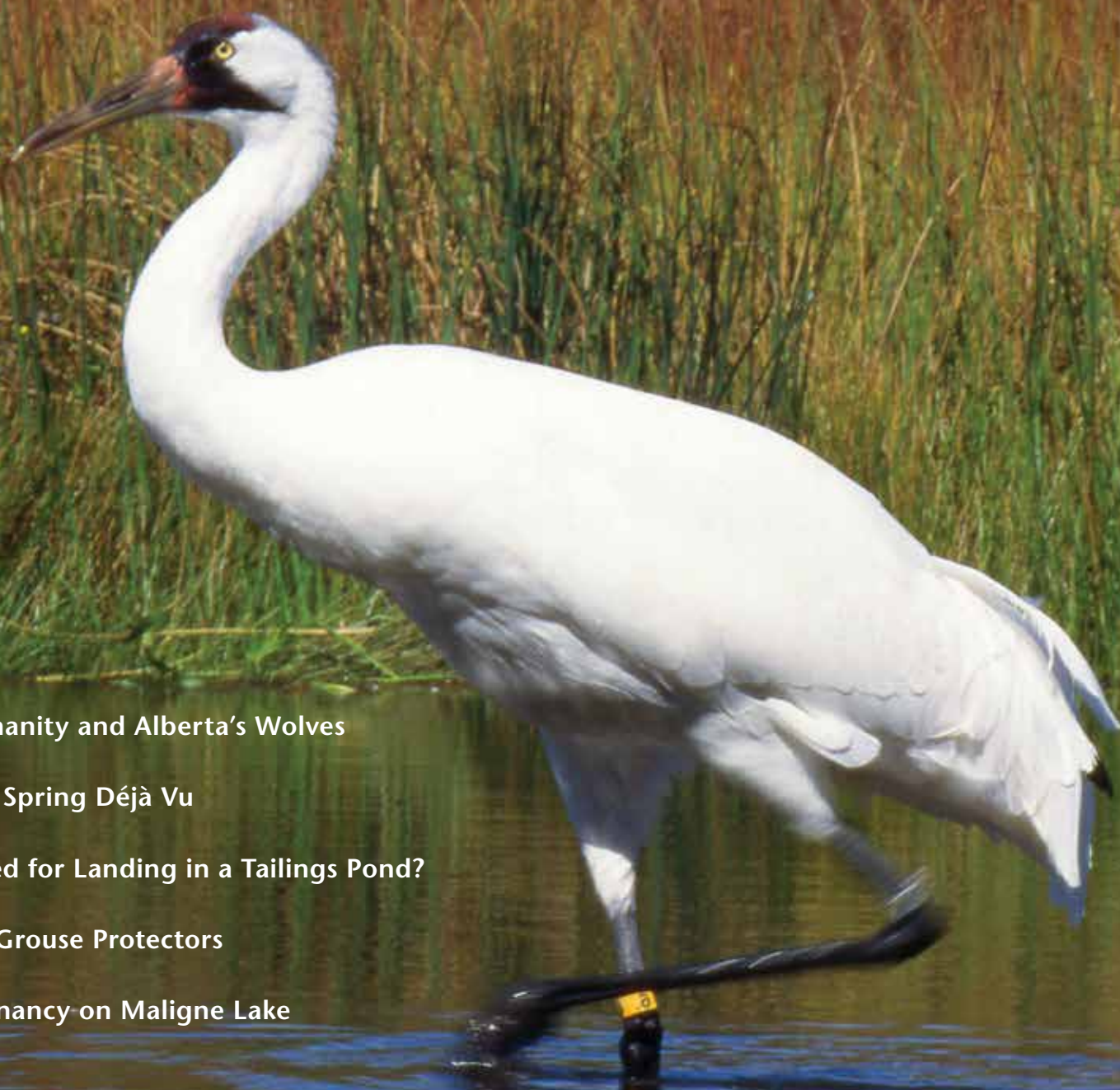


# A WILDLANDS ADVOCATE



THE ALBERTA WILDERNESS ASSOCIATION JOURNAL

APRIL 2014



Inhumanity and Alberta's Wolves

Silent Spring Déjà Vu

Cleared for Landing in a Tailings Pond?

Sage-Grouse Protectors

Malignancy on Maligne Lake

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APRIL 2014 • VOL. 22, NO. 2

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## Cover Photo

Captive breeding programs play an important role in efforts to help threatened and endangered wildlife species. Dwight Knapik is a zoo keeper with the Calgary Zoo and has worked with the breeding program to produce birds for reintroduction to the wild.

PHOTO: © D. KNAPIK

## Featured Artist

This issue of the Wild Lands Advocate gratefully acknowledges the creativity and passion for wilderness exhibited by the 14 teams that participated in the 2014 Climb and Run for Wilderness Mural Painting Competition. The artwork they adorned the stairwell of the Calgary Tower with this year joins the dozens of murals created for this Earth Day celebration in past years. It's a remarkable display of public art and the commitment of participating artists to the landscapes, flora, and fauna that make Alberta a special place. For more information about the mural competition see <http://climbforwilderness.ca/muralcomp.php>

Thanks also to David Harrison, Natalie Marsh, and Barry Marks – this year's judges and to Margaret Main for coordinating the competition.

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# Spring Has Finally Arrived...in Bizarro World

A question for all you baby boomers out there...does the phrase “Bizarro World” ring a bell? It should if you were a fan of Superman comics. It’s a world where norms, values, and expectations are the opposite of what you’d anticipate them to be. It’s a world where good or admirable behaviour and ideas are exactly the opposite of Earthly norms.

Enter Tommy, the subject of an April 27 article in *The New York Times Magazine*. Tommy is a chimpanzee. He’s imprisoned somewhere in the state of New York in a small cell amidst soiled bedding and toys. His lawyer argues that Tommy is a legal person, like Exxon-Mobil, and should enjoy the fundamental right not to be wrongfully imprisoned.

Sounds like the sort of argument lawyers on Bizarro World would make doesn’t it? John Muir didn’t think so. In 1867 Muir exclaimed: “How narrow we selfish, conceited creatures are in our sympathies! How blind to the rights of all the rest of creation!”

If Earthly norms include ethics of care, benevolence, and sensitivity – as I suggest they should – then Tommy’s predicament suggests we too often let the Bizarro World outlook animate our behaviour here on Earth.

Several articles in this issue of the *Advocate* speak to this suggestion. Dwight Rodtka’s feature article on what passes for wolf management in Alberta should shock reasonable people. What he describes there – neck snaring, bounties, indiscriminate poisoning – seems fitting in a more barbarous realm than what we aspire to in Alberta. The International Union for the Conservation of Nature has told the provincial government that wolf bounties are “archaic, outdated and ineffective.” Yet there’s no sign Alberta will prohibit them. The IUCN’s Wolf Specialist Group has pointed out that Alberta is one of “the very few jurisdictions left” anywhere on Earth where bounties are used to kill wolves. Now there’s something to be proud of.

The Bizarro Code also lives in the malignant proposal to establish a luxury resort on the shores of Maligne Lake. Here the *Advocate* reprints an open letter three former senior Parks Canada officials wrote to Canada’s Minister of the Environment. They strongly object to this major commercial development. Why? In part because the Maligne proposal threatens to deepen the predicament that vulnerable species in the National Park already face. They suggest that losing a single

member of the Maligne Lake caribou herd “could be the final ‘nail in the coffin’ for this herd.” It seems that ‘ecological integrity’ now may mean exactly the opposite of how it’s defined in the *National Parks Act* – perfection in Bizarro World!

And then there’s Brittany Verbeek’s shorter article on Alberta’s bats...magnificent creatures that the government defines as pests. Our treatment of bats, like that of too many other nonhuman animals, thumbs its nose at the ethics suggested above. It also ignores the valuable services these tiny, winged creatures provide for us.

Much of what AWA aims to do challenges the norms and actions we see in our tiny slice of Bizarro World. As other pieces in this issue demonstrate – for example, Nigel Douglas’s article on the recovery of whooping cranes and Clio Smeeton’s presentation of the work of the Cochrane Ecological Institute – we’re not alone. The challenge now, as always, is to develop the strategies and partnerships needed to send the Bizarro Code back to where it belongs – a place called Htrae.

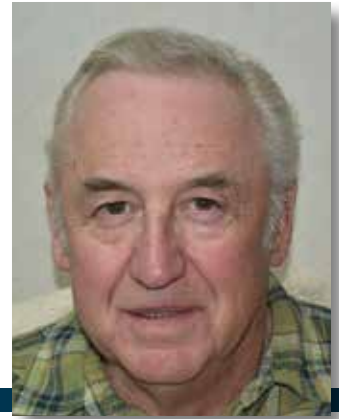
*Ian Urquhart, Editor*



# Mismanaging Alberta's Wolves:

## Where's Our Humanity?

By Dwight Rodtka



**A**fter almost four decades as a professional wildlife official with the government of Alberta who dealt with problem wildlife, I think I gained the experience and insight needed to offer informed opinions and advice about how predators should be managed. That experience also taught me to recognize mismanagement when I see it. Mismanagement - that's what we're seeing when it comes to managing wolves in Alberta today.

Alberta, unlike many places in the world, is blessed with still having viable populations of its apex predators. They are still mostly able to fulfill their roles in our ecosystems. Grizzlies are threatened in some parts of the province but they can recover with proper management and habitat protection. The numbers of wolves, cougars, and black bears are all solidly sustainable. Of these four species, grizzlies are protected from hunting; landowners may shoot cougars on their private land but there is a cougar quota for each wildlife management unit (WMU) where they may be hunted and females with kittens cannot be shot. Black bears may be shot on private land by the landowner and there are specific hunting seasons for them. Like the case of cougars, females with cubs cannot be shot. In my experience these science-based approaches work for the most part; with respect to grizzlies more should be done on the habitat front.

In contrast the wolf is a scapegoat. Alberta's apex canine predator is blamed for everything from disappearing woodland caribou and vanishing big game to endan-

gering livestock producers' livelihoods. Fortunately wolves are resilient and adaptable so they are in no immediate danger. But I've heard some government personnel say they could reduce severely Alberta wolf numbers in the name of "predator control." Such thinking also animates rumblings across Canada about "reducing wolf numbers to save the caribou."

We only have to look to the Smoky River caribou-wolf debacle here to realize what damage this attitude can produce... and how quickly that damage can happen. In the Smoky drainage government is poisoning wolves with strychnine. This indiscriminate approach is archaic and misguided; undoubtedly this method also is killing wolverines, fishers, martens, weasels, foxes and other animals. Trappers are complaining bitterly of how this poisoning is reducing furbearer numbers in the area. Meanwhile, logging and petroleum companies continue to carve up and destroy woodland caribou habitat.

Other current wolf management practices also have collateral damage on other species - perhaps even our own. Trappers can kill wolves from October 1 to March 31 in areas of Alberta that do not support grizzlies and from December 1 to March 31 in territories where grizzlies are present. This is designed to prevent grizzlies from being snared at wolf bait sites. Is it effective? Last fall we had a mature grizzly in our yard feeding on birdseed until December 9 and two days before then a different grizzly in the area still had not denned. So I would argue this approach isn't protecting grizzlies at all. These bait stations or

"carcass dumps" become a bear smorgasbord in spring and could have catastrophic consequences for the unwary person who stumbles onto one. Since these rotting piles can be set up in many areas of the province, anywhere wolves may be trapped or snared, you would have no warning that you were in the vicinity of them. Pets are also caught in wolf snares, often with tragic results. It should seem unbelievable but our government allows trappers to legally set wolf snares out in the fall and not check them until the March 31 closure. Since wolf pelts are only prime from late November to the end of January this situation is clearly designed to maximize, in a very inhumane way, the wolf kill. Trappers often don't need to worry about prime wolf pelts anyway, because they can collect big money from bounty payments in many areas.

Sport hunters also have generous opportunities to shoot wolves. Unlike other animals wolves have no particular season but are lumped in with whatever big game season happens to be open at the moment in a particular WMU. You also don't need a tag or license to kill a wolf. They may be shot during fall hunting seasons and spring ones too. Shooting wolves in the spring is especially repulsive to me because wolves, including lactating females, are often shot at bear baits in the spring. The pups are left to starve. This is neither biologically sound nor moral. It is merely a specious attempt by government to claim they are managing wolves with a season. A growing number of hunters pursue wolves during the winter by baiting and electronic calling, contrary to the fair chase principles that apply to





*In 21st Century Alberta this magnificent gray wolf pup could die a horrible death in a neck snare.*

PHOTO: © JOHN E. MARRIOTT [www.wildernessprints.com](http://www.wildernessprints.com)

most other species.

Many livestock producers and their pet politicians consider all wolves a threat to livestock. That's why there is essentially an "open season" for them on private property and on public grazing allotments. Farmers or ranchers or any person authorized by them can kill wolves at any time of the year wherever cattle are grazed. It doesn't matter if they have never lost stock to wolves - the wolves can still be shot just for reasons of prejudice. Wherever you see cattle wolves can basically be shot on sight. There they're treated just like Norway rats, like vermin.

Another wolf management tool that is better seen as a mismanagement tool are bounties. Essentially, anyone may establish a wolf bounty for any reason. Consequently special interest groups like the Foundation for Wild Sheep in cooperation with some local Fish and Game clubs and Alberta Trappers Association locals have posted secretly \$300 per wolf bounties along the

Eastern Slopes from south of Calgary north to Grande Cache. The Sheep Foundation has spent over \$50,000, plus whatever the participating Fish and Game locals and the Trappers Association have contributed. Hundreds of wolves have been killed in the pathetic hope it will provide hunters with more big game animals to shoot. Alberta Environment and Sustainable Resource Development [ESRD] doesn't seem to even monitor this secret cull. To allow bounties on wolves or any other species blatantly ignores scientific evidence about how ineffective bounties are. It's as if government wonders "so what, we have lots of wolves so what's the problem?"

Some municipalities and counties also use wolf bounties. Several of them pay up to \$500 per wolf. Hundreds are killed. Again there isn't any provincial oversight. These arrangements exist despite the fact that producers who suffer wolf predation receive 100 percent compensation for their

losses. They also receive the full services of Fish and Wildlife; this may involve poisoning wolves (and likely other animals). Bigotry and hatred of wolves runs deep and it seems as if ESRD likes to take full advantage of it. It's such a simple solution for dealing with problems that can arise when wolves and livestock mix or when wolves compete with hunters for big game. Sim-  
plistic would be a better adjective here.

Not only do bounties kill wolves needlessly they actually may cause or worsen many of the problems they are professed to cure. Not all wolves kill cattle -- in fact biologists have found evidence that wolves keep potential cattle killers out because of their territorial behaviour. Nonetheless the government blithely allows non-selective bounties. Biological research has shown breaking up packs can cause increased breeding and chaos which may lead to unusual pack dynamics and actually create cattle predation problems which didn't

exist before. Every authority I am aware of agrees with my personal experience that quick, selective removal of problem wolves is the key to solving predation problems. Yet the government allows and practices just the opposite.

Bounties are notorious for many reasons. The most offensive one to me is that they likely increase recreational wolf snaring. Snares are grossly inhumane and are not target selective. They consist of a simple wire “snare” with a locking device. The hope is the snare will tighten around the wolf’s neck and strangle it. A snare’s basic design guarantees it cannot meet any common sense “humane” criteria. Furthermore, its proper function depends on a myriad of external influences that are uncontrollable. Wolves often die long painful deaths in snares. Go to [wolfmatters.org](http://wolfmatters.org) for the full story on snares.

Another major problem goes back to the non-selective nature of too many wolf management techniques. Snares often catch and cripple or kill anything that happens by. For example, a short time ago 12 to 15 snares were authorized by Fish and Wildlife to be set for wolves that had killed some cattle not far from Rocky Mountain House. In about a week these snares had killed: one wolf pup, one or two white-tailed deer, one mature black bear, and one mature grizzly. How many non-target animals are killed when thousands of snares are set on game trails and around draw baits over thousands of square miles? In my career I have seen every thing from eagles to big-horn sheep and cougars caught in them. One-third of the radio-collared cougars in

a recent study near Rocky Mountain House were killed in wolf snares. Not surprisingly there is no mandatory reporting by trappers of non-targeted species taken except for a few animals on quota; the deer, moose, elk, and other species that die are just the cost of convenience.

Wolves are mismanaged in Alberta; the question is how can we change regulations and policies so they reflect wolves’ true value and show some semblance of respect for or humanity towards them. It’s simple really: change how the government views them and change some of the bigoted minds that believe the only good wolf is a dead one. That might sound facetious but if we want wolf management to be guided by biological principles and humaneness then these mindsets must change. Attitudes are at the root of the problem.

We also could take a hard look at our land use practices. Why don’t wolves have as much right to be on public land as cows do? The culture of entitlement among some stockowners may be growing. Some now want compensation for the possible stress and reduced weight gain their cattle may suffer if wolves are even present in the area. Maybe the focus should be on getting cows off of public lands.

Hunting regulations are simple to change...just base them on what is well-known about wolf biology. Stop the ad hoc, non-selective killing. If that’s too complicated, restrict hunters to the same seasons as trappers. Basic decency demands that at least heavily pregnant or nursing females should be protected the same as any other animal we value.

Bounties should be banned immediately – they cause nothing but harm and have even attracted the condemnation of the International Union for the Conservation of Nature (IUCN). These best scientists from almost every country in the world, including Canada, have developed a Wolf Manifesto, based on best management principles, that includes strongly condemning bounties. As expected Alberta completely ignored the IUCN....much easier to maintain the status quo.

Snaring is a nasty business. Somehow Alberta has managed to avoid the international humane regulations and the Fur Institute of Canada and simply says “snares are exempt.” At the same time the government states in the regulations: “Fur bearing animals must be trapped using methods that are proven to avoid unnecessary pain and suffering”. What hypocrisy! The humane standard for a wolf to die in a lethal device is irreversible unconsciousness within 300 seconds. That standard is nearly impossible to meet with snares even under laboratory conditions. Many wolves die of exhaustion, exposure, and starvation – they can suffer horribly for days.

This article only touches on some of the many problems wolves face. There are solutions but there must be political will to manage wolves ethically and based on their biology. We don’t have management now; we have an undeclared war on wolves. 🐾

*Dwight Rodtka was a professional and licensing officer for 39 years with the problem wildlife section of Alberta Agriculture. He lives on a farm near Rocky Mountain House.*



# Bee Aware –

## The Use of Neonicotinoid Pesticides

By **Brittany Verbeek**, *AWA Conservation Specialist*



**F**inally...as mammals crawl out of their winter hibernation dens, birds make their way north to their breeding grounds, small buds on trees begin to appear and all those wonderful insects begin to hatch – the feeling of spring is in the air. But even as the warm breezes start blowing in, I would like to draw your attention to a somewhat chilling subject. Neonicotinoids, a relatively new chemical threat, have been embraced by more and more agricultural producers. Some refer to this new group of pesticides as the “new DDT.” Neonicotinoids were introduced in the 1990s and have rapidly become the most widely used pesticide in the world. Plants readily absorb them via their seeds, roots or leaves and transport them throughout the tissues of the plant. They are most commonly applied as a seed dressing before planting occurs, so plants treated with neonicotinoids enjoy complete protection from all types of insects.

Regardless of many serious warnings from scientists, Health Canada’s Pest Management Regulatory Agency (PMRA) has consistently allowed the registration of neonicotinoids for use on a variety of crops in Canada including corn, potatoes, canola, lettuce, and in seeds for home gardening plants. One such warning came from the US Environmental Protection Agency (EPA). The EPA concluded that thiamethoxam, a widely used neonicotinoid, was likely to have “direct adverse effects on freshwater invertebrates, birds and mammals.” Despite this strong statement about thiamethoxam’s likely harm this pesticide’s extensive use continues in North America.

Despite their effectiveness as pest controls, pesticide fact sheets show that imidacloprid,

clothianidin and fipronil – three other common neonicotinoids – are as toxic to non-target invertebrates as they are to their intended targets. Many of the insects that are collateral damage in the war on agricultural pests provide ecological services instrumental to crop health and longevity. Scientific studies have demonstrated that, because neonicotinoids are present throughout the plant, their toxins are passed to the pollen and nectar. This creates deadly problems for pollinators. Bees, both native and introduced species, have suffered a tremendous hit from neonicotinoids.

Bees come into contact with these pesticides in several ways, the most obvious one being directly through pollen and nectar. But small portions of the active ingredient in a neonicotinoid seed dressing also aren’t absorbed by the soil or crop and are lost in dust during sowing. This airborne dust is toxic enough to kill nearby flying pollinators; a good indication of the high level of toxicity found in only trace amounts of neonicotinoids. The Xerces Society for Invertebrate Conservation reported that “at least four wild species, formerly common in North America, have ex-



*A bee paying a welcome visit to subalpine fleabane (*Erigeron peregrinus*). PHOTO: © J. HILDEBRAND*

perienced catastrophic declines over the past decade – two of them may be on the brink of extinction.”

Evidence also points to a strong correlation between neonicotinoid pesticides and the colony collapse disorder (CCD), where European honey bees are abandoning their hives and dying off in large numbers. Just last year, in response to rapidly dwindling global honey bee populations, environmental and food safety groups sued the EPA for approving neonicotinoids despite damning evidence of their effects. To add yet another twist, disorientation of bees that causes delay in foraging and hive abandonment is very similar to the abnormal neurological behaviour in bats affected by White Nose Syndrome (WNS); this syndrome has caused dramatic declines in bat populations. The potential connection between CCD and WNS warrants further research and may provide a compelling example of the possible pervasive and costly repercussions of neonicotinoids.

Many neonicotinoid suppliers have tried to marginalize scientific warnings by suggesting there could be multiple factors for this bee genocide – blaming disease rather than looking at the link to neonicotinoids. However, a recently published scientific study found a causal link between neonicotinoid exposure and the depression of a bee’s immune system. This thwarts the pesticide industry’s argument that diseases and neonicotinoids are mutually exclusive threats to bees.

Neonicotinoids are agonists at the insect nicotinic acetylcholine receptor (NAR). This causes receptor blockage, paralysis, and death. Fundamental differences between the NARs of insects and other animals give selectivity for the pesticide, which is why neonicotinoids were thought to be a selective, effective pest controls that would only target insect pests. Although these pesticides have been praised for having a low affinity for vertebrate relative to insect NARs, studies show that neonicotinoids also cause chronic toxicities in vertebrates. Insects are far from the only animals these pesticides negatively impact; other members of our kingdom are directly or indirectly harmed from coming into contact with neonicotinoids.

Most bird species at risk are insectivorous, feeding their young and themselves with insects potentially covered in pesticides. Others at risk would diet mainly on seeds, which can easily be neonicotinoid-treated seeds planted shallowly in the ground or spilled by farm machines. If birds do not die immediately they may suffer less obvious sub-lethal consequences including partial paralysis, decreased reproduction rates, and behavioural changes. Because these debilitations are not fatal or easily detected, they slip through the monitoring cracks and lead us to underestimate the risk posed by neonicotinoids.

A recent study showed a connection between rat respiration and behavioural symptoms and neonicotinoid insecticide exposure. Another study demonstrated that gestational exposure in rats to a single, non-lethal dose of imidacloprid produced neurobehavioral problems and pathological alterations in their offspring. This raises the possibility that neonicotinoids could have effects on mammals, including our own health.

And, of course, what lands on land is bound to end up in our waterways. Major risk concerns about these pesticides regarding their persistence and mobility, features likely to cause surface and ground water contamination, have been ignored. Most neonicotinoids are stable in water, not easily biodegradable, and can accumulate in soil and sediments where they may persist for months, even years. Water contamination concerns led the State of New York to refuse to register clothianidin and to severely restrict the use of imidacloprid and thiamethoxam. In Alberta, we do not even know the extent of the harm done on aquatic organisms by neonicotinoids, but there have been studies suggesting that we should take note. Are we going to continue to allow water contamination from these pesticides in Canada? Considering the amount of land under the plough in Alberta and the regularity of flood events we should be extra concerned about neonicotinoid runoff.

The widespread adoption of neonicotinoids as seed dressings has led to a move away from integrated pest management (IPM). IPM is a planning approach to pest manage-

ment that minimizes the use of chemical pesticides by monitoring pest populations, making maximum use of biological and cultural controls, applying chemical pesticides only when needed, and avoiding broad-spectrum, persistent compounds. Abandoning IPM is a significant step backwards from the goal of making agriculture more sustainable. Here profit and convenience seem to once again overrule the overwhelming evidence of serious side effects to all ecosystem players.

There is some good news. At the end of last year, the European Commission restricted the use of three commonly used neonicotinoids for a two-year period. The US EPA is currently conducting a regulatory review of this class of insecticides. In Canada the PMRA acknowledged last year in a ‘Notice of Intent’ that the majority of examined pollinator mortalities were the result of exposure to neonicotinoids. This branch of Health Canada has admitted that current agricultural practices related to the use of neonicotinoid seed treatments are unsustainable. There has been a North American wide call from a range of organizations for a ban on neonicotinoid seed treatments and a suspension of all neonicotinoid applications pending an independent review of the products’ effects on aquatic and terrestrial invertebrates, birds, and other wildlife.

These pesticides are being called the “new DDT” because, like DDT, neonicotinoids were registered for use without acknowledging the many red flags raised by scientists. Why are we repeating the past instead of learning from it? Joni Mitchell’s plea sadly remains applicable “Give me spots on my apples; just leave me the birds and the bees.”

## What can you do?

On March 4, Gus Yaki, a life-long naturalist, captivated an audience at the AWA building with his talk on neonicotinoids and biodiversity loss. To inspire action, he suggested several things individuals could do in their own yards to take a stand against neonicotinoids and help out our native wildlife. So as we head into spring



and your dusting off those gardening gloves, keep the following suggestions in mind:

- A lawn is a farce; instead plant small native trees, shrubs, grasses and perennial flowering plants. This will attract native pollinators as well as birds and other small wildlife to your yards.
- Only buy seeds and plants that are guaranteed to be neonicotinoid free. This is no easy task considering there are no neonicotinoid labelling regulations currently in place. Talk to nursery employees and don't buy the plants or seeds if they are unsure. Your best bet is to source seeds and plants from small local suppliers of native plant seeds.
- Increase the awareness of this issue to friends, family, coworkers, etc.
- Write to your MLA, provincial and federal governments, and PMRA to voice your concerns. 🐝



*Of course, bees are not the only insect pollinators. Note the flecks of pollen on the bee and the other, much tinier insect on the flower. PHOTO: Benson Kua, licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.*

#### 2014 Climb and Run for Wilderness Mural Painting Competition



# Birds and Tar Sands Tailings Ponds:

## Ever Safe to Land?

By Carolyn Campbell, AWA Conservation Specialist



Now that spring bird migration is well underway, hundreds of thousands of birds are again flying over oil sands mine tailings ponds in northeast Alberta. These industrial water bodies are located along the lower Athabasca River, where several major North American migratory bird flyways converge enroute to the Peace-Athabasca Delta, one of the world's largest freshwater deltas. The "ponds" covered 182 square kilometres of surface area as of 2011 and have been growing since then (no updated measures of their sprawl across the boreal are publicly available). According to 2012 data from the Oil Sands Regional Bird Monitoring Program, a significant proportion, some 40 percent of spring and autumn migrating birds observed during daytime in the vicinity of tailings ponds are landing on the ponds.

This 2012 monitoring program report, released in May 2013, is the latest available. Overall 70,000 birds were observed during the spring and fall 2012 monitoring sessions and 30,000 of them landed on mining process-affected [PA] tailings pond water. Seventy percent of the birds that landed on these polluted waters (about 20,000) were wading shorebirds or diving or dabbling (shallow feeding) waterfowl. These species are considered to be most vulnerable to tailings water toxicity. Observations were conducted once a day, for 30 minutes per large pond, preferably within six hours of sunrise, at stations that assessed about 10 percent of the total tailings pond area.

In contrast to the large number of birds observed landing on the PA water, the monitoring program detected very few bird mor-

talities during surveys. CNRL, Shell, Suncor, and Syncrude observers spent almost 4,000 hours in the same spring and fall period searching the perimeter and surface of ponds in twice-weekly afternoon mortality searches. They only found 88 dead birds. Operators reported another 51 dead birds in the incidental reports they must submit when dead or 'live oiled' wild animals are found on site.

The Oil Sands Regional Bird Monitoring Program is funded by the fines paid by Syncrude after it was found guilty of breaking federal and provincial environmental laws in the 2008 deaths of 1,600 ducks. These birds landed on Syncrude's Aurora mine tailings pond. AWA reviewed the 2011 Oil Sands Regional Bird Monitoring Program report from the program's first year (see the April 2013 *Wild Lands Advocate*). At that time, we concluded that more credible monitoring was needed because of wide discrepancies between data collected by University of Alberta (U of A) observers at local freshwater bodies and the industry's observers at their tailings pond sites, where U of A observers were not permitted.

There is still high variability in the 2012 detection rates between observers. There was an effort to reduce variation by improving observer qualifications, and by having U of A observers accompany most companies' observers several times to tailings ponds and then discussing their respective observations. More protocols to standardize training and equipment used by observers were put in place for 2013 monitoring. This is positive. But it would be even better if independent and highly qualified observers were at

all operators' sites.

Knowing that tens of thousands of birds come in contact with "process-affected" water is a convincing addition to the body of evidence showing that the array of visual and auditory bird deterrents used by companies do not effectively prevent birds from landing on tailings ponds. The report's authors are rightly concerned about the "known detrimental effects of chronic noise pollution" from the very loud warning devices used by several operators that "impose noise pollution that exceeds 80dB deterrent standard for several km beyond pond perimeters." The report contains several sensible recommendations such as reducing the presence of bird attractants in tailings ponds – islands, floating vegetation, and sloping 'beach' shores – and investigating how artificial lighting can be better managed to deter birds from landing on PA ponds. The authors also recommend greater efforts to contain highly lethal floating bitumen into smaller areas with intensified deterrents. In light of the ineffectiveness of visual and acoustic deterrents, it would make more sense to recommend prompt and complete removal of floating bitumen from ponds.

Because the observations indicate that birds land on local freshwater ponds roughly ten times more often than on PA ponds, the authors suggest increasing the attractiveness of the freshwater ponds by using aerators to extend the open water season of the ponds or by adding decoys. We think the emphasis should be on much stronger regulations that would see the long-overdue removal of legacy tailings from the landscape. As well, the outstanding McClelland Lake wetland com-





*Given past research on harmful impacts of even a light oil sheen on water birds, it's premature to conclude that brief landings on most areas of bitumen mine tailings ponds are not harmful to birds. Much more emphasis should be placed on removing these giant hydrocarbon-laced wastewater bodies from one of North America's most important migratory flyways. They covered 182 square kilometres as of 2011. PHOTO: © C. WEARMOUTH*

plex, threatened by Suncor's Fort Hills mining project, and other natural water bodies and wetland complexes remaining in and near the mineable oil sands region, should be left intact.

A major flaw of the report may be how the authors have interpreted the low numbers of bird mortalities reported. "[A]ssuming mortality searches were comprehensive, fewer than 1% of the live birds we detected died as a result of that contact. The resulting inference, that brief landings on PA water are not harmful to birds, is consistent with toxicological measures following repeated exposure of captive ducks to PA water." As a result of this inference, mortality searches were reduced in 2013 to certain transects on ponds, to be visited every two weeks in the afternoon.

AWA believes it's premature to suggest that contact with tailings ponds or any PA water harms very few birds. The report's authors state that because data adjustments

and analyses continued until shortly before the final draft was due, "it has left the authors without time to offer much synthesis of these results with the available literature." This is a significant shortcoming given previous research on the effects of various contaminants on birds. For example, a 2010 Canadian Wildlife Service study found that even a barely visible oil sheen greatly altered the feather structure of marine birds. US Fish and Wildlife scientist Pedro Ramirez Jr. has widely published on the harmful effects to birds of even a light oil sheen on open oil field wastewater pits.

AWA corresponded with the report's lead author, University of Alberta biologist Dr. Colleen St. Clair. Dr. St. Clair is well aware of scientific literature citing many potential adverse effects of oil sands PA water based on the toxicity of its individual components. In her view, some PA water ponds have lower concentrations of these harmful components, which makes them much less dan-

gerous to birds than the areas that contain bitumen and fresh tailings. In October 2010 a storm forced many migrating birds to land on mine leases and tailings ponds. Hundreds died. Dr. St. Clair studied these deaths and in November 2011 she reported that "several experienced toxicologists have told me that the process-affected water on the surface of tailings pond water has negligible effects on birds that land for short periods, provided that the effluent was deposited at least 24 hours previously and that the birds do not come in contact with bitumen and other hydrocarbons. The mixing with air that occurs near the pond surface oxidizes the PAHs (polycyclic aromatic hydrocarbons) that are otherwise highly toxic to birds (Hwang and Cutright 2004, Albers 2006)." With operators' varying practices for bitumen booming and skimming on tailings ponds, these seem to be large provisos to us.

Dr. St. Clair notes that a relevant literature review is included in a recently-sub-

mitted M. Sc. Thesis by her student, who undertook the 'captive duck and PA water' research referred to in the 2012 monitoring report. The thesis, which will be available in late April, will outline how the PA water in that experiment was obtained, how it compares to representative samples of PA water from tailings pond observation sites, and how that research accounted for differences between captive, lab-reared ducks and wild birds migrating under far different food, physical and environmental conditions. It would have been better if this pertinent information had accompanied the suggestion that PA water is not harmful to birds.

Another concern is that on-site mortality searches may have occurred too late after stormy weather. Ducks and shorebirds migrate more often at night than daytime, often staying at high elevations except when severe weather events force them to land. Mortality searches should be conducted "as soon as possible following storms (typically within 2 days)". But in this time lag, landings and on-site mortalities could be missed as oiled and waterlogged birds can quickly sink below the water's surface and remain undetected. From Dr. St. Clair's 2011 study of the 2010 storm mortalities, she hypothesized that storm-related mass mortality events only occur when a rare combination of factors is present, including strong unfavorable winds, poor visibility, industrial lighting attractants, and presence of bitumen mats. In the coming years, she will further assess this hypothesis.

The monitoring program for the tailings ponds has a striking, substantial knowledge gap. It doesn't assess polluted water-related injuries, disorders, or deaths associated with birds that fly away after landing on the ponds. Dr. St. Clair agrees this issue needs to be assessed.

AWA asked Alberta wildlife biologist Sarah Hechtenthal, M.Sc., P.Biol, about the effects of hydrocarbons and other contaminants on birds. In 2007, Sarah specialized in oiled bird rehabilitation while working in California with the International Bird Rescue and Research Center. She also spent a month in the summer of 2010 working as a rehabil-

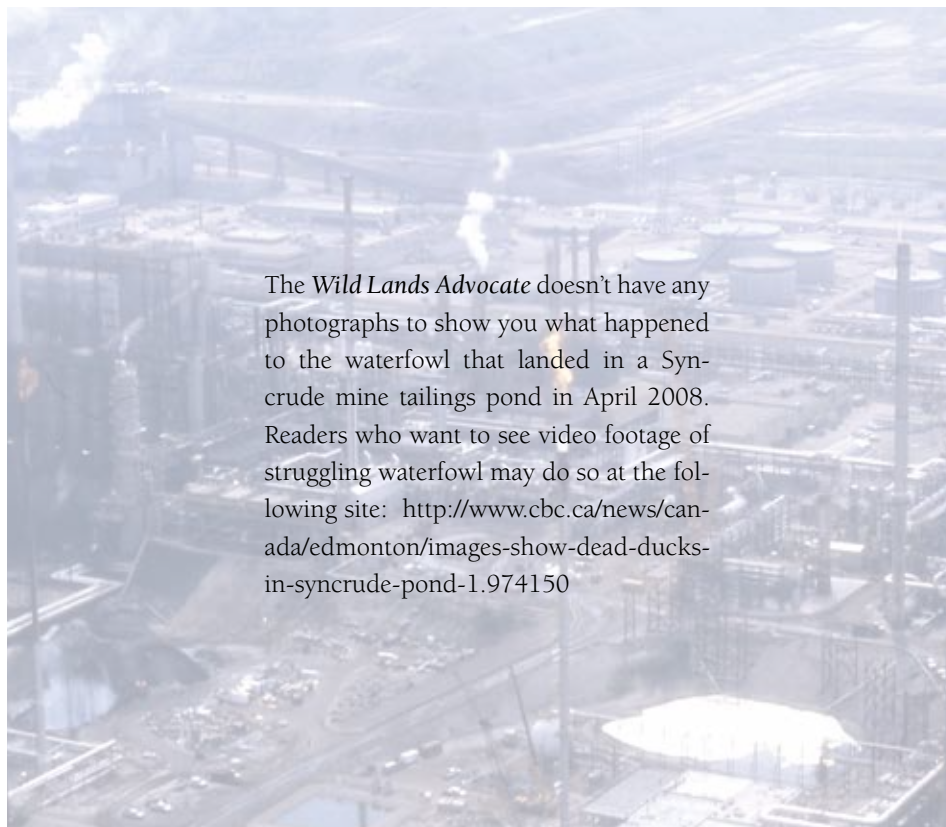
itation manager in Louisiana at the rescue centre for oiled birds caught in the BP Deepwater Horizon spill in the Gulf of Mexico.

In Sarah's experience, even small spots of oil can interfere with a waterbird's intricate feather structure that insulates and waterproofs them. Alberta's diving birds, such as grebes and scaups, are especially vulnerable to impacts from contaminant-caused changes to feather structure and loss of insulation because the increased water pressure from diving forces water to penetrate their feathers, allowing it to reach their skin. Once cold water bypasses the waterproof insulating layer, birds get water logged and/or lose ability to thermoregulate. Sarah cautions: "Just because the bird is able to fly away, does not mean it was not impacted in some way. But the impact may not be immediately detectable to an observer. It is well documented that even a tiny spot of oil may eventually lead to mortality due to hypothermia – especially in northern climates. But this may take hours, days or weeks to occur." She also notes that there can be behavioural changes, such as excessive and persistent preening, from even a small amount of oil or other contaminants that result in poor body con-

dition, loss of reproductive output, or mortality. Even landing in hyper-saline water, which leaves salt crystals on feathers that birds must preen off, can cause salt toxicity from ingestion leading to brain impairment or death. Sarah believes: "At a minimum, we should explore this issue further prior to making unsubstantiated assumptions."

Sarah's other recommendations for future tailings pond-bird contact monitoring include ensuring fully independent observers are present during the annual migratory seasons at all mine sites, providing a third-party review of results, and reporting that specifies how industry operators are integrating existing research, recommendations, and knowledge into their adaptive management plans.

In AWA's view, it makes sense to significantly strengthen efforts to remove floating bitumen and bird attractants on or around ponds and to reduce the use of harmful, ineffective deterrents. But the 2012 monitoring observations offer far from sufficient proof to conclude that birds are safe in most areas of oil sands tailings ponds. Much more emphasis should be on removing these giant industrial blights from one of North America's most important migratory flyways. ▲



The *Wild Lands Advocate* doesn't have any photographs to show you what happened to the waterfowl that landed in a Syncrude mine tailings pond in April 2008. Readers who want to see video footage of struggling waterfowl may do so at the following site: <http://www.cbc.ca/news/canada/edmonton/images-show-dead-ducks-in-syncrude-pond-1.974150>



# Sage-grouse Protectors

By Nigel Douglas



If Alberta's sage-grouse are ever going to receive a stay of execution, then the recovery process is not just something that will be led by scientists and environmentalists. It is going to require buy-in and support from a broad spectrum of interests including governments, industry, and ranchers. With the new Sage-Grouse Partnership (SGP) there is some optimism that maybe these diverse and sometimes competing groups do have it in them to work together to find common ground and make the changes to land-use practices that the species so desperately need.

If SGP members David and Ralph Heydlauff are anything to go by, then that optimism is well founded. The Heydlauffs ranch 13,212 acres of land in the far southeastern corner of Alberta and their property is one of the few places where sage-grouse are still hanging on.

## The early years

There have been Heydlauffs living in this part of the province since before Alberta itself existed. "The ranch buildings are 5.5 miles from Saskatchewan and 5.5 miles from Montana," David informs me. Their grandfather Victor first came in 1903, two years before Canada created the province of Alberta. "The first grazing lease (on the land) was dated January 1, 1901 and we're still running the same lease today," he says. "The grazing lease is 11,400 acres; the total place is 13,212 acres."

"Our grandfather was the first to ranch the land," says Ralph. The conditions he had to face in the early part of the twentieth century are difficult for us to comprehend more than a century later. "In his first winter he built a log cabin," Ralph explains. "He put up a tent inside the log cabin, which wasn't finished yet. Snow between the tent and the cabin

kept him warm through the winter."

A reliable water supply was critical for a new ranching operation, both for ranchers and their cattle. "He had tried homesteading further west," says David. "Here he found a well he could get decent water from." That well lasted till the 1950s when David speculates "there was seismic activity in the area and it must have breached the aquifers because the whole thing went alkaline. "After that we didn't have good water." For a while they hauled water from wherever they could get it. Eventually, in 1965 they drilled a water well into the Milk River sandstone. "It went 1,170 feet down to the cap rock, 1,505 feet to the bottom of the well," David explains. "The water is salty. The cattle can drink it, but we distill it because it tastes bad." Ralph agrees: "The cattle like it but we don't."

In this dry corner of Alberta, the entire landscape testifies to the lack of moisture, from



*Prairie farmers have always had to deal with extreme conditions, including violent prairie storms and even plagues of grasshoppers – the cloud of "dots" on the photo are grasshoppers. PHOTO: Heydlauff Family*



*The first home of William and Inga Heydlauff (Ralph and David's parents) PHOTO: Heydlauff Family*

the drought-resistant sagebrush plants to the sandy soil specialists such as burrowing owls. Because the land is very dry the cattle stocking density is low. "Fully stocked, we have 180 animals," says David. "It takes around 83 acres for a cow here." To put that in perspective, such a stocking density would be one tenth of what might be found in the wetter foothills of Alberta. This low grazing pressure is, as David points out, "good for the habitat but not too good for a guy's bottom line."

This sensitive management – living well within the natural carrying capacity of the land – is also the reason that the Heydlauff's land still supports such healthy populations of other wildlife. "Mountain plover, burrowing owl, sage thrasher, Sprague's pipit, ferruginous hawk..." the Heydlauffs list off some of the many species-at-risk that call their ranch home. And their property is also one of the few remaining places in Alberta where endangered sage-grouse can be found. "We used to have two leks, both of them pretty big," says Ralph. "We are down to one now. Last spring there were two roosters on the lek."

The continued presence of sage-grouse is a direct result of the light grazing regime maintained by the Heydlauffs. "Through the years we've found out that what's good for cattle habitat is good for sage-grouse," says Ralph. "There is a movement to graze really heavy but that depends on the moisture conditions and here it doesn't work." At the same time it is important to maintain a certain level of grazing. "If you undergraze, the habitat goes

to pieces too," Ralph emphasizes. "It's a delicate balance. If you throw down a one metre square, you'll find ten, twenty different kinds of plant. But if there is no grazing, after twenty years, you'll find two or three species. Grass species start to take over and you lose the forbs."

As well as the Heydlauff's respectful stewardship, part of the reason for the continued existence of sage-grouse here when they have been lost from so much of southeastern Alberta is the lack of oil and gas activity. "Fish and Wildlife won't let them have access," says David. Access has been prevented for the past 15 to 20 years. "They let seismic lines come up to the fence and then cut them off."

This lack of industrial activity is somewhat a mixed blessing to landowners and ranchers such as the Heydlauffs. When the government precludes industrial activity on a piece of land, then the landowner is cut off from the potential income that comes with that activity. Ironically, ranchers such as Ralph and David who for decades have managed their land in a sensitive fashion are expected to take a substantial financial hit to keep sage-grouse on their land. Landowners who care less and have already given in to the industrial machine are richly rewarded. "Guys in the city and environmentalists say we should do this," points out Ralph, "but so far it's all on our own nickel." David agrees: "Environmentalists push for restrictions but there is no money for it." Clearly, this lack of financial support for managing the land for wildlife is a fundamental flaw to the Heydlauffs.

"Whatever you do costs you and you don't gain any," says David.

Through its hosting of the Sage-Grouse Partnership (David Heydlauff is co-chair with AWA vice president Cliff Wallis) AWA is also working to try to ensure that wildlife-friendly landowners receive the financial support they deserve. However well it might be managed, one ranch such as the Heydlauffs' can only go so far in sustaining sage-grouse populations in the long term. Changes will be needed on a much bigger, landscape level if the species is going to be saved and there will undoubtedly be a cost. "The Government of Canada needs to put appropriate resourcing behind (sage-grouse recovery) to ensure that existing commitments can be honoured through compensation or payments for ecological goods and services," said Wallis in a recent news release. "The energy companies and ranchers are assisting with recovery efforts and we want to make sure they are not penalized for that."

In other jurisdictions, such as the European Union, there are grants available for farmers to operate in a wildlife-friendly fashion but the Heydlauffs are suspicious of being beholden to grants: "You have to be careful; all of a sudden you are not running your own operation," says David. Even conservation easements, which have allowed many ranchers in southern Alberta to protect the natural values of their land into the future, are not always the answer; the restrictions which come with those easements can seem onerous to some landowners. "Easements provide money now but down the road your property is worth less," David stresses.

The lasting impression left by the Heydlauffs is of two men who are trying their hardest to do what they think is best – to manage their land in a fashion which is beneficial for cattle and for wildlife. The future of Alberta's sage-grouse, and many other grassland species-at-risk, will depend upon the knowledge and the willingness of people like the Heydlauffs. But shouldn't this behaviour be encouraged financially? It's time for governments and industry to step up to the plate and finance responsible land-use. 🐾

**BACKGROUND PHOTO:** Heydlauff Family



# Former Senior Parks Canada Staff Urge Ottawa to Reject the Maligne Tours Resort Proposal

**A**s the *Wild Lands Advocate* goes to press we still haven't heard if the proponents of a hotel resort on Maligne Lake in Jasper National Park intend to continue to pursue this ill-conceived proposal.

AWA hopes the categorical rejection of this scheme made by three former senior national park officials will be decisive. Their rejection, expressed in an open letter to Canada's Minister of the Environment, is reprinted in its entirety below.



PHOTO: Courtesy of Jasper Environmental Association

## Open Letter to Canada's Minister of the Environment Regarding Maligne Tours proposal for overnight accommodation at Maligne Lake, Jasper National Park

April 9, 2014

Dear Minister:

As former senior national park staff, we are writing to strongly urge you to take a stand now that will safeguard Canada's national parks for years to come. Please reject the proposal by Maligne Tours for a hotel resort at Maligne Lake in Jasper National Park, part of the UNESCO Canadian Rocky Mountain Parks World Heritage Site.

Approving overnight accommodation at the Maligne Lake would contravene a Parks Canada policy designed specifically to limit development in the mountain national parks, and could open the floodgates to more commercial development, putting the ecological integrity of the mountain parks and quality of park visitor experiences at risk.

It is our view that the Canadian people, Jasper and other national park ecosystems and Parks Canada have nothing to gain and plenty to lose if this development is approved.

Currently only day use is allowed at Maligne Lake. Maligne Tours' proposed resort contravenes Parks Canada's 2007 policy that prohibits any new commercial accommodations outside park town sites and places clear negotiated limits on all existing "outlying commercial accommodations". This policy was developed after significant study by an expert panel and considerable public dialogue. It is a principled response to a widely-held view among a large majority of Canadians - as shown repeatedly in public opinion polling and management plan consultations - that nature protection and public enjoyment need to be protected against commercial development in our national parks. In our considered view, making an exception to this policy would undermine the entire policy foundation for controlling commercial development in our national parks. As such, it would be a betrayal of the public trust and a repudiation of what Canadians have consistently shown they expect of those entrusted with the care of their national treasures.

There is no doubt that other businesses and corporations would use the approval of this proposal as a precedent to try and secure

new developments and expansions elsewhere, and that Parks Canada would be compromised in its ability to argue that these proposed developments contravene policy. The Maligne Tours' proposal is a very real "thin edge of the wedge" that could jeopardize the natural values of our national parks that Canadians have entrusted the federal government to protect on their behalf.

Further, the Maligne resort proposal is inconsistent with your legislative requirement under the Canada National Parks Act and the Parks Canada Agency Act to prioritize ecological integrity in park management decisions, as well as your responsibilities under the Species at Risk Act. The Maligne Valley is home to a Threatened Southern Mountain caribou herd that has declined precipitously in the past 15 years from more than 60 to just 5 animals. This endangered herd requires less disturbance, not more, if there is to be any chance for its survival and recovery.

Were it to proceed, the proposed Maligne Lake hotel development would extend the time of day that visitors and hotel staff use the area and its access road from daytime to 24 hour use. More staff and accommodation would be needed at the lake to service the hotel, leading to more wildlife disturbance. Losing just one caribou on the road because of increased traffic at dawn or dusk, or during the night, could be the final "nail in the coffin" for this herd. The northern end of Maligne Lake is also important habitat for grizzly bears and harlequin ducks, both sensitive species which could be harmed by the expanded activity that would result from overnight accommodation at the lake.

At a broader scale, the incremental commercial development that would result from allowing this precedent-setting contravention of park policy would threaten the ecological integrity of all of our Rocky Mountain national parks by enabling more development in sensitive ecosystems critical for the survival and movement of wildlife.

Any development proposal that could add risk to the well-being of vulnerable species in national parks is inconsistent with the requirement to maintain or restore ecological integrity as a first priority in park management decisions.

The Maligne resort proposal is being considered by Parks Canada on claims that it could improve visitor experience. A survey of Maligne Lake visitors showed 99% were satisfied with their visit, which raises the question whether the proposed development would in fact address the 1% that were not fully satisfied, and if so, if it is worth the risks noted above. Fundamentally, Parks Canada surveys show that Canadians are attracted to national parks for their wildlife and pristine natural beauty and not for built developments, regardless of whether they are tasteful, green or rustic.

In our view, the resort development at Maligne Lake and the anticipated subsequent incremental development would corrupt the natural beauty of Maligne Lake and of our parks. The question is whether you want to be known as the Minister who stood up for, and protected our national parks for Canadians, now and in the future?

Jasper is part of the Canadian Rocky Mountain Parks World Heritage Site which Parks Canada is entrusted to protect on behalf of Canadians and the global community. As you know, World Heritage is a very special designation given by the United Nations to places on Earth that are of outstanding universal value to humanity and, as such, are to be protected by the responsible State Party for the global community to appreciate and enjoy, now and in the future. We have a global responsibility to ensure Jasper's natural values are not compromised.

As the local Jasper Fitzhugh newspaper noted in a recent editorial:

**Policies exist for a reason. They are there to shape what is and is not acceptable. They are there to guide governments through tough decisions. And they are there to ensure fairness and due process...**

**...Parks' policies are in place to limit the growth of our town and park to ensure the protection of our wild spaces and wildlife. If the agency is planning to hold true to its mandate of protection and maintenance of ecological integrity, exceptions to longstanding policies on limited development are not an option.**

We agree. National Parks are ultimately about natural heritage and future generations. We strongly urge you to stand up for the long term public interest and legacy by telling Maligne Tours that their operation is, and will always be, a day-use facility that serves the visiting public, not a private resort that excludes the public, contributes to the final loss of the Maligne caribou herd and fills a peaceful place with disturbance, noise and memory of broken promises.

We would be pleased to discuss this important matter with you, and look forward to your response.

Sincerely,

**Nikita Lopoukhine**, Former Director General, National Parks, Parks Canada  
Former Chair, World Commission on Protected Areas, IUCN  
**Stephen Woodley**, PhD Former Chief Ecosystem Scientist, Parks Canada  
**Kevin Van Tighem**, Former Superintendent, Banff National Park, Parks Canada



# Two-bits?:

## Woodland Caribou Are Worth More Than That

By Chad Belisle



It's no secret that our environment has taken a turn for the worse with more than 70 plant and animal species currently "at risk" in Alberta. By looking into the history of the woodland caribou, it becomes apparent that our society hasn't progressed in terms of responsible environmental management. Three things have occurred side by side since the early 1970s. First, the woodland caribou population has declined steadily and seriously. Second, only a select few have taken it upon themselves to advocate for the caribou and protect its future. Third, the government has repeatedly assured us that the decline will be fixed.

Over the past 45 years the Government of Alberta has created countless programs and policies to help address the factors causing the caribou population decline. For example, "*Woodland Caribou Provincial Restoration Plan*" and the "*Alberta's Woodland Caribou Conservation Strategy*", are two of the larger efforts implemented by our government. The province attempted to address high predation rates by initiating a wolf cull program; we've killed more than 800 wolves over the past decade. Government took that path despite studies showing that the root cause of the population decline is industrialization within caribou ranges. The government's programs and policies have touched on controlling and restricting further development in these areas, but have never actually fully eliminated development.

It's one thing to write a policy and another thing to enforce it. There has been a lack of consistent government commitment to actually enforcing any of the policy changes. Whenever there is corporate interest these policies are stepped on and promises are broken. A question posed in 2004 to the Minister of Sustainable Resource Development asked: "Will the Minister call a stop to new industrial development in caribou habitat until populations have been restored to historic levels?" The Minister replied that: "Only the Liberals would stop everything in a situation like this. We don't do that. That's why we are the government. That is why we have a strong economy, a good environment, and good wildlife management and we'll continue doing that." Inflated statements like this make it clear that the Alberta government has had little to no interest in fully committing to caribou conservation. It's so troubling and insulting to see government claim it has our environmental interests at heart when its actions make it obvious that industrialization takes precedence over environmental concern.

For caribou to have any chance of surviving on the Alberta landscape for the next 45 years we must revolutionize our way of thinking about how we manage the environment and who we trust to manage it for us. The provincial government has a key role to play in protecting the environment and should represent the public's voice. Election after election the same promises of

good environmental management are made, and yet the public is still voicing its concern. It's time for a new approach from our leaders. Many Canadians probably don't know that the picture on the quarter is not a moose, but is actually a caribou. The caribou design was issued first in 1937 and celebrated one of Canada's most commonly seen animals. Ironically, through industrialization, we have traded one of the most magnificent mammals in the country for pocket change. Soon all we will have when buying our coffee in the morning is a cruel reminder of how Alberta's need for a "strong" economy outweighed the survival of an entire species. 🐾

*Chad Belisle is a graduate from SAIT with a diploma in Environmental Technology. Now that he doesn't have to stress about grades he is free to enjoy his favourite pass times such as hiking, snowboarding, and messing around with computers.*



# Focus:

## Alberta's Species-at-Risk

By Nigel Douglas



### The Whooping Crane

**T**he whooping crane, one of North America's most spectacular birds, provides both a success story about the recovery of a critically endangered species and a salutary lesson about the enormous resources required to revive a population which has been allowed to fall to such desperately low levels. Never particularly common, whooping cranes came perilously close to extinction. In 1941, the entire world population was believed to be 21 birds (six of these were in a tiny relict population in Louisiana which was soon to become extinct). Today, with a wild population of nearly 400 birds, the future for the whooping crane is considerably more rosy. But the whooping crane will still require constant vigilance for the foreseeable future for its recovery to be sustainable in the long term.

Whooping cranes are huge, imposing birds, standing up to 1.5 metres tall, with a massive 2.5-metre wingspan. Adults have a pure, snowy white plumage with jet black wingtips. With their long black legs, a large, powerful beak and striking red crest, they are truly impressive birds. The whooping crane is one of only two crane species to occur in Canada (the other is the smaller and more numerous sandhill crane).

Canada is the focus of the world's remaining whooping cranes. The only "natural" population of whooping cranes nests in Wood Buffalo National Park, between northern Alberta and the Northwest Territories. This population migrates more than 4,500 kilometres to winter on the coast of the Gulf

of Mexico at the Aransas National Wildlife Refuge. Breeding birds were not discovered in Alberta until 1977; now, between one and nine pairs nest in Alberta, with the remainder nesting in the Northwest Territories. Additional flocks have been established in southeastern Idaho, and a non-migratory flock may be found in Florida. In Canada they nest in emergent vegetation in shallow water, mostly in poorly drained areas where muskeg meets boreal forest. Though fussy nesters, they are not particularly fussy eaters, feeding on fish, frogs, snakes, crabs, insects, and occasionally small rodents.

According to historical evidence, whooping cranes were never common, and their numbers probably never exceeded 1,500 individuals. Though small, the population is believed to have been wide-ranging, extending from the Arctic coast to Central Mexico, and from the Atlantic to Utah. Historically they are believed to have nested in large isolated marshes in prairie and aspen parkland in Alberta, reaching as far south as the Battle River. So with breeding today so concentrated in one particular region, one important question now is: do they nest in Wood Buffalo because it is the best breeding habitat, or do they nest there because it was their last remaining refuge after having been driven away from their preferred breeding habitat? It is interesting to speculate whether they could ever be encouraged to return to nest in their historic breeding areas in Alberta.

So why did the whooping crane population plummet to such a desperately low level? The Alberta government's 2001 report *Status of the whooping crane in Alber-*

*ta* suggests "(p)opulations began to decline dramatically in the latter 19th century because of over-hunting, habitat loss, and habitat degradation..." A naturally low population did not need much to push it to the brink of extinction.

Whooping cranes are particularly sensitive because they rely not only on their wetland breeding grounds in Canada, but also on their Texas wintering grounds, not to mention the migration corridor between them. Though their breeding grounds are protected in Wood Buffalo National Park and their wintering grounds are largely protected in Aransas National Wildlife Refuge, the 4,500-kilometre migration route in between is not. So conversion of wetlands for whatever reason (agricultural, industrial, urban) remains a serious threat.

The continuing vulnerability of the crane population was demonstrated by two events in the 1990s. In the winter of 1993-4, there was a widespread population crash of blue crabs, the principal winter food of whooping cranes in their wintering grounds. After this crash many pairs failed to nest the following spring. Then a severe storm during the fall migration in 1998 is thought to have killed many birds. It is likely that such a small population will always be susceptible to natural events such as these.

Although whooping cranes are not hunted today, the Alberta government's status report recognizes "accidental shooting due to misidentification and poaching are still of concern." There remains a risk that renewed calls to resume hunting of the closely-related sandhill crane in Alberta may lead to accidental kills of their rarer



cousins. In the fall of 2008, 34 whooping cranes disappeared on their southward migration, and we may wonder how many of these disappearing birds might have been unreported “accidental” kills.

Recovery efforts for whooping cranes have been extensive and expensive. The Calgary Zoo has played a major role in leading the captive breeding programs which have allowed young cranes to be reared and released in different locations. And recovery attempts in the U.S. have even included teaching young cranes to “imprint” upon microlight aircraft, which they will then follow on their first fall migration.

Ultimately though, the long-term recovery of any wildlife species will depend on protecting suitable habitat throughout its life stages. Though the website for Alberta’s Environment and Sustainable Resource Development stresses “wetland degradation and loss may continue to pose threats” to cranes, the government’s actions do little to reduce these threats. The abject failure of Alberta’s recently-announced Wetland Policy, including a pitiful reneging on previous commitments to “no net loss” of wetlands, will do nothing to protect whooping cranes or any other wildlife.

The Alberta government’s recognition that “conservation of migratory habitats and potential breeding habitats in Alberta (is) required” has also been met with a concerted lack of action. AWA has invested considerable time in calling for the protection of the McClelland Lake Wetland Complex near Fort McMurray, in part because it is a known migration staging area for whooping cranes. But these calls have been met with deaf ears and stubborn resistance.

Recovery of whooping cranes from the brink of extinction is, without doubt, an achievement to be celebrated. But it is important to recognize that the work is not yet finished and more effort will need to be made to protect crane habitat – for breeding, wintering and migrating – if this magnificent bird is to remain on the landscape forever.



Whooping Crane in flight in Texas. PHOTO: U.S. Department of Agriculture photo by John Noll.

### Quick Facts:

- Whooping crane, *Grus americana*
- Federal status: Endangered
- Provincial status: Endangered
- Size: up to 1.5 metres in height, 2.5 metre wingspan
- Average weight: 7.3 kg (males), 6.4 kg (females)
- Interesting fact: Whooping cranes are the tallest birds in Canada. They are “sexually monomorphic”; males and females look exactly the same (at least to the human eye).

### Short-horned Lizard

The short-horned lizard, Alberta’s only native lizard, is a tiny creature. Pick two loonies out of your pocket (if you are so fortunate), put them side-by-side and they are about as long as a male short-horned lizard; together your loonies weigh just a little more. The females are a bit heavier – 18 grams to the male’s 10 grams – but still

they’re not exactly heavyweights either.

Two-thirds of Alberta’s endangered species are grassland dwellers and the short-horned lizard is no exception. They are found in the Dry Mixedgrass Subregion in the extreme southeast of the province, the warmest, driest subregion in Alberta. Additional populations occur in southwestern Saskatchewan. Short-horned lizards occur in scattered populations on thinly-vegetated, south-facing slopes of rivers and badlands, mostly along the Milk River and South Saskatchewan River. Other scattered populations are found in nearby coulees in places such as Manyberries and Pakowki Lake.

Less than one percent of Alberta’s Dry Mixedgrass Subregion is protected – just 0.62 acres for every 100 acres of this ecosystem (or think of it as 62 cents of protection for every \$100 of habitat). One consequence of this sad habitat protection record is that the lizards are very vulnerable to habitat loss. That’s why they’ve been designated as endangered under the federal *Species at Risk Act*.



Short-horned Lizard PHOTO: © C. WALLIS

Short-horned lizards are one of thirteen North American species of horned lizard. They are rather peculiar looking beasts. Flat and round in shape, they look slightly squashed, with short legs, blunt muzzles, and short tails. The sharply-spiked scales on the head and around the side of the body give them the “short-horned” moniker. Their short legs result in a waddling toad-like walk which led to them being incorrectly called horned toads.

Rather than running away to escape predators, or hiding in burrows, these fascinating lizards rely on their mottled, sandy-coloured skin as camouflage and stay absolutely still, even if a predator gets very close to them. They also use this camouflage to hunt; they are “sit and wait” predators, waiting for a prey to pass by before leaping out and grabbing it. Prey mostly consists of ants, and to allow them to digest their apparently indigestible food, short-horned lizards have specialized teeth and a large stomach capacity.

Female lizards give birth to between six and thirteen live young every year.

Like so many grassland specialists, populations of short-horned lizards in Alberta have declined dramatically in recent years. According to the 2004 provincial *Status Report*, “(a) recent provincial survey verified populations persisting at only one third of documented historical locations.” Popula-

tions in Forty Mile Coulee and near Medicine Hat have died out recently and lizards have not been recorded on a number of previously-occupied sites. The website for the federal *Species at Risk Act* notes that “(the) number of subpopulations appear(s) to be decreasing, but subpopulations themselves seem stable.”

According to the provincial *2012-2013 Recovery Action Summary*, “(p)rimarily reasons for listing (as endangered) include a small, severely fragmented distribution and continued decline in the quality of its habitat. Isolation and rarity of occupied habitats, combined with the threat of ongoing oil and gas development, proliferation of roads, proposed mineral development, and an increased human presence, all present significant challenges to the recovery of this species.” Oil and gas activity is a major impact, particularly the access that comes with industrial activity. Vehicle tracks are used by lizards to sunbathe and as access routes, and their natural defence mechanism of freezing in the face of danger is of no help when the “predator” is a truck. As with grizzly bears, roads are both an attractant and a mortality sink.

Unfortunately, one opportunity to protect short-horned lizard habitat – the South Saskatchewan Regional Plan – seems to have missed the boat. No extra protection is being called for at all despite the best efforts of

AWA and other environmental groups. The federal *Short-horned Lizard Recovery Plan* is currently being drafted and is scheduled for release during the 2014 fiscal year so it will be important to see if it does any better. Alberta’s Recovery Summary notes that “(p)artial designation of critical habitat in the upcoming federal recovery strategy will offer additional protection” and “future plans include adding protective notations to all habitat identified on public land.” The designation of critical habitat for greater sage-grouse has shown us what a painfully long and drawn-out process this can be. But we must remain optimistic.

In the February 2014 Advocate, Carolyn Campbell described Richard Schneider’s predictions of how future climate change might produce corresponding changes in the make-up of Alberta’s natural regions (*Losing the Boreal: A View of How Climate Change Could Shift Alberta’s Ecosystems*, WLA February 2014). A warmer, drier climate could see a considerable expansion northwards of Alberta’s Grassland Natural Region. It is interesting to speculate how this might bring about a range expansion of grassland specialists such as the short-horned lizard. Improved management and protection of interconnected landscapes on a large scale could help ensure that in future wildlife can move into newly-created habitats as they try to adapt to a changing world. 🌱

### Quick Facts:

- Short-horned lizard, *Phrynosoma hernandesi*
- Federal status: Endangered
- Provincial status: Endangered
- Length: 70 mm (females), 50 mm (males)
- Weight: 18 grams (female), 10 grams (male)
- Surprising fact: Short-horned lizards use their bodies like solar panels. They can spread out their ribs and flatten their bodies to increase the surface area, and adjust the angle and tilt of their bodies to capture the maximum sunlight.



**In a departure from our normal practice this issue of the *Advocate* features information about two of our partner associations: the Oldman Watershed Council and the Cochrane Ecological Institute. Check out these pages in June for a recap of another very successful Climb and Run For Wilderness.**

# Oldman Headwaters Action Plan 2013-14:

## Maintaining and Protecting the Headwaters and Source Waters of the Oldman Watershed

By **Connie Simmons**

The Oldman headwaters are the source of 90 percent of the water in the Oldman River - a critical water tower for southern Alberta. The headwaters area lies along the Rocky Mountains and foothills of southwest Alberta and into Montana, from Chain Lakes and Willow Creek in the north to the southern headwaters tributaries of Glacier National Park, Montana. It is an iconic landscape – rich in beauty, wildlife, history, and opportunity. As such it attracts a myriad of uses, from communities and rural residential development to recreation, tourism, forestry, mining, agriculture, and grazing.

The Oldman Watershed Council (OWC) was created to work with communities, stakeholders, non-government organizations, First Nations, and governments to help address *Water for Life: Alberta's Strategy for Sustainability*. OWC worked during 2012 and 2013 on an important element of the *Oldman Integrated Watershed Management Plan*: the need to maintain and protect headwaters and source waters of the Oldman watershed. The *Headwaters Action Plan 2013-14* is the first iteration of a plan to begin addressing cumulative impacts on headwaters health – and to engage a wide spectrum of stakeholders and the public in stewardship actions to address these concerns with measurable actions on the ground.



The Oldman Headwaters area is defined as the land west of Highways 22 and 6, and is based on precipitation contribution to the flow of the Oldman River. CREDIT: OLDMAN WATERSHED COUNCIL

The Headwaters Action Plan process involved several important steps. They included: scientifically assessing headwaters health using the best available data and information; hearing what local communities had to say about headwaters health and stewardship needs; engaging key stakeholders who have the capacity and commitment to work for headwaters health over time; and reviewing other initiatives related to the headwaters to understand and consider their outcomes in the planning process.

Throughout this process the Partnership Advisory Network, a group of stakeholders and resource people from a broad spectrum of interests, agreed to work through a consensus process to develop the first iteration of the Headwaters Action Plan 2013-14. Starting with three important indicators of headwaters health, the PAN participants agreed on targets (desired outcomes), recommendations to decision-makers, and stewardship action needed to begin to address issues and concerns related to each indicator. The first three indicators of headwaters health addressed in this first iteration of the Headwaters Action Plan are:

1. **Presence and abundance of fish** - especially native populations (an indicator of biodiversity and watershed integrity)
2. **Density of linear features** (cumulative disturbance of roads, seismic lines, pipelines, power lines, railroads, cutlines, off-road vehicle trails across each sub-watershed in the headwaters area)
3. **Aquatic invasive species** (e.g.: zebra mussels (*Dreissena polymorpha*), quagga mussels (*Dreissena rostriformis bugensis*), and Eurasian watermilfoil (*Myriophyllum spicatum*)) are classified as major threats to aquatic ecosystem health that we need to keep out of Alberta.

## Highlights of the Headwaters Action Plan 2013-14

The Partnership Advisory Network participants agreed on the following **targets** for the three priority indicators of headwaters health:

- Maintain current native and naturalized fish populations within the headwaters area and explore opportunities to increase native fish populations in their current range.
- Restore native fish in selected streams\* in the headwaters. (\*selected streams = streams with sufficient or restored habitat value for native fish; streams where native fish have been extirpated from their historic range).
- In urban centres and major transportation corridors, no linear thresholds will be set; however, mitigation of the impact of linear features will be actively pursued.
- Maintain negligible and low linear features density where it currently exists; ensure no net increase of linear features in each sub-watershed.
- Decrease density of linear features where there is moderate to high pressure/risk rating in the headwaters.
- Keep aquatic invasive species (Zebra mussels, Quagga mussels and Eurasian watermilfoil) out of Alberta.

Actions were developed to address each target, as well as recommendations to decision-makers to assist reaching these targets. Some key actions of the plan are:

- Determine where native fish remain and why they are declining. Use citizen science to assist and share data and results with the public.
- Develop an education and outreach program about headwaters health, the importance of healthy trout streams, and provide opportunities for people to get involved through an "Adopt a Watershed" program
- Initiate a pilot restoration project in one watershed to improve water quality and fish habitat.
- Explore options for recreational user fees to fund enforcement, education, and stewardship projects.
- Improve landscape connectivity for fish and wildlife, especially across highway 3.
- Classify linear features according to

their intensity of use, overall impact on watershed health, and priority for reclamation.

- Reclaim linear features in high priority areas.
- Assist Alberta Environment and Sustainable Resource Development with education activities to prevent aquatic invasive species (AIS) from getting into Alberta.

Some key recommendations to decision-makers are:

- Adopt the linear features density targets as determined in the Headwaters Action Plan 2013-14 into the South Saskatchewan Regional Plan.
- Develop an Access Management Plan and a Recreation Management Plan for the headwaters.
- Increase enforcement of existing laws and policies related to recreational use in the headwaters.

## What's next?

A Headwaters Action Plan Steering Committee, comprised of representatives from key sectors who participated in the development of the plan, will work on an implementation strategy of prioritized actions in 2014-15. The committee will monitor, evaluate, and report on progress annually. The Headwaters Action Plan 2013-14 is the first iteration of a plan committed to implementing actions on the ground to begin the task of addressing key risks to headwaters health. Its ultimate success depends on the collaborative strength and commitment of key stakeholders, the public, and the OWC.

For more information contact the Oldman Watershed Council: [shannon@oldmanbasin.org](mailto:shannon@oldmanbasin.org) (403-382-4239) or [connie@oldmanbasin.org](mailto:connie@oldmanbasin.org) (403-627-4407) 📞



# The Cochrane Ecological Institute:

## Helping Injured and Orphaned Wildlife

By Clio Smeeton

As snow swirls over the Eastern Slopes the ground remains diamond hard. Although the first day of spring has passed, it is difficult to believe that the verdant season is actually on its way. It's hard to believe until after dark in the countryside when the sounds of the true harbingers of spring fill the air – hooting owls, calling coyotes, barking foxes, migrating geese.

Spring is the season of birth and rebirth but throughout urban, suburban, and otherwise developed areas, the collateral damage of development is orphaned or injured wildlife. This is especially the case in the fastest growing parts of Alberta. These helpless wild animals must be looked after but the *Alberta Wildlife Act* prohibits individuals from rescuing and releasing wildlife orphans. Our governments, federal and provincial, will not do it nor pay for others to do it. They have no mandate to do so, even though all our wildlife is Crown property belonging to the people of Alberta. This responsibility for looking after the people's property is devolved onto Alberta's seven Wildlife Rehabilitation Centres ([www.albertawildliferehab.org](http://www.albertawildliferehab.org)), all of which operate under permits issued by the federal and provincial governments. These centres receive no government funding for their work.

Since 1967, the Cochrane Ecological Institute (CEI), a registered charity, has accepted injured and orphaned wildlife for rearing, treatment, and release.

The CEI consists of a cluster of administrative, educational, and animal housing buildings and enclosures set in the centre of a spacious, 160 acre, patchwork mix of open country, woodland, and ponds. The

complex is completely encircled by an eight-foot high perimeter fence. Since accepting our first orphaned moose in the late 1960s, the CEI has reared and released thousands of Alberta's indigenous wildlife. They've included big horn sheep, elk, moose, white-tailed and mule deer, black bears, Canada lynx, bobcats, coyotes, red foxes, otters, badgers, and more. The wildlife housing at the CEI reflects this variety amongst our wildlife clients.

The secret of successful wildlife rehabilitation is to get the animals fit and healthy and, using species-specific release protocols, return them to suitable habitat where they are unlikely to come into conflict with humans again. At the CEI we keep rescued orphaned wildlife until they have reached the age when they would normally separate from their parents; we keep injured wildlife

until they are completely healed.

For birds, particularly birds of prey, they must be fit, healthy, and successful hunters. Large aviaries are necessary for raptors to practice flying in and a "Hack House" to fly from and return to if their hunting was unsuccessful. For waders and waterfowl release site knowledge of riparian habitat and wetlands is essential. For them, as for other bird species, obtaining food and avoiding predation is hard-wired in their psyche.

Many people have a philosophical objection, termed "habituation," to the rearing and release of orphan carnivores and bears. "Habituation" is a carpet bag word, freely bandied about, but meaning little other than "accustomed to" as in urban wildlife are accustomed to living in an urban setting. Habituation in carnivores and bears is a baseless gut-feeling. In fact, Alberta Environment



*Aerial view of the Cochrane Ecological Institute and the quarter-section of land it occupies.*

PHOTO: © Cochrane Ecological Institute

and Sustainable Resource Development although constantly raising the false spectre of “habituation” as result of wildlife rescue, rehabilitation, and release has also stated publicly they have no record of human-wildlife conflict resulting from wildlife rehabilitation and release.

Bears are an easy species to rear because survival life-skills, how to forage, fish, and hibernate, are hard-wired in them.

Research has shown that the CEI’s bear orphans will forage for the same insects and vegetation as what is being eaten by their age/class at the same time of year in the wild. As bear cubs spend a long time with their parent, from 18 months to 3 years, any captive management for bears must take this necessity into account. Bear cubs are extremely affectionate with each other but as each year passes they become more solitary and less dependent. Research, post-release monitoring, has proven that successful absorption into the wild population of captive-reared bears can be done successfully if bears are released at the appropriate age and in an appropriate site.

With carnivores, which have to hunt to survive, hunting is a difficult skill to teach. But as anyone who has ever known a domestic cat will know, hunting is a built-in desire. Practice can make this innate skill

perfect. To rear carnivores for release they must have ample space and suitable natural habitat. For example, lynx should have trees and be provided with mice and rabbits rather than ground beef or kibble.

Habituation means “accustomed to” and anywhere in southern Alberta ungulates that are habituated to cattle and traffic may be encountered. Often, unaware that it is illegal, families rescue deer fawns and raise them at home. If the rescuers have dogs too, fawn and dogs get on wonderfully together. Such positive relationships ultimately may prove fatal to the released yearling. Occasionally a homeowner who has a dog may raise an abandoned deer fawn. This fawn may lose its natural fear of dogs. If released into a developed suburban or acreage area, rather than into true wild habitat, it may be attacked and killed by other dogs. The CEI overwinters the fawns we rear as small herds within the fenced 100 acres of native habitat that comprises part of the CEI.

As we at the CEI never know when or what is going to be brought in to us, we have to build new facilities every year to house the animals brought to us. Enclosures built by public subscription and volunteer help have made the CEI unique in that we have three large (two to five acre) enclosures specifically built to house black bear cubs and juve-

niles, and a five-acre enclosure designed and built for bobcat and lynx. We couldn’t have done this without volunteers, donations, and successful grant applications.

Grant applications are not a reliable source of funding to cover the feed, veterinary care, and housing of a wide variety of different wildlife orphans. To ensure that the CEI always has the money to look after the orphans and the injured the CEI built a dog and cat boarding kennel ([www.happytailsre-treat.com](http://www.happytailsre-treat.com)). The proceeds from the kennel go to fund wildlife rehabilitation and release. The CEI applies for grant funding only for special projects and to build species-specific enclosures.

Nothing can match the heart-skipping experience brought by wildlife release: to see a hawk once again turning on the wind or a porcupine waddling toward the safety of woodland. It does the soul good to know that each of these once orphaned or injured animals is free again because of the combined efforts of volunteers, of donors, and of organizations like the CEI.

For more information on the Institute please visit our website [www.ceinst.org](http://www.ceinst.org) or contact us at [cei@nucleus.com](mailto:cei@nucleus.com) or (403) 932-5632.

*Clio Smeeton is the President of the Cochrane Ecological Institute*



*Some of the wildlife who’ve benefited from the care offered by the Cochrane Ecological Institute.*  
PHOTO: © Cochrane Ecological Institute



PHOTO: © S. DRESSLER



PHOTO: © C. MATHESON



# Updates

## Alberta's Bats on the 'Pest' List

Besides being magnificent creatures that are a crucial part of Alberta's biodiversity, bats provide a cost-free service to humans by consuming billions of insects considered pests to forestry, agricultural, and even recreational industries. This underappreciated mammal has been facing several serious threats in recent years. Not only do Alberta's nine species of bats lack meaningful protection federally or provincially, but they are considered pests and are included on Alberta's Non-Licence Animal List. Any species on this list may be hunted, trapped, killed or re-located without a licence or permit. In an April 10, 2014 letter to ESRD Minister Robin Campbell, AWA urged the government to remove bats immediately from this list.

Alberta's bats have adapted different techniques to survive throughout the winter. Migratory bat species, not unlike many Albertans, escape the cold winter months by flying south. Other bats brave the winters in Alberta by hibernating in caves or abandoned mines for up to seven or eight months of the year, relying on stored energy reserves alone. In North America over the last several years, these poor mammals seem to be doomed regardless of the path evolution selected for them.

Hibernating bats have been caught defenseless against an exotic fungus called *Geomyces destructans*. This Latin name is very suiting for a fungus that causes White-Nose Syndrome (WNS) – a disease that has killed millions of bats in northeastern U.S. and eastern Canada in less than a decade. *G. destructans* thrives in low temperatures, 5-14°C, and high levels of humidity (90%), conditions characteristic of many bat hibernacula in those regions. The fungus itself is not thought to be the cause of death. Instead, the fungus disrupts a bat's hibernation depleting its energy reserves. Infected bats starve to death during the winter. I can imagine it was a horrific sight for those

who first discovered thousands of bats dead on the ground at cave entrances with white noses and ears.

In February 2012, in response to the widespread outbreak, an emergency assessment subcommittee of COSEWIC (Committee on the Status of Endangered Wildlife in Canada) recommended an emergency order to list three hibernating bat species as *Endangered* in Canada – tri-colored bat, little brown myotis, and northern long-eared myotis. Two of these species are found in Alberta, little brown myotis and northern long-eared myotis. To date, they have not been legally designated as *Endangered* under the *Species at Risk Act* (SARA). The long-legged myotis is another hibernating bat found in Alberta that also potentially may be affected by WNS.

Although WNS has not yet been detected in Alberta, the epidemic is now found in the Lake Superior region and is spreading westwards through bat populations at 200-400 km/year. The fungus is thought to move slower east to west because of the more north to south movement patterns of bats. But there is a potential for WNS to affect over a million Alberta bats in just a few years. A pre-emptive cautionary approach to the management of bats in Alberta would be more appropriate than consigning them to a 'pest' list. Along the other evolutionary path, Alberta's migratory bats that roost in trees, including hoary bats, red bats, and silver-haired bats, are meeting their demise at the blades of spinning wind turbines. When the staggering numbers of turbine-related bat deaths were first documented, scientists were perplexed because of bats' excellent echo-locating skills to detect moving objects. Later studies revealed the cause of death was more likely from barotrauma, a sudden drop of air pressure causing internal haemorrhaging, and less frequently from direct contact with the blades. (See also Niki Wilson's column in the December 2013 issue of the *Wild Lands Advocate*.) Taller turbines seem to have en-

tered into bats' migratory air space, causing much higher mortality rates in bats than birds. Bats also have a more difficult time recovering from population declines because they are long-lived animals with low reproductive rates. The good news is that mitigation measures by wind power companies have been extremely successful at reducing the number of bat fatalities. Bats generally do not like to fly when it is windy so increasing wind speeds at which wind turbines begin producing electricity into the power grid has helped reduce mortality rates, especially in the fall at peak migration times.

Despite being listed as 'sensitive' in the current *General Status of Alberta Wild Species* report due to the combined effects of wind-turbine deaths, habitat loss and fragmentation, hoary bats and silver-haired bats are on the Non-Licence Animal List. Small-footed myotis was identified in 2010 as a 'species of special concern' by Alberta's Endangered Species Conservation Committee. It doesn't make any sense to identify a species as one of "special concern" and then relegate it to a "pest" list. The list of sensitive and special concern species and the Non-Licence Animal List should be mutually exclusive; animals that appear on one should definitely not be on the other.

In another paradox, ESRD has established an Alberta Bat Action Team (ABAT) devoted to the conservation of bats in Alberta, while continuing to tell the public that bats are pests that may be killed without a licence. ESRD's bat information page under the Fish and Wildlife sub-section of its website states that "bats are generally shy and gentle creatures by nature, but they can often be misunderstood by people who encounter them." Listing all nine of Alberta's bats on the Non-Licence Animal List is likely contributing greatly to this misconception.

Losing huge numbers of bats will not only have an ecological impact but a significant economic impact as well on both agriculture

and forestry. All nine of Alberta's bat species are insectivores. A single little brown myotis can consume 4 to 8 grams of insects, about half of its body weight, each night during the active season. The loss of over one million bats in the northeastern United States means that over 1,000 metric tons of insects are no longer being eaten each year by bats. A study published in *Science* in 2011 estimated the value of bats to the U.S. agricultural industry was anywhere from \$3.7 billion per year to \$53 billion per year. These estimates do not include the additional savings of reduced downstream costs of pesticide use, which would increase significantly without bats around. It is time to remove Alberta's wild bat species from the Non-Licence Animal List to ensure the proper conservation and protection of this ecologically and economically significant mammal.

- Brittany Verbeek

## International Day of Forests

Friday March 21, in case you missed it, was the United Nations International Day of Forests. According to the United Nations (U.N.) website, this global celebration of forests "provides a platform to raise awareness of the importance of all types of forests." Forests, the U.N. points out, cover one-third of the Earth's land mass, and around 1.6 billion people worldwide depend on forests for their livelihood; forests are also "the most biologically-diverse ecosystems on land, home to more than 80% of the terrestrial species of animals, plants and insects."

To celebrate the International Day of Forests, the World Resources Institute (WRI) profiled five of the world's "overlooked deforestation hotspots" and regular readers of WLA will not be unduly surprised that one of those hotspots is Alberta's tar sands. "Industrial developments associated with the Athabasca tar sands have cleared thousands of hectares of Canada's boreal forest since the year 2000," says the WRI, pointing to "extensive tree cover loss near Fort McMurray as new pipelines are laid and the ground is cleared for open-pit mining. Smaller 'check-board' patterns of tree cover loss and gain show industrial forestry on the margins of

larger mining operations."

Key to the WRI's work is a fascinating new website from Global Forest Watch - [www.globalforestwatch.org](http://www.globalforestwatch.org). Global Forest Watch (GFW) began in 1997 as an initiative to establish a global forest monitoring network around the world and its mission, to improve forest information using the latest technology, has continued ever since. The GFW website is highly interactive allowing you to scroll around a map of the world (in a similar fashion to Google Maps) and zoom in to look at forests anywhere on the planet. This very accessible website allows you to research forest loss (or gain). You can draw an area on the map – an area around Fort McMurray for example – and the site will instantly tell you the size of the area and the amount of forest gained or lost between 2000 and 2012 (my 51,600 ha area around Fort McMurray gained 580 ha over this time and lost 3,650 ha). An interactive timeline allows you to determine in which year the majority of the change took place and even to see how those changes occurred year-on-year.

For the more technologically-minded, you can also download the original detailed forest cover data either developed by WRI or GFW partner organizations or generated from other data in the public domain (e.g. data developed by governments, non-governmental organizations, and companies).

AWA has regularly relied on GFW data and maps in the past, as well as regular reports such as the 2013 study, *Environmental Incidents in Northeastern Alberta's Bitumen Sands Region, 1996-2012*. That study found that "environmental violations in Alberta's bitumen sands region are frequent, enforcement is rare, record keeping is dysfunctional, and there is a chronic failure to disclose important environmental incident information to the public." Sites like the GFW website are an invaluable tool for organizations such as ours; they provide ready access to accurate up-to-date data.

"(L)et us acknowledge the vital role of forests," said UN Secretary-General Ban Ki-moon on the 2014 International Day of Forests, "and pledge to work together to protect and sustainably manage these vital ecosys-

tems." Hopefully the work of the WRI and GFW will help us to do just that.

- Nigel Douglas

## Watered Down Mountain Caribou Recovery Strategy Needs Strengthening

'Southern mountain' woodland caribou populations have continued to decline despite being federally designated as *threatened* for fourteen years. These caribou include the Jasper, A La Pêche, Narraway and Redrock-Prairie Creek populations in west central Alberta; sadly, the Banff population disappeared under an avalanche of snow in 2009. However, a better future is possible: according to caribou scientists advising the federal government, recovery of all existing southern mountain caribou local populations is technically and biologically feasible.

In January 2014 the federal government finally released a very long overdue proposed recovery strategy which AWA commented on in mid-March. This recovery strategy must, under the *Species at Risk Act*, use the best available evidence to set goals and identify protected habitat for the recovery of caribou. The proposed strategy falls short and needs to be significantly strengthened if we hope to re-establish self-supporting caribou populations.

Caribou have co-existed with forest fires and wolves for thousands of years but human alterations of caribou habitat have tilted the balance dramatically in favour of predators. It's caused unsustainable predation. Human disturbance creates more food for deer, moose, and elk. This draws in wolves and, through roads and seismic lines, it also increases opportunities for wolves and other predators to encounter caribou. Furthermore, Alberta's mountain caribou populations used to migrate between the mountains in the summer and the foothills in winter. Many now avoid their historic foothills ranges because of intensive industrial activity there but the mountains do not provide optimal year-round habitat for them.

We noted that the strategy's population and range goals were strikingly unambitious. They should aim at recovered numbers, and previously occupied ranges, rather than strive



only to maintain diminished ranges and populations.

Identifying critical habitat is an essential and controversial component of recovery strategies. We were disappointed the proposed strategy only makes a highly risky unspecific reference to critical habitat somewhere within range boundaries. AWA stated that the Recovery Strategy needs to identify specific critical habitat as the entire identified caribou range and a 20 to 30 kilometre buffer zone around each range. Critical habitat needs to be this extensive because predator ranges are so large and human disturbance around and within caribou range areas stimulates heightened predation.

We also urged the Recovery Strategy to emphasize habitat ‘maintenance’ specifically and not just the obvious urgent need for habitat restoration. Long-term protected areas should be specified, especially in Alberta’s foothills region where not even two percent is now protected.

We hope that our comments, along with those of other Canadians, will produce a final federal Recovery Strategy strong enough to spark actions necessary to recover these emblems of Canadian wilderness.

- Carolyn Campbell

## Potential New Additions to the Species at Risk Act

A new list of potential additions to Canada’s list of species at risk includes some quite familiar Alberta species – American badger and bank swallow – as well as some less familiar species such as the Gibson’s big sand tiger beetle and the greenish-white grasshopper. (It also includes some intriguing species from outside Alberta’s borders, including the pugnose shiner, the threehorn wartyback and the unforgettably-named warty jumping slug).

An integral part of the federal *Species at Risk Act*, passed in 2002, is Schedule 1 – the list of *endangered*, *threatened*, and *special concern species*. Schedule 1 is now more than twice as long as it was originally in 2002; then it listed 233 species, now 518 species are listed as “at risk.” Every year the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommends new species to be added to (or removed from) that list and, after a period of public consultation, the federal Minister of the Environment accepts or rejects those recommendations. (For aquatic species, the Minister of Fisheries and Oceans is the responsible minister). Generally the minister supports COSEWIC’s recommendations, although in 2012, he controversially re-

fused to list three endangered species – Laura’s clubtail, coast manroot and four-leaved milkweed – because of their “peripheral” distribution in Canada (i.e., their ranges or populations are primarily in the United States).

Once species are added to Schedule 1, recovery strategies must be prepared for all *endangered* and *threatened* species. These strategies should include measures to mitigate the known threats to the species and its habitat and they also set the population and distribution objectives. To the extent possible, recovery strategies must also identify the critical habitat of the species. Recovery strategies must include the time frame for the development of action plans with the measures needed to address threats and achieve the recovery objectives.

Unfortunately, one of the biggest failures of the federal *Species at Risk Act* is that it only applies to federally-managed land such as National Parks; protection on provincial lands is mostly left up to the discretion of the provinces. In exceptional circumstances, the federal minister can make an emergency order if “the Minister is of the opinion that the laws of the province or territory do not effectively protect the species.” The sage-grouse is one example of how AWA and other environmental groups

### 2014 Climb and Run for Wilderness Mural Painting Competition



To See Before Being Seen (L. Fisher and A. Frost) Honourable Mention: Senior High School PHOTO: © K. MIHALCHEON



Mountain Grizzly (S. Tull and Dad), Winner: Family PHOTO: © K. MIHALCHEON



Ecce Homo: Behold the Man (C. McEachern Hunt), Winner: Senior High School PHOTO: © K. MIHALCHEON

used a complex legal process to oblige the federal minister to issue an emergency order. But such federal action is very rare.

COSEWIC recommended adding six species to Schedule 1 in 2014. If the Minister accepts the committee's recommendations three species will be added to the *threatened* list (bull trout, bank swallow and Gibson's big sand tiger beetle) and three species will be added to the *special concern* list (American badger, western tiger salamander and greenish-white grasshopper). Particularly striking is the bank swallow, which has seen a loss of 98 percent of its Canadian population over the last 40 years.

If nothing else, perusing the COSEWIC reports for these species offers a reminder of the main reason why species become endangered or threatened: habitat loss.

- American Badger: "The main threats facing American Badgers throughout their range are road-kill and decline in habitat... Habitat loss and degradation result from housing development... and cultivation (row-crop) agriculture. American Badgers are highly susceptible to road-kill."
- Western tiger salamander: "Salamander habitats are becoming increasingly fragmented by agricultural and oil and gas developments and associated infrastructures and roads."
- Gibson's big sand tiger beetle: "This very restricted subspecies, with most of its populations in Canada, requires open sand dune areas. This habitat is declining throughout the Prairies as a result of a dune stabilization trend. Loss of historical ecological processes such as bison-induced erosion, fire, and activities of native people, as well as possible accelerators such as increase in atmospheric CO<sub>2</sub>, nitrogen deposition, and invasive alien plant species, may also be important factors in open sand reduction."
- Greenish-white grasshopper: "A number of threats have been documented including conversion to tame pasture, pesticide use and overgrazing."

As part of the consultation process for the

listing of these species, AWA has written to the federal government to encourage their timely listing, and to remind the federal government of the overarching need to protect habitat. It is the most effective way to recover species.

- Nigel Douglas

## Swimming Upstream: Westslope Cutthroat Trout Recovery

A debilitating limbo – that's where westslope cutthroat trout have been for nearly eight years. It took seven years for the federal Department of Fisheries and Oceans (DFO) to accept the Committee on the Status of Endangered Wildlife in Canada's (COSEWIC) recommendation to designate Alberta's population of westslope cutthroat trout as a threatened species under the Species at Risk Act (SARA). Then it took nine more months of waiting, until Christmas Eve of 2013, for the federal government to release its *Proposed Federal Recovery Strategy for Westslope Cutthroat Trout, Alberta Population*.

Las Vegas oddsmakers likely would stack the odds against their successful recovery as high. This is partly due to the snail's pace of the provincial and federal government listing exercise for westslope cutthroat trout; it's also partly due to the ongoing destruction of vital cutthroat habitat in Alberta. Despite their ubiquitous historical presence in many streams, rivers, and lakes throughout the foothills, genetically pure and near-pure westslope cutthroat trout remain only in small isolated patches in the uppermost reaches of Alberta's watersheds. Even these remnants aren't safe; these populations are battling to survive against threats like climate change, habitat damage and loss, invasive non-native species, and overexploitation.

The proposed federal recovery strategy goes beyond what was included in the *Alberta Westslope Cutthroat Trout Recovery Plan (2013)*, a document prepared by a multi-stakeholder joint federal-provincial recovery team. The federal recovery strategy proposed designating critical habitat for westslope cutthroat trout as SARA requires. SARA defines critical habitat as "the habitat necessary for the survival or recovery of a listed wildlife species..." and spe-

cifically for an aquatic species as "...spawning grounds and nursery, rearing, food supply, migration and any other areas on which aquatic species depend directly or indirectly in order to carry out their life processes, or areas where aquatic species formerly occurred and have the potential to be reintroduced." Critical habitat must also be identified to the greatest extent possible, based on the best available scientific, community and aboriginal information. Properly identifying and designating critical habitat is crucial to outlining appropriate recovery objectives and to achieve those objectives. The designation also legally binds the federal government to protect all aspects of the habitat identified as critical for a given species. Critical habitat for westslope cutthroat trout in the proposed strategy was identified as "all areas of bankfull waterbodies currently occupied by naturally occurring, pure-strain populations within their original distribution."

In AWA's comments on the proposed recovery strategy, we stressed that in order for the recovery strategy to be consistent with SARA's requirements, and to successfully recover the westslope cutthroat trout population, the net for identifying critical habitat must be cast wider to include several missing elements. The most important element here is recognizing riparian vegetation zones surrounding the bankfull waterbodies as critical habitat. Healthy riparian habitat is essential to aquatic ecosystem integrity and function that many fish, including westslope cutthroat trout, rely on. Those functions include control of sedimentation and channel complexity through bank stabilization, provision of shade for water temperature regulation, input of large woody debris and allochthonous (sediment or rock originating upstream) materials as energy sources, terrestrial invertebrate inputs, and filtering of nutrients and toxins from land uses. Most of the in-stream attributes outlined in the proposed recovery strategy as essential parts of westslope cutthroat trout critical habitat – clean cold water, sediment/silt free gravel substrate, large woody debris and bedrock – depend crucially on healthy riparian habitat function. The scientific literature abounds with research showing that riparian habitat is essential to the survival and recovery of



salmonids such as westslope cutthroat trout. Few, if any, studies claim that a healthy riparian habitat is not needed. In addition to this, clear precedents have been set by other federal recovery strategies where riparian zones are included as critical habitat for fish species (such as the Nooksack dace and the Salish sucker). Westslope cutthroat critical habitat also should include areas of ground water storage, flood plain buffers, and both permanent and ephemeral tributaries upstream of trout bearing streams. All of these elements contribute to the survival and recovery of westslope cutthroat trout. They are essential to increasing the odds of achieving the federal goal: "Protect and maintain the existing 0.99 pure populations at self-sustaining levels, and re-establish additional pure populations to self-sustaining levels, within the species' original distribution in Alberta."

The comment period to provide feedback on the proposed recovery strategy has closed. Now we wait for the release of the final strategy. Due to their dire state, westslope cutthroat trout cannot afford to wait much longer and their recovery depends on much more than paper shuffling. The recovery of this native fish requires significant changes to headwaters management. Here the wider landscape needs to join the stream in defining critical habitat. Let's not underestimate the resiliency

of a species that has survived for 10,000 years on the eastern side of the Rockies. At the same time, let's do what's needed to give them a fighting chance.

- Brittany Verbeek

## Piles of Feedback: South Saskatchewan Regional Planning

From the moment the Draft South Saskatchewan Regional Plan (SSRP) was released on October 10, 2013, AWA started to pour over the document, reading and re-reading all 157 pages of it. We consulted with our members, scientists, other ENGOs, and experts in land use. We had at least one AWA representative at 14 out of 21 stakeholder consultation sessions and we were very grateful to have had several members report back to us on the public consultation sessions. AWA also attended and provided feedback on the consultation sessions held for the air and surface water quality management frameworks that will be embedded in the SSRP.

AWA was copied on over 50 letters written by concerned citizens and several more from environmental organizations, written on behalf of their members, expressing their concerns and comments regarding the draft SSRP. Many in southern Alberta were up burning the midnight oil in order to get their

comments in before the deadline of January 15, 2014, only to find out the following day that Alberta Environment and Sustainable Resource Development (ESRD) had extended the consultation period for another six weeks. The consultation period has now officially ended and ESRD expects to release the final plan sometime this spring.

There was a common theme among the many Albertans who spoke out – water security. The South Saskatchewan region is the most populated region of the province with many competing land uses and a limited water supply. We heard very clearly that people want enforced threshold limits on linear density (including industrial access roads, seismic lines, OHV trails, pipelines, transmission corridors) to protect our water, biodiversity, and natural spaces. Cumulative effects management was a topic at the forefront of most conversations during the consultation period. In the words of Alberta's *Land-use Framework* (LUF), the foundation from which the draft SSRP was built, "we cannot continue with the status quo if we want future generations to enjoy the same quality of life that current generations have."

Thank you to all who participated in this land-use planning process; we hope for a positive outcome in the final SSRP.

- Brittany Verbeek

### 2014 Climb and Run for Wilderness Mural Painting Competition



Nitanisak – My Daughters (Valley Creek School: T. Sharma), Winner: Elementary School PHOTO: © K. MIHALCHEON



Woolly Oak (Westmount Charter School: R. Cormier and S. Kakumanu), Winner: Junior High School PHOTO: © K. MIHALCHEON



Swainson's Hawk (T. Polay and M. Reed), Winner: Adult PHOTO: © K. MIHALCHEON

# Gear Ideas

## **“Spring Spirit” - the MEC Spirit 40 Backpack**



**By Kristina Vyskocil**

Although March 20 marked the Vernal Equinox, Alberta's weather is still as expected for this time of year: cold! Signs of spring, however, are just around the corner: the days are lengthening, new shoots are sprouting, and birds are trilling in the trees. It's time to dust off that old pack and prepare to explore the great outdoors. If you and your pack, however, have lost that loving feeling, or if your pack has just seen better days, it's likely time to consider buying a new one. The newly redesigned MEC Spirit 40 Backpack still has all of the critical features which made the original a favourite for hikers, climbers, and skiers: it is the ideal pack for minimalists to carry heavy loads along hiking trails, up to the crag or to the skin track (\$99 at MEC; 69cm x 31.5cm x 20cm [standard/long]; torso length 48-53.5cm [standard/long]).

### **What is the MEC Spirit 40 Backpack?**

The MEC Spirit 40 Backpack is a multi-sport and overnight travel pack.

### **What does the MEC Spirit 40 Backpack do well?**

Don't be deceived by its compact size: the MEC Spirit 40 Backpack only weighs 1.4kg and can fit up to 40L of gear (short/standard)!

Made of 305-denier polyester Cordura® fabric, the newly redesigned MEC Spirit 40 Backpack is lighter yet more abrasion resistant than its predecessor. The structure of the pack is made of a plastic back-panel and lightweight



hooped aluminum frame that transfers weight efficiently to your hips; this means you can go equipment-intensive without sacrificing carrying comfort. Need to custom fit your pack? No problem. Both the plastic back-panel and aluminum frame are removable so you can cut down on excess weight and configure your pack for greater loads.

The hip-belt is attached with Velcro® behind the lumbar pad so you can adjust the angle, waist size, and torso length for an even better custom fit. Even better, the hip-belt is padded and shaped to sit snugly on your hip-bones. It even features a pocket so you can keep your phone, pocket camera or GPS easily accessible.

Mesh fabric lines the dimpled foam panels and inside of the shoulder straps to help keep you cool. There's also a mesh pocket with a key clip in the main compartment for you to stash your keys and wallet. Small side-entry zippered pockets on the top of the pack are ideal for storing your bars and trail mix. The MEC Spirit 40 Backpack is also hydration compatible and is complete with two stretch-woven water bottle holsters on the sides, which means all those snacks won't leave you parched.

Access to the main compartment is still through the conventional zippered top open-

ing, though the pack also features a shove-it pocket with a bottom drain: this allows you to quickly layer, delayer and “quarantine” soggy clothes.

### **What are some drawbacks of the MEC Spirit 40 Backpack?**

The MEC Spirit 40 Backpack features a dimpled foam back panel instead of a ventilated back panel: this means your back may not experience as much air circulation as you would prefer. The pack also does not feature a crampon patch, ice axe loop or sleeping bag compartment but the lightweight, adjustable attachments can be used to hold your trekking poles. You need to supply your own hydration system since a reservoir is not included with the pack. Fans of the original version may find the short/standard size no longer adequately fits: this size is a bit longer in the newly redesigned version (63cm x 30cm x 19cm; ideal for torso length 43-48cm). The pack may not fit as well as other packs as it does not feature an adjustable shoulder harness or dynamic suspension. Finally, for outdoor enthusiasts looking for this pack to do double-duty as a travel pack, the MEC Spirit 40 Backpack exceeds carry-on size measurements.

### **What's the bottom line?**

Whether you're looking to replace a well-loved multi-sport and multipurpose pack or are aiming to try some minimalist backpacking this summer, you'll find the MEC Spirit 40 Backpack a suitable fit for a great value.

*Kristina currently works at Mountain Equipment Co-op and has just finished the third-year of her English B.A. at Grant MacEwan University.*



# Upcoming Spring Events

## **Beer, Nuts and Wolves!** An evening with Andrew Manske

**Tuesday May 6, 2014**

Don't miss a spectacular evening with renowned Canadian wildlife filmmaker Andrew Manske as he shares his experiences filming wolves all over Canada and his footage of this breathtaking animal. Coolers and beer will be available along with delicious snacks!

**Location:** 455 – 12 Street NW, Calgary

**Time:** Doors open at 6:30 p.m. Talk starts at 7:00 p.m.

**Tickets:** \$20.00

**Registration:** (403) 283-2025

**Online:** [www.albertawilderness.ca/events](http://www.albertawilderness.ca/events)

## **Music for the Wild** **Saturday, May 10, 2014**

**Headline act:** Caravana Gypsy Jazz Quartet

Vladimir and Joy Kaitman, Doug McLean and Don Milne play hot gypsy jazz of the 40's & 50's, mixed in with some original numbers. Caravana wowed our audience at the Music for the Wild in March 2013 and are back for our spring show.

**Opening:** The Bow Valley Fiddlers

Young music students from 7-18 years old who will astound you with their stage presence, charm and musicianship. Under the direction of Donna Turk the BV Fiddlers will share music full of joy

**Location:** 455 – 12 Street NW, Calgary

**Time:** Doors open at 7:00 p.m. Music at 7:30pm

**Tickets:** \$20.00

**Registration:** (403) 283-2025

**Online:** [www.albertawilderness.ca/events](http://www.albertawilderness.ca/events)

## **AWA Kids Day Camp – NEW THIS SUMMER!!!**

Week 1: Monday, August 11 – Friday, August 15

Week 2: Monday, August 18 – Friday, August 22  
9:00am – 5:00pm

If you are between the ages of 6 and 11, become a little wilderness defender at AWA's Kids Day Camp! Action packed days will include fun activities, games, crafts, special guests, field trips and more.

Get outdoors. Get in nature. Have fun. Make friends. Learn naturally.

**Stay tuned for more information on our website coming soon.**

## **SUMMER HIKE PROGRAM**

**Spring in the Whaleback** Saturday, June 7, 2014  
Join leader Bob Blaxley and experience the wonders of one of Alberta's last remaining montane wild spaces.

**Devon River Valley** Saturday, June 14, 2014  
Take a stroll with leader Don Kenyon along semi-wilderness trails of the mighty North Saskatchewan River to appreciate the unique flora and fauna of the valley.

**Lakeland Orchid Walk** Sunday, June 22, 2014  
Enjoy the spectacular boreal forest birds and wildflowers with leader Aaron Davies.

**Hidden Creek** Friday, June 27, 2014  
Learn about ephemeral creeks and the importance of riparian buffers in an actively logged location from leader Brian Meagher.

**Ya-Ha-Tinda** Saturday, July 12, 2014  
Join leader William Davies to explore an inspiring region of prairie and parkland surrounded by mountain peaks.

**Dry Island** Wednesday, July 16, 2014  
Explore the wonders of Alberta's Red Deer River valley with leaders Rob and Tjarda Barrett. Climb to the top of the "dry island", an untouched remnant of natural fescue grasslands.

**Medicine Wheel Bus Tour** Tuesday, August 5, 2014  
Hop on our bus with leader Jay Bartsch for a day of touring around the northern grasslands where natural and human history abounds.

**Sage Creek** Saturday, August 9, 2014  
Enjoy the big sky landscape and discover the many hidden wonders of Alberta's grasslands with leader Lorne Fitch.

**Castle Backpack Trip** August 24 – August 26, 2014  
Join leader Reg Ernst and spend two days and nights exploring southern Alberta's Castle River region. You must supply your own camping gear and food.

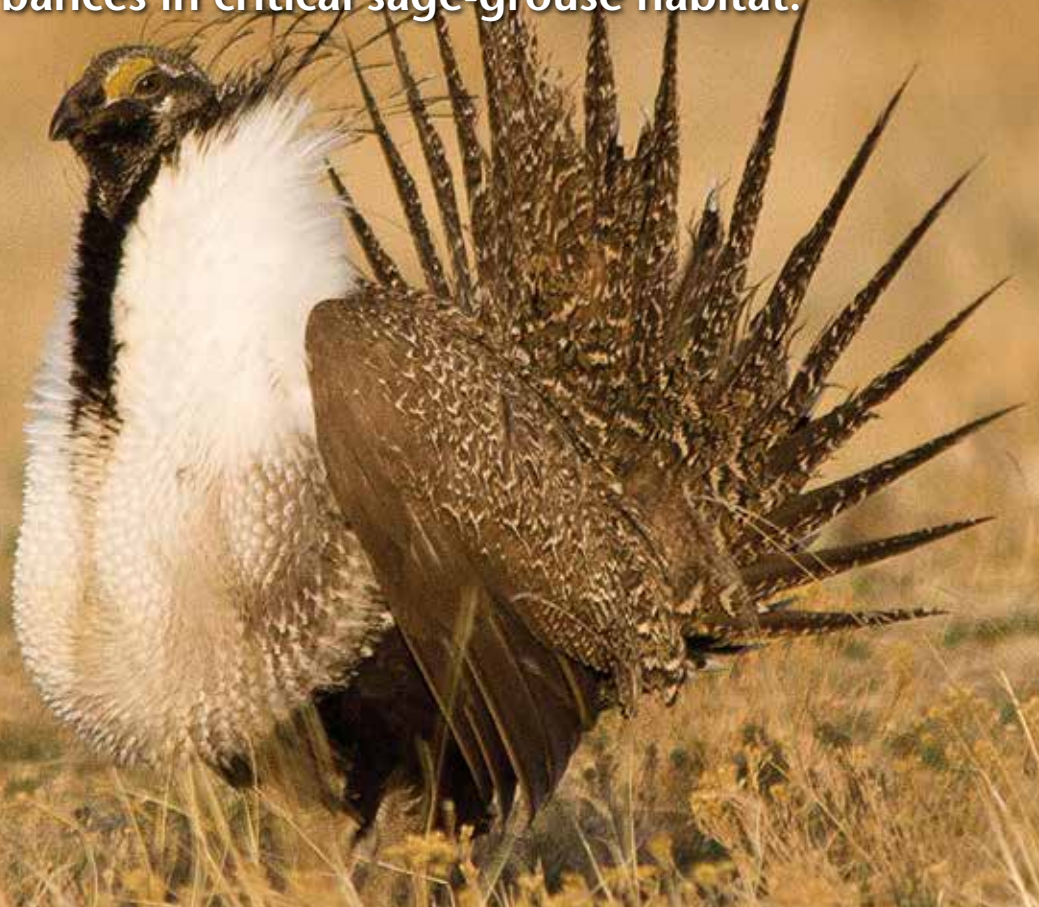
**Fall in the Whaleback** Saturday, September 27, 2014  
Softened by fall colours, both the montane environment and Bob Blaxley will impress you with their one-of-a-kind attributes.

**Rumsey Natural Area** Saturday, October 4, 2014  
Hike with leader Paul Sutherland along this beautiful rolling knob and kettle terrain, rough fescue and other grasses.

**For more information and registration:**  
[www.albertawilderness.ca/events](http://www.albertawilderness.ca/events) or 1-866-313-0713  
**\*Pre-registration is required for all hikes and tours.**



Sage-grouse have been endangered for many years but governments have done very little to eliminate human disturbances in critical sage-grouse habitat.



[www.AlbertaWilderness.ca](http://www.AlbertaWilderness.ca)

Return Undeliverable Canadian Addresses to:



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Box 6398, Station D  
Calgary, Alberta T2P 2E1  
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