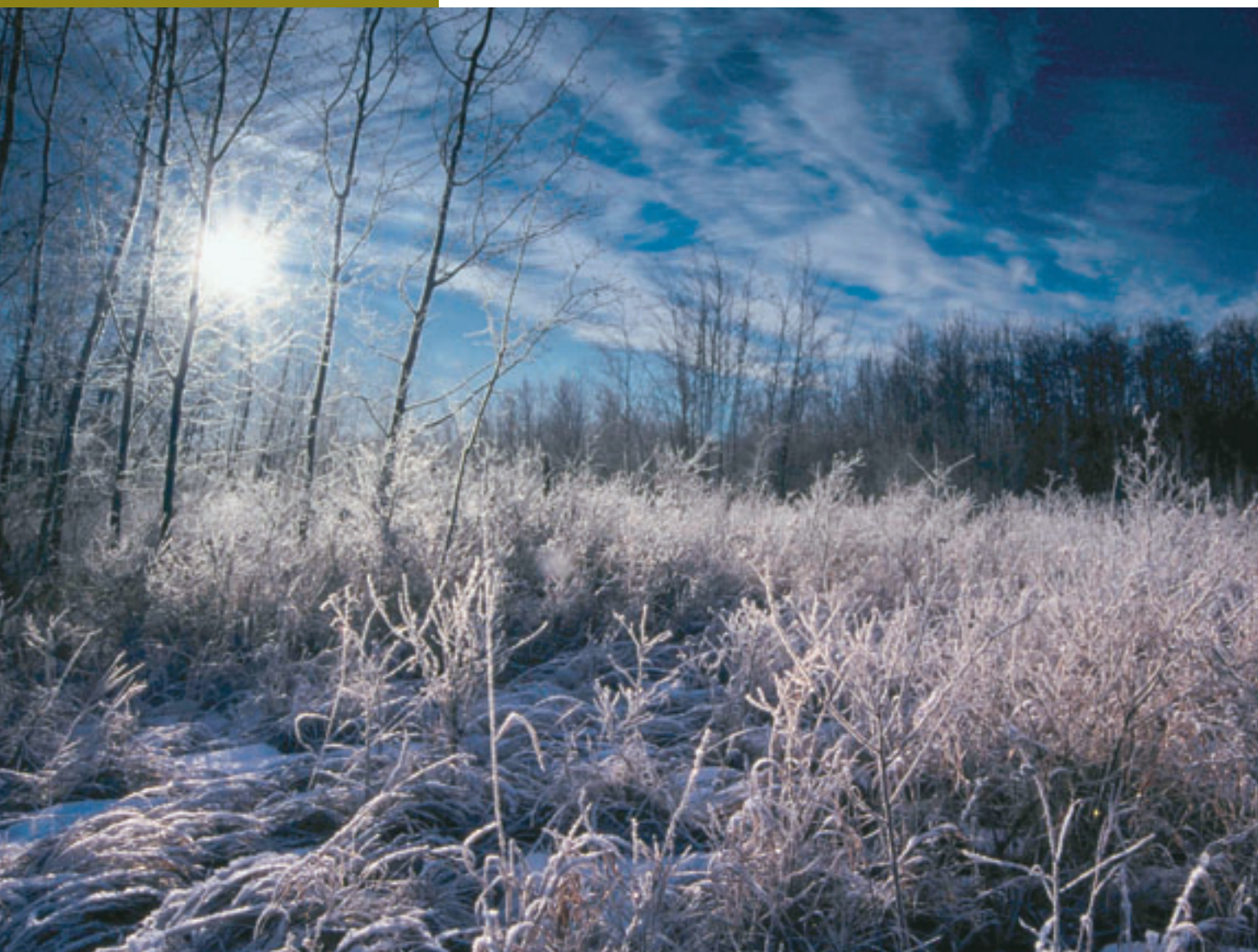


VOLUME 35 | NUMBER 4 | WINTER 2006

Nature Alberta

ALBERTA'S NATURAL HISTORY REVIEW



FROST, STRATHCONA COUNTY R. DAVID ALLEN
PHOTOGRAPHED IN FEBRUARY, 2004 USING A NIKON F100 CAMERA AND FUJI VELVIA 50 FILM

issue theme

Water

Adapting to Alberta... Naturally



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The Federation of Alberta Naturalists is composed of natural history clubs from across the province. The aims of the Federation are:

- (a) To encourage among all Albertans, by all means possible, an increase in their knowledge of natural history and understanding of ecological processes;
- (b) To promote an increase in the exchange of information and views between natural history clubs and societies in Alberta;
- (c) To foster and assist in the formation of additional natural history clubs and societies in Alberta;
- (d) To promote the establishment of natural areas and nature reserves, to conserve and protect species, communities or other features of interest;
- (e) To organize, or coordinate symposia, conferences, field meetings, nature camps, research and other activities whether of a similar or dissimilar nature;
- (f) To provide the naturalists of Alberta with a forum in which questions relating to the conservation of the natural environment may be discussed, so that united positions can be developed on them, and to provide the means of translating these positions into appropriate actions.

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P R E S I D E N T ' S P A G E

Musings on rivers . . .

BY SANDRA FOSS

I have been thinking about rivers a lot lately. With the long dark nights of winter close about us, I long to be on a river somewhere.

I took many canoe trips, long ago— in Algonquin Park and Temagami in Ontario. Many years passed, and in December 1998, we obtained an “experimental” winter permit to run the Colorado River through the Grand Canyon. This is the longest stretch of runnable white water left in the world. As the waiting list was then 20 years long, we were thrilled to get a permit after only a 9 year wait.

That trip was incredible. I had almost a month, in a mind-blowing landscape, with my son. The experience was unforgettable: watching the night sky, having no contact with the outside world for weeks, other than seeing an occasional plane overhead, and just reducing life to the basics: can we navigate this rapid, and remain upright? The sound of the canyon for me is the trill of the Canyon Wren, cascading down the cliffs. Great Blue Herons cruised off the cliffs look like ancient pterodactyls. Giant barrel cacti stood at attention along hillsides, guardians of the land, the souls of ancient Hopi men.

The Colorado was a big deep river that ran red every spring with sediment, until the Glen

Canyon dam was built. When that happened, water for the river was released from a great depth, and water temperatures below the dam cooled considerably. The native warm water fish are now almost gone and introduced Rainbow Trout have replaced them. Park managers are trying to restore the native fish, by maintaining very low summer flows, so the water warms up.

The Colorado is now a hydro peaking river, where the flow goes up to produce electricity for peak times, and drops at others. When travelling on it, you have to be aware and make sure boats are not in jeopardy due to the dramatic shifts in flows. Some mornings, we found rafts hanging vertically, as the river had dropped in the night.

Before that trip, I had never heard the sound of goldeneye flying. I would hear them leaving to fly north (it was early February) , flying overhead as I lay in my sleeping bag. The river certainly focused my thinking. We travelled on it, drank from it, slept beside it, and peed in it (National Parks rules!).

Water from some side streams is drinkable, but streams running crystal clear with no algae, are not

safe to drink. Backpacking in that area later, I was taken aback by the “radiation hazard” sign at one creek, with a “Do not drink the water” sign. It was starting to make sense: there are many natural heavy metals in the area, some radioactive. Along the river, there are various springs, cascading down cliffs, or growing watercress close to the river. One spring called “Pumpkin Springs” forms a warm water pool beside the river. But, guide books warn against swimming or floating in it, unless it has rained in the last day or so, or you will “glow in the dark”.

We saw amazing things. On the first day, I was perched on one tube of the raft, while my son rowed this first stretch of the river. I had my binoculars around my neck and was gawking at the colourful mile high cliffs, when I spotted a sparrow chasing a hawk (I thought!). When I finally realized the scale of the landscape, and my head adjusted....I realized I was seeing was an eagle chasing a condor. California Condors, nearly extinct, were cruising overhead - seven of them! We decided to stop below Badger rapids for lunch, and I was first on land, rope in hand. I took 2 steps, and was in disbelief. There were bird tracks everywhere, each one bigger than my hand, with fingers outstretched, a half eaten beaver carcass, and bones everywhere. A condor lunch stop! One even landed close by, to supervise our lunch.

P R E S I D E N T ' S P A G E

We saw many condors....my companions wondered why I was so excited, until I explained that we were looking at more than 10% of the world population of this bird. Interestingly, later in the season, National Parks staff required travellers to leave someone guarding tents if they went for a hike. The condors were strolling up to and shredding tents with their beaks, to see what was inside!

I did another long river trip in 2003, down the Athabasca River from Fort McMurray to the delta, then down the Slave River, to just short of the NWT border. The terrain was the exact opposite, low delta lands, and I paddled a small canoe. Paddling is different from rowing: rafts are more stable than canoes and can carry much larger loads. By myself, with no one to rely on, strength and endurance were larger issues. In the Grand Canyon, there were several young men, all eager to row, so I had to fight for my turn. Here, I had to do it if I wanted to go. My guide didn't show, so a choice was made. I realized how much I enjoy rivers. Life looks different from a river. It has a rhythm of its own, and when you sleep beside it and travel on it, you tune in to it.

On this trip, several things stuck in my mind: the incredible people I met along the river, and the hospitality they extended, spectacular auroras when solar storms were raging, and the challenges of obtaining safe drinking water. Finding side streams to collect water that we could purify with our filters was a job. The people living along the

Athabasca River are trappers, but no one drinks from the river due to industrial contamination. Some travel a long distance by boat to a well, others to a lake or other water source. All had rain barrels, and they used that water for drinking. One kind soul heated some rainwater up and offered a very welcome hot shower. All graciously shared their food, shelter and water with us. Most of the buildings are raised, to keep them above spring flood levels. It was interesting to travel the routes of the early fur traders. The Embarras Portage Post Office is a museum, with artefacts from many of the early settlers and travellers of the area, starting with fur trader and explorer Peter Pond, who overwintered there more than 300 years ago.

I paddled the Mackenzie too, when they were first evaluating it as a pipeline route. Now these areas are slated for industrial development. The Mackenzie valley pipeline project, the Oil Sands, water basin diversions & transfers....all of these developments come with huge water issues, wildlife impacts, habitat loss and fragmentation, and linear intrusions into sensitive landscapes. Unfortunately, many



CONDOR TRACK, WITH 8 INCH KNIFE FOR COMPARISON IAN G. FOSS

folks, especially those in government, don't seem to realize that the economic prosperity we are enjoying comes at a huge cost. Vast areas are destroyed, their character altered forever and species vanish from the face of the earth. Soon we will be wondering what happened, when the "bust" comes, as it inevitably will. Many of the projects are uneconomic without massive financial support from government.

River trips have been a wonderful escape from reality, getting back to basics, without the technological intrusions of the modern world. You get in touch with what one is capable of, and what is truly important. Without the special landscapes that help restore our souls, as well as our bodies, we really don't have much. Soon, many of those landscapes will be gone.

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Endangered
Species
Conference
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The Proceedings of the 7th Prairie Conservation & Endangered Species Conference, held in Calgary in February 2004 are now available. The Proceedings contain Award Winner (& FAN Board member) Dawn Dickinson's acceptance speech, as well as contributed papers by many well-known scientists working in the Prairies.

The Proceedings are available from the Royal Alberta Museum, 12845 102 Avenue, Edmonton, Alberta, Canada, T5N 0M6, and sell for \$45.00 (CD for \$15.00). Phone 780-453-9146 or fax 780-422-5681 orders are accepted.

EDITOR'S PAGE

Water, water to who does it flow

BY BRIAN PARKER

In terms of molecular structure, water is simple to describe: two hydrogen atoms bound to a single oxygen atom. Describing the interaction of water and life, however, is more complex.

Water, as a vapour, is by far the most important greenhouse gas in the earth's atmosphere, playing a major role in controlling earth's climate. In liquid form, water is the solvent that allows transport of nutrients and wastes both in our bodily fluids and our flowing waters. Water, in its solid form, carved the valleys and cirques of the Rocky Mountains, to which we flock in large numbers each summer to renew our spiritual connection with the environment. In general, where water is abundant life proliferates. Where water is scarce, life struggles.

And the latter point brings us to Alberta, sitting in the rainshadow of the Rocky Mountains, with a rapidly growing population and economy and thus an increasing thirst for water. At the same time, water volumes issuing from the Rocky Mountains, which are the source of most of settled Alberta's water, are threatened. As climate warms and glaciers, which contribute significantly to summer flows in many mountain

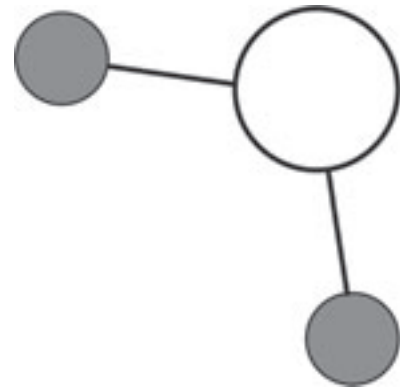
streams, melt, stream discharges will fall. Increased temperatures also will cause water supply problems, as evaporation rates increase with air temperature. Already, some southern Alberta watersheds are effectively tapped dry during drought years, primarily to support irrigated agriculture. Daily withdrawals of water from the Bow River, for example, have exceeded 95% of daily river discharge in the summer months of some years.

Albertans are faced with making very difficult choices about how, where, and to who, freshwater will be allocated in the future. Those decisions will determine where economic development occurs and where it doesn't, whether fish will continue to swim in the downstream reaches of many rivers and whether cottonwood trees will continue

to grow along their banks. In short, these decisions will play a huge role in shaping the future face of our province, both economically and ecologically. But relatively few Albertans seem aware of the challenges we face with respect to water or how our water resources are being allocated. So, let me challenge individual readers of Nature Alberta to do a little research on their water supply, and the use and allocation of water in the drainage in which each of us lives. Find out how much water is allocated for ecological goods, for municipal use and for industrial and agricultural users. I suspect this simple step would lead to many more of us becoming involved in watershed planning and the water allocation processes.

“Without water, there is no life.”

THE KORAN



LETTER TO THE EDITOR

Dear Editor:

Special Areas Water Supply Project

BY TONY BLAKE

Summaries of the Special Areas Water Supply Project's economic, social, and environmental effects can be found on the Special Areas Board web-site at: <http://www.specialareas.ab.ca>

The effects that caught my interest included:

- Losses to the mixed grass native ecosystem and associated rare plants and wildlife
- Canals could seriously impede the movement of larger wildlife such as Pronghorn Antelope between important seasonal habitats
- Disturbance to sensitive wildlife species (i.e. Ferruginous Hawk, Prairie Falcon, Piping Plover, Loggerhead Shrike)
- Interbasin transfer of undesirable aquatic life
- Loss of water quality due to the highly saline soils in the Berry, Sounding, and Monitor Creek basins
- Groundwater problems due to leakage from canals and water storage sites (i.e. waterlogging in low areas which brings mineral salts to the surface)
- Valuable land lost to flooding (storage sites), increased erosion in creek channels, and slumping of unstable banks.

Notably absent was a discussion of the potential impacts to the aquatic and riparian ecosystems of the Red Deer River. I find this particularly galling because benefits to wildlife and recreation are used as major justifications for the project.

The new wildlife habitats touted by the project would be artificial creations, totally dependent on an electrically powered pump to lift water up and out of the Red Deer River valley into totally different drainages. The new habitat may attract wildlife, but is it really wild or natural, and more importantly, is it really sustainable?

There has been no consideration of the rich natural habitats that already exist in the lower Red Deer valley or acknowledgement of the huge contribution the valley makes as a wildlife movement corridor and as a reservoir of regional biodiversity. Altered flow regimes and decreased river flows during droughts are stresses that this environmentally significant area doesn't need. For example, it is well-established that river-bottom forests need periodic floods to renew themselves. In southern Alberta, every river has been seriously over-allocated for irrigation and this has sent the Cottonwood forests into a steady decline. How can we be sure the same thing won't happen in the Red Deer River Valley?

Even if it can be shown that it is theoretically possible to operate the project and still preserve the natural capital of the lower Red Deer River, can we really be sure that future river flows will be adequate? The glaciers that feed Alberta's major rivers are shrinking at an alarming rate. Some may be gone within our lifetime, leaving us totally

dependent on annual precipitation to maintain river flows. Have we considered the consequences for water management?

We also need to consider the consequences if agriculture, industry, and population follow the diverted water into the semi-desert of east-central Alberta. Low flows during drought years will require some heart-wrenching choices to be made. What will the priority uses be and who will decide where the water goes? History shows that in a crisis, environmental concerns always come last.

If long-term environmental concerns don't convince Albertans that the Special Areas Water Supply Project is a bad idea, there is also an economic argument against the project. In the Socio-Economic Assessment Executive Summary done by Watrecon Consulting, the authors admit: "From a provincial perspective, the quantified costs would exceed benefits. For the most pessimistic scenario the benefit:cost ratio would be 0.55. However, assuming that beef prices return to historic levels and that farmers use irrigated silage to background cattle, the benefit:cost ratio would increase to 0.70." The report describes a multitude of benefits that would come to the recipients of a publicly funded supply of Red Deer River water, but the BEST value that an ordinary Albertan can hope to get for each tax-dollar spent on this scheme is 70 cents!

No Thanks. There are much better uses for public money and publicly-owned natural resources.

ALBERTA ISSUES

Off Highway Vehicle Access

FAN and the Alberta Off Highway Vehicle Association presented the results of their Recreation Access Management Workshop to the Energy/Sustainable Resource Development Standing Policy Committee (SPC) in October. The groups, representing both motorized and non-motorized recreational interests, as well as workshop sponsor the Alberta Conservation Association, hunting

& fishing guides & outfitters, trapper's groups, industry, agriculture, ENGO's and government, were well received. They were directed by Members of the Legislature to present to the Health and Community Living SPC as well. Paying for recreational use of public lands, difficulty in controlling access and other MLA concerns also were addressed.

FAN Executive Director, Glen Semenchuk, represented FAN, and was co-presenter to SPC with Cal Rackach of the AOHVA. FAN President Sandra Foss represented the non motorized sector, as well as seniors. For Workshop results, see the FAN website, under News. (www.fanweb.ca)

Petroleum Issues

Oil Sands Development

The Mineable Oil Sands Strategy (MOSS) discussion documents have been released. The MOSS proposes to make oil sands mining the highest priority use for more than 3400 km² of land near Fort McMurray and Fort Mackay. ALL other uses will be secondary to oil extraction. The documents, available from the Alberta government website, suggest that, among other things, rerouting of some river systems will be considered and protection of wildlife and habitat will proceed only after mining is completed. Aboriginal use of the landscape may also be restricted. Reclamation of mined areas will replace preserving pieces of the landscape as a policy objective. Independent evaluations suggest returning the landscape to productive status may take a century or more. Further, the

reclaimed landscape, which will likely be comprised of dry forested hills, will be substantially different from the current mix of wetlands and forested areas.

Expansion of oil sands mining will lead to significant demand for water from the Athabasca River and the projects could consume much of the natural gas delivered to Alberta via the Mackenzie Gas Pipeline. The Pembina Institute recently released the report "Oil Sands Fever" that provides an overview of the Oil Sands, their development and the probable impacts of Oil Sands mining expansion. It is available from the Pembina Institute at: <http://www.pembina.org> or contact info@pembina.org.

Provincial and Federal government tax and royalty relaxations, in addition to high oil prices, are fueling the increase in oil sands development. It would be far better that we put financial incentives into conservation measures and stagger the projects over longer periods. Extending time frames will provide opportunity to improve reclamation techniques and allow for more sustainable development of local communities. This would also discourage use of the "rape and run" approach to resource extraction.



SANDRA FOSS

Petroleum Issues...continued

Mackenzie Gas Pipeline

Exxon Mobil, the world's largest oil company and the 2nd largest global corporation, with annual profits of over 270 billion dollars in 2004, declared it will go ahead with the Mackenzie Gas Pipeline (MGP) after the federal government announced royalty subsidies for the project. The MGP will affect the ecosystems of the Mackenzie River Valley and fuel oil sands expansion. The MGP environmental impact statement does not address how it will affect the 350,000 migratory birds that summer in the Mackenzie Valley and Delta.

According to Nature Canada, "the statement fails to document the effects of the project on five Important Bird Areas that occur in the study area." Important Bird Areas are internationally significant areas of critical bird habitat. The five IBAs contain almost 6,700 km² of wilderness. For more info, check www.cnf.ca.

Read Sierra Club's TAKE ACTION NOW page for a link that sends email regarding the above issues: <http://www.sierraclub.ca/national/getinvolved/item.shtml?x=884>

Wind Power

At a recent Prairie Conservation Forum meeting, a representative of VisionQuest claimed that wind farms are very profitable, in part because of the subsidies they receive. The representative also advised that the situation will improve when carbon credits become available for wind power investments. This potentially makes Alberta's wind power less green, because it permits additional dirty power to be generated and exported.

Siting of wind farms remains an issue: to minimize environmental damage, wind farms should not be developed on our little remaining native prairie.

Forest Issues

AlPac gains FSC certification

The 5.5 million ha FSC-certified area of public land managed by Al-Pac is the first in Alberta. FSC certification should make Alberta's forestry industry more competitive.

Al-Pac's FSC-certificate highlights the company's strengths as well as setting out a series of implementation conditions in line with FSC standards. FSC is an independent, performance-based certification system that is recognized as the international standard for sustainable forestry among environmental and social groups. FSC is governed in

Canada by Aboriginal, economic, environmental and social chambers. Boreal forestry operations in Canada are assessed

against FSC's National Boreal Standard, which is endorsed by all of these sectors. For more information, visit: <http://www.fsccanada.org>.



Ranking Canada's environmental performance

"The Maple Leaf in the OECD: Comparing Progress Toward Sustainability" report analyses Canada's environmental performance in comparison to the other member states of the OECD. The report concludes that our industries must adapt and innovate to keep up with other advanced countries. Many countries, including Switzerland,

Denmark, Germany, Austria, Sweden, Italy and the Netherlands have created high per capita income alongside strong environmental policies. Canada ranks a disappointing 28th place out of the 30 member nations. Copies of the report are available from: http://www.davidsuzuki.org/WOL/News_Releases/web_of_life10180501.asp

A Longevity Record for a Wild Whooping Crane

BY ERNIE KUYT

On 21 October 2005 Brian Johns, a Canadian Wildlife Service (CWS) biologist stationed in Saskatoon, informed me he had recovered the carcass of an adult Whooping Crane at Muskiki Lake near Cudworth, Saskatchewan, about 75 km northeast of Saskatoon.

Brian had last seen the bird, a female (Kuyt and Goossen 1987), feeding with her mate and fledged chick on 3 October. Five days later, the female no longer accompanied the rest of the family, and earlier had been observed wandering away from the other two birds, behaviour not considered to be normal.

On 18 October, Brian returned to the site and found the remains of the crane dragged into a hawthorn bush. The bird carried a standard U.S. Fish and Wildlife Service band above the tibio-tarsal joint on the right leg. The 'lock-on' band was worn but the numbers 599-09801 could still be read. The colour bands were no longer present. The banded crane, referred to as 'Green-Red' (green plastic band on left leg, red band on right leg), was caught and banded as a unfledged chick on 29 July 1977 in the upper Nyarling River area, where a pair of whoopers had nested for six consecutive years in Composite Nesting Area NY-1 (Kuyt 1979, 1981).

On 27 April 1977, I had found the nest with one egg, and a subsequent aerial survey on 3 May confirmed a full clutch of two eggs. On 20 May one of the eggs was

removed and shipped to Grays Lake, Idaho. The following day that egg began to 'pip' and it is likely that the egg left in the nest hatched on or about that day. A survey on 30 May confirmed the egg left in the nest had hatched and the chick - later to become Green-Red - was one of 13 chicks seen that day.

This young crane was the first Whooping Crane ever banded in Canada, in a project initially criticized by Canada's National Park Service and several individuals but approved by CWS and The National Audubon Society. The banding team, operating from a helicopter, consisted of the late W.J.D. Stephen (CWS), Rod Drewien (University of Idaho) and was directed by the author. Brian Johnson (CWS) directed the fixed-wing 'spotter' plane, working at medium altitude, and of paramount importance in locating family groups of cranes before the helicopter, working at tree-top level, approached.

Green-Red reached the end of her life at 28 years and four months of age, presumably of natural causes. Her death establishes a longevity record for wild Whooping Cranes. Brian Johns informed me that over the years, she had successfully taken 10 young to the Texas winter

range, and her 11th offspring and mate will hopefully make it this fall, to join the other 225 (estimated) wild Whooping Cranes in Texas.

Whooping Cranes in the NWT-Texas population migrate twice yearly between the breeding range and winter range, a distance of 4008 km, based on observations from telemetry studies 20 years ago (Kuyt 1992). During her lifetime, Green-Red completed over 56 migrations and at time of her death near Saskatoon had flown over 225,500 km (not counting daily flights between feeding, drinking and roosting sites), a distance of more than 5.5 times around the world.

-
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OSPREY GORDON COURT

Ospreys as the “Canary in the Coal Mine”:

Persistent Organic Pollutants in Mountain Ecosystems

BY SARAH LORD

Although DDT and its cousins have been banned in North America, their legacy continues to haunt some of Canada's most sensitive environments.

Persistent organic pollutants threaten Arctic systems, where top predators such as Polar Bears and marine mammals suffer toxic effects from PCBs, DDT and other chemicals. Rocky Mountain ecosystems are similarly threatened: contaminants have been found in snow, glacial ice, invertebrates and fish in mountain lakes. In the mountains, the top predator role is often filled by the Osprey. Osprey migratory habits—they spend winters in Central and South America, where environmental protection is weak—place them in ‘double jeopardy’ for contaminant accumulation.

A study at the University of Alberta will investigate contaminants levels in Rocky Mountain Ospreys. Researchers will collect naturally unhatched Osprey eggs, which provide

an indication of contaminant levels in the mother's body. Tail feathers of nestlings will be used to estimate contaminant load in the offspring. Finally, a handful of fledglings will be equipped with satellite transmitters to track their migration routes to find out where they overwinter, and what contaminant sources they might be exposed to. This study highlights the importance of international co-

operation in protecting threatened species and ecosystems.

Locating Osprey nests in the Rocky Mountains and foothills is pivotal to this study. Good records exist for most of Alberta, but Jasper and Banff National Parks have been overlooked.

Researchers need your help! If you know of Osprey nest locations in Jasper, Banff, or surrounding areas, please send an email to silord@ualberta.ca or phone (780) 492-1292.

Word Search: *Hydrology*

BY LAURIE L. LYWAK

Circle the words found below. Words may be horizontal, vertical or diagonal and may be spelled backwards. The remaining letters can be rearranged to answer the following clue:

_____ WELL

| | | |
|------------|-------------|-------------|
| Air | Flow | Spring |
| Anemometer | Gradient | Stream |
| Aquifers | Groundwater | Temperature |
| Dam | Humidity | Velocity |
| Discharge | Hydrologist | Volume |
| Energy | Ice | Weir |
| Evaporate | Lake | Well |
| Flood | Runoff | |

| | | | | | | | | | | | |
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SOLUTION FOUND ON PAGE 19

The Water Crisis at Beaverhills Lake

BY DICK DEKKER

As reported in Nature Alberta 34(3), Beaverhills Lake came very close to drying up completely in the fall of 2004. The speed and the scale of the decline were astonishing: the lake's surface area decreased from 140 km² eight years ago to <2 km² by late October 2004 (Dekker 2004).

From a maximum depth of 2.3 m just a few decades ago (Mitchell and Prepas 1990), the lake dropped to less than a duck needs for swimming. On windy days, the thin sheet of water was blown far and wide over sun-baked mud, soaking into the cracks, never to return. The remnant slough literally blew away.

Until recently, when one stood on the lake's southern shore and looked north along its 18 km axis, there was a wide stretch of horizon where water met the skyline. On windy days, a walk along the wave-washed strip of sand conjured up a sense of sea and surf. Today, a dreary vista awaits the visitor along the south, west and north shores: the former lakebed, as far as the eye can see, is rank with weedy vegetation. Only from the east side, at a road access point formerly called Mundare Beach, one might still discern a silver

line of distant water, a pathetic remnant of this once vast and splendid lake.

The main cause of the lake's decline was an extended regional drought that reached its height in 2002. However, 2003 and 2004 were not dry by any standard. In fact, area farmers harvested bumper crops, and data supplied by Environment Canada indicate that the annual precipitation in both years was above the long-term average. At the Tofield North weather station, the 2003 and 2004 precipitation totals for snow and rain combined were 499 and 504 mm respectively. These amounts exceed the ten-year mean (471 mm) for that locality as well as the thirty-year mean for Edmonton International Airport (477 mm). So why did the lake continue to shrink after the drought had ended? And why did the decline accelerate in 2003 and 2004 while water levels rose in other area lakes?

I propose that human water diversions superimposed on climatic factors had brought Beaverhills down to a point where recovery was impeded. In a similar water diversion crisis in the southwestern USA, researchers from the University of Kansas reported that the evaporation rate of a prairie lake doubles each time the depth is halved, because shallow water warms more quickly than deep water (Zimmerman 1990). If we apply this simple formula to Beaverhills Lake, today's evaporation could be more than ten times higher than a decade ago. Increased evaporation rates make it harder to refill the lake once its volume has decreased.

This past spring, following heavy snowmelt runoff from Amisk Creek, Beaverhills Lake returned to roughly the same level as the spring of 2004 (Figure 1). Due to frequent rains and cool temperatures, its size fluctuated little over the summer and fall of

The Water Crisis at Beaverhills Lake...continued

2005 (Dekker 2005a, b, c). It will be interesting to see what 2006 will bring. For instance, in the spring of 1974, following a winter of deep snow, the water level rose by one metre (Dekker 1991-1998). If that were to happen again, careful management will be paramount if another unnatural decline is to be avoided.

THE IMPACT OF UPSTREAM WATER USES

Driven by long-term climatic cycles, Beaverhills Lake has been low before. Based on the written and oral history of the Tofield area, a major decline began in the 1920s and reached its deepest point during the 1950s (Lister 1979). How far the lake retreated is not exactly known. However, local old-timers and a provincial wildlife biologist who frequented the lake around that time believe that the decline was not as serious as in 2004.

Although the previous low was mainly the result of low precipitation, already half a century ago some upstream water was dammed up by a local farmer (Lister 1979). However, a much larger diversion was initiated by Ducks Unlimited Canada (DUC) in 1973. The flow of Amisk Creek, the major feeder stream entering the lake from the south, was regulated with a series of weirs. The stated objective was to restore and

conserve a series of smaller upstream wetlands. To ensure the cooperation of local landowners, additional water was allocated for the spring flooding of hay meadows. The 17 DUC impoundments have a combined surface area of 805 hectares (~8 km² or 1990 acres). About half of the water is meant to be returned to Beaverhills Lake sometime in May or June, but by then a portion has been lost to seepage and evaporation. Because annual evaporation from the lake normally exceeds the mean annual precipitation

by about 150 mm (Mitchell and Prepas 1990), even without considering increased evaporative losses due to recent low lake levels, it is critical that inflows from feeder creeks are not diverted. This is all the more important since the lake is a collection basin and lacks an outlet (after the 1920s.)

WHAT CAN BE DONE TO RESTORE THE LAKE?

In April 2005, I wrote the regional director of DUC to request that this year's spring run-off be allowed to flow

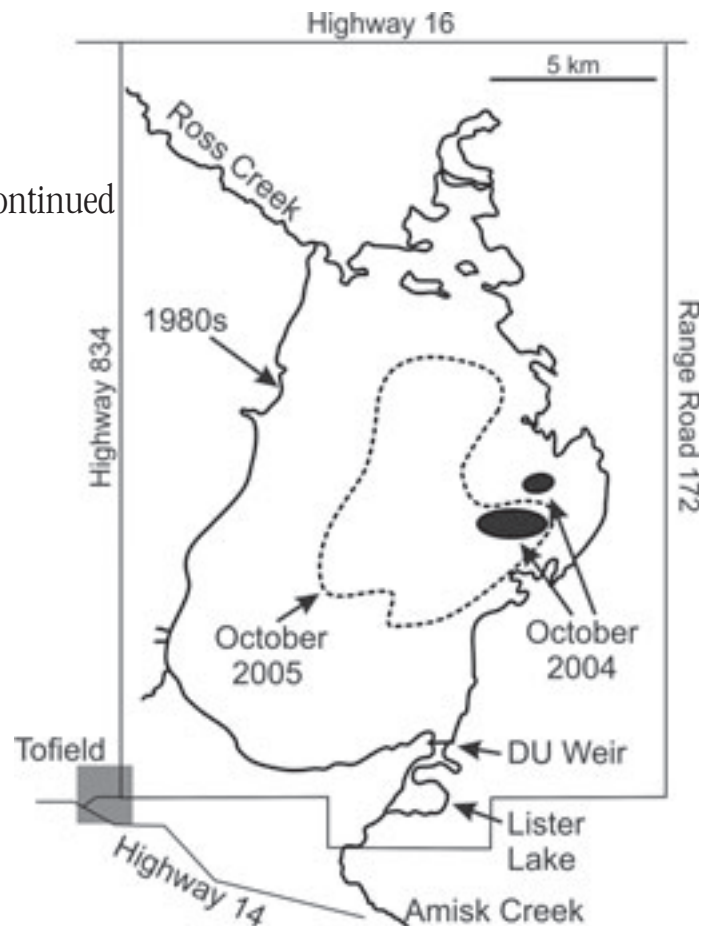


FIGURE 1. BEAVERHILL LAKE WATER LEVEL IN OCTOBER 2004 AND 2005

The Water Crisis at Beaverhills Lake...continued

unimpeded into Beaverhills Lake to speed its restoration. A public announcement to that effect would, I suggested, enhance DUC's conservation reputation. The answer was swift and unequivocal: the water rights for the various users had been allotted in long-term contracts that were difficult to break.

A similar letter to the Honourable Guy Boutilier (Minister for ABENV) produced an invitation to discuss concerns about Beaverhills Lake with the Department of Water Resources. Our first meeting led to a promise that their hydrological engineer would conduct a study of the Beaverhills watershed. The results were presented during a second meeting. Although Alberta Environment cautioned that their research was incomplete and preliminary, the summary of their *Water Balance Model for Beaverhills Lake* revealed that the lake loses 1.5 million m³ of water per year to evaporation at average precipitation levels. This is approximately equal to the ~1.6 million m³ withheld from the lake for human use, including the DUC projects. These estimates may be on the low side for the years 2000-03. Then, unauthorised diversions probably added to the total

amount of water withdrawn by licensed users.

To speed the restoration of this internationally famous Ramsar site to its former splendour, there is an immediate need to reduce the amount of water allotted for agricultural uses such as the flooding of hay meadows. The problem of long-term contracts may be circumvented through financial compensation to affected parties. This avenue was suggested by a sympathetic official of Alberta Environment. *But, setting this political ball rolling needs the support of a coalition of individuals and groups.* For that reason, I urge FAN members and other conservation-minded stakeholders to bring public pressure to bear on the right authorities. One way to do this is to write the provincial premier and your MLA.

BEAVERHILLS LAKE THEN AND NOW

Unsuitable for watersports or angling, this huge but shallow sheet of water used to be the exclusive domain of duck hunters and muskrat trappers. Its fame as a birdwatcher's Mecca was sparked in the 1920s when Professor William Rowan began publishing his ornithological observations (Lister 1979). Since then, the binoculars-and-telescope crowd has reported

many a rarity at the lake (Dekker 1991-1998).

In the growing realm of public appreciation for nature and the expanding world of ecotourism, Beaverhills Lake became an important part of Alberta's Natural Capital. Locally, nationally, and internationally it has received a long list of honours.

In 1982, the Canadian Nature Federation designated the lake as a National Nature Viewpoint. In 1987, the Alberta government declared the lake a Wetland for Tomorrow and established natural areas on the north and south shores. In the same year, the Ramsar Convention added Beaverhills Lake to its list of Wetlands of International Importance. In 1996, the lake's status was raised another notch when it was elected a Wetland for the Americas and a Western Hemisphere Shorebird Reserve. One year later, BirdLife International ranked Beaverhills Lake as an Important Bird Area of Global Significance.

In 1983 the Beaverhill Bird Observatory established a netting and banding station in the aspen woods by the southeast bay. The choice of location was predicated on the principle of guiding lines: the well-known fact that migrating birds tend to follow the shorelines of large

The Water Crisis at Beaverhills Lake...continued

water bodies, which act to concentrate the flow of migrants. In recent years the comparative value of the BBO migration counts probably has been compromised since the lake has dropped completely out of sight of its former shore.

In 1992, in recognition of the economic value of "the big slough" on its doorstep, the town of Tofield established its annual Snow Goose Festival, a two-day party to celebrate the spring migrations of waterfowl. Supported by many wildlife groups, run by an army of enthusiastic volunteers, and promoted by *The Edmonton Journal*, the event attracted 6,000 – 10,000 visitors a year. The event was cancelled in 2002 after the lake had shrunk so far back from former viewpoints that the Snow Geese were hard to find.

HELP RESTORE BEAVERHILLS LAKE

Please write the Premier and your MLA. Here are a few points that you might want to include.

1. Beaverhills Lake is a celebrated and irreplaceable part of Alberta's natural capital.
2. As a world-famous wetland, the lake was a favourite destination for growing numbers of birdwatchers, naturalists and ecotourists, as well as waterfowl hunters.
3. The popularity and economic impact of nature-oriented recreation are increasing. Birdwatching is a non-consumptive growth industry with multiple monetary spin-offs that exceed the value of a few fields of hay. The total dollar benefits for the Tofield community of the 2000 Snow Goose Festival were calculated at \$146,145.00 with an indirect multiplier effect of an additional \$211,206.00 (Hvenegaard and Manaloor 2001).
4. In a 2001 demographic analysis of birdwatching in the USA, the overall economic output was pegged at \$85 billion, including retail sales (optics, books), travel, taxes generated and jobs created.
5. Over the years, the lake has received a number of provincial, national and international distinctions. By signing the prestigious Ramsar agreements in 1987 and 1996, the governments of Canada and Alberta committed themselves to the preservation and wise stewardship of Beaverhills Lake for the benefit of humans as well as the biotic community. In a sense, we are all responsible for helping to safeguard our share of the world's vanishing wetlands.

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BOOK REVIEW

The Bedside Book of Birds

REVIEW BY LAURIE L. LYWAK

Graeme Gibson, in his book, "The Bedside Book of Birds", has created an anthology – a collection of short stories, poems and quotes – of the relationship between birds and people over the centuries.

The title of the book suggests its probable use: this book will find a spot on the reader's bedside table. He/she will read a few pages and then reflect on the subject matter prior to turning in for the night. The reader's imagination will be stirred time and again. "The Bedside Book of Birds" is not a book one would read in a single sitting; it seems intended to be slowly savoured over several weeks or months.

On first picking up the book, it is hard to resist leafing through the more than 350 pages to admire the often-colourful historical paintings, drawings and folk images of birds scattered throughout. Gibson compiled images that appeal to a wide range of readers – birdwatchers, artists, historians and poets. I suspect many people will buy the book just to browse the stunning images. They are a delight to the eye.

After the imagination has been sparked by the images there are the stories and poems. The range of contributions is impressive. Content is extracted from both current and historical works. Repeatedly, birds appear in mythology, folk tales and literature. It is brought to our attention that birds have been omens, allegories, disguises and guides. They have been worshipped, eaten, feared and loved. Charles Darwin was drawn to birds to study them from a scientific perspective. I was pleased to read stories about particular

The BEDSIDE BOOK of BIRDS

– An Avian Miscellany –

GRAEME GIBSON



by Graeme Gibson

Published by Doubleday Canada, a division of Random House of Canada Limited 2005, Price \$39.95, 384 pages, hardcover, ISBN 0-385-66048-0

types of birds, whether they be thrushes, ravens, owls, eagles or vultures. The diversity of stories will encourage many people, with a wide range of interests, to read this book. "The Bedside Book of Birds" does not have a lot of original writing by the author, however, the author is to be commended for his efforts to compile and share this vast amount of information with the reader.

This book has something to offer most every reader. You will be surprised with new insights on the second and third readings. The wide range of stories, poems, excellent paintings and drawings work together to provide a book full of insight into the relationship between birds and people. This book is an excellent addition to anyone's library.

Comments

on the Economic Overview of Encana Corporation's Proposed Drilling in the National Wildlife Area at CFB Suffield

BY HENRY BINDER

By refusing EnCana Corporation's proposal to drill up to 1275 additional natural gas wells in the Canadian Forces Base Suffield National Wildlife Area (SNWA), Canada can achieve both environmental stewardship and greater economic efficiency, and help end the old mentality of seeing these as opposing objectives.

The refusal to allow drilling need not be based only on a standard economic analysis which demonstrates that the SNWA is a unique natural asset, making the social cost of risking its degradation far greater than the private benefit realized from faster gas production. It is also justified by the more general need to correct for the market's failure to achieve an economically efficient rate of depletion of Alberta's gas reserves. The proposed rate of drilling throughout much of the province will bring on too much near term production at the expense of future supply, a problem whose consequences are exacerbated by NAFTA, which prohibits Canada from reducing exports to serve domestic needs when future shortages arise. The greatest economic efficiency will be realized by preventing additional production where its social cost is highest. This takes us directly to the SNWA, because of its value as a benchmark for biodiversity in a region where it is the only

remaining large block of unimpaired prairie grassland.

As the preamble to the Species at Risk Act (SARA) recognizes the intrinsic value of wildlife, and its value to Canadians for its aesthetic, cultural, ecological, scientific and other reasons, one would think extensive industrial development in a National Wildlife Area would not be permitted. This would be in keeping with Canada's ratification of the United Nations Convention on Conservation of Biological Diversity and statements Canada's ministers have made on the topic. Canada opposed the U.S. government's plan to drill in the Alaskan Arctic National Wildlife Refuge. Paul Martin was adamant, "we will pull out all the stops to maintain the ecological integrity of the Arctic National Wildlife Refuge". He was supported by Stephane Dion: "the government must bring the same focus and determination to enhancing the environment as it did to restoring the government's financial health". These comments also suggest that

EnCana's proposal should be rejected outright.

The SNWA is described as "458 km² of unploughed prairie grassland blanketing rare landscapes of national significance including sand hills, ancient glacial coulees, and the riverbank and breaks along the South Saskatchewan River valley". "As one of the few extant large blocks of unaltered Dry Mixed-grass Prairie" it is home to a "rich species assemblage" (1100 species, 14 designated as at risk under the SARA and 78 listed in Alberta as "at risk or otherwise sensitive because of their declining abundance"). As CFB Suffield is the only large block of prairie grassland where a wealth of plant and animal species has been maintained, we are clearly dealing with a unique national asset.

EnCana is proposing infill drilling into existing gas pools in much of SE Alberta, including the SNWA. It plans to increase well density from 4 to 8 wells per section to 12 to 16 wells per section, an increase made feasible by higher gas prices. I was told by an industry representative that, at current

Comments on the Economic Overview...continued

prices, there is no need to wait 25-30 years when shallow gas pools can profitably be depleted in 10-12 years.

Market failure associated with faster recovery is similar in effect to what in economics is called the "tragedy of the commons", usually illustrated by the example of overfishing, in which the incentive for each producer is to take as much as possible, as quickly as possible. This ultimately leads to dramatic depletion of fish stocks, to the detriment of all concerned. The problem arises because each fisherman, in calculating cost, only looks at private costs and not the external cost his/her catch imposes on others. Similarly, in the natural gas context, each player, in a mad dash to recover quickly, disregards not only current external costs, but also the future costs its actions impose on society.

To demonstrate this inefficiency, one need only appreciate that the gas industry is behaving as though there were an infinite supply of gas. However, for a non-renewable resource, economic efficiency requires limitations on current production to make gas available at higher prices in the future, as it becomes scarcer. This rationing is not occurring. Instead, there is economic waste, with too much near term production at the expense of future production.

There are many reasons for the excessive pace of development, including desire for corporate growth, maximizing shareholder value, opportunity to simply deplete and invest elsewhere, concern that substitutes, maybe renewables, will reduce the profitability of future gas development and concern for future limitations on carbon production. There may even be concern the windfall profits may soon end, as Albertans come to

appreciate they are selling their resource legacy for a pittance while paying high prices to buy "their" gas back at the retail level. However, it is likely the Alberta government's policy of reducing gas bills, distributing petro-dollars and keeping the economy overheated will stave off this appreciation. Regardless, by allowing corporations to pursue high rates of extraction, we are imposing significant future external costs on all Canadians, namely, the possibility of future shortages and all its consequences. Any intervention to make corporations pay more of their external costs of production, including higher royalties, carbon related costs, and other environmental costs, would help reduce production to a more socially desirable level.

Some will argue that high corporate discounting of the value of future supply imposes no external social cost because new technology will come to the rescue. Appeals to new technology, however, cut both ways. New technology may, for instance, also lead to dramatically higher valued uses for natural gas in the future.

In passing, we might also note that the problem of GHG emissions is likely worsened by the high rate of gas extraction and export. The impact of this on the effectiveness of Canada's Kyoto policy has yet to be addressed. I should make clear that I am not criticizing corporations; my concern is with government policy that doesn't reflect the will or inclination to compel corporations to serve the public interest.

The Alberta government could do a great deal to eliminate or minimize market failure to help ensure future supply, by not permitting greater well densities that accelerate production. The

federal government can also play a role in protecting Canada's interests by having the National Energy Board reverse the trend of exports under short term export orders and allow exports primarily pursuant to long-term licenses, which have 25 year reserve requirements.

Although corporations are intent on extracting gas faster, many Canadians are concerned about the fall in proven reserves. In 2003, only about 8.9 years of natural gas production remained in Alberta, a far cry from the 25 year supply safeguard in place prior to NAFTA. Since NAFTA, exports have increased, while overall production has dropped. The proportion of production exported has increased over the 1990s from 33 per cent to 55 per cent, an increase that will prevent Canadians from reducing exports to serve domestic needs when future shortages arise. This is because, under NAFTA, Canada is prohibited from reducing the proportion of gas exported below the level set over the preceding 36 months, and therefore becomes legally committed to continue exporting virtually the highest proportion of gas ever exported.

The combination of market failure, and increasing exports, under NAFTA, ensure that Canada will be short of supply as production declines over the longer term. Under NAFTA, even the willingness of Canadians to pay higher prices than what is realized in the U.S. will not permit more gas to remain in Canada (i.e., free trade with a nasty twist). The problem will be greatest in Alberta, where, encouraged by provincial gas subsidies, citizens and businesses are continuing to build energy inefficient gas dependent infrastructure. In short, although infill drilling is favoured by industry and serves U.S. national energy strategy, it imposes a high social cost on Canada.

Some argue that future shortages and cost adjustments can be prevented by developing new sources of supply, such as coal-bed methane. Such arguments highlight the importance of keeping protected areas like the SNWA as robust as possible. In the future, today's intensive

Comments on the Economic Overview...continued

drilling will look mild compared to the ravaging of land and destruction rationalized by the need for more supply. The environment will pay the price for our current economic waste, and unless better protective legislation is in place for the SNWA, industry will be back one day to haunt it again. These indirect future costs of current high depletion rates support the need for government policy that achieves a slower pace of resource development, which provides market incentives for, and allows time for, integration of less socially costly renewable substitutes.

EnCana's proposed additional drilling in the SNWA is only a small part of the infill drilling program it has planned for SE Alberta. We must keep in mind that the entire region will be subjected to intensive development, including the remainder of the base, especially the northwest portion, described as the "Oil Access Area", where as many as 60 wells per section will be permitted. If EnCana doesn't drill in the SNWA, the drilling rigs it engages will be employed elsewhere and perhaps just as profitably. Accordingly, the market will probably have just as much gas and the price of gas will not be affected by whether this proposal goes ahead or not. For the corporation, it might mean that it finishes up a little sooner in this part of Alberta and moves on to develop properties elsewhere. Also, its existing wells in the SNWA will recover the gas, or most of it, over a longer time frame, but without further investment. In short, little, if any, profit and private benefit will be foregone. There won't even be a reduction in royalties, and even if there were, it wouldn't be problem, as the Alberta government doesn't have a sound plan for its petro-dollars anyway. Moreover, any miniscule shortfall could be more than offset by a long overdue general increase in energy royalties.

The social cost of drilling in the SNWA, which will be borne by all Canadians,

not Encana, will be high. It is not possible to put a number on this cost, but, for many Canadians, losing the ecological integrity of the SNWA represents losing a priceless asset.

It will be claimed that effective mitigation will reduce disturbances to an acceptable level, but the mitigation argument should not carry the day. We have been mitigating and compromising for years and still more species are becoming endangered, primarily because of habitat loss. The SNWA has long been recognized as a special place, because of its rich abundance of wildlife, and must, in the context of ongoing habitat loss in Alberta, be afforded absolute protection. Instead of mitigation, the precautionary principle should be followed and the SNWA retained as a benchmark for biodiversity in the region, and as an area from which wildlife has an opportunity to expand when the well-heads are decommissioned.

Having been a rancher for many years, I am well aware of the limitations of mitigation. I feel it necessary to mention the difficulty of preventing invasion of non-native plants, or weeds, such as downy brome. Such threats may appear small, but invasion can quickly change the essential character of a highly valued, biological benchmark.

Further, I recommend investigating decommissioning of existing installations in the SNWA in an environmentally sound manner. At least any fracing or other disturbances should only be permitted under exceptional circumstances and after careful scrutiny. EnCana's proposal suggests amendments to the National Wildlife

Act are called for, to require dismantling and/or prohibition of further development when an area is designated for protection.

For those interested in the bottom line, my recommendation is that we maintain or reduce the pace of gas production in the SNWA, because it is economically efficient to do so and it helps guarantee protection of this special area. From the corporate perspective, less gas from SNWA simply means more gas from somewhere else, where the environmental damage will be less. I note that natural gas is still used indirectly to keep office tower lights burning all night in cities across North America, and for other wasteful purposes. In economic terms, waste includes all low value uses that wouldn't be engaged in if the price of gas reflected its full social cost. Even if some gas were left in the ground in the SNWA, it can fairly be viewed as gas that would have contributed to economic waste. By refusing additional drilling in the SNWA, we are not only preventing the SNWA from contributing to an economically wasteful process, we are also giving a valuable asset, biodiversity, the protection it deserves. The choice should be easy.

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Henry Binder is a semi-retired rancher and grazes livestock in the Cypress Hills. He practiced law for 12 years and was a sessional lecturer in economics at the University of Alberta for 3 years. He now sits on the executive of the Grassland's Naturalists.

FAN CLUBS PAGE

Vermilion

River Naturalist Society

BY STU HEARD, PRESIDENT



Vermilion has had an active natural history community since 1987, when a group of citizens who enjoyed being in the outdoors established the Vermilion River Naturalist Society (VRNS) at an inaugural public meeting on February 11 1987.

In September 1987, FAN, via a letter from then President Pat Clayton, designated the society as an Associate member. In later years the VRNS became a Corporate Member Club of FAN and, in the autumn of 2004, a registered not-for-profit Society. Our society has an on-going membership of between 15 to 20 people.

Right from the start, the VRNS has been very busy, establishing a Blue Bird Trail (with the help of Myrna Pearman) close to the community, which is still active today, working with a local farmer to help establish a Buck for Wildlife area, known as the McNabb Property, running a full slate of field trips and meetings, acting in an advocacy role and providing public education. In 1996, the VRNS submitted a nomination of property for consideration as part of the Alberta Special Places 2000 program. As well, Jason Rogers (a student at Lakeland College) was supported financially to produce a Vermilion Provincial Park Bird Checklist. In conjunction with the national launch of the "Living by

Water" campaign in 1999, the VRNS sponsored a public education forum with speakers and educational displays. The Society established the "Paddling Upstream Award" (a hand-carved canoe paddle) for local citizens who showed outstanding effort in environmental education, advocacy, and activity.

The VRNS has maintained a close relationship with the Town of Vermilion. Several members participate in the VRNS Environmental Action Committee and sit on local committees that work toward waste management and reduction (Town of Vermilion Waste Management Committee), recycling, environmental education, and community watershed management and monitoring (Vermilion River Watershed Initiative). The VRNS Environmental Action Committee worked closely with the Town to obtain a Terra 2000 grant to re-organize the waste disposal system in Vermilion. The results of this were the establishment of recycling in Vermilion, and a multi-year plan to phase out the town landfill and move to a

regional system, with a town transfer station.

The VRNS has been and is still involved with lobbying and providing input on local, provincial (Agriculture Lease Review, Alberta Water for Life, Lakeland PRA Management Plan, Natural Heritage Act) and national (endangered species legislation, national parks) issues related to our environment and natural history. FAN financially supported the VRNS in 1996 to build a bird-watching blind located along the shoreline of the Vermilion reservoir in Vermilion Provincial Park. Regular meetings and field trips are scheduled, with guest speakers on natural history topics presenting at the regular meetings. Field trips have included weekend camp-outs at Lakeland/Sir Winston Churchill parks and Dry Island Buffalo Jump PP. Guest lecturers and presenters have included Richard Klauke, who did a weekend workshop on bird identification, and speakers from Lakeland College, who have provided workshops on plant and shrub identification, fish, aquatic invertebrates, butterflies, weather, geology and much more.

Vermilion River Naturalist Society...continued

Guest speakers at regular meetings (held bi-monthly) and at special event presentations, over the years have included:

- Geoff Holroyd on Swift Fox and Trumpeter Swan re-establishment
- Les Sherwood on Vermilion and area archeology and anthropology
- Grant Gilland on soil erosion
- Loney Dickson on the Prairie Shorebird Project
- Steve Brechtel on endangered species and their management
- Sandra Myers on the Natural Areas Stewardship Program
- Gerry Kuzyk on wolves of western Alberta
- Elizabeth Beubien on the Alberta Plant Phenology Project
- Ian Ross on Cougars
- The Environmental Law Centre community outreach program

Over the years we have maintained several regular activities, including:

- Annual Christmas Bird Count and owl prowls
- Alberta Bird Atlas project
- Bluebird nestbox trail monitoring and maintenance
- Natural area stewardship monitoring
- Winter animal tracking and snowshoeing
- Canada Loon survey
- Vermilion Park bird viewing platform maintenance

• Environment Week activities

Our field trips have been diverse and frequent, occurring monthly from September to July, and have included, among many other locations, trips to:

- CWS Wainwright falcon re-establishment station
- David Lake Ecological Reserve
- Battle River Natural Area
- Beaverhill Lake (Snow Goose Festival), Elk Island Park, and Ministik Hills
- Quill Lakes (Saskatchewan) Spring Bird Festival

- Alberta Provincial Museum, Muttart Conservatory, and the Edmonton Observatory

- Sharp-tailed Grouse lek
- Big Lake IBA
- Dinosaur Provincial Park
- Neutral Hills and Mud Buttes
- Lakeland, Sir Winston Churchill, Whitney and Cold Lake Parks

The Vermilion River Naturalist Society is going strong after 18 years of activity, providing our community and area with opportunity for natural history public education and environmental action.

Medicine Hat Interpretive Program Reaps Awards

BY DENNIS BARESCO

The Medicine Hat Interpretive Program (MHIP) came out a big winner in the first annual Centennial Sun Awards. Hosted by Tourism Medicine Hat and the Medicine Hat and District Chamber of Commerce, the Sept 15th Awards Show recognized individuals, organizations and facilities in the tourism and hospitality industry.

MHIP Interpreter Corlaine Gardner went home with the "Best Visitor Services: Tour Guides/Interpretive/Step-on Guides" award. Tanya Maruska, a student who worked the past two summers for MHIP, won "Best Customer Service: Information desk/Attractions."

MHIP itself was honoured with one of three "Sunshine of the Year" awards.

These are awarded to any individual, organization or operation that makes a significant contribution to the industry. Phil Horch, as Chair of the MHIP Operating Board, accepted the award.

MHIP is a partnership between the City of Medicine Hat and the Grasslands Naturalists, a FAN corporate club. Dennis Baresco, Past-President of FAN, manages the program. Promoting the prairies of southeastern Alberta, including Cypress Hills, has been a part of MHIP's programming for a number of years, the highlight being co-hosting the hugely successful Canadian Nature Federation (now Nature Canada) National Conference in 2003.

Cover Photo Submission Guidelines

Nature Alberta will accept never before published, high quality photographs of Alberta landscapes, wildlife, flora and related subjects in competition for publication, in full colour, on the front or back cover.

Nature Alberta requires contributors to include photographer name, street address, e-mail address (if available), location the photograph was taken, the subject and how the photograph was taken (digital/film camera/lens/filter used, etc.) with their submission. If a photograph includes identifiable persons, it must be accompanied by a signed release granting Nature Alberta explicit permission to publish the likenesses of the individuals in the photograph.

Minor digital/darkroom enhancement of images is allowable, but must be disclosed to the Editor. Composite images, such as generated by adding wildlife to a landscape image or combining two landscape images, are not acceptable. The Editor reserves the right to refuse any image and to crop images to fit the front/back cover page format. Photographs may be held for publication in future issues or, by Editor's choice, may be included as black-and-white images within the body of the magazine.

Submit images either electronically to fan@fanweb.ca or, for film format, by regular mail, to the address provided on the back cover. Although Nature Alberta staff will undertake all reasonable efforts to return original film images to contributors, Nature Alberta will not be held responsible for any failure to either receive or return images. No fee is payable for published images.

Digital photographers are advised that 5 megapixel and larger formats are recommended.

Submission guidelines for articles are available on the FAN website at www.fanweb.ca.

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Nature *gallery*



MULE DEER – WHITE-TAILED DEER HYBRID?, NORTH SASKATCHEWAN RIVER VALLEY, NEAR EDMONTON

BRIAN PARKER PHOTOGRAPHED IN DECEMBER, 2004 USING A CANON AE-1 CAMERA, 70MM LENS AND KODACHROME 65 FILM



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