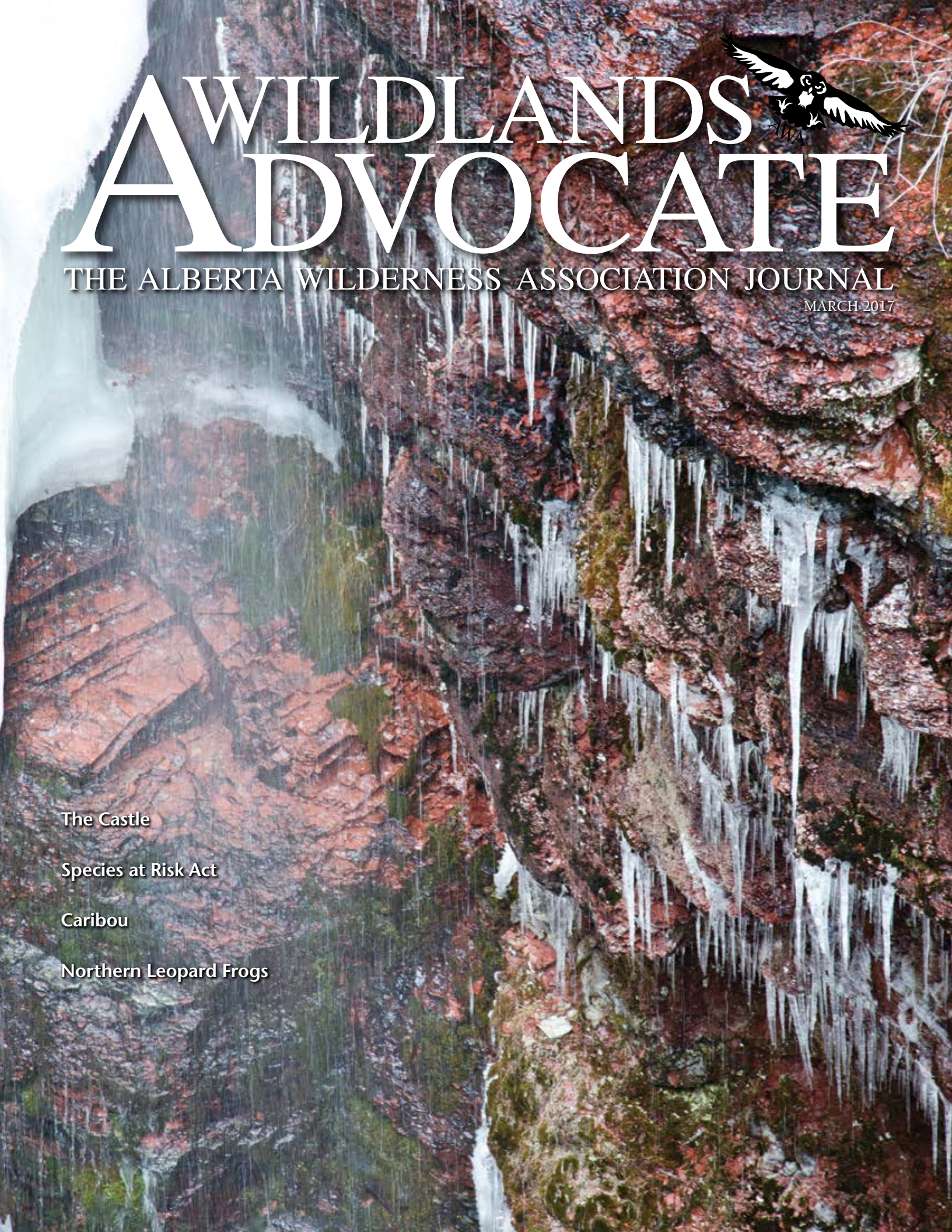

# WILDLANDS ADVOCATE

THE ALBERTA WILDERNESS ASSOCIATION JOURNAL

MARCH 2017

The Castle

Species at Risk Act

Caribou

Northern Leopard Frogs

# CONTENTS

MARCH 2017 • VOL. 25, NO. 1

## Features



## Association News



## Wilderness Watch



## Departments



## Events



## Cover Photos

Winter reluctantly relaxes her grip in Waterton National Park.
PHOTO: © K. MIHALCHEON

## Featured Artist: Rayma Peterson

AWA is very pleased to feature the art of Rayma Peterson in this issue of the Advocate. Rayma, who has both a BSc. and BEd. is represented in many private and public collections, including the Alberta Foundation for the Arts. She has created botanical drawings for interpretive signs at the Devonian Botanic Garden and the George Pegg Historic Garden. Rayma's specialty is painting watercolors of plants in their native habitats. She teaches art to all age groups. Her artwork and articles have been published in the following magazines: Watercolor, Legacy, arts & activities, School Arts, Artichoke, and Wildflower magazines. To learn more about Rayma and her work please visit her website: http://raymapetersonart.weebly.com/



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# A "Fully-Protected" Castle: A Bridge Too Far?

Our goal looked so close. With a bold plan we could reach it in only a matter of a few months. All our allies and much of our energy and resources were devoted to realizing the goal by Christmas. But, a determined opposition combined with unwarranted assumptions and dubious decisions were our undoing. We failed.

This is a cryptic summary of Operation Market Garden, the Allies' effort in September 1944 to end the Second World War before the dawn of 1945. This heroic failure was dramatized in the film "A Bridge Too Far" – a reference to a bridge in Arnhem, Netherlands, a bridge the Allies couldn't capture.

I worry that the fully-protected Castle the government promised in September 2015 is destined to be, like the bridge at Arnhem, a bridge too far for this government to secure. It seems with each passing week that Premier Notley's government is stepping further and further back from the substance of the promising headline her Minister of Environment and Parks delivered 18 months ago.

For months now the decisions from headquarters have been, at best, perplexing or, at worst, daft. Take the March 10th release of a revised draft Castle management plan for you to comment on. It comes in the middle of the public consultation process on the original draft plan. Why revise the original plan before all the comments on the original plan are in? What reputable polling or consultation guide recommended this?

The extent to which Alberta continues to ignore the scientific imperative on the Castle issue is perplexing or daft...you decide. It's sadly ironic for at least two reasons. First, during the legislative debates over climate change, opposition members in the legislature who ignore the science were called "ideologues" by the government. Shouldn't this same characterization apply to those who oppose a fully-protected Castle? Shouldn't the government follow its interpretation of the scientific imperative?

Second, the government's draft management plan baldly, bluntly states that science demands a total and immediate ban on OHVs in the Castle parks. It reads: "off-highway vehicle use at current or substantially reduced levels is incompatible with conservation goals of the parks." The FAQ section about the plan states: "(O)ff-highway vehicle use is not scientifically supportable in the Castle Provincial Park and Castle Wildland Provincial Park." If you're still not convinced read the reports from Global Forest Watch Canada. The science is unequivocal. OHVs should be banned immediately and totally from the Castle parks.

How has the government implemented conservation science so far? For six weeks it looked like the government would immediately ban all OHVs south of Highway 774 in the parks. Premier Notley announced this on January 20th. Her Minister of Environment and Parks reversed this decision. OHVs have the government's blessing to continue to operate on designated trails during a three to five-year period in the parks.

Other omissions and additions to the revised draft management plan should raise our concerns too. The government will work with OHV users (the more mindless of whom chanted "lock her up" at the Premier during her January press conference) to prioritize the trails to phase out over the next five years "based on environmental and other criteria." No mention there of conservationists; no mention there of what "other criteria" entail.

Also, the original draft plan clearly stated that the reclamation of illegal trails and the restoration of designated trails would be restored "for non-motorized use." Poof. The reference to non-motorized use is now gone from the revised plan.

If what we're witnessing is perplexing or daft from the perspective of conservation science maybe it makes sense according to politics. Bad politics. The government must believe there's some political credit to be earned by "just" telling OHV users that their days of using Castle parks are numbered. Would an immediate ban of OHVs in the Castle be any more unpopular among the very small minority who use these machines than phasing them out? And, the New Democrats have to be dreaming in 3D if they think people with deep-enough pockets to shell out $15 grand for a "Sportsman" ATV are going to join the coalition needed to secure their re-election in 2019.

A more politically-astute position would be to take the principled, scientifically-sound, ground. Ban OHVs today from these parks. That's the position more likely to garner the continued and new voter support in places such as Calgary and Edmonton the Premier's party will need to have real hope of re-election in 2019.

*-Ian Urquhart, Editor*

# Why not a Castle Wilderness?

**By Joanna Skrajny, *AWA Conservation Specialist***

## Some History

Fifty-one years ago Alberta Wilderness Association (AWA) was started by a group of hunters, anglers, and landowners concerned with the future of Alberta's wilderness. AWA cut its teeth defending the need to protect the Castle Wilderness, recognizing that if we were to have wildlife in the future we needed wild spaces as well. The Castle-Crown Wilderness Coalition (CCWC) was born in 1989. This group, largely drawn from residents in southwest Alberta, recognized the unique ecological values associated with the Castle and its pivotal location in the Crown of the Continent Ecosystem.

The fight for the Castle has been long and hard. The landscape has suffered greatly from the days when the Castle was part of the National Parks system. Logging, mining, and petroleum extraction have all left scars on the landscape. More recently, as detailed so well by Global Forest Watch Canada, off-highway vehicle use and random camping have added their insults to the land.

In the 1990s AWA warned that the government's efforts to address motorized use in the Castle and Eastern Slopes were woefully inadequate. In language that is as appropriate now as it was when AWA spoke it in the 1990s we said:

> *Compromises to please 'user groups', if implemented, will lead to continued degradation of the recreational Wildland potential of the area, soil and vegetation damage, harassment of wildlife and other impacts. Where the bottom line of any planning process should always be resource protection and environmental leadership, we see an access plan whose bottom line compromises these principles in order to try and please all users, whatever the impact or legitimacy of their activities.*
>
> *For some reason, the off-road vehicle users have already chosen to renege on the consensus decision they helped shape. After agreeing to a consensus solution that was already too heavily weighted in favor of motor vehicles, they orchestrated massive demonstrations to further weaken the draft policy.*

Since we spoke those words, the situation has only worsened. When the South Saskatchewan Regional Plan was approved in 2012 its only commitment to protection was to the bare mountain tops in the region.

We thought that had changed in 2015 when the government declared that it would "fully protect" the Castle. Our hearts dropped again when we read the fine print – off highway vehicle use would be allowed in the Castle.

More than another year of consultation followed. Municipalities, ranchers, off-highway vehicle users, scientists, and conservationists all participated. AWA ar-

*Numerous flower species like this yellow monkey flower can be found throughout the Castle.*
PHOTO: © N. DOUGLAS

gued consistently throughout the consultation that OHVs should be prohibited from the Castle parks. First Nations were engaged in a separate process. Personally this second consultation was vital. It's all too easy to forget that our time on this landscape is miniscule compared to First Nations who have used the Castle Wilderness for at least 10,000 years.

The government response to date is promising but it's too long on intention, too short on action. On January 20, 2017 Premier Notley went some way towards that position. OHVs were to be prohibited starting in 2017 on lands south of Highway 774, an area that included approximately 50 percent of the Wildland Provincial Park. Critical habitat for westslope cutthroat in the West and South Castle would have benefited immediately from that decision.

That commitment lasted less than six weeks. On March 1, 2017 the Minister of Environment and Parks announced there wouldn't be any change to "current state-of-trail access." OHVs will operate this year south of Highway 774 on designated trails, regardless of the proximity of those trails to critical cutthroat habitat.

This disappointment comes despite plenty of evidence that the Alberta public wants something very much like the "fully protected" Castle they have been expecting since September 2015. How many more years, then, before they can see for themselves that the Castle has been protected and has recovered from the abuse?

So with the overwhelming support for protecting the Castle, why hasn't more progress been made? In order to answer that question, we need to take a step back and look at the value of wilderness itself.

## Valuing Wilderness

To begin, what is wilderness? Personally, I'm fond of the legal definition used in the United States:

> *A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. (Wilderness Act)*

I have always been proud of Canada's reputation for wild spaces. Many weekend excursions have helped me disconnect and reconnect with myself and to feel grounded. Yet unfortunately, we as Canadians also tend to take our wild spaces for granted. An eye-opening moment for me was to visit Kananaskis Country with a cousin who lives in Europe. Coming across a series of blue lakes and openly forested mountains, she was dumbfounded for most of the day before finally exclaiming – *this can't be real!* At the time, it seemed equally unbelievable to me that there were places where this didn't exist.

Unfortunately, Canadians' ability to take our wild spaces for granted has led to the degradation of much of what we hold dear. We have generally assumed that there is more than enough wilderness in Canada. Yet this assumption has been challenged by scientists for generations;

*Why not wilderness? Victoria Peak stands majestically in the Castle* PHOTO: © C. OLSON

their subsequent calls to protect wilderness have gone largely unanswered. As a result, we've seen the widespread declines of many species, including iconic ones such as caribou which depend on true wilderness in order to survive.

*Why not wilderness?* It's a simple enough question, yet incredibly poignant. Dave Sheppard, a retired ecologist, posed this exact question in his book by that name. He theorized that Canadians' inability to properly value and protect wilderness was a combination of our inability to speak up and taking our wilderness for granted. The lack of checks and balances and any proper protections for our wildlife or wild spaces has led to preferring industrial development over anything else. Any conversations about protecting wilderness lead to squawking over the "need to balance" all uses, despite the fact that the scales are unfairly tipped towards exploiting the landscape. This has resulted in a disconnected public that, although supportive of wilderness protection, is largely isolated from experiencing true wilderness. I tend to agree with his use of Fred Bodsworth's assessment of the situation in Ontario's Algonguin more than forty years ago:

> *So, indeed, why all the fuss about preserving wilderness? Except for a narrow strip of settlement along our southern border, Canada is all wilderness and likely to remain that way for a long time.*
>
> *Yet despite this seeming incongruity, we have a wilderness crisis, we are rapidly running out of wilderness – the kinds of wilderness we need – and in the places we need it… A large and exploding mass of Canadians need wilderness where it can be conveniently reached and used.*

There are as many reasons to protect wilderness in Alberta as there are landscapes. Protected wilderness fulfills a need to escape to experience solitude and silence – with a canoe paddle, tent, or fishing pole in hand. These areas protect our water supply and ensure we have clean drinking water in the future. We also protect wilderness areas out of a sense of obligation to pass on a natural legacy to our children. There are aesthetic reasons – the joy of knowing our province still has magnificent, undisturbed water and landscapes. And there are moral imperatives too – commitments to protect and preserve wildlife and biodiversity.

The most touching aspect about Dave Sheppard's writing is that in many ways *Why Not Wilderness?* is an homage to the Castle. His opening paragraphs describe the Castle in a way a parent describes a child – with grief to the damage that has been done to the area, but still adamant that it is: "A place worth saving." He understood very clearly that if the Castle was ever going to be protected, Albertans needed to value and speak up for wilderness.

The Castle is a special place. It is a natural force to be reckoned with not only on a provincial scale, but nationally and internationally as well. It's an area we and government stewards of public lands should see as fundamentally irreplaceable, a one-in-a-world kind of place.

As an essential piece of an ecological puzzle, the Castle Wilderness in the southwestern corner of Alberta contains one of the highest amounts of animal and plant species diversities in Alberta, as numerous ecosystems overlap in one relatively small area. Conservative estimates place the number of rare or at-risk species in the Castle at 200. This number is likely too low. Peter Sherrington, a past AWA President, local resident in the Castle area, and an avid birder, has identified 300 bird species alone, most of which he has seen from his own backyard. This includes about 30 species that had been previously unrecorded in the area. High biodiversity means that this landscape is more productive and more resilient – the more species that exist, the higher the chance that one of them is able to survive and adapt to any changes. This is becoming increasingly important as climate change adds another stress to our natural environment.

The Castle also contains important wildlife corridors and critical watershed areas. Its watersheds are home to much of the remaining threatened native westslope cutthroat trout population in Alberta. Their habitat is legally protected at a federal level. These watersheds also comprise a significant source of the water in the Oldman River – roughly 30 percent – meaning that the Castle is critical for providing a sustainable source of water that people living and working downstream in our southern prairie provinces depend on.

It's clear that the Castle is valuable for countless reasons.

## The Problem with Balance

Let's return to January 20 of this year, when the Government of Alberta announced increased protections for the Castle Wilderness. The announcement included an expansion of the boundaries of the Castle Wildland Provincial Park and a plan to phase out motorized use in the parks. AWA supports the creation of these parks. We made it clear that we agree that the eco-

*This behaviour has no place in a protected provincial or wildland park.* PHOTO: © W. HOWSE

logical arguments for eliminating off-highway vehicle use there are unassailable.

The Castle parks, with expanded Wildland Provincial Park boundaries, will provide important protection for headwaters and threatened species including westslope cutthroat trout and grizzly bears. I think that Albertans will be happy to see that they have been listened to and that protection of our headwaters and species at risk is being taken seriously. It's important to give the government credit where credit is due: if you haven't already, a quick email, letter or call to your MLA and to the Minister of the Environment's office is appreciated to let them know your support.

But, it's important to note that the government proposes to allow the damage OHVs do to critical habitat in the parks to continue for another three to five years. And, under pressure from OHV users, the government abandoned the commitment to ban OHVs immediately from the lands south of Highway 774. There is a risk that this wilting under pressure will worsen, so your participation in exercises such as the online survey about the Castle is imperative (see the link at talkaep.alberta.ca/CastleManagementPlan).

You may have heard rumblings from the legion of motorized vehicle users that there needs to be a 'balanced approach' where all uses are allowed on the landscape. Dave Sheppard's counter to this in his book is a quote from wildlife scientist Brian Horejsi:

> *'Balance demands with protection' is just one rote use of words that has failed society and the natural world across North America for nearly half a century. If 95 per cent of the land is exploited and five per cent is protected, it's balance.*

Horejsi's assessment is so true. On public land in Alberta, roughly 90 percent of it is accessible to those who can afford to spend $10,000 or more on an OHV. This is completely disproportionate to the percentage of the public who claim that using machines to destroy public land and torment wildlife is their idea of fun: roughly two to six percent of the population. It's true that motorized users shouldn't be ignored and need trail systems built in places where it is appropriate to do so. But it's also true that they must not have a disproportionate amount of attention paid to their cause. The argument over balance as it has played out over Alberta's lands falsely shifts the conversation from whether something is the *right* thing to do to *it's my right to decide what I want to do!* Again, the science is as clear as the ruts OHVS leave in the land behind them – motorized activity at current or reduced levels in the Castle is incompatible with the conservation goals of parks. Full stop. As a retired fisheries biologist once said to me: allowing OHVs into a protected area is essentially the same thing as allowing people into the park with chainsaws and bulldozers. But wouldn't I get in trouble for doing that?


*It's not too late to have your say – the deadline to voice your opinion is April 19.*

## Featured Artist
## Rayma Peterson

*22" x 15", watercolour. A friend and I were looking for ostrich ferns along the Lac La Nonne lakeshore trail. There we also discovered wild ginger. It was the first recorded discovery of wild ginger in Alberta.*

*22" x 30", watercolour. The flowering plant, Grass-of-Parnassus likes to have its feet damp and is often found along lakeshores.*

# Could the Castle OHV Backlash Have Been Muted

**By Ian Urquhart**

At the end of World War I Max Weber spoke to German students about "Politics as a Vocation." His speech stressed the importance of an ethic of responsibility to political leadership. This ethic demands, in part, that decision-makers "give an account of the forseeable results of one's action." In other words, the best political leaders should prepare for and address the consequences of the actions they intend to take. The backlash from OHV users over their proposed exclusion, at some time in the next five years, from the Castle provincial parks certainly should have been anticipated by the Alberta government. As a forseeable result of establishing the Castle Parks it's a fair question to ask what the government was thinking about doing to address the likely backlash.

Some insight into the government's thinking comes from a document obtained through a Freedom of Information request AWA made in February 2016. AWA asked Alberta Environment and Parks for records pertaining to the department's communications with OHV associations. In early October 2015 the Minister of Environment and Parks, at her request, met with representatives of Alberta OHV organizations. In a document entitled "Advice to Honourable Shannon Phillips, Minister of Environment and Parks" the department suggested that creating a provincial park in the Castle likely would increase pressure on the public lands in the North Castle, Livingstone and Porcupine Hills from OHV use and random camping. This scenario, the advice to the Minister read, increased "the urgency for recreational trail planning."

The document outlined a number of measures the government intended to take in order to develop recreational management plans, "with full stakeholder engagement," by now – 2017. These anticipated plans sound very ambitious. Based on the '5Es' – experience, education, enforcement, engineering, and evaluation – the government anticipated these strategies would "establish a foundation for world class outdoor recreation opportunities and experiences on the southern eastern slopes of the province."

The reality is that we are still a long way from establishing the prerequisites for these recreational management plans cited in this advisory document. For example, the designation of Public Land Use Zones in the North Castle, Porcupine Hills and Livingstone areas, still hasn't happened. The government had hoped to have this interim measure in place before the summer of 2016 in order to help control OHV use and random camping in these regions. Readers should be aware that public land allows unfettered motorized use that cannot be controlled or enforced unless a Public Land Use Zone is put in place. This has pushed the greater public off of public lands and has allowed uncontrolled motorized use and damage to scar public lands in the Livingstone Porcupine and elsewhere along the Eastern Slopes. Might the OHV outcry reflect a subject for conversation and controversy over public lands that not enough people want to have and address?

What bearing does any of this have on the Castle? Had the government proceeded to implement the "next steps" outlined in this October 2015 document then today it would have another excellent justification, along with conservation science, for prohibiting OHVs in the Castle parks. That justification would be the ability to point to recreational plans for public lands outside the Castle where OHV use would be managed. Would more progress on the next steps have silenced OHV groups? No. But, such plans would have enabled government to show all Albertans that a complete, immediate ban on OHVs in parks was not only scientifically sound but was fair to OHV users and the general public as well. Why? Because OHV use would be regulated on public lands outside of the provincial parks.

The backlash from OHV groups should have been anticipated. Alberta's political leaders missed one promising way to try to contain it.

*This type of OHV damage inspired AWA's Bighorn Trail Monitoring project.* PHOTO: AWA

# Species on Life Support with Proposed Permitting Policy

**Andrea Johancsik,** ***AWA Conservation Specialist***

## Species on Life Support: Section 73

Species at risk are on life support. University of Calgary legal experts Shaun Fluker and Drew Yewchuk use this analogy to underline their perilous position: "A species becomes listed as endangered or threatened under SARA because it is on the verge of becoming extinct or extirpated." So then, why does the *Species at Risk Act* (SARA) include Section 73? This section appears to allow a permit to be issued to authorize harm to listed endangered or threatened species or their critical habitat. If an endangered species is on life support, harming the individual or its habitat is like unplugging their ventilator.

To the contrary Section 73 is not designed to permit harm to species. Rather, it allows for permits to be issued when the activity (meaning, anything human-caused) ultimately should be beneficial to the species. One example of this would be a permit for scientific research relating to the conservation of species. Another would when the activity benefits the species or is required to enhance its chance of survival in the wild. A third type of activity permitted by Section 73 would be when affecting the species is incidental to the carrying out of the activity (I'll return to what "incidental" means shortly). SARA goes on to say a permit can only be issued if it is the best solution out of all reasonable options. Measures must be taken to lessen the impact of the activity. Most importantly perhaps, the permitted activity must **not jeopardize the survival or recovery of the species**. Further to the life support analogy, a permit might be issued to disconnect the flow of oxygen, but just for a moment in order to put a better mask on.

Threatened westslope cutthroat trout offer us a real-world example of permitting under Section 73. Permit DFO-16-PCAA-00028 was a Section 73 permit issued in August 2016 to remove a collapsed bridge that was creating a damaging barrier in critical habitat for westslope cutthroat trout. Removing the bridge and restoring the bottom, banks, and riparian areas was intended to improve this fish habitat. There is always a risk of damage to habitat or the fish themselves, so permits contain pre-conditions so that the proponent can outline mitigation measures to lessen that risk.

Last year, a new policy was proposed for Section 73. AWA and the Timberwolf Wilderness Society, receiving legal counsel from Shaun Fluker at the University of Calgary Faculty of Law, argued in a November 18 letter that the new policy contradicts the purpose of SARA and is therefore unlawful. Our work and especially the valuable work of environmental lawyers like Shaun is a bit like trying to understand the fine print. Our main concerns are with the changes that introduce industrial development in critical habitat, and the concept of biodiversity offsets.

## "Incidental"...to Whom or What?

**Section 73(2)(c): A permit can be issued only if the competent minister is of the opinion that affecting the species is incidental to the carrying out of the activity**

Using the term "incidental" in Section 73 is troubling. The proposed policy interprets "incidental" to mean that the effect of carrying out the activity upon the species must not be the purpose of the activity (my emphasis). The policy explicitly says that industrial development projects may satisfy this paragraph of SARA. Most permits issued under this provision so far have been for infrastructure maintenance like roads or bridges, not industrial development. The concern is that, with this language, this provision could instead be used to allow industrial development. Could a mining company apply for a Section 73 permit on the grounds that, if any damage was done to westslope cutthroat habitat, the damage was only incidental?

AWA believes "incidental" needs qualifiers such as "minor" or "inconsequential" because large scale industrial developments have no place within critical habitats of species at risk. A previous draft policy by Environment Canada in 2005 could be brought forward instead. It interpreted "incidental" as an activity that is not directed at the species but that can reasonably be expected to affect it.

## Biodiversity Offsets:

**Section 73(3)(c): A permit can be issued only if the competent minister is of the opinion that the activity will not jeopardize the survival or recovery of the species.**

Under Section 73(3)(c), the policy also attempts to introduce the concept of bio-

diversity offsets. Biodiversity offsets are a way to re-create the same amount, type, and quality of habitat to replace habitat that will be impacted.

There is a fundamental problem with allowing "offsets" while damaging critical habitat. Critical habitat is just that: *critical* to the survival and future of the species. We must be very careful with relying on offsets when they have proven in practice to be ineffective.

Everyone envisions best case scenarios in which the fish would not only survive, but thrive, while humans reap the economic benefits. Unfortunately, the worst case scenario is too often the reality: dollars for enforcement run out, managers are noncompliant, and the habitat is less productive or even completely unviable for the species in question. A 1986 fish habitat offset policy under the Fisheries Act in Canada was considered to be flawed due to serious and irreparable problems in compliance and actual effectiveness. A 2006 study of Canada's fisheries offsets found about two thirds of habitat compensation projects resulted in net losses of habitat productivity. In the United States a wetland banking offset mechanism saw only 50 percent of the promised offsets fully implemented.

Another disadvantage to offsets is that they arguably weaken the *Species at Risk Act*. Providing an offset, one that may never be implemented effectively, might be considered as merely a cost of doing business. It may discourage and impair efforts to identify innovative ways to avoid and prevent significant harm to critical habitat.

The proposed policy also allows a time lag between the destruction of critical habitat and the implementation of an offset. This raises a big red flag. This means critical habitat and the flora and fauna it nurtures could be gone years before an offset measure is put in place. Albertans want oil and gas companies to commit to reclamation funds from the outset of projects so that the province doesn't end up with the huge liability of orphaned wells; in the same way, if biodiversity offsets are allowed they must be established and proven to work *before* species habitat is disturbed. Of course, successful well-reclamation demands that sufficient funds be set aside; biodiversity offsets must receive the funding needed to establish their biological relevance and connectivity to other populations.

And then there's the issue of enforcement. Habitat compensation will demand additional investments by government into the public service to supply the dedicated staff this goal will require.

## Our Wildlife

Canadians all have a stake in wildlife management. Species recovery plans are transparent, but Section 73 permits are seldom, if ever, available for timely public scrutiny. However, there's a chance now until March 31 to voice your opinion that species at risk policies should be designed to protect and recover Canada's struggling species.

The purpose of the *Species at Risk Act* is to maintain or recover species at risk. One might have thought it should be obvious that when an activity is likely to harm a species at risk the activity shouldn't be allowed. Full stop. As it is written, SARA is a strong law that provides a backbone to protect and recover species at risk in Canada. But, like the species it is concerned with, the Act is at risk of being weakened by interpretations that may benefit industrial developments rather than species at risk. We need policies that support the purpose and intention of SARA, not ones with the troubling potential to undermine it.

*AWA thanks Sean Fluker and Drew Yewchuk at the University of Calgary for their valuable contributions to this subject.*

*To read AWA's letter on the permitting policy, visit: https://albertawilderness.ca/awa-tws-letter-proposed-species-risk-act-permitting-policy/*

*To submit your own comments on the permitting policy and the other five policy changes under the Species at Risk Act, write to ec.registrelep-sararegistry.ec@canada.ca by March 31, 2017.*


*"Don't worry, the government says right here that pulling the plug is just an "incidental" activity."*
IMAGE: © D. URSENBACH

# Where are Alberta Caribou Range Plans and Protected Areas?

**by Carolyn Campbell, *AWA Conservation Specialist***

In June 2016, the Alberta government made a significant, high profile commitment to Alberta's threatened population of woodland caribou. It declared that its woodland caribou recovery actions would include "providing permanent protection to an additional 1.8 million hectares of caribou range in the Chinchaga, Bischto, Yates and Caribou Mountains ranges." New protected areas were a key component in the government's June 2016 *Alberta's Caribou Action Plan*. That plan also declared: "We are committed to achieving self sustaining caribou populations. We cannot and will not abandon them to history."

AWA welcomed these promises. But nine months later we are concerned by what appears to be the very slow pace of implementing these promises. Canada's *Species at Risk Act* (SARA) requires woodland caribou critical habitat on provincial and federal lands to be identified and protected. Critical habitat for caribou was identified in Alberta in 2012 but no actions to protect that habitat have been initiated yet. The federal government gave Alberta and other provinces until October 2017 to produce range plans outlining how lands on each caribou range will be managed to achieve a minimum of 65 percent undisturbed caribou critical habitat. In June 2016, Alberta released one draft plan covering the Little Smoky and A La Peche ranges, a plan which in AWA's view still needs major revision (see below). Alberta has a mere seven months left to issue draft plans for 13 ranges, receive public comments, and finalize plans for all 15 ranges.

## The Challenge

Caribou need large intact areas of old forests and peat wetlands. Although caribou and wolves have co-existed for millennia, excessive industrial disturbance in the boreal robs the caribou of their ability to minimize overlap with predators. If caribou have a future in Alberta, many other old forest and wetland-reliant species will also benefit. This is why wildlife biologist Mark Hebblewhite wrote recently: "There can be no better umbrella species for the Boreal forest than woodland caribou."

Clearcuts, roads, seismic line and pipeline corridors create young forest that boosts populations of deer, moose, and wolves. Industrial surface disturbance also gives predators easy routes to travel deep into the formerly impenetrable older forests and wetland areas that caribou prefer. In fact, when measuring habitat disturbance in a caribou range, the 2012 federal caribou recovery strategy requires any human-caused disturbance, whether a 'line' such as a road, or a 'polygon' such as a well pad or cutblock, to be buffered by 500 metres. This reflects how profoundly disturbance increases the risk of predation. This was the minimum appropriate disturbance buffer suggested by scientific evidence at the time.

The current Alberta government inherited an awful situation. Its predecessors were guilty of neglect. Decades worth of scientists' and multi-stakeholders' carefully considered recommendations to limit caribou habitat disturbance were ignored. Meanwhile, accumulating forestry and energy industry impacts have fragmented our boreal and foothills forests and wetlands. For example, by 2012, 63 percent of Alberta's oil sands region was within 200 metres of human disturbance. This is a staggering shift in a boreal forest area the size of Florida that was relatively intact 30 years ago. Protected areas are the exception to this rule but they don't cover nearly enough caribou range. This is why Alberta's 2016 promise for new northwest Alberta protected areas was so important and needed so urgently.

Not surprisingly, researchers in 2013 confirmed that almost all Alberta caribou populations were in significant decline. Three populations were 'stable or slightly declining': two in the north, Yates and Richardson, which still had relatively low human-caused disturbance, and the Little Smoky.

## The Lone Range Plan

Alberta's only caribou range plan to date is in draft form. It covers two west central Alberta populations: the Little Smoky boreal caribou and the neighbouring A La Peche mountain caribou. Habitat disturbance in the Little Smoky range was estimated at 95 percent in 2011. This is the highest disturbance percentage in Canada. Since late 2005, the Alberta government has killed approximately 100 wolves each winter to reduce caribou predation. That is why it is the other Alberta caribou population rated as 'stable or slightly declining.' AWA has repeatedly criticized the scapegoating of wolves while Alberta continues to authorize the habitat destruction that drives wolf predation of caribou.

As described in more detail in the August 2016 *Wild Lands Advocate*, both the

draft Little Smoky - A La Peche (LS-ALP) plan and the stakeholder consultation in the months before its release were improvements over what had been produced previously. Government-appointed mediator Eric Denhoff's May 2016 report on LS-ALP gives a useful account of various viewpoints and issues. However, the Alberta government's draft plan, which was based on Denhoff's report, still allows unacceptably high critical habitat destruction in the near term, and offers no roadmap or details about when, if ever, the minimum 65 percent undisturbed habitat goal will be achieved. After receiving public comments on this draft up until last August, the government seems to be willing to wait to release the final LS-ALP plan with the rest of its plans in autumn 2017.

Alberta has less than 2 percent of its foothills region in protected areas. This landscape is vital to caribou yet the draft LS-ALP plan proposes no protected areas for the Little Smoky range; the A La Peche's alpine summer range already is protected by Willmore Wilderness Area but its winter range in the foothills lacks any protection whatsoever. The draft plan proposes more wildlife manipulation instead. A big fence will be built to confine wild caribou females and their calves will be released as yearlings… into, as things stand now, a degraded and degrading habitat. Since June, fence design proposals have been submitted for consideration. AWA is concerned the fence will provide another excuse to keep destroying habitat and will drain resources from habitat conservation. The wolf cull will continue, and there is no end in sight to it unless new surface disturbance, which adds to the degraded habitat equation, essentially ends. This is possible to do by ending in-range logging and having a strict limit on energy-related disturbance. It's an option that depends on political will.

The draft plan allows significant in-range clearcut logging to resume by Alberta Newsprint Company (ANC) and Foothills Forest Products. Such logging had been halted in early 2016. This is especially frustrating since a major logging decrease is already planned within ten years in LS-ALP ranges and surrounding area, as unwarranted mountain pine beetle surge cuts are completed. The Denhoff report noted that both ANC and their largest quota holder, West Fraser (which owns 49 percent of ANC), have requested an Annual Allowable Cut reduction in ANC's overall Forest Management Agreement area in order to reduce unsustainable pine beetle surge cuts. In AWA's view, logging in and adjacent to the small ranges must end now, while there are still caribou. To minimize impacts to communities from this halt to in-range logging, sustainable harvest levels outside of LS-ALP ranges and buffer zone should be reallocated among the regionally interdependent forestry companies to support all the region's mills. Alberta Newsprint Company should be required to use at least some recycled paper in its feedstock.

There are some positive aspects of the draft LS-ALP plan. It includes an extensive seismic line restoration program and clustering of the excessive new logging near already-disturbed areas for five years. Unfortunately, there are no hard limits on cumulative surface disturbance. Instead there is a promise of "strict operating conditions" and access planning that will "balance values, benefits and trade-offs." This may be an improvement, or may be more of the same weak measures that enable ongoing new disturbance. What hasn't been promised, but is urgently required, are strict access regulations for this endangered species habitat to confine energy infrastructure to a few nodes and corridors. That approach would support caribou recovery chances while allowing energy extraction. Constrained by strict access rules energy companies would be highly motivated to pool leases in a given area, extend the reach of directional drilling, and cluster or avoid well pad and pipeline disturbance.

Since June 2016 plans have advanced to pilot a seismic line restoration program. This has very positive potential to set forest habitat on a trajectory towards recovery and to provide good jobs for communities to offset the end of in-range logging. If there were strict access rules, we would unreservedly support an extensive restoration program. Under the draft plan, however, restoration efforts may create jobs but amount to nothing for caribou. This winter, local trappers were concerned to see pilot restoration work proposed on the same seismic line site as a proposed spur road for an energy company. Without strict access rules it is very probable that new energy infrastructure will be built near or right over

*Well and cutblocks in endangered Little Smoky caribou range, January 2013. There are still no strict limits on industrial surface disturbance there, nor an overall access plan, so new energy infrastructure could be built near or right over recovered seismic lines and negate efforts at restoration.* PHOTO: © C. CAMPBELL

recovered seismic lines. This would simply waste the restoration effort.

## Positive Mineral Rights Changes

While we await all the caribou range plans that have been promised for this October, we recognize that some very positive changes in provincial energy policies have occurred. Alberta Energy deferred new energy rights sales in Little-Smoky - A La Peche ranges in May 2013 until range plans were completed. AWA welcomed that move. Until recently, however, Alberta Energy continued to jeopardize caribou recovery in all other caribou ranges by auctioning off new mineral rights in a fashion that didn't establish any effective limits on surface footprint.

To its credit, the government has recently reshaped two key mineral rights policies to reduce barriers to caribou recovery. After quietly halting its caribou range oil and gas lease sales in summer 2015, Alberta Energy officially stopped all mineral rights sales within caribou ranges in September 2016. The pause covers oil, gas, oil sands, coal and industrial mineral rights, and will last until "stringent operating practices" for caribou have been defined.

In another positive move, Alberta Energy decided in November 2016 that any oil sands, oil, gas or mineral lease holder in a caribou range could apply to extend their deadline to prove up leases until March 2019. This means companies may delay surface disturbances related to drilling, if they choose. We hope Alberta Energy will soon report on the extent and location of voluntary drilling deferrals.

## Rest of the Range Plans

With only seven months remaining to complete plans for 15 caribou ranges, there is no time for further multi-stakeholder discussions to help generate draft plans. This is unfortunate. A well-managed multi-stakeholder process, operating with common access to good data, can significantly reduce exaggerated claims. It can generate a useful range of optimized proposals, to help government authorities make better choices. In the absence of that, AWA will continue to put forward the solutions we see for habitat-focused caribou recovery.

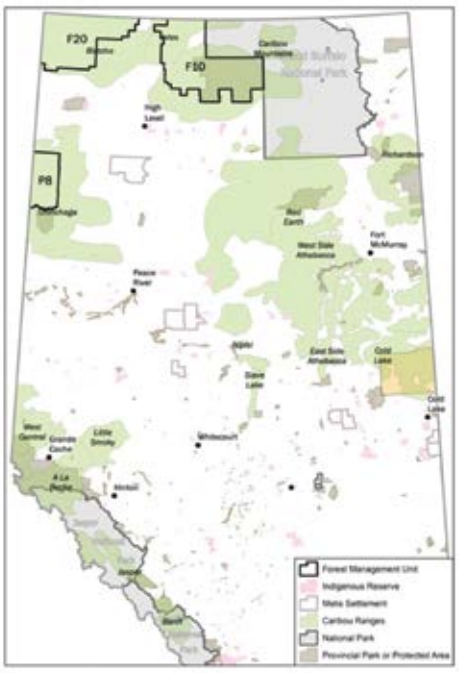
In our view, the government must keep its promise soon to establish large permanent protected areas in northwest Alberta. The Denhoff report recommended that, subject to consultation with indigenous communities, three unallocated forest management unit (FMU) areas should receive Wildland Provincial Park protection (see map). It further recommended pursuing protection of roughly half of FMU F23 (south and southeast of F10, along the border of Wood Buffalo National Park) in partnership with the Little Red River Cree. This First Nation has a large forestry quota there and is interested in sustainable co-management of the area.

For the Bistcho caribou range, creating a Wildland Provincial Park on FMU 20 would benefit wildlife habitat on 87,000 km$^2$ or 60 percent of the range. It would achieve multiple conservation benefits. Situated along Alberta's far northwest border with B.C. and the Northwest Territories, the Bistcho range has no other protected areas. Many of the radio-collared female Bistcho caribou use the FMU 20 area. Areas with high levels of biodiversity including Bistcho Lake would also be protected.

While it is helpful that no new mineral rights are being sold in Bistcho or other caribou ranges, the Bistcho range is not pristine: it was rated at 71 percent habitat disturbance in 2011. Since late 2012, the Alberta government auctioned off 1500 km$^2$ of new energy leases there before halting lease sales. Establishing a Wildland Provincial Park would minimize cumulative impacts of existing leases. The precedent of Hay-Zama WIldland Provincial Park, with government-First Nations-industry-ENGO collaboration to reduce, manage, and restore energy industry disturbance would be a good fit for these northern Alberta protected areas.

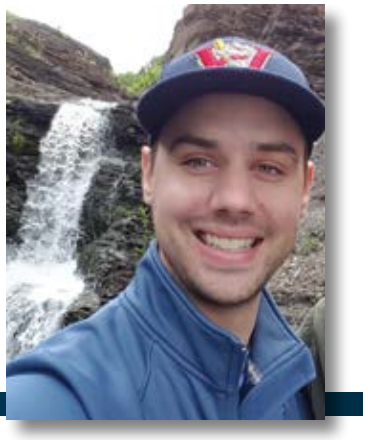
The advantage to Denhoff's strategy to protect unallocated FMUs is it minimizes conflicts with the forestry industry and is therefore more likely to actually proceed. The drawback is that, in some ranges, these unallocated FMUs may not overlap with the highest value areas for caribou and other wildlife. If that is the case, and if a swap in tenure areas could be arranged to protect an equivalent area of highest value caribou habitat and log in lower value habitat, that would be a promising approach. But given the shrinking time window for decisions, protecting the 'good' is preferable to losing the opportunity completely.

Alberta's caribou range plans should create protected areas in core caribou zones, set strict limits on new industrial surface disturbance consistent with caribou population recovery, and accelerate the restoration of the industrial footprint. Range plans for endangered woodland caribou are an important way for Alberta to demonstrate its commitment towards implementing responsible resource development. There have been some encouraging recent promises and policies by the Alberta government. The magnitude of ongoing caribou habitat loss from industrial activities requires much more to be done.




*Map from mediator Eric Denhoff's May 2016 report* Setting Alberta on the Path to Caribou Recovery. *In June 2016, the Alberta government accepted Denhoff's recommendations to permanently protect 1.8 million hectares in the outlined P8, F20, and F10 forest management areas. AWA would like to see the government follow up on those recommendations.* CREDIT: GOVERNMENT OF ALBERTA

# The Ribbet Hypothesis



## By Nick Pink, *AWA Conservation Specialist*

*Lea Randall is a population ecologist with the Calgary Zoo. Lea leads the Northern Leopard Frog Research Program at the Zoo and is a part of the British Columbia Northern Leopard Frog Recovery Team.*

**Nick Pink: Tell me a little bit about yourself, how did you end up at the Calgary Zoo?**

**Lea Randall**: I am originally from the Yukon; I loved wildlife and outdoors so that's part of what led me to wildlife biology. I did my undergrad at the University of Victoria and then I came to the University of Calgary to do my Masters. I was studying forest ecology, looking at little brown bat habitat use in the Yukon, and looking at how different forms of forest disturbance affected their habitat use: infestation, logging, and forest fires. Which seems kind of far off from studying frogs in Alberta but it's funny how the sets of skills you gain in one job can transfer to another – a lot of the skills that I gained doing my Master's degree and working with the Yukon government for their wildlife department. The Zoo was looking for someone who had an ecology background, but they wanted someone who had experience working in remote field settings who could back up a trailer and was comfortable driving trucks on back roads and all of those skills I had pretty much gained, either growing up in the Yukon or doing my Masters.

**NP: So northern leopard frogs – they were pretty abundant until about the 1970s when they just crashed. Why is that thought to have happened?**

LR: There's a few different things. Somewhere around the 1970s/1980s, naturalists and biologists who were working in the field noticed that they weren't seeing leopard frogs in the numbers that they used to and in the places that they used to be found. That was primarily happening in western Canada and the United States. They're still fairly abundant and doing fairly well in Eastern Canada and parts of Eastern U.S., although not as well as they used to be either. Here in Alberta we had a drought that was fairly severe. We've also lost an estimated 60 percent of our wetlands in the white zone of Alberta – the settled areas of Alberta. Just that loss of wetlands in itself could have led to those declines.

Leopard frogs and many other species of frogs are assumed to act like a metapopulation – the idea being that you might have a pond occupied but maybe it's not occupied every year and maybe the population goes extinct there one year but next year it gets recolonized from adjacent ponds. As you start to lose wetlands on the landscape, you lose that connectivity and metapopulation structure, and the populations can collapse. Or you may end up with really isolated populations – the problem there being that you can end up with genetic isolation.

Not just habitat loss but also habitat degradation; things like increased agriculture – with pesticides and herbicides leaching into the water, increased development, and the effects of a higher density of roads. If frogs have to cross roads they can act like barriers to migration.

Chytrid fungus may also have been a major player (this fungus causes a potentially lethal skin disease called chytridiomycosis. It has caused global declines in many amphibian populations – NP). The problem is that we didn't know that chytrid fungus even existed then. But there have been some studies that have looked at going back through museum specimens and swabbing them and then discovering that chytrid fungus has probably been around for a lot longer than we knew about. Certainly there are some anecdotal reports from primarily Manitoba – Manitoba used to have huge populations of leopard frogs. They seem to have recovered somewhat but there used to be quite an industry of people collecting leopard frogs for sale.

**NP: Would that be to eat?**

LR: Probably some of it was for eating, but a lot of it was for schools – they were commonly used for dissection and a common laboratory animal. It's amazing if you go through the literature, there's a huge body of literature that uses leopard frogs.

**NP: Right, they were a model organism for neuroscience.**

LR: Yes and for toxicology as well, so there's been lots of work done with them. But we know from looking at these collection records that somewhere back in the 1970s the numbers that they collected crashed. And there are descriptions of people trying to collect the frogs – they would collect them in their

hibernacula – and they would find a metre deep of dead and dying frogs. To me that suggests that there was probably a disease agent.

**NP: So there were a number of environmental factors that increased susceptibility to disease and then something bad struck?**

LR: Yeah I think it was partly synergistic and a lot of factors played into it, primarily habitat loss.

**NP: And they are dealing with many of these same threats today – habitat loss, fragmentation, and degradation. Are you presently finding chytrid fungus in your surveys?**

LR: There have been a couple studies done in Alberta. One of them found that approximately 40 percent of the wetlands that they surveyed, where they found and swabbed frogs, there was chytrid fungus present. We know it's out there on the landscape; the only thing that we can hope is that the frogs that have survived have a genetic resistance to it.

We only have a single extant population of leopard frogs in B.C. and that's in the Creston valley area, and we know that there is chytrid fungus throughout that system and the frogs seem to be persisting. It's not that you find a lot of dead and dying frogs but that doesn't mean that it can't be having sublethal effects that might be impacting their ability to breed or overwinter, among other things.

**NP: Part of the reason why these threats to habitat are such a big problem is that leopard frogs require a mix of habitats: in a given year, they go from wintering in a stream with moving water, to breeding in a shallow pond, to foraging anywhere from riparian habitat to prairie landscape to a forest. Why do they need these different habitats and what happens to a population if they can't reach one of those three required habitats?**

LR: They are probably toast. That is one of the big challenges because their habitat requirements are so diverse. It is possible that they find a single spot that meets all of those habitats but that's fairly rare. They overwinter in streams and rivers that have flowing water so that it does not freeze to the bottom and there is sufficient dissolved oxygen. There is some research that they can overwinter in some lakes and springs that don't freeze to the bottom and have a high enough dissolved oxygen content, so there are some locations that will meet the overwintering requirements and also function as a breeding pond.

*A northern leopard frog foraging in the grass* PHOTO: © L. RANDALL

**NP: What is their current protected status of northern leopard frogs and does this vary amongst the different populations?**

LR: Yes, so in British Columbia the Rocky Mountain population is listed under COSEWIC as endangered and provincially they are red-listed. In Alberta, the prairie and boreal forest populations are considered threatened under the Wildlife Act and a species of special concern under COSEWIC.

**NP: I was kind of surprised to see that they are listed as "Least Concern" on Wikipedia.**

LR: That's IUCN [International Union for Conservation of Nature]. If you go through the IUCN, part of their criteria is "what is the chance that this entire species is likely to go extinct within a certain number of generations or years," so given how widespread the leopard frogs are and how many populations there are still in existence that is highly unlikely to happen. But what's far more likely to happen is that we'll lose them in specific parts of their range.

**NP: Which of course is proving to be more and more important in conservation as local extinction reduces the species genetic diversity. For the everyday person, amphibians seem to be pretty rarely thought about, why are they important to conserve?**

LR: There's different reasons. One is the Rivet Hypothesis, where the idea is that if you're flying along in an airplane, you can lose a few of the rivets in the airplane and it will continue to fly along,

but if you start to lose too many rivets, the whole thing comes apart at the seams. And you never know which rivets are important. I like to think of it as the "Ribbet" Hypothesis as it pertains to frogs.

From a biodiversity standpoint amphibians are important. A lot of the time when we think of importance we think of what is important to us as human beings. Frogs are important to us because they can eat a lot of pest species and the tadpoles can be primary consumers of algae in ponds. If you don't have them you can get huge overgrowths of algae which can lead to fish die-offs and all sorts of other things. They're used as study animals and research animals, leopard frogs in particular, and there's been substances that they've found on their skin that have been useful for human use. For example, they've found something they've isolated from the leopard frog's skin that's useful for treating genital warts. So I laugh, because amphibians are sometimes blamed for giving warts but actually they could cure you. There are lots of other examples but that one makes me laugh.

**NP: Going back to your Rivet Hypothesis, I suppose losing one rivet is also probably an indicator that you're about to lose a lot more.**

LR: Yes, people often use frogs as a "canary in a coal mine;" they can be indicators of wetland and ecosystem health because they are so sensitive. Frogs spend a lot of their lifecycle in the water and they have very permeable skin and that's so that they can maintain their moisture balance and absorb oxygen. Anything that's in the water, such as toxins and runoffs, they can also absorb into their skin. So when you start losing amphibians, that can be an indicator that there is something else going on that could wipe out the whole ecosystem which could have run-on effects that can affect human health.

**NP: Something I've been interested in of late is the value of a healthy wetland. Research is finding that wetlands have large economic benefits, such as improved water quality, just by existing, and it functions better than anything we can create using "grey infrastructure."**

LR: Yeah, wetlands have these spin-off benefits for humans as well. They are amazing for filtering things, anything that flows into the wetland they can help settle things to improve water quality. Algae will start to degrade toxins. Wetlands in themselves are really important for human health.

**NP: And they reduce costs for water treatment.**

LR: Absolutely, and they reduce flooding. Here in Calgary, we've lost an estimated 90 percent of our wetlands and now we're putting lots of effort into making these storm water ponds.

**NP: We're trying to make wetlands.**

LR: But these aren't necessarily functional wetlands that are good habitat for other species – they're just basically to prevent flooding.

**NP: In terms of what the Calgary Zoo is doing for the northern leopard frogs, what has the scope of your project been to date?**

LR: Here at the Zoo we've been involved in northern leopard frog research since 2003. As part of that we lead a massive surveying effort – which you were a part of (I worked with Lea in 2013 – NP). We surveyed 68 wetlands over 60,000 $km^2$ of southern Alberta to look at leopard frog population dynamics. We knew that the populations had crashed at some point, but we didn't know if they were actually starting to recover. The results of that work showed that they didn't seem to be declining but they also didn't seem to be recovering. If our goal was to make a difference, we needed to be doing a little bit more. So in addition to that we also do recovery work in B.C. where we help with doing leopard frog reintroductions in the Columbia Basin.

**NP: Is that with the Vancouver Aquarium?**

LR: I'm on the B.C. Northern Leopard Frog Recovery Team, as is Vancouver Aquarium. We use the one extant population in Creston as the source for all of the reintroduction efforts, so we'll move tadpoles to two reintroduction sites, hoping to re-establish populations to other parts of their range where populations have gone extinct. Each year, the Aquarium brings in wild tadpoles for their captive breeding program and the idea is that, if successful, they will also supply tadpoles for reintroduction. And there has been some success with that.

**NP: Has there been success in establishing viable populations at the reintroduction sites?**

LR: We have two sites, one is in the Upper Kootenay Floodplain and we've had ongoing reintroductions there for years. We didn't introduce any frogs there last year and yet we detected breeding and successful metamorphs, so as far as being an indicator of success, wild breeding is one of the major milestones. We'll see if that is self-sustaining, we may still have to further augment the population but right now we are just monitoring it. We are putting more of our efforts into reintroduction into the Columbia Basin. One of the major concerns in B.C. is that we have all of our frogs in one basket – we only had a single population and there are all the same threats that we talked about as being in Alberta. There's habitat loss, we lose frogs on a road that runs through it – they get smushed by cars every year – and we know we have chytrid fungus present. One of the other major concerns is that there are invasive bullfrogs that are starting to move up into the area, literally a few kilometres from our breeding grounds. In other places where that has happened, often

*Hanging out.* PHOTO: © L. RANDALL

the bullfrogs win – they're just so big and they're such excellent predators. We're really concerned about that and it's another reason we want to try and establish them in different locations.

**NP: To hedge your bets, essentially.**

LR: Yes, and the B.C. Leopard Frog Recovery Team approached us here at the Calgary Zoo to see if we'd be willing to host a captive assurance and captive breeding colony for B.C. northern leopard frogs. If something catastrophic happened in the wild or at the Aquarium, having two different populations increases your probability of being able to maintain the frogs. It mitigates the risk of a single event wiping them all out.

**NP: How far along is the captive breeding program at the Calgary Zoo?**

LR: We'll actually be bringing in our first eggs or tadpoles this spring. The plan is to build an age structured population for captive breeding so we'll bring in say, 75 tadpoles each year to build up to this captive breeding population and we're not anticipating that those frogs will breed for at least a couple of years. Vancouver Aquarium will hopefully give us some of their frogs as well, so that'll give us a bit of a jumpstart on our population here.

**NP: You'll be breeding the B.C. strain of leopard frogs; will they be released back into B.C.?**

LR: We'll be getting eggs from B.C., they'll grow into frogs, they will lay eggs themselves, and we'll take those eggs back to B.C.

**NP: Captive breeding sometimes makes people in the conservation community nervous as it does not address the issues that contributed to the species decline. From your point of view, where does it lie on the hierarchy of preferred recovery options?**

LR: The best way to sustain a species at risk is to protect their habitat in the first place because, invariably, habitat loss is the one thing that's driving most species to extinction. Ideally, if you can protect their habitat then you never really need to do anything more than that. After that, there are other methods for recovery.

If you've lost certain populations but still have healthy populations elsewhere, you can use translocation. Ideally, the closer the source population is to the release population the better. That's

for a couple of reasons: genetic diversity – it's better to take individuals from habitats that are more similar to where you're going to put them because they are likely adapted to local conditions; disease concerns – if you take a frog from far outside of its range, it could have different diseases that maybe it's resistant to but other populations, or even different species of amphibians, might not have any resistance to. If a nearby population is not feasible, and in many cases it is not, then you have to look further afield.

Captive breeding is pretty much a last case resort. It's often very expensive and labor intensive and it's not guaranteed to work.

**NP: Do you worry, about any unintended consequences of your captive breeding and translocation programs?**

LR: We are working on a risk assessment right now and there are ways to minimize risks. One thing we are looking at doing is either bringing in eggs or freshly hatched tadpoles, and the reason for that is that those life stages are less likely to harbor disease. Chytrid fungus, for example, isn't really found in eggs because they lack cretanous structures that chytrid feeds on. So you can minimize disease risk at that point. We also have excellent vets and zoo keepers, so if we did end up bringing in disease we have the ability to treat it here, which gives us a head start over wild populations because you can't really do that in-situ.

The other potential risk is escape. We have ways to prevent that, we'll have enclosures and the frogs will be isolated.

**NP: What could the average person who's concerned about the decline in leopard frogs or other amphibians do to help ensure their survival?**

LR: Well, the average person can't necessarily do this but… saving wetlands. There are lots of organizations that are committed to preserving wetlands, in the prairies for example. You could buy property and make sure that those wetlands last in perpetuity, organizations like Nature Conservancy of Canada are good with those kinds of things. If you want to help amphibians in general, a lot of it comes down to: don't drain wetlands. And also there's ways to improve water quality – don't use pesticides and herbicides because all of that ends up flushing into the river and ends up in our wetlands.

*Thank you to Lea and the Calgary Zoo for facilitating this interview.*

*Individual leopard frogs can be identified by their spots as no two are the same, much like our fingerprints.*
PHOTO: © L. RANDALL

# Species at Risk

## Emergency Protection Orders and Non-Targeted Species

**By Ian Urquhart**

Those interested in species at risk likely are familiar with the term "umbrella" species.

An umbrella species, according to the *Oxford Dictionary of Environment and Conservation*, is: "(a) species of plant or animal that has a large home range and broad habitat requirements, both of which overlap with other species, so that if it is given a large enough area for its own protection the other species will also benefit." I have seen the phrase used in the context of grizzly bear conservation. Here I am interested in two questions: May endangered greater sage-grouse on our prairie landscapes be viewed as an umbrella species? If so, will efforts to protect and restore greater sage-grouse and sage-grouse habitat, such as the federal emergency protection order, benefit other species that depend on sagebrush habitat?

### Sage-Grouse Conservation and Sagebrush Songbirds in the American West

I was reminded to think about the links between an umbrella species and other species by a study released last October. This study, *Sagebrush Songbirds Under the Sage Grouse Umbrella*, was sponsored by the U.S. Sage Grouse Initiative. This initiative is an ambitious collaborative effort by many actors to strengthen the presence of sage-grouse across the American West (for information about the Initiative see the October 2014 issue of WLA available through our archive at https://albertawilderness.ca/publications/wild-lands-advocate/ ).

The songbird report studied three sagebrush songbirds: Brewer's sparrow (*Spizella breweri*), sagebrush sparrow (*Artemisiospiza nevadensis*), and sage thrasher (*Oreoscoptes montanus*). Patrick Donnelly and Jason Tack, the research scientists who conducted the study, wanted to know, first, if songbird abundance was correlated positively with sage-grouse abundance. Second, they explored if sage-grouse conservation measures benefited these three songbirds.

On the mutual abundance issue Donnelly and Tack found that strongholds for sage-grouse coincided with those for sagebrush songbirds. This was confirmed in two ways. Songbird abundance doubled when sagebrush habitat comprised more than 40 percent of the landscape. These three species of songbirds also were found to be between 13 and 19 percent more abundant near large sage-grouse leks. Both of these measurements also showed the value of measures targeted to protect

*Sage Thrasher* PHOTO: © R. WERSHLER

and restore sage-grouse populations for these three species.

## What Will the Federal Emergency Protection Order Mean for Species Other Than Sage-Grouse?

I put this question to Environment Canada. I was particularly interested in the impact on the sage thrasher. I picked the sage thrasher because the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommended the sage thrasher be classified as endangered. This designation was assigned to the songbird in 1992 and it was reaffirmed in 2000.

The Environment Canada officials, Megan Harrison and Dr. Stephen Davis, promptly and helpfully answered my question. Dr. Davis is supervising a student who is exploring that question in the sage-grouse's Saskatchewan range. He expects the federal EPO will improve the prospects of the sage thrasher in Alberta and Saskatchewan but that improvement will be limited by the fact that Saskatchewan and Alberta are at the very northern edge of their range. Individuals may benefit but Dr. Davis suspects the population likely would be unaffected.

That said, other species that do well in a sagebrush habitat should be expected to benefit from the EPO. Brewer's sparrow, clay-colored sparrow, vesper sparrow, lark bunting, and loggerhead shrike should benefit from the critical habitat conservation measures implemented in Alberta and Saskatchewan.

Dr. Davis added that improved sagebrush habitat is likely to be neutral to negative for other grassland bird species. Sprague's pipit, Baird's sparrow, chestnut-collared longspur, and McCown's longspur are unlikely to gain much advantage if sagebrush densities increase on prairie grasslands.

On balance I think there are strong grounds for believing that the umbrella of protection afforded greater sage-grouse through the federal EPO will improve the health and diversity of songbird populations on the public lands it applies to. I look forward to seeing the results of Dr. Davis's student and hope they confirm this belief.

If you're unfamiliar with the beautiful sounds these songbirds bring to our grasslands I would invite you to visit an online site such as Cornell University's Lab of Ornithology (https://www.allaboutbirds.org/). There, in addition to hearing the songs of these birds, you can acquaint yourself with many more facts about these species, their ranges, and their life histories.

*Greater Sage-Grouse* PHOTO: © C. OLSON

# Louise Guy Poetry Corner

In 2011 AWA, in honour of Louise Guy, inaugurated a poetry contest in Louise's name as part of AWA's annual Run and Climb for Wilderness. I never had the privilege of meeting Louise but, from what I've been told, Louise was an amazing person in so many ways. Any community Louise belonged to benefited from her membership due to the many contributions she made. For Louise being a citizen of a community meant contributing to that community's health. Locally she taught the deaf and delivered meals-on-wheels. Globally she supported the peace and health goals of Project Ploughshares and Eyesight International. When it came to the outdoors Louise's interests and memberships were many. Cross-country skiing, rock climbing (which she only started in her fifties), and hiking all were favourite pastimes. The last year she climbed the Calgary Tower, in 2010, one journey up the stairs wasn't enough for Louise – she did it twice!

AWA decided that, beginning with this issue of the *Advocate*, we would continue to recognize Louise's spirit by dedicating a corner of the magazine to poems about the theme of wildness. As was the case in the poetry contest we invite you to interpret the theme broadly. We welcome poems that celebrate the spiritual well-being generated by wildness or its harshness or its persistence or its evolution or…

In this, the 150th year of a country called Canada, AWA decided to feature wildlife poetry as one way to commemorate this anniversary. Given Louise's support for local conservation groups such as the Friends of Nosehill Park we thought she would appreciate our decision to feature wildlife poetry by Rosemary Gell in this space in 2017. Rosemary, along with Mark Campbell, played a vital role in the Bowmont Green-Space Preservation Group. This group was instrumental in securing a Special Purpose-Urban Nature District designation for lands intended for the now-abandoned Sarcee Trail extension.

*- Ian Urquhart*

Celebrating 150 years of Canadian Wildlife!

# Alberta

## Who Am I?

Eyes down, ready to fight,
High in the Rocky Mountains.
Head to head, like charging knights,
We crash in the towering mountains.

Curled horns, sprightly legs,
Scaling the rugged mountains.
A battering ram is what I am,
At home in the Rocky Mountains!

Mountain Goat

Bighorn Sheep

Grizzly B

Turn page upside-down for answer!

I'm a Bighorn Sheep!



Celebrating 150 years of Canadian Wildlife!

# British Columbia

## Who Am I?

Tracks in the snow, but where can I be?
I'm watching from behind a tree!
Silently I hunt for prey,
Hungry on this wintry day.

I've fur that's short and tawny-red,
While on my chest it's white instead.
My tail helps to balance me,
When creeping, leaping stealthily.

My head is small with whiskers white,
My nose is pink, my eyes are light.
But don't forget when tracking me,
I might be watching silently!

Coyote

Wolf

Cougar

Turn page upside-down for answer!

I'm a Cougar!



Celebrating 150 years of Canadian Wildlife!

# Saskatchewan

## Who Am I?

Sitting by the water, quiet as can be,
Don't be fooled, that's not a rock, that lump is really me!
I've skin that's green and slippery, with spots upon my back.
A little like a leopard, I've lots of spots of black.

Waiting by the water, hungry as can be,
Suddenly my sticky tongue is longing to be free!
An insect buzzes by me, I leap without delay…
Zap! I trap him with my tongue, then munch the day away!

Garter Snake

Grasshopper

Northern Leopard Frog

Turn page upside-down for answer!

I'm a Northern Leopard Frog!

# 2016 Calgary Youth Science Fair Award


AWA President Owen McGoldrick was very pleased to present AWA's annual Calgary Youth Science Fair Award to Olga Skorinskaya from Louis Riel School. Olga's project was entitled *"Beaver Activity Monitoring at Fish Creek."*

## Watch in April for Information on AWA's Hikes Program.

# Updates

## Let's Talk Parks Canada

National parks have been under scrutiny in the month of January as Parks Canada held one of the largest public consultations in years.

Parks Canada manages national parks, national historic sites, and marine conservation areas. As a conservation group in a landlocked province, AWA focused on speaking up for the health and integrity of national parks. Alberta's five national parks (Waterton, Banff, Jasper, Wood Buffalo, and Elk Island) make up an important part of the province's network of protected areas.

The *Parks Canada Agency Act* requires Parks Canada to convene a round table of people interested in the subject matter of concern to Parks Canada at least once every 2 years "to advise the Minister [of Environment] on the performance of the Agency of its responsibilities under Section 6." Those responsibilities include implementing policies relating to national parks and other federal protected areas, ensuring there are long-term plans for establishing systems of national parks and protected areas, and negotiating and recommending to the Minister the establishment new protected areas. What was new this year was that the Minister of Environment and Climate Change, Catherine McKenna, opened up the consultation to all Canadians. This is a big undertaking, not least because the Act requires the Minister to respond within 180 days to any written recommendations submitted.

AWA was invited to attend a mid-January stakeholder meeting in Calgary. In our view, the consultation avoided directly addressing the performance of the Parks Canada Agency. We had hoped they would ask participants: "Is Parks Canada doing a good job?" They didn't. Instead, they asked us to address some of the significant problems the agency is facing like environmental change, indigenous relations, and visitor experience.

Parks Canada's *State of the Parks Report* in January 2016 revealed that almost half of parks are in fair or poor condition. Indicators that Parks Canada evaluated are based on ecosystem type (i.e., forest, grassland, tundra). In all of Alberta's National Parks, five indicators were rated "good", seven indicators were "fair", and three indicators were "poor". Visitation numbers in all five parks have increased in 2015/16. However, comparing this Report to previous years is not "apples to apples" because the number of indicators has changed. The public can't also see behind the scenes on how the indicators were evaluated, leaving us with questions about scientific accuracy and public transparency.

Business pressures may be contributing to a greater difficulty in realizing ecological objectives. Language in the Agency's 2012-13/2016-17 Corporate Plan, for example, could be interpreted as favouring commerce over ecology. It reads in part: "To mitigate its Competitive Position risk, the Agency continues to ***enhance*** the tools and training available to the dedicated teams of external relations and visitor experience professionals... Parks Canada will also mitigate this key corporate risk through proactive events and promotion of places and products available to visitors..." However, to mitigate a key corporate risk "Environmental Forces", Parks Canada "will ***continue to implement***" improving ecological integrity indicators. (my emphasis) It appears that conservation may be taking a back seat to commercial growth. Canadian Parks and Wilderness Society (CPAWS) reported in their own state of the Parks report that spending on visitor experience in 2015/16 was almost double conservation – that's $202.8 million spent on visitor experience compared to $99.3 million on national park conservation, and a mere $15.9 million on national park establishment.

Since protecting the ecological integrity

*Special events, such as the Banff-Jasper relay, bring thousands to the mountain National Parks each year. AWA has argued in the past that such events are inappropriate activities in National Parks. These events disrupt wildlife and do not align with National Parks ecological integrity mandate.* PHOTO: © AWA

of national parks is the primary priority of Parks Canada we requested the Minister adhere to and strengthen this commitment. We urged the government to restore funding for science, bring back legislated environmental assessments, and improve interpretive and stewardship programs.

As wonderful as our national parks are – after all, they contain some of Canada's best protected and representative natural regions – they're far from perfect. They face a wide range of challenges and threats. Wood Buffalo National Park, for example, is threatened by upstream dam development. In fact, the Mikisew Cree has petitioned to list the park as a World Heritage Site in Danger and AWA agrees that the threats are real and must be removed.

The Banff townsite has exceeded its mandated permanent resident population cap of 8,000; still further development is being approved with its potential to increase that population further.

In Jasper, the Maligne and Brazeau caribou herds, thought to number less than 10 individuals, are considered "functionally extinct" by scientists. Caribou in Jasper are known to be genetically different than in B.C. or elsewhere in Alberta. Losing Jasper's caribou means losing critical genetics that may help boost the chance of recovery and reintroduction through the mountain parks. AWA has asked for consideration to be given to conservation in the spending priorities in National Parks. For example, the well-publicized "Jasper bike trail," rumored to go through endangered caribou habitat, will cost **$87 million**; meanwhile the federal government committed in 2012 to spend **$4.5 million** over six years for the Banff, Jasper, Revelstoke and Glacier National Park caribou conservation strategy. These spending plans don't do any favours for ecological integrity. With figures like that, it's hard to argue that conservation is a priority over adventure tourism experiences.

National parks and other Parks Canada sites face the worrying threat of climate change. While it is difficult for the Parks Canada Agency to change "external threats" if federal protected areas are managed according to the principles of protection, conservation, and restoration their resilience to change may improve. From reading the public's comments on the online forum in January, I think most Canadians agree. Let's hope the Minister will as well when she responds to the national conversation about parks.

You can read AWA's submission at: https://albertawilderness.ca/mrt-2017/

*- Andrea Johancsik*

## Bison hooves hit the ground in Banff National Park

By the time you read this Banff National Park will have welcomed a new herd of plains bison. It's been more than a century since these magnificent mammals have roamed the lands set aside in Canada's first national park.

You're not likely to see the herd of 16 plains bison, as they're in an enclosed pasture in the remote Panther Valley, in the eastern area of the park. The herd will calve twice in this "soft release" pasture for the first year. On January 29, Treaty 6 and 7 First Nations held ceremonies for the bison move and their hooves hit the ground the first week of February. In July 2018, Parks Canada plans to release the bison from their enclosure to freely roam throughout more than 1,000 square kilometres of the Park, their full reintroduction zone.

Conservation lobbyist Julia Lynx played a communications outreach role with Bison Belong in encouraging Parks Canada to see this project through – and garnered a wave of support from her Bow Valley community, Calgary and across Canada along the way. She recently attended the Treaty 6 and 7 First Nations bison ceremony in Elk Island National Park where the Banff bison originated. She experienced deep relief and excitement at the gathering. "The symbolism of the bison, or buffalo, is hugely important, especially here in Alberta," she says. "The bison reintroduction feels in part to be the beginning of healing for this land." Lynx is a long-distance hiker and hopes to eventually see the bison in their wild habitat. For now she's happy to leave them be while they settle into their new habitat. "Giving the bison some space to feel at home in their ancestral homelands seems like a smart choice by Parks Canada, especially since it won't be long until the babies are born!"

Karsten Heuer is the Bison Reintroduction

*In early February a herd of plains bison was released into a remote area in Banff National Park after their transfer from Elk Island National Park.* PHOTO: © D. RAFKA/PARKS CANADA AGENCY

Project Manager from Parks Canada and has seen the project through from paper to reality. "As you can imagine, it was a pretty emotional day for me when the animals finally came out of the crates and all of them were moving well," he says. "The thing that struck me the most was how natural they looked in the mountain environment. This, combined with how quickly they settled into their new home, made it seem as if they had been here all along. It was as if the last 140 years in which they have been absent were erased."

AWA supports reintroducing extirpated species. However, we believe other Alberta landscapes such as the Suffield National Wildlife Area are more suitable for bison herds than Banff National Park. Unfortunately, the status of bison in federal and provincial legislation leads to policy differences that are one obstacle to a more general repopulation of wild bison in Alberta. In federal lands, such as National Parks, plains bison are assessed as Threatened but are not listed under the *Species at Risk Act*; to the provincial government plains bison are considered extirpated and they are classified as livestock.

We also made some detailed recommendations about the project. They focused on the impact on rare plants, the feasibility of operating fencing, the management of backcountry users in the area, and potential risk of commercial operations in the bison reintroduction zone. We were pleased to see amendments made to the project to accommodate some of those concerns. For instance, permits will not be issued for groups larger than 10 to travel within the reintroduction zone. Also, proposals to bring people into the reintroduction zone simply to view the bison will not be considered.

It will be interesting to monitor the outcome of this project. AWA will continue to push the province to list plains bison as endangered in Alberta and pursue reintroduction in suitable provincial prairie habitat.

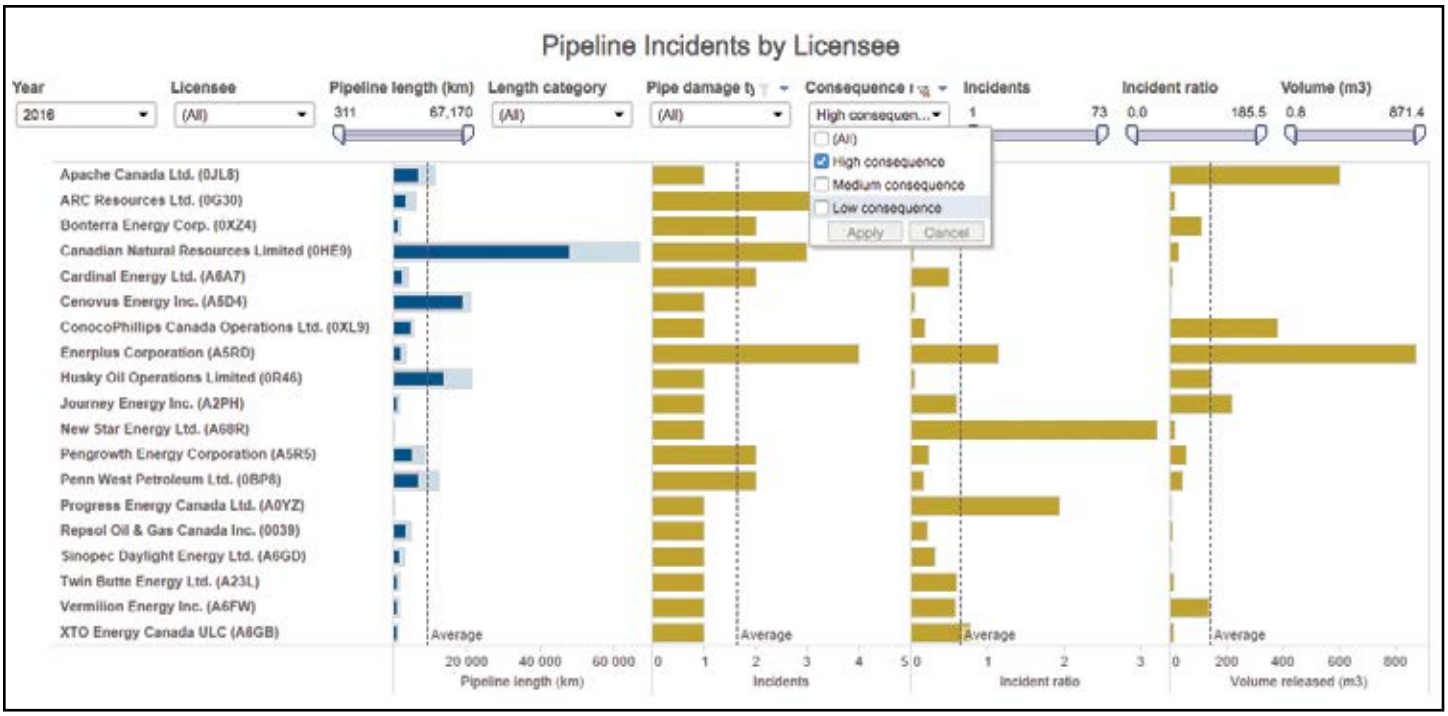
*- Andrea Johancsik*

## Alberta Pipeline Spill Risk Concerns

On February 21, 2017, the Alberta Energy Regulator (AER) released a new Pipeline Performance Report. The AER reported spills and 'hits' (where no substance is actually released) for the 420,000 kilometres of pipelines it oversees, a distance about ten times the earth's circumference.

The report provides totals for 'high', 'medium', and 'low' consequence pipeline incidents annually since 2007. For 2015 and 2016, it also reports incidents by company, with some description of each incident, such as spill volume, type of substance released, consequence rating, and area affected. While this report is a step forward in transparency, significant concerns remain about the quality of AER's pipeline spill data.

In terms of transparency, the AER's report should also have identified spill counts in sensitive environment and habitat types. The AER is now the lead agency responsible for regulating the energy industry in accordance with the *Water Act, Environmental Protection and Enhancement Act,* and *Public Lands Act*. In November 2016, AWA and other members of the Alberta Environmental Network were informed that the AER was analyzing pipeline incident data according to the sensitivity of the affected area. Sensitivity included species at risk habitat, wetland category of lands, First Nations reserve and Métis settlement areas, protected areas, and Class A waterbodies. This important risk-based information should have been included in the AER's report.




*2016 High consequence pipeline incidents by company.* SOURCE: AER PIPELINE PERFORMANCE REPORT, FEBRUARY 2017.

Instead, the AER provided an inappropriately narrow perspective on wildlife impacts. This perspective is presented in a 'Wildlife-Livestock-Priority' category. In that category, of the 933 total pipeline incidents reported in 2015 and 2016, 858 (92 percent) had no effect, 62 (7 percent) had no classification, 12 were classified as 'Animal(s) affected' and one was classified as 'Animal(s) injured or killed'. Habitat impacts were ignored.

The report provided only a very coarse environmental location: 'air/land,' 'flowing water' or 'muskeg/stagnant water'. This last term is presumably an outdated reference to wetlands. Spill impacts and frequency also should be reported based on proximity to headwaters and by natural region, to identify areas of particular environmental risk as a focus for future incident reduction. Overall, this report demonstrates that our energy regulator needs to modernize and improve its reporting on environmental impacts to align more accurately with its mandate.

Another recent investigation of AER pipeline spill data raised concerns that cumulative impacts of pipeline spills are not adequately managed. In early February 2017, ecologist Dr. Kevin Timoney presented his findings on AER pipeline spill and cleanup records. Indigenous Traditional Ecological Knowledge holders worked with Timoney to investigate nine pipeline spill sites on Dene Tha traditional territory in the Hay River watershed of northwest Alberta. The spills occurred between the 1970s and 2012. Timoney's investigation found that on those sites lingering impacts from the spills were significantly worse overall compared to AER's records. This was the case for both spill volume recovery rates and wildlife habitat impacts. These discrepancies raise worrying questions about the quality of Alberta's pipeline spill cleanup certification processes.

Timoney's research also analyzed AER data on 35,000 crude oil and saline water spills across Alberta from 1975 to 2013. The analysis suggests that Alberta's pipeline spill records generally overstate spill volume recovery rates and understate harmful impacts on wildlife and their habitat. One risk identified from unreliable cleanup data is that harmful effects to soils and vegetation, which can be especially persistent with saline water spills, are not being properly documented or managed. This may lead to a significant gap in managing cumulative pipeline spill effects over time in more sensitive and higher-risk environments. These findings suggest that the AER needs to improve its assessment protocols in order to reduce risks to the environment and local communities. It also needs to provide more accurate, relevant information to the public about pipeline spill impacts.

*- Carolyn Campbell*

## Why are grizzlies getting hit by trains? Survey says...

Trains are the leading killer of grizzly bears in Banff and Yoho National Parks. An estimated 17 bears have been struck and killed since the year 2000. This is a significant number given that population estimates suggest there are only approximately 60 bears in the region. Trains don't only kill grizzlies either: countless other wildlife are victims too. Four wolf pups, for example, were killed last summer.

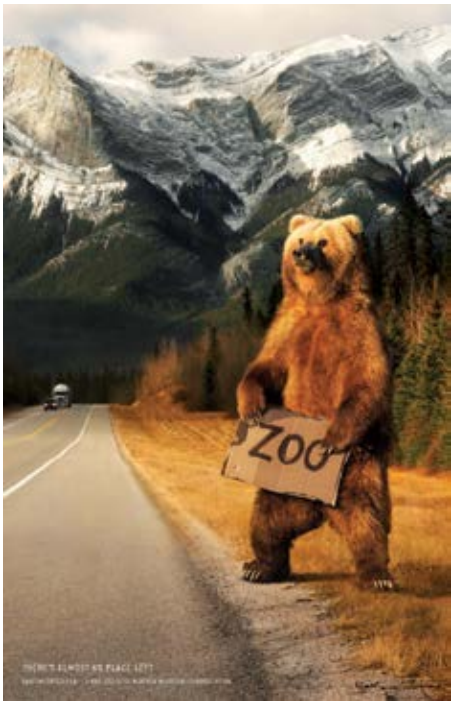
Canadian Pacific Railroad and Parks Canada started a five-year project in 2010 to understand and address the root causes of bear deaths on the tracks. The results and commitments to take action were announced at a press conference earlier this year.

The research highlighted commonly held knowledge that the railway tracks are attractive to bears and other wildlife for a number of reasons. For starters, travel is made easier on flat and cleared corridors. These cleared paths also provide the perfect conditions for bear food such as buffaloberries and dandelions which flourish in the sunlight. To combat these attractants, Parks Canada has committed to using prescribed burns to create alternative suitable habitat away from the tracks and to clear edible vegetation away from the tracks.

Another complicating factor to bear-train collisions is the location of the tracks. Bears are more readily able to flee trains when the trains are easy to hear and the bears have clear lines of visibility. But in the parks there are a couple of notable pinch points where there are steep slopes without clear escape routes and where train noise echoes in the valleys and confuses the bears as to where the sound is coming from. Early warning signals, clearing pinch points, and fencing off high risk areas were all suggested strategies to help reduce deaths related to this cause.

While it's encouraging to see these research-inspired commitments to try to reduce bear mortalities on train tracks in Banff and Yoho National Park, the conference failed – or neglected – to address a vital issue: grain spillage.

Many papers noted that grain contributed to grizzly deaths. One study found that an average of 110 tons of grain is spilled annually; this is equivalent to leaving open nearly 1 1/2 hopper cars full of grain for animals to scavenge. Obviously, not all of the spilled




*If even our protected areas don't keep grizzlies safe, where do they have left?* PHOTO: © AWA

grain is available for bears. Some of it is scattered very sparsely and/or is consumed by other animals. Still, grain could be a major supplement to the diets of grizzlies in a relatively unproductive landscape such as our mountain parks. In fact, this amount of spilled grain is enough to meet the annual nutritional needs of 50 grizzlies.

What makes this situation even more threatening to the bears is the seasonal availability of grain spills. Grain along the tracks is highest in the fall, when shipping rates are high, and in the spring when snowmelt reveals all the grain accumulated throughout the winter. This also coincides with the times when bears are most food stressed, leading up to and immediately following hibernation. The peak seasons for bear mortality – spring and fall – are the seasons when the most grain is available.

And yet, there was no mention of any commitments on the part of Canadian Pacific to address the ongoing grain issue. Instead, the response seemed to be that there wasn't a need to act since grain spillage isn't the only, or the most significant, contributing factor to grizzly deaths.

This type of response ignores the fact that grain spillages play a role. Also, it ignores the fact that no study conclusively proved that grain wasn't an important factor. Spilled grain's place in the diets of other wildlife including squirrels, deer, and moose makes the train tracks an attractive spot for bears to find prey and to scavenge other killed wildlife. One study highlighted that squirrel density was significantly higher near the tracks and that middens near the tracks were packed with grain – creating yet another attractant. Working to improve bear movement and habitat but neglecting to address the amount of grain spilled is counterintuitive. It's like saying exercise without a healthy diet will result in good health outcomes.

This whole story reads like an episode of Family Feud where a contestant loses the round because everyone failed to mention a glaringly obvious answer. In this case, our contestant is the grizzly. Let's hope they don't lose this round.

*- Joanna Skrajny*

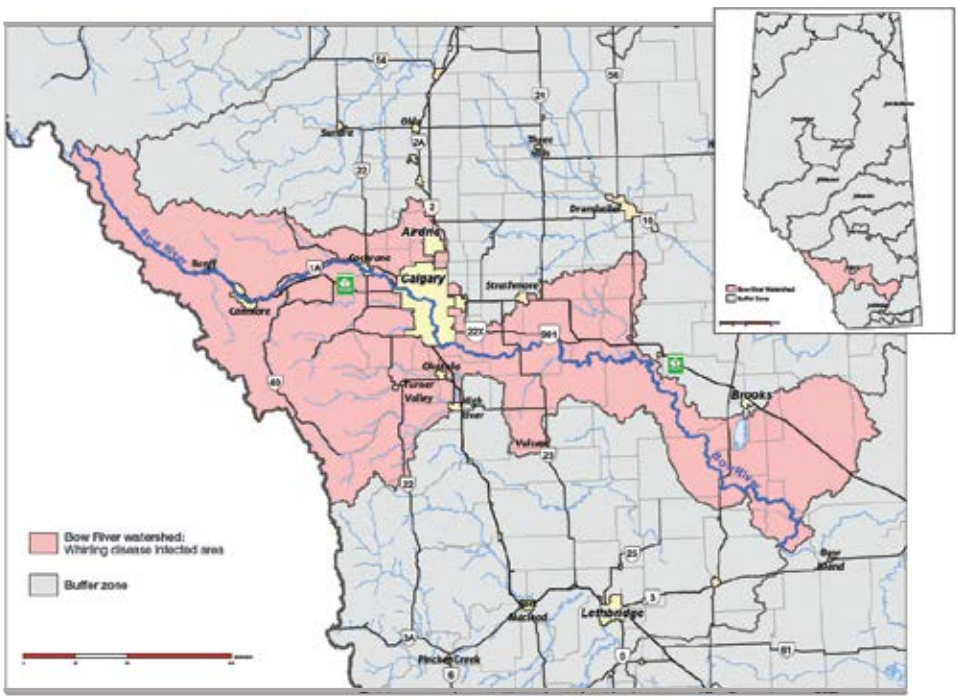
## Whirling Disease – Spinning in circles for much needed action

Canada's whirling disease "baptism" came on August 25, 2016. That was the day the Canadian Food Inspection Agency (CFIA) confirmed the presence of whirling disease in fish in Johnson Lake in Banff National Park. I remember quite vividly an off-the-cuff remark by a fisheries scientist then that if fish are infected in the Park, it's likely the entire Bow is infected as well. I wonder if he knew just how prophetic those words would be. Last month, on February 10th, the CFIA declared the entire Bow River watershed to be infected with whirling disease. This means that all streams, creeks, lakes, and rivers that feed into the Bow River, including the Elbow River, have been infected.

Whirling disease is caused by *Myxobolus cerebalis*, a microscopic parasite. This parasite has a complicated lifecycle which begins in spores found in soil at the bottom of water bodies. These spores are taken up by tubifex worms in the soil. In the worms the spores develop into the triactinomyxon, the parasite form, which is released into the water and infects salmonid fishes (trout, salmon, whitefish) through the skin. Obviously this leaves many opportunities for the disease to spread: water, soil, or fish contaminated with whirling disease all are potential carriers and hosts of the disease.

Whirling disease originated in Europe as a parasite in brown trout. Since the disease coevolved with brown trout, it wasn't detected until Europeans brought over rainbow trout to Europe from North America and noticed die-offs and swirling swimming patterns in fish behaviour. The completely commonplace practice of bringing over fish eggs and live fish a century or more ago meant that in the early 20th Century whirling disease had spread to the United States. Initially detected only in fish hatcheries, it wasn't until the massive declines of native fish species in Colorado and Montana in the mid 1990s when the potential and dramatic effects of this disease on native fish species dawned on anglers and conservationists alike.

The disease's mortality rate depends on a number of factors. The most significant one is the size of the fish when it is exposed to the parasite. The height of summer and early fall are the peaks times for the presence of the parasite in the water which means that the




*Map of the whirling disease infected area in Alberta.* SOURCE: GOVERNMENT OF ALBERTA

life history of fish species plays a large role in which populations are more vulnerable. Species such as bull trout – which spawn in the fall and hatch in the winter or early spring – are much larger when they first encounter the parasite. This improves their resistance to the disease. On the other hand, westslope cutthroat trout spawn in the early summer and their eggs hatch in mid-summer. Therefore, the fry are at a high risk of developing whirling disease. Our already threatened westslope cutthroat trout, which exist only in isolated pockets within the Bow and Oldman River drainages, are being placed under even greater mortal risk with this additional threat to their persistence in our waterways. However, don't think that we don't have reason to be concerned about bull trout: with warmer water temperatures, infection rates of the parasite increase dramatically. This is a double whammy for bull trout, a species which needs cold, clear water to survive and is already struggling with our increasingly warmer planet.

What can we do? Unfortunately, it seems that the ongoing spread of whirling disease is more a question of when, not if. Mandatory cleaning protocols are necessary: much of the spread of whirling disease in the United States was exacerbated by researchers not cleaning off their waders as they traveled from infected to non-infected lakes and streams! The clean, drain, and dry campaign is likely insufficient since mud is an important vector of the disease. Hot water can kill the parasite but it will not kill the spores present in mud. A chemical disinfectant, such as chlorine, is effective at killing all stages of the disease. So it would be vital for the government to adopt a mandatory standard suite of cleaning protocols for everybody that are effective at killing all life stages of the disease.

Right now it is of paramount importance to protect the remaining bull trout and westslope cutthroat populations not yet affected by the disease. This will mean that some watersheds will need to be closed to all non-emergency work, angling, and recreational OHV use. Eventually, fish will develop a resistance to whirling disease and this resistance is passed onto the offspring of survivors. For now, however, there is an even greater need to protect and restore the remaining populations of bull trout and westslope cutthroat trout within the Oldman drainage. The new Castle Parks provide an opportunity to not only protect but to recover these species. It might be one of the last remaining footholds for them in this brave new world.

*- Joanna Skrajny*

## The $87 Million Icefields Trail – Really??

As the bicycle racks outside of AWA's Calgary home suggest, AWA is a fan of bicycle transportation. But we're opposed to Parks Canada's proposal to build a 109 kilometre paved bicycle trail that would parallel Highway 93A from Jasper to the Wilcox Campground at the boundary of Banff National Park.

The estimated price tag for this project is an eye-popping $87 million. You won't be surprised to hear that AWA feels these funds would be much better allocated if they went into the Heritage Resources Conservation Program. This is the program that, in the Parks Canada Agency's *2013-2014 Report on Plans and Priorities*, was said to include "maintenance or restoration of ecological integrity in national parks through protection of natural resources and natural processes…"

This whopping infrastructure commitment led me to crunch some numbers. I wanted to know just how much of the national Parks Canada budget was, is, and will be allocated to different programs. Those numbers confirm how justified AWA is to be worried about the place of ecological integrity in the planning of the Agency's senior administrative and political leaders.

I was disappointed but not surprised to note that, over the years when the Conservatives enjoyed a majority government, the percentage of the Parks Canada budget devoted to Heritage Resources Conservation suffered. It fell from 23.4 percent in 2011/12 to 15.8 percent in the 2015/16 fiscal year.

But the Trudeau government doesn't seem interested in redressing this situation. In fact, the 2017-18 departmental plan for the Parks Canada Agency indicates that the Trudeau government is quite content to see this percentage continue to decline. By 2019/20 the Liberals intend Heritage Resources Conservation program spending to fall to 13.8 percent of total spending.

This further percentage decline comes despite the fact that Parks Canada Agency spending is projected to rise from $1.036 billion in 2015/16 to $1.312 billion in 2019/20. This is a 27 percent increase over four years, much more than what likely would be needed to keep pace with inflation.

If the additional resources aren't planned for protecting and enhancing ecological integrity what will they be spent on? Much of it will be spent on infrastructure such as the paved Icefields Trail. Nearly 36 percent of the planned spending in 2019/20 by Parks Canada is intended to go to Heritage Canals, Highways and Townsites Management. This is a program dedicated to "the management of infrastructure for Canadians and provides opportunities for socio-economic benefits to adjacent communities." When the Government of Canada writes that "(t)his investment demonstrates the government's responsible stewardship of Canada's protected places" it's talking about the more than $3 billion intended for highway improvements and other infrastructure projects. Bike trails too. It's not talking about ecological integrity.

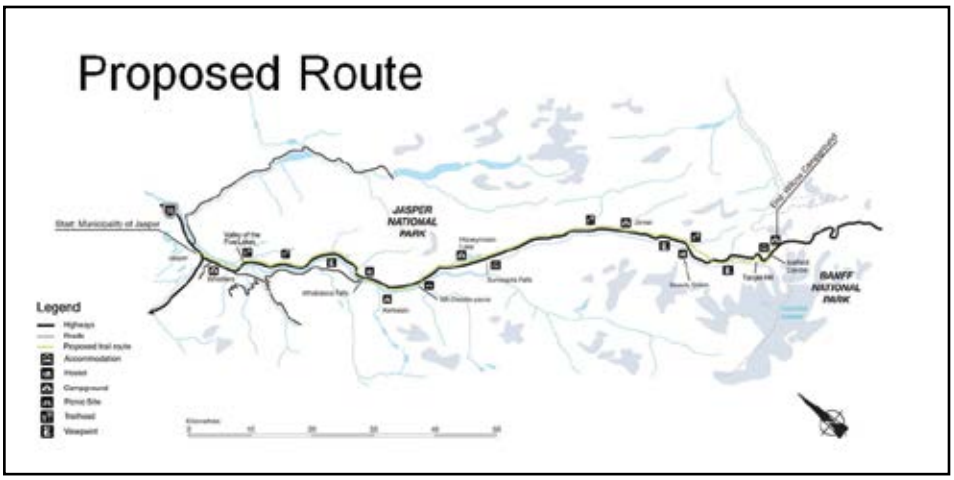
Over the course of only eight fiscal years the Canadian government intends to increase the Parks Canada Agency's spending on infrastructure by a staggering 349 percent. It will increase from $104.4 million in 2011/12 to $468.5 million in 2019/20. Those eight fiscal years will see that type of spending grow from 15.4 percent of the Parks Canada budget to 35.7 percent.

Imagine what might be done for the eco-

logical integrity of our National Parks if the Conservative and Liberal governments regarded the Heritage Resources Conservation program with such favour.

The spending trail the federal government is building for Parks Canada is one that privileges infrastructure like highways and paved bike trails over ecological integrity. It's why we urge you to echo AWA's concerns about the Jasper Icefields Trail to the federal government. Please use the links you will find at https://albertawilderness.ca/87-million-icefields-trail-speak-jasper-wildlife/ Please do so as soon as possible, but definitely before April 24, 2017.

*- Ian Urquhart*




*Proposed Route for the Icefields Trail* CREDIT: Parks Canada Agency

## Featured Artist
## Rayma Peterson

*22" x 15", pen and ink. This Beargrass was found just north of Waterton National Park in Middle Kootenay Pass. It was selected for a travelling exhibition, "America's Parks", and shown at the Roger Tory Peterson Institute.*

*22 "x 30", watercolour with pen & ink. This painting is a composite of the creek-side flora around the Mosquito Creek campground north of Lake Louise. Bow Peak is shown in the background.*

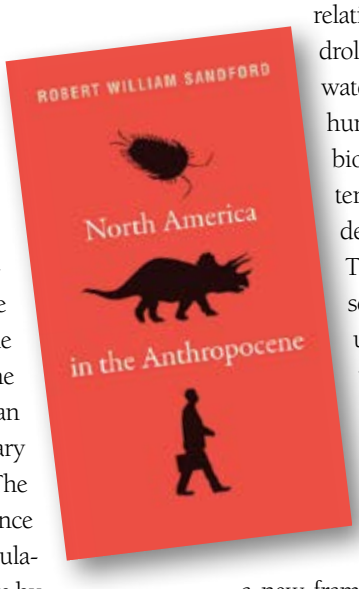
*22" x 30", watercolour. From the Cardinal Divide West near Cadomin. In addition to the orange lichen (Xanthorium elegans) the paing. The painting also shows Hedysarum boreale, Potentilla nivea, Penstemon procerus, and Dryas octopetala.*

*14 "x 11", watercolour. These two louseworts are found in the subalpine zone on the Cardinal Divide East, near Cadomin, Alberta. They are only a few inches tall, but exquisite to find.*

# Reader's Corner

**Robert William Sandford, North America in the Anthropocene** (Canmore: Rocky Mountain Books, 2016).

*Reviewed by Heinz Unger*




It seemed more than coincidence. The same day I started reading Robert Sandford's new book, I found the World Wildlife Fund's *Living Planet Report 2016* in my inbox. It introduced this new concept: the Anthropocene. It describes the current the geological era, one in which humans rather than natural forces are the primary drivers of planetary change. The WWF report presents evidence that worldwide wildlife populations have declined on average by 58 percent since 1970 and are likely to decline further to be only 67 percent of 1970's level by the end of the decade. We can see this close to home in Alberta where key wildlife species such as grizzly bear, woodland caribou, and greater sage-grouse numbers have decreased at an alarming rate. AWA's *Wild Lands Advocate* has documented that loss of habitat, caused by an ever-expanding human footprint (for energy, industry, agriculture or urban expansion), is the primary reason for declining wildlife numbers.

The term Anthropocene was only coined in the year 2000 and entered the Oxford English Dictionary in 2014 as "the era of geological time during which human activity is considered to be the dominant influence on the environment, climate, and ecology of the earth." Geological eras are often associated with mass extinctions, and the question arises whether the Anthropocene signals the beginning of the end of human and other life, or the uncertain and turbulent beginning of a new and better age. Sandford's new book explores this question in some detail and tries to provide answers.

He starts out with a strong focus on climate and water and draws on a 2015 United Nations report titled *Water in the World We Want*. That report is very concerned about how a warming climate has disrupted the relative stability of the globe's hydrological cycle. The increase in water shortages not only affects human needs but also erodes biodiversity-based earth system functions, contributing to declining wildlife populations. The agriculture and energy sectors are the largest water users and are therefore called upon to lower their demand through efficiencies and new ways of production.

Sandford then examines the UN's *Transforming Our World* 2030 agenda. This is a new framework for global action that sets out 17 goals for sustainable development. While water is a development goal on its own, it also plays a role in13 of the other 16 goals. It's vital to ending poverty and hunger, ensuring healthy lives, energy security, resilient infrastructure, and taking action on climate change. Water clearly plays a crucial role for human health and wellbeing and also for the health of the environment and the economy.

The book continues with a review of the *Global Risks Report* 2016 presented by the World Economic Forum (WEF) at its annual conference in Davos. It ranked "the failure of climate change mitigation and adaption" as the highest risk; this was the first time an environmental risk received the top risk ranking by the WEF. Water crises and large-scale involuntary migrations were listed as other, interconnected, high risks. Global insurance companies, too, consider climate and environmental change among the highest risks they are trying to insure against.

Under the heading "Separating the hype from the hope in Paris" Sandford discusses the achievements of the 2015 UN Climate Change Conference in Paris. He found that compared to what could have happened, it was a miracle; but compared to what should have been decided, it was a disaster. There was consensus among the 193 nations which attended on the need to act. But the commitments to act are modest and non-binding, as is Alberta's goal to cap greenhouse gas emissions from oilsands production at 150 percent of present levels by 2030. Moreover, since Paris 2015 the election of U.S President Donald Trump has added uncertainty and increased the risks associated with climate change.

The book continues with brief reviews of four recent books on climate change: *Reason in a Dark Time* by Dale Jamieson, *Learning to Die in the Anthropocene* by Roy Scranton, *Hot Topic – Cold Comfort* by Gudmund Hernes, and *Don't Even Think About It: Why We Are Wired to Ignore Climate Change* by George Marshall. As is evident from the titles, there isn't much optimism to be found in much of the current relevant literature. Nonetheless Sandford resists the rather gloomy perspectives and proposes that a new era, i.e. the Anthropocene, needs a new narrative and mythology.

Sandford dismisses techno-utopian and geo-engineering options, but concludes with an exhortation to make a choice between self-delusion and self-fulfillment. The latter option will enable us to create not a new but a better world around us. Relentless, informed, and courageous citizenship by many committed individuals is needed. Using the way water flows in a river as an example, he asserts that many small actions and changes over time can lead to sudden, huge and dramatic changes in the course of a river. Thinking of the Anthropocene in these terms could produce an epoch of positive change effected by humans and lead to a more equitable, just, and sustainable future for **all** life on this planet. This positive and hopeful outlook challenges all of us to take action, however small those actions might be.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