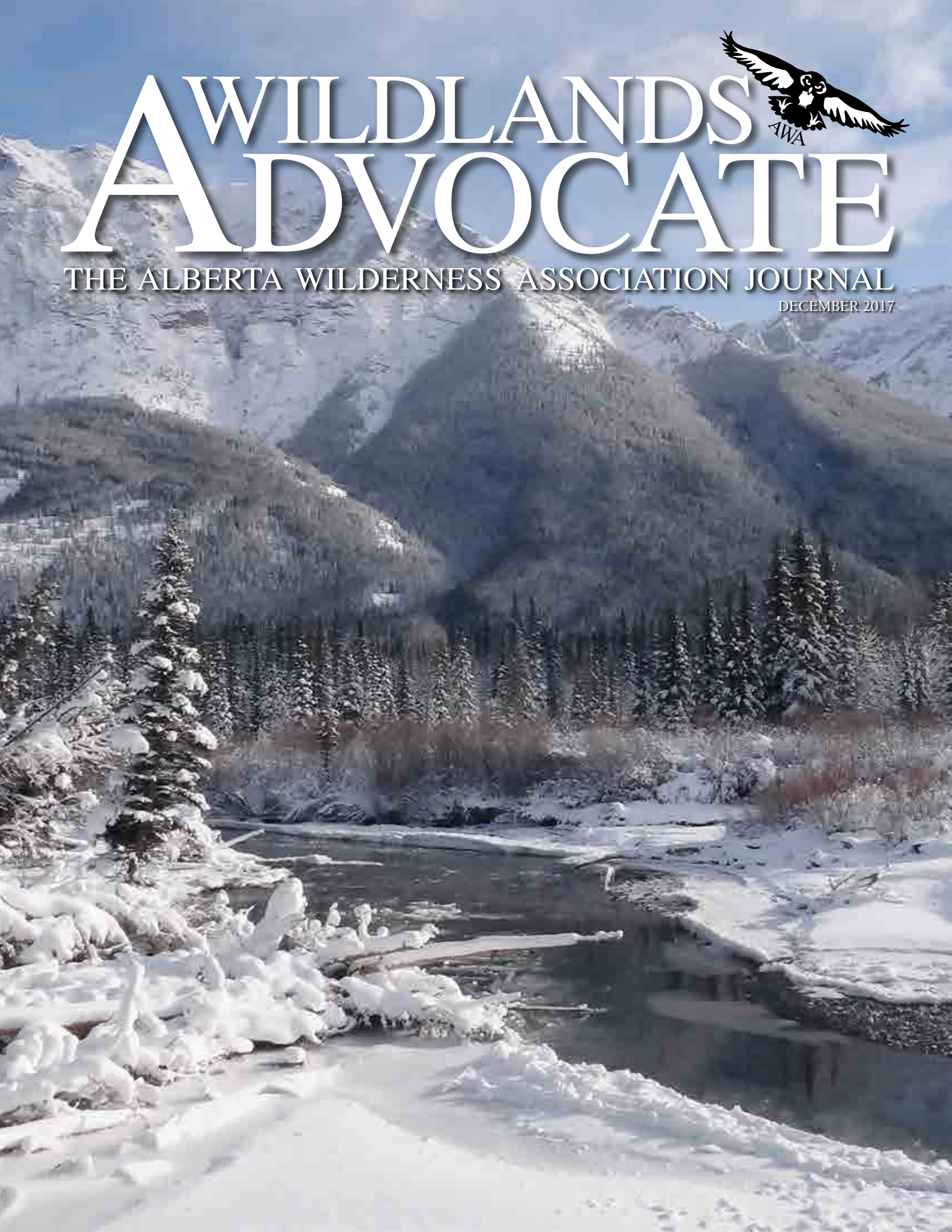

WILDLANDS ADVOCATE

THE ALBERTA WILDERNESS ASSOCIATION JOURNAL

DECEMBER 2017

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Heinz Unger's photo reminds us of what inspired Alberta Wilderness Association in 1972 to propose a wilderness area in the Elbow, Sheep, and Kananaskis valleys, a proposal that helped to encourage the Lougheed government to protect parts of Kananaskis country in 1978. The Kananaskis river is in the foreground while the background is set by the Patrick range (left) and Fisher range (right). Heinz took this photo in early November…it was minus 20 degrees C. PHOTO: © H. UNGER

Featured Artist: Tess Stieben

Your editor had the pleasure of meeting Tess Stieben at the Edmonton Farmer's Market in late October and is very pleased to included Tess's acrylic and watercolour paintings in the December issue of your magazine.

"By focusing attention on creatures that bless us with their presence I hope to inspire viewers to contemplate the magnificent environment in which they live. The earth is more than a landscape to enjoy; it is a living delicately balanced ecosystem."

Born in Powell River, BC, Teresa (Tess) Stieben taught workshops and visual art through city programs in Creston BC, Camrose, Calgary, Hinton AB, and Manitoba. Stieben began her studies at the University of Manitoba, and in 2002 graduated from the University of Calgary earning a BFA with Distinction. Numerous hours of field research devoted to watching and photographing the natural world advise and inspire her work as a painter, photographer, printmaker, and multi-media eco-art sculptor.

Stieben's environment based sculptures and nests built from recycled media speak to the demise of the natural landscape and surrounding ecosystems as a result of human shortsightedness.

Inspired by the quote above, Tess hopes her artistic practice will encourage recognition and protection of the natural landscape with its native plants, birds, and varied wildlife.

Learn more about her Eco-art nests at stiebentess.wordpress.com and her paintings at teresastiebenart.blogspot.ca. If you would like to email Tess her email address is *stieben.tess@gmail.com*

Tess's art also may be found at The Art Gallery of St Albert, The Wildbird General Store in Edmonton, and at Ellis Bird Farm in Lacombe (Ellis Bird Farm is closed for the season and will reopen in May 2018).

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A Tonic for 2018:

Working Together With Discipline and Persistence

Throughout 2017 it's been a challenge not to let a sense of melancholy, even despair, get the better of me. Events south of the border bear some responsibility here. The mad, vicious attack in the United States on civility, decency, and compassion by "He-Who-Must-Not-Be-Named" should appall anyone who believes public life and progress demand empathy and respect for others.

But in my case, malaise is nurtured by more than the Dark Lord of Pennsylvania Avenue. It's fueled by the conviction that governments and corporations in too many locales continue to fail to give the environment the priority it demands. This failing isn't just one of 2017, it's one of the last generation. On some fronts, such as climate change, our failing may be existential for kin in less developed parts of the world. On other fronts, such as species at risk, the existential threat is faced by the flora and fauna Alberta Wilderness Association defends.

So, between grading papers and getting ready to move to Calgary, I've been looking for a tonic to restore my sense of optimism about the future. The other day I saw a student who was wearing it. His T-shirt said "Be the Change You Want to See in the World." Many of you might say "Oh yes, Mahatma Gandhi's phrase." In fact, it's unlikely Gandhi actually said or wrote those exact words (more on that in a moment).

The point I seize is that individuals can matter. The phrase invited me to remember just how many individuals, through their skill and dedication, have contributed to positive changes. Vandava Shiva, David Brower, Colleen McCrory, David Suzuki, Martha Kostuch…the list goes on and on. They and others testify powerfully that individuals who don't have the institutional power of the White House or Exxon-Mobil can make a difference; they can "be the change" and drag some of the more reluctant members of the powerful along with them.

Which takes me back to Gandhi. Brian Morton, writing in the *New York Times,* couldn't find any reliable evidence that Gandhi ever said "be the change." The closest verifiable remark Morton could unearth was, in part: "If we could change ourselves, the tendencies in the world would also change. As a man changes his own nature, so does the attitude of the world change towards him. … We need not wait to see what others do."

It's how Morton interprets Gandhi's remarks and his search for change that invigorates me. Morton doesn't believe Gandhi is suggesting a single individual can change anything. He's saying instead that personal **and** social transformation walk together. Gandhi was encouraging "an awareness that unjust authority can be overturned only by great numbers of people working together with discipline and persistence."

This interpretation is the tonic I need as 2018 looms on the horizon. Work together with discipline and persistence is the advice I'm embracing as I head into next year. AWA is my vehicle for implementing that advice. I hope you will join me and make it your vehicle for pursuing healthier environments and wilder spaces. Check back here in December 2018 and I'll let you know what I think the tonic accomplished!

-Ian Urquhart, Editor

Alberta "Tackles" Fish Recovery in North-Central Eastern Slopes

By Joanna Skrajny, *AWA Conservation Specialist*

A new provincial effort – the North-Central Native Trout Recovery program – aims to recover threatened bull trout and other native fish such as Arctic grayling, mountain whitefish, and endangered Athabasca rainbow trout in the central-northern east slopes of Alberta.

It's no secret that Alberta has needed to see this action for decades. Alberta's coldwater fish have been in a lake of trouble for a long time: major declines began in the late 1800s to the early 1900s, when the first boom of settlers overfished streams and lakes throughout the province. Many species were overfished intentionally so that settlers could introduce fish species that they were familiar with such as rainbow trout, brook trout, and brown trout. Bull trout were considered to be *trash fish* because as predators they were thought to reduce the populations of other more 'desirable' species. As a result, many introduced species pushed out native fish or hybridized (bred) with them: rainbow trout hybridized with Athabasca rainbow trout, lake and brook trout aggressively overtook areas previously occupied by bull trout. For example, in 1973 the Abraham Reservoir contained only bull trout; by 2007 it was almost entirely (96.5%) populated by lake trout (Source: Government of Alberta Bull Trout Conservation Management Plan).

On top of all of this, as Alberta's population grew, the wild character of our Eastern Slopes suffered. Degrading and damaging these lands increased pressures on and accelerated the declines in populations. Alberta has a unique set of challenges when it comes to fish conservation: Alberta has substantially fewer lakes – hundreds compared to hundreds of thousands in SK, MB, and ON. We also have the dubious honour of living in a province with the highest amount of industrial disturbance and road networks outside of the Maritimes. This disturbance causes widespread habitat destruction and degradation. With a growing population, this vast road network has meant that virtually no lake or stream is safe from human access by car or OHV. On top of all of this, the cold streams and lakes in Alberta are relatively unproductive, which means it takes a *long* time for our fish to grow and reproduce. Recovery is slow.

As you may imagine, it is incredibly challenging to recover trout in a resource-extraction obsessed province which also happens to have one of the highest concentration of anglers in the country. As a result, fisheries managers did one of the few things that were within their realm of control: changing fishing regulations. Some readers may remember that fishing regulations in the Eastern Slopes from the 1950s to the 1980s had alternating stream closures, so that 50 percent of streams were closed to fishing in any given year. However, these one-year rest periods were not enough to allow fish populations to recover. Fisheries management then shifted from alternating closures to widespread catch-and-release regulations for native fish, teaching a generally-receptive angling community to release the fish that belong and keep the ones that don't. These zero-bag limits prevented the complete collapse of native fish populations. But they did not lead to widespread recovery as they were not coupled with efforts to address other issues such as human population growth, habitat degradation, habitat fragmentation, and poaching. All of these factors complicate any effort at restoring native fish populations.

Take bull trout, for example. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) lists three main factors as responsible for the decline of bull trout: loss of habitat through degradation and fragmentation, hybridization and competition with introduced species, and overexploitation (overfishing). However, they cautioned that the degree to which each of these factors is contributing to decline should not be generalized and likely varies from watershed to watershed.

Provincial biologists have taken an important step towards understanding the relationship between these factors by creating a modeling tool. The model identifies the main threats facing bull trout in any given watershed and predicts how much bull trout will recover if these threats are addressed. The threats identified by the model are confirmed by field data.

The North-Central Native Trout Recovery Program will use this tool to triage recovery efforts from the central to the northern parts of the Eastern Slopes, beginning with a handful of watersheds. They picked watersheds which are at high risk, have a reasonable chance of recovery, and where restoration work (by government or industry) will be happening in the near future. After five years the government will assess the effectiveness of their recovery efforts. If successful, the government expects to expand the program to more watersheds.

The following areas have been chosen for

Watershed ➡ / Threats to be addressed ▼	Kakwa River	Berland River	Pembina River	Lower Ram/ North Sask. River	Clearwater River	Upper Red Deer (Burnt Timber)	Pinto Lake
Fish Mortality	➡	➡	➡	➡	➡		
Poaching	➡	➡	➡	➡	➡		➡
Habitat Fragmentation		➡	➡	➡	➡	➡	
Water Quality (sediment, OHVs, phosphorus)		➡	➡	➡	➡		
Competition w/ introduced species						➡	➡

Table: Watersheds included in the North-Central Native Trout Recovery Program, major threats to be addressed

recovery work: Kakwa River and all its tributaries, the upper Berland River and tributaries, Lower Ram River and the section of the North Saskatchewan River between Rough Creek and Prentice Creek, the upper Clearwater River and tributaries, the Pembina River, the upper Red Deer River, and Pinto Lake.

The government also proposes to address threats to fish recovery with the following actions:

Fish mortality and poaching would be addressed by increasing enforcement and implementing fishing closures. These closures would prohibit Indigenous or Non-Indigenous fishing at any time of year. Catch and release fishing also would be prohibited during these closures.

Habitat fragmentation: Hanging culverts can act as barriers to fish and prevent them from using their full range of habitat. Over the next five years, work to remove inappropriate barriers would be undertaken in the North Saskatchewan & Lower Ram, Clearwater, Berland, Pembina and the Upper Red Deer watersheds.

Water quality: Mitigation of point sources of sediment and phosphorous runoff such as roads, road crossings, areas of OHV disturbance and impacted shorelines.

Competition with other species: Suppression of non-native fish populations will occur in the upper Red Deer and Pinto Lake.

The public have expressed concern with aspects of the proposed North-Central Native Trout Recovery Program. What follows is my understanding of the program and the concerns that have been raised.

Hanging culverts fragment fish habitat and deny fish access to the full range of their habitat.
PHOTO: © J. SKRAJNY

> *"Trout are fairly adaptable creatures, but they simply can't live in streams that flash flood in May, dry up in August, freeze solid in winter, or are polluted by storm-sewer runoff. And they most certainly can't reproduce if spawning gravels are clogged with silt – provided they can even get there."*
>
> - Barry Mitchell,
> Trout Unlimited Canada, 1998.

There has been a general lack of transparency in this initiative. For example, why have these specific watersheds been chosen, and not others? Have these watersheds been selected because they are in most need of restoration work or because they will be the easiest to recover?

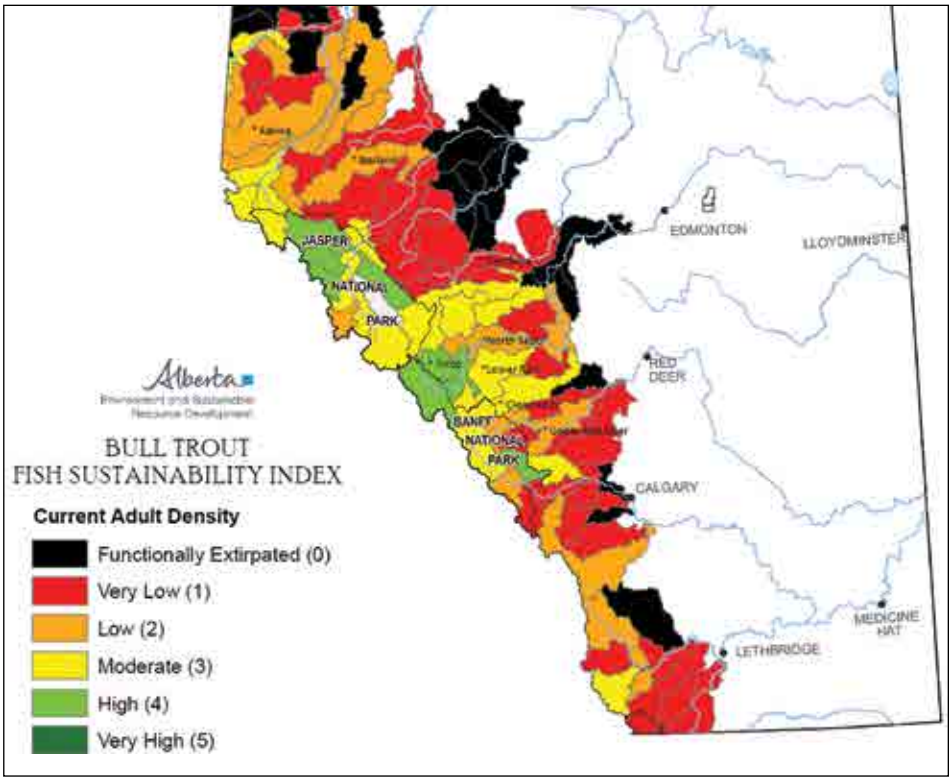
Taking a cursory look at the state of bull trout in the watersheds selected, it's possible that the truth may be a little bit of both. Most watersheds selected have either low or very low current adult density of bull trout (translate: have a high or very high risk of being extirpated in those watersheds). There is also a strong case to be made for putting some pro-active recovery work in areas where the situation is not as dire. Greater clarity regarding how these watersheds were selected is needed.

The proposed fishing closures in these watersheds have been contentious. The government has not been proactive in providing information about how they made their choices. There are valid concerns that need thoughtful answers. Will these closures increase pressures on surrounding watersheds? Will the loss of eyes on the landscape increase poaching?

While not directly related, the proposed closures bring to mind the growing body of research about no-fishing zones and marine protected areas (MPAs). In general, MPAs result in rapid increases in fish populations and fish size, as well as increases in biodiversity. As the populations of fish grow larger, fish migrate out and "spillover" into the area that is harvested. It has been found that there are increases in the number of fishers in the area surrounding the boundaries of an MPA. In some instances, the spillover of fish into surrounding areas is enough to keep populations stable, in other cases enforcement and management of fishing activities around boundaries have to be controlled in order to prevent population decreases. In MPAs established off the coast of Newfoundland it was found that illegal harvesting of fish occurred on some level, but engaging community support and increasing enforcement played a large role in solving the poaching issue. In general, results could be seen in as little as three years, but the more depleted a fishery was, the longer it took to recover populations.

Now clearly, there are some marked differences here – the most obvious being we are dealing with streams and lakes, not seas and oceans – but it does provide evidence that fishing closures in some ecosystems are successful in recovering fish. Again, it would be good to know what the province is planning to do in order to help manage some of these impacts and what research exists for freshwater fish species.

Some anglers feel they are being progressively restricted despite acting responsibly and practicing catch and release faithfully. They're not wrong – the North-Central program clearly intends to use closures to further reduce fishing pressure and mortality. The program's rationale for these additional angling restrictions comes from its conclusion that "over the past 20 years, efforts to restore fish populations by implementing catch-and-release fishing regulations and other management actions have mostly failed." We have tasted these failures before. In December 2003, right here in the *Advocate*, Dr. Michael Sullivan described a scenario where mandatory catch and release would contribute significantly to mortality in the walleye fishery: "For example, recovering walleye fisheries like Bapiste Lake may attract 10,000 anglers in a summer. The sustainable harvest is likely no more than 1,000 fish. How do you divide 1,000 fish amongst 10,000 anglers? Once minor problems like catch-and-release mortality (usually as low as five to ten percent) have now become major sources of the annual kill when multiplied by the heavy angling pressure." (Vol. 11, no. 6)



Current density of bull trout in Alberta. A low adult density means there is a high risk of losing these populations in the near future. Asterisks mark the locations of watersheds for proposed recovery work.*
CREDIT: GOVERNMENT OF ALBERTA

Angling expertise goes a long way to reducing mortality. We also know that catch-and-release related fish deaths increase dramatically under higher water temperatures. With climate change, summers such as the one we just had will increase fish stress and mortality. Even though the province currently closes areas to fishing when temperatures get too high, more guidelines and restrictions on fishing to address temperature issues may be needed in the future.

In order to reduce mortality the plan has also rejuvenated calls for mandatory education programs and for limiting the number of fishing licenses issued in any given year. Mandatory education programs are incredibly important – it's pretty obvious that if you're allowed to eat fish x but have to release fish y, you better know the difference between the two! The exact impacts of misidentification, while unknown are thought to be significant, especially for species such as bull trout which are notoriously easy to catch and more vulnerable to overfishing. It only takes a couple of anglers mistakenly identifying a bull trout as a brookie and several bad catch and release handlings to undo in a day what skilled anglers could sustainably fish forever.

While the percentage of licensed anglers in Alberta is stable (seven percent in 1999 and 2016) more than 90,000 more licenses were

issued in 2016 than were issued in 1999. Given the sad state of many of our fisheries should we be issuing nearly 300,000 fishing licenses? Can we recover and establish sustainable fisheries with a growing absolute number of anglers? The answer is likely "no": a paper in the *Journal of Fisheries Management* published in 2002 warned that Alberta would face unrecoverable collapses in fisheries unless serious restrictions were placed on anglers and recommended a lottery system to reduce the amount of fishing pressure in the province.

The final, and perhaps greatest, concern is that the commitments to restore habitat fragmentation and improve water quality focus on issues such as hanging culverts, road crossings, and OHV trails. Stronger commitments to limit industrial development or protect habitat appear to be absent. Indeed, ongoing habitat destruction in trout habitat is incredibly concerning. A commitment to address sedimentation at road crossings while continuing to build more roads (thus causing more sediment, OHV use, and access to streams) is completely illogical and may undo any other efforts made.

Habitat loss and degradation, even if not directly killing fish, places them under stress and makes them less resilient to climate change, competition with introduced species, and angling pressures. Addressing all other causes for fish decline without restoring and protecting habitat is a lot like managing symptoms without treating the root cause of the disease.

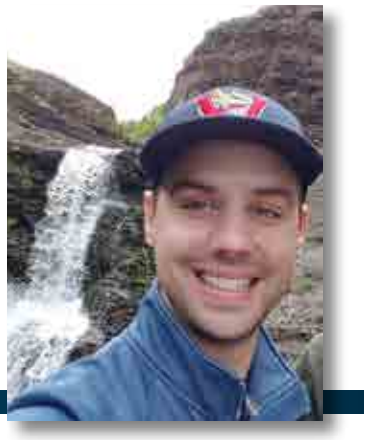
While it is relatively easy to cause widespread collapses of fish populations, it will take a lot more serious intervention in order to fix years of neglect by the government. There is no quick fix or simple answer. One approach will not be enough – many problems will have to be tackled simultaneously on landscapes that are plagued with problems. It's clear these recovery actions will have to be coupled with landscape restoration and habitat protection in order to ensure that recovery is permanent.

Despite these challenges, it appears that for the first time in decades, there are solid plans for action that will allow native fish a chance to recover and once again thrive in these watersheds. The government expects that after the five-year rest period, there will be significant increases to fish population numbers in these watersheds. If the government has the data and scientific rationale behind their decisions, they need to make that clear to all of us and we can in good faith let them show us what they can do. A successful result would be a win for all.

Does it really need to be said that situations like this in the backcountry severely damage water quality and fish habitat? PHOTO: © W. HOWSE

After Obed:

The Path to Better Dam Safety Regulation



By Nick Pink, *AWA Conservation Specialist*

In September's *Wild Lands Advocate*, "Countdown to Disaster: The Obed Mine Spill" outlined the October 2013 tailings spill at the Obed Mountain Coal Mine, near Edson, Alberta. The article focused on the events that led up to the spill and its environmental impacts. It ended with a hopeful comment that, perhaps out of this disaster, we might have learned lessons that could prevent a similar event from occurring in the future.

Some will applaud the good news that we haven't seen a disaster on Obed's scale in the last four years. This is certainly positive. But, as the Obed case underlined, the ability to prevent such catastrophic events depends in part on the regulatory process. It depends on companies carrying out the obligations and duties established by the regulator. It depends as well on the regulator ensuring that dam safety requirements are met initially, that they are followed during a tailings facility's lifetime, and that necessary restoration/reclamation measures are implemented after a mine closes. Here I want to consider if regulatory safeguards and procedures have been strengthened since the Obed spill to try to minimize further the likelihood of similar dam failures occurring.

The Weaknesses in the Regulatory Process

To get a sense of how the regulation of dams has changed since the Obed spill, we can take a look at what deficiencies existed. In a March 2015 report, the Auditor General of Alberta released the results of the audit of the then-current regulatory system in place to regulate dam safety. The audit took place during the Obed spill and a subsequent transition period during which the responsibility of dam regulation was being transferred from the Department of Environment and Sustainable Resources Development (ESRD) to the AER. The findings were... damning.

The Auditor General concluded that ESRD did "not have adequate systems to regulate dam safety in Alberta." So insufficient was the information available to the department's senior executive that the Deputy Minister could not assure Albertans that his department was regulating dams in the province appropriately. "At the most basic level," the Auditor General observed, "reporting should allow important questions to be answered." Those questions were ones about whether the department, through its own work and the information it received from dam owners, could come to a confident conclusion about the safety of dams. They were questions about whether risks identified demanded that changes be made to regulatory activities. That basic level of reporting didn't exist. When it came to dam safety in Alberta there were:

- no performance metrics,
- no results analysis,
- no identification of areas for future improvement.

When it came to process, Dam Safety officials weren't required to document their work. While they attended inspections and reviewed information from dam owners there was insufficient documentary evidence to recommend if dams were being regulated well.. It's unsettling, if not shocking, to read in this respect that "the nature, frequency and the quality of this work cannot be verified appropriately, either by supervisors or outside scrutiny, as documentary evidence is lacking."

ESRD received some credit from the Auditor General for having a registry of dams. But when it came to the "completeness, accuracy and sustainability" of this record the registry was "lacking." Further to this the Auditor General concluded: "At present, the database is not updated appropriately, information is missing, and is not being used to its full potential. For example, it is capable of but is not used to track inspections and deficiencies.".

Another weakness identified by the Auditor General rested in the fact that the department's regulatory activities were shaped primarily by what dam owners concluded about the consequences of their facilities. The regulated, in other words, told the regulator what the consequence rating of dams should be. "If the consequence rating for a dam is not significant or very high," the Auditor General discovered, "Dam Safety's reporting requirements range from minimal to none." Given the nature of the regulatory process, it wasn't surprising to read next that the audit identified dams and tailings ponds with outdated consequence ratings. Outdated ratings increased the risk that the department was carrying out an appropriate level of monitoring.

Specific to coal mines, the report states bluntly that "coal mine tailings ponds have not been appropriately monitored by

In 2014 the responsibility for regulating all energy-related dams was transferred to the Alberta Energy Regulator. AER regulates 65 of the approximately 1,500 dams in Alberta (40 oil sands dams and 25 coal mining dams). Blue dots indicate the location of low consequence dams; green indicates significant consequence; purple indicates high; yellow indicates very high; red indicates extreme consequence.
PHOTO: © OPENSTREETMAP.ORG (OPENSTREETMAP CONTRIBUTORS)

Dam Safety." The majority of coal mines tailings ponds hadn't been inspected since the 1980s and 1990s. This appears to be due to an inadequate "consequence rating" system that effectively ignored dams that were not rated as "significant" or "very high" consequence. It is unclear what the consequence rating of the Red/Green Pit at Obed – where the October 31, 2013 failure occurred – was prior to the spill, but today it is listed as "low".

Other key findings observed by the auditor were that the public's ability to obtain information relating to dam safety is limited, as was regulatory oversight. Locations, safety precautions, and emergency procedures were all formerly available to the public but were removed at the time of this report.

The Auditor General made two key recommendations after this audit: 1) Develop a Plan to Regulate Dams and 2) Improve Regulatory Activities. These recommendations were stated as crucial in demonstrating regulatory responsibility and maintaining accountability to the public.

Where are they now?

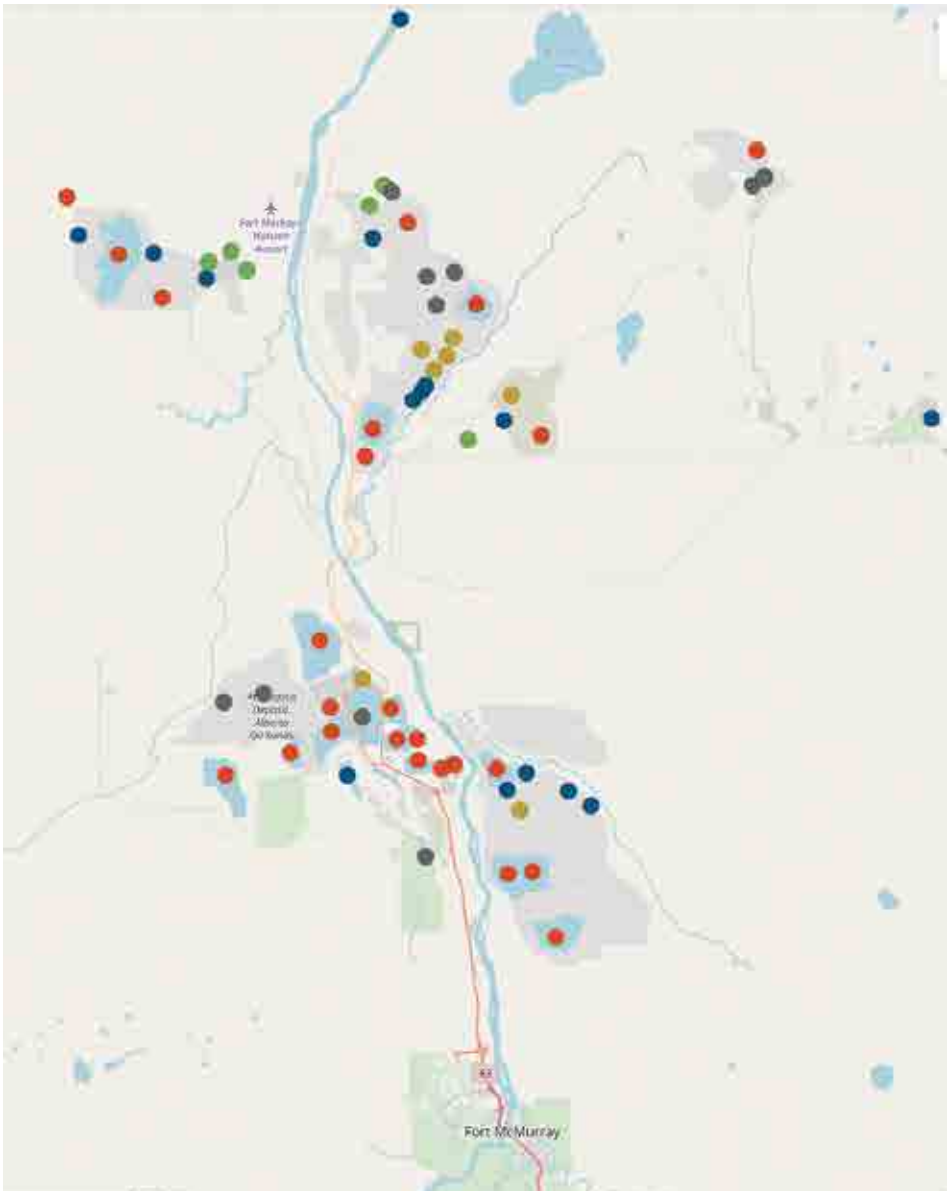
In April 2014 the Alberta Energy Regulator assumed relate authority over oil/gas/coal related energy dams. To the AER's credit, they immediately responded to the Auditor General's report and committed to incorporating the recommendations. That is great news – but have they done it?

In many ways they do appear to be on track. For example, the AER have since announced that they have inspected all of the dams they regulate. On the ground, they have implemented specialized dam inspection training for inspectors and a more rigorous new dam assessment process. They have released an interactive "Dam and Pond Map" tool that allows you to view said dams in Alberta. They have released 2015 Dam Safety Inspection Results and 2016 Dam Safety Inspection & Audit Results. The rudimentary consequence system rating for each dam has been supplemented with an AER assessment that rates the operator's safety system and performance. They have created a dam safety registry and update it regularly with inspection findings.

But as I look at each one of these initiatives the same comment keeps coming to mind: prove it to me. As someone concerned about how these facilities are being regulated, *I want to see how these facilities are being regulated.* Almost every public facing initiative could be, should be, more informative. The 2015 Dam Safety Inspection Results is half a page and states that 99 of 100 containment structures were "satisfactory." The 2016 Dam Safety Inspection & Audit Results is one page. The AER assessments and dam safety registry are not currently public and – I am told by AER Dam Safety – may not ever be. The Auditor General recommended that Alberta Environment and Parks "develop a plan to regulate dams and **report on the results of its regulatory activities**" (my emphasis). One wonders if when that recommendation was made the Auditor General imagined that one page summaries would be sufficient to fulfill the recommendation's intent.

Even minor successes, such as the mapping tool, have too little info to be of much use. Knowing where a dam sits along with what and how much fluids/sediments it contains is only so helpful. When I asked the AER when we might see an update to this tool they responded that they are aiming for the end of 2018. What will they be adding? Maybe something to do with dam performance or regulatory findings, they aren't sure yet.

The Auditor General stated that one of the implications of limiting information available to the public is that the "public cannot hold the department accountable for its regulatory responsibilities." For us



Nearly two-thirds of the dams regulated by the AER are in the Athabasca Oil Sands Area.
PHOTO: © OPENSTREETMAP.ORG (OPENSTREETMAP CONTRIBUTORS)

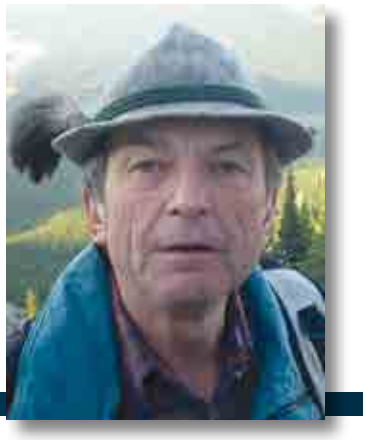
to ensure our regulatory agencies are doing what they need to do to protect human and environmental health, we can't just be taking their word for it, we need access to pertinent information. The lack of information and documentary evidence sat at the heart of the Auditor General's 2015 critique of the dam safety regulatory system

If the AER is competently doing a better regulatory job behind the scenes then I would hope they would be willing to share that good news in a more transparent manner with Albertans. In the March 2015 report the Auditor General, under the heading "What needs to be done" wrote that improving Alberta's systems for regulating dam safety should begin with: "a reliable registry, a plan for carrying out that work, and informative reporting on dam safety in Alberta. Of critical importance, the department must also document its regulatory activities. Without this evidence, the department can't prove it is doing what it should and fully support any conclusions that it makes regarding dam safety." It's not too much to ask of the AER to offer Albertans a comprehensive accounting of what they have done to implement the Auditor General's important recommendations.

Featured Artist
Tess Stieben

"In the Wake of Loons"
Acrylic on canvas,
12x24 inches
(at The Wildbird General Store, Edmonton)
PHOTO: © T. STIEBEN

Five Days on the Bighorn Historic Trail



By Heinz Unger, *AWA Past-President*

Gourmet food, with vegetarian options, home-cooked on an open campfire, ice-cold beer after a day's work on the trail, a full moon rising over the tall pines, morning yoga exercises on a mountain meadow with horse bells tinkling in the distance – but hold on before you think this trip was all fun and pleasure. There was also dust, heat, thick smoke in the air from forest fires nearby, long hikes in and out with many stream fordings, and the hard work on the trail using heavy brush cutters, pickaxes, shovels, hatchets and handsaws. Read on for the full story.

One Monday in early September 2017, Joanna Skrajny and Nick Pink, AWA conservation specialists, together with volunteers Sean Nichols, Joel Van Riper, and Heinz Unger, took off from the AWA office in Calgary for the long drive to the trailhead in the Blackstone/Wapiabi Forest Land Use Zone (FLUZ) in the Bighorn Backcountry. This FLUZ is about 50 kilometres north and west of Nordegg as the crow flies, and the Blackstone Gap trailhead is less than 20 kilometres east of the Brazeau River where it forms the boundary to Jasper National Park.

The Blackstone Gap offers the shortest foot access to the Bighorn Historic Trail in that FLUZ. The Blackstone Gap is a dramatic river valley gap where the trail barely clings to the scree-covered steep mountainside. Then the valley opens up and the trail follows George Creek, a tributary of the Blackstone. The Bighorn backcountry is immense and beautiful. It boasts wide open, gently sloping valleys, clear streams, and thick forests of spruce and pine, interspersed with wet meadows near the source of the creeks. Its scenic backdrop of rocky ridges and peaks certainly isn't hard on the eyes. Likely due to the hot and dry summer, fall colours had already started to show in the valley, adding to the beauty of the scenery. On the hike in it was clear that the trail conditions had deteriorated over the years. Flooding and washouts shared the blame for this deterioration with the vigorous growth of willows, shrubs and conifers on both sides of the trail.

The Bighorn backcountry – the object of AWA's affection. PHOTO: © H. UNGER

AWA –Caring for the Bighorn for More Than a Generation

Starting in 1983 and for the following 10 years, horse-mounted AWA volunteers, with air-lift assistance from the Alberta Forest Service, cleared all major Bighorn valleys of old outfitter and industrial exploration garbage. Literally two tonnes of garbage a year were gathered and then airlifted out of the Bighorn. By 1993 it looked like AWA's summer volunteers were out of work, but not for long! The Forest Service initiated an "Adopt-a-Trail" program in 1994 and AWA was asked to assume maintenance of the historic Bighorn equestrian trail that stretches between Crescent Falls on the Bighorn River and Chungo Gap north of the Blackstone River. It took larger groups of six to eight people working very long days for the first 5 years in order to clear AWA's stretch of long-neglected trail. In later years, much of the maintenance was carried out by only four people, assisted by four saddle and four pack horses. However, repeated flooding in recent years and a great deal of vegetation encroachment means larger crews are once again needed to maintain this trail

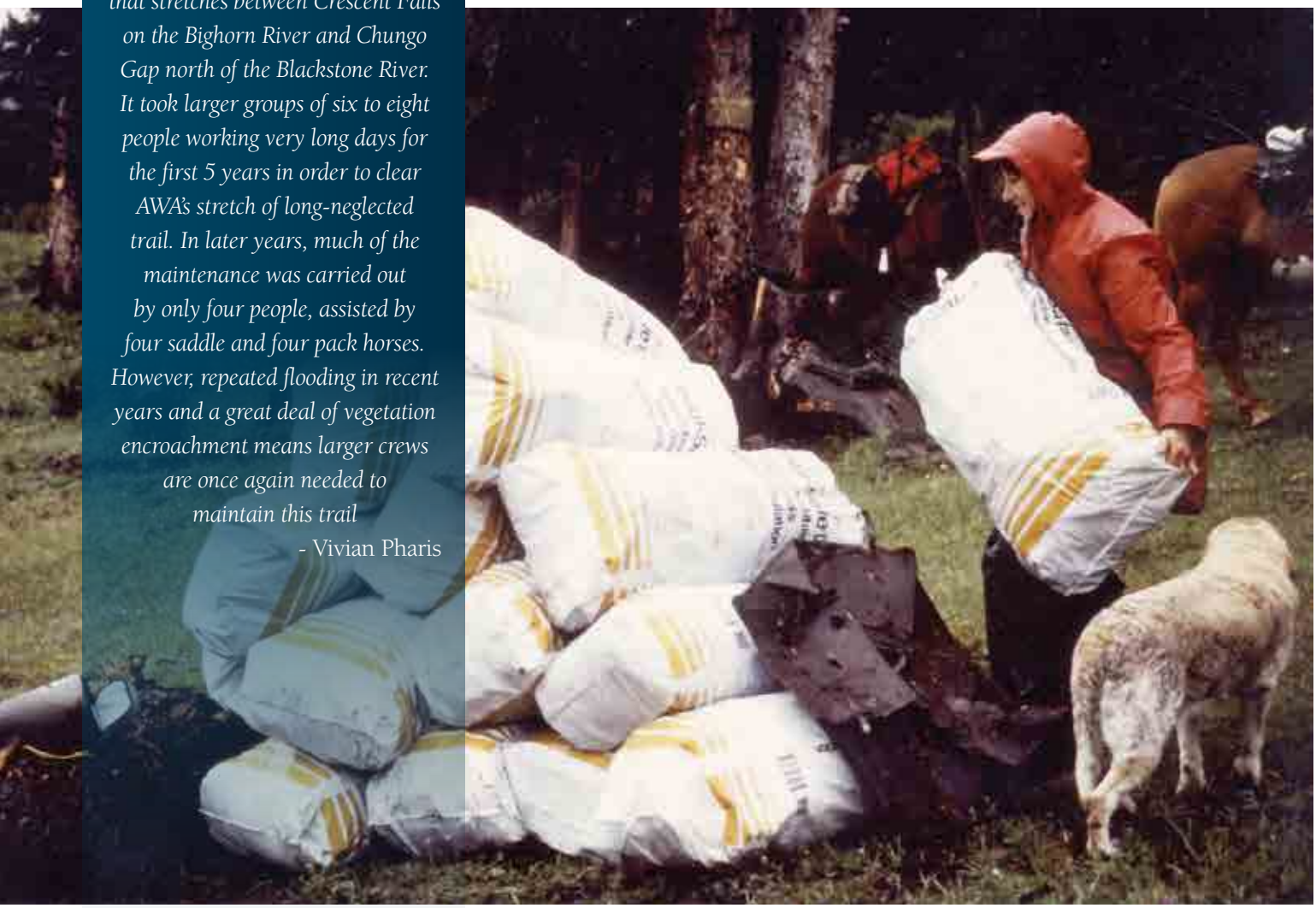
- Vivian Pharis

Late that first afternoon the hiking group finally reached the agreed campsite and was greeted – no kidding – with ice-cold beer by Vivian Pharis, AWA Board Emerita and Norma Ruecker, a faithful volunteer. They had come in on horseback (including an extra packhorse), traveling over two days via a longer trail, starting at the Wapiabi trailhead further south. They had carried the tools and all the heavy gear from the helicopter drop location and set up the camp kitchen, ready to start cooking dinner.

Yes, this was a helicopter-assisted trail restoration and maintenance operation, and a very beneficial and effective collaboration indeed between Alberta Environment and Parks (AEP) and the AWA. The latter contributed the manpower, expertise, and knowledge of the area, while AEP gave their agreement, provided some of the necessary tools, and dropped all heavy supplies and gear a couple of hundred metres from the campsite.

The three horses were already happily grazing on the wide meadows to the south of the campsite when we arrived by foot. In addition to carrying people and loads, they continued to provide diversion and entertainment with their antics. Vivian and Norma were less pleased when they occasionally had to chase the horses after they started off to a better water source or down the trail despite being hobbled. But despite these expressions of equine individualism, they added much to the camp ambiance with their presence and their snorts and tinkling bells when they headed down to the pasture.

The daily routine for the group started at first daylight with re-starting the campfire. Everything was cooked sustainably on an open fire, using locally gathered deadwood and Vivian's camp cookware which has an



This is some of the garbage that AWA volunteers gathered on their stewardship trip into the Bighorn forty years ago. PHOTO: AWA

amazing black patina. The camp coffeepot was as black on its inside as on its outside but the line-up for fresh coffee was almost as long and as eager as at the local Starbucks or Tim Hortons. The breakfast was a cooked, hot meal, including porridge and bacon and eggs. Lunch was eaten on the trail to save time, but dinner started out with cold drinks and munchies. Vivian had an amazing meal plan and surprised everyone with new delights of full four-course dinners. As the dusk deepened and the moon rose various libations appeared, including Tang & Rum, and the storytelling began. Vivian and Norma had taken part in the Bighorn Historic Trail maintenance trips for many years in the past, and had lots of entertaining tales. It was an experience the best backcountry outfitters could not have provided for a few hundred dollars a day.

Everybody felt so grateful for the delicious meals that all chores – fetching water, cutting and splitting firewood, and doing the dishes – were done willingly like in the happiest and most cooperative of families. Joanna, the team leader, has a low key leadership style, and there was a minimal amount of organizing and assigning tasks. However, safety was taken very seriously, starting with briefings, bear spray always at the ready (although we never saw a bear except for piles of scat on the drive out), and mandatory use of safety gear and vests, especially when operating power equipment. There was excellent camaraderie and collaboration throughout the time in the backcountry, and group members picked tasks and supported each other according to their respective inclinations and abilities.

On the first morning the team scouted the section of the trail past George Creek, continuing to the south. One of the worst problems that affect backcountry trails is deep rutting on steep sections where the trail is on a cutline. Better drainage and water bars (to divert flow off to the side) would greatly improve the situation. Wet forest and meadow areas are a different but equally serious problem, especially for horse travel during wet weather. New corduroy installation or plastic matting would be needed to fix those sections. AWA hopes to tackle some of those problems in the years to come – more opportunities to volunteer!

The actual trail restoration and maintenance work consisted of light-to-heavy brush clearing using both power brush cutters and hand tools, such as axes and saws. The majority of brush clearing called for cutting overgrown willows and encroaching conifer saplings. Some areas showed signs of serious flood damage, such as erosion ruts and loose rocks covering the trail. Minor re-routes of the trail were made around unsafe and/or degraded terrain, and water bars were built where needed to divert drainage from the trail. Cut brush and unstable rocks were removed from the trail by hand. At some locations, the right trail was marked using flags and/or cairns.

On the way out the group could admire the greatly improved condition of the trail, although it was clear that more and continued efforts will be needed to maintain these old trails that open up this beautiful backcountry. The provincial government and AWA are to be commended for their efforts and good cooperation that helps to keep some of Alberta's special wild places open and accessible.

And…did I forget to mention that a group of seven volunteers had a great time out in the Wild?

Part of the Bighorn watershed PHOTO: © V. PHARIS

Cleaning Up After Ourselves:

Oil Sands Mine Liability Program Needs Major Reform

By Carolyn Campbell, *AWA Conservation Specialist*

In April 2013, Alberta Premier Alison Redford reassured her Washington DC audience about Alberta's oil sands mining industry impacts, while she promoted the contentious Keystone XL pipeline. Among other points, Premier Redford claimed that: "Tailing ponds disappear from Alberta's landscape in the very near future."

While Premier Redford's remarks may have persuaded the ill-informed they were truly far-fetched, unless the premier was talking about geological time. In fact, oil sands mine tailings are nowhere near disappearing. These tailings reservoirs sprawled across 234 square kilometres and contained 1.1 trillion litres at the end of 2014. They have been growing since then. Massive volumes will continue to be produced and stored behind huge earthen berms for many decades. The Alberta Energy Regulator (AER) re-confirmed this regrettable reality as recently as October 2017: AER approved Suncor's plan to gradually reduce tailings in its Millennium Mine waste ponds from today's level of over 300 billion litres of tailings, to 147 billion litres by 2033, the year the mine is scheduled to close. Those pond tailings are not required to hit 'zero' until 2043, ten years after mine closure.

The province's *Environmental Protection and Enhancement Act* (EPEA) acknowledges the 'polluter pay' principle. In practice, however, our liability management system is very weak. Three problems with the current system are: serious unresolved bitumen mine reclamation problems; a lack of disclosure of liability assumptions, and therefore likely significant under-estimation of liabilities; and very small upfront financial security requirements. In AWA's view, these shortcomings represent a potential multi-billion-dollar liability to taxpayers and to government. This lax regime risks saddling future generations of Albertans with significant, unfair clean-up costs. Major reforms are needed.

A Syncrude tailings pond. Under the current liability management approach, there's an unacceptably high risk that the public will be stuck with multi-billion dollar costs of bitumen mine clean up.
PHOTO: © J. HILDEBRAND

Ecological and cultural significance

The 'mineable' oil sands region covers a land surface area of about 4,700 km^2. This represents three percent of Alberta's official oil sands region area and one percent of Alberta's boreal forest region. That may sound relatively small, but as part of the traditional territories of the indigenous communities living in the region, those boreal forests, wetlands, and wildlife are central to their livelihood and culture. The government and mine operators have made commitments to return a functioning boreal ecosystem of 'equivalent land capability' to disturbed mine sites, as required by EPEA.

The mines are situated in an area of outstanding ecological importance. North of Fort McMurray, mining leases extend about 100 kilometres along both sides of the Lower Athabasca River, where major North American migratory bird flyways meet. The only wild whooping crane population and hundreds of other bird species migrate twice a year over the mineable oilsands region. Not far downstream from the mines is the Peace Athabasca Delta, one of the world's largest freshwater deltas. The delta

provides breeding and stopover habitat for extraordinary concentrations of waterfowl and other wildlife.

Major reclamation problems remain

One reason why oil sands mines' liabilities are so worrisome is the difficulties of replacing boreal ecosystems in this globally significant area. Those who attended Dr. Lee Foote's December 6th AWA talk in Edmonton heard first-hand how challenging restoration and reclamation is in the boreal forest. Peat-forming wetlands once made up half the natural landscape on the mine leases. They are significant carbon stores and are essential for habitat, water storage and for buffering drought and wildfire impacts to the adjacent forest. The mines destroy them. It is unlikely that equivalent constructed wetlands can persist in the salty soils of the subsiding, re-contoured reclaimed mine landscape. Climate change only adds to the challenge.

Water that has come into contact with bitumen, called process-affected water, must also be dealt with. Much of this water remains after suspended tailings materials finally settle. The Alberta government is still in the early stages of determining how to safely treat and release this water from mine sites.

The mines' toxic tailings also have many unresolved clean-up issues. There are persistent reports of tailings reservoirs leaking into shallow groundwater. This poses a daunting reclamation challenge. Tailings berms can also fail catastrophically. As a reminder, the breached dam at Alberta's Obed coal mine site released over 600 million litres of coal wastewater into the upper Athabasca River in 2013. The March 2017 report of the joint UNESCO/International Union for Conservation of Nature (IUCN) Reactive Monitoring mission to Wood Buffalo National Park noted that "[t]he multiple risks from tailings ponds, including leakages and dam failures, constitute a concrete threat to the PAD [Peace Athabasca Delta], which should receive systematic analysis considering the World Heritage values of the PAD."

And what does the 'zero' fluid tailings requirement ten years after end-of-mine life demand? Zero really means 'covered somewhere. ' Most operators propose to cover thickened tailings with water in end-pit 'lakes.' These have not been demonstrated to transform into functioning aquatic communities in the cold northern environment. For example, there are concerns about wind action and freeze-thaw water circulation destabilizing the buried toxic tailings. Some alternative plans would cover thickened tailings with sand and soil. However, these areas are projected to slump by many metres while they compact and settle over the years. As with the constructed wetlands, the tailings experiments should require operators to provide many decades, if not centuries, of monitoring and maintenance.

With hindsight, the best way to manage these risks would have been not to issue or renew the approvals of so many mines until reclamation was less of a gamble. Without that option we must shore up today's weak liability management system.

Details of mine reclamation liability calculations must be made public

Earlier in 2017, the AER began to publish the combined reclamation liabilities submitted by all Alberta oil sands and coal mines under the Mine Financial Security Program: that total was a staggering $27.79 billion as of June 2017. AER also began to publish what each approval holder has paid to the AER as financial security against those liabilities. These payments are either in cash deposits or letter of credit guarantees and the AER holds them in trust against those liabilities. Granted, this is a step forward in transparency.

Because Alberta's coal mine industry chose to pay full financial security for clean-up liabilities, their liabilities should equal their $452 million security (for June 2017). That leaves oil sands mine reclamation liabilities of $27.4 billion. In sharp contrast to the situation in coal mining, oil sands companies only have supplied a minuscule fraction of their liabilities. They have submitted $939 million in security deposits to the AER, a mere 3.4 percent of the sector's liabilities. We will discuss below why this security amount is inadequate.

But first, let's consider how liabilities are determined. Here there isn't sufficient transparency. The AER doesn't publish important details of operators' self-reported reclamation liabilities. The public should know what areas of different land covers and volumes of groundwater, process-affected water, and tailings are addressed. This is crucial to evaluate if 'equivalent land capability' will be achieved or not. We also need to see the unit cost assumptions for different land covers and water treatments. We should also be able to see the provisions made for long-term adaptive

What about orphaned oil, gas, and 'in situ' oil sands wells?

AER's Licensee Liability Rating (LLR) Program and Orphan Fund rules apply to wells and most other infrastructure (excluding the biggest processing facilities) for upstream oil, gas, and 'in situ' drilled oilsands projects. Orphan sites are officially assessed as having no legally responsible or financially able party to deal with abandonment and reclamation responsibilities. For good reason, orphan sites have been in the news lately. Their numbers are increasing - as of September 2017, there were over 1,700 orphaned sites – and there are some high profile legal disputes about reclamation obligations after bankruptcy. Alberta also has a lenient system allowing wells to remain 'inactive' indefinitely prior to reclamation; there are now over 80,000 inactive wells. Tens of thousands of other wells are abandoned but not fully reclaimed. So there are likely many other wells that are orphaned in all but name. To its credit, in spring 2017 Alberta Energy included environmental groups in a multi-stakeholder advisory group to review these regulations. We do not yet know what changes will result. This article focuses on oil sands mine liability management, which also requires government reform.

monitoring, maintenance, and contingency to address the enormous reclamation uncertainties discussed above. There should also be some provision for catastrophic insurance against tailings pond berm failures. Because these deemed cost elements are secret, AWA is very concerned they are likely far too low, or missing.

The AER's current (February 2017) Guide to the Mine Financial Security Program states: "Individual asset and liability numbers will not be disclosed as these numbers reflect confidential financial information." This is difficult to believe for end land uses and third party unit costs for public lands reclamation (these third-party costs are estimates the approval holders give the AER to calculate what, in the event the miner defaults, third-party contractors would need to be paid in order to address the liability). The secrecy is especially dubious given the technology-sharing these same mine operators practice in Canada's Oil Sands Innovation Alliance (COSIA). COSIA's website stated as of mid-November 2017: **"To date, COSIA member companies have shared 936 distinct technologies and innovations that cost almost $1.33 billion to develop [emphasis in original].** These numbers are increasing as the alliance matures and expands. Through this sharing of innovation and application of new technologies, members can accelerate the pace of environmental performance improvements."

AWA believes the assumptions and details behind liability estimates need public scrutiny. This scrutiny is needed given the globally significant ecological values at stake on these public lands and the high uncertainty of reclamation success. Such scrutiny in itself should accelerate progressive, timely, and effective reclamation.

Need to collect the full financial security for reclamation liability

Alberta Energy's web page on Oil Sands Facts and Statistics in November 2017 states reassuringly: "Mine operators are required to supply reclamation security bonds to ensure requirements are met."

As we noted above, less than five percent of incurred reclamation liabilities are actually "in the bank" now. Fairly small 'base' securities amounts between $30 to $360 million per mine are now held in trust by the AER. If tailings profiles are meeting targets set by the companies themselves, little else is required in the first decades of operations. Miners must start ramping up financial security payments only in the final fifteen years before a weakly defined 'end-of-mine life' date. In all the years prior, they will have been distributing their cash flows to investors or investing them in projects, projects that may well be outside of Alberta.

What is the government's logic when it comes to the Mine Financial Security Program's lax approach? Low upfront financial security is premised on the belief that if the company's assets are at least three times above its estimated reclamation liabilities, all will be well. In July 2015, Alberta's Auditor General found that assets are inflated, development costs are not recognized, and mine life estimates are over-extended. Yes, these are calculation problems, but fixing them doesn't begin to address the real issue.

Added to these calculation problems is a much larger potential oil sands developers dismissed 20-years ago: a carbon-constrained world. If the world reduces its thirst for petroleum there may be little incentive for oil sands producers to offer up tens of billions of dollars in reclamation payments after nearly all of a mine's high-earning years are over. In the event a company is unable or unwilling to fulfill its end of life obligations, the remaining bitumen reserves may be very unlikely to pay for accumulated clean-up costs. This leaves Albertans highly exposed to the risk of corporate defaults.

Recent examples of mine failures should alert Albertans to this default risk:

- **Yukon's Faro open pit lead-zinc mine:** once the largest mine in the world, the last owner declared bankruptcy in 1998, after 30 years of mining. According to the *Globe and Mail* Canadians likely will pay over $1 billion to remediate hundreds of millions of tonnes of tailings and waste rock.
- **Yellowknife's Giant gold mine:** when the owner went bankrupt in 1997, the mine was sold on condition that its billion-dollar arsenic waste liabilities, built up during 50 years of operations, would be assumed by the federal government.
- **Smoky River Coal, Grand Cache, Alberta:** in 2000, before Alberta coal mines agreed to pay full security for their reclamation liabilities, the owners of Smoky River Coal declared bankruptcy after 30 years of operations. This bankruptcy left Albertans with $6 million in unfunded cleanup costs.

The AER should require oil sands miners to transition to full financial security for closure liability to remove the significant default risk we have created. Don't let the likely howls of indignation from the operators fool you, this is financially feasible for mine operators. For example, Teck Resources Ltd. has stated that, if required, they could provide full financial security for reclaiming their proposed Frontier Mine. Existing mines also have the capacity to pay. Cash flows reported by Suncor, CNRL and Imperial are also healthy, with mine operating costs for Suncor and CNRL in the low $20s per barrel.

In summer 2017, AWA and ENGO colleagues joined in a government-led multi-sector review of a small piece of the cleanup liability picture. One outcome of that review was to suggest financial penalties if miners missed their own planned volumes of tailings. We appreciated being part of this process. We took the opportunity to propose the broad reforms to the overall financial security program, as outlined above. In September and October 2017, we briefed AEP and AER about these broader reforms. To date, there has been no commitment to the kind of major reforms needed to reduce public financial risks.

AWA will continue to seek reforms to liability management to require oil sands mine operators to post full security now, while their incentives are still high to do so. Requiring detailed liability disclosure and full financial security would spur timely, progressive reclamation and significantly reduce the unfair mine clean-up burdens we are passing to future generations.

Conservation Corner:

How to Hunt for Nighthawks

By Niki Wilson

As Brenda Shepherd walked home around 10:30pm one summer night in the town of Jasper, she heard the PEEEENT of a nighthawk. "Seriously?" she said to herself. Shepherd, Jasper National Park Conservation Biologist with Parks Canada, had spent the summer overseeing a project designed to detect this very call in a number of grasslands and meadows throughout the Park. At that point she'd had only a handful of detections. "But that's the thing," says Shepherd. "It's a rare bird that people can hear in their backyards."

Nighthawks are members of the nightjar family of birds, known for their distinctive vocalizations, along with long wings, short beaks, and at times erratic flight patterns. Their populations have experienced massive declines across the country, likely due to a number of factors. They feed mainly on airborne insects, and insects are disappearing around the globe. One study estimates there has been a global decline of 45 percent in insect abundance over the past four decades. Other factors, like pesticides, habitat loss, and hunting from domestic animals may also play a role. For these reasons nighthawks are considered a Threatened species under Canada's *Species At Risk Act*, and a *Sensitive* species in Alberta.

One of the bird detectors biologists in Jasper National Park are using to sample the common nighthawk population in the Park. If you happen upon on one of these devices in your travels through the Park, please do not tamper with the device. PHOTO: © B. SHEPHERD

These designations have shone a light on a species that needs attention, says Shepherd. "So we've identified some conservation measures that we hope in the future will provide them with extra protection."

One of these measures is to identify breeding sites that could easily be disturbed by human activities. However, nighthawks are cryptic birds, unique even among the group of songbirds referred to as aerial insectivores—those that hunt insects on the wing. Nighhawks call only in the dim twilight of late dusk and early dawn—difficult times of day for people to do surveys says Shepherd. In Jasper National Park, they make up a consistent but only small part of the bird community. So the hunt for nighthawk nesting areas has been a multi-step process that Shepherd is refining as it unfolds.

Shepherd and her team began their search in the spring and early summer of 2016. They set-up bioacoustics monitors at 26 sites across the Park hoping to collect audio recordings of the distinctive PEENT of the nighthawk. The call of the nighthawk was recorded at only one location that season, with visual confirmation reported at one other site. This confirmed the team's suspicion that nighthawks are uncommon in Jasper and they decided to conduct longer surveys at only high quality sites in 2017.

In some ways, nighthawks aren't choosy. High quality sites can range from dry grasslands to wet meadows, and even flat roof tops. But they all have one thing in common—water is somewhere nearby. Water may increase the likelihood nighthawks will encounter the clouds of insects on which they feed. Nighthawks have been observed flying low to snatch insects hovering over lakes, rivers, and streams. Sometimes they get too low and make navigation errors. In a recent report, they were even seen crashing into a river, yet easily righting themselves and taking off from the water's surface apparently unharmed. Still, their feeding isn't limited to water habitats. They will fly as high as 150 metres to snatch insects from the sky.

Back on the ground, in 2017 Shepherd's team, including biologist Serge Aucoin, deployed eight bioacoustics monitors, but this time for longer periods. The team collected nearly 6,000 hours of audio recordings. That's A LOT of data. "To sit there and listen to all those recordings would be over-

whelming," says Shepherd, "but we've been working with Elly Knight, a PhD student at the U of A to solve that problem."

Knight works in the Bioacoustics Unit of the Alberta Biodiversity Monitoring Institute. She's developed computer software that can identify nighthawk calls from the hours of audio collected by Shepherd and others studying the species. Knight says nighthawks are easily detected with the software because they have distinctive calls with a simple structure, they call frequently making them highly detectable, and they also call at times of days when there is little other noise.

"We've been using nighthawks to help develop a whole host of bioacoustics tools," says Knight. She hopes these tools will help the biology community better understand nighthawk behavior and the way the bird uses its habitat. Nighthawks are mysterious because they don't behave like other songbirds, she says. They forage at a different time of day from many songbirds that feed on the wing, which may reflect a different food supply. Another difference is that they aren't traditionally territorial like other songbirds. "I'm a song bird biologist by training," says Knight, "but I've had to check a lot of my assumptions about avian behaviour at the door with nighthawks."

Knight looks forward to the results of Shepherd's study, which will provide further information about how nighthawks behave in different habitats. This past season the Jasper team was able to detect the presence of common nighthawks at five of the eight sites they surveyed with bioacoustics recorders. It's hard to know if these calls were from breeding sites. Nighthawks are notoriously bad homemakers—they don't build nests but instead choose to lay eggs on the ground and leave little evidence afterward of their presence.

Still, the environment and type of "territorial call rate" at two of the Jasper detection sites suggests they are likely breeding there. Next year, in addition to bioacoustics monitoring, the team will go to areas they suspect are breeding grounds. There they will play the calls of breeding nighthawks in hopes of a response.

Based on those results, Shepherd and her team will figure out what role to play in helping to recover the species. "Once we begin to better understand their distribution, we'll move into the next phase of trying to protect them."

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

A bioacoustics monitor deployed in promising common nighthawk habitat. PHOTO: © B. SHEPHERD

Featured Artist
Tess Stieben

"Mountain Gems, Rufous Hummingbirds, male & female"
Watercolour, framed 12x15.5 inches
PHOTO: © T. STIEBEN

"Into The Reeds; Black-crowned Night Heron"
Acrylic on canvas 36x48 inches. Based on watching night herons that nest on an island in Jackie Parker Park Edmonton
PHOTO: © T. STIEBEN

"Ho Ho, Hey Hey Caribou are here to stay!"

...shouted the group gathered in front of the Alberta Legislature in Edmonton. On Tuesday, November 28, 2017, Alberta Wilderness Association and Canadian Parks and Wilderness Society held a rally for caribou. Joined by concerned citizens and representatives of the Confederacy of Treaty Six First Nations, the group demanded protection for Alberta's dwindling caribou herds.

MLA Dr. David Swann championed the cause in the legislature. He reminded Members of the Legislative Assembly that the Government of Alberta had promised to protect caribou and had over five years to complete these plans – time caribou can ill-afford to see wasted. Dr. Swann later presented over 300 postcards – signed by concerned Albertans over the previous weeks – calling on Premier Rachel Notley to release the much anticipated caribou range plans for northern Alberta.

While some view protecting caribou and their habitat as a threat to jobs in Alberta's natural resources sectors, this does not have to be true. Some jobs may have to shift from resource extraction to stewardship and restoration – areas Alberta already lags in – and forestry companies may need to share quotas. But much of the land required to support caribou is located outside of areas where those natural resource companies are operating. At the end of the day, we need healthy forests and ecosystems to drive our economy and mitigate the coming threats of climate change. Alberta's economy shouldn't sacrifice healthy forests and ecosystems, it relies on them.

- Nick Pink

PHOTOS: © J. QUIROZ

Legislative Assembly of Alberta, Alberta Hansard, November 28, 2017

Dr. Swann: Well, thank you very much, Mr. Speaker. Great honour for me today to rise and introduce to you and through you to the House a constituent, an active environmental protector with the Alberta Wilderness Association, Carolyn Campbell, here on behalf of the Wilderness Association and the Canadian Parks and Wilderness Society. AWA's work will be familiar to many of us in the Assembly, the oldest wilderness conservation group in Alberta, seeking a network of representative protected areas throughout the province for caribou. Founded in 1965, AWA has a proven history of raising awareness and achieving conservation actions for wildlands, wild waters, and wildlife. Carolyn is a conservation specialist with AWA, and in her 10-year tenure she has taken the lead on caribou conservation and continues to work tirelessly with her colleagues throughout Alberta and across the nation to see habitat protected, just as the caribou need to be. She has now risen, and I'd ask that we give her the warm welcome of the Assembly… Today we are tabling a petition and over 300 postcards highlighting the threats to caribou in northern Alberta. Among those signatories is Robert Bateman, the famous painter from the west coast.

How Many Bucks Does it Take?

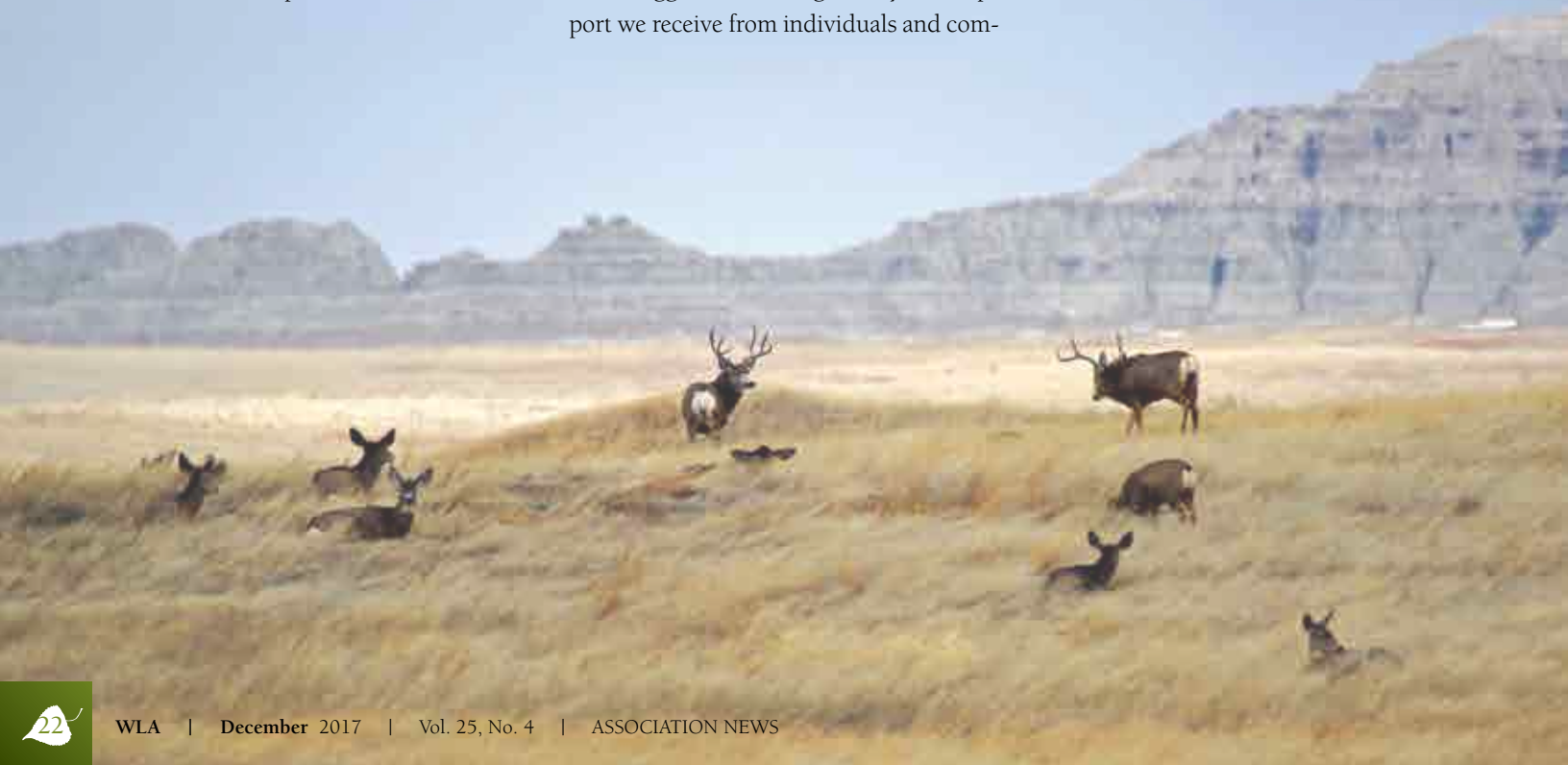
By Christyann Olson, *AWA Executive Director*

Each year the December issue of our *Wild Lands Advocate* reports to you about how AWA managed financially in the past fiscal year. This year's report underlines just how vital you are to AWA's financial health. Funds received from donations by members, supporters and fundraising efforts provided 87 percent of our total revenue this year. AWA's annual Earth Day event *Climb for Wilderness* and the *Wild West Saloon* in the fall helped the Association meet its revenue targets. Donations from long term dedicated supporters; children bringing in lemonade stand money and birthday money, friends celebrating achievements, memorial gifts and bequests and new members are the core of AWA's strength. Fundraising and gifts from individual donors promotes AWA's financial independence and freedom to speak out for wilderness protection.

AWA devoted 77 percent of its cash expenditures to wilderness stewardship, conservation, outreach and the Roger Creasey Wilderness Resource Centre (the library named in Roger's memory). Please visit our website where you will find AWA's Annual Report and Financial Statements. These documents provide the detail of our work and our resources. As you read the reports I have no doubt you will find AWA to be an efficient and carefully managed association, supported significantly by volunteerism.

From AWA's humble beginnings to the strong force it is today, we are about people. The Association has grown and is respected for its work, not only in Alberta but throughout the country and indeed the continent. We are pleased and proud of our successes, discouraged by some of our struggles, and energized by the support we receive from individuals and communities. We are constantly learning and adapting. We are nimble. When faced with government or industry intransigence we look to acquire new skills, knowledge, and strategies to tip the balance in favour of Alberta's wild spaces. Scientific information plus on the ground experience help us to be steadfast in this quest.

I believe AWA has some of the brightest and most respected staff in the conservation movement today. Their dedicated work is fueled by the financial support and heartfelt notes of encouragement. Please keep them coming so we can continue to invest your support in building the wilderness legacy we all seek. Thank you!



Bequests

Individuals, members, and supporters making a bequest in their will naming a gift to AWA are helping make a difference to long-term security and AWA's ability to plan for the future.

Wilderness and Wildlife Bequests

Daphne M. Smith 1980
Dr. James Birkett Cragg 1997
Anna Nowick 1999
Myrtle Muriel Koch 2001
Ian Ross 2003
Dorothy Barry 2003
William Mayer 2004
Diane Hughes 2005
Harold deVries 2009
Ann Roberts 2009
Richard Collier 2013
Harriet Ruth Mowat 2016
Kim Bennett 2016
Carol A. Haines - 2017
Wendy Williams - 2017
Herbert G. Kariel - 2017

Memorial Tributes

AWA is honored to receive memorial tributes from family and friends; we remember those gifts and individuals here.

Orval Pall 1951-1986
David Manzer 1939-2010
Betty & Harry Horton
Roger Creasey 1953-2012
Sharon Tranter 1940-2013
P.K. Anderson 1927-2014
Christina Havard 1944 - 2015
Ron Wetherill 1940-2016
John (Jack) Olsen 1929-2016
Joyce Docken 1923-2016
Lindis Rachel Spurr 1935-2016
Emile Fauville 1929-2016
Knut Vik 1933 -2016
Brian McWilliam 1957-2016
Larry Frith 1943-2016
Ruth McPhee 1920-2016
Brent Dahl 1961 - 2016
Hugh Wallace 1941-2016
Martha Reisenhofer 1932-2016
Florence Gehman 1940-2017
Eleanor Hvizdos 1927-2017
Rodney Hatchard 1965-2017
Richard Koinberg 1946-2017
Peter Millward 1926-2017
Noreen Olinek 1931-2017
Max Winkler 1931-2017
Ruth Moir 1921-2017
Brian Staszenski 1951-2017
Herb Kariel 1927-2017
Lewis Ramstead 1935-2017
Spencer Dunford 1944-2017

Recognition For Outstanding Individuals

AWA is honoured to receive throughout the year donations from friends and families made to honour outstanding individuals and their accomplishments. This year's tributes recognize:

Sean Nichols bicycle ride across Russia
Olivia Lingard donated her birthday money
Gus Yaki's Botany Walks
Raphael Slawinski's 50th Birthday
Alex & Lindsay
Joel Lipkind
Philip & Tristann Stopford
Gus Yaki's Canada 150th Prairie Walk

Louise Guy Poetry Corner

Celebrating 150 Years of Canadian Wildlife!

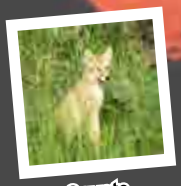
Newfoundland & Labrador

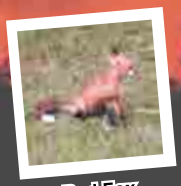
Who Am I?

I'm clever and cunning, I'm sleek and sly,
I watch for food with a focused eye;
Found to be quite shy, am I...
Can you guess my name?

I've pointed ears upon my head,
A furry coat of flaming red;
A bushy tail, I've heard it said...
Can you guess my name?

My warning bark is sharp and high,
My paws are dark as midnight sky;
A legendary sneak am I...
Have you guessed my name?


Coyote


Red Fox


Grey Wolf

Turn page upside-down for answer!

I'm a Red Fox!

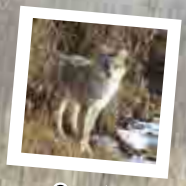
Celebrating 150 Years of Canadian Wildlife!

Yukon

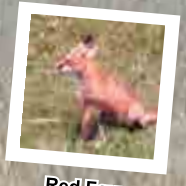
Who Am I?

Over the desolate land I prowl, my shadow growing longer,
Into the darkening night I howl, my hunger growing stronger.
Traveller, predator, hunter, hunted, family protector,
Looming in the morning mist, a fairy tale spectre.

Savagely fighting for food to feed the young within the pack,
Fierce defender of those I lead, prepared for each attack.
Steadfast, loyal, caring, cared for; famed throughout the ages,
Vilified or justifiable hero of the pages?


Coyote


Gray Wolf


Red Fox

Turn page upside-down for answer!

I'm a Gray Wolf!

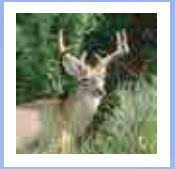
Celebrating 150 Years of Canadian Wildlife!

Northwest Territories & Nunavut

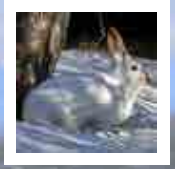
Who Am I?

Plentiful am I in the land of ice and snow,
One of many thousands, with many miles to go.
Navigating rivers, a multitude of foe,
To thunder 'cross the tundra where the warm winds blow.

Cloven-hoofed am I in the land of snow and ice,
My crown of velvet antlers is staggering in size.
Home again we journey beneath the arctic sky;
Think how quickly we'd be home if only we could fly!


White-tailed Deer


Caribou


White-tailed Jackrabbit


Mule Deer

Turn Page Upside-down for Answer

I'm a Caribou!

Nose Hill Park:

AWA Offers A First Look At An Old Grassland

By Nathan Schmidt

For many Calgarians, Nose Hill Park is a natural refuge amidst the sounds and activities of a bustling city. It's an important reminder of the expansive grasslands that rested where Calgary now stands. Nestled between the northwest and northeast quadrants of the city, the park is a significant natural landmark that rivals any of the impressive skyscrapers populating the downtown core. Beyond that, it is also an example of successfully restoring and preserving an important ecological landmark in an urban environment. Nose Hill Park, eleven square kilometres in size, is one of Canada's largest urban parks – hard to miss if you've ever driven in north Calgary.

Known for its wildlife, flora, scenic sights, geology, and suitability for any number of recreational activities, Nose Hill Park is a beloved and well-used wild space. Because of its prominence within the city and significance as a grassland environment, it offered a perfect setting for AWA to use in its program introducing new Canadians to the natural regions of Alberta. While past programs have included excursions to exotic areas like the badlands of Dry Island Buffalo Jump Provincial Park, a hike through Nose Hill Park gave the new Canadians the opportunity to explore an area literally in their backyard.

Over twenty participants from the Centre for Newcomers came along for the journey and were treated to an in-depth and educational look at the value Nose Hill has to offer. Leading the new Canadians were Gus Yaki and Karel Bergman, two well-known local naturalists, and AWA's own Carolyn Campbell and Nick Pink.

Although surrounded by 12 residential communities in the middle of one of Canada's biggest urban centres, Nose Hill provides enough quality habitat to sustain the likes of deer and coyotes as well as smaller mammals like porcupine, northern pocket squirrels, and Richardson's ground squirrels. A typical day in Nose Hill also offers northern harriers and Swainson's hawks as constant companions, circling the skies above the park searching for prey.

Shortly after the hike began, the participants split into two groups, one led by Gus and the other by Karel. The groups ventured in opposite directions towards the top of the park where the hikers were treated to spectacular views of the Calgary skyline and an impressive perspective of a new city still somewhat unfamiliar to many of them. While the journey might take only thirty minutes at a standard walking pace, there was rarely a stretch of more than one hundred metres travelled before Gus or Karel stopped the group to share a little about the surroundings.

One oft-visited topic in Karel's group was the invasion of non-native plants in the park and a general lack of action on account of the City of Calgary. "Goatsbeard is childsplay," Karel says of the blowball weed that plagues City greenbelts and residential yards alike.

At one stop, Karel explains the pervasiveness of non-native thistle in the Park. Hard to eradicate and all too easily spread, entire hillsides are covered in the thorny, purple-flowered weed. At another stop, Karel points out vines of yellow clematis climbing over native vegetation and trees, choking them out. Yellow clematis is "public enemy number two... at least" he explains to the group, noting its abundance throughout the city of Calgary. "At least this plant is pretty to look at," he concedes.

The rise of invasive species in the Park is particularly troubling as the prairie grassland that populates much of Nose Hill is one of the most under-protected ecosystems in Canada. The Park remains a compelling example of what we are in danger of losing should we continue to neglect these threatened regions. Although perhaps not as visually stunning at first as a trip to a Rocky Mountains park, a closer look at the grasses of Nose Hill reveals a complex, beautiful world.

Gus's group was treated to his encyclopedic knowledge of the birds and plants found in the park. Just off the beaten trail, a small number of Yucca shrubs were found hugging the ground. Yuccas are characterized by pointy leaves that grow out from the centre, creating a spiky-ball look.

Further up the trail, the group came across a large rock that was strangely smooth. "What caused this?" Gus asks. "Water? Wind? Ice?" No, the smoothness resulted from the fact livestock had used the rock as a rubbing stone when they were formerly allowed to graze on the rough fescue grassland.

Nestled amidst the rough fescue grasses was a beautiful selection of wildflowers peppered by a consistent stream of bees busily collecting pollen. The Saskatoons provided the hikers with a literal taste of the Prairies, as the tour was temporarily

derailed by the opportunity to pick berries when the group came across a large stand of fruiting bushes.

For AWA, a program like this is valuable in many ways. It's a strong representation of a core belief that Alberta's wilderness should be appreciated and treasured by all its citizens. Perhaps more significantly in this case, these citizens are just beginning to experience what the province has to offer.

"We always talk about creating friends for Alberta's natural regions." says AWA's Nick Pink, "the idea being that when these areas come under threat, there are people who value the area who will stand up to protect it. When we do our summer hikes, we hope that we are showing a side of Alberta that few people make the effort to go and see and that this creates a bond or interest in these areas." Nick believes the Nose Hill hike contributed importantly to this goal. "The participants were so interested and so hungry to learn about the plants and animals of the Park and left with a solid knowledge of the area, he said. "This, combined with the unique ability of Gus and Karel to find something fascinating in the smallest of things made this hike a really great time."

Familiarizing yourself with a new home can often be intimidating. But by offering an accessible introduction, AWA helped these new Canadians develop a positive first impression of their new environment. Our enthusiastic, knowledgeable guides helped all who attended to gain a better appreciation of the grasslands and our connection to them.

Nathan is an AWA Volunteer who has helped staff in a number of roles including as our mascot Little Smoky the bear since he began volunteering only a few months ago.

Featured Artist Tess Stieben

"Sunset, Great Horned Owl"
Acrylic on canvas, 16x20 inches.
PHOTO: © T. STIEBEN

Updates

Caribou Legal Petition and Outreach

The Alberta government missed its October 2017 deadline to complete caribou range plans. Under the federal recovery strategy, the provinces and territories had five years to produce plans outlining how boreal caribou home ranges will be managed to reach a minimum of 65 percent undisturbed habitat. That is one of the most important requirements for Alberta's endangered caribou to survive and recover. The federal government reported in late October that human-caused disturbance in ten Alberta boreal ranges actually has increased since the recovery strategy was released (it dropped slightly in the two most remote northwest ranges, Bistcho and Yates). This report also stated that Alberta will release its range plans in December 2017.

Meanwhile, AWA has been very active helping people learn why it's so urgent to protect and restore the lands caribou need, and how to help make that happen. With partners David Suzuki Foundation and Ontario Nature, we highlighted the lack of habitat protection with industrial "hot spot" maps for the Chinchaga (Alberta), Pipmuacan (Quebec) and Brightsand (Ontario) caribou ranges. The satellite image maps, created by Sean Nichols, have interactive 'sliders' so people can vividly see the habitat loss in the five years since the recovery strategy's release. We launched the 'Quarters for Caribou' postcards. We screened the beautiful and relevant film "Last Stand: The Vanishing Caribou Rainforest" about BC mountain caribou, where I also discussed the Alberta situation.

We are also making it clear to the federal and Alberta governments that the *Species at Risk Act* must be upheld. On November 27, AWA, Cold Lake First Nations, David Suzuki Foundation and Ecojustice wrote to the Minister of Environment and Climate Change Canada asking her to recommend a safety net order to protect habitat of five northeast Alberta caribou populations. We included a 'petition' documenting that the critical habitat of these declining herds is excessively disturbed and remains unprotected by provincial or federal laws. "If any portion of the critical habitat of the northeastern herds remains unprotected as of May 1, 2018, the Petitioners are prepared to take legal action to ensure that the critical habitat protection provisions in section 61 of the Species at Risk Act are applied and enforced."

AWA participated in a caribou forum hosted by the Confederacy of Treaty Number Six First Nations at the University of Alberta on November 29th. PHOTO: © L. BUFFALO

Caribou are central to northern Alberta indigenous communities. In explaining why they are partners in the petition, Cold Lake First Nations Chief and Council stated: "Cold Lake First Nations sides with the caribou. If the caribou can survive on the land then so can we." I was proud to participate as a panelist at a caribou forum November 29 at University of Alberta, hosted by the Confederacy of Treaty Number Six First Nations. Event moderator Crystal Lameman of Beaver Lake Cree Nation outlined how caribou are integral to their inherent and Treaty rights. One of the highlights was to hear Elder Brian Grandbois of the Cold Lake First Nations speak about the importance of caribou to his own and neighbouring communities.

As a final note, the caribou4ever.ca website is a great resource for all who want to help caribou. Check out snappy Q and A caribou facts, the hot spot maps, a virtual caribou postcard to send to the Premier, and professional, easy-to-print brochures and cards to circulate. Your help is vital in the next months to save our caribou from extinction.

- Carolyn Campbell

A Plan to Redevelop the Lower Kananaskis River

Meaningful public consultation. This phrase is a favourite of government and industry but too often the substance seems to belie its meaningfulness. There are often times when a consultation experience can feel as useful as shouting at the night sky – cathartic, but the moment your words leave your lips they are lost forever into the void.

In a refreshing change of pace, the proposal to redevelop the Lower-Kananaskis River and Barrier Lake area is a great example of a moment when public consultation was actually meaningful.

In 2011, a proposal was submitted to redevelop the Lower Kananaskis River area including areas such as Canoe Meadows, Widowmaker, and the Kananaskis Visitor Centre. This plan proposed a staggering amount of new development in the area: 109 new campsites at Widowmaker, 79 new campsites at the Kananaskis Visitor Centre, and an 18 Hole disc golf course between Barrier Dam and Widowmaker. Unsurprisingly, this proposal drew significant controversy and concerns from the public regarding the extensive development being proposed so close to the river.

The provincial government listened to public concern surrounding the proposed level of development and conducted a comprehensive environmental review. The review confirmed concerns raised by the public, showing that the amount of proposed development would have a negative impact on wildlife movement and connectivity.

The new redevelopment proposal was released in August of this year. Using the results from their public consultation and environmental review, the plan was rewritten "to better reflect the ecological sensitivities of this landscape." The golf course and the massive campgrounds are no longer being considered; instead the focus has shifted onto changes which would improve user conflict issues and congestion. New development is now proposed to be largely contained within already disturbed areas. The plan also takes wildlife corridors seriously – there will be no development in identified wildlife corridors and a road will be decommissioned in order to widen the wildlife corridor at one of its narrowest points.

The original redevelopment proposal for the Lower Kananaskis River area in 2011. CREDIT: GOVERNMENT OF ALBERTA.

Despite these significant improvements to the proposed redevelopment plan, AWA is still concerned about some aspects of the plan which may increase the recreational use footprint in the area. This is particularly true for the Barrier Reservoir Day Use area, where a new hand boat-launch and associated road access, water sports equipment rental hut, expanded parking, and comfort camping spots are being proposed. However, it is encouraging to see that the plan recommends an environmental review of these proposed changes as well. Comfort camping amenities (think of cabins and yurts) are also being proposed in Canoe meadows. This is contradictory to another part in the plan which suggests that providing comfort camping options at Canoe meadows and Barrier Reservoir could increase human-wildlife conflict. AWA believes the government should carefully reconsider any development with the potential to degrade ecological values by increasing recreational infrastructure and accommodations.

Clearly, Kananaskis is well loved. It receives many visitors every year. This plan is clearly trying to address these high visitation numbers by better managing human traffic in the area. However, the reasons why people are attracted to the area – an easily accessible place to experience nature that is less commercialized than the National Parks – may be lost if this area is developed further. If visitation increases in the future, it's clear that building facilities in order to accommodate more visitors is not the solution. We believe that there will be a point in the near future where Kananaskis will reach visitor carrying capacity – when it will be impossible to effectively manage human-wildlife conflict and ecological integrity will be significantly compromised.

Finally, the popularity of this area shows that Albertans love and appreciate our protected areas. What many do not know is that only about 50 percent of Kananaskis is currently protected. It may be time for this public consultation exercise to produce a plan that will meaningfully increase protection of this incredibly valuable area.

- Joanna Skrajny

Wainwright Dunes Wildlife Friendly Fencing

King's College undergraduates recently completed several years of field monitoring to investigate wildlife friendly fencing on the Wainwright Dunes Ecological Reserve. The Alberta government and the Buffalo Park Grazing Association supported this research. The students examined the benefits of wildlife friendly fencing in order to contain livestock, but reduce injuries to deer, moose, and elk attempting to cross the fences. Using a network of automated cameras on the Ecological Reserve they obtained many images of wildlife attempting fence crossings. They compared four strand barb wire fencing to wildlife friendly fencing, using three strand fencing with a higher bottom strand and a lower top strand.

The study found that elk were the most frequent fence crossers, with seasonal and daily patterns. Elk also had more difficulty crossing fences than moose, white-tailed deer or mule deer. They concluded that, if fence crossings could be made easier, there would be significant benefits to wildlife and less fence damage for leaseholders. Any modification that increased fence permeability to ungulates, elk in particular, should result in less injury to wildlife and less damage to the fences.

They found that the safest and most preferred passage was through open gates. There would likely be a considerable benefit if gates could be strategically located at preferred crossing points and left open when not needed to contain cattle. This practice would complement the adoption of wildlife friendly fencing throughout the reserve. The findings of this study should help wider adoption of these best practices to benefit wildlife and ranchers alike. As scientific research is one of the prime reasons for establishing Ecological Reserves it's very commendable to see the grazing association and students cooperating in such a worthwhile manner.

- Carolyn Campbell

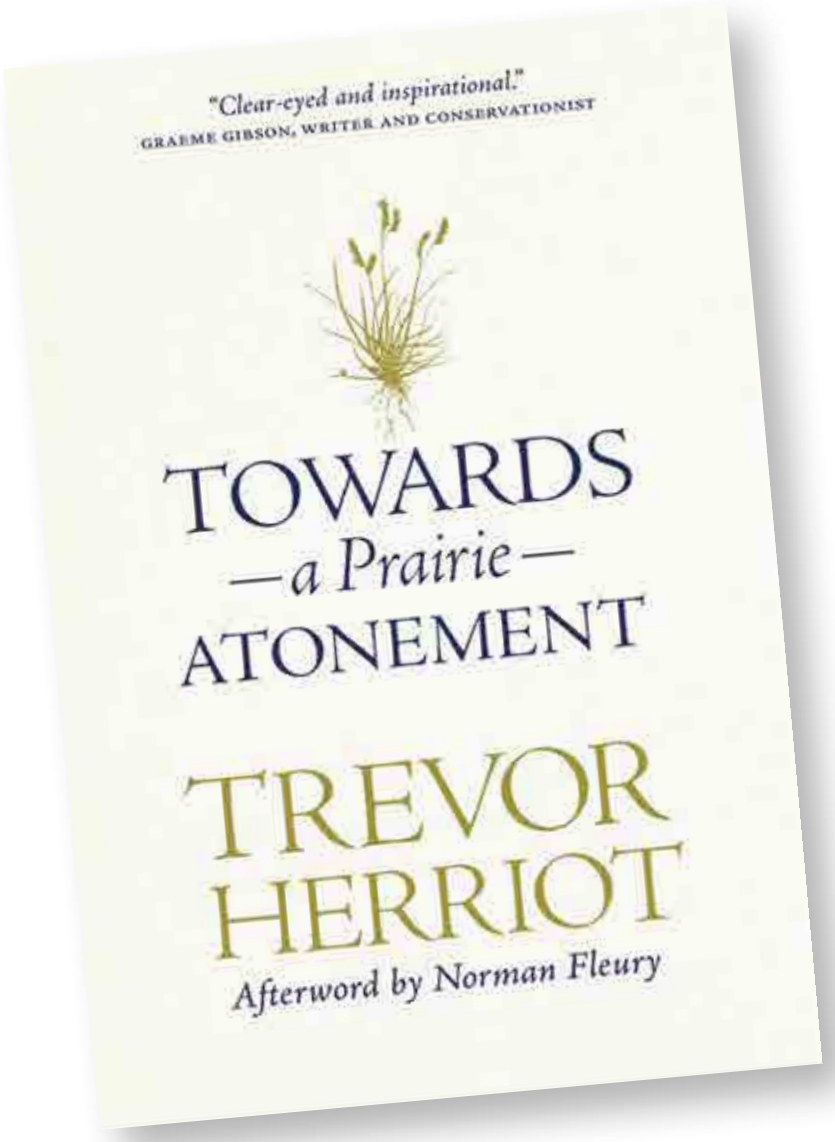
Featured Artist
Tess Stieben

"Sumptuous Repast, Sandhill Crane parent and juvenile,"
Acrylic on canvas, 16x24 inches.
PHOTO: © T. STIEBEN

Reader's Corner

Trevor Herriot, Towards a Prairie Atonement, (Regina: University of Regina Press, 2017)

Reviewed by Joanna Skrajny



Trevor Herriot is a well-regarded and renowned prairie naturalist who has worked to try and protect Canada's dwindling natural prairie landscape. One of the most important tools in protecting this endangered landscape has been the community pasture program. This program established a system of grazing commons after the Dust-Bowl era in order to return cropland to grass and to preserve remaining stretches of prairie. Through this initiative wildlife received a much needed network of refugia. This federal protection was removed by the Conservative government in 2012. As Herriot pushed to restore this protection, he learned of the disturbing discrimination Indigenous peoples suffered from as these lands were established.

Towards a prairie atonement explores the tragic losses that Indigenous peoples suffered and the rapid loss of Canada's native grasslands. It begins with a brief timeline of the last 200 years on the prairie but, unlike the books I read in school, this timeline is from a Métis perspective. It shocked me to read through the events and realize just how profound my lack of knowledge was. My understanding of our prairie history was absurdly one-sided. Herriot's observation was all-too-true: "Colonialism, we have learned too late, is an utterly unreliable narrator."

Herriot's narrative tells the story of when the Métis of Ste. Madeline were forcibly removed from their community, their homes burned down. The land they had held and cared for together had been requisitioned by the federal government for the purpose of creating a community pasture.

The ending of the community pasture program in 2012, offers an opportunity to set right this historical wrong. In order to move towards a prairie atonement, we need to make amends with both indigenous peoples and the landscapes that sustained them. Indigenous peoples, as a comment on Heriot's blog underlines, could once again play a part in taking care of and protecting our native grasslands.

Much more than a historical narrative, this small book is packed with important thoughts and moments that make you pause and think. It is a raw introspective on how we all have a part to play towards meaningful reconciliation with Indigenous peoples. This book is a must read for those who want to gain a deeper understanding of Canada's prairie landscapes. The thought below, the first line in this book, captures well the collaborative spirit we must cultivate in order to preserve what matters.

Whether we are indigeneous or newcomer, today our tipis are held down by the same peg. Neither is going anywhere. The knowledge and the will needed to protect and save these places no longer belongs to one people or tradition – Cynthia Chambers and Narcisse Blood, 'Love Thy Neighbour: Repatriating Precarious Blackfoot Sites'

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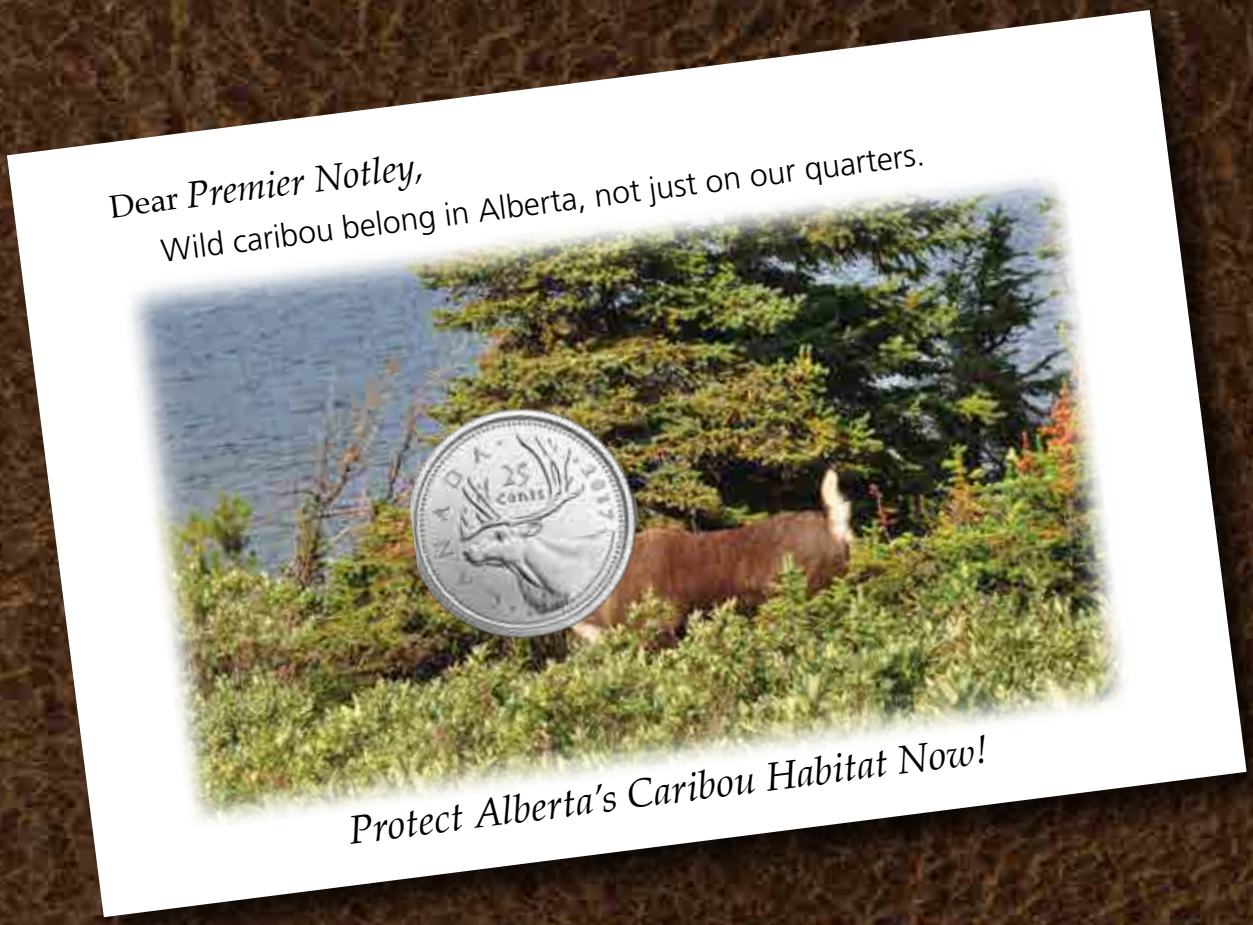

To learn more about the perilous state of caribou in Alberta and what you can do please visit *caribou4ever.ca*

Return Undeliverable Canadian Addresses to:

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