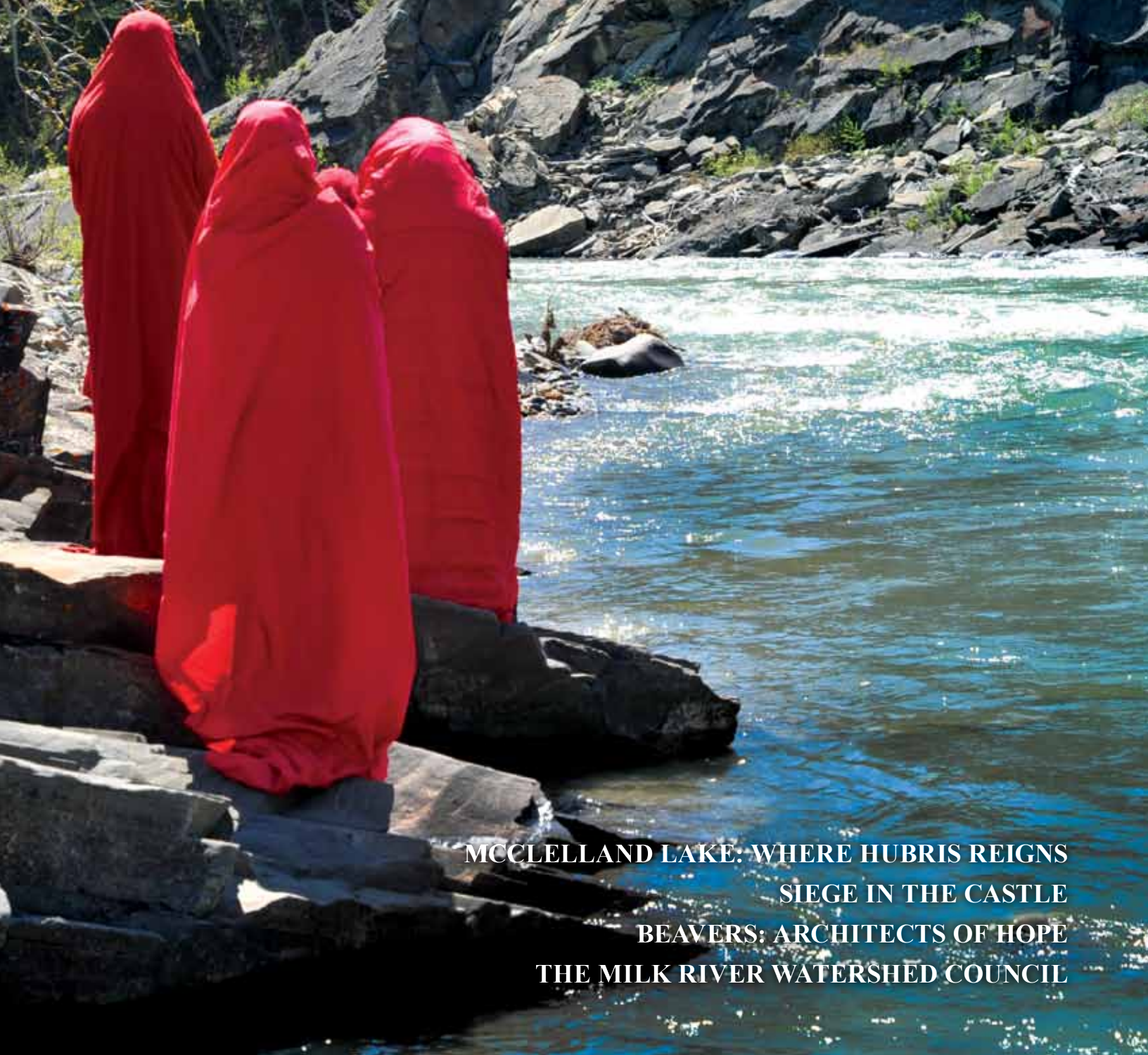


A WILDLANDS ADVOCATE



THE ALBERTA WILDERNESS ASSOCIATION JOURNAL

OCTOBER 2012



MCCLELLAND LAKE: WHERE HUBRIS REIGNS

SIEGE IN THE CASTLE

BEAVERS: ARCHITECTS OF HOPE

THE MILK RIVER WATERSHED COUNCIL

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OCTOBER 2012 • VOL. 20, NO. 5

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COVER PHOTO

The Guardians is the title of the cover photo by Barbara Amos. It is one of a series of photos, *Red Alert for the Castle Watershed*, intended to create metaphors about caring for our watersheds.

FEATURED ARTIST

Born and raised in a family of professional photographers and artists in Montréal Claude Boocock moved to Jasper in 1970 where she co-founded the Jasper Artists Guild. For decades glaciers have fascinated Claude. The acrylic works we are privileged to feature in this issue of WLA speak to her passion for interpreting their movement and grace on canvas. Claude's works may be seen on her website: <http://cboocock.com/index.html>. Her works are also displayed in Mountain Galleries at the Fairmont (Jasper Park Lodge) and Cava in Edmonton (<http://www.savacava.com/>). They also will be displayed in the new Jasper Art Gallery when it opens next spring.

Editor:

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Graphic Design:

Marni Wilson

Printing:

Colour printing and process is sponsored by Topline Printing



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Wild Lands Advocate is published bi-monthly, 6 times a year, by Alberta Wilderness Association. The opinions expressed by the authors in this publication are not necessarily those of AWA. The editor reserves the right to edit, reject or withdraw articles and letters submitted.

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Subscriptions to the *WLA* are \$30 per year. To subscribe, call 403-283-2025 or see AlbertaWilderness.ca.



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ISSN 1192-6287

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A photograph of a sunset over a body of water. The sun is a bright, glowing orb in the upper right, casting a long, shimmering reflection across the water's surface. In the foreground, a beaver dam made of sticks and branches is visible, partially submerged. The background shows a line of trees under a clear, deep blue sky.

Where Have All the Guardians Gone?

The first line of the Government of Alberta's waterforlife.alberta.ca website reads: "Water is not only a resource, it is a life source. We all share the responsibility to ensure a healthy, secure and sustainable water supply for our communities, environment, and economy – our quality of life depends on it."

Barbara Amos's photograph, "The Guardians," that greets you on the cover of this issue of the *Advocate* is one expression from artists in southern Alberta about their concern for the health of the Castle River watershed (see www.facebook.com/CastleHeadwaters).

Together the two statements beg the question of how well Alberta is doing when it comes to guarding this life source. The features in this issue of the *WLA* consider that question in the north, south, west, and east.

First, Sean Nichols introduces you to the importance of water and McClelland Lake in AWA's 2012 list of conservation priorities. Then Carolyn Campbell takes you to the tar sands in northeastern Alberta where her look at the Fort Hills oil sands mine proposal should leave you gasping with disbelief. The McClelland Lake wetland complex, suggested by some to have the qualities of a World

Heritage site, will be sacrificed so even more bitumen may be shipped to foreign markets. Reclamation plans there display what I can only describe as "technological hubris" – an exaggerated confidence that whatever natural system we tear asunder we can put together again.

Glynnis Hood's look at *Castor canadensis* – the North American beaver – offers a corrective to those who think that technology always trumps nature when it comes to adapting to natural events such as drought. Read her article for insights into the role beavers play with respect to drought, biodiversity, and building bridges between landscapes.

Peter Sherrington and Tim Romanow explore the challenges water stewardship faces in southwestern and southeastern Alberta respectively. Logging and irresponsible off-highway vehicle use are highlighted in Peter's look at the course water management is taking in the Castle. Why, he wonders, won't the government heed the counsel it's received from Albertans about how our life source should be managed there?

Two hundred kilometres to the east, in the dry, arid landscape sculpted by the Milk River, the context and challenges of water management couldn't be more

different than they are in the Castle. Tim Romanow, the Executive Director of the Milk River Watershed Council, details the work that the Council, and the local residents who support it, are doing to try to realize the ambitious, essential goals of the Water for Life strategy.

Tim's article points out how important inter-jurisdictional collaboration is to stewardship of the Milk River; such collaboration is just as important in the north as Bob Sandford points out in his account of a international forum on managing the Mackenzie River system.

Looking into the future Sean Nichols may offer us the most inspirational piece in this issue of the *Advocate*. His subject: 84 grade seven students from Rundle College Junior High School in Calgary and the message about water stewardship they delivered to Alberta Environment and Sustainable Resource Development. It's a message about guardianship and the need to take that responsibility more seriously. We hope the government isn't too proud to see that seventh graders have a sounder, more sensible, approach to water stewardship than the one embodied in too many provincial land-use policies today.

- Ian Urquhart, Editor

AWA'S 2012 PRIORITIES: Water, the Lifeblood of Alberta

BY SEAN NICHOLS, AWA CONSERVATION SPECIALIST



The southwest portion of the McClelland fen.
PHOTO: © I. URQUHART



The North Saskatchewan River headwaters in Jasper National Park.
PHOTO: © N. DOUGLAS

Like a great circulatory system, an intricate network of rivers, streams, and creeks stretches across Alberta, distributing its precious lifeblood from the headwaters in the Rocky Mountains' eastern slopes down across the prairie to the east. Even the driest parts of the grasslands would be a wasteland without the nourishment provided by water. It becomes self-evident, then, that AWA would consider sustaining a clean wild water system for Alberta and all Albertans – human and non-human alike – one of its very highest priorities. When we were setting out our ten highest priorities for 2012 after last year's Annual General Meeting, the AWA board, staff, and members engaged in lengthy debates considering the relative merits of the many candidate issues. But little debate was needed regarding the importance of safeguarding Alberta's water: we all knew this issue would find a place at the top of the list.

One of the most significant components of that circulatory system are the magnificent and extensive patterned fens of the McClelland Lake wetland complex, of which AWA has already written much over the last several years. Recognized in 1998 by the Alberta government as an Environmentally Significant Area and described at the time as being “worthy of a strenuous protection effort,” the complex has been a top AWA priority since the mid-1990s when proposals were first made to develop oil sands mining projects in the Fort Hills adjacent to the lake. Fens and other peatlands around the world are disappearing rapidly due to human impact from activities such as mining, forestry, and agriculture, making the protection of those that remain even more crucial. When intact, fens provide important ecological benefits. They store carbon, control flooding, recharge groundwater, filter surface water, and offer habitat for a diverse community of unique plant and animal species.

Water: Quantity and Quality

AWA position on Water: Healthy ecosystems purify water and provide drought and flood protection. To increase our water security, Alberta must improve headwaters, wetland, and river corridor management. This



Glacial Erosion
24"x48" on wooden cradle panel
© CLAUDE BOOCOCK

is a particularly important precaution for potential effects of climate change on our water supplies. For most Alberta rivers, headwaters areas in the mountain and foothills contribute more than 80 percent of total flows; they accumulate, store, purify and gradually release surface and groundwater flows. They are critical source water areas, best protected by intact functioning ecosystems. Alberta must fill gaps in headwaters protection by designating the Castle area in the Oldman River basin and the Bighorn area in the Red Deer and North Saskatchewan River basins as free from industrial activity. In all headwaters regions, legacy linear disturbance must be greatly reduced and recreation access better managed for water quality and threatened native species such as westslope cutthroat trout, bull trout, and grizzly bear. Healthy wetlands absorb, slowly release and purify our water, and provide critical wildlife habitat; Alberta has already lost two thirds of our central and southern wetlands and an unknown area of northern wetlands. The Alberta government needs to adopt a "no net loss" provincial wetland policy and implement stronger incentives to increase wetlands in areas of high historic loss.

In this issue: Carolyn Campbell updates us on the many current developments

across Alberta related to the development of water and wetland policy. Associations such as the Milk River Watershed Council are busy at work around the province, designing new policy under the auspices of the Land Use Framework planning process. Also of note in this issue are Carolyn's updates regarding the Bow/Oldman process, and the Alberta Water Council. Finally, Glynnis Hood, author of *The Beaver Manifesto*, writes about that animal giving us a first-hand look at one species that calls Alberta's riparian areas home.

8,000 Years in the Making, a Decade in the Taking

AWA position on McClelland: The McClelland Lake wetland complex is located north of Fort McMurray at the northern edge of the mineable oil sands region. It is at risk from land and groundwater disturbance from immediately adjacent tar sands mining projects and proposals. McClelland Lake is the largest natural water body between Fort McMurray and the Athabasca River delta. Two of Alberta's largest patterned fens lie on either side of the lake. The McClelland Lake fen to the southwest has built up over 8,000 years since the last glacial retreat; it is intricately patterned,

with hundreds of narrow treed ridges separating long, narrow, shallow pools of water. The watershed also features twelve sinkhole lakes, rare in Alberta. McClelland Lake and the wetland complex are an important way station and breeding area along one of North America's major migratory bird routes. The endangered whooping crane has been observed there on several occasions; other species of concern noted there include the Canadian toad, sandhill crane, yellow rail, black tern, and short-eared owl. The wetland complex hosts twenty rare or endangered plant species and a rare vegetation community. AWA seeks legislated protection for the wetland complex and a ban on industrial disturbance within the watershed.

In this issue: Carolyn investigates the closure plans for mining operations in McClelland and discusses what effects these plans can be expected to have on the area as a whole.

As we begin to close out the year, and begin to cast an eye forward to 2013, keep your other eye on the upcoming December issue of *WLA*, where we will update you on the final two priorities that AWA has been pursuing in 2012, and that are sure to continue to inform our work in the year to come. 🐾

McClelland Wetlands:

Mining our Outstanding Peat Wetlands Should Be Passé

BY CAROLYN CAMPBELL,
AWA CONSERVATION SPECIALIST



“Suncor, Total May Not Proceed with New Oil-Sands Mines” read a late July 2012 Dow Jones newswire article. This was important information to consider for the fate of the ecologically and aesthetically outstanding McClelland Lake wetland complex in northeastern Alberta. In a deeply flawed process in 2002, regulators approved mining of the upper part of the McClelland watershed, including half of its rare “patterned fen,” by the Fort Hills tar sands mine project; the caveat regulators added was that there be no damage to the un-mined portion of the complex.

Ten years later, the Fort Hills project has not yet received formal approval from the current leaseholder owner/operator Suncor Energy. Citing greatly increased light oil production in North America, Suncor’s CEO stated to investment analysts that Suncor was reviewing the scope and profitability of its new mines. Further bad news came in a mid-August CIBC energy report on North American energy projects, which stated that a glut of light oil production and limited pipeline capacity will mean high-cost oil sands mines will be the first energy investments to be deferred in favour of less capital-intensive alternatives.

Located 85 kilometres north of Fort McMurray on the east side of the Athabasca River in the Fort Hills of northeastern Alberta, the McClelland Lake wetland complex (MLWC) is a Canadian natural heritage treasure. The lake and wetlands are important both for their aesthetic and ecological qualities. The complex consists of two large patterned fens – peat wetlands built up since the last glacial retreat by complex shallow groundwater flows. McClelland Lake fen on the southwest side of McClelland Lake is intricately patterned, with hundreds of narrow treed ridges (strings) separating long, narrow, shallow pools of water (flarks). The watershed also features 12 sinkhole lakes, which are rare in Alberta.

In terms of its ecological importance, McClelland Lake is the largest natural water body between Fort McMurray and the internationally significant wetlands of the Peace-Athabasca delta, which is one of the world’s largest inland freshwater deltas. McClelland Lake wetland complex is an important stopover point along a major North American migratory bird route towards the Peace-Athabasca Delta, and is an important breeding area in its own right. Two hundred and five bird species have been recorded within or near MLWC, of which more than 100 stay to breed. The endangered whooping crane has been seen on several occasions in these wetlands. The wetland complex is home to other species of concern, including the Canadian toad, yellow rail, rusty blackbird and short-eared owl. The complex hosts over twenty rare or endangered plant species and a rare vegetation community.

Bad Politics Plunders an Ecological Treasure

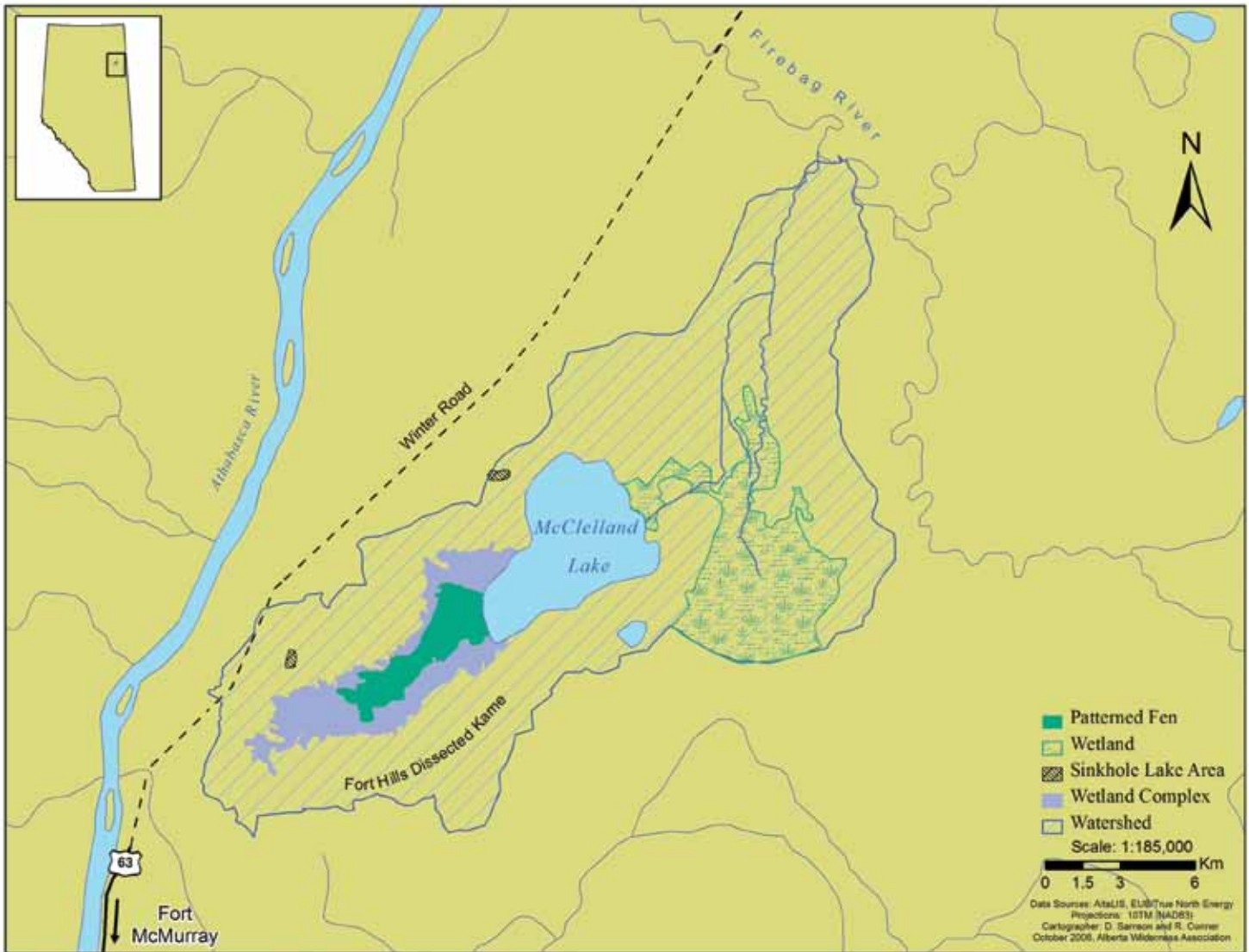
The McClelland Lake wetland complex was originally excluded from surface mining in the provincial government’s 1996 regional Integrated Resource Plan (IRP). This IRP was developed in a sound process including four years of extensive public consultation. However, due to industry lobbying, the Alberta government suddenly amended the IRP in mid-2002 after a brief, poor public consultation, before the Fort Hills mine application hearing began. The amended IRP allows mining in half of McClelland Lake fen and the entire upper watershed that feeds the wetland complex. At that time, the Fort Hills project was owned by True North, a subsidiary of the secretive and powerful U.S. private company Koch Industries.

Incredibly, at the 2002 Fort Hills mine application hearing, regulators allowed True North to set aside the negative Environmental Impact Assessment



Half of the outstanding McClelland Lake patterned fen is slated for certain destruction; the other half is unlikely to survive if the Fort Hills tar sands mine proceeds.

PHOTO: © J. REZAC, WWF-UK



(EIA) that was part of their application. This EIA had stated that water table disruptions from mine dewatering and other lease disturbances would likely kill peat-forming mosses, ending peat production on the fen. Instead, regulators agreed that a company-led Sustainability Committee could devise a plan to sustain the half of the wetland complex that the amended IRP said must remain un-mined. Approval was granted for the mine, about three-quarters of which is outside the McClelland watershed. The Alberta government stipulated that six years before operations began in the McClelland watershed, the government must receive and approve an operating plan to ensure that, in the un-mined portion of the McClelland Lake wetland complex, water flows, water chemistry, and water levels are maintained.

After several ownership changes, Fort Hills is now held by Suncor (which owns just over 40%), French petroleum

giant Total (just under 40%) and Teck Resources (20%). According to media reports, Suncor still plans to present a development plan in mid-2013 to its Board of Directors for sanctioning Fort Hills and other projects. Total must also approve the go-ahead of Fort Hills. Teck recently announced it would be slowing down its preproduction spending on the project amidst current weaknesses in global commodity markets.

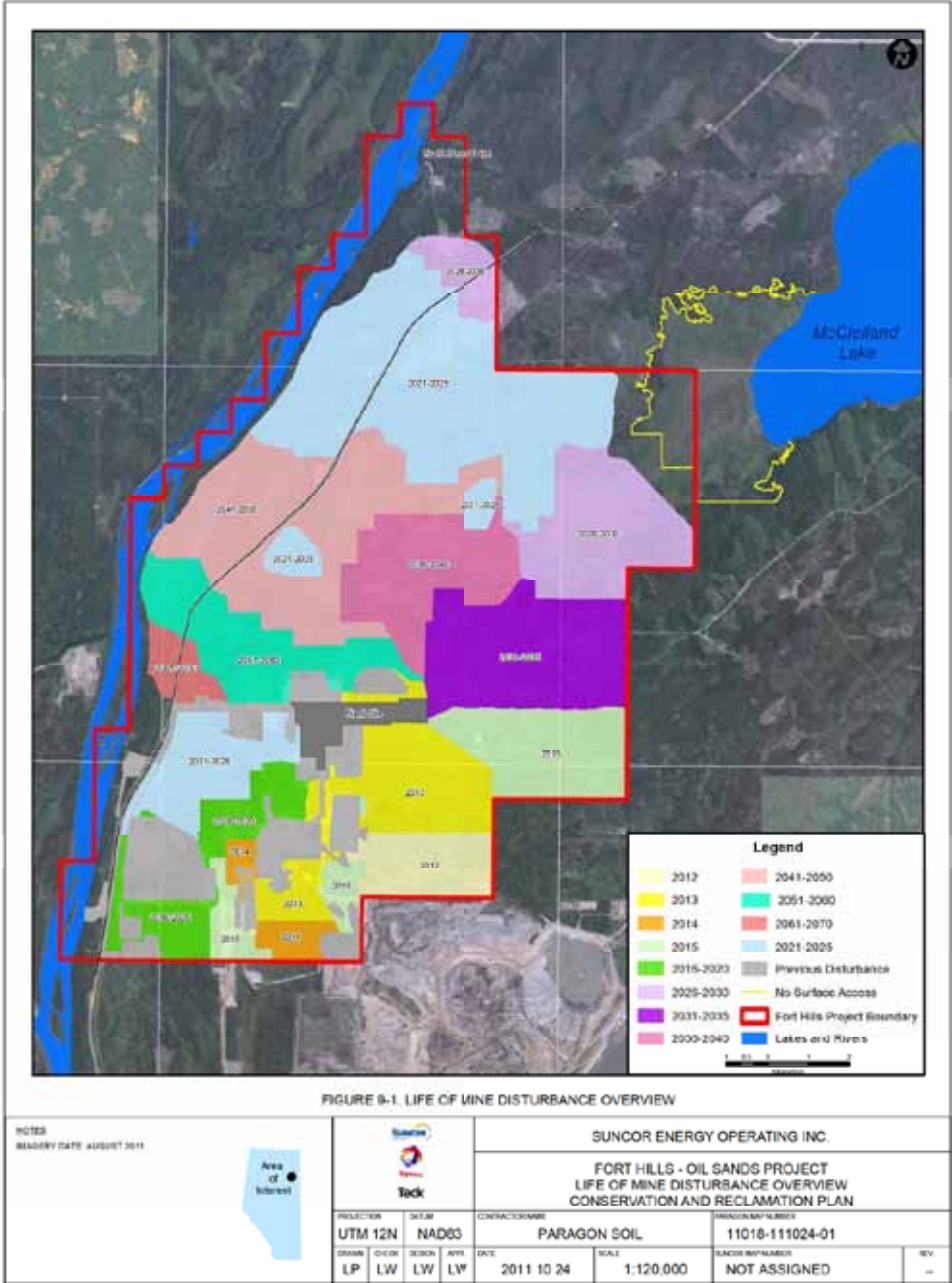
While the investment community may now be concerned about mine profitability, it would be foolish to be complacent about the fate of this exceptional wetland complex. According to its required annual update on

activities in Fort Hills, submitted April 2012, Suncor had notified the Alberta government in late 2011 that the project site was returning to active status after a period of inactivity. Further site clearing was planned for 2012 in watersheds south of McClelland.

Suncor's April 2012 report also summarized MLWC Sustainability Committee activities. Committee members have decided which monitoring indicators to use to meet regulatory requirements. A network of surface water and groundwater sites in the McClelland fen is now monitoring water quality and flows. Vegetation monitoring plots have been established in the fen, and bird

Suncor states that the un-mined wetland complex will be isolated from the mine and will have “sufficient surface and groundwater flows” of the “required water quality.” The company doesn’t explain how it will do this.

“By law, the post-mine landscape must be ‘reclaimed to equivalent land capability.’ It’s ludicrous to suggest that there will be equivalency in soils, vegetation and species richness in this (Suncor’s) proposed closure plan.”



Disturbance schedule from Suncor’s as yet unapproved Fort Hills 2011 closure plan. If approved, excavation to destroy the ‘upper’ half of McClelland watershed (which sustains the downstream or ‘lower’ half) would begin in 2021. Note the proximity of mining to the yellow ‘no surface access’ border inside the McClelland Lake wetland complex.

and other wildlife monitoring has been initiated. Suncor stated that it intends to submit in 2012 the required operational plan to mitigate the mine’s effects on the un-mined portion of the MLWC. AWA has not yet seen this proposal.

A Closure Plan or Closure Experiment?

Some of Suncor’s intentions for McClelland’s wetlands are evident in the Fort Hills 2011 Reclamation and Closure Plan, which AWA did obtain. This plan was submitted by Suncor to the Alberta

government in January 2012 and hasn’t been approved yet by the Government of Alberta.

In this 2011 closure plan, Suncor proposes that significant forest clearcutting in the upper McClelland watershed will occur during 2016-2020. Excavating, dewatering, and mining would follow after 2021 (see proposed disturbance map). Half the McClelland Lake wetland complex will be excavated and destroyed. This will include peat layers two to five metres deep (marked as MLD3 and MLD4 on the baseline

soil map legend). The topography and soils in the upper half of the watershed that have sustained fresh groundwater flows to allow the wetlands to build their distinctive patterns over 8,000 years would be lost forever. This alone would be an irreplaceable ecological and biophysical loss for this region. Peat wetland vegetation comprises over half the natural landscape of the 4,750 km² mineable oil sands region; in other open pit mine leases, no peat wetlands have been successfully recreated. Two fen construction projects are in their infancy, but according to U of A wetland biologists in a March 2012 peer-reviewed paper, at best there will only be a small fraction of the pre-mining area of fens replaced on mine leases. Salt-tolerant marshes with far fewer species are the best prospect currently for wetland replacement.

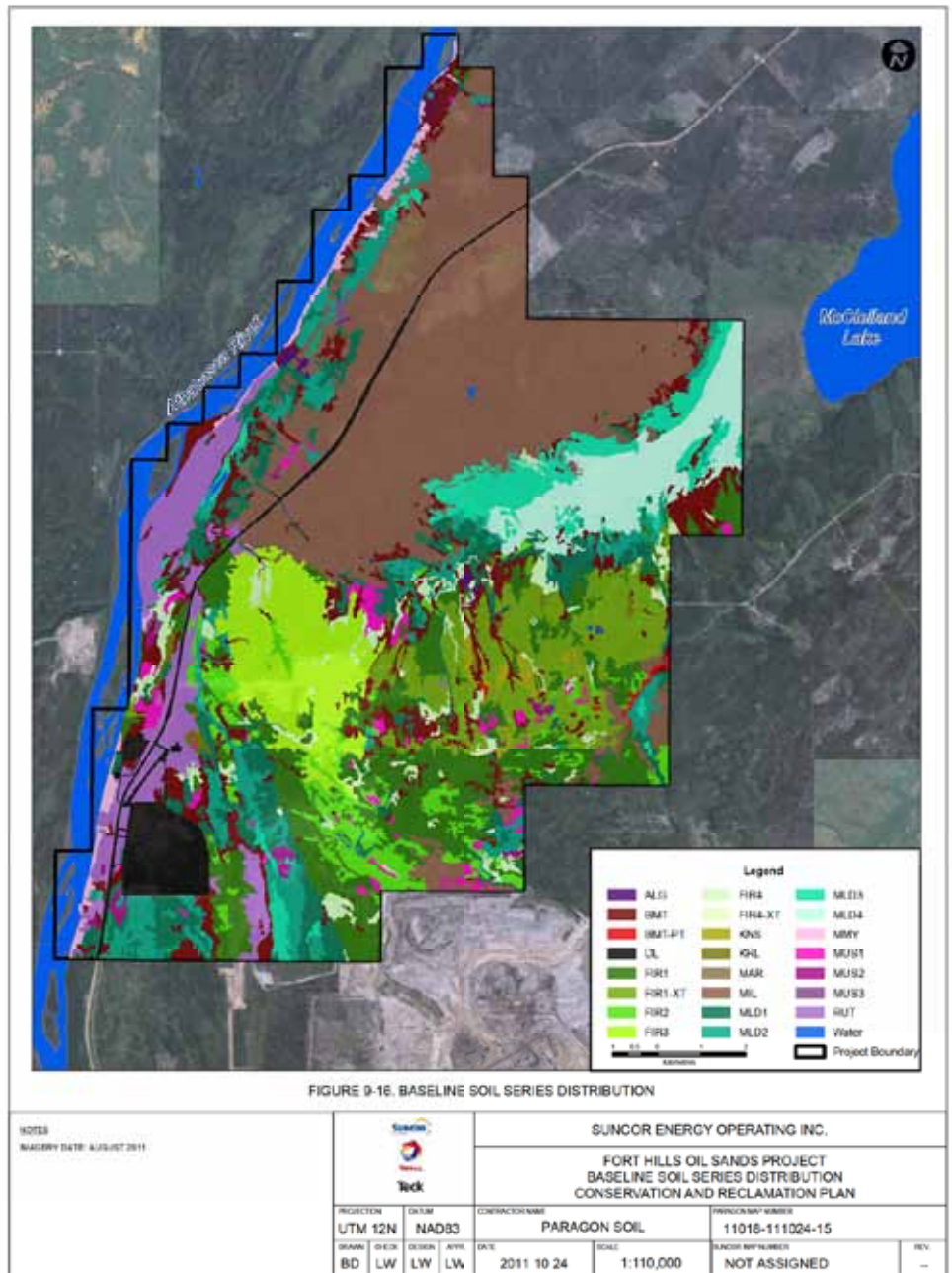
Suncor states that the un-mined wetland complex will be isolated from the mine and will have “sufficient surface and groundwater flows” of the “required water quality.” The company doesn’t explain how it will do this. In AWA’s view, the massive mine disturbance will very likely destroy the other half of the fen and put the Lake and the rest of the wetland complex at risk. No one has ever tried to save half a patterned fen. A highly experimental engineering and reclamation project on this outstanding peat wetland complex is unacceptable.

The focus in the 2011 closure plan is on how the landscape will be re-contoured and re-vegetated after mining ends. As the two soil maps show, the proposed post-mining lands will lose the incredible variety of soil types laid down by natural processes since the last glaciation. Peat-forming areas will be replaced by far smaller salt marshes and experimental areas that, experimenters hope, will form fens in the distant future.

At one point, the closure plan states: “Given the importance of this habitat for yellow rail, moose, and special status non-vascular plant species, and given the extent of fens in the baseline study area, creating fen wetlands is fundamental to the wetland reclamation plan.” But there are major disclaimers elsewhere around prospects for peat-forming wetlands. There is the uncomfortable fact that even current climate conditions in Alberta’s boreal forest are drier than when the peat wetlands were forming 8,000 years ago; the added stress of climate change will only dim the prospects of fen creation. The closure plan states that “with current or cooler climate conditions, peat is expected to accumulate and shrub fens may establish and total fen area would likely increase... Should climate warm, become drier, and/or subsurface flowpaths not establish, upland ecosites – or transition [wet upland] ecosites at best – would likely become established.” In other words, do not expect peat wetlands on this landscape. By law, the post-mine landscape must be “reclaimed to equivalent land capability.” It’s ludicrous to suggest that there will be equivalency in soils, vegetation and species richness in this (Suncor’s) proposed closure plan.

There is even significant uncertainty about how well prairie-like marsh wetlands will function. The reclaimed peat-mineral soil mix Suncor proposes for wetlands will have natural hydrocarbon “tarballs” from the churned-up soils. So the company must monitor and mix soils to below-toxic levels of hydrocarbons. The salts present in the region’s disturbed layers of marine soils will also limit successful wetland construction: the plan notes that “a critical condition that will be difficult to predict or address is the salinity of the soils and influent water.” The plan also notes that little is known about re-vegetation of boreal wetland plant species.

As for the un-mined portion of the McClelland Lake wetland complex, it is scheduled to receive discharge from a constructed East end pit lake filtered through a buffer of constructed treatment wetlands. End pit lakes are far deeper than the region’s natural water bodies; their viability to treat mine-affected water and to function as ecosystems has not yet been demonstrated for oil sands mine reclamation. Suncor proposes to drain a post-mining engineered area of



Natural soils are far more diverse than reclaimed soils, from Suncor’s as yet unapproved Fort Hills 2011 closure plan. In this proposal, after the year 2070, mining process-affected water from the north and southeast mine site will flow in constructed streams (green lines) into the East end pit lake, then through constructed marsh wetlands (dotted blue zones) into the un-mined part of McClelland Lake wetland complex.

60 km², including most of the mines’ tailings drying areas and the North and South Dumps, via vegetated waterways into the East end pit lake (the green lines on the reclaimed soils map). But there are disclaimers about the waterways as well: “The success of vegetated waterways is highly dependent on the success of the vegetation cover, which can be compromised by poor runoff water quality (in particular the presence of salts) or frequent flow, which may occur even in very small watersheds if

groundwater seepage is present.” With constructed wetland success hedged by many disclaimers, this seems a poor, risky solution to count on to provide fresh water in the quantity and quality needed for the un-mined McClelland Lake wetland complex, even assuming it hasn’t died from changes in water quantity or quality over decades of upstream mine activity. This closure plan leaves little room for error when huge uncertainties and high ecological loss are at stake.

Six wildlife species or groups are



Glacial Splendour
 24"x48" on wooden cradle panel
 © CLAUDE BOOCOOCK

the focus of closure biodiversity plans: snowshoe hare, beaver, moose, black bear, muskrat, Canadian toad and unspecified waterfowl. For wetland types, the key species types are moose, beaver, muskrat, common loon and two special status species, Canadian toad and yellow rail. The 2011 closure plan states “there is considerable uncertainty as to whether these special status species might colonize these habitats, but the wetland types and designs are being selected to increase the likelihood.” In AWA’s view, the anticipated drier landscape of young forests, shrubs and salt marshes will very likely support far fewer species than the previous landscape.

What About a Land Swap?

A pioneering agreement between Environment Canada and French energy company Total may offer a path to a future for McClelland Lake wetland complex. In 2011, Total received regulatory approval for its Joslyn North oil sands mine, but at last the Government of Canada recognized that under the *Species at Risk Act*, it needed to ensure that destroyed habitat for species at risk on the Joslyn Mine lease should be replaced elsewhere. In an October 2011 agreement, Total committed to provide replacement habitat for the common

nighthawk and Canada warbler, and “where and when possible,” for the olive-sided flycatcher. The location identified as a good candidate for securing the habitat was lands on the east shores of McClelland Lake (Fort Hills is to the west of McClelland Lake). These lands were leased by the Alberta government to energy companies (another poor decision, in AWA’s view) and now form part of the Northern Light Partnership tar sands mine leases owned by Total and SinoCanada Petroleum Corporation.

Northern Lights does not currently plan to develop the bitumen resources in that part of the lease and Total is prepared to replace the species at risk habitat affected by the Joslyn Mine with “ecologically equivalent” land on their McClelland lands. Equivalence is defined in the agreement as the ability to support and sustain similar life cycle activities. The parties can reconsider which lands will be replacement habitat if Total decides to develop McClelland lands or if there is a fire. The agreement is in effect until Environment Canada determines replacement habitat is no longer required because there has been sufficient reclamation on the Joslyn Mine lands or because Total provides sufficient alternate replacement habitat. While not perfect, this agreement suggests that, at a

bare minimum, the best intact habitat left in the mineable oil sands should remain intact as replacement habitat for species at risk affected by current mines.

If Fort Hills does mine in the McClelland watershed, there will be a decades-long vivisection of the ecological treasure that is the McClelland Lake wetland complex – half will be destroyed forthwith, with a very poor replacement after many decades that will lack the wetlands and species richness. The other half is unlikely to receive adequate clean fresh water in the highly uncertain decades during and after upstream open pit mine excavations. There is very little prospect of re-creating healthy peat wetlands that make up over half the natural pre-mining landscape of the 4,750 km² mineable oil sands region, 99 percent of which has already been leased. Clearly, McClelland watershed should be removed from the mining plans of the Suncor-Total-Teck Fort Hills mine. The Alberta government should compensate Suncor for its McClelland lease, perhaps via operating oil sands mining companies collectively bearing the compensation cost as an offset to the irreplaceable peat habitat they are destroying. AWA will continue to work to try to ensure a bright future for this ecological gem in northeastern Alberta. 🍷

Beavers, Biodiversity and Wetlands of Hope



BY DR. GLYNNIS A. HOOD

All you could see across the surface of the beaver pond were my lips, nostrils, eyes, and hair. Everything else – my clothes, my mud-covered socks, and my enthusiasm – was completely hidden under the murky water. It wasn't that I didn't ask, "Why am I standing in a beaver pond in my clothes just to keep a wetland intact?", but no one could hear me as my lips made fish-like movements (as described by my field assistant) just to keep air in my lungs. Swimming here (my favourite stroke is the dog paddle... suggesting I'm not a strong swimmer) was required to install a pond leveler to prevent beavers from flooding a popular equestrian trail, while still allowing beavers and their wetlands to remain on the landscape for years to come. By design the leveler operates as a siphon every time the pond rises above the desired height and ensures that the usual flooding doesn't occur. The effort of installing one of these devices is very rewarding – both in time and money saved by land management



A summer day at the lodge on Grebe pond in Miquelon Lake Provincial Park.

PHOTO: © G. HOOD



Beavers play an important role in mitigating the impact of drought, an important reason for protecting their place on the landscape.

PHOTO: © G. HOOD

authorities and in the preservation of aquatic ecosystems that would otherwise be regularly drained.

In Alberta, we have already lost over 65 percent of our non-boreal wetlands due to draining and infilling and are just beginning to understand the more complex bogs and fens within our boreal region. To say that beavers play an important role in creating and maintaining Canada's wetlands is an understatement. The Canadian landscape evolved with beavers on it and the two are intimately linked. Today's North American beaver (*Castor canadensis*) has existed since prior to the last ice age and has shared its habitat with sabretoothed cats, woolly mammoths and the beaver's distant cousin, the giant beaver (*Casteroides ohioensis*). The giant beaver weighed up to 100 kg and was up to three metres long; it disappeared with many other land mammals approximately 11,000 years ago.

Despite being trapped nearly to extinction during the fur trade, the beaver has made a remarkable comeback and now fills almost every available habitat there is. Amazingly, in Alberta, trapping beavers was prohibited until the 1930s

because population levels were so low. When I was a PhD candidate at the University of Alberta, my advisor, Dr. Suzanne Bayley, and I had the good fortune to work in Elk Island National Park where beavers had been extirpated from the mid-1800s to the early 1940s. Only after transferring beavers from Banff National Park to Elk Island, did beavers slowly begin to find their way to habitats that had been void of beavers for almost 100 years. When we examined the historic aerial photographs, climate data, and beaver occupancy data for the park, we discovered a remarkable aspect of beaver ecology that would receive international attention.

Beavers and Drought

Beavers are crucial to alleviating the impacts of drought. Over and above climatic variables, the presence of beavers is the most important variable keeping water on the landscape, even during periods of extreme drought. During our study of a 54-year period (1948 to 2002) we discovered that, even during drought, wetlands with beavers had nine times the extent of open water than similar ponds without beavers. Moreover, there were two



Installing a pond leveler to maintain water levels and prevent flooding of trails in the Cooking Lake/Blackfoot Provincial Recreation Area.

PHOTO: © G. HOOD

major droughts within our study period (1950 and 2002), which allowed us to see how beavers fared in the dry years. Although it was the fourth driest year on record, 1950 had over 47 percent more precipitation than 2002 (the driest year on record). Remarkably, 2002 still had 61 percent more open water. The reason was that the area we analyzed with 1950 data had not yet been re-colonized by beavers; in 2002 beavers were actively working the landscape and were able to keep water around. Local farmers knew what beavers could do; some actively sought out landowners with beavers on their properties so they could help feed and water their cattle. Beavers were actively mitigating the effects of drought by digging channels and deepening ponds. Just as a farmer drains water off the fields in the spring by digging drainage ditches, beavers dug channels to concentrate water into the ponds during the drought. Ponds with beavers were some of the only ones with water; many others dried up completely.

Beavers and Biodiversity

Since that study my current research program in and around Miquelon Lake Provincial Park at the southern extent of the Cooking Lake Moraine in east-central Alberta has expanded to examine the effect of beaver-modified wetlands on biodiversity and the availability of open water. In 2008, my student Chantal Bromley (BSc) and I conducted a research project to determine whether active beaver ponds provided waterfowl with access to open water earlier in the season than ponds without beavers. Not only did the ponds open up an average of 11 days earlier adjacent to the occupied beaver lodges, Canada geese would fight among themselves for the right to nest atop these lodges. Often times we would see two sets of geese fighting over a lodge, only to find another couple walking up the backside of the lodge and settling in for the spring nesting season. Shorebirds and mallards were also drawn to these open water areas. After a Canadian winter, early access to open

water is critical for many wildlife species. Often during our surveys, we would also see the tracks of weasels, foxes, coyotes, deer, small rodents, and birds adjacent to these open-water areas. It became so common that I started to call them “boreal polynias” after the open water areas in Canada’s high Arctic.

Building on our observations of wildlife tracks around active lodges during the winter months, another of my students, Tim Nelner, and I designed a research project to examine biodiversity of land mammals around beaver ponds in Miquelon and on the adjacent agricultural lands. Although there were no discernible differences in the number of winter tracks and wildlife species within Miquelon during the winter months, the agricultural lands were a different story. On agricultural lands where farmers had chosen to keep an active beaver lodge or two on the property, the number of species of wildlife and the density of tracks was over twice that of lands in the same agricultural areas without inhabited

beaver ponds. In fact, the beaver ponds on the adjacent agricultural lands appeared to be acting as stepping stones across the landscape and helped increase habitat connectivity between various protected areas in the southern moraine.

From 2008 to 2011, entomologist Dr. David Larson and I worked with our summer students to gather hundreds of thousands of aquatic macroinvertebrate specimens representing over 46 different taxa. Adding to the hydrological effect of beaver channels during the drought, we were also beginning to notice a difference in species distribution throughout the same beaver pond. After sampling macroinvertebrates from shoreline, open water, and beaver channel habitats, a remarkable trend began to appear. Not only did beaver channels have a higher number of species, they were also a hotspot for predaceous macroinvertebrates. Some species were exclusively found in active beaver ponds, while surprisingly, the abandoned beaver ponds were producing the bulk of the mosquitoes.

Having beavers actively maintaining a beaver pond actually kept the mosquito population down, either through the increased presence of aquatic predators or through increased pond depth.

Channels across Landscapes

Although ponds with active beaver colonies were higher in some measures of biodiversity, the channels really caught our attention. A beaver channel is a long trench that beavers dig perpendicular to the pond edge so they can haul back branches to their lodge. They also act as escape routes and travel corridors supporting the beaver's activities around the pond. Using a geographic information system (GIS), I determined that channels can extend over 200 metres away from the pond edge and increase the pond perimeter almost tenfold. New niches and increased vegetated-edge provide extensive habitats for many other species in the pond, including macroinvertebrates and amphibians. Dr. Cindy Paszkowski



Grinding Machine III
48"x48" on wooden cradle panel
© CLAUDE BOOCOCK

and my student, Nils Anderson (MSc), have discovered that beaver channels might act as an important dispersal aid for wood frogs as they make their journey from water to land in the late summer and early fall. Anderson's research is ongoing, but shows interesting trends. When looking at some of these channels on an aerial photograph, it is amazing to see how they also link several ponds across the landscape. The implications of channels acting as ecological linkages invite much more exploration.

Swimming for Wetlands

So, why do I swim in beaver ponds despite my dislike of swimming? My answer: why not swim there if it is going to save a wetland? My research and that of my students shows there is so much more to these complex ecosystems than meets the eye. Despite being the ponds with some of the highest levels of biodiversity and resilience during

drought, they are often the first to be drained when conflict with humans occurs. In mid-September, we just installed another pond leveller with the generous financial assistance of the Alberta Conservation Association; the Alberta Sports, Recreation, Parks and Wildlife Foundation; and the in-kind support of Alberta Parks; the Alberta Trail Riders Association and some very loyal friends. Pond by pond, a bit more biodiversity and hope is left on the landscape. ♣

Dr. Glynnis Hood, a former Parks Canada warden, is an associate professor in Environmental Science at the University of Alberta's Augustana Campus in Camrose. For nearly thirty years she has worked on protected areas issues from the west coast to the subarctic. Aquatic ecology, beaver management, and human-wildlife interactions fuel her passion for teaching and research.

CANADA'S COLD AMAZON:

The Rosenberg Forum Examines the Significance of the Mackenzie River Basin



BY R.W. SANDFORD

With the support of the Walter & Duncan Gordon Foundation, an internationally respected water policy forum recently spent three days deliberating on the eco-hydrological significance of the Mackenzie River Basin to Canada and the rest of the world.

It is hoped that its findings will inform the current negotiations of agreements between British Columbia, Alberta, Saskatchewan and the Northwest Territories over the future of Canada's largest river system.

What is at stake is the ultimate state of one of the world's most important northern rivers, a river system scientifically described as a lynch-pin of water-ice-climate interactions that create relative climatic stability not just in southern Canada but throughout the world.

Concern over the Mackenzie system has been growing as climate change effects accelerate in northern Canada. Canada's Arctic is warming two to three times faster than the rest of the country. Negotiations between Alberta and the Northwest Territories regarding the future management of the 1.8 million square kilometre basin were initiated after the Northwest Territories began implementing its Northern Voices, Northern Waters water stewardship strategy in 2011.

Many water policy experts view this plan as ground-breaking. It is a reaction to the effects of warming temperatures on how rapidly and intensely water has begun to move through the global hydrological cycle, and to the rapid changes those effects are bringing about.

In 2008, the Government of the Northwest Territories invited the University of California-based Rosenberg International Forum on Water Policy to offer observations from international experts on elements of its water strategy and to provide advice in support of its successful implementation.

In a forum held at Simon Fraser University in Vancouver between

September 5 and 8, 2012, the Rosenberg Forum brought together a panel of experts from around the globe to examine what scientific and legal principles might be brought to bear in the crafting of a transboundary agreement that would benefit all the riparian jurisdictions sharing the Mackenzie over the coming decades.

In addition to internationally respected hydrologists and aquatic ecologists, the Rosenberg panel was composed of legal scholars from Canada and abroad: experts in Aboriginal law and policy, political scientists, and resource economists.

The statement of task required that panelists consider key questions regarding transboundary relations between riparian neighbours on the Mackenzie system.

They explored the current state of scientific knowledge in the basin and identified the major scientific questions that need to be addressed to ensure that the waters and lands of the basin are managed in a way that protects their integrity.

The panel also heard evidence regarding the extent to which indigenous knowledge might supplement or reinforce western science and the social sciences in the basin.

The panel also concentrated its efforts on defining the role of adaptive management in scoping and implementing any transboundary agreement in the face of the levels of uncertainty created by rapid warming especially in the northern part of the basin.

The panel went on to thoroughly examine the strengths and weaknesses of existing cooperative governance structures to determine how to strengthen existing relationships between riparian neighbours now and in the future.

Finally, the panel explored whether reformed governance structures might be required to ensure levels of cooperation between riparian neighbours that would make adaptive management of the basin

more successful over time.

It is important to note that presentations made to the panel by two of Canada's most respected experts on the Mackenzie system both confirmed the global significance of the basin in terms of its moderating effect on the temperatures of the rest of the continent, the extent and nature of its estuary, and the hydrological influence of its flows into the Arctic Ocean. That managing the Mackenzie system is a matter of great concern to the rest of the world may be gauged from the extent of national and international media coverage the forum received both before and after the deliberations began.

News of the forum, including interviews with the Premier of the Northwest Territories, Bob McLeod, who addressed the panel at the outset of deliberations, appeared around the world and in newspapers in provincial capitals across Canada.

The outcomes of the deliberations of the Rosenberg Panel are presently being incorporated into a formal report that will be released through the Walter & Duncan Gordon Foundation in January 2013.

So why is this important to Canadians? This is an opportunity to show the world how to employ science and enlightened legal principles to break out of the prisons of treaties that no longer respond to the realities that are emerging as the global hydrological cycle responds to a rapidly warming atmosphere.

It is an opportunity to craft an agreement that will serve the future needs of not just the NWT, but all of the jurisdictions that share the Mackenzie Basin. The world will be watching as this treaty is crafted. Canadians should be watching also. ▲

Bob Sandford is the EPCOR Chair of the Canadian Partnership Initiative in support of the United Nations Water for Life Decade and a member of Canada's Forum for Leadership on Water. Bob is also a regular contributor to Water Canada.

The Milk River Watershed Council Canada – **OUR WATER, OUR LEGACY**

BY TIM ROMANOW, EXECUTIVE DIRECTOR, MILK RIVER WATERSHED COUNCIL



The north fork of the Milk River is augmented by diversion water from the St. Mary River in Montana; seasonal fluctuations are a challenge for riparian communities; uplands are dotted with diverse native grasslands.

PHOTO: © K. ROMANOW

The Milk River watershed is a unique drainage located in the most southern part of Alberta. It is distinctive, not just because of its extraordinary dry landscapes and diverse plant and wildlife communities, but also for the direction in which the Milk River flows. The Milk River is the only watershed in Alberta that drains south to the Gulf of Mexico. Alberta shares this watershed with Saskatchewan and Montana, a relationship presenting equally unique challenges.

Water shortages are common in our dry, arid watershed. As the problem of water scarcity grows, proper water and watershed management is critical. In 2005, community discussions lead to the formalization of The Milk River Watershed Council Canada (MRWCC). Its intent was to create a broad partnership of interested and informed people living and working in the watershed to provide local leadership in watershed management

and planning. Early on, we realized that a broad partnership would need to be formed between government and non-government agencies, industry, and watershed residents to provide comprehensive watershed planning for a sustainable future.

The MRWCC supports the Alberta *Water for Life* Strategy; we provide State of the Watershed reporting; we are working on developing a watershed management plan; we are working with our community to proactively promote stewardship of our watershed. Our first State of the Watershed Report was completed in 2008. In the spirit of cooperation and community we developed the report with key agency partners and local expertise instead of parachuting in outside consultants. This approach produced a reference document the entire community is proud of. The report balanced scientific content with interesting information about our watershed. We think it's a model for how

to deliver effective and cost effective messaging to both decision makers and the general public.

The Milk River watershed is a transboundary watershed; we foster good relationships with our Montana

The Milk River Watershed Council

Canada is an independent organization that supports the goals of Alberta's *Water for Life* Strategy in the Milk River Watershed. These goals are:

- **Safe, secure drinking water supplies,**
- **Reliable water supplies for a sustainable economy, and**
- **Healthy aquatic ecosystems.**



In the shadow of the Sweet Grass Hill, Writing on Stone Provincial Park is a cultural and archeological gemstone in the Milk River Watershed; hoodoos and cottonwoods are critical habitat for numerous songbirds and species-at-risk.

PHOTO: © T. ROMANOW

neighbours for the continued co-management of the Milk River waters. Our headwaters are reliant on the nearly 90-year old St. Mary Diversion siphons and infrastructure near Babb Montana. The 1909 Boundary Waters Treaty mandates sharing the Milk's waters with our American partners. The MRWCC is currently working on a number of projects, some current highlights include:

2013 State of the Watershed Report – Growing Transboundary Cooperation

The Council is working towards updating its 2008 State of the Watershed Report (SOWR) and plans to release the 2013 SOWR next spring. As befits a transboundary resource the report will include information about the Alberta, Saskatchewan, and Montana portions of the watershed. The Project intends to develop a factual, educational, and interesting document that will be read by the scientific community and the general public. The SOWR will be used as a tool to support watershed management. The report will also identify data and knowledge gaps within the watershed, as well as outline projects and activities that have been initiated in the watershed since the first edition of the SOWR.

Local technical expertise has been employed in all three jurisdictions with Alberta taking a coordinating role. Working across borders is a challenge. The number of jurisdictions and other actors is multiplied and there are also challenges when it comes to adopting consistent mapping and monitoring techniques. Watch for updates on the project this winter and join us next spring for the final release of the report at our 2013 Annual General Meeting.

2012 Groundwater Well Synoptic Survey

In preparation for the 2008 State of the Watershed Report, a project was initiated to investigate well water quality within the four counties composing the Alberta portion of the watershed. Ten wells were selected as representative wells from each municipality and an extensive set of parameters were analysed. The landowners received a complete report and the data was summarized to protect confidentiality. The project provided a general overview, a baseline, of groundwater quality throughout the watershed.

With the assistance of Agriculture and Agri-Food Canada AESB we revisited most of these sites this past December and January and sampled the same wells again. Generally speaking, two samples over five years makes it difficult to make assumptions regarding changes in water quality or trends. A number of wells indicated elevated levels of heavy metals and in general, elevated salts; these data are important to document in the context of future changes, for example, changes in area land use over time.

Identifying Sources of Fecal Coliforms on the Milk River

At times over the last few years, there has been increased public concern regarding potential sources of fecal contamination in a few locations on the Milk River. The most visual and publicly scrutinized site has been at Writing-on-Stone Provincial Park. Park staff sample the public beach site there weekly and the samples are analyzed for total coliform levels at the Provincial Health Laboratory. The beach has been subject to occasional health risk advisories due

to E. coli concentrations that exceeded recommended guidelines for recreational use.

Some blamed, without evidence, the local farming and ranching community for the elevated concentrations. The MRWCC responded by approaching Alberta Agriculture and Rural Development (ARD) to create a project to investigate the coliform concern and research the fecal contamination issue within the watershed. This discussion led to establishing a microbial source-tracking project. The study will examine all the potential sources of elevated coliform levels in the Milk River. These sources include wildlife, humans, pets, livestock, and non-fecal related, naturally occurring environmental strains. It will identify and quantify the major sources of fecal contamination and will utilize E. coli fingerprinting as a microbial source tracking method.

The study also will consider the relationship between E. coli levels and environmental conditions such as low water flows, high water temperatures, and sediment load. Since sand has been identified as a significant reservoir of naturally occurring E. coli strains the uniquely high sediment load in the Milk River may complicate the situation further.

Four sites have been selected along the river for sampling and monitoring this season and we are currently assisting Alberta Agriculture to build a DNA marker library of various wildlife and livestock sources that are found in the watershed. This will allow ARD to more closely determine sources. If successful, the project may be expanded to help direct and adjust stewardship project implementation within areas of the watershed that offer opportunities for improvement.

This is the first time a DNA source tracking project has been attempted at a larger watershed scale within the province. Watch for future updates on the project.

Draft Milk River Integrated Watershed Management Plan - Making Progress

The Milk River Integrated Watershed Management Plan (IWMP) will be a tool to provide guidance to resource managers working in the Milk River watershed. It will address the management of water supply and quality (surface water

and groundwater), riparian areas and wetlands, biodiversity, and land use to ensure that resources are available for future generations.

In 2010, the Milk River IWMP Terms of Reference (the Terms of Reference set the direction for the plan) was endorsed by municipalities and the public and supported by Alberta Environment. Since then the IWMP Planning Team has met to draft targets, thresholds, and recommendations for each of the resource areas using a scientific approach that incorporates local knowledge and research from the Milk River watershed.

Draft water quality objectives (WQOs) for four reaches of the Milk River were developed using data collected from the on-going surface water monitoring program. Draft WQOs were established for salts, nutrients, sediment, and bacteria. New monitoring data will be compared to the WQOs to determine if future water quality trends are stable, improving, or degrading. Water quality objectives reflect natural differences in water quality in the four reaches due to channel characteristics such as bed material (e.g., gravel or sand) and position in the watershed (e.g., upstream or downstream position). Currently, the draft WQOs only reflect the open water season that is represented by the period when St. Mary River water is diverted to the Milk River and the period of natural flow.

Draft riparian management objectives and recommendations were developed for riparian areas and wetlands located in five reaches of the watershed (the same four reaches delineated for water quality objectives plus the eastern tributaries) using historical, pooled riparian health assessment data. The riparian health target that will be proposed is a score greater than or equal to 80 using the Cows and Fish riparian health assessment protocols for streams and small and large rivers and the threshold that will be proposed is a score of 70. The target score represents the “healthy” riparian category and suggests that there are little or no impairments to riparian function. The threshold score falls within the “healthy with problems” category and suggests some impairment to riparian functions due to human or natural causes. Current riparian health data suggests there is room to improve on riparian conditions in the Milk River watershed.



The MRWCC hosts an annual canoe trip for local residents and our partners to explore the Milk River.

PHOTO: © M.LUPWAYI

Recommendations are provided that address the management of invasive weed species and the conditions needed to establish woody vegetation in riparian areas in order to protect stream banks and reduce erosion.

Managing for biodiversity is another important aspect of watershed management as it is interconnected with land and water management. Many of the fish and wildlife species present in the Milk River watershed rely on the river, tributaries, riparian areas, and wetlands for part or all of their life cycles. Species rely on good land-use management to provide essential habitats that include water and associated riparian vegetation, large, contiguous tracts of native grassland and unique habitats like sagebrush. When habitat (or land-use) change occurs in the watershed, the quality and quantity of both the water in the Milk River, and the water stored in riparian areas and upland wetlands are also affected. The presence and abundance of fish and wildlife species can thus be used as indicators for overall watershed health. In the Milk River IWMP, indicator species include native fish, amphibians, birds, and ungulates.

The Milk River IWMP will also make recommendations for range management, river access management, and commercial/industrial activities in the watershed. The IWMP Team continues to work on developing appropriate instream flow needs recommendations that are required for Milk River channel maintenance, riparian vegetation recruitment and function, fisheries, and recreation. Groundwater recommendations will also be developed and will be based on the findings of the Milk River Transboundary Aquifer Project.

The Milk River IWMP is currently being developed. When the draft plan is released later this fall all stakeholders will have a chance to review the document and provide comment. A technical review of the targets, thresholds and recommendations was planned for May through September 2012. A public meeting is anticipated in the Fall of 2012 to receive public feedback to ensure that the IWMP reflects local expectations for watershed management. Thereafter, municipalities will be asked to provide comments on the draft plan and offer suggestions on how the recommendations may be implemented. The MRWCC intends to have the Milk River IWMP completed and adopted in 2013. The IWMP will be a living document that is updated as new information becomes available.

Members of the MRWCC should feel positively about what the council has achieved so far. Its success should be attributed to the broad range of partnerships it's been based on - our rural municipalities, conservation groups, provincial and federal agencies, and most importantly our local community have played vital roles.

For more information on the MRWCC feel free to check out our website at www.milkriverwatershedcouncil.ca All MRWCC publications and research projects may be found in our online library; or when traveling through our watershed stop by our office in Milk River to pick up a copy. 📄

Tim became Executive Director of the MRWCC in October 2011 after working in Cardston County on the county's sustainable agriculture program. Tim, a graduate of the University of Lethbridge and Lethbridge Community College, lives with his wife Kristie near Spring Coulee.

CLARITY OUT OF MUD:

Rundle College Students Teach ESRD A Lesson in Responsible Management

BY SEAN NICHOLS, AWA CONSERVATION SPECIALIST



Grade seven students clearly “get it.” Why does it sometimes seem that many of our elected officials don’t?

This last June, the *Calgary Herald* ran a story, “*Are you drinking McLean Creek mud?*” that highlighted a project done by teacher Beverley Ross’ grade seven class at Calgary’s Rundle College Junior High school. Her students were inspired by an article by Adam Driedzic of the Environmental Law Centre (see Adam’s story on motorized recreation in the April 2012 issue of *WLA* for a discussion of related issues) explaining how OHV misuse damages riparian areas. Like all good scientists, the class decided to find out the truth for themselves.

Over the following year, the 84 grade seven students embarked on a program of investigation and experimentation as they designed simulations, brought in speakers, and learned everything they

could about the effects of OHV use on the environment. Once satisfied they understood the issues, they turned to action.

They produced media ranging from pamphlets to a comic book describing the impacts of “mud bogging” and similar OHV activities on wildlife and stream beds. They built and enclosed a number of informative resource kits in geo-caches hidden around the Calgary region for geo-cachers and other outdoor enthusiasts to find.

Perhaps most importantly, they presented their findings and concerns to the government.

The students described to Alberta Environment and Sustainable Resource Development (ESRD) what they discovered about these activities. OHVs disturb ecosystems, destroy habitat and food availability, and increase the level of pollutants in the water that we drink.

In sharp contrast to the waters disturbed by OHVs the students’ fundamental conclusions were crystal clear.

Strikingly, the students proposed a set of recommendations to ESRD. No OHV use in wetlands and riparian areas. No “mud bogging” on public land. These are also very clear, fundamental, and important recommendations. They echo and reinforce the recommendations AWA has been delivering to the Alberta government over the last decade.

In short, guided by the clarity that comes from the removal of the politics and special interests surrounding the issue, the students did the science, did the research, and

drew a straight line to the inescapable conclusion. They “get it.”

Now they are waiting, along with all Albertans, to see if the government finally will get it too. AWA shares the Rundle College students’ hopes that ESRD will integrate sane OHV management regulations into the South Saskatchewan Regional Plan being developed under the Land Use Framework (LUF) planning process.

At the same time, AWA notes with caution the response from ESRD cited in the *Calgary Herald* article. A department spokesperson asserts that the students’ recommendations are already covered by existing laws but then goes on to say that “people are *expected* to keep OHVs out of wetlands” and that they (ESRD) “have been *telling* people to stay on the trails” (emphasis added). What is missing, in other words, is the enforcement.

AWA hopes the Rundle School message will prompt some real action on the enforcement front. All this expecting and telling is well and good, but without the enforcement to back it up, it ultimately comes to naught.

In a July meeting with ESRD to discuss recent OHV trail developments in the Bighorn (see the article by Sean Nichols in the August 2012 issue of *WLA*), AWA clearly communicated our position: Alberta needs better enforcement of OHV and trail regulations. Enforcement is a key component of any OHV management plan, and it’s one that is currently missing. Enforcement considerations absolutely need to be a part of the new regional plans implemented under LUF.

AWA hopes Albertans will be inspired by the hard work and insight demonstrated by Ms. Ross’ students. We look forward to the government’s “getting it” too. Will ESRD implement and enforce the regulations needed to protect riparian areas? We know one group of knowledgeable grade seven students who would like to give the department a detention if it doesn’t. 🐾



Engineered wetland at start of project.

PHOTO: © S. NICHOLS

Water in the Castle



BY PETER SHERRINGTON

*What would the world be, once bereft
Of wet and wildness? Let them be left.*

Gerard Manley Hopkins, *Inversnaid*,
1881.

The plains of southern Alberta are dry with most places averaging only around 350 mm of annual precipitation. The reason for this aridity is that they fall within the rain shadow of the Rocky Mountains to the west where moist pacific weather systems dump their load mainly in the form of winter snow. The Castle Mountain resort, for example, annually receives over 1,100 mm of precipitation, over 900 mm of which falls as winter snow. It is the water gathered in the headwaters of the Oldman watershed and carried by the streams and rivers to the east that sustains much of the agriculture and settlement of southwestern Alberta. In fact the Castle Special Place, although it only comprises four percent of the Oldman River basin, contributes a massive 30 percent of its yearly water flow.

Critical to this process are the headwater sub-alpine and montane forests that capture the snowfall, protect it from the fierce dry chinook winds for which the area is famous, and regulate its release as water into the headwater streams through the forest's spongy soils. This complex of forests, together with the magnificent mountains, lakes, and grasslands that make up the 1,004 km² of the Castle Wilderness are also second only to Waterton Lakes National Park in Alberta in biodiversity. Its residents include many rare or at-risk species including grizzly bear and bull trout.

A Fading Legislative Commitment to Water in the Castle

The importance of these forests was recognized in the 1906 *Dominion Forest Reserves Act* which included the Kootenay Lakes Dominion Forest Reserve. This area now includes Waterton Lakes National Park and the Castle Wilderness. The Act established the reserves "for the maintenance and protection of the timber growing or which may hereafter grow thereon, for



Blue Lake, Castle Wilderness.

PHOTO: © G. PETERSEN

the protection of the animals and birds therein, and the fish in the waters therein, and for the maintenance of conditions favourable for a continuous water supply."

In 1930 the control of Alberta's natural resources was transferred from the Federal government to the province. Today the recognition of the importance of water is found in Section 4 of the provincial *Forest Reserves Act* (2000): "All forest reserves are set aside and constituted for the conservation of the forests and other vegetation in the forests and for the maintenance of conditions favourable to an optimum water supply in those reserves." The *Forests Act* of the same year, however, has no such purpose statement. The *Alberta Land Stewardship Act* (2009) further dilutes the emphasis on water. Section 2(a) specifies that one purpose of the Act is "to provide a means by which the Government can give direction and provide leadership in identifying the objectives of the Province of Alberta, including economic, environmental and social objectives."

The Castle's value as a critical "water tower" together with its high biodiversity and its central importance for wildlife connectivity throughout the Crown of

the Continent ecosystem should have resulted in its legal protection long ago. Regretfully this has not yet happened and the history of the area is a long litany of unfulfilled expectations and broken promises.

For seven years the Castle was actually protected as part of Waterton Lakes National Park to which it was joined in 1914 when the Carbondale River formed the park's northern boundary. In 1921, however, it was removed from the park and was then administered as a provincial game reserve until 1945. In 1953, the first fire road penetrated along the South Castle River allowing access for recreational use and in 1957 the discovery of the Waterton gas field led to mineral exploration throughout the area. The government then granted subsurface leases in the Castle to Shell Canada. Gas exploration, together with logging, inspired the Pincher Creek Fish and Game Association to call for protection of the South Castle area in 1958. Fifteen years later AWA proposed establishing a South Castle Wildland Recreation Area during the Eastern Slopes hearings. In the same year the Alberta Land and Forests branch expressed concern that "... headwaters of streams have been allowed

to be logged, including some protection forest, in order to meet the quotas.”

In 1974 a government study recommended establishing a park in the headwaters of the Castle River. That same year the Eastern Slopes policy again identified the Castle as having “considerable park potential” and in 1979 the Integrated Management Plan for the Castle River proposed “a large Provincial Park for the Castle River sub-basin.” Nothing came of these proposals. By the mid-1980s the government’s Integrated Resource Plan (IRP) weakened protection to allow the expansion of drilling by Shell while still stating, rather cynically, that watershed protection and recreation remained primary values. In 1993 the



Two of the dozens of protesters who braved bitterly cold temperatures this past winter to oppose plans to clearcut in the Castle.

PHOTO: © G. PETERSEN

Natural Resources Conservation Board approved the expansion of the Westcastle Ski Hill under Vacation Alberta’s four-season resort proposal. But it insisted that most of the Castle be given National Park-like protection and recommended that this protection be given whether or not the project went ahead.

In 1998 it appeared that all the hard work had borne fruit when the Castle, together with 80 other areas, was designated a Special Place in the Special Places 2000 program. Unlike those other 80 areas, however, the Castle has yet to receive its final legislated protection, although its status as a Special Place is confirmed on the Alberta Tourism, Parks and Recreation website. The designation of the area as a Forest Land Use Zone was intended as an interim measure to regulate access to the area. It was to be followed by a revised Integrated Resource Plan that

would finally give the area protection. This plan was not accepted and the Castle is still managed under the outdated 1985 IRP, that still recognizes, largely in name only, watershed protection, recreation and tourism as the highest management priorities.

In 2010 following an extensive but highly flawed public consultation exercise the C5 (Crowsnest) Forest Management Plan was approved. This plan gave scant heed to the avowed priority of watershed protection. The Department of Sustainable Resource Development (SRD) ignored concerted protests from local citizens and concerns from government fisheries specialists and approved a clearcut proposal by Cochrane-based Spray Lake Sawmills (SLS) to log in the Castle in late 2011. Despite more protests, rallies, pickets and a huge letter writing campaign to the Premier the first phase of the logging started this past February.

Government justification for the logging has varied from the need to control pine beetle infestation (there are none currently in the area), fire control (although all major fires in the area since 1934 have occurred in clearcut areas), and the obligation to provide “fibre” to SLS (which has other approved timber sources and the Castle only represents 8 percent of its five-year appetite for timber).

Recreational Threats to Water Quality

The other large and growing threat to Castle water quality is unregulated off-road vehicle use and random camping. The number of motorized recreational vehicles using the area has increased considerably in recent years resulting in the development of an extensive network of illegal trails. These trails parallel and radiate from designated trails; bridges over streams are widely ignored. Random camping sites are usually located adjacent to a water source and often take on the character of villages during the summer months, albeit without garbage and sewage disposal facilities. Logging roads increasingly open up new areas for illegal motorized recreation. Even if roads and bridges are decommissioned or gated this appears only to add to the challenge of the “sport.” Enforcement of regulations is sporadic and often limited to summer long-weekends when the problem becomes particularly acute.

And What About Climate Change?

The degradation of the Castle water catchment area, already well advanced, is also taking place within a context of a changing climate. Whatever these effects they will likely impact the water supply in important ways and we will need intact forest systems to collect and regulate water flow. Today there is little or no old growth forest (over 230 years in age) left in the Castle and mature forest (over 150 years old) is now reduced to nine percent of the region’s forests. A further 5 percent of the region is scheduled to be logged by SLS over the next three to five years. Models predict that mature trees should comprise about 40 percent of an “unmanaged” forest in the Castle. We should also note that the same forest type occurs in adjacent Waterton Lakes National Park where it is neither “managed” for beetle or for fire prevention and it seems to be doing just fine! Clearcuts and immature forest are less efficient at retaining snow and because of disruption of their soils they are unable to filter and regulate the runoff when thaws occur.

Alan Brice, a well-known fly-fishing guide from the Crowsnest Pass, recounted a graphic illustration that occurred last June. He planned to take clients to fish the Oldman River downstream from an extensively logged area. But, because of heavy persistent rains the river had risen in a matter of hours by 170 percent (from 60 to 180 m³/sec) but rapidly dropped within one day to 50 percent above normal flow. By contrast the upper Castle, where clearcut logging is not yet a factor, received the same amount of rain yet because of the retention properties of the forest the water rose only by 25 percent and gradually returned to a normal flow over a period of several days. The Oldman became considerably turbid with the water becoming opaque and the river bottom being extensively scoured; the Castle remained clear and the river bed was not scoured. June coincides with trout spawning and it requires little imagination to predict which river will be the more productive this year.

Fish are, of course, excellent indicators of water quality and river health, and the Castle has two at-risk species of cold-water fish. The province has classified the bull trout as a Species of Special Concern; the westslope cutthroat trout

is classified as Threatened. Lorne Fitch charted the extirpation of the bull trout from the Crowsnest River, mainly as a result of human activities (see Lorne's Article in the June 2012 issue of *WLA*). They still inhabit the cold waters of the upper Castle, but historically they, and cutthroats, could be found as far downstream as Lethbridge. Their retreat has been driven by the warming of the water, in part because of the removal of thermal cover afforded by trees, by changes in water chemistry and flow rates through human agencies (probably including the controversial construction of the Oldman Dam) and by the severe limiting of breeding sites ("redds") through increased fine sediment flow that cements the interstices in the stream gravels where the eggs develop. These fines originate in increased erosion and runoff because of logging and its associated surface disturbance and through stream degradation by motorized off-road vehicles. Sixty years of logging and its associated and resultant activities in the upper Oldman drainage have also eliminated bull trout there.

Hear, Listen to the Voices of the People

It is often the cumulative effect of many small-scale changes in water flow and quality in the smallest streams and through subsurface flow that prove to be critical. These are rarely, if ever, measured or monitored. Stable thick snow cover in mature forests maintains a gentle subsurface flow throughout the winter to sustain stream flows and water quality, yet this critical element is unmeasured and therefore not taken into account. By allowing logging in the Castle Special Place the government has certainly not learned from its mistakes in the Crowsnest, Oldman, and elsewhere.

The Castle area does not exist in a vacuum but forms part of the headwaters of the Oldman River watershed and ultimately of the South Saskatchewan River system that is the main source of water for southern Saskatchewan. In 2010 the Oldman Watershed Council (OWC) produced a *State of the Watershed Report* that rated both the quality and quantity of water in the Castle river sub-basin as good, but all other downstream sectors were judged to be fair or poor.

Phase 1 of the Integrated Watershed Management Plan will follow this report. The planning for the management

plan is well advanced. Its initial intent is to manage and protect the integrity of headwaters and source waters. In 2011 a core team of 37 stakeholders who live and/or work in the watershed identified the top ten risks in most need of action. The top three were: a lack of understanding of the cumulative effects, the degradation and loss of aquatic and terrestrial habitat, and headwaters degradation. They also recognized that groundwater and emerging contaminants are knowledge gaps that have to be addressed. A draft action plan should be completed by mid-2013. In partnership with *Water Matters* a series of two public meetings in eleven communities will be held as part of the process in the fall and winter of 2012-13. It is assumed that the action plan will align with the pending South Saskatchewan Regional Plan (SSRP) and will connect with provincial policy. And that, of course, is where things will get tricky!

The residents of southwestern Alberta and Alberta as a whole, however, have already made their opinions on the Castle crystal clear. Early in 2011 the Praxis Group conducted public opinion surveys among residents of the Municipal District of Pincher Creek, the Town of Pincher Creek, the Municipality of the Crowsnest Pass, the Piikani First Nation, Fort Macleod, the City of Lethbridge and the Town of Coaldale. Praxis found that 78 percent of respondents either strongly or somewhat opposed commercial logging in the Castle, 80 percent supported the establishment of a Wildland Park in the Castle, and 85.5 percent prioritized watershed protection ahead of recreational use in the Castle.

In March 2012 the Praxis Group produced a report on Community Values Assessment for the M.D. of Pincher Creek and the Southwest Alberta Sustainable Community Initiative (SASCI). The report found that out of 38 value statements, "conserving and protecting water sources" was number five, and in a list of eleven land use options "enforcing appropriate use of public lands" was number one. The statement about "more opportunities for motorized recreation, such as off-roading, dirt biking" came in last; "allowing clear-cut logging in the Castle Special Management Area" was second to last.

In late 2011 and early 2012 over 100,000 communications opposing the

logging of the Castle were sent to the Premier and Government of Alberta. The weeks leading up the start of the logging saw hundreds of Albertans attend protest rallies at the site and a protest camp was sustained for three weeks in temperatures that fell to -40°C. These activities received widespread media coverage but on February 1 the first trees fell, albeit not before four protesters were arrested and briefly detained by the RCMP for refusing to leave the site.

The Castle-Crown Wilderness Coalition and local residents have asked the courts to review the Alberta government's decision to allow clearcut logging in the Castle. The case will be heard in Court of Queen's Bench on November 8.

The April 23 provincial election returned a Progressive Conservative government led by Alison Redford who campaigned on a platform of "change." Subsequently the Departments of Sustainable Resource Development and Environment were combined under a single minister but to date little or nothing appears to have changed as far as the Castle is concerned.

The reality in the Castle, however, still remains and needs a positive response from the Redford administration. Without immediate regulation of off-road vehicles in the Castle and a rescinding of the current logging license given to SLS the most prolific source of clean water in southwestern Alberta will continue to be jeopardized. It is just not worth the risk. ♣

As of the time this story went to press, AWA has learned that Alberta Environment and Sustainable Resource Development has put some logging within the Castle on hold pending the completion of the SSRP. While logging slated for the 2012-2013 season (representing about 230 ha of clearcut area, and with an estimated yield of approximately 50,000m³) will be allowed to continue, any further logging is to be deferred.

Logging Trumps All Other Concerns in the Castle: Findings from a Freedom of Information Application

BY NIGEL DOUGLAS



Alberta's forest division seemed to pay little heed to anti-logging protests such as this one near Beaver Mines.

PHOTO: © NIGEL DOUGLAS

In early 2012 a dramatic scene unfolded day by day in southern Alberta's Castle. Opposition to the planned clearcut logging program was becoming louder and louder; thousands of letters were written criticizing the logging plans; demonstrations were held in Beaver Mines as well as Calgary and Edmonton; they culminated in the arrest of four protesters on February 1. Yet the Alberta government still was deaf to any voice other than the clearcut logging mantra, seemingly driven by... but what were they driven by?

As the clearcut logging plans continued unabated, AWA increasingly wondered why the government was so determined to push ahead with its unpopular logging plans in the face of growing local opposition and in the absence of any scientific or economic justification for doing so. So in February 2012, AWA applied under the provincial Freedom of Information and Protection of Privacy Act (FOIP) to try to uncover some of the behind-the-scenes correspondence behind this seemingly inexplicable process. How were decisions being made when there seemed to be no rational justification for them?

In early July, 379 pages of FOIP documents arrived at the AWA office. As usual with these FOIP applications, the documents contain many many gaps and unanswered questions. Only one third of the material applied for was deemed to be in the "public interest" and so provided

without fee. If we wished to see the remaining two-thirds, there would be a substantial fee. Of course there was no way of questioning this "public interest" determination: who decides what's in the public interest and according to what criteria?

Despite the selective nature of the material supplied, there is much interesting information to be gleaned from those 379 pages. There are a few snippets of striking information, a lot of holes, but more than anything, a pervading sense of a Forestry Division entirely devoted to the practice of clearcut logging. It was not going to listen to any alternatives, not even from other divisions within the same ministry.

Though the Fish and Wildlife Division and Forestry Division were both part of the Ministry of Sustainable Resource Development, the FOIP documents leave no doubt that one division – Fish and Wildlife – was very much the junior partner; all of the shots were called by the forest division. Clearcut logging plans were made by the forest division, working closely with the logging company Spray Lake Sawmills (SLS). Fish and Wildlife, with a minimal complement of staff, was given very little time to respond to the plans. Whenever they were unable to respond within the time frames given, their silence was interpreted as approval. On a few occasions Fish and Wildlife wasn't even notified of plans until *after* the response window had closed.

Fish Concerns

Nevertheless, on a number of occasions, Fish and Wildlife staff raised significant concerns, but at no time did their concerns appear to lead to any changes in the planned logging. Instead responses from the forest division mainly justified why Fish and Wildlife recommendations would not be adopted.

Concerns were raised numerous times about the likely impacts of forestry activities on habitat for westslope cutthroat trout (approved for listing as *Threatened* in Alberta) and bull trout (listed as a *Species of Special Concern*). "Harvest should only proceed if Forest Management and Spray Lake Sawmills can ensure changes to hydrology, stream temperature and sediment loads will not impact these species at risk," recommended Fish and Wildlife. Yet the forest division continued to propose haul roads that run within a few metres of trout spawning creeks.

Concerns were expressed at the negative effects on fish habitat if logging access were to be added to the existing network of poorly-designed recreational motorized vehicle trails: "the state of the designated trails in this area is appalling and makes it very difficult to encourage SLS to be more precautionary with their own roading and stream crossing options." This resulted in little more than an acknowledgement that "the designated trail system is what it is," leading one person to question "how recreational interests on trail use supercede fish and wildlife protection interests / values."

Wildlife Concerns

Other Fish and Wildlife concerns included the likely impacts of logging on threatened grizzly bears. “Structure retention should be increased to higher levels for harvest plans in Grizzly bear core areas,” said one proposal. This recommendation was curtly dismissed as “outside the scope of OGR (operating ground rules).” Grizzly concerns were again expressed in a later Fish and Wildlife email, written on February 1, the day that Castle protesters were being arrested. “As you may be aware, proposed harvest areas in this (area) provide some of the more contiguous and unfragmented / key habitat for grizzly bears in this area and it is defined as core habitat as part of our recovery plan. During collaboration with researchers over the last decade, we have captured, collared, tracked and observed grizzly bears throughout this area and have found high use and selectivity during the summer months. Low elevation denning of grizzly bears have been verbally reported to us (sic)... In short, bears use this area extensively.” Once again, there is no evidence that these considerations made a whit of difference.

Similarly, in a January 25 news release, AWA and the Wild Canada Conservation Alliance raised the issue of winter logging operations and their potential to displace or even kill denning bears. According to the operating ground rules (OGRs) for forestry operations, Spray Lakes Sawmills is required to produce maps showing den sites of black and grizzly bears. Conservationists requested copies of these maps and assurances that logging equipment would not disturb bears in their dens, but these were never produced. The FOIP materials do not give any indication that these maps were ever submitted by Spray Lake Sawmills or approved by Fish and Wildlife.

Another typical case involves long-toed salamanders which are listed as a *Species of Special Concern* in Alberta. The OGRs for forestry operations call for a 100-metre buffer for ponds containing the salamanders. As forest division plans called for development close to a stream where the salamanders have been recorded (the exact distance has been deleted from the documents), Fish and Wildlife raised their concerns, but these concerns were once again brushed off. “SLS is confident that the

30-90 m buffer left will adequately protect the salamander,” reads the forest division’s response, adding that “the OGRs refer to the buffering of ponds not streams.” Without any explanation the forest division appears willing to give more weight to the logging company’s expertise on salamanders than its own colleagues, particularly when the salamanders are foolish enough to inhabit the wrong type of water body!

Rare Plant Concerns

The issue of rare plants in the Castle is another case where the logging paradigm was allowed to run roughshod over other concerns. In July 2011, the Alberta Native Plant Council wrote to the forest division to enquire whether the required rare plant surveys had been carried out in the proposed logging areas, noting that “the Crown of the Continent ecosystems in southwestern Alberta harbour the richest biodiversity in all of Alberta.” The resulting flurry of emails is almost comical as it becomes clear that nobody had thought to follow through with this, even though it was a requirement of the Detailed Forest Management Plan (FMP). “We might of (sic) missed this step of sharing an updated rare plant map with SLS... as committed to in the C5 FMP as well as incorporating these requirements into the new ground rules.”

Filling in the Blanks

As is often the case, one of the most striking things about reading the FOIP materials is what discussions did not appear to take place. Nowhere is there any suggestion that the Castle is any different from any other forest scheduled for logging; there is no reference to the Castle as a Special Place, designated by the Alberta government in 1998 as “a major milestone in the preservation of Alberta’s natural heritage for future generations.” There is no reference to the mounting opposition to the clearcut logging, to the thousands of letters and emails, or to the extensive media coverage.

Even more surprising is the fact that there is not even any reference to the government’s own land-use planning process, the Land-Use Framework, and its renewed commitment to protecting headwaters forests. The 2008 *Land-Use Framework* document emphasized: “Historically, watershed and recreation

were deemed the priority uses of the Eastern Slopes. These priorities should be confirmed, and sooner rather than later.” This principle was then reaffirmed in March 2011 in the draft recommendations of the South Saskatchewan Regional Advisory Committee which recognized the need to “Manage land in the headwaters (e.g., Eastern Slopes and Cypress Hills areas) so that maintaining watershed integrity is given highest priority by considering impacts of land disturbance in management decisions.” There is no indication that this led to any changes within the forest division.

The period during which the Castle clearcut logging decisions were being made was a somewhat turbulent one in Alberta, with an internal battle for the leadership of the governing Provincial Conservative party. Though the Alberta government under Premier Alison Redford was elected on a platform of openness and transparency, unfortunately it appears that her southwestern forest division did not get the memo. The documents suggest that Alberta’s forests still seem to be managed almost as a personal fiefdom. Clearcut logging has been the mainstay of forest management in this area for decades, and there is no intention of changing that, regardless of what is going on in the world outside forest division offices. The circular, self-fulfilling philosophy seems to be: “we must manage forests this way because we have always managed forests this way.”

Now that the Sustainable Resource Development ministry has been merged with the Environment Ministry, it may be that other concerns – particularly water concerns – will belatedly be allowed to play a role in future management decisions. One response from a beleaguered and entrenched forest division might be to dig in further and try to ensure that future concerns are not put on record, so as to prevent them from being revealed in future FOIP applications. Or alternatively, perhaps the notorious atmosphere of secrecy which surrounds the decisions of the forest division will in future be thrown open to more scrutiny. Alberta’s forests in general, and certainly the precious and fragile forests of the Castle, deserve so much more than a singular management focus on providing a sustained supply of low quality timber. ♣

Touring the Suffield National Wildlife Area



BY CHRIS HAVARD

A small group of AWA staff and supporters met early in the morning of August 1 in Ralston, Alberta for a guided tour of the Suffield National Wildlife Area (SNWA). This was a very special occasion as few non-military people have this opportunity and we were accompanied and guided in our yellow school bus by Drew Taylor, Range Biologist at Suffield.

The Suffield National Wildlife Area, located within the boundaries of Canadian Forces Base Suffield, comprises 458 km² of largely undisturbed prairie grassland along the South Saskatchewan River. This area was designated as a National Park from 1922 until 1938. In 2003, it was established as a NWA under the *Canada Wildlife Act*. The Department of National Defence administers and controls the area.

The Suffield Block, about 2,690 km² of marginal agricultural land had little successful settlement due to its semi-arid climate; the federal government expropriated it from the province in 1941. For the next 30 years the area was used for various military training and research purposes. In 1971 a ten-year agreement was signed with Great Britain to allow the British Armed Forces to use the northern three quarters of the Suffield Block for armoured, infantry, and artillery live-fire training. This shared-used agreement with the Canadian Forces has been extended indefinitely since 2006.

Our first stop was at an overlook of the South Saskatchewan River where Bill Taylor, a retired Canadian Wildlife Service habitat biologist, gave us an overview of the history of protected areas ecological management. It's been 125 years since the first protected areas program for wildlife was introduced. He discussed the fluvial, glacial, and eolian landforms, and habitats that occur in the SNWA. He pointed out the many landslumps along the South Saskatchewan River below us. These landslumps, in combination with the riparian vegetation along the river, create

excellent habitat for reptile hibernacula (hibernation sites). The participants spent some time appreciating the expansive river views, and the prairie grasses and flowers before attacking the more important job of freeing our school bus from the sandy substrate of this narrow track.

We next drove north along the southwestern edge of the Wildlife Area. There Janet Ng, a PhD candidate from the University of Alberta, gave us a presentation on hawks. Janet has been working on a project studying ferruginous hawks for several years and described the SNWA as a highly desirable working area due to the beauty of the grasslands, the abundance of wildlife, the cooperation of the base, and the good fortune to be one of the few to access these lands. With small digital cameras mounted near the nests and very small GPS satellite transmitters worn by the birds, her group is studying hawk movements to determine how they are using the habitat and the effects of external influences on their behaviour. She mentioned that they often see survey stakes incorporated into their huge nests! Many of us had the chance to use some clever gadgetry to peer into an unoccupied badger hole, a common site for nesting burrowing owls. The Burrowing Owl Project team devised this equipment (hosing, goggles, and a lighted plumber's snake. There were no burrowing owls present but we could clearly see the burrow walls and plant roots.

Our lunch stop was at another outlook over the South Saskatchewan River. Participants wandered through the grass and sage-brush to a fenced area protecting a medicine wheel where more photographs were taken of the river below, the sloping coulees, and the glacial erratics collected by aboriginal peoples to form the stone circle and extending rays. Lunch was a famous fabulous feast courtesy of the resident chefs at AWA's Calgary office

Our afternoon stop was towards the northeast into an area with a view of sand

dunes. When Dr. John Palliser visited this area, these dunes were actively moving across the prairies at a rate of up to a metre per year. Removing bison from the landscape probably had a significant effect the rates of dune stabilization. Today, they are mostly stabilized.

Corey Scobie presented an overview of sand dune dynamics and kangaroo rats. The Ord's kangaroo rat is a species with a range from Mexico to its northernmost point in the SNWA. It differs from its members further south by being up to 50 percent larger with the ability to use a form of torpor where body temperature can be dropped to below freezing, probably as a hibernation strategy. In contrast with southern rats which breed during one period defined by spring rains, our northernmost rats reproduce whenever possible, sometimes all year around.

Scobie is concerned because the kangaroo rats depend upon actively eroding sand dunes for their survival. Studies show that kangaroo rats are declining, probably due to changing sand dune dynamics with a loss to 40 percent of active sand dunes in recent decades. Scientists predict that all sand dunes will be stabilized by 2014. Dr. Darren Bender explained that experimental techniques suggest that fire and increased ungulate grazing can combat stabilization but generally the dunes restabilize after about three years. The base at Suffield has some interest in introducing fire to these areas to help provide a better habitat for the kangaroo rats.

We returned to Calgary with memories of big sky, rolling grassland, grazing pronghorn, wheeling hawks, and soft winds. We were impressed with the scientists' enthusiasm for the projects in this special landscape. We gained a new appreciation for the ecological benefits of the Canadian government's decision to create a military training facility in this area, effectively blocking rampant industrialization from disturbing this prairie grassland. 🌱

2012's Offering: A Recommended Vintage for the AWA Wild West Gala

BY SEAN NICHOLS, CONNOISSEUR OF FINE WINES AND FINER CONSERVATION ORGANIZATIONS

Like a fine wine, there are some things that just get better with age. If this year's vintage was any indication, AWA's Wild West Gala is surely one of those things. After 24 years of coming to understand what works and what doesn't, and learning from the occasional misstep, AWA was able to lasso the stars into alignment on September 21 and put on our best gala to date.

From the gorgeous oriental pillows to the fields of fragrant basil, an entire kitchen's worth of appliances, toys for tots (and not-so-tots) and, yes, the towering "wine tree," attendees were treated to a true plethora of prizes. Save possibly for the few who got outbid, no one went home disappointed.

Of course, it wasn't just the auction items up for bidding that made the event.

There was an always-mouthwatering prime rib dinner, great conversation and the swinging strains of the evening's entertainment provided by Matt Masters. Above all, the Gala provided the opportunity to get together with so many of our friends, colleagues, and supporters to commemorate our successes over the last year and to celebrate the beauty and majesty of Alberta's wilderness.

It was also an opportunity to look forward to what the next year may bring. Outgoing conservation specialists Madeline Wilson and Nigel Douglas may have left some pretty big paws to fill, but the newest member of the AWA team, Katie Rasmussen, is already off to a running start as she tries them on for size. Friday's event was the perfect chance to introduce Katie to many members of

AWA's extended family.

As always, the event wouldn't have been possible without the countless hours put in by volunteers or the generosity of our donors who provided some of those fantastic auction packages. In the middle of more than a few long nights leading up to September 21, there were those in the AWA offices wondering if we would ever manage to pull it off at all. But thanks to everyone that pitched in to help, not only did the Gala come together, but it was truly the most successful and festive yet.

With the helpful impartiality of a newcomer, Katie got straight to the heart of the matter as she noted the camaraderie permeating the event, remarking that "it just seemed like a group of good friends getting together for a fun time." That sounds about right to us. ▲



1 Auctioneer Jesse Starling sets the bidding in the right direction.

PHOTO: © K. MIHALCHEON

2 Groovin' to the sounds of Matt Masters.

PHOTO: © K. MIHALCHEON

3 The bidding war heats up for Chris Havard's knitted baby elephant.

PHOTO: © J. QUIROZ

4 "Can I bid on this one, Nana?"

PHOTO: © J. QUIROZ

5 Ana Rojas gets into the spirit of things.

PHOTO: © K. MIHALCHEON

6 AWA Conservation Specialist Carolyn Campbell, Executive Director Christyann Olson, and EmCee and Board Member Jim Campbell.

PHOTO: © K. MIHALCHEON

7 The table centrepieces were hard to resist for more than a few owlnappers.

PHOTO: © K. MIHALCHEON



8



9



10



11



12

8 *Around the world in 80 wines? The wine tree was one of the evening's hottest items.*

PHOTO: © K. MIHALCHEON

9 *"Tired now."*

PHOTO: © K. MIHALCHEON

10 *It was a night to focus on the awareness part of AWAs mission.*

PHOTO: © K. MIHALCHEON

11 *The always-popular "grizzly bear" balloon pop backs up the basil-filled baskets.*

PHOTO: © K. MIHALCHEON

12 *The fall harvest theme, made possible only thanks to the help of the Gala's many donors and volunteers.*

PHOTO: © K. MIHALCHEON



Glacial Motion
12"x48" on wooden cradle panel
© CLAUDE BOOCOCK

AWA Takes Toursim, Parks and Recreation Minister Cusanelli on Tour of Southeastern Alberta Grasslands

BY SEAN NICHOLS, AWA CONSERVATION SPECIALIST

Earlier this year, AWA had the opportunity to meet with Christine Cusanelli, the new minister of Alberta Tourism, Parks and Recreation (TPR). In that meeting we introduced the minister to AWA's concerns for many of Alberta's wild lands and wild spaces and the threats facing them. This introduction covered many of the same topics we have highlighted in the "2012 Priorities" series appearing in *WLA* over the course of this year. The meeting was followed up on July 26 with a tour of southeastern Alberta to give Minister Cusanelli the opportunity to see the grasslands "through AWA's eyes."

The tour started off with a visit to the two primary reaches of Pakowki Lake, giving the minister the opportunity to see first-hand the extensive marshes of this important staging area for migrating shorebirds. We had a chance to speak with a number of birders attempting to catch a glimpse of the black-headed gull that had been spotted on the lake the previous day – the first time this species has ever been seen in Alberta.

Next on the itinerary was the Pinhorn Grazing Reserve, a 77,000-acre expanse of natural grassland habitat that still supports a variety of wild species, including several species at risk such as soapweed, yucca moth, and burrowing owl. At the edge of the grazing reserve we stopped to take in the sweeping vistas of the Milk River canyon and get a quick hands-on lesson on Alberta's disappearing native grasses courtesy of Cheryl Bradley representing the Alberta Native Plant Council.

The final stop on the tour included an exquisite home-cooked meal at Bayot and Francisca Britschgi's J-bar-J ranch near Orion. The J-bar-J is part of an initiative by MultiSAR, an organization devoted to preserving grassland habitats for species at risk. The general initiative aims to foster coordination between the conservation and ranching communities. On ranches like the J-bar-J, experts from the different communities work together to adapt operations in ways that better support native vegetation and

animal species. For example, previously-cultivated parcels of the J-bar-J have been returned to native grass types. Fences on the ranch have also been modified to be friendlier to pronghorn antelope. Brad Downey from MultiSAR was on hand to discuss some of these measures and the Britschgis were able to give Minister Cusanelli a perspective on rural living that is increasingly difficult to some by.

AWA specifically chose the Grasslands Natural Region as the destination for the tour because with only 0.8 percent of the grassland's area enjoying any form of legal protection, it is the least-protected of Alberta's six Natural Regions. It falls far short of the 17 percent figure recommended by the International Union for Conservation of Nature. Inexplicably, this is despite the fact that it is home to more species at risk than anywhere else in the province. From the iconic sage-grouse to its eponymous fescue grasses, settlement, industry, and agriculture have had a devastating effect on the wildlife, wild waters, and natural ecosystems of this "forgotten corner" of Alberta.

The reality is that Alberta's far southeast is no longer forgotten by industry – however the provincial government has not kept up with that development when it comes to ensuring that areas are set aside to maintain a continued home for these threatened species. So now, Alberta TPR has some catch-up work to do. This is the message AWA conveyed to the minister and her staff on this tour.

AWA appreciates the time taken by the minister and her staff to immerse

themselves in some of Alberta's lesser-seen wilderness, and to hear the perspective of AWA and some of our members and associates. We hope that the impressions made by this too-short visit will positively inform any policy decisions made by the department for the remainder of this session of the legislature and into the future. ▲



Top: Members and staff of AWA, the Alberta Native Plant Council, and Alberta TPR at the edge of the Milk River Canyon.

Bottom: Alberta TPR Minister Christine Cusanelli at the edge of the Milk River Canyon.

PHOTOS: © C. OLSON

Steve Dixon, an AWA founder, whose determination, tenacity, and untiring energy for defending wilderness helped shape AWA and the success we are today is shown here on his 95th birthday with Helen, his wife of 73 years, at their home near Brant, Alberta.

PHOTO: © C. OLSON



National Park Wardens: A Community under Siege

In Jasper National Park the September 8 weekend saw a large gathering of friends and family. This group of people was connected by their collective lifelong commitment to protect and preserve Canada's National Parks. "Warden Days" is a bi-annual gathering of past and present National Park Wardens, their families, and other Park employees. It first began as a skills competition between wardens from different National Parks. Teams would come to Jasper to compete in bear trapping technique, fire-starting skills, pack horse races, and then wrap it up with a dinner, barn dance, and pancake breakfast. These events all still take place, but trophies are no longer awarded and visiting now manages to be the main order of the weekend.

Sadly, many Parks Canada employees

lost their jobs this year as a result of budget cuts handed down by the Harper government. In the host park of Jasper one in eight employees were "scaled back" or let go altogether. It was hard to find a person who wasn't affected by these shocking changes. These cutbacks not only threaten the ecological integrity of the National Parks by eliminating necessary conservation positions, but they have also had an extremely disheartening effect on the community as a whole.

This year, it was widely acknowledged that Warden Days was not a Parks Canada event; rather it was a family reunion. This was a chance for friends to come together to reminisce, socialize, and assert faith in traditional methods of park stewardship. On September 7 a protest against intensified commercial development at the Columbia Icefields saw a proud contingent from the Warden

Alumni Association standing up for traditional values of National Parks alongside citizens from around the province. Warden Days was a weekend that gave this close knit group an opportunity to remember the days when their beliefs of conservation were shared and supported by politicians, to honour skills that were once a necessary part of the profession, and to celebrate the friendship and camaraderie that makes this community so strong. As someone who has been fortunate enough to be raised as a part of this family, I hope it will be able to survive these attacks from the federal government. This community is the first line of defense for National Parks; our parks are an integral part of a Canadian national identity that needs the protection these dedicated individuals provide, now more than ever.

- Becky Best-Bertwistle

Sixteen Years after Being "Protected" Rumsey Natural Area Sees a Halt to New Oil and Gas Access

Sixteen years after it was officially "protected," Rumsey Natural Area may finally be able to look forward to a future free of industrial development. AWA learned recently that Alberta Energy has made changes so that, as of February 29, 2012, all new petroleum and natural gas agreements within the Rumsey Natural Area will now come with the condition: "Surface Access is Not Permitted." Any new energy resource extraction will have to be carried out from outside the protected area, using directional drilling techniques.

Previously, leases were sold with "Surface Access Subject to Restrictions" but this seemed to do little to slow down escalating development. Despite the fact that Rumsey was declared a Natural Area in 1996, it has continued to see more and more oil and gas development. Less than a year after it was designated, 44 new oil and gas leases were sold by the Alberta government in the Natural Area. Since then new oil and gas leases continued to be sold; new wells have been drilled and new pipelines constructed. The incomparable values of the area have suffered as a result.

Located about 40 kilometres north of Drumheller, the 241-km² Rumsey area constitutes the largest remaining intact tract of aspen parkland in the world. Rumsey is a mosaic of trembling aspen woodland, grassland, and wetland habitats. This mosaic on the rolling terrain at Rumsey is important for many typical parkland plants and animals. Its biological significance lies mainly in the variety, quality, and extent of

representative natural habitats.

AWA has been fighting for meaningful protection in Rumsey for several decades. We regard the new changes as an encouraging first step in the long-term phasing out of oil and gas activity in the Natural Area. It has been a long, long time coming but we are pleased that Rumsey may be started along the road to true protection.

- Nigel Douglas



Caption: Rumsey is one of the only large protected areas in Alberta's Parkland Natural Region. Less than one percent of the region is protected.

PHOTO: © C. WALLIS

In Memoriam

Richard Collier

1941-2012

The following excerpts are taken from the eulogy Rick's wife Mardy and her sister Sandy wrote. Reverend Grant Dawson delivered it at Knox United Church in Calgary on August 23, 2012.

There are so many people that Richard's life touched – so many different circles, indeed, that perhaps many of you are meeting for the first time – and only now discovering the many sides to Richard Collier.

A main sphere of activity for Richard, of course, was his involvement in organizing, attending, and speaking out at public rallies and protests on social justice issues. In 2009, he was calling on the federal government to offer asylum to Americans who didn't want to fight in Iraq. He was a member of the Canadian Cuban Friendship Association and organized several rallies to release the "Cuban Five" jailed in the U.S. He brought bags of food to the Occupy Calgary protesters last winter. Calgary's Raging Grannies, (including his artist sister-in-law Sandra), remember him as their most staunch (and audible) supporter. In fact, as one fellow activist stated, "I can't imagine going to a progressive meeting or rally without seeing Richard's enthusiastic face there." Richard believed, even in the face of discouragement, that "just because you can't do everything, doesn't mean you should do nothing. Do something – anything."

In terms of outdoor pursuits, at any time of the year Rick might be competing in a run or bike race, skiing, heading out on a cross-country bike tour or planning an ambitious adventure. Friends and family often had great ideas for a trip or a climb... but it was usually Rick who took the initiative to make it happen. He had, over the course of a few years and with his stepsons Paul and Dave, biked the entire perimeter of the United States. He was one of the founders of the Old Goats Climbing Club, a loose collection of people who enjoy the outdoors and who stay in touch with each other by e-mail disbursed through a Yahoo bulletin board.

Over the past 50 years, Rick climbed

over 1,300 peaks in the Canadian Rockies, Selkirks, and Coast Range, as well as in the U.S., South America, Europe and New Zealand. He was the second to climb all 54 of the 11,000-foot peaks in the Canadian Rockies. In 2005, he completed his project of climbing all 572 peaks in the Southern Rockies listed in the classic 1973 edition of the Guidebook. He also finished off all the peaks in his friend, Alan Kane's *Scramble* book in 2006 and climbed all the named summits on the continental divide between the U.S. border and Saskatchewan River Crossing in the same year.

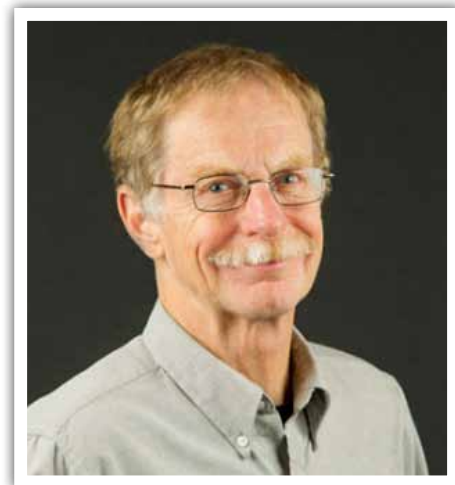
His last climb was on Mount Geikie in Mount Robson Park, west of the Alberta border, where a rock face gave way as he led the ascent. But despite all these ascents, Rick was not just a "peak bagger;" he loved, even more than

We're here to celebrate the life of a committed activist, a wholehearted environmentalist, an avid outdoorsman, and a proud family man, Richard Collier. And, not least, an all-round great guy who at whatever point of his life his death occurred, it would seem too soon.

reaching a summit, the problem solving involved in climbing, the meadows along the way, the unknown lakes and valleys and the companionship of fellow climbers. He was toying with writing a guidebook – not to help folks climb mountains but to guide them to the most beautiful but hidden places he'd discovered.

In an interview with the *Calgary Sun* in March 2012, Richard said he was most proud of "exploring thoroughly most of Alberta's magnificent mountain and prairie wildlands, while simultaneously working for their responsible use and preservation."

Richard's stand on environmental issues is probably well-known. He was a member of the Canadian Parks and Wilderness Society and the Alberta Wilderness Association. He fought to preserve the Weaselhead Natural area near his home in Lakeview and was actively protesting the planned logging near Bragg Creek.



Richard Collier

PHOTO: © ALBERTA NDP

He gained notoriety (as well as praise) when he stood his ground at the officially protected Castle Wilderness area in February 2012. He had traveled there to protest clear-cut logging in this pristine place, with dozens of local residents, business leaders, and activists in the often

below-zero weather. He refused to move aside when ordered to by police, and was arrested and jailed along with three others. His main complaint about the incident was that his jailers didn't even provide anything to read during the half day-long stint in a prison cell.

While strong in his political views, Rick ran only once for public office – as a provincial candidate for the NDP in Calgary Glenmore in the last election – and laughingly vowed that, although he had loved the experience, he'd never do so again. His public addresses for the campaign were direct, honest and from the heart, causing many in the audience to applaud his forthright style and convictions. He was ready and willing to engage in friendly debate with anyone despite their holding disparate views, and numbered Conservatives and Wild Rose members among his friends and climbing buddies.

Rick is remembered as a dedicated English professor at Mount Royal

University by his fellow academics, teachers and the over 5,000 students he taught, and he was honoured with three teaching awards. Long after he left teaching in 1996, he continued to read academic articles and carry on his obsession with proper grammar and word usage, in his humourous notes to friends or reviews of teaching and writing guides. While some might retire for the night with a good mystery book, Rick preferred a book of poetry. He kept in touch with his college roommates (from Canton College in Minnesota and the University of Wisconsin at Madison) and his pals from those days referred to him as XP, which stood for Ex Professor.

Rick's public persona has been multifaceted, but if asked, he would probably say the most important thing in his life was family. Born to parents Rex Collier and Judy Ipsen, he and his brother grew up in St. Louis, and he was one of many who came to Canada in the late 1960s during the Vietnam War. A son by his first marriage, Tim, was father to four of Rick's grandsons (Caleb, Eli, Ben and Jaden), who loved the times they spent with their grandfather. He married Mardy

Roberts in 1996 and was a second father to her sons David and Paul. His newest grandson, Finlay, was born to David and his wife Bridget just over a year ago. He talked often about sharing with Fin the joys of outdoor activities.

One of Rick's favourite poets was Mary Oliver, and her poem When Death Comes seems a fitting tribute to Richard Collier and a life well-lived:

I want to step through the door full of curiosity, wondering: what is it going to be like, that cottage of darkness?

And therefore I look upon everything as a brotherhood and a sisterhood, and I look upon time as no more than an idea, and I consider eternity as another possibility,

and I think of each life as a flower, as common as a field daisy, and as singular,

and each name a comfortable music in the mouth tending as all music does, toward silence,

and each body a lion of courage, and something precious to the earth.

When it's over, I want to say: all my life

I was a bride married to amazement. I was a bridegroom, taking the world into my arms.

When it's over, I don't want to wonder

if I have made of my life something particular, and real.

I don't want to find myself sighing and frightened or full of argument.

I don't want to end up simply having visited this world.

And to close with the words of Che Guevara — words that Richard often quoted,

"At the risk of seeming ridiculous, let me say that the true revolutionary is guided by a great feeling of love. It is impossible to think of a genuine revolutionary lacking this quality." 🍌



Glacial Moraine
12"x24" on wooden cradle panel
© CLAUDE BOOCOCK

Events

Music For the Wild

SATURDAY, OCTOBER 27, 2012

Robbie & Will

Robbie & Will (Robbie Bankes, Will Lynch and Brigitte Ouellet) return to the Music for the Wild for the third time. They have left our audiences dazzled and delighted with their wonderfully skilled playing and their great sprit on stage. They play a mix of Celtic and folk music with élan using guitar, bouzouki, mandolin, accordions and fiddle.

Opening Act: Blue Rambler

- Doors open at 7:00 p.m.
- Music starts at 7:30 p.m.
- **Tickets:** \$15.00
- **Pre-registration is required:** 1-403-283-2025
- **Online:** www.AlbertaWilderness.ca/events

Martha Kostuch Annual Wilderness and Wildlife Lecture

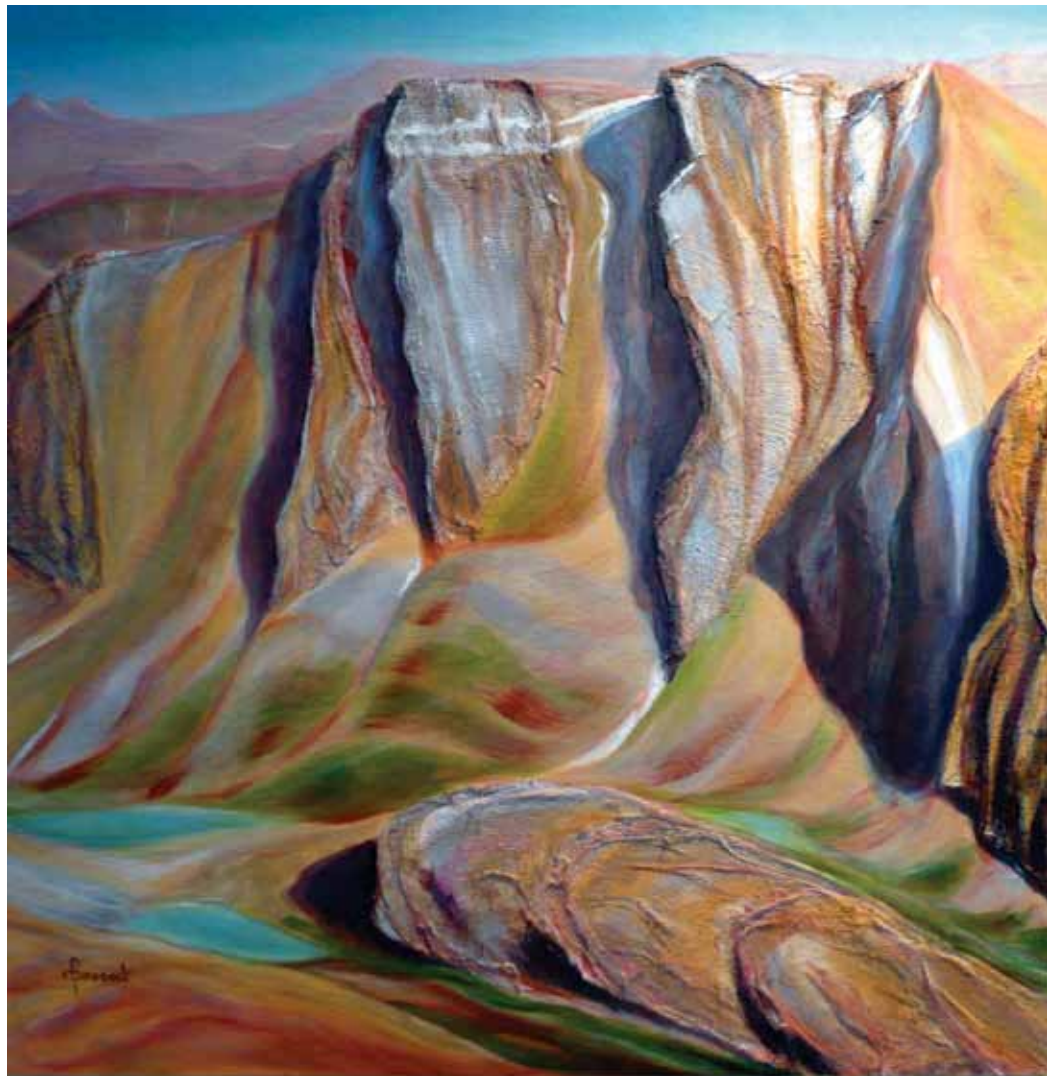
and the

Annual Wilderness Defenders Awards

FRIDAY, NOVEMBER 16, 2012

Guest Lecturer – **Lorne Fitch**
Two Alberta Wilderness Defenders Awards and one Great Gray Owl Award will be presented at this evening of celebration.

- **Location:** 455 – 12 Street NW, Calgary
- **Reception:** 6:00 p.m.
- **Wilderness Defenders Awards:** 7:00 p.m.
- **Lecture:** 7:30 p.m.
- **Cost:** \$30.00
- **Registration:** 1-866-313-0713 or 1-403-283-2025
- **Online:** www.AlbertaWilderness.ca/lecture



Rock Lake
24"x24" on wooden cradle panel
© CLAUDE BOOCOCK

Alberta Wilderness Association Annual General Meeting

SATURDAY, NOVEMBER 17, 2012

- Time 11:00 a.m.
- Location: 455 – 12 Street NW, Calgary
- Registration: 1-866-313-0713 or 1-403-283-2025
- **Online:** www.AlbertaWilderness.ca



Winter Walk

THURSDAY, DECEMBER 13, 2012

Join AWA for a walk through the winter wonderland of Big Hill Springs east of Cochrane! AWA's Vivian Pharis will be hosting this interpretive stroll through the coulees of Big Hill Springs. Be sure to bring your mug, because you'd better believe there will be hot chocolate a-plenty, as well as carolling and more. Please phone or see the AWA website for details.

- **Registration:** 1-403-283-2025
- **Online:** www.AlbertaWilderness.ca/events

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

STILL ONLY 13 MALES LEFT?

www.AlbertaWilderness.ca

Return Undeliverable Canadian Addresses to:



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