churchillnorthernstudiescentre

THE BIRDFISH

SPRING 2007

Churchill Northern Studies Centre Newsletter

SPRING AT ARCTIC'S EDGE PAGE 2

INSIDE:

SPRING AT ARCTIC'S EDGE

Photo: Michael Goodyear

Now Available in Full Colour

In the spirit of an early subarctic spring, welcome to the first full colour issue of the Birdfish newsletter. Eight years ago, the first issue of the Birdfish was printed in-house on an inkjet printer and distributed as black-and-white photocopies. Today, with a circulation of nearly two thousand, design and printing is now handled by our good friends at Montage Design of Winnipeg. This leaves us more time to focus on bringing you timely and interesting stories highlighting research and education in the North.

In this issue we bring you information on how variations in climate affect the growth of trees and we help shed some light on the true origins of the CNSC's *"Birdfish"* logo. In addition to our usual research updates and Centre news, this issue also introduces several new features such as *What's Happening Here?*, a photographic quiz designed to stump even the most seasoned Centre alumni; Remember When…, which recalls noteworthy events in CNSC history; and visitor-submitted humor.

Some of you noticed the absence of our regular winter issue. We appreciated your understanding while we took some time to work out our new look. We promise to make it up to you with a special edition later this year. After you've had a chance to enjoy our new format, please drop us a line at **birdfish@churchillscience.ca** and let us know how we're doing. As always, we welcome your story ideas, submissions and pictures. ❄

ORIGIN OF A SPECIES

The true story behind CNSC's enigmatic "Birdfish"

by Michael Goodyear

Perhaps one of the most frequently asked questions we hear at the Churchill Northern Studies Centre is, "What's the story behind your logo?" We hope the following history sheds some light on the origin of the CNSC Birdfish.

The genesis of the Birdfish can be traced back to 1984 and the tenure of former Executive Director Peter Dueck. At that time, the Centre was using as its logo the image of a snowy owl perched upon a rock. Two things about this logo concerned Peter. First, the image itself was a rather soft pencil sketch, not particularly striking and was difficult to reproduce cleanly. Second, while the snowy owl was a recognizable symbol of the North, Peter felt that the Centre's logo should represent more than just birdlife. A new symbol, unique to the CNSC was proposed.

Centre lore recounts one aborted attempt to create a new logo involving that quintessential image of Churchill – the "flagged" tree. A quick conceptual sketch of a white spruce, stripped of branches on its windward side, was sent to a design firm in the south. The drawing was soon returned with all of the branches on the northwest side carefully restored by a well-meaning, if somewhat ill-informed, graphic artist.

Peter Dueck soon enlisted the help a graphic artist by the name of Gerald Loewen to create something a bit more abstract. The resulting design incorporated elements of the earth, the sky, and the water. The circle represented Earth and the long history of atmospheric research in Churchill. The addition of the beak signified the birdlife and ornithological significance of the region, while the fish body symbolized the marine environment of Hudson Bay. The image was quickly embraced for its simplicity and unique character. It would come to be identified with the Churchill Northern Studies Centre and with nothing else. No one seems to know exactly who first coined the term Birdfish, but it has since come to be synonymous with the Centre and its work.

Recently, the Centre explored the idea of contemporary update to the Birdfish logo and associated word mark. Although many variations were considered, the timelessness and simplicity of the Birdfish was ultimately retained. Oh, and by the way, remember the Centre's first logo, the soft pencil sketch of the snowy owl perched upon the rock? Turns out it was designed by the world-renowned wildlife artist Robert Bateman as a special gift to Fred Cooke, a respected ornithologist and one of the founding members of the CNSC. Beauty, as they say, is in the eye of the beholder. ❄

Photo: L. Brandson

• Michael Goodyear is the Executive Director of the CNSC. This fall, Mike will travel to Salt Spring Island for a week-end gathering with friends. He'll have an apology ready should Robert Bateman happen to stop by for tea.

FOREST-TUNDRA

Radial-growth response of forest-tundra trees to climate variations along a longitudinal transect, Wapusk National Park and the Cape Churchill Wildlife Management Area

by Steve Mamet

Photo: Steve Mamet

The forest-tundra ecotone at the northern limit of the boreal forest is an important biogeographical boundary. The heterogeneity of this subarctic landscape sustains a wide variety of environmental conditions which results in a disparity of tree-ring radial growth responses to climate. Since the position of the arctic treeline is associated with the position of the polar front, it is theorized that arctic warming could displace the position of the treeline poleward of its present location. As Wapusk National Park (NP) straddles this ecotone from the Hudson Bay coast east of Churchill extending south towards the mouth of the Nelson River, poleward treeline displacement could have significant impacts on the ecosystems within the park by means of changes in habitat, fire cycles and synoptic climate. The primary objectives of this study are: **(1)** to use dendroclimatological techniques to characterize tree-ring radial growth response to climate for three sites in Wapusk NP and the adjacent Churchill Wildlife Management Area (CWMA) (the northern continuous forest (NFOR), tundra *krummholz* (TUND) and southern continuous forest (SFOR)), and to examine interspecific responses within and between sites to changes in climate across latitudinal/environmental gradients; and **(2)** compare rates of recruitment determined through dendrochronological analyses to historical variations in climate inferred from tree-ring width growth indices.

Cores from 297 trees (179 *Picea glauca* (Moench) Voss, 77 *Picea mariana* (Mill) BSP and 41 *Larix laricina* (Du Roi) K. Koch were collected during the summers of 2002-2005 along a north-south transect through Wapusk NP and at several locations near the Churchill Northern Studies Centre (CNSC) within the CWMA. Chronologies from each site were standardized to remove low-frequency variance not related to climate. Churchill climate data for the 1929-2002 period was obtained from the Adjusted Historical Canadian Climate Database of Environment Canada.

Tree-growth at each site was primarily limited by summer temperatures (June-August). Synchronous growth suppressions in years following major volcanic eruptions were observed at each site. Elevated spring (March-May) temperatures were found to positively affect TUND trees and negatively affect NFOR trees, which suggests that the deeper snowpack in a forest environment results in a frozen rooting zone that would prove detrimental to tree growth during the initial stages of cambial activation. Radial growth of all species within the NFOR and TUND sites were significantly correlated within and between sites, indicating common environmental influences at each location. The SFOR *P. glauca* index exhibited low correlation with climate and the *P. mariana* index showed no correlation, suggesting that there are considerably different environmental influences present in the south end of Wapusk NP. All indices exhibited a decreased correlation with summer temperatures from 1950-1980 indicating a decoupling of tree-growth and temperature, potentially related to an influx of temperate air masses during that period. The warming trend present in the instrumental data is most strongly represented in the NFOR indices, particularly the *L. laricina* index.

The second objective will be met by determining stand origin dates from samples collected during July and August of 2006 (168 *P. glauca, 82 P. mariana, and 76 L. laricina;* Σ=326) across an additional 10 sites. Dendrochronological techniques will be employed to determine if stand origin dates are related to periods of climatic amelioration inferred from temperatures modeled from tree-ring indices.

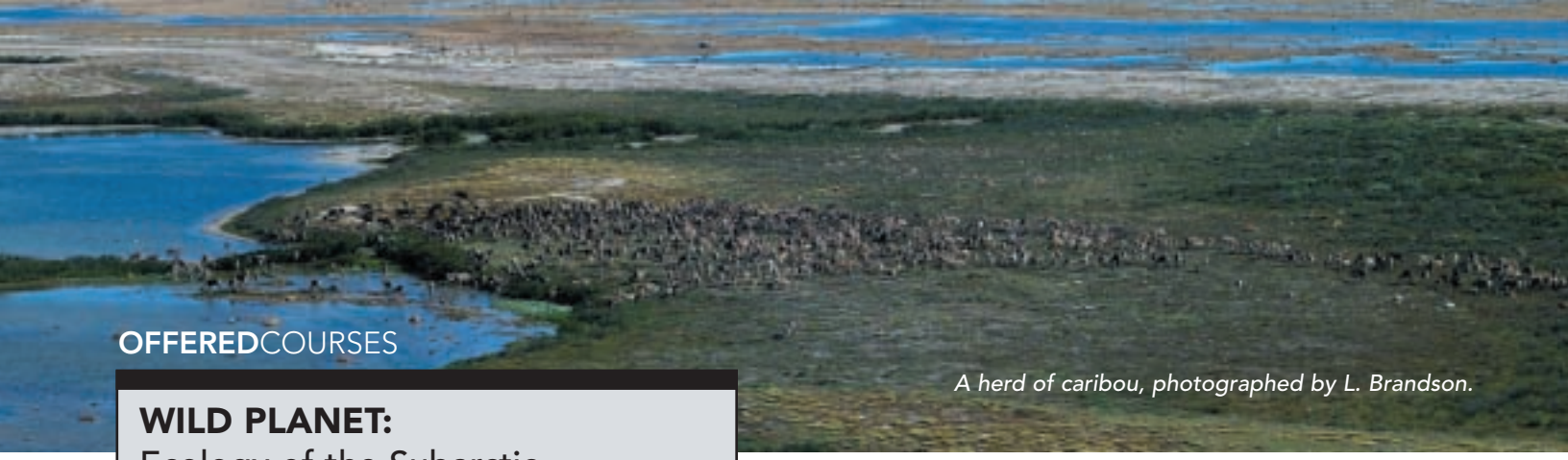
• Steve Mamet is a Master's student in the Department of Earth and Atmospheric Sciences at the University of Alberta in Edmonton. We can't estimate the number of times he's been to Churchill, so we've asked him to provide a core sample from his leg by next week. Serves him right for using so many big words.

CONTEST

WORTH A THOUSANDS WORDS

What's going on in this picture? Hint: this shot of the Churchill Research (Rocket) Range was taken from the roof of the Nike Launcher. Send your responses to **birdfish@churchillscience.ca** to be entered into a draw for a chance to win a CNSC t-shirt.

Photo: CNSC Archive



A herd of caribou, photographed by L. Brandson.

OFFEREDCOURSES

WILD PLANET:
Ecology of the Subarctic
Learning Vacation

Date: August 2 – 7, 2007
Instructor: Michael Goodyear
Cost: $1200 CDN
(10% discount for all CNSC members)

Journey to where the Arctic tundra and boreal forest meet. This general interest course explores the adaptations of arctic plants and animals to the harsh and unforgiving subarctic environment. In addition to evening lectures from resident scientists, wildlife experts and local aboriginal presenters, this course includes:

- 30 min helicopter flight over Wapusk National Park, the world's largest polar bear denning area
- Daily walking tours through a variety of dramatic wildlife habitats (tundra, boreal forest, intertidal zone, fen and coastal ponds to name a few)
- Visit to an actual research site for a hands-on introduction to scientific research
- Beluga whale-watching on the historic Churchill River
- Community tour, including the Parks Canada Interpretive Centre, Prince of Wales Fort, Cape Merry and the world-famous Eskimo Museum

An evening celebration of arctic char, caribou and bannock served up with a selection of Canadian wines completes your subarctic adventure!

A Perfect Family Oriented Vacation!
For more information, please email cnsc@churchillscience.ca or call (204) 675-2307.

Photo: Michael Goodyear

• Brent Young was a Research Technician at the Centre during the summer of 2006. We lost track of him about six months ago when the batteries in his radio collar ran out.

SUBARCTIC SUMMER

by Brent Young

Working as a Summer Research Technician at the Churchill Northern Studies Centre has been an amazing experience for me. Working and living at the CNSC has allowed me to spend the summer in a very unique sub-arctic environment while learning about and contributing to a wide range of research projects. As a fourth year student in the Environmental Science Program at the University of Manitoba, this was the ideal summer job. It has provided me with experience doing a number of different tasks in a number of different areas. Some of the things I've done include collecting water samples from local ponds, collecting tadpoles and daphnia samples, monitoring long term vegetation plots, collecting rain samples for mercury analysis, collecting carbon dioxide samples, and banding snow geese!

Working at the CNSC has not only given me excellent on-the-job experience, but it has also given me a chance to meet a lot of really interesting people, and to learn about a lot of interesting research projects. Simply being able to spend a summer in Churchill has been a great experience. I've learned so much about the natural history and wildlife of the area and about northern environments. How many people back home can say they've spent a summer in a place where you can see such a wide variety of birds and wildflowers, beluga whales by the thousands, and polar bears (sightings are almost a daily occurrence), watch caribou as they roam across the tundra, or step outside on a clear August night and watch the northern lights as they dance across the sky. ❄

recentpublications

CLIMATE CHANGE: LINKING TRADITIONAL AND SCIENTIFIC KNOWLEDGE

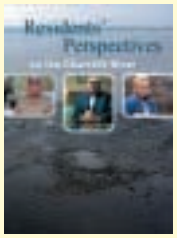
Rick Riewe and Jill Oakes (editors)
285 pages; Price $25.00

This book is a refereed publication and includes papers written by over 50 community experts and scientists addressing theoretical concerns, knowledge transfer, adapting to climate change, implications of changing weather, water and ice conditions for northerners and wildlife, and the impact of climate change on tourism, fire, and industrial development. Northern communities, politicians, managers, policy makers, scientists, and schools will find valuable insights gained by exploring linkages between traditional and scientific knowledge in the north.

"Climate change is not an abstract ivory tower concept to the peoples of northern Canada; rather it is a very real and important part of their everyday lives. This book provides insights into how traditional and scientific knowledge can act as integrated pedestals supporting our quest to understand and predict the impacts of Arctic climate change."

RESIDENTS' PERSPECTIVES ON THE CHURCHILL RIVER

Joel Edye-Rowntree
110 Pages; Price $15.00



The lower Churchill River was and still is a very important part of the psyche of Churchill residents, being used for recreational purposes, such as fishing and boating and transportation routes for hunting and trapping. Residents' spatial orientation is based on the river, *"upriver"* and *"across the river"* are terms used in everyday language.

The overall purpose of this book is to share Churchill residents' perspectives on the importance of the lower Churchill River. The specific objectives include:

- Increase understanding and awareness of the importance of the lower Churchill River to local residents,
- Enhance knowledge of how the lower Churchill River was and currently is used by local residents,
- Obtain insights into issues concerning the social impact of changes to residents as a result of changes to the lower Churchill River,
- Obtain local perspectives on ways of addressing concerns related to the lower Churchill River,
- Provide a forum for sharing local resident's perspectives with future generations of Churchill residents.

These publications are available through the University of Manitoba's Aboriginal Issues Press.
Visit **http://www.umanitoba.ca/environment/aboriginal_issues_press/** for more information.

Cirque du Midnight Soleil

Tom Sura lives quietly with his wife, Jan, in Boulder, Colorado. He is currently finishing a Polar Bear Ballet which includes: Dancer the polar bear, beautiful ballerinas, leaping men in kilts, rocket launches, sled dogs, calving icebergs, penguins, veterinarians, northern lights, beluga whales, Inuit artists, and French fur trappers in tights driving tundra buggies.

In addition to the striking aesthetic visual and musical aspects of the ballet, the theatre will start out icy cold and by the grand finale will be like a sweat lodge. Audience members who still doubt the existence of global warming will at least have shed a few pounds by the end of the final act. Occasionally throughout the performance ushers, dressed as polar bears, will appear in the aisles with tranquilizer dart guns to remove any audience members who don't appear to be enjoying the ballet or are trying to leave early. As part of the show, darted patrons will be dragged to the lobby, photographed by passers-by, weighed, ear tagged, tattooed, blood sampled, and have a tooth extracted to determine their age. They will then be humanely air lifted in a cargo net by helicopter to a bus station at least thirty miles from the theatre.

- *Tom Sura was a participant in our 2006 CNSC Lords of the North polar bear learning vacation. Cirque du Soleil has optioned his ballet for a Christmas Las Vegas opening in 2007.*

[OURVOLUNTEERS >

Polar Bear Season 2006 came and went in a flurry of activity! We could not have had such a successful season without the enthusiasm and dedication of our volunteers, many of which are returning volunteers and have become dear friends.

Ayesha Tulloch - Edmonton, Alberta
Viv Tulloch - Lake Louise, Alberta
Jonathon Wiens - Winnipeg, Manitoba
Nicole Pearce - Mohawk, Michigan USA
Debbie Lepo - Montana, USA
Amanda Verschuere - Parry Sound, Ontario
Melanie Gamache - Deloriane, Manitoba
Alex Hamilton - Dunstable, UK
Deb MacLeod - Burlington, Ontario
Merle Peters – Florida, USA

The following hardworking individuals also provided support during the winter months for our Northern Lights and Astronomy programs and Earthwatch:

Merle Peters – Florida, USA
Dieter Weise – Minnesota, USA
Beth Kolb – Minnesota, USA

NSERC Northern Research Internships

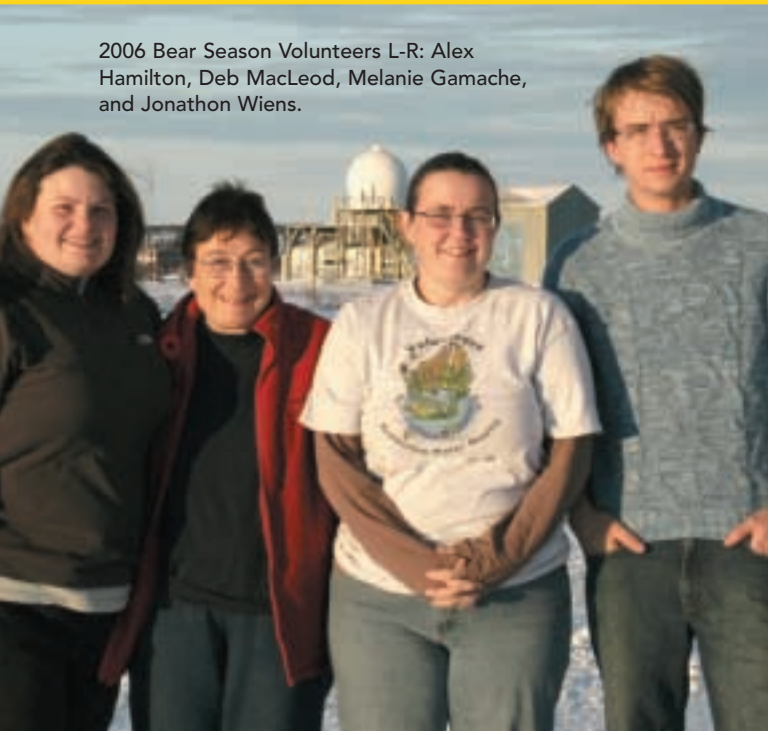
The Natural Science and Engineering Research Council of Canada awards Northern Research Internships to senior undergraduate students, graduate students and postdoctoral fellows. These internships facilitate extended stays and subsidize the costs associated with research in the Canadian North. Northern Research Internships are tenable in a northern Canadian organization that will benefit from the research conducted, either directly or through the sharing of knowledge. These awards also encourage a new generation of highly qualified persons to pursue research in the North. The Churchill Northern Studies Centre has partnered with three students to obtain further funding for their research.

Kate Edwards, Ph.D. student at University of Toronto *"Soil microbial, nutrient and plant growth dynamics during the winter-spring transition in arctic sedge meadows"*

Tali Neta, Ph.D. student at York University *"Water storage assessment in a subarctic environment through remote sensing technology"*

Kate Ballantyne, M.Sc. student at Trent University *"Habitat change analysis and nest site selection of Red-necked Phalaropes in Churchill, MB"*.

Visit **http://www.nserc.gc.ca** for more information.



2006 Bear Season Volunteers L-R: Alex Hamilton, Deb MacLeod, Melanie Gamache, and Jonathon Wiens.

Photo: H. MacLeod

For more information on how you can volunteer at the CNSC, contact Heather at: **cnsc@churchillscience.ca**

Established in 1976, the Churchill Northern Studies Centre is an independant, non-profit research station located along the western coast of Hudson's Bay.

to understand and sustain the **north**

The CNSC is a registered Canadian charity in part supported by the Manitoba Department of Advanced Education and Training and the Natural Sciences and Engineering Research Council of Canada through a Major Facilities Access Grant.

The Birdfish Newsletter is produced by CNSC staff with assistance from researchers and program participants. Cover photo: Mike Macri

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DID YOU KNOW...

...that your bequest to the Churchill Northern Studies Centre will make the world a better place?
...that you pay no capital gains tax on gifts of appreciated securities to the Churchill Northern Studies Centre?
...that we have a new way for donors in the United States to receive a tax deduction for gifts over $350.00 and gifts of securities?

Please contact the CNSC at **(204) 675-2307** or **cnsc@churchillscience.ca** for more information.

Membership

The Best Way of Staying Involved

The CNSC will be launching a major membership drive later this year. Help support research and education in Churchill by encouraging like-minded friends to become members of the Centre. For as little as $25, members receive a one year subscription to the Birdfish, special rates on upcoming courses, discounts on CNSC giftshop purchases and much more. For each new member you refer, your name will be entered into a draw for a CNSC fleece vest. Please fill out the membership form below or call **(204) 675-2307** today.

Canada Helps.org

Giving made easy

The Churchill Northern Studies Centre has partnered with Canada Helps.org to help make supporting the Centre even easier. Simply go to our website at **www.churchillscience.ca** and click the **"Donate Now"** button.

Canada Helps is itself a charity and operates on the premise that all of Canada's charities should have access to electronic-donation technology without having to bear the full cost normally associated with turn-key e-commerce.

A one time gift or a monthly donation on your credit card is an easy way to make the world a better place. Your donation is processed immediately and an electronic Canadian tax receipt is promptly issued. Sorry, Canada Helps is not valid for tax-deductible US donations.

Protect your privacy! The Canada Helps website is a safe and secure method of making your donation online.

We appreciate your support of the Churchill Northern Studies Centre. Your donations support research and education that makes the world a better place. Thanks very much.

Join the Churchill Northern Studies Centre TODAY!

We rely on our membership to provide the support and funding eeded to make the CNSC a place for world class research and education programs in the Canadian subarctic. Join us now and be part of these exciting times at the CNSC.

◯ I would like a one-year CNSC membership - Individual $25 ◯ Student/Senior $20 ◯ Family $40 ◯ Corporate $500 ◯

◯ Enclosed is my donation of $ _____ **Tax reciepts are available for Canadian donations of $25 or more.*

NAME: _____ ADDRESS: _____

CITY: _____ PROVINCE/STATE: _____ POSTAL/ZIP CODE: _____

TELEPHONE: _____ E-MAIL: _____

*In accordance with the Personal Information Protection and Electronic Documents Act, names, addresses or other personal information collected by Churchill Northern Studies Centre will only be used for internal purposes such as informational mailings, membership renewals and other communications, and will not be shared with any third party. Complete details of our privacy policy are available by contacting the CNSC.

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