

Nature Alberta

ALBERTA'S NATURAL HISTORY REVIEW



NORTHERN SAW-WHET OWL LISA PRIESTLEY

feature article

The Nesting Phenology of Northern Saw-whet Owl and Boreal Owl in Central Alberta



AWESOME MAJESTY...THE SIGHT OF A GRIZZLY PAUL HORSLEY



**SERENITY...THE FACE
OF A GRIZZLY**
ASHLEY HOCKENBERRY

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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 among 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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Editor's Page

BY DENNIS BARESCO

FALSE PRAISE?

Not everything is as it seems. The David Suzuki Foundation has rated British Columbia as the #1 province when it comes to confronting global warming and Alberta the worst (see Issues: page 5). But wait a minute!

BC got to be #1 because it introduced a carbon tax; Alberta got to be last because its plan is essentially to **increase** emissions.

However, BC's carbon tax (such as it is) is pretty well where it ends. BC is determined to go ahead with massive (and massively anti-environmental and destructive) coal mine and coal-bed methane projects in the East Kootenay region, and damn the consequences – including seriously impacting the Flathead Valley in Canada and the United States. BC has also jumped on the liquid fossil fuel gravy

train, going all out to sell permits for exploration and exploitation.

Hmm...I see the logic: initiate a carbon tax, then do everything inhumanly possible to increase the amount of carbon and hence the tax collected. It's a windfall-windfall situation! Except for the environment, of course. In fact, every single government in Canada is planning on full-scale exploitation of all its carbon-based resources – and damn the consequences. Conservation – the



BC'S FLATHEAD VALLEY –
"THE CROWN OF THE
CONTINENT" – IS CAPTIVATINGLY
BEAUTIFUL. CHECK OUT
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EDITOR'S PAGE

single most effective and only long-term successful method of reducing emissions – is limited to inglorious rhetoric and grand exaggeration of the effects of drops-in-the-bucket actions.

Certainly, Alberta has earned its reputation as the most anti-environmental government in Canada – and arguably in North America. However, at least they're honest: their policies and actions – from gas to grizzlies – make it obvious that they have little regard for the future health of the province or planet. BC meanwhile puffs up like some eco-god. The carbon tax, by the way, has been shown by analysts to be a pitifully minor thing that will make little to no difference whatsoever.

What about the \$2-billion Alberta government subsidy, announced in July by Premier Edward Stelmach, for carbon capture and storage methods? It may look impressive, but Alberta's approach isn't going to be effective, says the Suzuki Foundation. Other analysts have pointed out that the industry was going to do it anyway; this just means yet another multi-billion dollar present to an industry awash in capital.

It's right to praise those who do positive things and to expose those who do not. We should be careful though, that the praise is deserving, and that the action is not just political subterfuge.

INSIDE NATURE ALBERTA

Birds, bugs, bears, bats 'n tracks: Another issue full of fascinating articles and great photos.

The cover story (page 20) outlines a study by Lisa Priestley looking at the nesting phenology of two of Alberta's "cute" owls: Saw-whet and Boreal. "Prairie Potholes" – those unbelievably productive sloughs that support wildlife galore – are the subject for Sandra Hawkins' article (page 34).

Margot Hervieux looks at bugs that suck sap (page 26); that may not sound too pleasant to some, but it is interesting – as is the fall phenomena of Maple Bugs (page 32), even though some find that event extremely unpleasant!

Meanwhile, a team of researchers has discovered something that may well help prevent bats from continuing to be killed in excessive numbers by wind turbines (page 35). Plus, you the readers are asked to make your own discovery (see page 29): what on earth made these tracks??

Your Editor has received many wonderful bear photos from a variety of photographers: think back to the cover photo, by Rick Price, in the Spring '08 issue, and the two photos on the inside front cover of this issue. Bears are extremely photogenic in a grand, majestic sense, and they are the subject of John Warden's regular feature (page 14).

A new regular column makes its first appearance in *Nature Alberta*: "Focus on the Foothills" by Chuck Priestley. Chuck is the new full time coordinator of the Alberta Foothills Network, thanks to financial support from Limited Brands, parent company of lingerie giants Victoria's Secret and La Senza. He will focus on communications with local communities, industry and government agencies to make them aware of the urgent need for new protected areas in the Foothills, a natural region that currently has only 1.2% protection. Says Chuck, on FAN's website: "This is exciting because we have an opportunity to take meaningful action in the Foothills and many of the stakeholders would like to see increased habitat preservation in that area. After all, the Foothills are the gateway to our beloved Rocky Mountains and are critical for wildlife such as Caribou."

INSERTS

You should find a couple of inserts in this issue. Both are highly relevant for Christmas – which, in essence, is just around the corner! Insert One is for FAN Books – and excellent nature books make excellent gifts for anyone. Insert Two is for *Nature Alberta* subscriptions and donations to FAN. The excellent magazine *Nature Alberta* (said the Editor humbly) makes an excellent gift for anyone, too. And, when you are thinking Christmas gifts, please remember FAN.

On the Covers:



FRONT COVER

There's a reason Saw-whet Owls, in particular baby Saw-whets (as the cover shot illustrates perfectly), are considered one of Alberta's "cute" owls. Lisa and Chuck Priestley took this photo north of Opal, Alberta with a Canon PowerShot S31S Digital

Camera. Lisa's study of Saw-whet and Boreal Owls is this issue's Feature Story, starting on page 20.



INSIDE FRONT COVER

Grizzlies exude an awesome majesty mixed with serenity that is evident even in photographs. We can only imagine what the photographers taking the pictures must feel. These photos, by Ashley Hockenberry (a wildlife photographer from Toronto) and Paul Horsley, capture that sense perfectly. Both Ashley and Paul are photographers who are new to *Nature Alberta*; you will likely be seeing more of them. More on Grizzlies, by John Warden, is on page 14.



INSIDE BACK COVER

A page celebrating brilliant colour! Last issue, Sandra Hawkins' photos of a cow moose in the water gained the inside back cover spot. Sandra gets this spot again with her waterfowl photos (see the story, page 34), but sharing it with another colourful animal. Black and white photos simply won't do when trying to show the beauty of Maple Bugs or ducks.

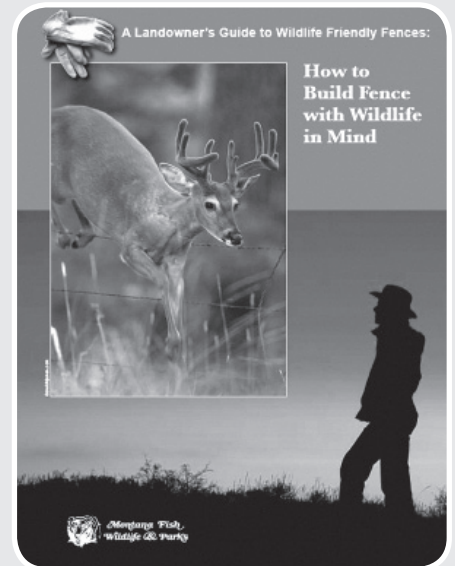
The Maple Bug photos (see the story on

page 32) are from the Royal Alberta Museum, which has a very interesting website.



BACK COVER

A new photographer joins the ranks of *Nature Alberta*, with a breath-taking shot in Banff National Park. Paul Horsley, of Paul Horsley Photography, is from Edmonton. The photo was taken with a Canon EOS-1D Mark II.



Montana Fish,
Wildlife and Parks has
recently published a
*"Landowner's Guide to
Wildlife Friendly Fences."*

The 44-page full-color booklet is full of solutions to help make fences less injurious to wildlife. It also includes tips on making fences more visible to reduce bird collisions. Although geared toward Montana ranch owners, the ideas will certainly be relevant here in Alberta.

A PDF version can be downloaded from the FWP website at:

<http://fwp.mt.gov/wildthings/livingwildlife/tips.html>.

It's under "Wild Things" then "Living With Wildlife - Tips."

No matter where you go in Alberta, wildlife and habitat are under assault by government and specific industries – so much so that this province is fast becoming an international pariah and is earning a reputation as “the throw-away province!”

ALBERTA ISSUES IN BRIEF

Wood Bison Hunt

The Alberta Government has announced a special hunt for Wood Bison (*Bison bison athabasca*): Sept/08



for First Nations; and Jan/09 for recreational hunters. The herd, in north-western Alberta, is the province's only free-range, disease-free wood bison population. The stated reasons for the hunt are: increased collisions with vehicles; concerns for public safety; reducing the risk of disease (eg. tuberculosis and brucellosis). The strategy is to reduce Wood Bison numbers in the 40,000 km² Hay-Zama Wildlife Management Area from over 700 to 400 animals over a period of years.

Although Wood Bison, also called Wood Buffalo, are an endangered species under Alberta's *Wildlife Act*, the government feels a hunt is an acceptable method of ongoing wildlife management of this species. A long-term plan to re-establish Wood Bison across northern Alberta is being developed.

Progress Report – CFB Suffield NWA

All reports by researchers contracted by three members of the Suffield National Wildlife Area Coalition (Alberta Wilderness Association, Grasslands Naturalists, Nature Canada) are now posted on the CEAA website registry. Joint Panel Formal Hearings started Oct 6/08; informal hearings: Calgary Oct 16 and 18; Medicine Hat Oct 20-21. Check the Canadian Environmental Assessment Agency website, file #05-07-15620 for full participation details and for information that has been presented to date. You can also let Jeff Davis at CEA know when you wish to participate. **They are anxious to hear from the public on this.**

Jeff.Davis@ceaa-acee.gc.ca
Tel.: 613-948-1362
Fax: 613-957-0941

A tremendous amount of work has been done by the Coalition and their researchers to obtain the information needed to assess the impacts of EnCana's proposal to increase the density of shallow gas wells from 8 to 16 per section in a National Wildlife Area. If EnCana's project is approved, the word “protected” may well lose all meaning in this country.

Broad public opposition to such drilling is needed if the many species at risk in the NWA are to be protected. Please – make your voice heard.

New Direction for AB Parks

According to the new “Draft Parks Planning Framework,” environmental protection will be a low priority, while access, all forms of recreation (including motorized) and economic exploitation will be the main function of Alberta's Parks. Publicly, Parks staff say that conservation is still a priority;

privately many are horrified (and didn't even know about the Draft contents before it was released). This deliberate plan is being rushed through and will spell the end of Parks as we know them. What can you do? This is serious, folks; take any action you can! Or, visit your favourite park one last time while you can.

ALBERTA ISSUES IN BRIEF

Pine Beetles versus the Forests

A Government of Alberta report says that Mountain Pine Beetle (*Dendroctonus ponderosae*) continues to threaten Alberta's forests, despite cold winter temperatures in early 2008 that slowed the beetle population's rate of growth in parts of the province. Surveys by Sustainable Resource Development (SRD) indicated high rates of Mountain Pine Beetle over-winter survival across much of southwest Alberta and in several pockets of northern and west-central Alberta, as well as the potential for long-term survival of beetles in portions of our forests.

Mountain Pine Beetles are a native species whose current outbreak – that could affect six million hectares of Alberta pine forest – is directly related to global warming. Ecologically, their effect, in the simplest terms, just means ecosystem changes. The threat is to the forestry industry and related economics. Infestations began in west-central Alberta in 2006, following a wind-assisted inflight from BC, and in southwest Alberta in 2002.

Take that, Grizzly Protection Team!

To the astonishment of team members and the consternation of conservationists, the Alberta Government dissolved its Grizzly Bear recovery team in June of this year. The fifteen team members unexpectedly received dismissal letters from SRD assistant deputy minister Ken Ambrock. Members were surprised to find that their work had been completed.

Team spokesman Robert Barkley said the comprehensive plan that was accepted by SRD Minister Ted Morton last October contemplated the team would be responsible for updating the plan and monitoring the recovery of the dwindling Grizzly Bear population.

The team was appointed in 2002 after a provincial endangered species committee recommended that grizzlies be declared a



GRIZZLY ASHLEY HOCKENBERRY

threatened species on the basis that there were likely less than 1,000 on provincial lands. DNA testing, which is in its final phase this year, now indicates there are likely far less than half that number.

SRD's PR front-man Dave Ealey said no decision on hunting grizzlies or declaring them a threatened or endangered species will be made until sometime in the future.



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ALBERTA ISSUES IN BRIEF

Alberta Gets Failing Grade on Climate

A report from the David Suzuki Foundation rated Alberta the worst of Canadian provinces when it comes to climate change. The conservation group noted that all the provinces were stepping up with strong targets and policies in the absence of federal leadership. British Columbia leads all provinces with its recently implemented carbon tax.

The Suzuki Foundation gave a good rating to Quebec and Ontario for their policies to reduce greenhouse gas emissions and their proposed cap-and-trade system. Manitoba also gets the thumbs-up. Not surprisingly, Alberta, which plans to **increase** emissions, is rated the worst.

Dale Marshall, climate-change policy analyst with the Suzuki Foundation, said that though the \$2-billion Alberta government

subsidy, announced in July by Premier Edward Stelmach, for carbon capture and storage methods may look impressive, Alberta's approach isn't going to be effective. The Suzuki report

warns that it will be impossible for Canada to meet international standards if Alberta doesn't do something substantive on global warming.

Just Can't Say No!

To no one's surprise, the Alberta Energy and Utilities Board (EUB) has approved the construction and operation of a 230-kilovolt power line between Lethbridge and Great Falls Montana. Many rural landowners on both sides of the border strongly oppose the project. In July, a group of Alberta landowners were allowed to appeal the approval in court (slated for Jan 13/09). A spokesperson for Montana Alberta Tie Ltd (MATL), the company that will construct and operate the power line, says that the court case will delay, but not stop, the project.

The power line has not yet received approval in the United States, and as part of the regulatory work an environmental impact statement is being done. Alberta no longer bothers with such things as environmental impact studies, having scrapped them for many transmission lines.

Though the EUB assumes the use of the line is for both importing and exporting electricity, the entire 600 megawatt capacity of the line has been purchased by Montana-based industrial wind facilities with, according to MATL, plans to export that power to Alberta.

ANSWERS TO CROSSWORD PUZZLE #6 (IN THE SUMMER 2008 NATURE ALBERTA)

ACROSS

- | | |
|----------------|----------------|
| 1. JERICO | 13. BRAYER |
| 4. PLAID | 15. JOURNEYMAN |
| 7. MANX | 18. EXTENDER |
| 8. PLOTTING | 19. BOND |
| 10. SINGLETONS | 20. TENET |
| 12. ARCHER | 21. SADDLER |

DOWN

- | | |
|---------------------------|---------------|
| 1, 19 – Across JAMES BOND | 9. BLUEBONNET |
| 2. RINGNECK | 11. PYGMY OWL |
| 3. OBLATE | 12. AMBIENT |
| 4. PUT IN ORDER | 14. GREENS |
| 5. AVID | 16. NADIR |
| 6. DOGSTAR | 17. STUN |

ALBERTA ISSUES IN BRIEF

Wind Update

In May 2008, NaturEner withdrew its application to Alberta Environmental Utilities Board for industrial wind turbines on the north slopes of the Cypress Hills. NaturEner SA is a Spain-based corporation, owned by the Belgian multinational industrial group SAPEC, which bought out West WindEau (the company that initially developed the proposed “Wild Rose 1” industrial wind electricity-generating complex). West WindEau’s Environmental Impact Statement (EIS) in support of its application was based on turbines of a specific size. NaturEner then submitted a new application for much larger turbines. This will substantially change the project: a) they will emit more noise than earlier anticipated; b) most would have to be relocated; c) new access roads are necessary; d) setback distances will likely change; and e) there will be different transmission routes. However, no new data on the changed impacts has been obtained. In effect, this application is a new proposal and should require an EIS that would address these new environmental impacts.

Letters endorsed by FAN, Grasslands Naturalists, and

Alberta Wilderness Association were sent in July by Mr Paul Huene (a landowner near Irvine AB) to all government agencies which had approved this project asking that the agencies

withdraw their approval since the EIS is outdated. We have requested that NaturEner provide a new EIS that takes into account the impacts of this new project.

Tar Sands Tales

TOXIC TALE OF TAILINGS

FAN predicted problems with tailings ponds years before 500 ducks landed – and subsequently died – in a Syncrude tailings pond at the Aurora North Site Mine in northern Alberta in April 2008.

The provincial government assured Albertans a deterrent program would be in place to ensure this type of incident did not occur: the program appears to have some flaws! Tar sands tailings ponds, growing by millions of litres a day, are a massive ecological disaster.

In June 2008, The Alberta Energy Resources Conservation Board (ERCB) released a draft Directive for new industry-wide criteria, with enforcement actions, for managing tar sands tailings. The finalized directive is to be in place by fall, though it essentially ignores the problem: the toxic ponds themselves.

“Tailings” are the waste from tar sands extraction processes. Alberta’s inventory of fluid fine tailings that require long term containment is now over 750 million cubic metres.

TEN TIMES MORE TAR SANDS

The first ever report to provide an in-depth look at the environmental impacts of upgrading tar sands bitumen in the Edmonton region was released by the Pembina Institute June 16, 2008. It provides an assessment of the cumulative environmental impacts of a 10-fold expansion of upgrading capacity proposed for Edmonton’s doorstep.

The scale and pace of development will transform agricultural land and natural areas into an industrial complex about three-quarters the size of Edmonton. The report, *Upgrader Alley: Oil Sands Fever Strikes Edmonton*, describes industry plans that will result in nine massive industrial plants just east of Edmonton. You can download the full the report

ALBERTA ISSUES IN BRIEF

and a fact sheet at www.oilsandswatch.org.

Anne Brown, who lives in the area northeast of Edmonton known as “upgrader alley,” told the CBC that many people call the region “cancer alley” because of the number of people who have fallen ill. For information, contact: Mary Griffiths, Senior Policy Analyst/Lead Author
Tel: 780-433-6675;
Cell: 780-915-9771

CEMA SPURNED

On Aug 18/08, the Pembina Institute, Toxics Watch Society of Alberta and Fort McMurray Environmental Association formally withdrew from the Cumulative Environmental Management Association (CEMA). The groups finally realized that, after eight years of effort and consistent failure to meet deadlines for recommending systems to protect the region’s environment, CEMA has lost all legitimacy for environmental management in the tar sands.

“The Alberta Government has taken a ‘talk and drill’ approach ...[and] has squandered an opportunity to get effective environmental management in place ahead of serious on-the-ground cumulative impacts”, said Chris Severson-Baker, Policy

Director with the Pembina Institute and former CEMA Board Member.

“Frankly speaking, we can no longer legitimize a process that both the oil sands industry and government have been using as a shield to deflect criticism about the cumulative environmental impacts of oil sands development,” said Myles Kitagawa, a director with the Toxics Watch Society. Of the forty-one members left in CEMA, thirty-one are the industry-government alliance; only two environmental groups remain.

Pembina has made many recommendations which can be found in its new report, *Taking the Wheel: Correcting the Course of Cumulative Environmental Management in the Athabasca Oil Sands*. The report can be downloaded from www.oilsandswatch.org.

GREENWASH WON’T WASH

The Advertising Standards Authority (ASA) upheld World Wildlife Fund’s (WWF) complaint against an advert placed by Shell in the Financial Times earlier this year, which suggested that oil sands were a sustainable energy source. The ASA - the independent body responsible for regulating United Kingdom advertising - branded the advert

‘misleading’, due to its ambiguous use of the word ‘sustainable’.

The advert referred specifically to the company’s oil sands deposits in Alberta and their work to build the largest oil refinery in North America in Port Arthur, Texas. WWF believes that Shell’s repeated use of the term ‘sustainable’ is entirely at odds with these activities. A recent report by WWF and Co-operative Financial Services revealed that production of oil from tar-soaked shale or sand can create up to eight times as many emissions as conventional oil production does.

The original advert appeared in the Financial Times (01/02/08). Shell has assured the ASA that the advert will not run again.

COULD YOU DEFINE “STRICT”?

Companies operating in the tar sands are held to strict environmental standards, claim the Alberta and Federal governments. Wrong! In a July 2 press release, ForestEthics pointed out that “Library late fees in Calgary and Edmonton total 16 times more than environmental fines levied at Tar Sands companies.” According to the press release, library fines totalled over \$4 million while all the companies in the tar sands were fined only \$249,000. In 2006 alone, Suncor is said to have had 240 air exceedances. No charges were laid for tar sands under the federal Fisheries Act between 1998 and 2005.

Salty Roads

BY ROBERT ALISON



Road salt is a common de-icer, widely used to generate safe winter travel. It has, however, an acute attraction to wildlife, often with fatal consequences.

According to Environment Canada's "Risk Management Strategy for road salts", whereas the use of road salt on icy winter roads promotes public safety, it may "poison wildlife directly and increases the vulnerability of wildlife to vehicle strikes".

In 2002, Environment Canada designated road salt to be a "toxic" substance under the Canadian Environmental Protection Act. That designation applies to all "de-icing chemicals that contain inorganic chloride salts."

Several de-icing chemicals are widely used across Canada, totaling about

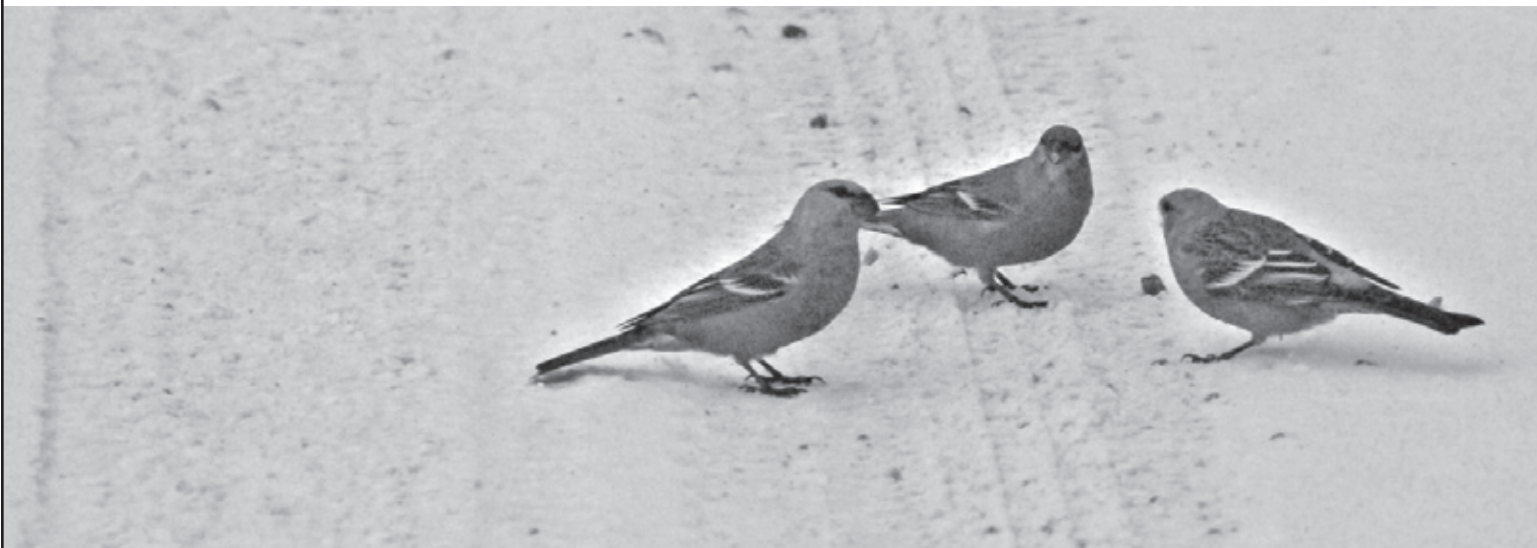
5 million tons a year. They include calcium chloride, potassium chloride and magnesium chloride, but sodium chloride (table salt) is the most common. They can be applied to roads as liquids or in crystalline form.

Road salt is ingested by wildlife to supplement the natural diet. It is an important element in their physiology. But, too much salt can cause salt toxicosis, which can be fatal.

A study by University of Guelph scientists D.W. Smith and G. Hofstra concluded that roadside sodium

**THIS GROUP OF PINE GROSBEAKS
IS DRAWN TO THE ROAD SALT.**

ROBERT ALISON





THIS HERD OF BIGHORN SHEEP IS DRAWN TO ROAD SALT, STALLING TRAFFIC AND INVITING ACCIDENTS. ROBERT ALISON

Salty Roads...continued

chloride levels as low as 100 parts per million (ppm) can inhibit seed germination in over 50 percent of all roadside plant species. Tests show some roadside salt levels top 1050 ppm.

"Road salt is a danger to pets, causing vomiting and diarrhea," said Vancouver veterinarian Michael Bratt.

According to a report in *Stormwater* (the journal for surface water quality professionals) authored by William Wegner and Marc Yaggi, sodium chloride is readily available, inexpensive and easily depresses the freezing point of water to melt ice.

However, the report confirms that sodium chloride, when ingested by elk, bighorn sheep, deer and moose – which are especially vulnerable to road salt – causes "salt toxicosis" in which the animals "lose their fear of vehicles

and humans". That loss of fear makes them much more likely to be struck by vehicles.

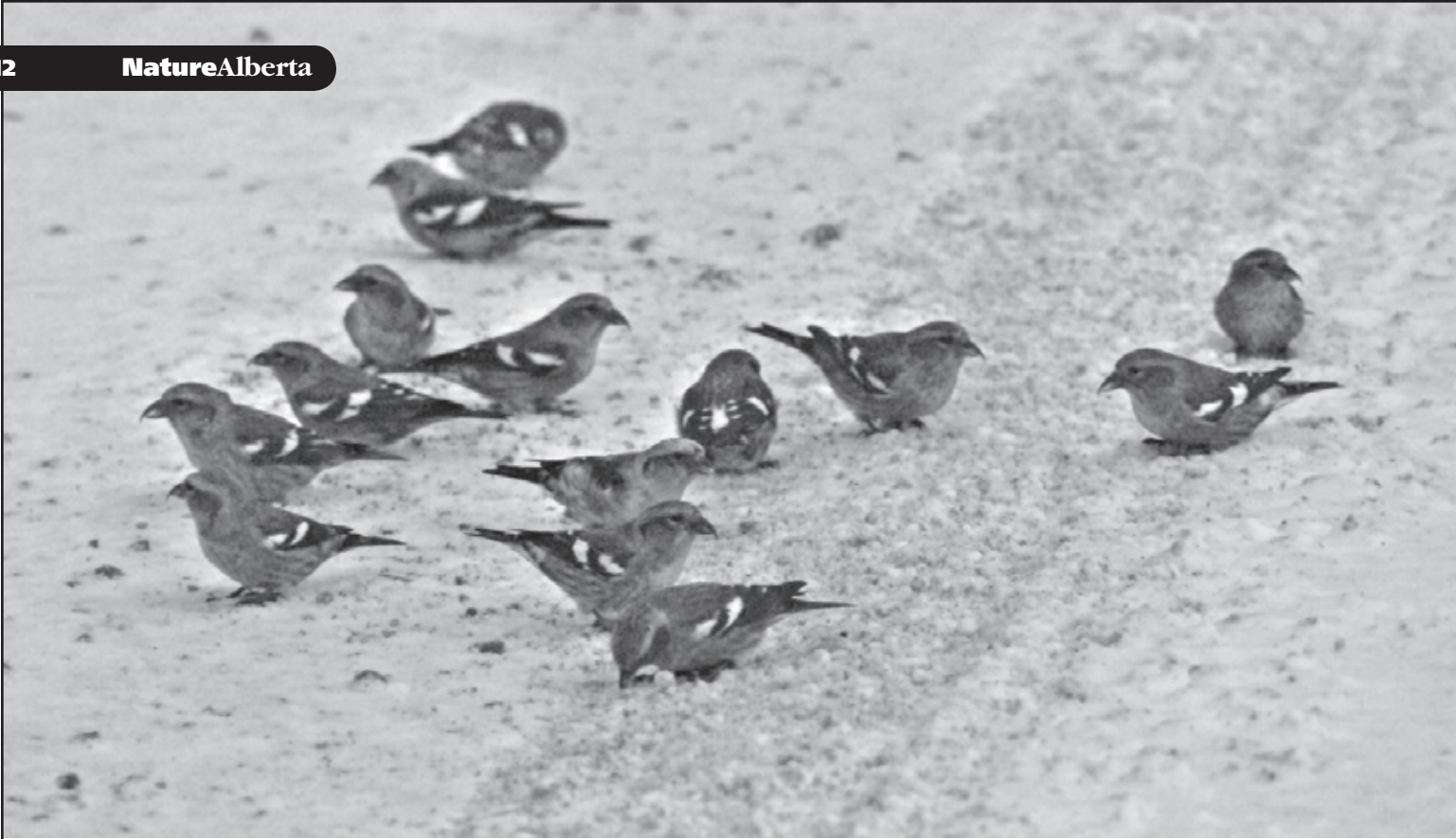
According to Ontario moose expert Ray Stefanski, road salt attraction to moose is a major cause of many moose-vehicle collisions. Wes Bradford, a senior biologist with Parks Canada, says that salt attraction is an important reason for so many large mammals being killed in collisions with vehicles in national parks.

Birds, too, have a fatal attraction to road salt. According to the *Stormwater* report, several cases of large numbers of birds being killed by attraction to road salt have been documented. Some losses amount to over 1,000 birds per incident. Environment Canada data shows that the most vulnerable birds are crossbills, grosbeaks, sparrows, siskins and waxwings. Seed-eating

birds, such as finches, are the main victims. They ingest grit off roads to help pulverize seeds in digestion and swallow some salt accidentally in the process. Five studies confirm that as little as 0.25 sodium chloride particle (266 mg/kgm) can cause mental impairment in birds, and 1.4 particles can be fatal. The Canadian Cooperative Wildlife Research Centre found several apparently healthy – but dead – birds on Quebec roads with very elevated salt levels in their brains, about 2.98 micrograms per gram brain material. That is about twice the normal level.

"Behavioural abnormalities can occur in some bird species with ingestion of a single salt particle, and death can take place with as few as two particles," Wegner said. "In birds, salt toxicosis increases vulnerability to vehicle strike."

In parts of Alberta, winter finches are often called "grille birds",



WHITE-WINGED CROSSBILLS COMING TO ROAD SALT. ROBERT ALISON

Salty Roads...continued

owing to the large number that collect in vehicle grilles after being struck on winter roads. According to the Environment Canada salt risk report, there are no reliable estimates of avian fatalities caused by road salt attraction, but the total number is likely very substantial. The report says that the critical amount of ingested salt that can cause mortality is 0.47 of a 2.4-mm diameter spherical salt particle.

The risk to wildlife due to road salt is so significant that in 2003, the Transportation Association of Canada recommended new guidelines to balance road safety with risk to wildlife. Road salt is commonly used as a de-icer on Alberta roads. Provincial government guidelines

recommend the use of less salt. The average recommended application is 85 kgm salt per 2-lane road kilometre, about 1/14th cubic metre.

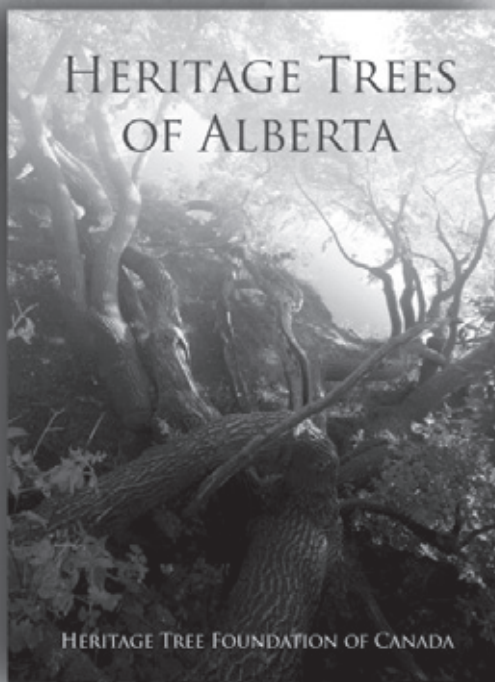
"When we apply road salt we try to achieve a balance between using as little as possible while achieving road safety," said a spokesman for the Alberta government. "The less, the better, and we usually apply it in liquid form."

According to the Canadian Wildlife Service, road salt is widely used as a safety precaution. "We have lots of cases where there would be ice on the roads if we did not apply salt," said one official with the Infrastructure and Transportation Ministry. "Deer and elk like to lick

the salt on the roads, and wildlife-vehicle collisions are a sad part of life that stems from that", he added. "We have hundreds of salt-related wildlife losses, mainly elk and deer." In 2005, the Alberta government signed a formal agreement with the Federal government that included commitments to cut salt use on Alberta roads.

Road salt eventually washes off roadways, usually into adjacent watersheds or soils. According to Wegner, amounts as high as 19,135 mg salt per litre water are not unusual.

Alternatives to sodium chloride are under study. One possible replacement is calcium magnesium acetate, which is more "environmentally benign", Wegner says.



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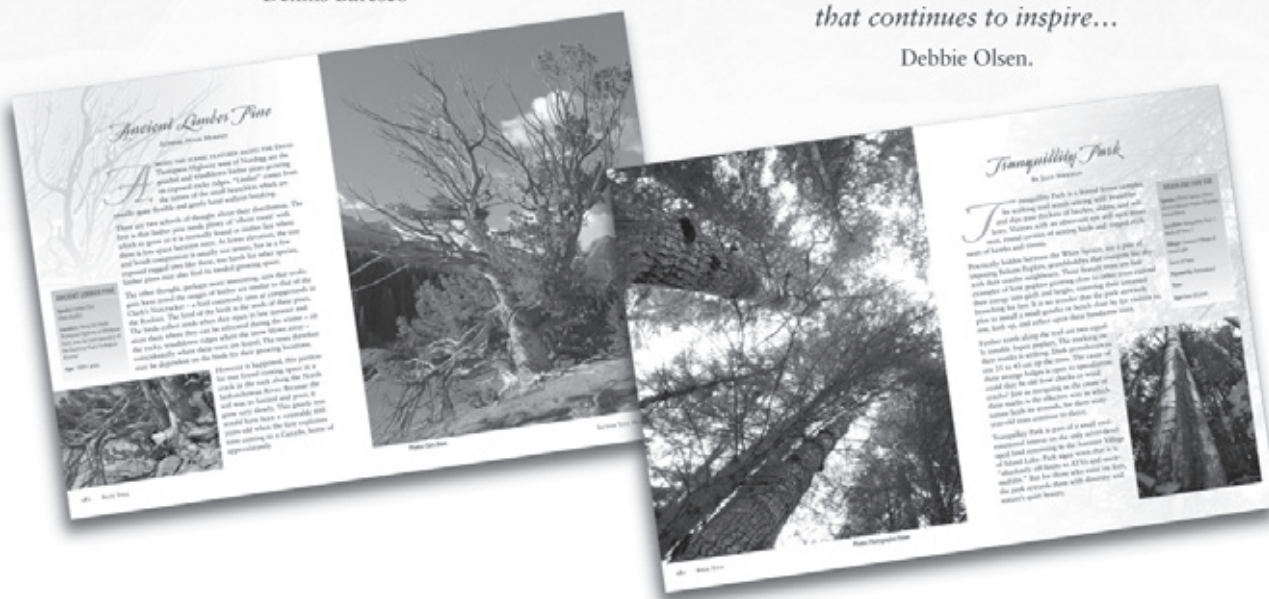
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Dennis Baresco

The tangled boughs of the Thinking Tree lay sprawled along the banks of the Battle River in Ponoka for decades before local residents realized the tree existed.... The tree became a spiritual retreat..... its knotted limbs have made it a landmark that continues to inspire...

Debbie Olsen.



Close to Home:

Nature Photography in Alberta

BY JOHN WARDEN



JOHN WARDEN

The Spirit of Bears

I was following very fresh bear tracks in the sand. They do indeed look a bit like a human palm print, except where it was clear that the bear's weight had shifted forward and its claws had sunk deep into the beach.

The tide was coming back in, so the tracks were likely no more than a couple of hours old, though they looked 'just made' to me. My wife and I spent the next three hours exploring the tidal pools of French Beach, just north of Sooke BC, with no sign of the

bear, though his presence remained with me.

The next morning we were having our morning coffee down on the beach at Sooke Basin where we were staying. It's nice to start the day watching the copper-skinned

limbs of Arbutus trees fingering the folds of morning fog. It's also an opportunity for our 'Yorkie/Maltese' puppy to meet other dogs out for a morning stroll on the beach. We met Len who was walking his very friendly 'Samoyed/Wolf' cross. Like his dog, Len was also very friendly and talked to us of life in the Sooke area. He mentioned that a 'Spirit Bear' – a white Black Bear cub – had been seen in East Sooke this past spring.

Spirit Bears – also called Ghost Bears and Kermode Bears – have been well documented as a genetic variation of the Black Bear, with perhaps as many as one in ten Black Bears having the white 'ghost' coat. Their greatest concentrations are along the northern Pacific



JOHN WARDEN



JOHN WARDEN

The Spirit of Bears...continued

coast around Princess Royal Island. If the reports were true, a 'Spirit Bear' near Sooke would be significantly south of their normal habitat.

It was a very windy day, too windy to go beach exploring, so I settled into the lee side of a beached drift-log and pondered my own experiences with bears, closer to home in Alberta.

As kids on summer vacation, we would see Black Bears at the garbage dump in Banff. My grandpa Charlie, my mom's dad, died when I was about ten, but I can remember him throwing a rock at a bear that

was scavenging the garbage cans at our camp site. The bear had his head inside the overturned garbage can and when the rock hit the can, the bear fell out backwards on his haunches with a corncob in his mouth. It seemed funny then, but fortunately the bear and garbage management plans of today tend to prevent such dangerous situations from occurring.

On the road to Maligne Lake in Jasper, I caught a couple of images of a mother Black Bear with two cubs playing at the edge of a pond. On the Icefield Parkway near Saskatchewan

River Crossing, I watched a young Black Bear eating new growth branches at the top of a tree but until recently, I had never seen a Grizzly Bear in the wild.

There is an alpine meadow near the Icefield Centre that seems like perfect Grizzly Bear habitat and I have scoured those meadows in vain. I had heard that the Bow Valley Summit was a good place to see Grizzly and finally, after three visits, persistence paid off. Early one morning, north of Num-ti-jah Lodge about a kilometer or so, I spotted a young Grizzly Bear

The Spirit of Bears...continued

foraging for roots and grubs in the meadow. He, a presumption on my part, was a pleasure to watch from the safety of inside my car. I got a number of shots as he used the power of his whole body to pull over small boulders in search of insects and surprisingly watched him fall backwards on his butt when one of the rocks came free and over-balanced him. By this time a number of other cars had stopped to watch as well and the bear ambled off into the tree-

line. But his presence lingered and stays with me still. A 'zen' bear, a Spirit Bear.

My zen bear had a tag on his ear, so likely he is known to our wildlife officials. Hopefully he has been accounted for in the provincial survey that has been undertaken to get an accurate count of our Grizzly Bear population which some authorities in recent media releases estimate at less than 500. If such numbers are accurate, then perhaps what is surprising

is that I did get to see my bear alive and apparently living well in the wild. Will I get to see another one? Will my children and their children be able to find Grizzly Bears in Alberta's wilds?

I have finally seen my Grizzly Bear, a lifer for me as the 'birders' out there would say. And the wonderful thing is that I will never again be able to drive by an alpine meadow without sensing the spirit of that bear. Alpine meadows are the home of Grizzly Bears. It is the way of things. An alpine meadow without a Grizzly Bear is a little bit empty...a little bit less complete.

A perfect bear track on a perfect beach on Vancouver Island. A spirit presence from a footprint created memories of bears for me. It makes sense that there are stories and legends about the spirit of bears, because their spirits are very powerful. But even better than the spirit of bears is real bears living wild and natural in our magnificent and wild Alberta.



JOHN WARDEN

In Memoriam

BY MARTHA KOSTUCH



Martha Kostuch

Martha Kostuch passed away on April 23, 2008. She was a great and exceptional environmentalist whose list of accomplishments and actions almost defies imagination. She had asked her family to send out this notice to "family and friends after my death."

I have had a good life. I raised four sons, Edward, Mark, John and Danny. I played a role in the lives of my "extra" children, Jeremy, Anika and Ieishia. I got to spend time with many of my grandchildren and foster grandchildren (18 in all). I was especially close to Shawnee, Wolfgang and Horatio. I enjoyed my veterinary work and many of my clients and patients (the animals) were also my friends.

I believe my environmental advocacy contributed to making Canada's environment a little better than it would have been without my efforts. I liked being an environmental activist. I enjoyed a good argument (as long as it wasn't personal), I liked challenges and I liked making a difference. I also enjoyed getting to know so many people through my environmental activities.

People used to ask me where I got all my energy. I would tell

them from nature. The mountains, the trees, the rivers and the wildlife gave me enjoyment and energy. I really was a tree hugger! I loved my walks in the woods and canoeing down rivers.

I don't want people to give money in memory of me. I would like each of you to think about some of the time we spent together; some of the things we did together. Your memories are important.

If you would like to do more than remember me (which I consider important - remembering me, that is), then I would ask you to do something extra to benefit the environment. Something you were not already planning to do or something you were not planning to do this soon. Through the additional actions taken by those who remember me, the environment will continue to benefit.

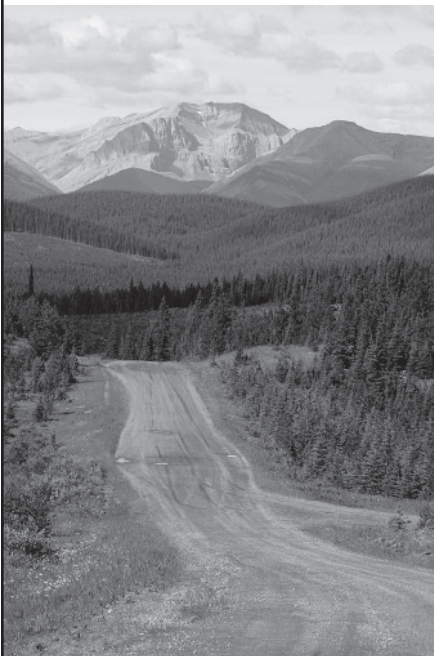
Love, Martha



Focus on the Foothills

Chuck Priestley's "Focus on the Foothills" will be a regular column in Nature Alberta. It has been developed to provide profile to one of Alberta's least noticed Natural Regions – the Foothills. This Region has various important and unique characteristics, and throughout the Region there are many natural hidden treasures that are waiting to be discovered. The two main goals of this column are: 1) to showcase the features that define the Foothills; and 2) to bring attention to some of the pressures that are currently influencing this Region.

**RANGE OF THE LITTLE SMOKY CARIBOU
HERD NEAR GRANDE CACHE, ALBERTA**
CHUCK PRIESTLEY



Increased Attention for the Foothills: Natural Values are getting a Foothold!

BY CHUCK PRIESTLEY

What encompasses 10% of Alberta, is sandwiched between the Rocky Mountains and the Boreal Forest, is composed of gently rolling hills that are blanketed with mixed-wood and coniferous forests and provides critical habitat for Trumpeter Swans, Ring-necked Ducks, Sandhill Cranes, Bonaparte's Gulls, Blackpoll Warblers, White-winged Crossbills, Woodland Caribou, Grizzly Bears and more than 80 rare vascular plants?

The Foothills Natural Region! This Region is the focus of a new initiative designed to expand protected areas networks. Only 1.2% of the area in the Foothills currently lies in protected areas.

After strong pressure from environmental groups regarding the distribution of their promotional catalogues, Limited Brands (the parent company of lingerie giants Victoria's Secret and La Senza) decided to 'green up' their policies. Their initial actions included the cancellation of a \$100 million paper supply contract with West Fraser's Hinton mill (which harvests in the Foothills) and switching to environmentally responsible paper

suppliers. They also increased the post-consumer recycled component of their promotional materials. Limited Brand's then funded an independently conducted study to map high conservation values and endangered forests in the Foothills (see www.albertafoothillsnetwork.org/library).

Findings from that publication made clear that nationally and internationally significant biological values are present in the Foothills. It was also demonstrated that current land-use practices and the lack of a network of protected areas threaten the persistence of these components in the Region. Most recently, Limited Brands made a large financial

Focus on the Foothills...continued

contribution to the Alberta Foothills Network (AFN) to help promote the implementation of the recommendations that resulted from the mapping study.

The AFN is composed of environmental organizations, including Alberta Wilderness Association, Canadian Parks and Wilderness Society, Federation of Alberta Naturalists, Greenpeace and Sierra Club of Canada. Various approaches will be used to address the AFN's main goal of expanding the protected area network in the Foothills.

The AFN recognizes the need to tap into the economic values present in the Foothills, and industry players will be called upon to acknowledge (in principle and action) the importance of maintaining habitat for biological values. The main approach needs to be a balanced one. Clearly it is unrealistic, and probably misguided, to suggest that all

industrial activity should stop in the Foothills. It is equally preposterous to suggest that development in the region should go forward at the expense of losing nationally and internationally significant biological values. AFN will continue to work directly with industry to ensure that natural and economic values persist in the Foothills Region. After all, it is the combination of these two values that provides Albertans with the lifestyle that we enjoy.

The AFN will strive to raise the profile of the Foothills. Even though the Foothills is often viewed as only the gateway between the Rocky Mountains (a World Heritage Site) and the Boreal Forest (the world's largest forest), the Region has many stand-alone values that

should be showcased. The column 'Focus on the Foothills' in *Nature Alberta*, the recent *Edmonton Journal* article (Aug 6, 2008) and updates to AFN's website (www.foothillsnetwork.org) are examples of the means that will be used to bring attention to the Foothills. Future activities being considered by the AFN include posting video podcasts, developing educational documentaries for schools and setting a world record that will be recognized by the Guinness World Records™. One thing is certain: the AFN will continue to "Focus on the Foothills."

For many of us in Alberta, the Foothills are just down the road. The next time you are on your way towards Jasper, Banff or Nordegg take a minute to stop and take a step in the Foothills. You will likely be pleasantly surprised by what you find there.

NEXT: In time for Winter! The next edition of 'Focus on the Foothills' will showcase a Foothills hibernator. The Little Brown Bat is one of the wildlife species that is at home in the Foothills. The bat's unique ecology, its year-round association with the Foothills and local efforts to monitor their populations will be discussed.

A GRIZZLY EMERGES FROM THE FOREST. GRIZZLIES CAN THRIVE IN THE FOOTHILLS' MIXTURE OF OPEN AND CLOSED HABITATS. HOWEVER, INCREASED HUMAN ACCESS IS THOUGHT TO BE THE MAIN UNDERLYING FACTOR THAT IS THREATENING GRIZZLIES IN THE REGION. CHUCK PRIESTLEY



AUTHOR WITH BABY BOREAL OWL

CHUCK PRIESTLEY



Lisa Priestley completed a technical diploma in biological sciences at NAIT and then a Bachelor of Science at the University of Alberta. Some work doing bird surveys in northern Alberta introduced her to a pair of Barred Owls, which developed into a Masters thesis working on the ecology of Barred Owls in the foothills of Alberta through the Renewable Resources Department. She worked on and developed various volunteer and intensive amphibian and reptile monitoring programs over five years for the Alberta Conservation Association and Alberta SRD. During this time, she was involved with Beaverhill Bird Observatory on the board of directors and took the lead in developing Guidelines for Nocturnal Owl Monitoring in North America. Lisa then worked for Bird Studies Canada as the Prairie Program Coordinator.

In 2003, she became the Executive Director of Beaverhill Bird Observatory (BBO) and coordinates the Alberta Raptor Nest Card Program and Alberta Nocturnal Owl Survey. Lisa has banded Peregrine Falcons in Rankin Inlet and Edmonton, Loggerhead Shrikes in Georgia, Piping Plovers in Alberta, and Long-eared Owls for the Owl Research Institute in Montana. She has been the editor for the Edmonton Nature Club's Nature Network since 2003. She met Chuck Priestley at Beaverhill Bird Observatory, married in 2002, and has two children: Sam is two and Kate is one year. Lisa and her husband incorporated STRIX Environmental Consulting Ltd. in 2005.

FEATURE ARTICLE

The Nesting Phenology of Northern Saw-whet Owl and Boreal Owl in Central Alberta

BY LISA PRIESTLEY

Alberta's two Aegolius owls, the Northern Saw-whet Owl (Aegolius acadicus) and Boreal Owl (Aegolius funereus) are secondary cavity nesters.

Both species predominantly use existing woodpecker nest cavities, usually those of Northern Flicker (*Colaptes auratus*) or Pileated Woodpecker (*Dryocopus pileatus*); they will also occupy natural cavities in snags and stubs and will readily use nestboxes (Cannings 1993, Hayward 1989, Hayward and Hayward 1993, Priestley et al. 2005). Northern Saw-whet Owls are one of the most common owls in Alberta and are found across most of the forested areas of the province. Their northern distribution is poorly understood (Cannings 1993). Boreal Owls have a continuous breeding population in the boreal forests of Canada and Alaska (Hayward and Hayward 1993). Both species feed predominantly on microtines (rodents which

belong to the Subfamily *Microtinae*: eg. Voles, lemmings and muskrats); however birds, insects, and amphibians can also be consumed.

In 1988, a volunteer raptor nest card program was initiated by Alberta Sustainable Resource Development (ASRD) to enable raptor banders and researchers to collect information on nest locations of birds of prey. These data were stored with ASRD and Beaverhill Bird Observatory. In 2004 funding became available to analyze these long-term datasets. The objective of the analysis was to determine the phenology of nesting of several raptor species (Priestley 2005a, 2005b). This paper addresses the timing of nesting of the Northern Saw-whet Owl and Boreal Owl in central Alberta, based on nest banding conducted between 1985 and 2007.



SAW-WHET OWL DAVE FAIRLESS

METHODS

The study area was located in central Alberta (latitudes 52.3° to 55.3°, longitudes 110.1° to 118.1°), surrounding the city of Edmonton. Nests were in the aspen parkland, boreal, lower foothill and montane ecoregions. Nests were located by one or more of: 1) setting up nestboxes and visiting the boxes during the nesting season; 2) searching for nest cavities; 3) looking for pairs of birds on territory in the spring (using call playback); or 4) through contact with landowners who found nests on their land. For each nest, banders collected information on bird species, nest type (stick, cavity, man-made), nest height, nest habitat, and banding data including number of eggs, number of young, and an estimate of the age (in days)

of the young at banding (Bent 1938, Pyle 1997). All data from nest cards were entered into Microsoft Excel for analysis.

The estimated date of hatching was calculated by subtracting the age (in days) of the average age of the young determined on the date of banding. Laying date was estimated by subtracting the number of days required for incubation from the estimated hatch date. Fledging date was estimated by adding the number of days required for fledging to the estimated hatch date. The time required for incubation and fledging was determined as the largest number of days reported in the literature from the closest geographic area, since there is little information from Alberta (Cannings 1987, Korpimäki 1981, Hayward 1989, Hayward

and Hayward 1993). Incubation and fledging days were thus deemed to be 28 and 32 days for Northern Saw-whet Owl and 29 and 34 days for Boreal Owl respectively.

RESULTS

There were 240 Northern Saw-whet Owl nest records that included estimated nestling age. The earliest estimated date for egg laying was February 26 and the latest was June 18 with an average laying date of April 12 (Figure 1). Most Northern Saw-whet Owl first eggs were found in early to mid-March (some late February to early April) in southern British Columbia (Cannings 1987). In Ontario, Peck and James (1983) report egg laying in April; they found the median egg laying date to be March 14 in southwestern Idaho.

The Nesting Phenology of Northern Saw-whet Owl and Boreal Owl in Central Alberta... continued

The average fledging date was June 11 (range: April 27 to August 17) (Figure 3). Two exceptional years for Northern Saw-whet Owls when there were very early and very late nests were: in 2004 first laying was observed March 20 and latest laying was June 5, and in 1990 earliest laying was March 24 and latest laying was June 18. All the nest records (n=5) from June 1 to June 5 were from the year 2004. There is no evidence of second broods, although there are several records of eggs being laid in June and July, which may represent second broods rather than late first broods or re-nesting attempts (Cannings 1993).

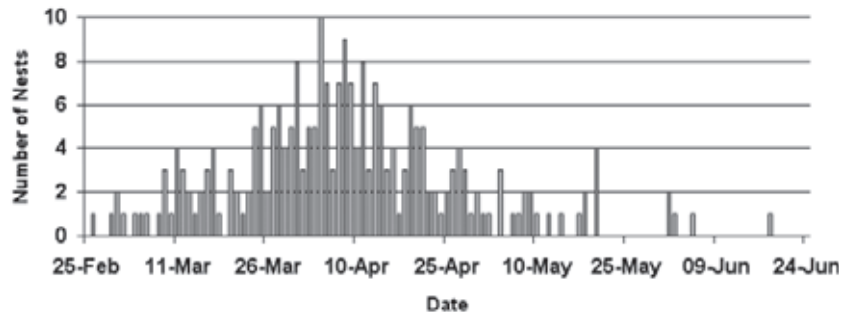


Figure 1. Estimated egg laying dates of the Northern Saw-whet Owl in central Alberta 1985-2007.

Out of 37 Boreal Owl nest records, 31 included nestling age. The average estimated egg laying date was March 22 (range: March 6 to April 6) (Figure 2). The average estimated fledging date was May 24 (range: May 8 to June 8) (Figure 3). These dates are comparable to Minnesota, where clutches were initiated by 30 Mar and 12 Apr (Lane 1988). In

Colorado, laying dates estimated from April 17 to June 1 with half the known nests being initiated by May 10. In central Idaho wilderness, initiation dates from April 12 to May 24 (Hayward 1989). Near Anchorage, Alaska, nesting has been reported between March 27 and May 5 (Ted Swem, U.S. Fish Wildlife Service, Fairbanks AK).

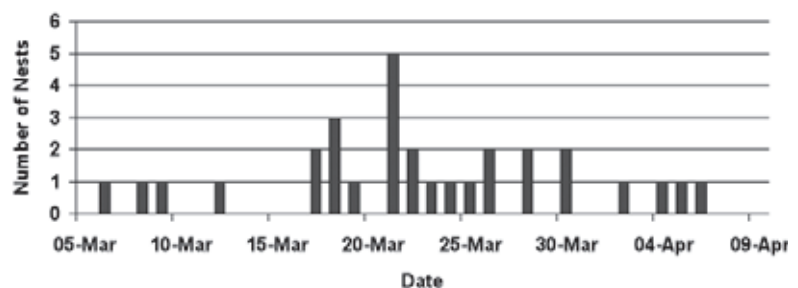


Figure 2. Estimated egg laying dates of the Boreal Owl in central Alberta 1992-2005.



The Nesting Phenology of Northern Saw-whet Owl and Boreal Owl in Central Alberta...continued

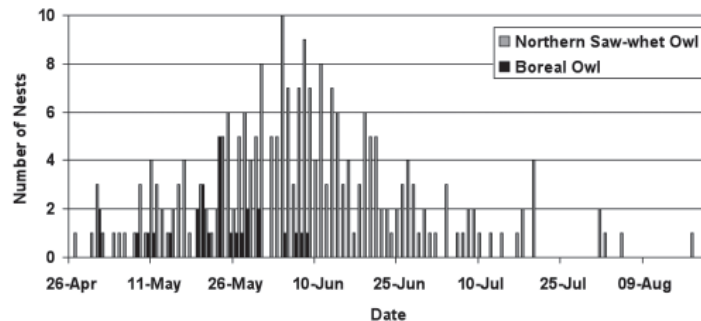


Figure 3. Estimated fledge dates of Northern Saw-whet and Boreal Owl nestlings in central Alberta.



DISCUSSION

Raptors are excellent indicators of the health of the environment (Burnham and Cade 1995). Data on primary demographic parameters are needed to determine the factors responsible for population declines in these birds and to identify conservation and management actions to reverse the declines (ASRD 2001, Desante 1995). The phenology of nesting also needs to be understood in order to protect nests during this critical time.

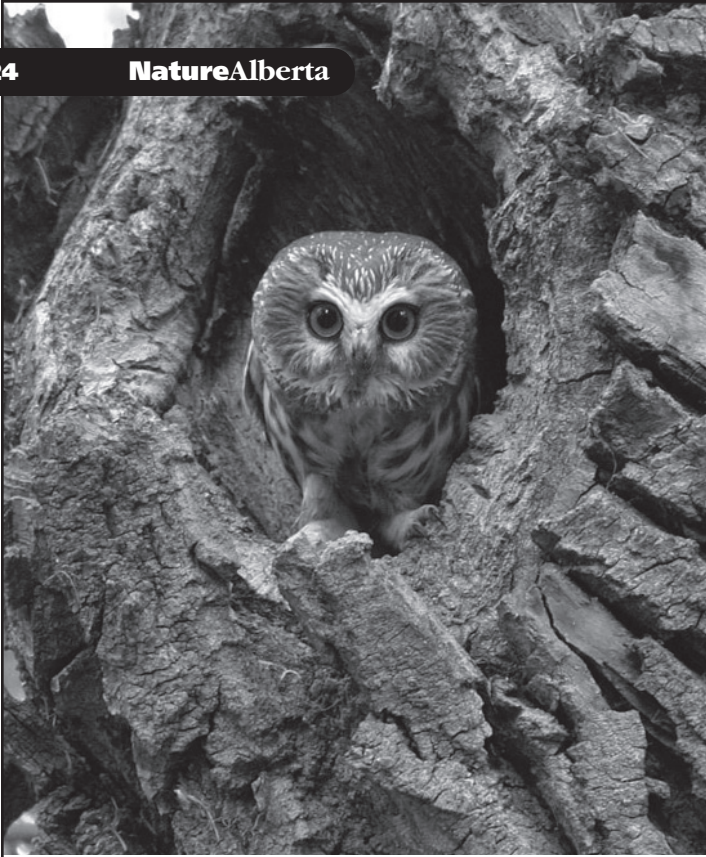
Boreal and Northern Saw-whet Owls can be affected by anthropogenic disturbances, particularly during the nesting season. Forest harvesting poses the greatest threat to these species, particularly with the reduction of suitable nesting sites, in particular snags. Also, when disturbed early in the

nesting season, females will abandon nests. Breeding season of these owls overlaps with the timing of forest harvest practices. Forest companies are recognizing the importance of considering breeding bird habitat requirements for cavity nesters by retaining snags and large live trees for structure in harvested stands. The timing of breeding bird nesting is being considered for timing of harvest operations and for well sites and seismic lines. The general guideline is to avoid harvesting April 1 through July 31 to reduce impacts on nesting birds. Results from this study show that nests of Northern Saw-whet Owls need to be protected from disturbance from early-March through to the end of July. Boreal Owl nests should be protected from early March to early May. Alberta's owls nest earlier

than other breeding birds. The Great Horned Owl key nesting timing is from the beginning of March through the end of May (Priestley 2005a), and Barred Owls nest from mid-March through mid-July (Priestley 2005b). To protect all four of these species of owls during the nesting time, disturbance should be avoided from the beginning of March to the end of July.

ACKNOWLEDGEMENTS

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The Nesting Phenology of Northern Saw-whet Owl and Boreal Owl in Central Alberta...continued

Alberta Sustainable Resource Development, Canadian Wildlife Service, Federation of Alberta Naturalists, and Bird Studies Canada and is available at <http://www.beaverhillbirds.com/>. Rick Bonar, Doug Collister, Gordon Court, Ray Cromie, Al DeGroot, Jim Herbers, Heather Hinam, Ted Hindmarch, Marg Lomow, John Moore, Rick Morse, Hardy Pletz, Jim Potter, Chuck and Lisa Priestley, Bryn and Juanita Spence, and Jody Watson provided nest records for this paper. The continuing cooperation of landowners is of great value to this program. I would also like to thank Chuck Priestley for his editorial comments.

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Spirit of the
Wilderness



Up Close Naturally: Sucking Sweet Sap

BY MARGOT HERVIEUX

Have you ever come home from a walk in the woods wondering why there seems to be spit on the bushes? These little masses of froth are created by one of the many insects that make their living sucking sap.

If you poke through one of those blobs of bubbles, you will find a tiny, green insect appropriately called the spittle bug. Spittle bugs are in the insect family, *Aphrophoridae*; world-wide, there are about 850 species known, over twenty of which are found throughout North America. Found on a wide variety of plants, spittle bugs stick their tube-like mouthparts into a

plant stem and then drink the sugary sap. The waste water is then whipped with air as it passes out of the bug to create a refuge from birds and other bug eaters.

Adult spittle bugs and their close cousins the leaf hoppers are remarkable jumpers. Recent studies have found that spittle bugs can leap over 60 cm (2 feet), breaking the distance record long held by the flea.

Another common sap-eating insect is the aphid. These green or black bugs pump out offspring at a great rate and can quickly cover a plant. Aphids multiply rapidly because they include males in the process only at certain times of year. During the

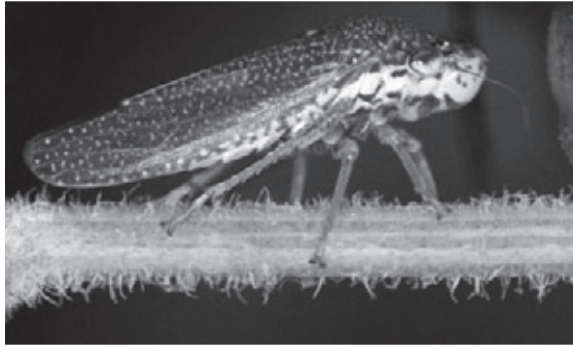
summer, the females give birth to live, pregnant females without fertilization. As the days get cooler, winged males are produced so that the insects can mate and lay eggs before winter sets in.

Like spittle bugs, aphids suck in plant sap and excrete the excess water. Their waste still contains lots of sugar and when it drips on cars and patios it can leave a rather sticky mess. Interestingly, ants actually farm aphids in order to harvest this “honey dew”; collecting the sweet liquid and standing guard over their unusual food supply.

Another unusual group of sap-sucking insects are the gall aphids. These aphids are responsible for the bumpy growths you find on the veins of poplar leaves. When the insect larvae begin to feed on the leaf veins, the plants respond by growing around the insect. The result is a protective chamber with



Margot's column first appeared in the Peace Country Sun. Archived copies of past columns are available at www.peacecountrysun.com.



ADULT SPITTLEBUG MICHIGAN STATE UNIVERSITY/
DAVID CAPPAERT; BUGWOOD.ORG



Up Close Naturally . . . continued

a steady supply of sap in the wall.

Aphids are only one of many insects that cause galls. The swellings in the stems of goldenrod are caused by a fly, the cone-like structures on the ends of willow branches are home to a sawfly, and a tiny wasp causes the prickly balls on rose leaves.

During the summer, there is an abundant supply of plant sap and a variety of insects and other creatures take advantage of this nutritious food source. Insects like aphids and spittle

bugs are able to tap directly into plants to feed while others dine at wounds or places where sap leaks out.

Advertising in *Nature Alberta*

Nature Alberta is now accepting a limited number of advertisements for future issues. Ad rates vary from \$35 (business card size) to \$249 (full page), X2 for colour.

Full details, including rates and sizes, are available at:
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Grey power VS. Big Oil

An American grandmother, 85-year-old Liz Moore, spent \$3,600 of her own money to launch a website, replete with photographs, detailing the destruction caused by the tarsands operation in Alberta. The site – www.oilsandsofcanada.com – has been censored by Syncrude, the company operating the mine where Moore took her photographs. “We see this as an issue of copyright, accuracy and quality,” a Syncrude spokesperson said. Undaunted, Moore has now replaced the pictures on her site with others supplied by environmental groups.

In *The Ecologist*, from
The CPPA Monitor May 2008

www.oilsandsofcanada.com



Ponderables

“There is no quiet place in the white man’s cities. No place to hear the unfurling of leaves in the spring, or the rustle of insect’s wings. . . And what is there to life if a man cannot hear the lonely cry of the whip-poor-will or the argument of the frogs around the pool at night? — Whatever befalls the earth befalls the sons of the earth. If man spit upon the ground, they spit upon themselves. This we know — the earth does not belong to man, man belongs to earth. Like the blood which unites one family. All things are connected. Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself.”

CHIEF SEATTLE: 1856, UPON SURRENDERING HIS TRIBAL LANDS

Help Birds Avoid Window Collisions

Birds – in particular migrants and first year fledged, have a problem – a big problem - with windows. There are many ways to make windows at your home or business more visible to birds, which will help to reduce bird fatalities. Collisions with windows kill up to a billion birds each year in North America. Visit the Fatal Light Awareness Program website to read about their top 10 recommendations for making glass less of a hazard for birds.

First Hand: Mystery Tracks!

This issue, "First Hand" is a mystery story from Ted Johnson, a FAN Director, representing Lac La Biche Birding Society – a story that one of our readers can hopefully solve! Here are the only clues we have.

The photos were taken at the end of July 2007 between Blueberry Lake and Net Lake, in the Maybelle area north of Fort McMurray. This animal made its journey on the warmest night of the year. The temp stayed above 24°C all night. It went about 600 to 700 meters between the lakes by its route; it knew where it was going, as there was no wandering in circles or major deviations.

Both a wolf and a bear crossed its tracks. The wolf followed them for about 200 metres; there was no sign that the animal was still around for the wolf to nab.



So what made the tracks? Several theories have been put forward. If you have any ideas, let us know. Email na@fanweb.ca. Watch the next issue of *Nature Alberta* for the answers received.

If you have a first-hand experience with nature, send it in and share it with other naturalists. After all – there are 8 million stories in the Nature City. Yours...could be one of them.

Guess What?

Here's a hint:

Nature Alberta makes a wonderful Christmas gift for virtually anyone. And it's reasonably priced: \$30/year – or better yet, only \$55 for two years. Fill out the enclosed subscription card today!

AS MIGHT BE EXPECTED, MALLARDS WERE ONE OF THE EIGHT SPECIES SEEN IN EVERY COUNT CIRCLE. SANDRA HAWKINS

Wings of Spring

The Spring Bird Count 2007 Results Summary

BY JUDY BOYD



Four hundred bird watchers in twenty-four areas of Alberta headed out, in diverse weather conditions, during the last two weeks of May 2007 to enjoy the province's avian diversity, as they counted well over 200,000 birds in the Annual Spring Bird Count.

The total of 276 species was up this year from 2006's 271, but the number of individual birds went down: 219,781 in '07, from 225,981 in '06.

The most numerous species was Franklin's Gull (*Larus pipixcan*) at 31,286. Second most numerous was Black-bellied Plover (*Pluvialis squatarola*) (15,473) and third was Canada Goose (*Branta canadensis*) (11,160). Last year, twenty three species were located in only one location, but in 2007, it was up to twenty six species. Some of the single sightings included: Northern Hawk Owl (*Surnia ulula*) at Bow Valley; Clark's Grebe (*Aechmophorus clarkii*), at Brooks; Northern Pygmy-Owl (*Glaucidium gnoma*) at Calgary; Wood Thrush (*Hylocichla mustelina*) at Claresholm; Virginia Rail (*Rallus limicola*) and Sabine's Gull (*Xema sabini*) at Cold Lake; Great Crested Flycatcher (*Myiarchus crinitus*) at Lac La Biche; Red-headed Woodpecker (*Melanerpes*

erythrocephalus) at Lethbridge; Boblink (*Dolichonyx oryzivorus*) at Milk River; and Burrowing Owl (*Athene cunicularia*) at Taber-Vauxhall.

Twenty four species were seen in only two locations in '06; this year, it was down to fourteen species. Some of the two-count sightings included: Greater White-fronted Goose (*Anser albifrons*) at Cold Lake and Wakamo Lake; Hudsonian Godwit (*Limosa haemastica*) at Cold Lake and Taber-Vauxhall; Red Knot (*Calidris canutus*) at Brooks and Calgary; Boreal Owl (*Aegolius funereus*) at Fort McMurray and Lac La Biche; Blackburnian Warbler (*Dendroica fusca*) at Cold Lake and Lac La Biche; Bullock's Oriole (*Icterus bullockii*) at Claresholm and Taber-Vauxhall; and White-winged Crossbill (*Loxia leucoptera*) at Medicine Hat and Waterton.

In 2006 we had eight species seen in all areas compared to ten species in 2007: Canada Goose,

Mallard (*Anas platyrhynchos*), Tree Swallow (*Tachycineta bicolor*), Black-capped Chickadee (*Poecile atricapilla*), American Robin (*Turdus migratorius*), Yellow Warbler (*Dendroica petechia*), Chipping Sparrow (*Spizella passerina*), Red-winged Blackbird (*Agelaius phoeniceus*), Brown-headed Cowbird (*Molothrus ater*) and Pine Siskin (*Carduelis pinus*).

Last year, four species were found in all but one area, compared to three species this year: Blue-winged Teal (*Anas discors*), Northern Flicker (*Colaptes auratus*) and American Crow (*Corvus brachyrhynchos*). As in '06, five species were found this year in all areas except two: American Wigeon (*Anas americana*), Killdeer (*Charadrius vociferus*), Spotted Sandpiper (*Actitis macularia*), Common Raven (*Covus corax*) and Yellow-rumped Warbler (*Dendroica coronata*).

Watch an upcoming *Nature Alberta* for the results of the 2008 Spring Bird Count as well as updates on the Spring Flower Count.



What's a FILL IN THE BLANK ?

Time to have a bit of fun. Most animals have group names.
See if you can guess what a group of each of the following is.

(ANSWERS ON PAGE 40)

A or of Badgers

A or of Bears

A of Elk

A or of Foxes

A or of Hares

A Cormorant

A of Grouse (late in season)

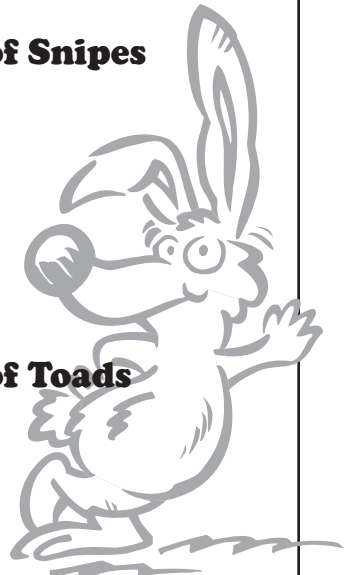
A or of Snipes

A of Teal

A of Woodpeckers

A or of Toads

A of Flies



Wildlife! Starring... the remarkable Maple Bug!

BY DENNIS BARESCO

A PAIR OF MAPLE BUGS MATING COLORADO STATE

UNIVERSITY/WHITNEY CRANSHAW; BUGWOOD.ORG



Ah yes, it's Autumn, which means – at least in the southern half of the province – an infestation of a flat, attractively-coloured, slow-moving and awkward-flying insect called a Maple Bug...or Box Elder Bug...or...garage bug...or stink bug...or red-shouldered bug...or most often, “those icky bugs that are everywhere!”

Its official name is Box Elder Bug (*Boisea trivittata*), but most Albertans call it a Maple Bug. This member of Alberta's wildlife diversity is said to feed primarily on the Box Elder tree (*Acer negundo*) which in the West is known as the Manitoba Maple – hence the two names of the bug. It sucks up sap from the softer tissues, but it seldom does any damage to the trees.

Our pine forests should be so lucky to have this kind of infestation, because Maple Bugs are completely harmless: a nuisance at times, perhaps but harmless. In fact, they are actually quite remarkable and deserving of, if not admiration, then at least more respect. So let's get to know this bug.

First, Maple Bugs really are bugs: in the Order *Hemiptera*,

the “true bugs”, which includes aphids, shield bugs, leafhoppers and cicadas. Sucking mouthparts is what they have in common. “Bugs” seems to be a generic name that people use for a whole raft of insects, but only *Hemipterans* are actually bugs. You can wow your friends with that bit of trivia at the next dinner party that has a Maple Bug as an accidental guest.

Maple Bugs are about 12mm long, 4mm wide, blackish with red wing veins and red eyes. When they fly, they show brighter red underwings. Adults lay their eggs on the host trees in the spring. The nymphs – a bright, pistachio-red – emerge in about two weeks, molt five times as they develop into adults

during the summer and then, the only time they are really noticed, “migrate” – often in large numbers – in August-September, with plans to overwinter somewhere warm and cozy. Normally, that means a dense tree (such as cedars) or a tree with deeply fissured bark. A good winter home may attract thousands. They are good fliers, so they could go miles to the ideal spot. What they are looking for though, is warmth, not a tree.

Suddenly, on a cool fall day, there's this nice wall, warmed considerably by the sun. Wow, that sure beats a tree! So off they go onto the wall in the tens, often the hundreds, occasionally the thousands! Sometimes, usually inadvertently, they end up going into the house, where



**NYMPHS AND ADULTS
CONGREGATE ON A TREE**

COLORADO STATE UNIVERSITY/
WHITNEY CRANSHAW;
BUGWOOD.ORG

they are discovered walking, with their Charlie Chaplin gait, across the table, up the drapes, on your sleeve...pretty well anywhere.

This is when they start to “bug” people. However, the word “infestation” is relative: maple bugs do not breed indoors, so those that are there are all that are going to be there. They can’t bite or sting, they don’t eat anything, and they won’t harm you or anything living in your house. They can’t harm the building (other than perhaps spotting furnishings with tiny droppings) and they are not going to live there permanently. The poor things are just looking for a place to stay warm.

There’s not a lot that can be done to get rid of them. Spraying them with soapy water, hosing down outside walls, sealing up cracks, and vacuuming them up inside all do it. If one doesn’t mind poisoning one’s self and everything else, there’s insecticide, though they don’t always work. There have actually been serious suggestions that all host trees be cut down – which is like burning your house down to solve the chore of vacuuming.

When squished or attacked, Maple Bugs emit a relatively unpleasant odour – which is

why they are marked in red: to warn predators. On one website, someone relates how even their pet piranha wouldn’t touch them! Still, some animals eat them: geese, ducks, other birds, most rodents. I have watched garter snakes gobble up immatures.

Remarkable, yes; but Maple Bugs just don’t get much respect, even though they are highly-watchable wildlife – an easy-to-watch, live and unusual insect in action.



TYPICAL GROUPING ON A TREE

USDA FOREST SERVICE/JAMES SOLOMON;
BUGWOOD.ORG



SONY’S “Afrika” Safari

The theme of many video games is grotesque violence – and the more bloodily realistic, the better for the core audience of young males. Now, Sony Corp. is trying something different with *Afrika*, its latest release for Playstation 3. The objective is to observe wildlife, take pictures, get paid (virtually) and move up to high-end cameras. The quality of the graphics is reported to be superb. Sony hopes it will attract a new audience: one that appreciates life and beauty as opposed to murder and mayhem. Cost of *Afrika* is very reasonable, even though the game took almost four years to develop.

Information from: Globe & Mail, Report on Business. Aug 28, 2008; p B3.

Guess Again!

Books from FAN make wonderful Christmas gifts, too!

We have many exciting natural history titles. Check out the enclosed list – and order today!

SHOVELERS ARE LARGE, COLOURFUL AND EASILY
IDENTIFIED BY THEIR BILL SANDRA HAWKINS

Prairie Potholes

BY SANDRA HAWKINS

Tiny jewels – often less than one hectare in area – that glint in the sun dot the prairie landscape and provide food and shelter for a wide variety of creatures.



GADWALL ARE UNUSUAL AMONG DUCKS IN THAT BOTH MALE AND FEMALE ARE IN CAMOUFLAGE COLOURS

SANDRA HAWKINS

These are the “prairie potholes”. This ecosystem is particularly vital for the production and maintenance of North American waterfowl populations.

In 1986, Canada and the United States signed the North American Waterfowl Management Plan (NAWMP). During the same year, NAWMP identified prairie pothole breeding habitat as “the top priority for protection”.

In Canada, this habitat is found in the grasslands of Alberta, Saskatchewan and Manitoba. Over the last 20 years, more than \$1.2 billion was raised under NAWMP to “secure and enhance” waterfowl habitat both on the Prairies and in other areas of Canada. Mexico joined this initiative in 1994. (http://ec.gc.ca/EnviroZine/english/issues/70/feature1_e.cfm).

From spring “break-up” to the end of fall migration, potholes mark the passage of time and play witness to the circle of life. Albertans are truly fortunate to have ready access to these microcosms of the natural world.

While some may revel in fine dining or an evening at the theatre, I prefer lingering

at the edge of a prairie pothole armed only with my camera and telescope. There are no admission fees, but the dramas that unfold rival the intrigue of any stage production or soap opera. Rivalry, aggression, courtship, adultery, family values and loyalty are all played out upon nature’s stage.

Although “pothole” may not be the most romantic or elegant of terms, the significance of these little water-filled edens is paramount for the survival of our waterfowl and the myriad of other creatures that share their world. We are the guardians of their future.

CANADA GEESE ARE THE MOST AGGRESSIVE AND LOUDEST WATERFOWL AT ANY POTHOLE! SANDRA HAWKINS



What’s a Prairie Pothole?

Prairie Potholes are the result of a glacial phenomenon during the Wisconsin Glaciation that left its mark on the northern Great Plains 10,000 years ago. As the ice sheet melted, it left behind millions of shallow depressions which were formed by the depositing of till in ground moraines, and by stranded ice blocks which then melted, creating kettle lakes. These depressions filled with water, creating shallow wetlands: the prairie potholes.

Depending on the area, up to 90% of potholes have been drained and/or plowed. Yet they are absolutely vital to waterfowl, providing critical breeding and migration habitat for over 200 avian species. Ducks Unlimited lists prairie potholes and the Great Plains as “the most important and threatened waterfowl habitats on the continent.”



THE PRAIRIE POTHOLE REGION

Information from: Wikipedia; Ducks Unlimited; Bird Studies Canada



Bats and Barotrauma



Research by a University of Calgary team under Erin Baerwald, the project leader, may have come upon a valuable discovery concerning why so many bats are killed by industrial wind turbines. The team “found that 90% of bat fatalities involved internal haemorrhaging consistent with [pulmonary] barotraumas”: heavy damage to the lungs caused by an expansion of air greater than what can be exhaled.

“Wind turbine blades create zones of low pressure as the air flows over them. Animals entering these low pressure areas may suffer barotraumas.”

While bats may detect the moving blade through echolocation, the change in air pressure is undetectable and, because of their unique respiratory anatomy, bats are “particularly susceptible to barotrauma”.

The barotraumas connection is potentially of tremendous value. Bat deaths from wind turbines are increasingly being found to be substantial: serious enough across North America that they may be leading to population declines and possible extirpation of some species. What actions industry will take to stave off the deaths remains to

be seen. A Kansas company is partnering with Bat Conservation International to test a new, possibly bat-friendlier turbine at the Valley Nature Center in Weslaco TX.



HOARY BAT MERLIN TUTTLE/BCI

Quotes and information from: *Current Biology* Vol 18 No 16; and *Bats* Summer 2008

At this Time of Year

Please remember to thank FAN for all the excellent service it provides to our human and natural community.

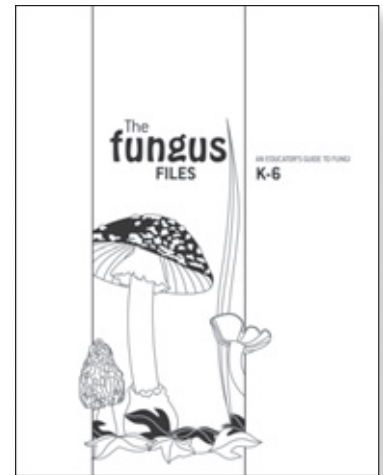
Send a Christmas card – the staff and Board of Directors will be thrilled! Your donations, too, are so wonderful – and necessary. Fill out the enclosed donation card today!

BOOK REVIEW

The Fungus Files

REVIEW BY: SHARON C. MCGONIGAL

The Fungus Files, An Educator's Guide to Fungi K-6, is the second in a series by Terra Brie Stewart Koval.



Terra Brie Stewart Koval

Although it is designed to be an educator's guidebook, we are doing it a disservice if we limit it to just educators. We are all educators and reading a piece of literature outside of which it would be commonly used creates a new path of learning.

Koval's conversational tone makes it easy to read; instead of having children tune out with movies and head gear in the car, have them read the material to you while travelling. Last summer I used it as a learning tool with my teenagers, and we generated discussions based on their previous learning and connecting to the "hidden kingdom" – fungi.

The guidebook has five sections: 1. **Introduction** explains the fungal kingdom in our daily lives and ecological role; 2. **Biology and Classification** shows: the differences between fungi, plants and animals; fungi's anatomy; and an identification key; 3. fungal lifecycles are discussed in **Reproduction and Development**, with emphasis on yeast and moulds; 4. **Adaptation and Environment** looks at symbiotic relationships, especially *mycorrhizae* and fungi's role

in nutrient recycling and soil creation; 5. **Fungus Among Us** includes historical information, mythology, folklore and facts about mushrooms.

The glossary provides some word pronunciations that, for most, would be unfamiliar. Some of the vocabulary, like *mycorrhizae*, would be challenging for younger readers, but that's learning. The beginner's field identification guide of mushrooms encourages the readers to investigate fungi further. An origami quiz game provides a review for everyone on flora, fauna, fungi or fiction. The Fung from the Dung flipbook reveals an amusing way that some fungi spread their spores. A resource list of Canadian Mycological Societies, contacts, related websites, books, and posters is included.

Suggestions for activities are listed by grade, with K-3 adaptations, and additional extensions. It includes a materials list, activities involved, and a vocabulary list. Activities in the guidebook state the objective, gives background information for the parent/educator, and range from writing

and poetry reading to outdoor pursuits and fun puzzles. Koval indicates: "DO NOT be intimidated by the depth of the background information. It is simply meant to provide a comprehensive overview of the Kingdom Fungi..." (p. 5)

Putting the K-6 age range on the front cover limits the audience range especially in an Internet search. This resource offers many activities that could be used with older grades, like the "Fall Foray of Mushrooms."

Although I can print it out any time, I prefer it print-ready, with coloured photos and hardcover for durability. Its format was intended for classroom use, and coloured photos would not be cost effective.

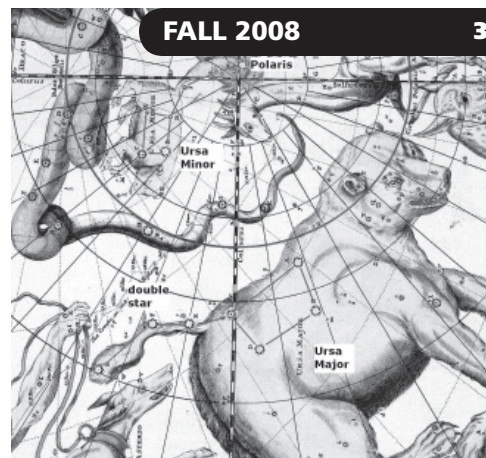
I've enjoyed doing the puzzles and activities with my children. They enjoyed the humour section, and now pay closer attention to fungi – especially those that bear names like Yuck on a Stick, Fuzzy Foot, and Sweating Mushroom! Just the names geared them to research further. So while travelling this fall and next summer, take an active role in fungi exploration, because they really are fun guys.

CELESTIAL HAPPENINGS

Starry Nights

Fall/Winter (November to January)

BY JOHN MCFAUL



FEATURED CONSTELLATIONS – URSA MAJOR AND URSA MINOR

The progression of the seasons is marked by the various constellations that enter the celestial stage in the east and then slowly dance across the stage until finally exiting many months later in the western sunset. However, there are a few constellations that never relinquish their place in our starry skies. These are known as the circumpolar constellations that lie close enough to the celestial North Pole so that they never set. The most well-known of these are the Great Bear and the Lesser Bear, also known as the Big and Little Dippers.

Any night of the year when you look to the northern sky you will see the Big Dipper. The Little Dipper is fainter, but can be found by using the outside stars of the bowl of the Big Dipper. These stars are known as the pointer stars as they point to the moderate bright star Polaris which is located at the tip of the handle of the Little Dipper.

Polaris is important as it marks the direction to the North Pole. Its height above the horizon also indicates what latitude the observer is at. Thus in Alberta this height will range from 49 degrees to 60 degrees above the northern horizon.

The handles of the dippers actually represent the tails of the bears. The Little and Big Bears have longer tails than what we see on Alberta's bears. This resulted from Zeus using their tails to toss them into the heavens. The Big Bear represents Callisto who was a great huntress. She was turned into a bear due to the jealousy of Hera, the wife of Zeus. One day Callisto's son (Arcas) was going to shoot Callisto. He did not recognize her. Zeus took

pity on them and turned Arcas into a bear also and then tossed them into the sky.

One Native American mythology tells the story of three hunters chasing a bear. In an effort to escape the hunters, the bear made a giant leap into the night sky. However the three hunters were able to follow the bear. The three stars in the tail represent the hunters. The middle star, upon close inspection, reveals itself as being a double star. This represents one of the hunters carrying a frying pan.

CELESTIAL HAPPENINGS

Sun: Rise - Nov. 1 (08:34 MDT), Dec. 1 (08:28 MST), Jan. 1 (08:50 MST)
Set - Nov. 1 (18:00 MDT), Dec. 1 (16:18 MST), Jan. 1 (16:25 MST)
Times are for Edmonton.

Moon: Full - Nov. 13th, Dec. 12th, Jan. 10th
New - Nov. 27th, Dec. 27th, Jan. 26th

Planets: **Mercury** can be seen low in the south eastern sky in the pre-dawn hours of November 1st. On December 30th Mercury may be seen close to Jupiter low in western sky just after sunset.

Venus will be an evening object shining brightly low in the SW. On November 30th it will be very near Jupiter. The crescent Moon will lie close to Venus on December 31st and January 30th.

Mars will be too close to the Sun to be seen.

Jupiter lies low above the south-western horizon in November and December. By mid December it will set before darkness falls. On December 1st the Moon and Venus will form a pretty grouping in the evening sky.

Saturn continues as a morning object high in the Southern sky in the Constellation Leo from November to January.

Meteor Shower: Watch for the Leonids on November 17th and the Geminids on December 14th.

The rate of meteors observed is for dark skies well away from city lights and with no Moon.




It's Autumn!

BY DENNIS BARESCO

The 2008 Autumn Equinox officially started Sept. 22 at 9:39 am MDT, and lasts until the Winter Equinox Dec. 21, 4:52 am, MST.

"The acrid scents of autumn, reminiscent of slinking beasts, make me fear."

D.H. LAWRENCE

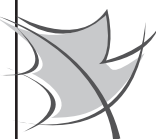


"Two sounds of autumn are unmistakable, the hurrying rustle of crisp leaves blown along the street or road by a gusty wind, and the gabble of a flock of migrating geese. Both are warnings of chill days ahead, fireside and topcoat weather."

HAL BORLAND


"Everyone must take time to sit and watch the leaves turn."

ELIZABETH LAWRENCE



"A few days ago, I walked along the edge of the lake and was treated to the crunch and rustle of leaves with each step I made. The acoustics of this season are different and all sounds, no matter how hushed, are as crisp as autumn air."

ERIC SLOANE



"Nature is, above all, profligate. Don't believe them when they tell you how economical and thrifty nature is, whose leaves return to the soil. Wouldn't it be cheaper to leave them on the tree in the first place?"

ANNIE DILLARD



Hunter's Lament

BY EDWARD JOHN; IN MANY VOICES

WHY FLY SO HIGH?

GOOSE

GOOSE

GOOSE

GOOSE

GOOSE

GOOSE

GOOSE

STINGING WASPS GET MORE AGGRESSIVE AS AUTUMN WEARS ON. PICTURED IS A WASP STINGER CLOSEUP, WITH VENOM DROPLET. WIKIPEDIA COMMONS



Heritage Tree Foundation of Canada

BY LIBBY FAIRWEATHER, EXECUTIVE DIRECTOR

Many groups work for protection of blocks of natural forest and habitat. For the general public, this is often a vague, distant issue; their attention is not drawn to a particular tree or groups of trees that have, or potentially have, the most direct impact on them.

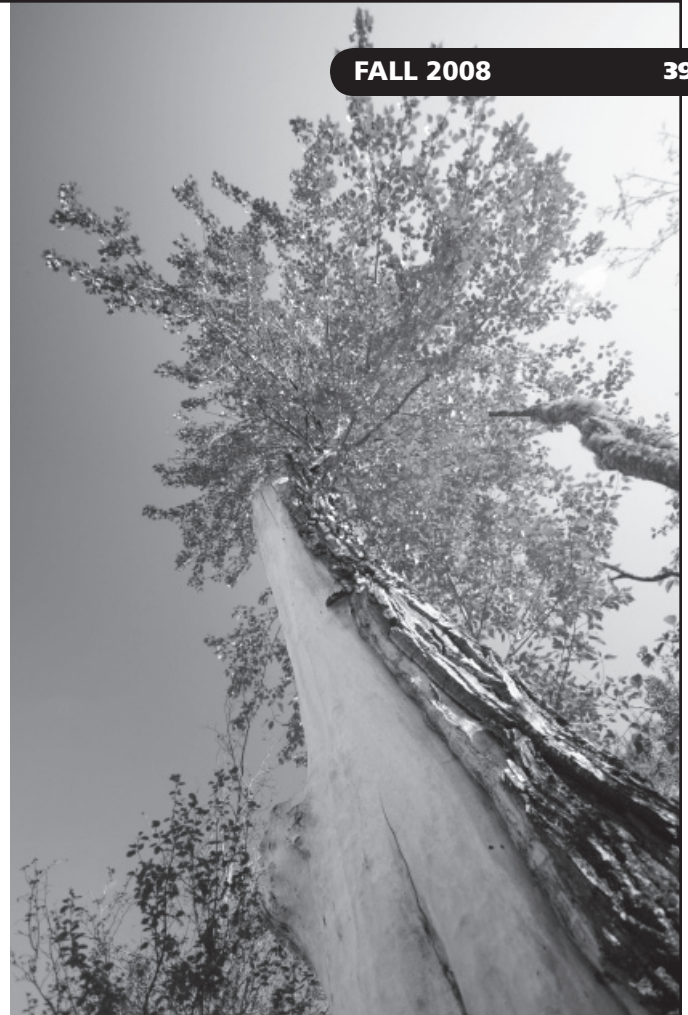
Having said that, many people have a personal, distinctive and historic relationship to particular trees – and they love to tell everyone about “their” trees. Enter the Heritage Tree Foundation of Canada (HTFC)!

HTFC is a FAN Associate Club. A nationally registered not-for-profit corporation, our vision and mission is designed to promote awareness and preservation of Heritage Trees. We have developed a network of professional individuals and organizations from a wide variety of disciplines, each actively involved in the preservation of and education about Heritage Trees.

Our goal, put simply, is to focus attention on trees wherever they are – to foster knowledge and awareness of the roles trees play in natural history and our culture, and to encourage thinking about trees and their preservation. Attention and thinking, it is hoped, will lead to a long-term, deeper awareness, understanding and respect for all trees, including those distant forests.

HTFC has generated a tremendous amount of excitement recently with its major project, the publication of the book, *Heritage Trees of Alberta*. The book is the product of three years of work, though

the initial planning began in 1999. With all the procedures and plans in place, the call for nominations went out across Alberta in May 2006. There were many categories; in addition to the most common ones of being the oldest or largest, trees with historical or cultural importance for individual communities were also considered for recognition. The response was overwhelming: 900 nominations; 1,000 participants (Nominators & Property Owners); 160 volunteers, 80 participating Municipalities (representing over three-quarters of Alberta’s population); and, the involvement of three Provincial Departments and the Agriculture



**THE ASSINIBOINE GIANT IS ONE OF THE FEATURED
HERITAGE TREES OF ALBERTA**

FAN CLUB PAGE

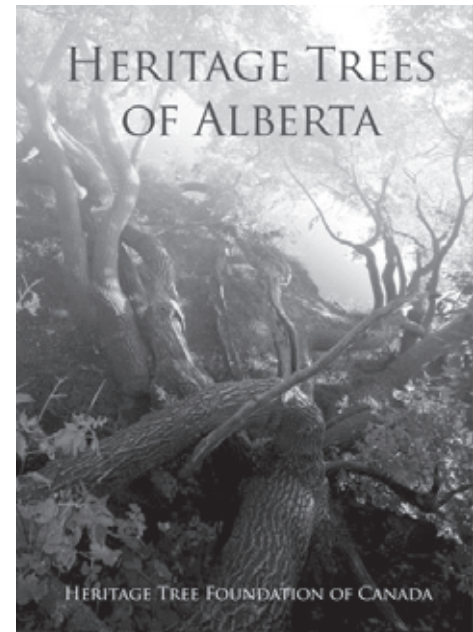
& Agri-Food Department of Canada.

The support and interest was amazing! The media got on board, with over 100 media venues (including forty-five Municipal newsletters) carrying articles, making announcements or doing live interviews. The book itself is limited by necessity to identifying 351 Heritage Trees, with photos and stories for ninety-two of them. To have included all the Heritage Tree stories would have meant a tome of 3,000 pages!

Heritage Trees of Alberta hits the bookstores in late September. FAN Books is the distributor,

making *Heritage Trees of Alberta* available to over 300 retailers. Retail price is \$29.95. A fifteen-city book tour to promote the book is underway. Plaques are in place marking each of the trees.

Soon, HTFC will move on to a public education component. In this, the Foundation will work with stakeholders and other relevant agencies (such as local interpretive programs) to coordinate a wide variety of activities. Several truly exciting partnerships are already in the planning stages. If you would



like to be part of Heritage Trees, let us know: send us an email (info@heritagetreefoundation.com). The future of the Foundation is very exciting! Check out our Website: www.heritagetreefoundation.com

Answers to

What's a FILL IN THE BLANK ?

A *cete* or *sett* of Badgers

A *sloth* or *sleuth* of Bears

A *gang* of Elk

A *leash* or *skulk* of Foxes

A *down* or *husk* of Hares

A *gulp* of Cormorant

A *pack* of Grouse (late in season)

A *walk* or *wisp* of Snipes

A *spring* of Teal

A *descent* of Woodpeckers

A *knot* or *lump* of Toads

A *business* of Flies

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IMMATURE MAPLE BUGS (SEE STORY ON PAGE 32) ROYAL ALBERTA MUSEUM/JOHN ACORN



ADULT MAPLE BUG (SEE STORY ON PAGE 32) ROYAL ALBERTA MUSEUM/TERRY THORMIN



**FEMALE BUFFLEHEAD
(SEE STORY ON PAGE 34)**
SANDRA HAWKINS



**MALE BUFFLEHEAD
(SEE STORY ON PAGE 34)**
SANDRA HAWKINS

Nature *gallery*



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