

CONSERVATION

SPRING/SUMMER 2008, VOLUME 10

The official publication of the Alberta Conservation Association



**Nurturing
the Land**
for Food, Flora and Fauna

Robert Bateman
Get to Know Your
Wild Neighbours

**Conservation
in Action**
with Barry Mitchell

Back from the Dead
Lake Aeration Breathes
Life into Fisheries

ON THE COVER

□ by Gerald Romanchuk

It felt as if I'd been sitting stuffed into the small, hot blind for half a day. In reality, it'd only been a little over half an hour. Still, I was starting to doze off when I looked up and saw a small, fuzzy Swift Fox kit looking curiously at the blind. I was so excited to see one of these rare grassland foxes that the first few photos I took were all blurry – I couldn't hold the camera steady!

Three siblings joined the first kit within a few minutes. Shortly afterwards their mother came up above-ground as well. The blind was set up near a den that was dug down into the southeastern Alberta prairie.

By the early 1900s, the swift fox had pretty much disappeared from western Canada. In 1978 the fox was officially declared an extirpated species in Canada. The Canadian Wildlife Service, with the co-operation of several other organizations, began a re-introduction program in 1983. With the release of captive-bred foxes and foxes taken from the wild in the United States, Swift Foxes have been slowly re-establishing themselves in Alberta. Their status has been upgraded

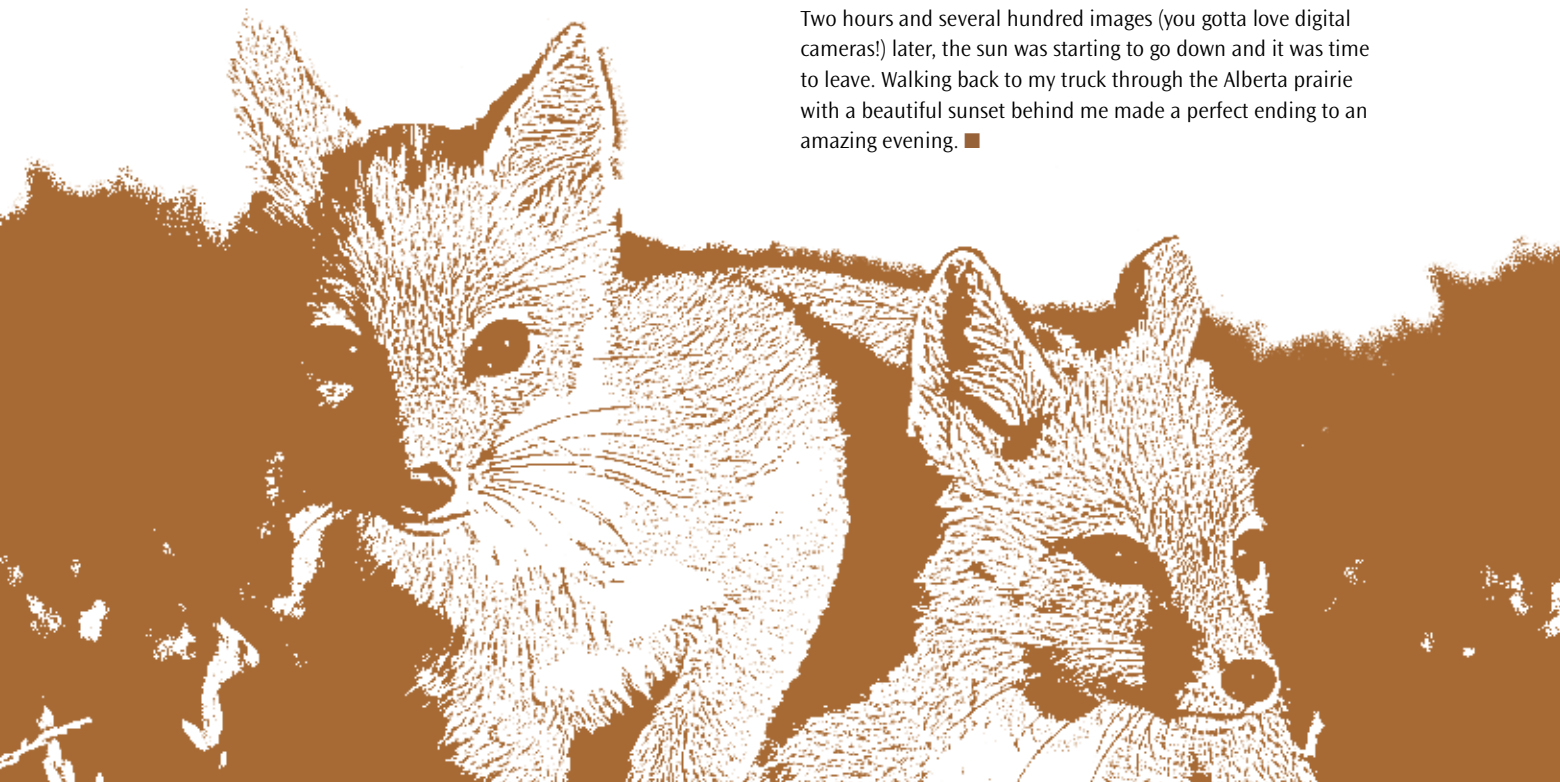
to endangered and, with a lot of luck, it is possible to see one of these small foxes on our province's native grasslands.

The kits that I had the privilege to photograph were full of energy and extremely rambunctious. They seemed to be in constant motion, running around, rough-housing with each other, and pouncing on each other's tail. One kit practised its predatory techniques by stalking a lump of dirt!

The female swift fox didn't seem all that impressed with her kits' antics. It was as if she barely tolerated them. I didn't see any signs of affection. I guess being stuck in a hole in the ground with four rowdy kids would make anyone a bit grumpy.

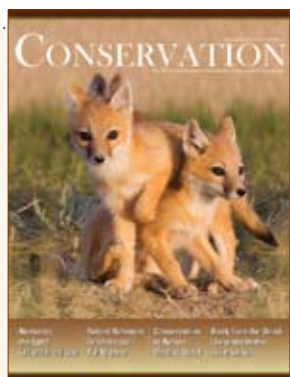
The biggest challenge from a photographic standpoint was deciding where to focus my attention. When you're looking through a telephoto lens you have a very narrow field of view. With so much action happening, I was always worried that while I was working on one of them, something better was happening with one of the others.

Two hours and several hundred images (you gotta love digital cameras!) later, the sun was starting to go down and it was time to leave. Walking back to my truck through the Alberta prairie with a beautiful sunset behind me made a perfect ending to an amazing evening. ■



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Yadda Yadda Yadda Yadda Yadda
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Yadda Yadda Yadda

My backyard outside of Yellowknife was paradise to me—a virtual Garden of Eden. In the Land of the Midnight Sun, there were endless opportunities and hours to explore the wilderness with my dog Buck. The adventures we embarked on are still some of my fondest memories. From my vantage point the landscape appeared untouched and teeming with life. Nothing was impossible and everything was amazing.

It is here that I developed a deep life-long respect for “my wild neighbours”. I knew their names, what they ate, about their young and most importantly about their habitat. Who knew that years later we would witness a generation of children who have never experienced this connection with nature?



At Muir Lake with my nephew, Thomas.

The partnerships we have with the natural world and those who want to conserve it have become increasingly important. In this issue, we highlight some revolutionaries who are taking unique steps to ensure future generations can discover the wonder of their own Garden of Eden.

In *Get to Know Your Wild Neighbours*, page 21, we meet Robert Bateman who took his passion for nature and art and created a somewhat unconventional program to reconnect youth with nature. With *Winning for the Environment*, page 14, we see how one voluntary act by Suncor Energy to conserve habitat in partnership with ACA launched Alberta's first terrestrial conservation offset program and inspired Total E&P and Shell Canada to come on board. Sherwood Park Toyota joins ACA as its newest *Corporate Partner in Conservation*, page 27, and is offering *Conservation Magazine* readers the opportunity to “cash in on a wild deal.”

Of course, we are delighted to profile Barry Mitchell, an iconic figure in the world of fish and fish conservation in our feature, *Conservation in Action*, page 26.

Margaret Mead believed that “a small group of thoughtful people could change the world.” At ACA, we witness it everyday through partnerships with our Member Groups, corporations, government and the hunters and anglers that provide valuable funding through levies for conservation work. *Conservation Magazine* is also a result of partnerships. Many of our writers and photographers work with us through the year to provide you with the stories and the incredible photography that help make it so wildly successful.

Enjoy the outdoors and don't forget to *Discover Alberta's Wild Side* with your **free** *Guide to Outdoor Adventure*, see page 24! — *Lisa Monsees, Editor*

Letters to the Editor: Address letters to *Conservation Magazine* Editor by e-mail, fax or mail. Include your name, address and daytime telephone. Letters may be edited for clarity and length.



Conservation Magazine
Conserving Alberta's Wild Side

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Conservation Magazine (ISSN 1488-6235) is the official biannual publication of the Alberta Conservation Association.

Charitable Registration Number:
88994 6141 RR0001

Nurturing the Land

for food, flora and fauna



□ by Lee Foote, ACA Board of Directors

It is a compelling theory that says our desire to participate in nature is instinctive.

My heart races when I am walking quiet harrowed fields, shotgun at the ready, watching dogs focus in on nervous, invisible pheasants. Then, like a jack-in-the-box, these rays of brilliant life are cackling and airborne. It is magical. Why should we be enamoured of the staccato tugging at the end of a fishing line, the sudden appearance of white-tails surging through willows, or the silent snow tracks of a marten?

Why Should Sportsmen Care About Biodiversity?

It is a compelling theory that says our desire to participate in nature is instinctive. If this is true, Albertans are among the most fortunate on earth in having vast opportunities to embrace wild experiences in an environment that is diverse, relatively intact and persisting in a long-term, sustainable fashion. Yes, there are problems and problem areas

requiring attention and work. That balancing effort is the first job of conservation.

Some minimal level of environmental diversity is very important for our wild experiences to be authentically wild and not conjured up in a mockery of nature. My dog and I are interlopers on these northern plains. She is dashing through a field composed of a single strain of a Siberian grass that is harvested with heavy machinery, then hauled to the mills and bakeries to provide our daily bread. This much is valued, but these human activities are not without costs to wildlife. There was a time when swift foxes, bison, gray wolves, prairie rattlesnakes, burrowing owls, upland plovers and sage grouse once tumbled out of these coulees and grassy swales. Now they are mostly replaced by pheasants, a colourful, albeit exotic, relative of the chicken. The pheasant is an enduring friend to sportsmen across North America, but is it fair and realistic to ask for more?

Can we have landscapes that are economically productive and that sustain regional biodiversity?

The simplified biodiversity of these tan, grey and blue wheat lands may provide greater wildland experiences with minimal stewardship. Our knowledge of biodiversity, of quality of outdoor experiences, and of the complexity of nature challenges us to develop ways to repair our disrupted, fragmented wildlands and to encourage a pattern of sustainable wildlife processes. How do we nurture the land to produce both our bread and burrowing owls?

Many conservation organizations, such as ACA and its member groups actively purchase and structure habitat to provide islands of lightly impacted natural lands. These are what biologists call “source areas” from which many species with special requirements can seep out into more



heavily used parts of the landscape. These habitat nodes adjacent to private landowner co-operators can provide connecting corridors, patches, and set-aside lands to foster a broad diversity of wildlife in the region.

An Honourable Preoccupation with Habitat

A fishing friend used to say, “Looks like we’re going to have some weather.” My response was, “Of course we are, we have weather every single moment of every day!” Habitat is like that. It is neither created nor destroyed; it is simply altered. It all produces *something* whether a complex of old growth forest composed of lichens, mosses, white spruce, caribou and black-backed woodpeckers, or flat mine tailings, which just happen to be excellent “habitat” for new carpets of algae, bacteria, and other micro-organisms. Conservationists generally prefer to think of older, more complex forest environment as habitat. But as Aldo Leopold, the father of wildlife management said, we need to “think like a mountain” by considering the long-term view. In time, an old-growth forest may become a charred remnant and a mine slime site may become a productive waterfowl wetland. When discussing “habitat loss,” we need to consider the time frame as well as the species using the habitat.

Applied and pragmatic conservationists have finally come to appreciate land that is being worked to produce food for humanity and simultaneously nurtured for the social benefits derived from water, plants and wildlife. It is honourable to work on finding ways to meet commitments to wildlife habitat while recognizing that society also requires land to produce livelihoods for individual owners. Our province’s white zone of private ownership is a treasure trove of rich soils and productive habitat with farmers/ranchers as the key stewards of this land base.

A musician friend of mine is a 4th-generation dairy farmer and conservationist whose family has worked the same section of central Alberta land over parts of the last 3 centuries (ancient history around these parts—there were still buffalo hunters in Alberta at that time). Larry followed the rainfall, degree days, and sunlight on his pastures and concluded that his great hay production meant he would treat himself to a new guitar. Now, every time I hear Larry play, I think about what a short chain of

sunlight, soil, crops and milk sales bought that instrument for him.

Not only does his family live close to the earth, but they are proud of the fact that their topsoil is thicker now than it was 75 years ago. Their sloughs buzz with spring waterfowl due to good husbandry and water yields, careful crop rotations, and judicious fallowing. The moose and deer I bow-hunted on his property share the place with badgers, weasels, ferruginous hawks, nesting gadwalls and saw-whet owls. It makes for a glorious evening of quiet sitting and watching the parade of creatures in his woodlots even though I hear his cattle lowing and the skyline of downtown Edmonton is clearly visible. This is biodiversity conservation in our backyard. The habitat has changed in the last century and in this case those changes have been for the betterment of wildlife, water, and soil resources while providing citizens with fresh milk each morning.

The existence of habitat is necessary to ensure access to wildlife; to appreciate the intangible benefits to society of clean water, clear air, aesthetics, species diversity, and carbon storage; and to provide vivid outdoor experiences. Remember though, existence of habitat alone is not sufficient.

We must direct the future of that habitat through vigilant care of the site, the users, and the surroundings. This is where we, as stewards and conservationists, have the chance to give something back.

Even though I do not own wild land in Alberta, I can vote, I can contribute through donations and licence sales, and I can reward those landowners who recognize that their farm accounts have multiple “bottom lines”; some bottom lines are expressed in dollars, some in soil carbon, and some in wildlife and biodiversity. Conservation contributions might be made through our words to others, by our examples and our physical input, and by how we educate our children. We can also offer mentoring to outdoorsmen and give support for enlightened agriculture.

Why Hunters and Anglers are Conservationists

Hunters and anglers are passionate about their time afield. This is a “use” of a limited wildlife resource that must be regulated much like water for crops, if it is to remain widely available over five or more generations. We have regulations to limit excess use, but sportsmen and women go a step beyond and show adherence to

laws, self-regulation and restraint through a code of sporting behaviour, volunteerism, and stewardship. Here, the simple act of conservation serves as a conduit to elevate the human spirit, to provide a wholesome natural and social environment where the best of human behaviour can be transferred amongst peers, between cultures through shared goals and respect, and across generations through mentorship. The process of conserving brings out the best in people. It is a positive act of hope and trust in the investments we make across time.

Experiences in the field makes hunters, anglers and other conservationists more committed to protecting the very forests, wetlands, prairies, lakes and species that are part of a healthy ecosystem. Whether we are hunting, angling, trapping, or picking mushrooms, through our active use of our wild resources we are investing ourselves into nature, thereby valuing it more highly. What people value, they protect. Thus, as passionate hunters and anglers, we become a driving force for Alberta's wildlife conservation.

Perhaps then, through conservation those wheat prairies can produce our daily bread *and* support a diverse plant and animal community, including pheasants. ■





□ by Kevin Fitzsimmons, ACA

SOME LIKE IT HOT, and some not so much

Stream temperature affects trout mortality

Water temperature is one of the most important factors that determine the structure and dynamics of communities in stream ecosystems. Due to this importance, stream temperature is one of the most widely studied aspects of water quality. Many processes, such as stream nutrient cycling, metabolic rates, and life history strategies of aquatic organisms are tightly coupled with stream temperature. Consequently, alterations to stream temperature can decrease the fitness of aquatic species, or can render reaches of a stream uninhabitable. Stream temperature is influenced and ultimately determined by the physical and biological characteristics of the stream channel, the riparian zone, and the amount of solar radiation the stream receives. Human practices such as the removal of riparian vegetation, thermal pollution from industrial cooling water, impoundment of moving waters, water withdrawals and other practices that alter stream discharge patterns or influence the amount of solar radiation reaching the stream can alter stream temperatures and have negative effects on aquatic biota.

Many of the streams in the foothills of Alberta start their journey at high altitudes

as very cold, well-shaded, high-gradient streams. Farther downslope, these streams have reduced gradient and less forest cover; consequently, they move more slowly and their temperature tends to increase. In the upper reaches of these streams, temperatures are generally suitable for cold-water fish species such

Increased metabolic rates and oxygen requirements, and sometimes death, are short-term consequences of elevated temperature on fish.

as bull, brook, cutthroat, rainbow and brown trout. In the lower reaches, these streams make the transition to parkland prairie streams where cold-water fish find themselves nearing the upper limit of their temperature tolerances. Different trout species have varying temperature tolerances, with bull trout found in streams

where water temperatures are less than 18 °C and preferably around 13 °C. Rainbow trout, on the other hand, are able to tolerate temperatures near 25 °C. Increased metabolic rates and oxygen requirements, and sometimes death, are short-term consequences of elevated temperature on fish. Longer-term implications of elevated stream temperatures are reduced reproductive capacity and increased overwintering mortality. In general, trout exposed to elevated temperatures have increased energetic demands that may affect both their ability to reproduce and to make it through the winter.

At the same time that cold-water fish are having a hard time coping with elevated stream temperatures, cool-water fish such as northern pike and walleye are better suited to these stream temperatures. The cold-water fish are therefore not only physiologically stressed, but now they have to compete with other fish species that are enjoying the advantages of elevated stream temperatures. For trout in this situation, the last thing they need is to find themselves on the end of a well-meaning angler's line. This stress may be enough to tip the scales and lead to increased mortality in the local trout population.

Cool-water Fish Species



Northern Pike



Walleye

Cold-water Fish Species



Rainbow Trout



Brown Trout



Cutthroat Trout



Brook Trout



Bull Trout

Photos courtesy of the Royal Alberta Museum

Increased understanding of the role temperature plays on aquatic ecosystems, and acknowledgement of global climate change, have produced considerable interest in the prediction of water temperatures. In the east slopes of Alberta, declining stream flows and increased stream temperatures have been identified as major threats to the conservation of many cold-water fish species.

In the east slopes of Alberta, declining stream flows and increased stream temperatures have been identified as major threats to the conservation of many cold-water fish species.

ACA, in association with Alberta Sustainable Resource Development (ASRD) developed predictive models that fisheries managers can use to predict temperatures along a stream. These models use the relationship between stream data collected by Alberta Conservation Association in 2004 and Alberta Environment data made available on the internet in near real-time. Fisheries managers simply have to look up data online and input it into a cell in a computer program. The predictive equation then plots the temperature at remote locations for graphical display. These models have been used by ASRD fisheries managers to predict stream temperatures at stream locations where real-time monitoring is not available and on-site visits would be very time consuming and costly.

During high temperature events, fisheries managers have been predicting stream temperatures at various locations, and issuing public notices to anglers to curtail angling for periods of time at locations where stream temperatures are dangerously high. While ASRD has the legal authority to change angling regulations when high temperature events occur, this has not happened to date as the public has responded well to voluntary angling restrictions. Fisheries managers have

also been advising Alberta Environment to place a moratorium on temporary water withdrawal licences on streams which are experiencing high temperatures events.

Through collaboration of ACA and ASRD, the prediction of stream temperatures at a number of locations throughout the east slopes has been possible. Consequently, ACA has been able to provide ASRD with a scientific tool that can be used to support appropriate fisheries management responses.

The outcome of this ACA and ASRD collaboration is the conservation of fish in streams prone to high temperature events, and the continued enjoyment of these fisheries by Alberta anglers. ■



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Back from the Dead

Lake aeration breathes life into fisheries

□ by Duane Radford

After yet another fairly long, cold winter in our province, spring finds the trout starting to move and becoming more active on Alberta's aerated pothole fisheries. These fisheries were once barren of fish due to chronic winterkill, but have been brought back from the dead as a result of aeration made possible through the efforts of the Alberta Conservation Association.

Winterkill is a fact of life for many lakes and ponds in Alberta as levels of dissolved oxygen decline under the cover of ice during the winter, starting from the lake bottom and working up to the surface. If the aeration lifelines were terminated, these fisheries would once again be lost. Lake aeration contributes to the health of the aquatic ecosystem. It allows trout to overwinter and survive for several years to reach their maximum potential size. These healthy, aerated lakes throughout the province attract many families for recreational outings.

Canada's National Fly Fishing Competition and Symposium were held in Grande Prairie, Alberta in 2007, featuring fly fishing competitions on Moonshine Lake and Spring Lake, as well as Kakut Pond, the former two

lakes being aerated by the ACA. These lakes were chosen for the competition because they are among several "go-to" destinations for inveterate fly fishers, and have long been popular with other Alberta anglers. Moonshine Lake is stocked with rainbow and



brook trout, while Spring Lake and Kakut Pond have rainbows. They're all part of a family of stocked lakes being aerated by the ACA over the past decade.

"To say the fishing was very good would verge on understatement, for the trout were big, strong, and generally—but not

always—cooperative," said Randy Taylor, president of Fly Fishing Canada, about the competition.

Two management programs have brought life to previously barren fisheries in Alberta. The first is the provincial government's trout stocking initiative whereby fingerling trout are planted into suitable waters, including some that are being stocked by the ACA. The second is the lake aeration program, initiated by the government but operated for the past decade by the ACA. These two initiatives have created some really outstanding trout fisheries which are becoming increasingly popular as the word gets out about the good fishing to be had by Alberta's outdoorsmen and women.

David Jackson, a senior technician with ACA says anglers are generally happy with fishing at aerated lakes. He says that, once the word gets out on an aerated lake, anglers show up from all over the province, although the majority are usually locals. He's also observing more consistent ice-fishing activity throughout the winter; anglers tell him that these aerated fisheries are great. Jackson chuckles, "I have even had one guy wanting to kiss me, but that's as far as that got!"

In another testimonial, an Edmonton angler told Jackson about the great fishing he's had in various aerated lakes, exclaiming, "The folks at ACA should be commended for their work in this area; through their work and the work of various clubs and organizations, we are starting to see very real results."

On a rather sad note, however, he added: "While most of the pothole lake fisheries are in trouble there are a few shining stars still in Alberta. Due to modern lake aeration technology, some of our fisheries are doing very well. Lakes and ponds, such as Sulphur, Swan, Figure Eight, Beaver, Muir, Millers, Ironside and Salter's, are now producing fish

to start than at one of Alberta's pothole fisheries and perhaps an aerated lake located nearby!

Find your next angling adventure on one of ACA's aerated lakes or stocked ponds by visiting www.ab-conservation.com and click on *Discover Alberta's Wild Side*. ■



Richard Olson with 12 pound champion Rainbow Trout from McVinnie Reservoir located 22 km north of Picture Butte.

larger than three pounds. These lakes typically suffer winterkill; so the population would consist of fish in the half- to one-pound range normally. When I take my bi-annual, week-long trips I usually go to one of these lakes."

In both 2008 and 2009, the theme for *Canada's National Fishing Week* will be "Catch a Memory". Try to think back to your first time out fishing; maybe now it's time to take someone fishing for the first time and catch a new memory. I can't think of a better place

Due to modern lake aeration technology, some of our fisheries are doing very well. Lakes and ponds, such as Sulphur, Swan, Figure Eight, Beaver, Muir, Millers, Ironside and Salter's are now producing fish larger than three pounds.



Pathways to Fishing at Rundle Park, Edmonton by Duane Radford



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Peigan Creek

Conservation Site



□ by Brad Fenson, Alberta Fish & Game Association

Brad Fenson

The Alberta Fish & Game Association (AFGA) is celebrating several milestones in 2008, including the 100th anniversary of the provincial organization. AFGA is the oldest conservation organization in the province and has a long list of historical highlights. The Wildlife Trust Fund (WTF) is undoubtedly the flagship conservation program of the AFGA, which itself is celebrating a 25th anniversary this year.

With more than 33,000 acres of critical fish and wildlife habitat already conserved in Alberta, there is a lot to celebrate. However, the WTF could not boast its successes without recognizing the strong partnerships with other conservation organizations, like the Alberta Conservation Association.

For example, a critical piece of native prairie habitat in southern Alberta has been conserved in perpetuity. The Peigan Creek Conservation Site, a 640-acre parcel of land southwest of Medicine Hat, has been

acquired by a number of conservation groups working collaboratively to ensure a future for wildlife. The diversity of the habitat found on this parcel makes it important for a wide host of flora and fauna. This habitat has also been identified as a critical wintering area for ungulates, adding further to the importance of securing the long-term habitat values.

The mix of native habitats is what makes the area and this property in particular, so valuable for conservation.

The native prairie grassland and associated riparian habitats along the two branches of Peigan Creek will benefit such species as mule deer, white-tailed deer, moose, loggerhead shrikes and even prairie rattlesnakes, bullsnakes and leopard frogs. Numerous wildlife species listed as species at risk in Alberta have been confirmed on

the property and will benefit from continued maintenance of prairie landscapes. The creek bottoms have a host of native shrubs and cottonwood groves that provide wintering habitat, nesting cover and travel corridors for wildlife. The mix of native habitats is what makes the area and this property in particular, so valuable for conservation.



David Fairless

Prairie Rattlesnake



The prairie rattlesnake is Alberta's only venomous reptile. Their timid nature and desire to be left alone means the foolhardy that harass or try to handle these snakes are bitten.

Prairie rattlesnakes are superbly adept at locating warm-blooded prey such as small mammals by using heat-sensing organs located within two facial pits positioned between their eyes and nostrils. These heat-sensitive receptors allow the prairie rattlesnake to target vulnerable prey with deadly accuracy, even in complete darkness.

The rattle located on the end of tail of the prairie rattlesnake has evolved as a means to deal with the constant threat of being trampled by heavy hoofed animals, such as the bison, that traditionally shared their prairie habitats. Although the rattle can be damaged or lost completely due to wear and tear, it's presence along with a large triangular head, facial pits, and vertical eye pupils instantly distinguishes this snake from all other snakes in Alberta. — *Kris Kendell, ACA*

Bullsnake



The bullsnake is Alberta's largest snake reaching up to 2.5 metres in length. It is also our only snake that kills its prey by constriction – meaning that they squeeze their prey in one or two of their powerful coils resulting in asphyxiation or immediate cardiac arrest of their would be prey.

Many ranchers and farmers are glad to see bullsnakes as they are incredibly efficient at controlling unwanted rodent populations.

While the bullsnake is superficially similar in pattern and colour to the prairie rattlesnake, it is fairly easy to identify. It has a relatively small head that is not well defined from the neck, the absence of a rattle, facial pits, and vertical eye pupils.

When approached or cornered, bullsnakes can make a loud, raspy hiss. The intimidating sound is produced as air passes and vibrates a flap of cartilage in front of their trachea. Despite their sometimes menacing attitude, they will not strike unless severely provoked. — *Kris Kendell, ACA*

Snakes and Flowers

You will notice a distinct lack of Richardson ground squirrels, better known as gophers. The Peigan property has several active snake hibernacula and with a healthy population of bull and prairie rattlesnakes, gophers are a rare sighting. Listed as an endangered species, prairie rattlesnakes can be observed on south facing slopes over the creek. Hibernacula are enlarged ground squirrel or badger holes. Snakes can often be seen sunning themselves near the entrance to their underground hide away, especially in the morning.

If snakes aren't your thing, make sure to take along a guidebook to Alberta wildflowers. The native prairie has a wonderful and

diverse array of trees, grasses and flowers that are sure to please any visitor. Plan seasonal visits and take advantage of the different flowering stages of plants.

For a downloadable map and air photo of the property please visit the AFGA website at www.afga.org, where Peigan Creek Conservation Property is listed under the Wildlife Trust Fund Properties.

Planning a road trip? Pick up your free *Guide to Outdoor Adventure* published by Alberta Conservation Association. The guide provides driving directions, maps and property details for Peigan Creek and 360 other conservation sites. Contact ACA at 1-877-969-9091 or visit www.ab-conservation.com and click on *Discover Alberta's Wild Side*. ■

Peigan Creek Partners

Peigan Creek was secured through the efforts of a number of partners including the Alberta Fish and Game Association Wildlife Trust Fund, Nature Conservancy of Canada, Alberta Conservation Association, Medicine Hat Fish and Game Association, Lethbridge Fish and Game Association, Picture Butte Fish and Game Association, Sarcee Fish and Game Association, Zone 1 Alberta Fish and Game, the Chinook Chapter of Pheasants Forever and the Calgary Chapter of Pheasants Forever.

The groups will work collectively to ensure that long-term habitat values are managed and enhanced to benefit conservation in the region.

Winning for the environment

Terrestrial conservation offset partnership a first for Alberta

Jenny Straub



Winning for the Environment: The Boreal Habitat Conservation Initiative was also a 2007 finalist for the Alberta Emerald Awards, which celebrate environmental excellence in the province.

A unique partnership between Alberta Conservation Association and Suncor Energy Foundation netted our organizations a national award from Imagine Canada, a research-based charity that raises the profile of non-profit groups. The Business and Community Partnership Awards, presented in Calgary on February 7, recognize innovative collaborations between businesses and their non-profit partners.

It's one of many accolades that we've received along with the energy company for our combined conservation efforts in the boreal forest. "Through a shared vision and complementary expertise, the ACA and Suncor are making a lasting contribution to boreal forest conservation efforts in Alberta," says Gord Lambert, vice-president of sustainable development for Suncor.

In a province where development of oil and gas is changing the landscape on a daily basis, this initiative means that large portions of boreal forest will be available for future generations of Albertans to enjoy. With its diverse vegetation and

wildlife, the boreal forest provides many recreational opportunities such as hiking, fishing, hunting and birdwatching.

The Boreal Habitat Conservation Initiative has the distinction of being a first for Alberta in "terrestrial conservation offsets". "Conservation offsets are the idea that companies can compensate for areas they disturb by acquiring private lands and passing those over to conservation," explains Simon Dyer, an environmental scientist with the Pembina Institute in Calgary. By doing so, the company recognizes that their project is having an environmental impact and offsets it by creating benefits on another portion of land.

"The success of the partnership has launched similar projects with other oil and gas companies," says Todd Zimmerling, ACA president and CEO, citing recent partnerships with Shell Canada and Total E&P Canada. "These projects and the corporations involved are having a real and positive impact on the environment. Without corporate partnerships, these types of projects would not be possible."

Sprucing Up the Forest

Alberta has 65,000 square kilometres of private land in the boreal forest natural region. According to the Pembina Institute's Simon Dyer, 6,000 square kilometres of boreal forest could potentially be disturbed by oil sands development in the province. By using corporate dollars to pay landowners to reforest portions of their land, it can help offset the environmental impact on the landscape.

Alberta's boreal forest is located in the northern half of the province and is home to aspen, balsam poplar, spruce and pine trees. It is an important wildlife habitat, supporting 48 species of mammals, including the Northern Flying Squirrel, black bear, moose and caribou, and more than 245 bird species. Rivers, streams and lakes in the region support 40 types of fish, including Arctic Grayling and bull trout.



Moose calf - Gordon Court

Setting the Groundwork

Corporations have a growing responsibility to protect the environment; The Suncor-ACA Boreal Habitat Conservation Initiative is paving the way.

One of the highlights of Sue Lowell's job is finding out that another piece of boreal forest has been purchased for conservation. "The most rewarding moment is when we get the notification from Alberta Conservation Association that a parcel of land has been purchased ... and that land can now be returned to its more natural state and conserved for our future generations," says Suncor's director of sustainability and integration.

The Boreal Habitat Conservation Initiative is a project that has its share of rewards. For Suncor employees, it gives them a chance to give back to the community and be a part of

an important conservation effort. For ACA, it helps meet our objectives in preserving ecologically sensitive boreal forest and, for Albertans, it provides land to enjoy for today and the future.

This award-winning initiative, in which land is purchased to partially offset Suncor's environmental impact, is paving the way for future conservation efforts.

This award-winning initiative, in which land is purchased to partially offset Suncor's environmental impact, is paving the way for future conservation efforts. It dates back to 2002, when Suncor was

looking to partner with a non-profit organization to offset habitat affected by oil sands operations in Fort McMurray. With the help of Alberta Parks, Suncor identified ACA as a partner and began a pilot project at Winagami Lake northwest of High Prairie, where we had been doing conservation work since 1997. The area is a birdwatcher's paradise, with more than 200 species of birds, and is important to fisheries and wildlife. But at the time, the shoreline had been overgrazed and water levels were critically low.

Building on our efforts, Suncor invested \$200,000 to purchase 480 acres of privately owned lakeshore for protection and conservation. Following the successful pilot project, Suncor committed to a three-year, \$1-million investment, which has resulted in the purchase of 1,750 acres of ecologically sensitive land across Alberta.

Corporations Gone Wild

The partnership has also inspired other companies to get on board through ACA's *Corporate Partners in Conservation Program*. In February, Shell Canada announced that the Athabasca Oil Sands Project (AOSP) will invest \$2 million with our organization to identify, purchase and conserve sections of Canada's boreal forest to offset the impact of land-clearing for the AOSP expansion.

"The AOSP is committed to developing our oil sands business in a responsible and sustainable manner, and this includes identifying opportunities to manage the environmental impacts of our operations," said David Collyer, vice-president of sustainable development, oil sands, for Shell Canada.

Total E&P Canada also partnered with us to purchase land in the Athabasca-Hubert Lake area in order to offset its SAGD operations southeast of Fort McMurray. With future development planned in the Regional Municipality of Wood Buffalo and the Strathcona region east of Edmonton, the oil and gas company will continue to look for opportunities to work with us to offset its environmental footprint.

There is a potential—and some would argue it's a necessity—for other oil and gas companies to get involved. "Pembina's expectation is that companies need to protect the environment at the same time as doing their operations. That should just be the cost of doing business," says Dyer. "There are strong demands from Albertans who would like to see more environmental benefits and there's a strong belief that companies can do more on the ground."

Enacting conservation offsets affects how shareholders, potential shareholders and the general public view a company. It shows that the company is "environmentally conscious; that they are doing what they can to reduce their impact. It may not have any direct bearing on their bottom line but it does have a bearing on how they sit on a social responsibility scale," explains Zimmerling. ■



David Fairless

CORPORATE PARTNERS IN CONSERVATION PROGRAM

Conservation efforts have a big pay-off for corporations and Alberta

ACA's *Corporate Partners in Conservation Program* offers corporate donors the opportunity to play a part in protecting Alberta's natural heritage. It encourages long-term partnerships for a minimum of five years and has the added benefit of providing employees with an opportunity to be directly involved. Getting staff involved – whether it be planting trees, installing or removing fencing or conducting wildlife surveys – they can feel that they are personally making a difference.

There are two ways companies can get involved. The first is through the **Habitat Securement, Enhancement and Management Fund**, which allows corporations to purchase and manage lands for conservation. Our staff and a partnership team from the corporate donor work together to identify geographic areas to focus on and ACA staff identify specific parcels and manage the land purchase. These purchases can be used as conservation offsets for impacts related to a wide range of industrial developments.

The second opportunity is through the **Special Project Support Fund**, which allows corporate donors to fund specific projects. Examples might include funding a lake aeration program to improve fish survival over the winter or funding a species-at-risk program.

Whichever type of involvement is chosen, it has the advantage of linking your corporation with a conservation organization that has a 10-year history of undertaking high-quality, high-profile conservation work throughout Alberta – for the benefit of us all.

For more information on our *Corporate Partners in Conservation Program* or conservation offsets, contact us toll free at 1-877-969-9091 or visit www.ab-conservation.com. ■

Alberta Conservation Association Corporate Partners in Conservation

- Albion Sands Energy Inc. (a joint venture among Shell Canada and its affiliates, Chevron Canada and Marathon Oil Canada Corporation)
- Petro-Canada
- Suncor Energy Foundation
- Sherwood Park Toyota
- Total E&P Canada



Ken Kranrod, Vice President, ACA and Art Angielski, General Manager, Sherwood Park Toyota

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Branching Out

Hayfield transforms into wildlife habitat

Frost had covered the landscape overnight, but the morning of September 21st evolved into one that was crystal clear. Large flocks of Canada Geese, mallards and northern pintails were staging on nearby Buffalo Lake. The melting frost and warming air melded with the earthy scent of ripening chokecherries and cranberries to create a natural perfume that could be enjoyed whenever the west wind blew. On a day such as this, ACA, Tree Canada and an army of volunteers would appreciate the perfect weather conditions; cool enough for hard, physical labour, but warm enough to be comfortable—even for bare fingers that were pressing cool, moist soil around the newly planted trees.

Last year during a span of more than a week, Tree Canada partnered with ACA to plant 70,000 trees on the “Buffalo Lake Moraine Habitat Link Project” near Stettler. As part of the “Growing Clean Air” program, these trees have the potential to store approximately 70 tons of carbon and release 50 tons of oxygen each year.

Trees planted by ACA and Tree Canada have tremendous wildlife benefits. The trees transform a tired hayfield into a valuable wildlife habitat. Seventy acres of hay land that was too rough to be harvested—now increases hiding cover and nesting opportunities for wildlife. This land is now more suited to a wide range of birds and mammals that couldn’t safely inhabit the old hayfield. The trees also diversify growing conditions: soil moisture, shade and plant competition. This added diversity of growing conditions and the seeds brought into

the area by birds and mammals will effectively speed up the naturalization process—further increasing the diversity of plants and animals the area can support.

Tree Canada is again partnering with ACA. This year we’ll combine efforts to plant 70,000 trees in the Hebert Lake area, south of Stettler. The project at Buffalo Lake Moraine and the upcoming Hebert Lake project are sponsored by the Shell Oil Sands group as part of Shell’s Voluntary Greenhouse Gas Emissions Offset Strategy.

Shell’s involvement is much more than financial sponsorship. At Buffalo Lake, many Shell employees were involved in planting these trees. Employees reap benefits of getting out of the office and into the field, coupled with the feeling that they are personally making a difference “growing clean air”.

Tree Canada got its start in 1992 as part of the government’s “Green Plan” and since then has planted 75 million trees across Canada. Initially government-funded, Tree Canada now receives the bulk of its funding from private donations and corporate sponsorships.

To access information on Buffalo Lake Moraine Conservation Site and other sites, go to: www.ab-conservation.com and click on *Discover Alberta’s Wild Side*. To learn more about carbon sequestration by trees, go to the “Grow Clean Air” page of the Tree Canada website (www.treecanada.ca). ■



The trees that were planted at Buffalo Lake are Trembling Aspen, a Wetaskiwin strain that was chosen because the trees bulk up quickly, are highly competitive with introduced grasses like brome and rangeland forbs like alfalfa, and provide excellent habitat for numerous wildlife species in central Alberta.



Sights Set on Ungulates

Aerial Ungulate Surveys for moose, white-tailed deer, mule deer, elk, pronghorn antelope, bighorn sheep, mountain goat, bison, and caribou across the province are the primary method used to determine:

- Population status and trends
- Hunting guidelines and tag allocations (*managed by ASRD*)
- Evaluate and inform land use decisions (*managed by ASRD*)

ACA and Alberta Sustainable Resource Development work in partnership to conduct aerial surveys, many of which are made possible through levies on hunting tags.

For more information on the results of 28 ungulate surveys conducted in wildlife management areas across Alberta visit our website or call toll free 1-877-969-9091.



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Membership Strengthens Conservation Efforts in Alberta

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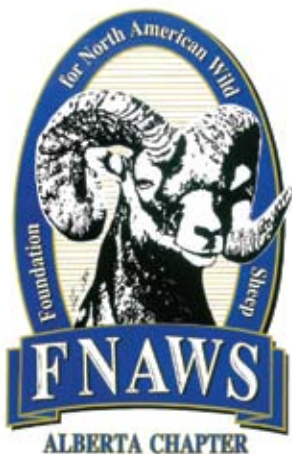
FNAWS joins ACA as ninth Member Group

If you've ever witnessed the sight of bighorn sheep deftly scaling a mountainside of seemingly impossible angles, then you've no doubt been awestruck by one of the most well-known and longtime symbols of western North America's rugged wilderness. It is perhaps with the hope of preserving this majestic symbol that the Alberta Chapter of the Foundation for North American Wild Sheep (FNAWS) joins ACA as a Member Group.

FNAWS brings to ACA a diversified range of backgrounds, and its members contribute to and enhance the capability of research carried out by ACA staff. "With the addition of the Alberta chapter of FNAWS as our ninth Member Group, we have strengthened ACA's commitment to conservation in Alberta," says ACA board chairman, Brian Bildson. "The Albertans who belong to FNAWS have repeatedly demonstrated their real, on-the-ground approach to furthering conservation in this province."

The mission of the Alberta Chapter of the Foundation for North American Wild Sheep

is to promote and enhance increasing populations of indigenous wild sheep in Alberta through the funding of programs that support responsible wildlife management, conservation education, youth involvement and the preservation of our hunting heritage.



This chapter was organized in 1999 and has since grown to include a membership of 600 individuals. With an administrative staff office located in Rocky Mountain House and an affiliate chapter in Edson,

11 volunteer directors and four executive directors manage the organization, project participation, publication of quarterly newsletters, and coordination of annual fund-raising functions.

Alberta FNAWS believes that, by building and maintaining positive working relationships with wildlife managers, enforcement agencies, corporations and other conservation organizations, wildlife can be safeguarded and enhanced for all Albertans. The organization's target species is bighorn sheep, but the management of populations and habitat overlaps with the management of other species.

As a result, Alberta FNAWS sponsors and funds a wide range of wildlife projects including the ongoing Central East Slopes cougar and wolf Studies, ungulate winter range restoration, ungulate surveys and bighorn sheep transplants. As well, FNAWS supports youth and first-time hunter mentorship programs and funds an annual Youth Sheep Hunter Camp every July at Alford Lake. ■



Robert Bateman—
Get to Know
your wild neighbours

□ by Lacey Payne, *Get to Know*

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Interactive CD connects children to the outdoors

Renowned painter and naturalist Robert Bateman passionately believes that the more our youth knows about the natural world, the more likely they are to care for it and preserve it for future generations. Over the years, he became increasingly concerned that children today suffer from “nature deficit disorder,” a term coined by Richard Louv, author of *Last Child in the Woods*, to describe the disconnect between children and the environment. For a long time, Bateman wanted to start a program that would inspire Canadian youth to get outdoors and experience the wonders of nature. In 2000, this vision came to fruition with the launch of the Robert Bateman “*Get to Know*” your wild neighbours program.

Since its inception, the program has been wildly successful, with hundreds of thousands of Canadian youth participating in the *Get to Know* contest, which encourages kids to go outside and create a work of art or write about their experience, and then share their work by entering it in the

contest. Countless politicians, educators, and organizations are enthusiastically supporting the program. 2007 saw the launch of the new *Get to Know* Interactive CD, a fresh approach to reaching youth and inspiring them to become familiar with and develop an appreciation for Canada’s incredible wildlife heritage.

Both Calgary and Edmonton are featured, with interactive hikes which contain a wealth of information about local flora and fauna.

The *Get to Know* Interactive CD project had its genesis in Alberta in 2003, when Dr. Brendan Croskery, Superintendent of Schools for the Calgary Board of Education (CBE) approached Robert Bateman and told him that if he could expand on the *Get to Know*

contest and provide more of a school-based program, he would have the full support of the CBE. In May 2004, Bateman presented his plan for an interactive CD to the Calgary Board of Education, the Federal Minister of the Environment, the Alberta Minister of Sustainable Resource Development, and a number of Calgary-based environmentalists.

Several years in the making, the *Get to Know* CD contains hundreds of videos, virtual hikes, field guides, PowerPoint presentations, links, and reference materials for both teachers and students. Both Calgary and Edmonton are featured, with interactive hikes which contain a wealth of information about local flora and fauna. These “virtual hikes” are set in local Albertan green spaces like Edwards Park, Fish Creek Provincial Park, Inglewood Bird Sanctuary, John Janzen Nature Centre, and Weaselhead Natural Area. Already, the CD has been distributed to public school districts in Calgary and Edmonton, and plans are in the works to expand the distribution to more areas in Alberta.

While it may seem counterintuitive to promote outdoor activities through an interactive CD, the idea is a little bit of beating technology at its own game. That is, the objective is not to replace real outdoor experiences with artificial indoor ones but to offer the students as many opportunities as possible to familiarize themselves with local species, as an invitation to go outdoors and experience the real thing.

All these achievements in fostering environmental literacy among Canadian youth could not have been possible without *Get to Know's* crucial partnership with the Alberta Conservation Association. ACA's commitment to Alberta's natural biological resources made *Get to Know's* message of conservation education a natural fit. ACA recognized the value of increasing public awareness of Alberta's fish, wildlife and habitat and the great potential to build the next generation of conservationists, who would preserve, enjoy and respect Alberta's wilderness.

Although this project will be used in other major cities, it is a “made-in-Alberta, supported-by-Albertans” program that provides local conservation education for Alberta children.

ACA played a critical role in championing the Alberta component by helping launch the initiative to create and distribute the interactive CD. Through the Alberta Community Initiatives Program, ACA applied for the funding necessary for the Alberta component of the *Get to Know*

Interactive CD. Additional funds for CD production were raised through Robert Bateman special edition prints, which were distributed through a partnership between Alberta Parks and ACA. After the CD was produced, the ACA also helped supply expertise and staff member time for marketing the CD, in addition to managing logistics and coordinating launch events to promote the completion and distribution of the CD to schools across Canada.

Although this project will be used in other major cities, it is a “made-in-Alberta, supported-by-Albertans” program that provides local conservation education for Alberta children. While the *Get to Know* program is based on simple philosophy, the goal of *Get to Know* reaches far beyond creating a program; it aims to inspire a revolution of nature-loving, environmentally-savvy youth. This new generation of conservationists is tasked with learning to care for and to conserve their local wildlife and its habitat.



With the ongoing support of the Alberta Conservation Association, plans are now underway to further extend the *Get to Know* educational program through the development of a Robert Bateman *Get to Know* Conservation Site in central Alberta. The goal of this partnership is to create a conservation education area that's accessible to schools, ACA member groups and other conservation groups to further expand the GTK concept.

The benefits for Alberta's wildlife are countless, but it is not just future Albertans who will profit from an increased understanding of nature and concern for the province's valuable wildlife. Children today also stand to gain from "getting to know" their wild neighbours. Contact with nature and outside play have always been regarded as vital components of a healthy childhood, until the advance of technology made outdoor activities seem old-fashioned. However, a growing body of scientific research highlights the multitude of mental and physical benefits that accrue to children who spend more time outdoors, including increased attention spans, improved confidence and more creativity, along with a reduction in stress and obesity. By reconnecting Albertan children with the outside world, the Alberta Conservation Association and *Get to Know* are helping to raise a generation of healthier, happier children. After all, what could be more natural?

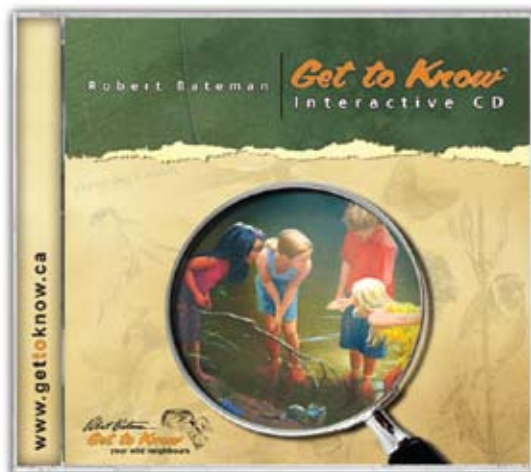
Purchase a copy of the *Get to Know* Interactive CD and learn the names of your wild neighbours! For more information, visit www.gettoknow.ca. ■



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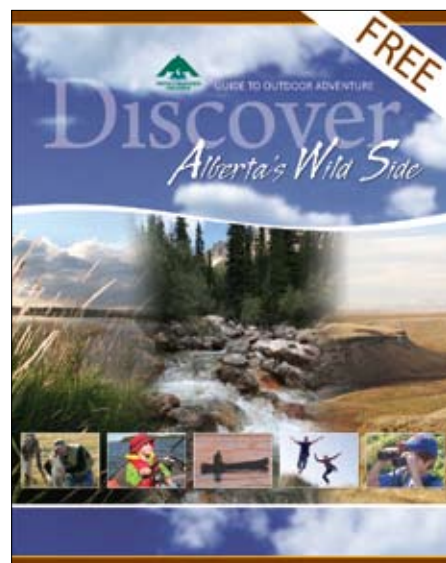
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Copies of the guide are available to the public free of charge any where hunting and fishing licences are sold in Alberta.

The guide is also available on our website at www.ab-conservation.com where you can search each conservation site, locate it using Google Maps and then download driving directions.

So what are you waiting for—grab your fishing rod, camera, binoculars and anything else you'll need in the Great Outdoors—just don't forget your free *Guide to Outdoor Adventure!* ■





Sustainable Grasslands Applied Research Program



BACKGROUND

Grassland conservation and sustaining the species, ecosystems, cultures and economies that depend on them is of common interest to wildlife and land management agencies in Alberta, Saskatchewan and Montana. It is of increasing interest as well to energy sector companies who operate in these regions and are committed to doing so in an environmentally responsible manner. Petro-Canada, together with the Alberta Conservation Association (ACA) and the Faculty of Environmental Design at the University of Calgary, has developed a program focusing on innovations in sustainable land use in Alberta's Grassland Natural Region. The program is based on the concepts of ecosystem restoration and management, including biodiversity conservation, social, and economic values, and associated innovations in mitigation and post-operational reclamation practices.

SCOPE OF THE SUSTAINABLE GRASSLANDS PROGRAM

Projects developed under this three-year initiative will focus on ecologically functioning landscapes and their restoration within the grasslands of Alberta. Guidelines for program development include:

- Strong overlap within the scope of ACA's wildlife program;
- Support for existing landscape-scale environmental management initiatives in the Grasslands Natural Region;
- Increased understanding of conservation issues facing the grasslands of Alberta's southwestern foothills and/or Alberta's southeast arid grasslands;
- Contribution to wildlife habitat conservation and restoration;
- Advanced science in support of land use planning for wildlife habitat and population management relative to the activities and impacts of the energy sector.

PROGRAM DEVELOPMENT

Programs in progress include:

- **Sage Grouse Recovery in Southeastern Alberta**
In support of a Government of Alberta interagency working group developing conservation design options for land use consistent with Sage Grouse recovery in southeastern Alberta.
- **Reclamation and Restoration of Silver Sagebrush Communities**
Development of beneficial management practices for the reclamation and restoration of silver sagebrush communities in the Northern Great Plains for the energy sector and wildlife habitat conservation.
- **Pronghorn Antelope as an Indicator for Conservation Design in the Northern Great Plains**
Examination of pronghorn antelope ecology and conservation planning in the international trans-boundary region of southern Alberta, Saskatchewan, and northern Montana, focusing on population and habitat ecology, and assessing impacts of habitat fragmentation, human infrastructures and activities on pronghorn antelope ecology.
- **Forest Encroachment onto Foothills Fescue Grasslands**
Documentation of the level and spatial extent of changes to vegetative cover and composition in the Foothills Fescue Grasslands in southwestern Alberta, through evaluation of historic and current factors influencing vegetative change and an assessment of local ecological knowledge.



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Conservation in Action with Barry Mitchell

A bad day of fishing is far better than a good day at work in the office. That seems to be what native Albertan Barry Mitchell believes. What he likes best about fishing is—well, catching fish. So passionate, in fact, that Barry has devoted most of his life, not only for the adventure of fishing, but also for the careful management of fish resources in Alberta.

Barry Mitchell, it seems, was born to fish, having fished the Cardinal River since he was 12 years old. But fishing was only part of it. As a young man in the late 1960s, having seen the problems with strip mining from the '50s, he became concerned when the Cardinal River Coal Mine was opened at Luscar. Along with CONFAB (Conservation Fraternity of Alberta), Barry lobbied the government to put in place strong guidelines for pit reclamation and care for the fisheries.

Out of Barry's passion and concern for fishing was born central Alberta's Trout Unlimited (TU) chapter in 1982. Barry also played a large part in Central Region TU's creation of the Alberta Stream Watch Coalition. Barry is quick to add that Stream Watch would not exist if not for the friendships he made in the Rocky Mountain House office of Fish & Wildlife.

Barry also supported the idea of ACA right from the start. Barry was impressed with the level of professionalism of this second generation of people who came to ACA. He really liked the idea of separation from government. He feels it set the tone and direction that the ACA has adopted.

It seems that one of the most challenging battles, yet one that means the most to

Barry, is changing the East Slopes fishing regulations in 1998. Increasing the number of catch-and-release streams has created monumental changes to the face of East Slopes fisheries. Instituting scientific limits was something Barry had tried to make happen for years.

In Barry's opinion, fisheries protection needs to be a priority with restrictions on OHV use



and limitations on human access to remote areas. Having been born in times when quads, trikes and trail bikes didn't yet exist, it took Barry a week on horseback to get out to a particular stream, but it was worth it.

For Barry, unforgettable fishing adventures are too numerous to mention, but one in particular comes to mind. One day, Barry spent a productive three-and-a-half hours on the Cardinal River catching 22 trout, 18 cutthroats and 4 bull trout. He then drove down the trunk road for another hour and a

half and ended up on the Blackstone River. He fished for 18 hours over the next 3 days and didn't catch even one fish. That single event prompted him to write what many call "the letter." It was a wake-up call about the need to address the safety of streams from any kind of harm, whether it's from off-highway vehicles, logging, oil production or even agriculture.

Barry is confident the future of healthy fisheries here in Alberta lies between the provincial biologist and ACA. He feels the government has to keep up with the changes in society and the increase in the population of Alberta. Something has to be done to protect the water itself.

Obviously, Barry Mitchell is big on honour. While being interviewed by Kevin Gardiner, East Slopes Regional Manager for ACA, Barry mentioned two of his favourite sayings: "A man either has honour or he doesn't," and, "The greatest gift a man can give himself is honour." Says Barry, "I think I'm an honourable person; I know that anybody I consider a friend is honourable. I don't hang around or have anything to do with anybody who I don't think is an honorable person. That plays a very large part in fishing."

Adds Kevin, "One thing I could say without hesitation—when I first got to Rocky Mountain House, I was kind of new, and I heard a lot about Barry Mitchell, but the one thing that I always heard associated with Barry's name—is that he's an honourable fellow."

After a pause, a humble Barry quietly replies, "Aw shucks...thanks, Kevin; it's nice to hear that..." ■

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Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisii*)

Westslope Cutthroat Trout are native to creeks and streams in the mountains and foothills of southern Alberta. They have black spots on their sides and back with the majority being found towards the tail and above the lateral line. Cutthroat trout get their name from the characteristic red or orange slash located on either side of the lower jaw. However, the slashes can be misleading, because young cutthroat trout may not have these slashes; if the fish dies, the slashes may disappear in a few hours. In the field, the only sure way to tell if you have a cutthroat is by the presence of small teeth at the base of the tongue.

One of the major threats facing Westslope Cutthroat Trout populations in Alberta is hybridization with rainbow trout. As a result, pure strains are often restricted to the upper reaches of a drainage, usually above fish barriers.

Cutthroat feed mainly on invertebrates such as mayflies, caddisflies, stoneflies and grasshoppers—the westslope cutthroat is not a predator of other fish. Cutthroat trout can be found in many East Slope streams including the upper Ram River and the upper Oldman and Castle drainages. Cutthroat trout can be observed in small pools or holding behind boulders, underneath logs and root masses waiting for the next meal to float by them.

Cutthroat trout mature at two to four years of age and generally live to about eight years old. The Alberta angling record for cutthroat trout is 9 lbs 9 oz, caught in the Castle River in 1988. - *Lance Engley, ACA*

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