me a bit of the history and development of Alberta Council for Environmental Education (ACEE).

GT: A decade ago a colleague and I toured the province, asking the broad community of environmental education stakeholders, "What can we do together that we can't do alone?" One of the things folk said was that someone needs to 'wake up in the morning' thinking about this, and that is why ACEE was created. We are a non-profit registered charity and our mission is to work in collaboration with others to advance environmental education in Alberta.

This is important: we need to think about environmental education as the key strategic tool to create a sustainable future. Now we are three full-time staff as well as a few contactors.

EB: How do you advance your mission?

Baba Dioum said, "In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught." CREDIT: ACEE

GT: We host an annual conference, where we put up a big tent and gather teachers and education programmers to compare notes, share best practices and successes, and grow together as professionals. We host an annual leadership clinic, where educators come with a goal, receive professional development training over several days, and leave with a plan to deliver on their goal. We run a program called Alberta Green Schools to provide groups of teachers from different schools an understanding of relevant teaching resources, and help them plan together to create a culture of environmental stewardship in their school. We have a searchable online database, which is an environmental education resource centre with over 500 programs currently listed. These tools can help in schools or non-formal settings, such as Cub Scout meetings.

We heard from one teacher recently who said: "ACEE adds a ton of value to our work. My team was amazed to learn that ACEE only has 3 staff!"

EB: So you really try to create communities of practice or cohorts of teachers learning together. How do you build that successfully?

GT: It's really important to us to gather people to get them pushing simultaneously in the same direction on something. We meet face to face, through our series of workshops and professional learning events, including the conference, to help educators or agency professionals become even better at what they are already doing. We try to orient them to opportunities to work together to create

something. For example, we are calling for more environmental content in the new Alberta Programs of Study.

EB: I have heard there are important opportunities for curriculum redesign in Alberta.

GT: Curriculum is a three-legged stool, composed of the programs of study, which is what teachers must teach and students must learn; teacher resources, which is what they use to deliver the lessons; and assessment.

Many programs of study are due for a rewrite: for example, Elementary Science hasn't been updated in nearly 20 years. It is noteworthy that one of the proposed new criteria for pre-service teachers [who are university students currently taking a bachelor of education] is that they must be versed in First Nations, Métis, and Inuit issues.

There is much that is encouraging that is in the Indigenous way of knowing—including their land ethic and a relationship to the earth. I believe that the dominant culture has much to learn from those ways of knowing. I encourage students to look at the world through different cultural lenses. What environmental outcomes might occur if perspectives of different First Nations were brought to bear on 21st century decisions?

EB: You promote energy education as well as environmental education. Why is it important to cover both sides of the issue?

GT: We live in a province where the energy sector is an important reality and an economic driver. Energy supports our lifestyles and gives people work. At ACEE work very hard to deliver on our mission to advance environmental education – so long as we do that, it makes sense to advance energy education at the same time. This is true education, and the only way to truly help students understand the connections and how things are related. We have them see how the real world works, wrestle with the tension between "development versus protection," and so understand a real-world point of view.

EB: Tell us about your recent exploration around showing climate leadership in Alberta schools.

GT: One of the tricks of our trade is to demonstrate how environmental education and conservation efforts are relevant to all Albertan's. Half a year ago, in collaboration with the Centre for Global Education ACEE convened 3,000 students with virtual town hall online technology. They came from eight Alberta high schools to consider, "How can Alberta schools show climate leadership?" Rachel Notley attended the event, answered students' questions, and gave advice on how to proceed. The students have put together a series of recommendations for education leaders, such as Ministers and school board Chairs, on how they, in their different roles, could help schools show climate leadership.

Climate change has been described as the mother of all environmental issues, which is just a call to us, as educators, to do this one really well. One of the few solutions to the despair and anxiety that climate change brings is to take action, to help students and everyone else to do things. The student who is given the chance to do something no longer feels hopeless and helpless; instead they feel empowered, they have agency. There are all kinds of things that should be done on this issue and the government is pushing us to do something on it as a bunch of citizens, so this is a great time to engage the students. There are all kinds of actions that students can take, including personal lifestyle changes, recycling in their elementary school, participating in conservation and wild land protection through letter writing campaigns in junior high, and decreasing the carbon footprint of their high school by improving energy efficiency and starting renewable energy projects.

EB: How can we spread these ideas beyond the classroom? How can adults and professionals also learn from the work you do?

GT: Wouldn't it be lovely if climate leadership came home from schools, just like recycling did in the 1980s? We just need to get those programs happening in schools to get that transmission and transfusion. Change is possible.

We have another program called Get Outside and Play, targeted at preschoolers. We've gathered almost 400 members to join this network, which seeks to ensure that more children have positive experiences in nature. Research tells us that time spent outdoors in the company of a caring adult helps create environmentalists and conservationists. Positive outdoor experiences are one of the big reasons that people "grow up green."

I put great stock on what Baba Dioum said: "In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught." We all need to create more opportunities for people to fall in love with nature, to fall in love with wild land.

EB: What are some memorable take-aways from the work you've been doing?

GT: I want to emphasize that everyone has the capacity to be environmentally literate.

Another of my heroes, David Sobel, said: "Teach no tragedies before grade four; help students understand how to love the earth before we ask them to protect it." A key precursor to becoming a conservationist is spending time in nature. I would encourage everyone to find a way to be a caring adult who takes a curious child outside. You can be an environmental educator by doing the following with young people or with adult friends: go for a walk. Enjoy this gift of planet earth that we're given, and think of a way to share your love with someone near and dear to you.

Gareth Thomson has over twenty-five years of experience in environmental education. He has taught high school, served on Canmore town council, and been a judge for the Alberta Emerald Awards. Gareth lives in Canmore, where he divides his time between parenting three exceptional young people and exploring little-known hiking trails and hidden valleys with his partner Kelly.

Conservation Corner:

The Boy and the Adze

By Niki Wilson

For the past two weeks I've been listening to my 11-year-old son trying to pound a river stone into a flat blade. It's slow going – the rock he's bashing the stone with is of similar hardness. Still, he's determined to craft an axe-like tool comparable to those first used in the Stone Age. "It's an adze, mom," he says. "A-D-Z-E." Of course, I say, then scurry away to google it.

The adze first originated in Africa, but some version of it came to be used in most places in the world, and modern versions are still used today. A Stone Age adze consists of a sharpened stone lashed with twine onto a wooden base with the blade perpendicular to the handle. Traditionally it's been used to cut, carve and smooth wood, or any other vegetation that needs to be crafted into something useful.

Making tools from the raw materials of the land are part of the survivor-man spell my son has fallen under. His partner in crime is my 37-old-brother who takes him adventuring across his 80-acre patch of mostly wilderness alongside the Upper Fraser River in the Robson Valley. Their recent projects include looking for clay seams along streambeds from which they hope to build bricks, and building willow wattle fences that encircle garden beds and the chicken coop. In between visits, they've assigned themselves the homework of reading how-to books, and watching the Primitive Technology YouTube channel.

"Imagine. People HAD to do it this way before they had iron," my son says as he pounds away. It looks like a lot of work.

My son has always enjoyed building. He has a love affair with LEGO that spans over nine years and is still going strong. But this is different. He's working with the elements. He's doing things that could have serious consequences if he doesn't pay attention. When he cuts willows, he uses a saw. When he wanders through the forest, he could run into a bear or stumble over one of many wasp nests. To get at the streamside clay, he must navigate the broad leaves of devil's club. At the end of days on the acreage he is dirty, tired, happy, and slightly more independent.

A little while ago I realized my son's face had really leaned out over the past few

The braided wood in Dylan's hand is a rope he and his uncle Tag are making to lash parts of their lean-to together. PHOTO: © N. WILSON

Tag, teaching Dylan to make fire.
PHOTO: © N. WILSON

Dylan and Tag gathering material for their lean-to.
PHOTO: © N. WILSON

months. Gone are the round, freckled cheeks of his early childhood. Our feet are the same size, and sometimes when I'm doing laundry I have to look really hard to sort his jeans from mine. He still loves hugs, and snuggles at bedtime. We are close. But he is no longer a little boy, and I'm keenly aware that right now he straddles two worlds. As he transitions away from boyhood, he will have less need of me, at least in the way he has up until now.

It's hard to let the little boy go. I can still feel the chubby hand on my face he used to wake me when he'd crawl in to bed each morning years ago. If he must grow up, I'm so glad he has great swaths of wilderness in which to get to know himself – to test his mettle. In the coming weeks, he and his uncle plan to conjure fire from sticks, and build a lean-to shelter deep in the trees. The fragrant pine and deep cedar forests offer themselves to him with all of their magic and danger. He's ready.

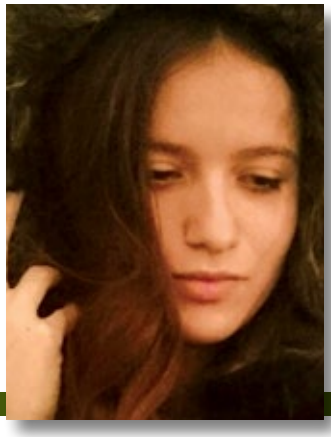
Niki Wilson is a multi-media science communicator and biologist living in Jasper. Visit her at www.nikiwilson.com.

Featured Artist Michael Mott

Majorville solstice 31cm x 50cm Watercolour

Bow Lake 36cm x 26cm Watercolour

Twenty-five Years and Counting: AWA's Climb and Run for Wilderness

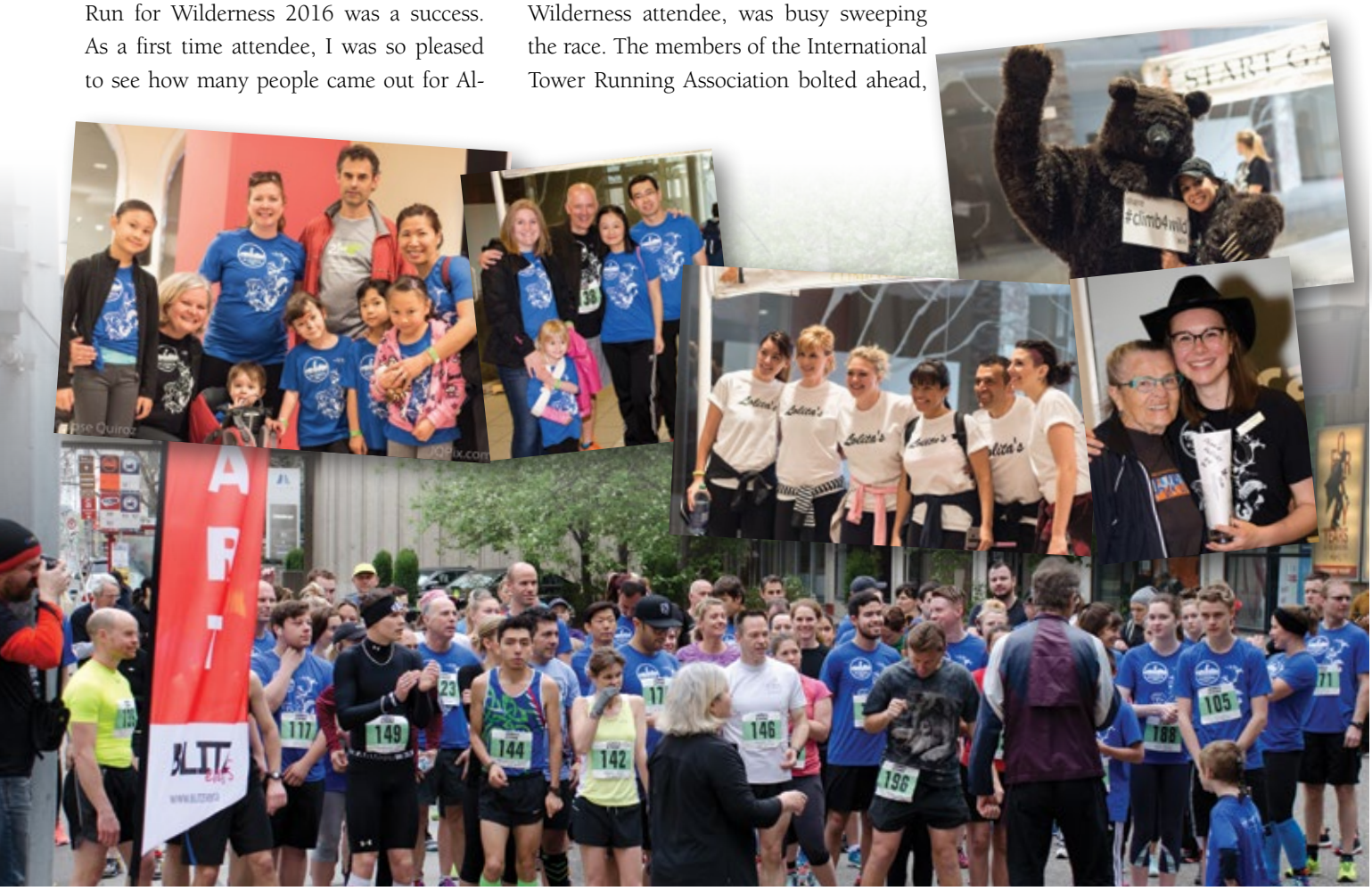


By Esther Bogorov

"Climb 802 stairs," I advertised to many curious folks about AWA's annual Climb and Run for Wilderness. "Anyone can do it," I added enthusiastically, not fully believing it myself. How could it be painless to climb the Calgary Tower?

It turns out – thanks to good spirits, beautiful paintings, and plentiful water – it's true: *you*, too, really can do it. And it was an amazing time. From an array of diverse and interesting displays to great music and delicious motivational snacks, Climb and Run for Wilderness 2016 was a success. As a first time attendee, I was so pleased to see how many people came out for Alberta Wilderness Association and chose to celebrate Earth Day together with us. An 8:00 a.m. Saturday morning start for participants made it clear how much people wanted to show they care. The 5:30 a.m. start for volunteers really took that demonstration of dedication and commitment to the next level.

In the morning, while I was busy setting up a face-painting station and teaching passers-by about milkweed plants, Andrea Johancsik, another first-time Climb for Wilderness attendee, was busy sweeping the race. The members of the International Tower Running Association bolted ahead, breaking records on the sprint around the block and up the stairs. At the end of the line was Nessie, a seasoned 84-year-old runner. "Nessie was so inspiring," said Andrea. "She has been running this for years — she told me she had to take some time off, but she's back at it complete with rainbow spandex running pants." Andreas went on to say: "One of the best moments was arriving behind Nessie at the top of the tower and everyone broke into cheers. That was really nice."



Joanna Skrajny, another member of the AWA team who had never been to the Climb, shared several lasting impressions. "I was surprised and amazed by how energetic the whole event was," she said, adding that "walking up the stairs was easier because the kid in front of me was beating everyone." She loved seeing couples and families enjoying the walk up, but she said, "I got so excited by this kid that I didn't realize what I was getting into trying to keep up with him until the next day, when I was sore." She pointed out that the good energy and good mood all around the Tower brought together a community on this special morning.

Despite it being a tough economic year for many people in the city of Calgary, AWA was very pleased with the financial commitments its dedicated members made at the Climb to support the organization, your wilderness and wildlife causes, and Earth Day. The standout again this year was Richard Guy who was celebrating his 100th birthday. His inspiration is ageless. He's such a motivating force to those who joined us for the festivities. Richard was this year's top fundraiser – bringing in over $5,700 in donations. His passion and strength made the challenge to "climb 802 stairs" so much easier.

Photos courtesy of J. Quiroz and K. Mihalcheon.

Updates

The Proposed Jasper Bicycle Trail: Mythbusters

A portion of the old highway between Jasper and Lake Louise that could be developed for bicycles. PHOTO: © J. SEATON

Recent media frenzy about the sudden announcement of a $65.9 million bike trail, dubbed the "Icefields Trail," in Jasper National Park has left environmental groups and the public confused.

Little is known about the project, but recent media articles have revealed some details of Parks Canada's plans: the trail will eventually run from Jasper to Lake Louise, new paving will be required for its construction, and the completion date of the project is March 2019. When appointed to cabinet, the Minister of Environment and Climate Change Canada Catherine McKenna's mandate letter instructed her to "Protect our National Parks by limiting development within them…," "Enhance protection of Canada's endangered species…" and "restore robust oversight and thorough environmental assessments of areas under federal jurisdiction." AWA is seriously concerned about many aspects of this project. Here's a clarification of AWA's position on the issue.

Myth: AWA is opposed to all trails. AWA is opposed to people going into Parks.

Reality: AWA is not opposed to trails. Well-sited trails that reduce impact/disturbances on wildlife and provide safe recreation experiences for visitors should be enjoyed. All of us at AWA love getting out in nature, and that's hard to do without trails! The size, location, and sensitivity of the area are all factors to consider when deciding whether a trail is appropriate.

Myth: Won't the bike trail just go along the Icefields Parkway?

Reality: At this point, the route hasn't been determined. There would be little ecological impact if the trail was an added lane on the highway, like the Banff-to-Canmore Legacy trail. However, there are rumors this project will go along an old road, which hasn't been used for decades and nature is reclaiming.

Myth: A bike trail will be more environmentally friendly since it will reduce vehicular traffic on the Icefields Parkway.

Reality: A bike trail will likely not reduce the amount of vehicle traffic in the mountain national parks, at least in the short term. The route from Lake Louise to Jasper, where this trail is rumored to go, is 233km with enough elevation gain to frighten even a seasoned cycle touring group. Parks Canada has said the trail will be accessible, and will be mostly flat. See next Myth.

Myth: A new bike trail will be safer.

Reality: It's not so simple. Certainly, a trail such as the Banff-to-Canmore Legacy trail reduces the risk of bike-vehicle collisions, while keeping out of critical areas that wildlife need to move. On the other hand, a trail that is far away from the main roadway increases the chance of carnivore-cyclist conflicts (read: spooking a sow bear with cubs on a bike = NOT GOOD). Unfortunately, both people and wildlife prefer to travel where it is easiest: valley bottoms. The easiest place for a trail is also the best habitat for bears, ungulates, and everything they feed on. To think about this further, we would also need to obtain statistics on bike-vehicle collisions on the Icefields Parkway, to see if cycling is currently unsafe on that road. A newly paved shoulder or bike lane adjacent to the highway would assist cyclists in staying to the side safely, away from vehicles, while still providing an enjoyable experience.

Myth: Parks Canada is telling me there will be no net environmental impact, so I shouldn't be worried.

Reality: We certainly hope this trail won't have a negative environmental impact. However, Parks Canada or ENGOs won't know the impacts until an Environmental Assessment (EA) is completed. EA's are a tool to determine the environmental impacts of a project, and if there are any, what mitigation measures will be done to protect the environment. Sometimes, EA recommendations are ignored in favour of promoting economic growth or securing political support. Sometimes EA's are rejected as incomplete. The Canadian Environmental Assessment Agency (CEAA) and environmental groups like AWA are watching to ensure an EA is done properly. It's Parks Canada's job to implement any mitigation measures that an EA determines appropriate.

Myth: This trail is not related to anything else going on in the National Parks.

Reality: AWA has documented increasing commercialization and development pressures in the Rocky Mountain National Parks, including expansion of the Lake Louise ski area, proposals for hotels near Maligne Lake, and other developments such as the Glacier Skywalk and a canyoning (rapelling or climbing in canyons) business right in the habitat of endangered black swift and threatened moss species. These are privatizing park experiences and prioritizing 'visitor experience' over conservation. AWA believes that visitor experiences and ecological integrity can co-exist, by increasing interpretive experiences and effectively protecting the wildlife and habitats that brings millions to the parks each year.

Myth: The 66 million dollars has already been allocated to this project, so it's too late to care.

Reality: We trust a final decision hasn't been taken yet. We think more thought needs to go into spending priorities in our National Parks. It's no secret that Parks Canada's budget for ecologically-focused activities have suffered in recent times. Is spending $66 million on a new bike trail a good investment when compared with what the Rocky Mountain National Parks need with respect to wildlife management, educational interpretive programs, and maintenance of existing infrastructure? This venture says to AWA that there is a need to think more carefully about what the balance should be between spending taxpayer dollars on visitor experiences and spending those funds on conservation objectives.

- Andrea Johancsik

Summer Events

Upcoming Summer Hikes

- The cost of most hikes is $20 for members/$25 for non-members
- You can register for upcoming hikes on albertawildernes.ca/events
- Our hikes program is extremely popular so reserve a spot while you can!

July 29, 2016
Hussey's Loop Hike

The Hussey's Loop Hike will lead hikers into the middle South Ghost River area. During this hike, participants will enjoy wildflower meadows and have spectacular views while cresting Hussey's Hill. With the close proximity to Calgary, hikers will, in addition to enjoying spectacular views, witness the effects of clear cut logging, OHV use, and watershed protection concerns. Join Heinz Unger on this spectacular and informative hike located on Calgary's doorstep.

August 4, 2016
Wainwright Dunes Ecological Reserve Hike

The Wainwright Dunes Ecological Reserve is part of a large and diverse area of sandy glacial deposits. Located 33 km southeast of Wainwright, AB this reserve is famous for its sand dunes that can reach heights of 30 meters. Hikers will be walking through mature balsam poplar, stunted aspen groves, shrub-grasslands and shrubby fen wetlands.

August 13, 2016
The Beehive Natural Area Hike

Located in the Upper Oldman Valley in southwestern Alberta, the Beehive presents a stunning mix of cool dark sub-alpine forests and broad alpine meadows against a dramatic backdrop of rugged rocks and scree. The area boasts over 2,000 acres of old-growth forests, with individual trees up to 300 years old, and provides habitat for Grizzlies, as well as summer range for Elk and Bighorn Sheep.

August 27, 2016
Hand Hills Ecological Reserve Hike

Hikers will be visiting Thumb Hill that is located within the Hand Hills Ecological Reserve. Located 35 km southeast of Drumheller, this area provides sweeping views and well preserved native prairie landscapes.

Thumb Hill is also rich in both geological and aboriginal history. Consequenetly hikers will have the opportunity to discover teepee rings, bison rubbing stones and fossils throughout the hike.

September 17, 2016
Autumn in the Whaleback Hike

Located in southwestern Alberta, the Whaleback Ridge is a 30 km ridge that rolls along its eastern edge. Known for its diversity of birdlife, the Whaleback is home to grizzly and black bears, wolves, cougars, deer, and elk. Experience fall colours and vistas in this classic montane landscape, one of the largest remaining examples of this fascinating ecosystem. Wander the trails, ridges and valleys and visit ancient pines clinging precariously to the slopes.

Summer Kids' Camp!!
Wilderness Defenders Kids Day Camp

Pick up and drop off location at AWA's Hillhurst Cottage School (455 12 Street NW Calgary, AB)

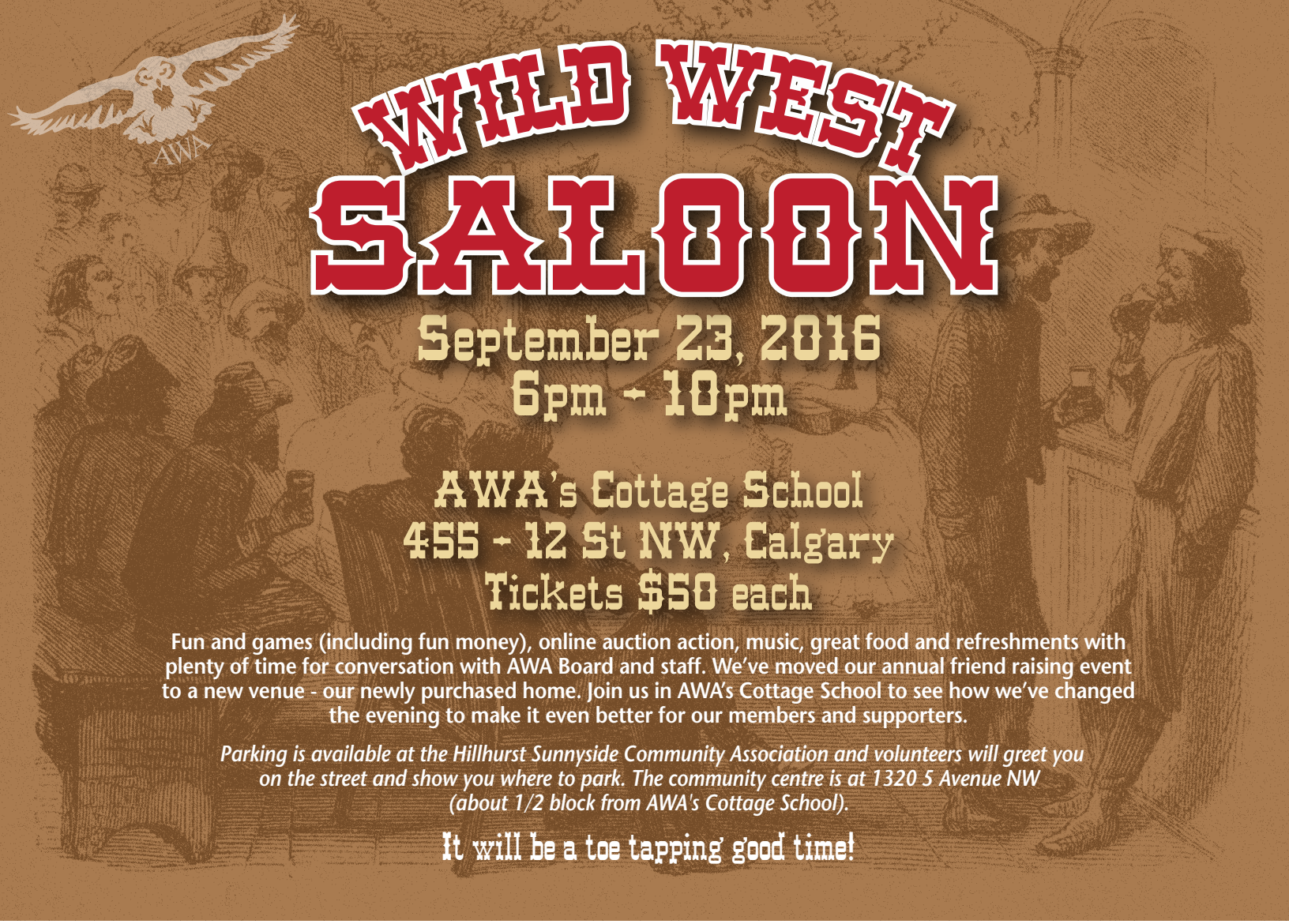
August 8 to Friday, August 12, 2016 OR Monday, August 15 to Friday, August 19, 2016.

Age Group: 6 -11 years old Join our - day eco-adventure camp filled with friends, laughter, fun and nature! Action packed days will include fun activities, games, crafts, special guests, field trips and more

Week 1 August 8-12, 2016 / Week 2 August 15-19, 2016

$150.00/child/week for AWA members, $180.00/child/week for non-members

For a complete list of AWA hikes and tours go to: Albertawilderness.ca/events



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