

# Nature Alberta

ALBERTA'S NATURAL HISTORY REVIEW



**FACE IN ROCK, MALIGNE RIVER, JASPER NATIONAL PARK** LAURIE L. LYWAK  
PHOTOGRAPHED IN 2004 USING A CANON AE-1 CAMERA, A 50 MM LENSE AND KODACHROME 64 FILM

*feature article*

## Northern Goshawk

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and Barred Owl Nesting  
Phenology in Central Alberta



**BARRED OWL, NEAR SUNDRE** ALAN MACKEIGAN

PHOTOGRAPHED IN MID-APRIL 2003 USING A NIKON F5 CAMERA, A 600 MM F4 LENSE AND FUJI VELVIA SLIDE FILM

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CONTRIBUTOR COOPERATION IS GREATLY APPRECIATED.

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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## PRESIDENT'S PAGE

# On Healthy Landscapes and FAN

BY SANDRA FOSS

*In this, Alberta's Centennial year, we need to celebrate what we have and encourage our elected representatives to make an effort to ensure that some small part of this province survives the next hundred years.*

Alberta seems destined to be dug up, mined and extracted, or built upon with much haste. There seems little thought for any impacts on the quality of life of those who live here. If anything is left it could well be due to an oversight on someone's part.

I have just been reading a Ducks Unlimited publication. In it they quote Ontario's Marketing & Communications Manager: "Currently health care receives roughly 45% of all charitable donations made in Ontario, which is not surprising given the enormous personal value that people attach to their health. Alarming, the environment receives less than 2% of charitable donations across Canada. The concern is that people are not making the connection between a healthy landscape and their own health and well being".

How do we help people find value in healthy landscapes? We need to get them outdoors for a start. So...take someone outdoors - show them a neat bird or plant or fish. Help them to understand

we are part of our environment, and that if we make it sick, it is bad for all of us, especially our children and grandchildren.

Dennis Baresco, FAN Past President, is a hard act to follow, as he accomplished a great deal during his tenure as FAN President. We now have a Policy Manual to cover Finances, Human Resources, Privacy & Confidentiality and Guidelines for Advisory Committee participation concerning environmental issues. We have established several committees. FAN holds regular "celebrations", and is trying to acknowledge hardworking volunteers in a timely fashion. FAN's bylaws have been adjusted to keep pace with these changes.

FAN has grown in complexity over the years. Many projects have been undertaken, and book publishing has become part of our public education mandate. FAN's internet capabilities have expanded with the organization, and we now offer these services to assist other groups. And FAN helps put computer-modelling

software (ALCES) into Alberta schools so that kids can learn about the cumulative effects of many impacts on the landscape. Nature Alberta has also undergone a much-needed facelift.

Of course, much credit must go to FAN's staff....Executive Director Glen Semenchuk, Executive Assistant Karen Rimney and a variety of Project Coordinators. George Newton has been working on the Important Bird Areas program, and several others, Philip Penner on the Bird Atlas and Kim Dacyk on the Living by Water program. Vid Bijelic is FAN's Information Systems coordinator, working on the leading edge of technology on some exciting mapping projects. Global Forest Watch has space within the FAN office and their staff share information and expertise with FAN staff.

The FAN Board has decided to reward our Executive Director with a bonus "sabbatical" for 14 years of hard work and his donation of many hours of volunteer time. His job is tough, with the added issue of needing to make sure we do enough

## P R E S I D E N T ' S   P A G E

fundraising to keep the office running. This level of work and commitment is common in non-profit groups, but it tends to burn people out. Often the task appears thankless, as so few Albertans seem to appreciate what we have in terms of natural resources. And I don't mean

petroleum or the oil sands. I mean natural beauty, wildlife and wild places (those few that are left!). Anyone who has sat on an Alberta Government committee will understand this frustration. If the committee's answer is not what the government wants to hear,

shelve it, and do it all over again five years later.

Share this magazine with a friend. Help get them "hooked" on the many wonderful things in our Alberta environment – so they can help preserve and protect a bit of it.

# Word Search: *Museums and National Historic Sites*

BY LAURIE L. LYWAK

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

## CALGARY MUSEUM

<i>Arrowhead</i>	<i>Michener</i> House
<i>Claresholm</i>	<i>Neerlandia</i> Historical
Climb Through <i>Time</i>	<i>Nose</i> Creek Valley
<i>Court</i> House	<i>Old</i> Hospital Museum & Gallery
<i>Dickson</i> Store	<i>Red</i> Brick Arts Centre & Museum
<i>End</i> of Steel Heritage	<i>Rimbey</i>
Royal <i>Tyrrell</i> Museum	<i>Seba</i> Beach Heritage
<i>Frog</i> Lake Massacre	<i>Stony</i> Plain Pioneer
<i>Gem</i> of the West	<i>St. Paul</i> Historical
<i>Henry</i> House	<i>Tri-Town</i>
<i>Iron</i> Creek	<i>Trochu</i> & District
<i>Kinosayo</i>	<i>Two</i> Hills & District

N	E	E	R	L	A	N	D	I	A	N	G
C	O	U	R	T	T	Y	R	R	E	L	L
L	N	I	W	O	R	I	R	O	N	R	S
A	O	O	L	I	Y	O	D	L	O	I	E
R	S	E	R	I	W	A	C	L	S	M	B
E	K	T	S	H	M	H	S	H	E	B	A
S	C	K	E	E	O	R	E	O	U	E	D
H	I	A	G	O	R	F	E	N	N	Y	N
O	D	B	G	N	I	K	I	V	R	I	E
L	W	D	E	R	Y	N	O	T	S	Y	K
M	I	C	H	E	N	E	R	L	U	A	P
E	M	I	T	K	C	O	L	T	S	E	W

SOLUTION FOUND ON PAGE 19

*Vermilion* Heritage  
*Viking* Historical  
*Westlock* & District Historical

## EDITOR'S PAGE

# The Acceptance of Change

BY IAN HALLADAY

In a departure from recent practice the Editor has elected to print a guest editorial on the Editor's Page. This piece first appeared in Pica in 2001.

BRIAN PARKER

*We humans arrived rather late in the history of Earth but after we got rolling our impact has been spectacular.*

Consider the time associated with the history of the earth to be the face of a twelve-hour clock. If the earth originated at midnight and if the present time is noon on the clock, the earliest rocks occur at 2:05, the first land vertebrates at 11:01 and the last dinosaurs at 11:50. Humans arrived within the last minute before noon.

Until 10,000 years ago, prior to the initiation of the Cultural Revolution, our ancestors lived off the land. Their existence depended on their knowledge of local established ecosystems for food gathering and shelter. For them, the passage of time was measured by natural rhythms, the seasons. With the invention of rudimentary agriculture, villages and eventually cities appeared and social structures and communications became more elaborate. Human enterprise began the exploitation of natural resources that to them must have seemed inexhaustible. Today, although we remain a part of the global ecosystem, we are much less integrated, having assumed the role of an exotic species that disrupts the system into which it is introduced.

An unintended consequence of the rapid increase in population and urbanization has been our isolation from natural rhythms. Especially this is true for the increasingly developed world where city markets have meat, fresh vegetables and fruit continuously available. There is little understanding among consumers of the unique combinations of water, soil and weather that determine the seasons of harvest and the processes that bring food to our table. For many of us there is the real belief that food comes from supermarkets and water from taps. There is perhaps even less understanding of the complex interactions of the lithosphere, hydrosphere and atmosphere that affect every aspect of our daily lives.

The earth sciences have taught us that we live in a world of change. Studies since the most recent deglaciation, about 11,000 years ago, show that the change involves global ecosystems. In North America we have seen change in an incredible range of biota and that change continues to the present day. These studies also indicate that change can

come about with unanticipated rapidity. Nature has never been steady-state. We need to understand that the complex systems that make up our environment are dynamic and interactive.

As members of a civilized society we must examine our role as overseers and instruments of change on the planet. We can choose to continue present or increased rates of consumption of earth resources and our alteration of earth's environments, or we can assume the role of responsible stewards. For significant change to occur we need to reverse destructive events now impacting earth's systems. If we are going to continue living on this planet and provide for all people a viable and sustainable way of life, we must choose to act.

The cultural attitude that insists that nature is to be somehow "tamed" is a major obstacle to the acceptance of the concept of sustainability in our way of life on this planet. It will be necessary to come to terms with our role and the imbalance we have created in the global ecosystem before we can effectively face the challenges of sustainability that lie ahead.

## ALBERTA ISSUES

## Oil &amp; Gas Issues

## Suffield National Wildlife Area

EnCana has applied to drill up to 1275 shallow gas wells in the protected National Wildlife Area (NWA) on the Suffield military base over the next 3 years. This NWA was proclaimed only 2 years ago! A NWA permit is required for the development, which in turn triggers a Canadian Environmental Assessment Act review. Such developments in protected areas are on the Comprehensive Study inclusion list. The Department of National Defence (DND) is the Responsible Authority. Environment Canada comes in as a Federal Authority along with others including Fisheries and Oceans, Agriculture Canada and PFRA. The Alberta Energy and Utilities Board and Alberta Sustainable Resource Development (Fish and Wildlife) have requested participation under the Federal-Provincial EA accord. As the Responsible Authority, DND is handling this assessment through Director Land Environment.

If you wish public input, it is critical that as many people as possible contact federal authorities. Contacts are listed below:

**For DND:**

Eric Trepanier, CLS-DLE,  
Pearkes, 18NT, GG08, ND HQ  
101 Colonel Bye Dr., Ottawa,  
K1A 0K2.

**Other contacts:**

The Honourable Stephane Dion  
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Kenneth W. Vollman  
Chairman & CEO  
National Energy Board  
444 7Ave.SW, Calgary AB  
T2P 0X8



## McClelland Lake Wetland

The McClelland Lake Wetland Complex (MLWC), an important part of Canada's natural heritage, will be destroyed if PetroCanada and UTS Energy Corp. go ahead with their plans for oilsands development in the Fort Hills Area. Located 90 km north of Fort McMurray, MLWC includes McClelland Lake, twelve sinkholes, and a patterned fen. The complex is home to numerous rare plants and is an important nesting and migratory stopover site for birds. The endangered Whooping Crane uses MLWC as a rest and refueling stop.

Under the EUB approved plan, originally developed by TrueNorth Energy, 40% of the fen would be mined and 50% of the McClelland Lake Wetland would be directly destroyed.

TrueNorth Energy bowed out of the project in 2003 but now PetroCanada has teamed up with UTS to develop the site. Under the original (1996) Integrated Resource Plan (IRP) for the sub-region the McClelland Lake area was placed off-limits to mining. Under pressure from the Klein cabinet, however, the Department of Sustainable Resource Development amended the IRP to permit mining to proceed.

The Alberta Wilderness Association wants the 164 km<sup>2</sup> site to be given protection as a provincial park, with the patterned fen being designated as an ecological reserve. "This wonderful place richly deserves World Heritage Site status". For further information, contact: Dr. Richard Thomas at (780) 425-4310

## ALBERTA ISSUES

## Oil &amp; Gas Issues...continued

## Coalition for Alberta's Future (CFAF)

The CFAF is a newly formed group comprised of surface rights groups and citizens who support responsible oil and gas development, with input from the citizens of Alberta. It represents more than five thousand citizens and families who own >5-million acres of land (more than 25% of the province). The Coalition wants substantial reforms in how oil and gas activity is regulated and is asking that the EUB rescind several Bulletins that it believes are not in the public interest. These are:

Bulletin 2005-08: This bulletin offers automatic approval of higher base line well densities in a portion of Alberta and removes the need for community consultation for downspacing applications that are submitted by the energy industry. <http://www.eub.gov.ab.ca/BBS/requirements/gbs/bulletin2005-08>

Bulletin 2005-09: This bulletin weakens existing enforcement

rules and gives the board greater discretion in how to enforce these rules. <http://www.eub.gov.ab.ca/BBS/requirements/gbs/bulletin2005-09>

The CFAF is not alone in its concerns. On April 6 2005 the Association of Municipalities, Districts and Councils (AAMDC) passed a resolution which called for Bulletin 2005-008 to be withdrawn until after the Multi-Stakeholder Advisory Committee on Coal Bed Methane has issued its final report to the Minister of Energy.

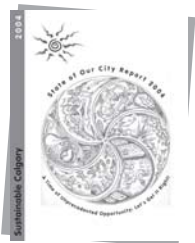
If these bulletins are not rescinded or withdrawn, the CFAF may call for the resignation of the Chairman of the EUB. In addition the CFAF is requesting a public review of the EUB's mandate to make decisions in the public interest. Board decisions that affect local communities, air quality, surface and groundwater and Alberta's landscape need urgent review.

CFAF's Membership includes: Alberta Association of Landowners for the Protection of Agricultural Land, Alberta Surface Rights Federation, Clean Water Foundation, Butte Action Committee, Battle Lake Watershed Enhancement, Federation of Alberta Naturalists, Livingstone Landowners Group, Pine Lake Surface Rights Action Group, Pekisko Group, Red Deer Ratepayers Association, Rimbey and District Clean Air People, National Farmer's Union and the Wheatland Surface Rights Action Group

For more information contact: [www.pekisko.ca](http://www.pekisko.ca)

## Sustainable Cities:

Sustainable Calgary's State of Our City Report 2004 is available on their website at <http://www.sustainablecalgary.ca/pages/statereport.htm>



## Government Spending on Canada's oil and gas industry: Undermining Canada's Kyoto Commitment

This report, commissioned by the Climate Action Network Canada, identifies and quantifies federal government expenditure on Canada's oil and gas sector. It also investigates both federal and provincial support for oil sands developments. In 1996, total government expenditure

on the oil and gas industry was \$1,085 million. By 2002, that number had increased by 33% to \$1,446 million. Total expenditure over the 1996 to 2002 period was \$8,324 million. This increase is at odds with the need to reduce greenhouse gas emissions as part of Canada's

Kyoto commitment. The report contains a series of recommendations for reforming public expenditure on the oil and gas industry.

Download the document: [http://www.pembina.org/publications\\_item.asp?id=181](http://www.pembina.org/publications_item.asp?id=181)

## ALBERTA ISSUES

## Forest Issues

### from: Boreal Market News 3(5):

At a meeting on the recovery of woodland caribou conservationists released an educational report entitled Caribou Nation. The report will be distributed throughout Canada, and to international buyers of Canadian forest products, which have repeatedly exhibited concern for the welfare of Canada's forests and wildlife. A companion website can be found at <http://www.caribounation.org>.

The Sierra Club of Canada also recently released an evaluation of Alberta's draft Caribou Recovery Plan, concluding that it fails to adequately address key industrial threats facing caribou today.

Greenpeace released a business report entitled: Kimberly-Clark, Investing in Forest Destruction: A Report on the World's Largest Manufacturer of Tissue Products, Green Consumerism and Socially Responsible Investment. The report highlights tissue product manufacturer Kimberly-Clark's controversial use of ancient forest fibre for its disposable products and questions its environmental responsibility. Members of Greenpeace and the Natural Resources Defense Council attended Kimberly-Clark's annual meeting calling on the company to stop purchasing pulp from destructive logging operations in ancient forests, especially the Canadian boreal.

Weyerhaeuser is being pressured to modernize its environmental policies – originally developed in 1971 – and publicly commit to protect endangered forests and respect native land rights. Environmental interests, consumers and investors want Weyerhaeuser to join forest products companies like Tembec and Domtar, Inc. in working with environmental groups, impacted communities and independent scientists to implement comprehensive policies to protect endangered forests and their inhabitants. <http://www.cpaws-edmonton.org>

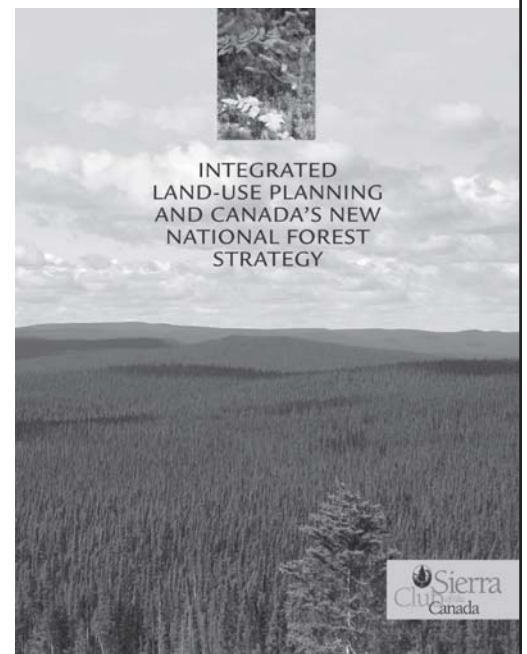


### Forest Management Practice Database:

The Sierra Club of Canada has released a database of forest management practices, which evaluates the progress of provincial commitments under the National Forest Strategy (NFS), a national road map towards more ecologically and socially sustainable forest management. The NFS includes strengthening the role of Aboriginal People in forest management, maintaining carbon reservoirs, completing networks

of protected areas and using ecosystem-based forest management. The Sierra Club of Canada used researchers across the country to gather data.

To view the database please visit <http://www.sierraclub.ca/national/programs/biodiversity/forests/nfs/integrated-land-use-planning/ilp-nfs-full-report.pdf>



## ALBERTA ISSUES

## Forestry...continued

## Alberta Government Underfunds Environment

Analysis of the new budget indicates the Alberta government is running an environmental deficit. Expenditures were compared against results of the government's recent "It's Your Future" survey of Albertans. Albertans ranked the environment as their third priority, after health and

education. Although the government committed 63% of the budget to the health and education, the environment will receive less than 0.7% (\$0.19 Billion). Environmental groups and scientists want Klein to put more money into environmental protection.

Contact: Rick Schneider, Canadian Parks and Wilderness Society, Edmonton — 780-662-4233  
or Helene Walsh, Canadian Parks and Wilderness Society, Edmonton — 780-922-0908  
CPAWS website: [www.cpaaws-edmonton.org](http://www.cpaaws-edmonton.org)

## Concern for Alberta's Foothills raised at Victoria's Secret AGM

Alberta conservation groups active in Alberta's Foothills, spoke at the annual shareholders meeting of Victoria Secret's parent company, Limited Brands in May. The company was asked to encourage West Fraser Timber Co. Ltd., one of their pulp suppliers, to not log in the Bighorn Country and Little Smoky Forests and to commit to Forest Stewardship Council (FSC) certification for its holdings in the Foothills. West Fraser, which owns Hinton Pulp and Wood Products (formerly Weldwood) and Sundre Forest Products (formerly Sunpine), supplies about a quarter of the pulp used in the 395 million catalogues Victoria's Secret distributes annually. For more information: See [www.bighorncountry.org](http://www.bighorncountry.org)

## Fishy stuff

## Department of Fisheries and Oceans

## (DFO) Reducing Protection of Fish Habitat

Under the recently developed Modernizing Compliance Initiative, DFO is planning to cut 80 fishery officer positions and 42 habitat management positions. DFO plans to partially offset the reductions by creating 40 new habitat stewardship and monitoring officers' positions. The Fisheries Act has no

provision for such positions and provides no authority for them to conduct inspections, to respond to complaints or to enforce the Fisheries Act. Fish habitat protection funding will be cut by \$2.3 million in 2005 if the Federal budget is passed with further cuts totalling \$7 million a year by 2007.

## Westslope Cutthroat Trout Listed

Westslope cutthroat trout are now listed as a 'threatened' species in Alberta and as a species of 'special concern' in BC. Given that westslope cutthroat trout is now listed by COSEWIC, this decision

will have implications related to the Species at Risk Act.

For more information see: [www.speciesatrisk.gc.ca/search/default\\_e.cfm](http://www.speciesatrisk.gc.ca/search/default_e.cfm), and search for cutthroat trout.



# On Garter Snakes

BY NIGEL DOUGLAS

*Working my way through Nature Alberta, I came across the article about the Wandering Garter Snake caught within the embrace of a Mucket Clam.*

It reminded me of a fascinating sight that I came across last July, while walking my dogs by the Bow River in Calgary. Gazing idly into the shallow (about a foot deep) water, a movement caught my eye. A long shape began to emerge from beneath a rock, and slowly revealed itself to be a garter snake. As it swam to the surface, I saw that it was

carrying a small (2" long) fish in its mouth. It swam to the shore right by our feet and, over the next 10 minutes proceeded to swallow its prey, tail first, under the captivated gaze of myself and my dogs.

I was surprised at the time to see a snake obviously hunting for fish, and wondered how a cold-



**GARTER SNAKE** TERRY SPIVEY, FORESTRYIMAGES.COM

blooded creature such as a garter snake could maintain its body temperature in the cold waters of the river. Even without the risk of marauding Mucket Clams, it must run the risk of becoming chilled to such a level that it is unable to get itself out of the river.



## ADOPT-A-PLANT

A NEW CONSERVATION INITIATIVE FOR ALBERTA'S RARE PLANTS AND LICHENS.

Would you like to get involved in the conservation of rare plants in Alberta?

Consider volunteering with the **Adopt-a-Plant** programme! This exciting new initiative offers an exceptional opportunity to learn about rare plants in Alberta and at the same time contribute to the understanding of their ecology and distribution in the province. Adopt-a-Plant participants will adopt a provincially rare plant of their choice. Experts will train them how to identify it, how to find it and, once found, how to gather data about its location and environment that will be useful in its conservation. All the data submitted will be housed in the conservation database of the Alberta Natural Heritage Information Centre, and be used to help understand where the species lives, and aid in efforts to protect the plant in the province.

Adopt-a-Plant will be developed if there is a sufficient interest amongst botanists, both amateur and professional, in the province. We are currently looking for volunteers to help generate that interest and help build the programme.

Adopt-a-Plant is a co-operative programme between the Alberta Natural Heritage Information Centre, Devonian Botanic Garden (University of Alberta), Alberta Native Plant Council & Alberta Fish and Wildlife Species at Risk Program.

For more information on assisting with building the programme, or to become a field participant, contact:

- René Belland (Devonian Botanic Garden).  
E-mail: [rene.belland@ualberta.ca](mailto:rene.belland@ualberta.ca) or phone, (780) 987-3054 (Edmonton)
- Dana Bush (Alberta Native Plant Council).  
E-mail: [dbush@axys.net](mailto:dbush@axys.net) or phone (403) 750-7660 (Calgary)
- Ed Karpuk (Alberta Native Plant Council).  
E-mail: [Ed.Karpuk@gov.ab.ca](mailto:Ed.Karpuk@gov.ab.ca) or phone (403) 340-7114 (work) and (403) 347-5723 (home) (Red Deer)

**Become an active member of a botanical community devoted to conserving the native plants of Alberta! Your involvement can make a difference. If you don't do it today, it could be gone tomorrow!**

## FEATURE ARTICLE

# Northern Goshawk and Barred Owl Nesting Phenology in Central Alberta

BY LISA TAKATS PRIESTLEY

*Northern Goshawks (Accipiter gentilis) and Barred Owls (Strix varia) are year round residents in Alberta. Both species are known to prefer older aged forest stands, and are associated with larger trees for nesting (Mazur and James 2000, Squires and Reynolds 1997, Takats Priestley 2005).*

Although the Northern Goshawk can be found in many different forest types, nesting stands are usually mature to old growth with large trees (Squires and Reynolds 1997). Both species are classified as *Sensitive* in Alberta, meaning they are not presently at risk of extinction or extirpation but may require special attention or protection to prevent them from becoming at risk (Alberta Sustainable Resource Development 2001).

The typical Barred Owl nest is in a cavity in a large living or dead tree or in the top of a broken snag (Mazur and James 2000, Takats Priestley 2005). Northern Goshawk nests are in the largest trees in the forest stand and the territory often contains alternate nest trees, usually within a distance of < 0.7 km (Squires and Reynolds 1997). Large, bulky, stick nests are built by pairs in primary crotches of large

deciduous trees or at the base of large horizontal branches in conifers (Kirk 1995).

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, conducted by Beaverhill Bird Observatory in 2003-2004, was to determine the phenology of nesting of several raptor species (Priestley 2005). This article addresses the timing of nesting of the Barred Owl and Northern Goshawk in central

Alberta, based on nest banding conducted between 1989 and 2004.

## METHODS

The study area was located in central Alberta (latitudes 52.8° to 58.3°, longitudes 2.6° to 118.1°), surrounding the city of Edmonton. The area encompassed about 100 000 km<sup>2</sup>. Nests were in the aspen parkland, boreal, lower foothill and montane valley ecoregions.

Nests were located by one or more of: 1) driving roads in the



THREE BARRED OWL YOUNG IN A  
NESTBOX AT 1 WEEK OLD LISA PRIESTLEY

## FEATURE ARTICLE

## Northern Goshawk and Barred Owl Nesting Phenology in Central Alberta...continued

winter and early spring and searching for stick nests; 2) looking for pairs of birds on territory in the spring; or 3) 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 an estimate of the age (in days) of the young at banding (Bent 1938, Boal 1994, 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 oldest-aged young from 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 (based on Mazur and James 2000, Reynolds and Wright 1978, Squires and Reynolds 1997) to the estimated hatch date. The time required for incubation and fledging was determined as the largest number of days reported in the literature, since there is little information from Alberta. Incubation and fledging days were thus determined to be 33 and 35 days for Barred Owl and 38 and 35 days for Northern Goshawk respectively.



NORTHERN GOSHAWK YOUNG JUST BANDED AT ABOUT THREE WEEKS OLD L. PRIESTLEY

### RESULTS

Thirty-nine Barred Owl nest records included estimated nestling age. The earliest estimated date for egg laying was March 21 and the latest was April 30 with an average laying date of April 5 (Figure 1). The average estimated fledging date was June 17 (range: June 2 to July 12) (Figure 2). It is interesting to note that six of the seven late records (April 19-30) are from far northern boreal (La Crete) and foothill and montane ecoregions.

Twenty-five Northern Goshawk nest records included nestling age. The average estimated egg laying date was April 6 (range: March 18 to April 22) (Figure 1). The average estimated fledging date was July 3 (range: June 14 to July 19) (Figure 2).

The estimated laying dates of both species were similar with a mean date of April 5 for Barred Owl and April 6 for Northern Goshawk. The mean fledge date, however, was more

FIGURE 1. ESTIMATED LAYING DATES OF THE BARRED OWL AND NORTHERN GOSHAWK IN CENTRAL ALBERTA.

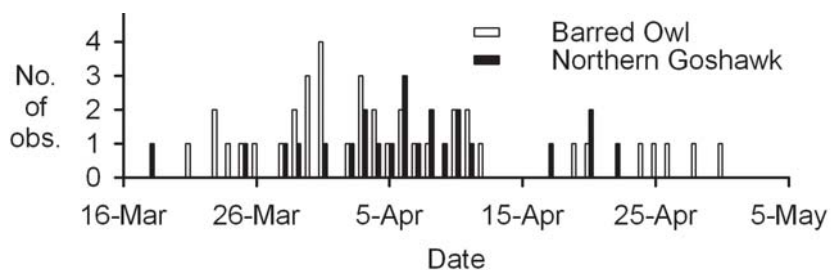
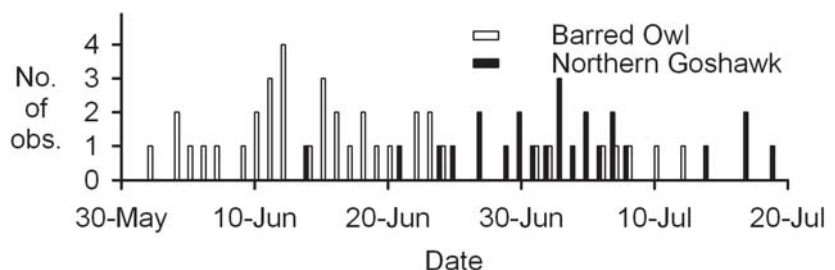


FIGURE 2. ESTIMATED FLEDGE DATES OF BARRED OWL AND NORTHERN GOSHAWK NESTLINGS IN CENTRAL ALBERTA.



## FEATURE ARTICLE

## Northern Goshawk and Barred Owl Nesting Phenology in Central Alberta...continued

separated due to the longer time required for Northern Goshawks to fledge. Although Barred Owls may fledge earlier than Goshawks, the owls are dependent on the parents for ~60 days after leaving the nest.

## DISCUSSION

Raptors are excellent indicators of the health of the environment (Burnham and Cade 1995). Data on primary demographic parameters (productivity and survivorship) are needed to determine the factors responsible for population declines in these birds and to identify conservation and management actions to reverse the declines (Alberta Sustainable Resource Development 2001). Barred Owl numbers and range are limited by the amount of nesting habitat available where they can

reproduce successfully and fledge their young without interference from competitors and predators (Takats 1998). Northern Goshawks also require specific nesting habitat (larger diameter aspen trees) (Schaffer 1998). Further, both species can be affected by anthropogenic disturbances, particularly during the nesting season. Nests of Barred Owls need to be protected from excessive disturbance from mid-March to mid-July. Northern Goshawk nests should be protected from mid-March to late-July.

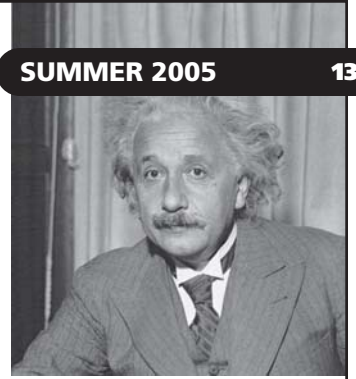
## ACKNOWLEDGEMENTS

Funding from Alberta Ecotrust, the North American Waterfowl Management Plan, Alberta Conservation Association, Alberta Sustainable Resource Development, Alberta Sport,

Recreation, Parks and Wildlife Foundation, and Beaverhill Bird Observatory is greatly appreciated. The new raptor nest card template was produced in cooperation with Alberta Sustainable Resource Development, Canadian Wildlife Service, Federation of Alberta Naturalists, and Bird Studies Canada and is available at <http://www.beaverhillbirds.com/bboraptorsnests.htm>. Thanks to Matt Hanneman who assisted with data entry. Nest records came from Gordon Court, Ray Cromie, Edgar Jones, John Moore, Rick Morse, Ben Olsen, Hardy Pletz, Lisa Priestley, Roy Richards and Warren Schaffer and we thank them for their contributions. The continuing cooperation of landowners is of great value to this program.

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# Space, Time and Einstein: The Question Answered

BY DENNIS BARESCO

*In the last two issues of Nature Alberta, I asked the question: "If you could position yourself 10 minutes beyond the edge of the expanding universe, what would happen when the universe reached you?"*

A difficult question, indeed, unless you're familiar with Einstein's theories, calculus and terms like "continuous" in the mathematical sense. Regardless, it is a fascinating question. Two readers, Lindsay Arizono from Fort McMurray, and Calgary's Nigel Douglas, gave reasonably right answers (I think; I'm not sure if I have any understanding of the answer!). If you're wondering what all this has to do with "nature", then read on to the end for a quote from 19 year-old Lindsay.

First, to give credit where credit is due. I found the question in a newspaper column, entitled "Speaking out on expansion of universe" (January 2, 2005), by Clay Thompson, who writes for the Arizona Republic. Thompson's columns cover many topics, usually with wry humour; he also has several fine books out. He didn't know the answer either, so he asked professor emeritus of physics at Arizona State University, Richard Jacob. The simple answer is: it will never reach you. Huh? Professor Jacob explains (in the column):

"If the universe is expanding, there should be a space into which it is expanding and you ought to be able

to position yourself outside of that space, right? Well, no. The expanding universe doesn't grow into new space-time. It has all the same space-time points; they just get farther apart. You are either at a time and place within this universe or you are at a 'time' and 'place' (completely different) in some continuum that can never be part of this universe."

Professor Jacob went on: "Some will probably ask, if the space-time points get farther apart, what fills up the space-time in between them? [You bet; that was definitely what I was wondering! - DB] This gets very mathematical, but basically, space-time is continuous so that there is zero space between points. Thus, expanding this by some factor still gives zero. Between any two points, no matter how close, there is an infinity of other points."

Nigel Douglas guessed right when he said that "the universe will never reach you", but then he took a wrong turn by adding: "Mind you, as the Universe is composed of everything, then it would be impossible to 'be' outside it anyway." He ended with a statement that most of us would agree with: "But then I've never understood what an

expanding universe could be expanding into in the first place: see, my brain's starting to hurt already..."

Meanwhile, Lindsay Arizono thought the universe, upon reaching you, would just "continue on...like a rainstorm in the distance, knowing it would eventually catch up with you, then pass over." Then she/he continued, more on track: "if you happened to be outside the universe, you wouldn't technically be a part of it, so you inevitably wouldn't exist because no one knows if there is anything beyond the universe. Or what if, whatever is beyond the universe is also expanding, and you could never be a part of the universe if you weren't a part of it already because you would be in a separate outer core of some other dimension that could never intertwine with another." Now my brain's starting to hurt!

How does all this relate to FAN? As Lindsay so eloquently said: "it is questions like those that inspire thought, the search for knowledge and finally, the truth." Amen. And thanks to Nigel and Lindsay for their thoughtful replies. Each will receive a collection of FAN books.



Presentation of the  
Loran L. Goulden Memorial Award to

# John McFaul

*John McFaul is an admirable selection for this award for his contributions to the study and promotion of nature in Alberta over the last two decades.*

Most notably, he has arranged 10 speakers a year for the past 19 years as Program Director for the Calgary Field Naturalists' Society's general meetings. The diversity of the topics indicate that John has access to a huge number of nature specialists who are willing to come to educate the naturalists and citizen scientists who make up the CFNS.

John has a keen interest in astronomy and leads several CFNS stargazing trips a year, where he explains the constellations while the club members view the night sky through his telescope. He has led field trips to view birds, animal tracks in the winter, or just whatever happens along in the outdoor environment for the last 20 years. He participates in local bird surveys on an ongoing basis, in particular as one of the captains of the Christmas Bird Count.

John is a dedicated volunteer for CFNS, and also for CPAWS, and he regularly mans booths

or displays at a variety of events, and has represented the Society at various meetings.

A survey of CFNS' journal, PICA, shows that over the years John has made many contributions to its content. Since 1987, he has written about 15 articles encompassing subjects as diverse as Peregrine Falcons, Rock-Rabbits (Picas) of the Rockies, Mourning Doves, astronomy and seasonal changes.

John has attracted many long-term hiking companions over the years because he makes his trips so enjoyable with his obvious delight in the world around him. He has a wonderful way of teaching, where he runs down a "checklist" of "what kind of habitat is this, what elevation are we at, what would we expect to find here" and so on. Here is a testimonial from one of John's hiking companions:

"Gone was the goal of just

getting to the top as fast as we could to see the view. John taught us there was a whole world of nature we were missing along the way. We learned to stop and examine the wonders of the smallest orchid and the significant meaning of a squirrel midden. Now we proudly name plants and recognize a few bird songs. Our connection to nature has been enhanced and enriched by John's expertise."

John also records his observations with photographs and occasionally fills in as a speaker at regular CFNS meetings. One of the best attended was one June meeting when John was the advertised speaker...on spring flowers in the Rockies. There were over 200 in attendance.

John has been teaching about the natural world, and fostering a love and appreciation for it for many years....in both his professional and personal life.

# Alberta:

## A Global Reflection

BY JILL YANCH

*The United Nations' Millennium Ecosystem Assessment (MA) Synthesis Report, released March 2005, forecasts a bleak future for the environment.*

The report, a joint effort of over 1300 researchers from 95 nations, warns that two thirds of Earth's ecosystems are in danger of collapse. The means by which we obtain and use natural resources is degrading the potential for ecosystem functions, such as air quality regulation and water filtration, to sustain future generations (Millennium Ecosystem Assessment 2005).

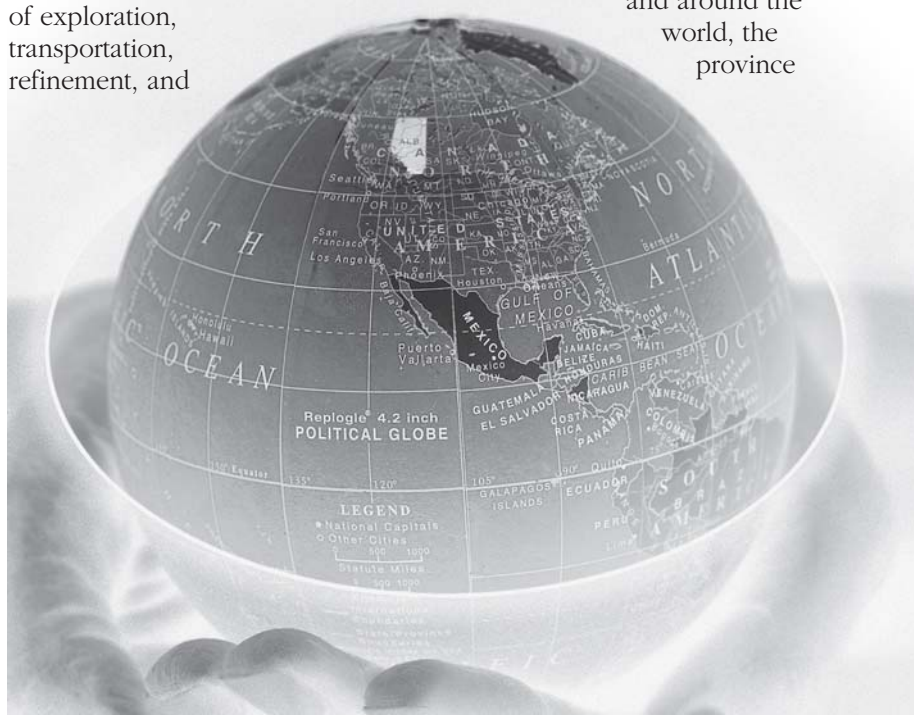
This is a chilling report: But what does this mean for Albertans?

An examination of Alberta's chief natural resource industries suggests it means a great deal. Alberta is a world leader in the production of oil and gas. Our oilsand deposits are the largest in the world and the province is home to more than 100,000 wells (that's one for every 6 km<sup>2</sup>), over 700 gas plants, and 300,000 km of pipelines (Alberta Energy and Utilities Board 2005). Nearly 20,000 licenses for oil-related activities were distributed by the Alberta Energy and Utilities Board in 2004, and production is expected to rise (Alberta Energy 2005).

Albertans benefit from the oil and gas industries through the use of fuel and a wide variety of goods. Scores of well-paying jobs and wealth generated by royalties and taxes have allowed Alberta residents to experience a high standard of living. Despite these benefits, however, are serious and often irreversible environmental impacts. Ecosystem disturbances, spills, and gaseous emissions are inescapable byproducts of exploration, transportation, refinement, and

use of fossil fuels. Fossil fuels are the largest contributor to climate change, one of the greatest environmental challenges the world has ever faced. What we do in this province affects not only our treasured Albertan landscapes and wildlife, but the global climate and air quality as well.

To produce a positive, or at least less negative, impact on ecosystems in Alberta and around the world, the province



## Alberta: A Global Reflection...continued

must follow what the MA prescribes: participation of all stakeholders (including the naturalist community), immediate use of technological advances, and an abrupt progression of the ecological mind-set of institutional and governmental organizations (Millennium Ecosystem Assessment 2005). Only a combination of these elements can direct us to a sustainable future.

We as citizens must be vocal. Expose companies lagging in environmental improvements and praise those companies making serious efforts toward sustainability. Markets for alternative energies such as bioenergy, solar, and wind power are escalating (Natural Resources Canada 2002) and many Alberta oil and gas companies are in the financial position to invest in them. These renewables have great potential to provide significant wealth and numerous jobs to Albertans. Progress is being made, but we must encourage and nurture it.

The electorate must be vocal. It is important that our governments hear our concerns. Alberta's political parties are waking up to the necessity of developing sound environmental policies, but there is room for improvement. Write letters and emails. Make

phone calls. Show a positive response. Show any response.

The MA cautions that the time has come for involvement and change. It is not an alarming report of happenings in a distant land. It reflects Alberta. In the last 50 years, our ecosystems have seen more change than in any equivalent time period in history, and the next 50 may yield significantly more. Let's ensure our environment changes for the better. We *can* persuade oil and gas companies to invest in sustainable energies and products, we *can* petition our governments to make the right choices, and we *can* save the Alberta wilderness that we love so much. We, as citizens of a leading producer of valuable natural resources and as ancestors to future generations, are obliged to make determined use of our most powerful personal resource: OUR VOICE.

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### FOR MORE INFORMATION ON:

- the Millennium Ecosystems Assessment, see [www.millenniumassessment.org](http://www.millenniumassessment.org)
- alternative energies in Alberta and Canada, see the Office of Energy Research and Development at <http://www2.nrcan.gc.ca/es/oerd>
- Alberta's oil and gas industries, see Alberta Energy at [www.energy.gov.ab.ca](http://www.energy.gov.ab.ca) and the Alberta Energy and Utilities Board at [www.eub.gov.ab.ca](http://www.eub.gov.ab.ca)

## FAN CLUBS PAGE

# The Calgary Natural History Society: a Forerunner of the Calgary Field Naturalists' Society

BY DON STILES

*A brief note in Alberta Naturalist, Special Issue No. 3 (Stiles 1986), celebrating the 25<sup>th</sup> Anniversary of the Federation of Alberta Naturalists (FAN), briefly mentions three Twentieth Century natural history clubs that were forerunners of the Calgary Field Naturalists' Society*

These were:

Calgary Natural History Society, 1910 - 1921

Calgary Naturalists Club, 1949 - 1955

Calgary Bird Club, 1955 - 1969

Myres and Stiles (1981) describe the Calgary Naturalists Club and the Calgary Bird Club. This article describes the Calgary Natural History Society (CNHS). A brief mention of the CNHS was made in Beryl Hallworth's article on Marion Moodie (Hallworth 1987), Calgary's pioneer nurse and botanist. Beryl mentions that "Marion must have inspired some other Calgarians with her own enthusiasm, because she founded the 'Calgary Natural History Society' and frequently displayed some of her flower specimens."

So, what kind of a club was the CNHS and when did it operate?

Answers were found in the Glenbow Museum Archives under the entry of "Calgary Public Museum" (which succeeded the CNHS), and in the City of Calgary Archives. The latter contains a "Declaration", dated January 27 1913, which would be similar to today's society incorporation documents.

The first two items of the "Declaration" are:

1. We agree to become incorporated under Chapter 66 of the consolidated Ordinance of the North West Territories for 1905, being an Act respecting Benevolent and other Societies, under the name of the 'CALGARY NATURAL HISTORY SOCIETY'.
2. The objects and purposes of the said Society are as follows:
  - (a) To study Anthropology, Botany, Geology, Zoology, Paleontology, and all and any other branches of Natural History.
  - (b) To give public lectures on the above and other scientific subjects.
  - (c) To create and maintain a museum for the purpose of collection and preservation of specimens and collections illustrative of Natural History, especially in the Province of Alberta and incidentally in other Provinces and countries — such museum to be open to the members of said society of the public at large at such times and upon such terms as the said society may deem fit.
  - (d) To hold Field days and make excursions to places which may be of interest to the members of said Society.
  - (e) To make or cause to be made research in all branches of Natural History or other scientific subjects.
  - (f) To collect specimens either by gift of purchase, mount the same, and dispose of duplicates in such a manner as the said Society may deem fit.
  - (g) To engage collectors and prospectors and other persons to work for or on behalf of the said Society.
  - (h) In general to do all such acts and things as in the opinion of the said Society may be necessary or incidental to any of the above objects.

The "declaration" goes on to list the officers of the Society, and the first Board of Directors: Marion E. Moodie, Annie Campbell (Treasurer), James R. Thurston, Euston Sisley (President), Frank W. Pratt (second Vice President), G.F. Dippie (later to become secretary) and W. Grant MacKay. There are other clauses saying that the officers shall be elected and serve one year terms; outlining membership categories

## The Calgary Natural History Society: A Forerunner of the Calgary Field Naturalists' Society...continued

(Active - \$2 per year, Associate - \$1 per year, Honorary); and a final clause saying that the Society then held no real property.

The Glenbow Archives contain a CNHS membership list, some treasurer's reports, one page of minutes, Permits to collect and lists of Birds and Animals collected, some Taxidermist's Invoices, and extensive correspondence, primarily from 1910 through 1921. An evaluation of these items gives a sense of what a natural history club did in this period. Items in brackets are added by the author.

### MEMBERSHIP LIST:

A single list with 25 names was found, probably from 1913, as it was filed with correspondence from that year. The first two names on the list are of famous Calgarians:

J. S. Walker - Box 356 (Col. James, Calgary's Citizen of the Century)

W.M. Reader 222 - 10th Ave. N.E. (William, of Reader Rock Gardens)

Some other names:

Dr. Sisley (Dr. Euston, President)

G.F. Dippie (George, Secretary)

Miss A. Campbell (Annie, Treasurer)

Miss M. E. Moodie - 736 - Fourth Ave. W. (Marion, the Society's first secretary)

Mr. Calhoun (Alexander, one of Calgary's early librarians)

### TREASURER'S REPORTS:

For 1913/1914 and 1915, submitted by Annie Campbell, Treasurer, total \$1039.70 and 932.52, respectively. The largest expenditure item each year was salary to J. R. Thurston, as taxidermist and caretaker, in the amounts of \$651.00 and \$808.25 respectively. Most other items had to do with collections. For example: W.E. Cutler - work on fossils - \$68. Only minor amounts had to do with

items such as museum rent (\$53), postcards, typewriting and subscriptions (Canadian Entomologist \$11.05).

### MINUTES

Only one page of handwritten minutes were found, dated March 6<sup>th</sup> 1914. These were copied into a minute book, which was found in the City of Calgary Archives. These minutes are provided below.

"A business meeting was held at the home of Mr. Dippie (Secretary).

Members present were: Dr. Sisley (Dr. Euston Sisley, President), Miss Moodie, Miss Campbell (Treasurer), Mr. A. Tomlinson, and Mr. Dippie.

Letters were read from Mr. Lawton, Chief Game Guardian, granting collecting Permit for 1914, and from the City, promising consideration re Annual Grant.

Moved by Miss Moodie, sec. Mr. Dippie, that Mr. A. Tomlinson be elected 2<sup>nd</sup> Vice President.

### Accounts

Accounts of C.H. Garvie, Thomas Cartage Co. 6.35, J.D. McAra 1.72, Ashdown Hardware 20.55, R. Hogarth 5.00, Revelstoke Sawmill Co. 7.08, Entomological Society of Ontario 1.00, were approved for payment.

Moved by Mr. Tomlinson, sec. by Miss Moodie, that the work of the Junior Members Branch of the Society be handed over to the Committee of the Woman Teacher's Association, and all membership fees will belong to them for their work, and further assistance, if required, will be granted from the Main Branch of the Society.

The Secretary announced the gift of a Pair of Sharks and a Skate in the flesh from P. Burns, Esq. A letter of thanks has been written to Mr. Burns."

### CORRESPONDENCE:

The earliest correspondence is dated November 1 1910 from the secretary of the Alberta Natural History Society, the province's oldest natural history society (now the Red Deer River Naturalists), to Marion E. Moodie, to the effect that they were pleased that a Natural History Society had been formed in Calgary, wishing the new club success, and offering an interchange of notes on results of research etc., and to welcome anyone from the Calgary club to their meetings.

A similar letter dated 16 January 1911 was received from the Natural History Society of British Columbia.

A letter dated April 3, 1911 to W.G. Carpenter, President, from Alexander Calhoun, said that the Public Library Board had granted the request of the Natural History Society to use a room on the upper floor of the library for the purpose of a museum. In a subsequent letter the same year, the library offered to look after publications received by the Calgary Natural History Society, provided that the library could receive back numbers.

Some letters were to speakers requesting programs, and thanking them. Speakers and their topics were: Cyril Child on Geology; Prof. John A. Allan, of the University of Alberta on "Geological Evidence of Pre-historic Animal and Plant Life upon Earth"; and, Mary T. S. Schaffer of Banff on Animals. These lectures were illustrated with a series of lantern slides.

Several letters to the City of Calgary asking for grants, and letters from the city enclosing the grants were found. These usually were for \$800 to \$1000 for the years up to 1921. There was also an occasional letter to a supplier saying that the club couldn't pay their bill until their grant was received.

Letters also were received from people offering their collections for sale - Some examples follow:

## The Calgary Natural History Society: A Forerunner of the Calgary Field Naturalists' Society...continued

From Henry George at the museum, Red Deer...

13 animals and birds mounted whole	\$355.00
113 var. Alberta eggs	66.90
14 Animal's skulls	10.00
20 nests and eggs of Alberta birds	25.00
Prairie Illustrated (a publication?)	<u>50.00</u>
	\$506.90

I will take \$500 for these.

A collection of Foreign and Native Butterflies and Moths, collected and mounted by George Rossiter.

From George G. MacBain of Medicine Hat offering a number of duplicate specimens of Exotic Lepidoptera.

From J.A. Munro of Banff, offering Clark's Nutcracker skins for \$18, and offering to collect others.

A letter dated May 19 1920 from Miss Amy Beazer, Teacher of Beazer School offered a bird killed 15 miles west of Cardston, probably a female woodpecker, and asked what it was. Answer sent back - a female Lewis' Woodpecker.

On June 5 1913 a letter enclosing payment of \$25 for a specimen of Passenger Pigeon was sent.

Other letters suggested that a) (bird) eggs should not be taken from nests, and b) no birds should be killed, except game birds in season: "Police and Game Guardians should publish the fact that no birds should be killed and to prosecute in every case".

A number of correspondences to and from workers in the field were identified. For example, from W. E. Cutler at Steville: "I have several fine limb bones unearthed and was plastering same, but owing to water shortage had to go for assistance to haul some."

G. F. Dippie sent an interesting letter to the previous secretary - "At last meeting, I was elected secretary. It has been brought to my attention that you are still representing yourself as secretary. Please

refrain from doing so in the future." It seems unlikely such a letter would be sent today!

Only one letter was found after 1921 in the collection - a letter dated June 25 1928 from Miss Currie's class of the Elbow Park Cottage School saying that they would like to visit the Museum.

### TAXIDERMIST'S INVOICES:

The largest one was from October 1913 in the amount of \$1203.75. Some prices were:

Mounting Wood Buffalo	\$200
Mounting moose and large horns supplied	\$225
Record Mountain Sheep Head	\$200
Mounting 3 Beaver @ \$20	\$60
Mounting Pheasant	\$4
Mounting Grosbeak and Shrike	\$3
Mounting Pileated Woodpecker	\$2.50
Mounting Ferruginous Hawk	\$2.50

### PERMITS TO COLLECT, AND LIST OF BIRDS AND ANIMALS COLLECTED:

A "Permit to Collect" dated 22 February 1915, from the Department of Agriculture, Alberta, was issued to Dr. E. Sisley, and Assistants of Calgary to collect for scientific or other purposes "Big Game, Game and other birds, eggs and nests of same" and deliver same to the "Calgary Museum".

A letter dated January 27 1914, to the Chief Game Guardian, Edmonton, listed what was collected in 1913: 1 Caribou, 3 Beaver, 1 Mountain Sheep, 5 Hungarian Partridges and one nest and eggs, 2 Hungarian Pheasants, 2 Golden Plover, 2 Long Billed Curlews and nest, 2 Pintail ducks, 2 Mallards, 2 Wilson's Phalaropes and nest, 1 Coot and nest, 2 Brewer's Blackbirds and nest, 1 Yellow-shafted Flicker and nest, 1

Red wing Blackbird's nest, and 2 Muskrats.

A longer list, mostly of birds (probable date 1913) includes a number of entries of older names of birds such as: 1 Bartramian Sandpiper nest and 3 eggs (now Upland Sandpiper), 2 Wilson's Snipe nest and 4 eggs (now Common Snipe), 2 Holboell's Grebe chicks (now Red-necked Grebe), and 1 Arctic 3 toe Woodpecker (now Black-backed Woodpecker).

All things eventually come to an end, however, and an agreement dated December 23, 1927 transferred the assets of the CNHS to the Calgary Public Museum: "Whereas the said Society has for some time been forced to suspend its activities: In consideration of the sum of One Dollar, the Society hereby conveys to the City of Calgary, the taxidermic specimens, Indian Work, Coins, Geological specimens, pre-historic relics, and other chattels situated in the basement of the Court House at Calgary. On April 23, 1928 the "Calgary Public Museum" formed a society under the provincial Societies Act, 1924.

Stiles, D. 1986. Calgary Field Naturalists' Society. Alberta Naturalist, Special Issue No. 3:18-21.

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Hallworth, B. 1987. Miss Marion Moodie, 1867-1958 — Calgary's Pioneer Nurse and Botanist. Pica 7(1):24-27.

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**JUVENIL GRAY JAY, NEAR FORT MCMURRAY**

DAWN HALL

PHOTOGRAPHED ON MAY 21, 2005 USING A PANASONIC LUMIX DMC-FZ20X CAMERA (DIGITAL) WITH OPTICAL ZOOM

**YELLOW LADYSLIPPER WITH COBWEB, NEAR**

**SEEBE** COLIN R. PARKER

PHOTOGRAPHED ON JUNE 15, 1996, USING A NIKON SLR CAMERA, A 70 MM MACRO LENSE AND KODACHROME 64 FILM



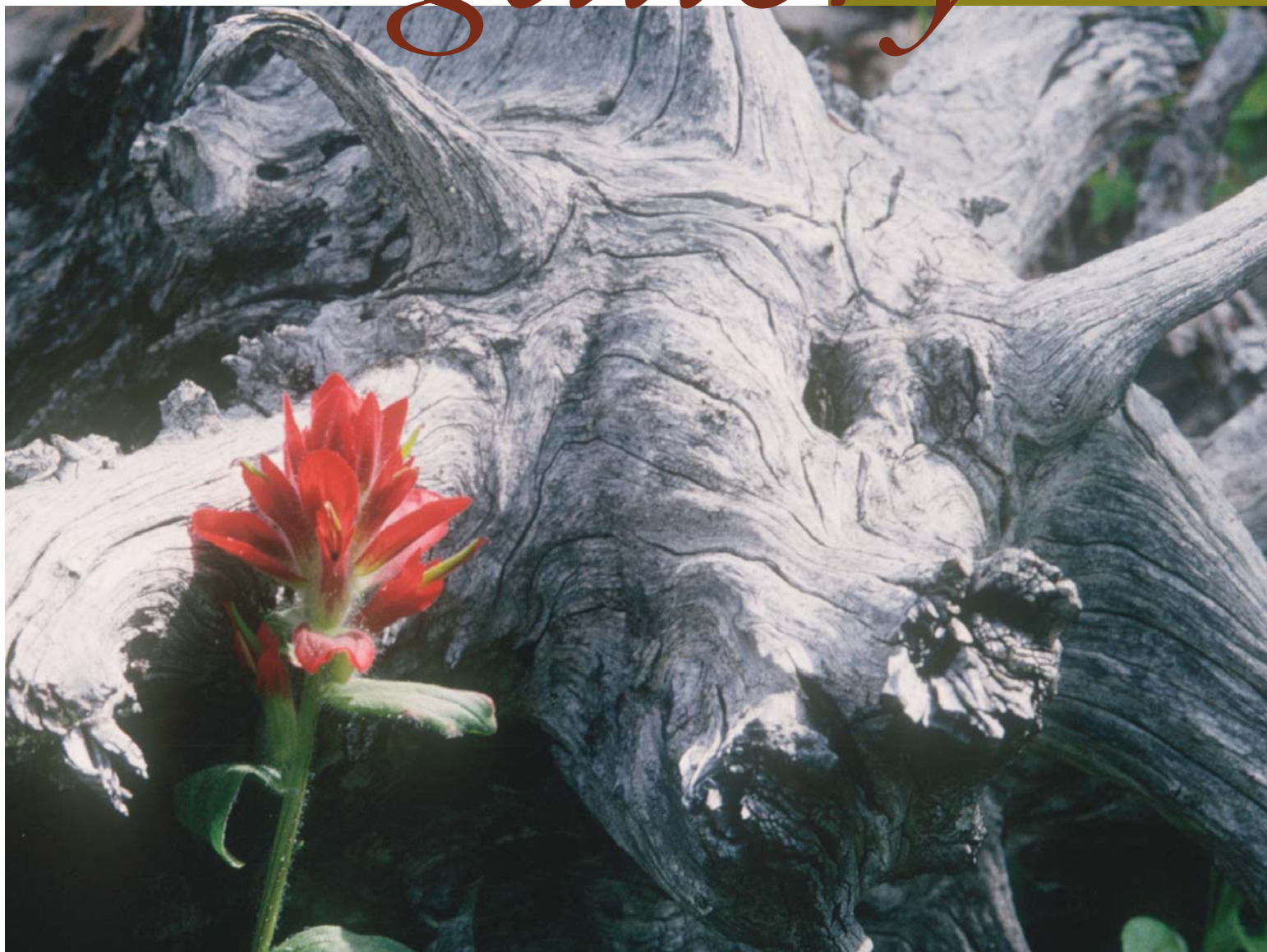
**DEER FAWN, STRATHCONA WILDERNESS CENTRE, STRATHCONA COUNTY**

MICHAEL S.L. CHASE

PHOTOGRAPHED IN MAY 2005 USING A CANON POWERSHOT A60 CAMERA (DIGITAL) AND A 3X 5.4-16.2MM 1:2.8-4.8 ZOOM LENS



# Nature *gallery*



**INDIAN PAINTBRUSH AND 'WOOD SPIRIT', NEAR SNOW PASS, BANFF NATIONAL PARK** COLIN R. PARKER  
PHOTOGRAPHED IN 2001 USING A CANON AE-1 CAMERA, A 50 MM LENS AND KODACHROME 64 FILM



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