



# **THE CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS Newsletter / Bulletin**

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# CSEB Newsletter Bulletin SCBE

VOLUME 66, NUMBER 3, 2009

CSEB Website <http://www.cseb-scbe.org>

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**Cover Photos:** (Front cover) Mary Kelly, Physical Science Officer, Environment Canada, sampling the outflow from wetlands to Darnley Bay near Paulatuk, Nunavut. (Back cover) Anne Wilson, Water Pollution Specialist, Environment Canada, looking along the wetlands to Darnley Bay.

**Photo Credits:** Anne Wilson

CSEB/SCBE Logo designed by C.C. Lindsey

Printed in Canada

ISSN: 0318-5133

Postage paid at Main Post Office,  
Edmonton, AB

Canadian Publication Mail Agreement No. 40050477

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**CSEB NEWSLETTER 2009**

Vol. 66, Number 3 Fall 2009

The Canadian Society of Environmental Biologists Newsletter is a quarterly publication. The Newsletter keeps members informed of the Society's activities and updates members on the current affairs and advances in the field of environmental biology. This publication draws together the widely diverse group of Canadian environmental biologists through a national exchange of ideas. Members are invited to contribute papers, photos or announcements that are of a national biological and environmental interest. Letters to the editor are welcome. This is a volunteer non-profit organization and we rely on your participation to make the newsletter a productive forum for ideas and discussion.

**All business correspondence, changes of address, undeliverable copies and membership applications should be sent to:** CSEB National Office, P.O. Box 962, Station F, Toronto, ON., M4Y 2N9. **Editorial correspondence:** Gary Ash, Editor, e-mail: [gash@golder.com](mailto:gash@golder.com)

**Editor/layout:** Gary Ash; **Production:** Gary Ash.

**Layout/Printing:** Lasertext Digital Print & Copy Centre, Edmonton, Alberta on recycled paper.

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**LE BULLETIN de la SCBE 2009**

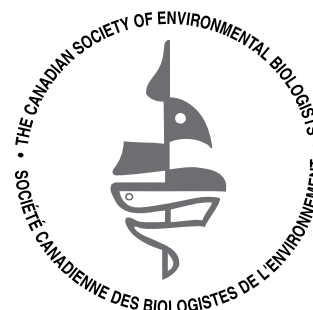
Vol. 66, Numbre 3 Automne 2009

Le Bulletin de la SCBE est une publication trimestriel de la Société Canadienne des Biologistes de l'Environnement. Le Bulletin informe les membres des activités de la Société sur événements courant ainsi que les progrès qui font en sciences de l'environnement. Par un échange d'idées au niveau national, cette publication intéresse un groupe très diversifié d'environnementalistes Canadien. Les membres sont invités à contribuer des articles, photos (noir et blanc) ou des messages qui sont d'intérêt nationale en sciences biologiques et environnementales. Les lettres à l'éditeur sont bienvenues.

**Tout la correspondance d'affaires, y compris les abonnements, les changements d'adresse, les exemplaires retournés et les formulaires:** CSEB National Office, P.O.Box 962, Station F, Toronto, ON, M4Y 2N9. **Les lettres à l'éditeur:** Gary Ash, Editor, courriel: [gash@golder.com](mailto:gash@golder.com)

Rédacteur en chef: Gary Ash, Mise en page: Gary Ash. Impression: LaserText Digital Print & Copy Centre, Edmonton, AB sur le papier recyclé.

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**The Canadian Society of Environmental Biologists****CSEB OBJECTIVES**

The Canadian Society of Environmental Biologists (CSEB) is a national non-profit organization. Its primary objectives are:

- to further the conservation of Canadian natural resources.
- to ensure the prudent management of these resources so as to minimize environmental effects.
- to maintain high professional standards in education, research and management related to natural resources and the environment.

**OBJECTIFS de la SOCIÉTÉ**

La Société Canadienne des Biologistes de l'Environnement (SCBE) est une organisation nationale sans but lucratif. Ses objectifs premiers sont:

- de conserver les ressources naturelles canadiennes.
- d'assurer l'aménagement rationnel de ces ressources tout en minimisant les effets sur l'environnement.
- de maintenir des normes professionnels élevés en enseignement, recherche, et aménagement en relation avec la notion de durabilité des ressources naturelles et de l'environnement, et cela pour le bénéfice de la communauté.

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## NATIONAL News

### PRESIDENT'S Report

*Submitted by Brian Free, CSEB President*  
**Greetings, once again!**

Fall is upon us and the growing season is coming to a close. Migratory birds and animals are beginning to make their annual treks to their wintering grounds. For the western prairies, the effects of drought are being observed as lake levels decline and wetlands disappear. Ecosystems are being stressed, but with that pressure comes change and adaptation.

The current economic recession has placed a lot of stress on the entire field of environmental management. All levels of government are tightening their belts and looking for programs to cut. Environmental programs and initiatives seem to be an easy target. Private industry's investment in environmental programs is also being cut back. These losses, especially to the less glamorous, long-term monitoring programs, could result in a significant setback for environmental management in Canada. It is important for organizations like the CSEB to keep pressuring decision-makers to place greater value on environmental monitoring and scientific research.

As my term as President draws near its end, I can reflect back on the past two years with fond memories. I have found great support among the Executive Committee, Board of Directors and other members who have volunteered their time and energy to the CSEB. I look forward to our Edmonton workshop on environmental monitoring, which will be another flower in our collective cap. It is an excellent example of the good work of the CSEB, as we contribute our biologists' perspective to the public discussion about pressing environmental issues in Canada.

I hope to see many of you at the Edmonton workshop. Be sure that you continue to support the CSEB by your continuing membership and be sure to volunteer in some small way to make a difference!

Brian Free, President  
 bfree@cseb-scbe.org

## REGIONAL News

### BRITISH COLUMBIA News

#### Pine Beetles Running Out of Trees in BC

The BC Forestry Minister has stated the mountain pine beetle infestation in BC is over, but it is not that they have been defeated, but rather they have run out of trees. And that heralds a whole new set of problems, Pat Bell told the Vancouver Board of Trade last month.

Forest companies that are running out of wood are now seriously looking at healthy stands of trees, including old growth forests in protected areas. Minister Bell is warning that 8 to 12 sawmills could close if other sources of timber are not found. Except for a few isolated areas in the eastern part of the province, he said the pine beetle population is now on the decline. He also indicated that the pine beetle has decimated an estimated 24 percent of the province's current timber harvest.

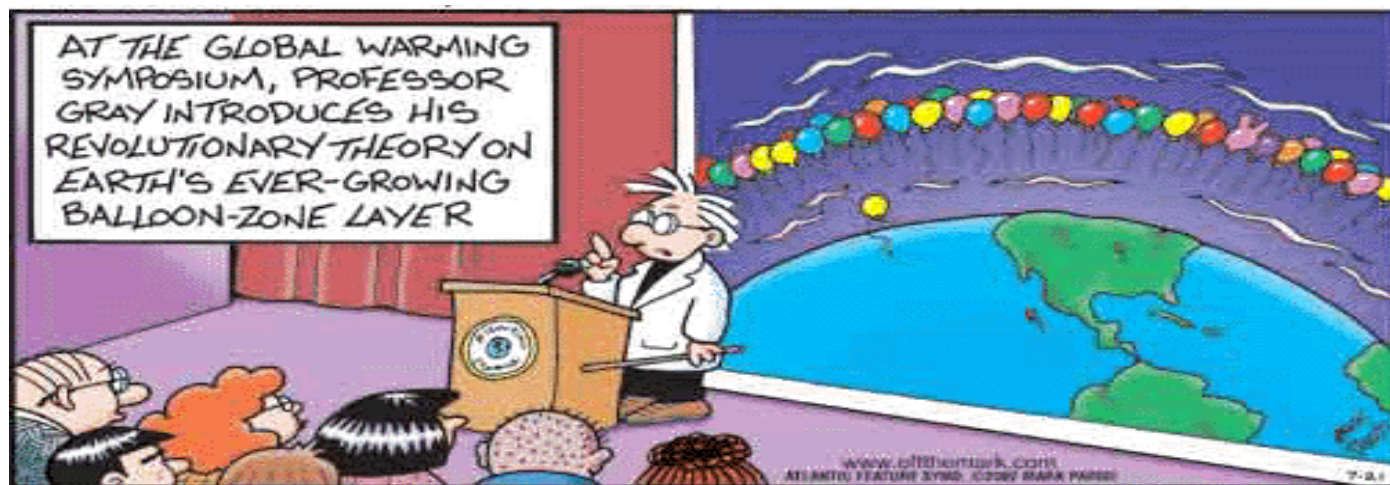


Extensive Pine Beetle Attack.  
 Williams Lake, BC



Close up of  
 Adult Pine Beetle

Photographs by: CanWest News Service



## BC Wolf Cull Results in “Monster” Hybrids

The wolf extermination program undertaken by the BC government on Vancouver Island has allowed large hybrid wolves to take over the region, say scientists from the University of Sweden, the Smithsonian Institution and the Raincoast Conservation Foundation. During the period of the 1920s to the 1970s, the province tried to eliminate wolves on Vancouver Island so sport hunters would have more black-tailed deer to harvest. When some larger wolves from the mainland swam across to the island in the early 1980s, they were not able to find mates, and instead, they mated with dogs. The results, were wild animals that were neither wolves nor dogs, according to research published in the journal *Conservation Genetics*. ☼



A Pacific coastal wolf at Pacific Rim national park. The B.C. government's Vancouver Island wolf extermination program allowed 'monster' hybrids to take over the region, a team of scientists said.

Photograph by: Chris Darimont/Raincoast.org, Canwest News Service

## ALBERTA News

The Alberta Chapter is hosting the 48th annual meeting of the CSEB in Edmonton on October 15-17, and features a two day workshop on “Environmental Monitoring- The Basis for Better Decisions.” See the program featured elsewhere in this newsletter.

## Pine Beetle Wars in Alberta

The mountain pine beetles, the single biggest threat to Alberta forests, are pushing eastward in the province, said Hon. Ted Morton, Minister of Alberta Sustainable Resource Development at the 67th annual meeting of the Alberta Forest Products Association. He indicated “we are doing a good job of containing the spread of the beetles in southwest Alberta, but an in-flight to our northeast this summer is cause for concern.”

Trees in the area are reacting quickly, and are already showing signs of dying. It has prompted the government to delay its aerial surveys by three weeks so government officials can gauge how much damage the new wave of beetles will cause, and to formulate a counter attack.

“Depending on the analysis, and for the sake of both effectiveness and value for dollars spent, we may have to

redefine our leading edge zone eastward and to the south, move to salvage operations in the west and the north, where the potential for beetle control is lost,” said Minister Morton.

## Invasive Stickleback May be Poisoned

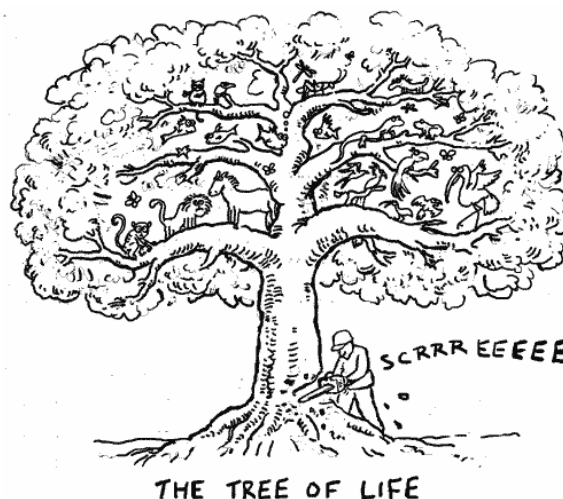
A small pond in St. Albert, just north of Edmonton, may soon be treated with a chemical to kill an invasive species. Riel Pond, which is used by the city to hold storm water, has been invaded by the non-native threespine stickleback, which are believed to have been illegally introduced in the region in the 1970s by someone returning from BC. Since that time, it has expanded its range within the region, and may compete with native brook stickleback.



Threespine Stickleback

The city of St. Albert has placed a screen at the outfall of the pond to prevent the exotic fish from moving into the Sturgeon River, but the screen tends to get clogged with weeds and other aquatic fauna and flora, which could result in problems during a large rain event. So the city is looking at using a chemical piscicide, rotenone, to kill the stickleback in the pond. Rotenone is a natural chemical extracted from the roots of a tropical plant, and kills fish by interfering with the transfer of oxygen across the gills of the fish.

If they get approvals, the city would block up the outfalls before treating the pond, and would wait for the rotenone to biodegrade, which should take between 3 to 14 days, and would test the water before opening the outfall, says Leah Jackson, Environmental Manager for the City of St. Albert. Any fish that float to the surface would be picked up, she indicated. ☼





## SASKATCHEWAN News

### Acid Rain Falling on Sask. from Alberta Oilsands

Reprinted From CBC News – August 10, 2009



Photograph by: CBC

Environmentalists in Saskatchewan are calling for federal intervention to halt what they say is an increasing threat to northern lakes and forests from acid rain linked to oilsands development in Alberta. The Saskatchewan Environmental Society issued a news release to say that data, obtained by the society from the Saskatchewan Environment Ministry, reveals that rain falling in the La Loche area of the province's far north has a pH level that falls under the definition for acid rain.

The generally accepted threshold for normal rain is a pH of 5.6. Environment Canada has determined any value less than pH 5.0 may be termed acid rain.

Ann Coxworth, a spokeswoman for the environmental society, said data from the Saskatchewan government shows the average pH level for rain and snow in the La Loche area is 4.96.

"We have now a combination of that region being the most sensitive forest soil in Canada, most sensitive to damage by acid precipitation and an increase in the acidity of the precipitation," Coxworth told CBC News. "So it seems to us that is a situation that really needs to be attended to."

The society wants the federal government to regulate emissions from Alberta's oilsands. It says pollution crossing provincial boundaries puts the issue under national jurisdiction.

Coxworth said if acid rain continues to fall unabated, it will destroy forests and lakes in Saskatchewan's northern region. Coxworth said the federal government should impose regional caps on the amount of sulfur dioxide and nitrous oxide that activity associated with oilsands development can release into the atmosphere.



### Saskatoon Company Fined \$14,000 for Unauthorized Alteration of Shoreline at Wakaw Lake

Saskatchewan Environment – September 22, 2009

A Saskatoon company has been fined \$14,000 in Wakaw provincial court for the unauthorized alteration of the shoreline at Wakaw Lake. The company also paid \$1,300 in restitution for site remediation.

Urban Oasis Homes Inc. was convicted of one count under the *Environmental Management and Protection Act* for altering the shoreline at Nelson Beach without a valid permit. The company has complied with an Environmental Protection Order to clean up the altered site.

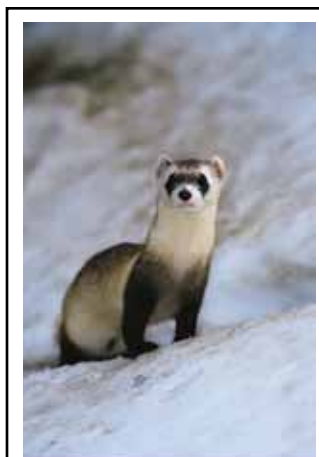
The charges were laid as the result of a call to the Ministry of Environment in August 2008. An investigation found that Urban Oasis Homes Inc. had contracted an excavating company to clear vegetation, trees and soil materials from the bed, bank and boundary of Wakaw Lake to build a beach. The work was done without the proper environmental authorization and permits.

"It is important that property owners around lakes find a way to carry out development without damaging our environment," Ministry of Environment's Compliance and Field Services Executive Director Kevin Callele said. "If a person is conducting work in and around water, the best thing for them to do is to contact their nearest Ministry of Environment office to discuss their development plans and the potential impact on the environment."

For more information, contact:

Gary Provencher, Saskatchewan Environment - Saskatoon  
Phone: 306-933-7928

### Ferrets Making a Comeback



With its long, slender body, the black-footed ferret easily searches the burrows and tunnels of its favourite prey, the prairie dog.  
Photograph by: Jeff Vanuga/Corbis

After vanishing from the Canadian Prairies more than 70 years ago, the black-footed ferret is once again making a comeback in Grasslands National Park in Saskatchewan. Parks Canada released 34 ferrets into their prime habitat, which is black-tailed prairie dog colonies in the park and in neighbouring ranchland in Saskatchewan. Additional animals are planned for release in the park in 2011.

The ferret is a buff coloured weasel type animal with distinctive raccoon-like masked eyes and dark cheeks and feet.

This is good news for conservationists, as the ferrets were almost extinct.

## Three Men Convicted In Connection With Saskatchewan Duck Shooting Video Posted on the Internet

*Saskatchewan Environment – August 11, 2009*

Saskatchewan Environment, August 11, 2009 - Three men have been fined a total of \$16,000 under the *Wildlife Act*, Saskatchewan and the *Migratory Birds Convention Act*, Canada. In addition to the fines they each received a three year hunting suspension under the *Wildlife Act* and a one year suspension under the *Migratory Birds Convention* regulations.

James Fraser was fined \$5,000 and Dave Fraser was fined \$5,000 and had to forfeit his video camcorder, which was used to record the incident. Jeremy Rowlands was fined \$6,000 and had to forfeit two rifles, which were used in the incident.

"Illegal hunting and waste of game robs the people of Saskatchewan of the benefits of our natural resources and the provincial government is committed to ensuring those who abuse our resources are prosecuted," Minister of Environment Nancy Heppner said. "The activities of these men were not condoned by the public, which was reflected by the large number of calls to the Turn In Poachers lines in both Saskatchewan and Alberta. Information from these tips led to the three individuals' arrest and subsequent charges."

Anyone who is aware of or who suspects environmental, fisheries, or wildlife violations is encouraged to report them to the nearest Ministry of Environment office or to call the province's toll-free TIP line at 1-800-667-7561 or #5555 for SaskTel cell phone subscribers.

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## MANITOBA News

### Nature Can Solve Climate Challenges

*Reprinted from Manitoba Wildlands – September 24, 2009*

Investing in natural areas, forests and coral reefs could have huge economic benefits. A new study highlights the economic value of our natural assets and suggests an investment of \$45 billion in protected areas could save nature-based services worth \$4.5 to \$5.2 trillion a year.

The study by The Economics of Ecosystems and Biodiversity (TEEB) found natural systems are crucial in fighting climate change. Germany and the European Commission launched the study, part of a global project to be published in 2010.

"The disproportion of investments in technological fixes versus investing in nature's ready-made solutions, tried and

tested over millions of years, is one of the great oversights of the 20th century," said Achim Steiner, Executive Director of the U.N. Environment Programme.



Photograph by: Manitoba Wildlands

Tropical forests provide services worth an estimated \$6,120 per hectare a year in food, building materials, carbon sequestration, biodiversity, water purification and opportunities from tourism. Coral reefs are worth

up to \$170 billion a year by providing nurseries for fish and protecting coasts from storms.

Investing in natural areas needs to be a key priority for governments attending the U.N. climate convention in Copenhagen this December.

## Manitoba Protects Two Largest Marshes

*Reprinted from Manitoba News Release – September 24, 2009*



Photograph by: Manitoba Conservation

Manitoba is strengthening its strategy for healthy waterways with an investment of \$1 million to protect and restore wetlands including Manitoba's largest marshes, Water Stewardship Minister Christine Melnick and Conservation Minister Stan Struthers announced.

"As part of our comprehensive strategy to restore and protect the province's wetlands, we are providing Ducks Unlimited with a grant of \$300,000 to restore Manitoba's two largest marshes: Netley-Libau Marsh on Lake Winnipeg and Delta Marsh on Lake Manitoba," Melnick said. "Restoring two of the largest marshes of their kind in North America will add another dimension to our government's commitment to ensure the health of Lake Winnipeg and Lake Manitoba."

In addition to the \$300,000 grant to Ducks Unlimited Canada, more than \$500,000 will be directed this year to the Wetland Restoration Incentive Program for the permanent restoration of lost wetlands through the purchase of conservation easements. Another \$200,000 will be used to support the province's overall wetland protection program including development of new policies and protection measures, Struthers said.

"The cost of restoring our internationally significant wetlands is small compared to the tremendous benefits they provide by improving the water quality of our great lakes, reducing greenhouse gas emissions and providing wildlife habitat and wildlife-related recreation opportunities," said Struthers. "The

Delta and Netley-Libau marshes are historically significant because early human populations relied on the wildlife living there. It's just another reason why wetlands form a critical part of our protected areas network."

Restoration of the Netley-Libau and Delta marshes is being guided by a working group led by Manitoba Water Stewardship and with representatives from the University of Manitoba, Ducks Unlimited Canada, Environment Canada, the International Institute for Sustainable Development, the Nature Conservancy of Canada and Manitoba Conservation.

"Large coastal lake marshes help to filter out excess nutrients, such as nitrogen and phosphorous, and studies conducted by the International Institute for Sustainable Development have shown that restoring the Netley-Libau Marsh could reduce nutrient loading to Lake Winnipeg by as much as six percent," said Henry Venema, director of the institute's Sustainable Natural Resources Management Program.

"Ducks Unlimited Canada is pleased to join the province, the University of Manitoba, the International Institute for Sustainable Development and other partners to begin the restoration of our two great coastal marshes, Netley-Libau and Delta marshes," said Bob Grant, manager of provincial operations for Ducks Unlimited Canada. "Water purification, carbon storage, fish, waterfowl and other wildlife habitat are just a few of these important services that have been lost or degraded over the years."

"I applaud the provincial government for working closely with its many partners and for leading initiatives to rehabilitate Delta Marsh and Netley-Libau Marsh," said Gordon Goldsborough, chair of the Lake Manitoba Stewardship Board and director of the University of Manitoba field station at Delta Marsh.

Netley-Libau and Delta marshes are both world-renowned lake marshes. Netley-Libau Marsh is designated as a Canadian Important Bird Area and is also a candidate for designation as a Manitoba Heritage Marsh by the provincial government. Delta Marsh is a Canadian Important Bird Area, a Manitoba Heritage Marsh and a site of international significance under the Ramsar, Iran, Convention on Wetlands.

Lake Winnipeg's Netley-Libau Marsh has declined in size and lost much of its normal complement of plants. Sediment levels have increased in the marsh's water. Lake Manitoba's Delta Marsh suffers mainly from damage caused by the common carp, a species introduced from Europe by early settlers, which destroys underwater plants critical to the marsh's function.

This year's work on the large marshes will focus on undertaking biological and engineering studies necessary to develop scientifically sound plans to guide restoration efforts. Extensive discussions will occur with all stakeholders once plans are developed.

The ministers said this announcement builds on the province's major investment announced in April of this year to protect ecologically significant lands in southern Manitoba. The Nature Conservancy of Canada is raising matching funds from other government and private contributors for a potential benefit of \$21 million for environmental protection in the province. ☪

## ONTARIO News

### New Rules for Using Nutrients on Farms Become Law

#### McGuinty Government Strengthens Standards That Protect Health and Environment

*Reprinted from Ontario Ministry of Environment News Release  
www.ene.gov.on.ca/en/news/2009/091802.php – September 18, 2009*

New rules that establish consistent standards and requirements for applying nutrients to farmland are now law. This applies to nutrients called non-agricultural source materials (NASM), which include yard waste, fruit and vegetable peels, food processing waste, pulp and paper biosolids and sewage biosolids.

The rules ensure NASM applied to the land at every Ontario farm meet strict criteria and are beneficial to the soil. This will protect the environment and the health of Ontarians.

In addition, farmers accepting nutrients, haulers carrying it and those that generate NASM are now regulated by either the Nutrient Management Act (NMA) or the Environmental Protection Act (EPA), not both. This removes an overlapping approval process.

"We have made significant changes to the requirements for applying organics to land," indicated John Gerretson, Minister of the Environment. "We have added new standards and improved others to protect human health, crops, the environment and Ontario's water supply. What is not changing is the ministry's compliance and enforcement activities. Our inspection process will help to ensure that materials are land applied according to our standards."

"Ontario has long supported the land application of quality organics," noted Leona Dombrowsky, Minister of Agriculture, Food and Rural Affairs. "We are taking a science-based approach to put standards in place under the Nutrient Management Act to protect public health and the environment. The use of non-agricultural source materials benefits farmers since it provides for options other than fertilizers, and it benefits Ontarians by keeping these materials out of landfills."

#### QUICK FACTS

- New odour categories have been developed based on materials and their odour potential. The categories will ensure proper land application and setbacks from dwellings and other occupied buildings - the stronger the odour the greater the separation.
- The Ministry of the Environment will continue to conduct compliance and enforcement activities related to the NMA, EPA and Ontario *Water Resources Act*.

#### LEARN MORE

- Learn more at [www.ontario.ca/nasm-moe](http://www.ontario.ca/nasm-moe) and [www.ontario.ca/nasm-omafra](http://www.ontario.ca/nasm-omafra).
- Synopsis of regulatory framework at: <http://www.ebr.gov.on.ca/> (posting number 010-6515)



## Environmental Penalties to Fund Local Projects

*Adapted from Ontario Ministry of Environment News Release at [www.ene.gov.on.ca/en/news/2009/082501.php](http://www.ene.gov.on.ca/en/news/2009/082501.php) – August 25, 2009*

Eligible groups in five areas of the province are invited to apply for funding from the new Ontario Community Environment Fund (OCEF).

The Ministry of Natural Resources, through the Ontario Stewardship program, and its 46 Community Stewardship Councils are working closely with the Ministry of the Environment to help promote the fund, identify potential projects and encourage the submission of funding applications.

Money in the fund comes from environmental penalties imposed on companies that violated regulatory requirements under Ontario's 'You Spill, You Pay' law. In 2008, the first year environmental penalty orders were issued, fines were paid by five facilities.

"Environmental penalties give the ministry a tool that can be applied swiftly to encourage quick and effective compliance with Ontario's environmental laws. It's only right that the funds are put to use in the community in which violations occurred," said John Gerretsen, Minister of the Environment.

Eligible groups in the following watersheds can now apply for a total of \$68,300 in funding:

- Goulais – \$17,200; Humber/Don Rivers – \$8,600; Lower Grand – \$9,000; Penetangore – \$24,900 and Whitefish – \$8,600.
- Eligible groups are Aboriginal communities and organizations, academic institutions, conservation authorities, municipalities, incorporated non-profit organizations and incorporated community-based groups.
- Projects can include environmental remediation, research and education relating to spills and restoration and spill preparedness.

To learn more, visit the ministry's Ontario Community Environment Fund website for maps of the watersheds and to learn about eligibility requirements and how to apply.

## Ontario Caribou in Peril Due to Road Building

*Reprinted from the Toronto Star - July 30, 2009*

The Ontario government should halt all logging and road building in endangered woodland caribou habitat, as six out of nine known populations below the 51st parallel are at risk of collapsing, environmentalists warn.

A report released by the Wildlands League reveals the formerly pristine habitats of six caribou populations have already been disturbed by logging and wildfires to the point where they likely will no longer sustain the extremely sensitive species.

A seventh caribou range is close to the established threshold beyond which scientists say caribou become too exposed to

predators and no longer reproduce sufficiently to maintain their numbers.

"We've always suspected trouble. We didn't realize it was this bad," says Anna Baggio, director of conservation with the Wildlands League, the Ontario branch of the Canadian Parks and Wilderness Society.



The endangered woodland caribou, which once roamed as far south as Algonquin Park, have had their numbers cut in half over the past century. Photography by: Ted Simonett

"We're already in emergency mode for this species," says her colleague, Trevor Hesselink, who wrote the report. "The government has to stop exacerbating the situation."

Woodland caribou are among the first species to be actively protected under Ontario's new Endangered Species Act. But the government is still developing its conservation plan and has not yet introduced habitat legislation for it that would lay out specifically where development could and could not occur. In the meantime, the province continues to issue logging permits.

Natural Resources Minister Donna Cansfield says all logging companies already have to submit plans that include caribou management. Her staff has assembled a panel of caribou scientists to develop a conservation strategy for the species.

"If there is new information out there, we are more than open to it," she said yesterday. "But I feel very confident we will have a very good strategy in place and very good regulation in place, based on good science, more research and the best advice in the world."

The caribou are considered an indicator species, reflecting the health of the boreal forest. They thrive only in untouched forest, roaming vast distances in solitude and feeding on lichen. They are extremely sensitive to development, as roads invariably bring predators, such as wolves. Once roaming as far south as Algonquin Park, their numbers have been cut in half over the past century.

"The more disturbances in an area, whether by fire or by humans, the less likely they persist," says Jim Schaefer, a professor of biology at Trent University who has studied the caribou for 25 years.

Schaefer was part of a science advisory group that produced the first large-scale national study on woodland caribou habitat for Environment Canada last year. They determined that if more than about a third of a caribou population's range is disturbed, the population will decline. ☎

## QUEBEC News

### Quebec Report Seeks To Divert Water, Generate Power

Reprinted from Reuters



Photograph by:  
Roger McLassus

A Montreal think-tank has proposed a huge scheme to divert water from three northern waterways down the Ottawa River, to divert water to the United States and in doing so produce a large amount of power. The scheme would send an extra 800 cubic metres per second of water through Ottawa, which is 40% more than the annual flow rate. This could generate up to \$9.5 billion a year according to a report released by the Montreal Economic Institute.

The report, entitled "Northern Waters: A Realistic, Sustainable and Profitable Plan to Exploit Quebec's Blue Gold," said that diverting the floodwater from north to south would boost levels on the St Lawrence River and let U.S. and Canadian authorities increase their use of fresh water from the Great Lakes without any risk to St Lawrence itself, a major international seaway.

"The revenue generated by exporting freshwater would be the result of complex negotiations between state, provincial and federal governments," said the report, compiled by former hydro-electric power engineer Pierre Gingras.

"Whatever the outcome of negotiations, and given the probable increase in the value of water in the coming years, this revenue from the sale of water would contribute significantly to the financial health of the Quebec government and the general prosperity of Quebecers."

The idea of bulk water exports from Canada has always been controversial, for political, environmental and security reasons. But Gingras said the scheme could net the French-speaking province some C\$7.5 billion a year, assuming the extra water supplied some 150 million people who paid a "very reasonable" C\$50 a year for the water.

The project would also build 25 hydro-electric plants and dams along the Ottawa River, generating electricity worth C\$2 billion a year. He put the cost of the project at some C\$15 billion and said it could be completed by 2022. "It should be a very profitable project for Quebec," he said.

But environmental group Great Lakes United said a project like Northern Waters could be devastating to the environment.

"The seasonal runoff is not surplus water. The rising and lowering of the rivers and lakes is critical to protecting the marsh which is home to so much wildlife," said program director John Jackson.

He said the project was contrary to legislation that forbids the bulk export of Canadian water from any of the five major basins, including the Hudson Bay Basin.

"There would be huge legal fights. There is no way you could win those battles," said Jackson.

The report indicated the environmental impact would be relatively small because the project would only capture "seasonal surplus waters." ☎

## ATLANTIC News

### Fundy Tidal Energy Demonstration Project Receives Approval

On September 15, 2009, the Nova Scotia Minister of Environment released a decision pursuant to Part IV of the *Environmental Assessment Act* giving approval for the Fundy Tidal Energy Demonstration Project to proceed.

The purpose of the project, proposed by the Fundy Ocean Research Centre for Energy, is to construct and operate a facility to demonstrate and test in-stream tidal devices and assess their potential to generate electricity. The marine demonstration site will consist of three underwater berths for turbines located in the Minas Passage just west of Black Rock, with power cables from the berths to an onshore facility located off West Bay Road, between the communities of Black Rock and West Bay, Cumberland County, Nova Scotia. Implementation is planned over a three year period (2009 – 2011).

The minister's decision report and conditions for the project are available at <http://gov.ns.ca/nse/ea/minas.passage.tidal.demonstration.asp>

### PEI Completes Registration of Private Wastewater Treatment Systems

Reprinted From PEI News Release - September 4, 2009

PEI provincial officials have registered all of the known private waste water facilities on Prince Edward Island, says Environment, Energy and Forestry Minister Richard Brown. The department's Water Management division confirmed that the last of the 28 private wastewater facilities had met the provincial requirement for registration.



"Having these system properly registered has been a priority. Now that they are all documented, it will be easier for our departmental officials to work with wastewater system operators and make sure that our regulations and standards are being enforced," said the minister.

Under the province's *Environmental Protection Act*, all operators of wastewater systems are required to register their operations with the Department of Environment, Energy and Forestry.

Media Contact: Ron Ryder

## Newfoundland Port au Choix Commits to Protection of Rare Plants

*Reprinted Newfoundland Environment and Conservation News — September 22, 2009*



Fernald's Braya is a member of the mustard family. It is very small, growing to a height of 1-7 cm and is a self-pollinating, perennial plant which lives for several years in ideal growing conditions.

Photograph by: Limestone Barrens

St Theresa's Elementary School and the Town of Port au Choix have entered into a Municipal Stewardship Agreement which designates areas of the Limestone Barrens habitat for conservation. On behalf of the Honourable Charlene Johnson, Minister of Environment and Conservation, Wallace Young, MHA for St. Barbe, signed the agreement which will help protect the threatened Fernald's Braya and other rare plant species in the area. The agreement also commits the St. Theresa's students and local residents to actions which

will help ensure the sustainability of these unique plants species which, in many cases, are not found anywhere else in the world.

"Co-operation and dedication to protection of the environment are key elements of agreements like this one," said Minister Johnson. "The spirit of stewardship is alive and well in towns like Port au Choix, and this is a wonderful example of residents, particularly our youth, making a commitment to work together with government to continue to find a balance between the natural environment, economic growth and development and sustainability. The agreement commits the municipality to protect species at risk habitat and accept a stewardship role in maintaining its integrity."

The plant life of the limestone barrens contributes greatly to the biodiversity of the province. The Strait of Belle Isle Ecoregion on the Great Northern Peninsula fosters a significant number of rare or unique species, including Long's Braya (designated endangered by the Committee on the Status of Endangered Wildlife in Canada) and Fernald's Braya (designated as

threatened). Of the 298 vascular plants considered rare on the island of Newfoundland, 104 of them occur on the Limestone Barrens. Twenty-two of these species are found only on the Great Northern Peninsula.

"Together, we are contributing to the future protection of this network of rare plants through the signing of such an agreement," said Wallace Young. "The significance of this area and its plant life extends well beyond our province, and I am delighted that the town is working together to ensure these plants are protected for many subsequent generations."

The Limestone Barrens Habitat Stewardship Program on the Great Northern Peninsula, an initiative funded in part by the federal Habitat Stewardship Program for Species at Risk seeks to protect Limestone Barrens habitat and associated species at risk populations through stewardship agreements, restoration, enhancement and education.

For more information on municipal stewardship agreements, contact Jonathan Sharpe at 709-637-2013, or [jonathansharpe@gov.nl.ca](mailto:jonathansharpe@gov.nl.ca). ☎

## TERRITORIES News

*Submitted by Anne Wilson*

Greetings to all from Yellowknife! As the days shorten and temperatures drop, the push is on to finish off field programs before ice forms. The North experienced a nice summer after the slow start to spring, and that helps make up for the rainy fall we are now having. In mid-September I had a preview of winter with some snow and cool temperatures while doing field work above the Arctic Circle in Paulatuk, NT. While most people might not think of two weeks hanging around a municipal lagoon and wetlands system as a highlight of "how I spent my summer", it was wonderful to get away from the paper mill and travel to Paulatuk for sampling in July and September!

The 2009 CSEB Workshop is coming together nicely, and we have an exciting line-up of speakers! The theme of "Environmental Monitoring – the Basis for Better Decisions" is cross-cutting for all the disciplines, and ties in to the notion of adaptive management. This is not a new concept for the North, as the diamond mines have been using monitoring results to inform management on an ongoing basis since the start of their operations, and have formalized these practices in adaptive management plans. Several studies and monitoring programs from the diamond mines will be presented at the upcoming workshop and provide great examples of how we can actively inform management through monitoring. Please visit the CSEB web site for a list of sessions and further information.

Various projects in Nunavut and the NWT remain active, although there are not many new projects coming on stream. One interesting one is the Avalon Rare Metals Inc. Thor Lake project, which is generating lots of attention.

### *Project Updates:*

#### **Mining:**

In the NWT, the three proposed new mines undergoing environmental assessment are just about through the scoping

stage. Terms of reference for Environmental Impact Statements (aka Developer's Assessment Reports in the NWT) have been released for the Tyhee NWT Corp.'s Yellowknife Gold Project, Canadian Zinc Corp.'s Prairie Creek Mine, and Fortune Minerals Ltd. NICO bismuth-gold-cobalt-copper property 160 km northwest of Yellowknife. We anticipate some weighty reading coming up! Information on current projects is available from the Mackenzie Valley Environmental Impact Review Board's site at <http://www.mveirb.nt.ca/>.

The latest update from De Beers on the Gahcho Kue Diamond Project focuses on further feasibility work, with no firm date given for the release of the Developer's Assessment Report.

Tamerlane Ventures Inc. continues to delineate reserves near the Pine Point Project test mine, which has not been constructed yet due to the unfavorable credit market and low price of zinc.

Avalon Rare Metals Inc. is conducting extensive baseline work in the Thor Lake area of the NWT, which lies just north of the Hearne Channel of Great Slave Lake. The company has mineral leases covering deposits of rare metals and earths that are used in green technology, as well as in alloys, electronics, glass, medical, and various specialized uses. These elements are currently sourced from China, but demand there is anticipated to limit supply within a few years. This project is a year or so from the project description submission which will trigger environmental assessment, but further information can be found at: [http://www.avalonraremetals.com/\\_resources/media/09MN01\\_br\\_raremetals.pdf](http://www.avalonraremetals.com/_resources/media/09MN01_br_raremetals.pdf)

In Nunavut, construction continues at Agnico-Eagle Mine's Ltd. Meadowbank Gold Mine, with in-lake dike construction proceeding to access the deposits which will be mined as open pits. Mining (pre-stripping) has commenced, and processing should start in January 2010. There have again been difficulties with sediment containment associated with dike construction; initially a double turbidity curtain was effective, however high winds caused breaching and allowed extensive migration of sediments through that area of the lake. The company is monitoring water quality/clarity on a daily basis, as well as sediment deposition and ecological effects.

Regulators are awaiting Newmont Mining Corp.'s vision of how they might proceed with development of the Doris North gold project and adjacent Hope Bay area deposits on a regional basis.

Not much has been going on for the various base metal properties in Nunavut. Things are quiet for Sabina Silver Corp.'s proposed Hackett River Mine (lead, silver, copper, lead,

and gold), and for OZ Mineral's High Lake and Izok Lake base metal properties.

Baffinland Iron Mines Corp. is seeking financing for what could be a 48 year mine life of their proposed iron ore mine. Resources are needed to do further baseline studies, and to draft the Environmental Impact Statement. The Final EIS guidelines should be released in October by the Nunavut Impact Review Board.

AREVA Resources Canada Inc. has applied for permits for mine development at the Kiggavik uranium property 80 km west of Baker Lake, and this has gone to the Nunavut Impact Review Board for environmental assessment.

### Hydroelectric

Taltson Hydro Expansion: The NWT Energy Corporation proposes to increase electricity production on the Taltson River system, with expansion of the existing facility plus construction of a 435 km long transmission line to the diamond mines. Following submission of the Developer's Assessment Report in March, the environmental assessment is currently in the community information session stage, preparatory to hearings in January 2010.

Quilliq Energy Corp, Nunavut: Quilliq proposes to build a dam at Jaynes Inlet, near Iqaluit, to generate power on a seasonal basis to meet the City's power demands. It would generate an estimated 5-9 MW of power.

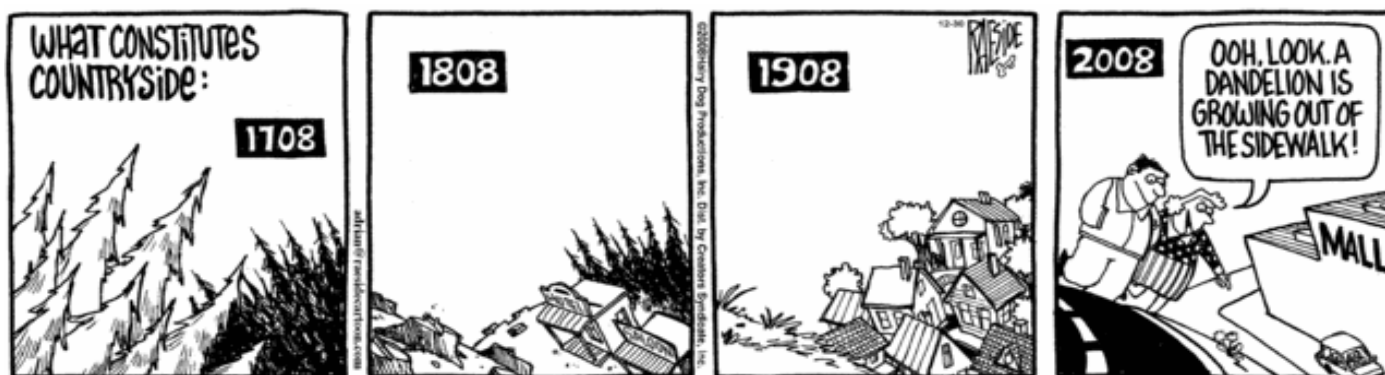
### Oil & Gas:

Nothing further on the Mackenzie Gas Project, which is on hold pending release of the Joint Review Panel's report by end of the calendar year.

### Municipal

The Canada-wide Strategy for the Management of Municipal Wastewater Effluent, which the Canadian Council of Ministers for the Environment signed in February, forms the basis for wastewater regulations under the Fisheries Act, which are expected to be drafted by the fall. Further information on the Strategy is available on the CCME website at: [http://www.ccme.ca/ourwork/water.html?category\\_id=81](http://www.ccme.ca/ourwork/water.html?category_id=81)

Implementation of the Strategy in southern Canada will involve collaboration between jurisdictions. Operators of southern systems will have to meet performance standards, conduct monitoring, and look at environmental discharge objectives (among other things) with time frames based on





risk and size. The North is being given a five year period to determine reasonable and protective performance standards for systems, which face challenges of extreme climatic conditions, infrastructure limitations, capacity, and logistics. Environment Canada is collaborating with other Northern stakeholders to identify and plan for further work to determine Northern performance standards. Monitoring programs are underway to characterize four Northern systems in order to evaluate performance, as well as collection of sampling data from a number of other systems to round out the community data inventory.

What are you and your colleagues doing north of 60 that our members would be interested in? You can let me know about it, or draft up an article for inclusion in the newsletter. Let's optimize our membership in the CSEB by using it as a networking and communication forum! Also, I would also appreciate hearing from northern members with ideas about what we can initiate by way of CSEB activities – both of the fun as well as the educational variety! Please email your thoughts to me at [anne.wilson@ec.gc.ca](mailto:anne.wilson@ec.gc.ca).

## Dealing with the Severe Decline of the Bathurst Caribou Herd

*Reprinted From Northern News Services – September 25, 2009*



The Bathurst caribou herd, considered to be the largest in the Northwest Territories, is estimated to have 31,900 animals this year.  
Photograph by: CBC

Results from a June survey released Thursday show a drastic decline in population. Since a survey done in 2006, the herd has declined by more than 95,000 animals, to 31,897 from 128,047.

"We now know the time for census, the time for study, for aerial surveys, while they have an important place, are now over," said Michael Miltenberger, minister of Environment and Natural Resources, during a press conference Thursday afternoon.

In a technical briefing earlier in the day, GNWT caribou biologist Bruno Croft said it's unclear what exactly is causing such a massive decline in a herd that, in 1985 totalled close to a half a million.

"We're scratching our heads," Croft said.

Croft said there are numerous possibilities for the decline, including predation, over-harvesting and changes to environmental conditions. The three diamond mines, according to wildlife biologist Jan Adamczewski, could be a contributing factor.

"There is some sort of formal displacement around the mines," he said. "You get closer to the mines and there is less use by the caribou. Whether or not that necessarily translates into a big effect at the population level is a bit harder to say."

Croft said the decline in female caribou, down to 16,604 from 55,593 in 2006, is a serious problem.

"Bottom line is we have to find ways to get more females to return to the calving grounds," he said.

Tlicho Grand Chief Joe Rabesca said he was shocked by the decline, and, along with the three community chiefs from Gameti, Whati and Wekweeti, he has already begun to speak to community members about the severity of the decline. Rabesca said action is needed now, and if it involves limiting aboriginal hunters, then so be it.

"We have to work with this government (the GNWT)," Rabesca said.

Miltenberger said the territorial government will be working with the Tlicho government to develop a proposal to put before the Wek'eezhii Renewable Resource Board by October laying out recommendations on how to improve the herd.

As for what measures will be taken to improve herd size and health, Miltenberger said some "tough decisions" are going to be made, specifically relating to sport hunting.

"Sport hunting is one of the things that will be dealt with," he said, adding the protection of subsistent hunting is important. In previous statements, Miltenberger has said if hunting of the herd needs to be restricted, sport hunters would be the first to go.

Dene National Chief Bill Erasmus said his people are concerned they will lose the ability to live off the land, like the aboriginal populations in southern Canada have.

"We're really concerned the same thing will happen to us," Erasmus said, adding at the bottom of the list is game hunting.

"We all know they want to keep their tags and we're going to have to say, *Is that practical?*" he said. "The unfortunate thing is someone has to pay the consequence."

## Baffin Bay Polar Bear Hunt Quota Goes Before Hearing

*Reprinted From CBC News.ca – September 28, 2009*

The disagreement between biologists and Inuit hunters over the number of polar bears in Nunavut's Baffin Bay region will take centre stage again this week when territorial wildlife regulators consider a new request to reduce the annual hunting quota in the area.

Concerned with overhunting in Baffin Bay, the Nunavut government has asked the Nunavut Wildlife Management Board to cut the quota or impose a moratorium on polar bear hunting before the hunting season begins next month.



The Nunavut government is concerned about overhunting. (CBC)

The board will discuss the government's proposal with hunters and biologists at a public hearing that starts Tuesday in Iqaluit.

"Of course, they don't see eye to eye at this moment, but we have always made the recommendation to them that we need to start incorporating traditional knowledge through scientific research," Harry Flaherty, the board's interim chair, told CBC News.

The Baffin Bay polar bear population is shared between Nunavut and Greenland, with each region controlling their respective domestic hunts.

Greenland's current hunting quota is currently 68 polar bears.

Last year, the Nunavut Wildlife Management Board recommended that Nunavut's hunting quota in Baffin Bay be kept at 105 polar bears, despite concerns from government biologists who say the combined polar bear hunt in Greenland and Nunavut hunters is not sustainable.

This year, the territorial government has presented the board with three options:

- reducing the hunting quota to 64 bears.
- setting a new quota altogether.
- imposing a complete moratorium on the Baffin Bay polar bear hunt.

But hunters say they want the hunting quota to stay the same, citing too many bears in the area.

"We know in Baffin Bay, even [in the] Greenland area, there's too many polar bears in this area," said Jayko Allooloo, chair of the Mittimatalik Hunters and Trappers Association in Pond Inlet.

The wildlife board is paying to bring in a hunter and an elder from each of the three communities that hunt for polar bears in Baffin Bay: Pond Inlet, Clyde River and Qikiqtarjuaq.

Allooloo said if the hunting quota changes this year, they would want compensation.

"We will try to make a proposal with the GN or maybe other parties about compensation. That's very important for us," he said.

Officials with the wildlife board say the public hearing on last year's Baffin Bay polar bear quota cost more than \$100,000.

## North Still Needs Scientists, Says David Hik

by Brian Murphy

Reprinted From [www.science.ualberta.ca](http://www.science.ualberta.ca)

Arctic and Antarctic research teams pulled back to warmer climates when the International Polar Year wrapped last March. But the call has gone out for a return to the poles for a sustained investigation into the accelerating effects of global warming.

David Hik, a University of Alberta biology professor and a lead researcher with IPY, is one of the researchers pushing for a return to the Canadian Arctic.

"IPY gave us a great snapshot of the state of the planet's polar regions," said Hik. "But in the Arctic, we made many observations that need a more thorough look, especially in the very early spring and the dead of winter."



Above: Marmots may be dying off during hibernation as warmer temperatures decrease snow insulation, says U of A researcher David Hik. Photograph by: UofA, Science

Hik says university calendars dictate when most northern research can be done. The only time professors and graduate students have for distant fieldwork is spring and summer.

"We have to be there as the snow begins to melt and we have to be there in the dark of winter to witness and document the effects of reduced snow cover," he said.

Hik says having researchers' boots on the Arctic tundra throughout the year will focus more intense research into a number of climate-change issues brought to light during IPY.

For example, the early onset of spring complicates the timing for calving caribou and their access to tundra vegetation when it's at its prime. "Warmer temperatures and an earlier growing season mean the best, nitrogen-rich grassland may come and go before calving caribou cows can get to it," said Hik. "The cows need that high-quality vegetation to produce milk."

Another issue is the reduction of snow cover and the loss of its insulation for hibernating animals across the Arctic. Hik takes particular interest in the plight of the hoary marmot's winter sleep.

"The marmot stores up enough energy to raise its body temperature from as low as three degrees Celsius to 38°C for brief periods during hibernation," he said. But less snow-cover insulation requires the marmot to heat itself up more often to combat the cold. "We think that more animals may die during hibernation because they just can't store enough energy to bring their body temperatures up."

Hik is hoping the increased work of all-season Arctic monitoring can be shared with the people who live there. Entire



northern communities have built up relationships with climate change researchers as they crisscrossed the Arctic during IPY, he says.

"People living in the North can keep an eye on the berry bushes, which are a food staple for many species," said Hik. He also notes that it was northerners who alerted biologists to another sign of climate change: the robin, among the most common of birds in the urbanized south, has become a more frequent visitor to the Arctic islands.

As a follow up to IPY, Hik co-authored a paper summarizing some of the research findings of the massive project. It was published this week in *Science*.

Hik is also helping organize a wrap-up conference for all of IPY's Arctic and Antarctic research teams next June in Norway.

"It's important that we synthesize all the work of thousands of scientists," he said. "We can show the planet's current climate-change trajectory and pull together the resources needed to address the most pressing concerns."

## Walrus Crushed as They Gather on Shrinking Sea Ice

By Andrew C. Revkin, *New York Times*

Reprinted from the *Edmonton Journal* – October 2, 2009

Half a century after Pacific walrus began recovering from industrial scale hunting, marine biologists are growing worried that they face a mounting threat from global warming.



Photography by: Bing Images

Masses of lumbering walrus have been crowding on beaches and rocks along the Russian and American sides of the Bering Strait in the absence of the coastal sea ice that normally serves as a late-summer haven and nursery.

While the retreats in sea ice around the Arctic this summer were not as extensive as in 2008 or 2007, the Chukchi Sea, at the north of the walrus subspecies' range, was largely open water.

On Thursday, biologists from the United States Geological Survey issued a report concluding that 131 walrus found dead near Icy Cape, Alaska, on Sept. 14 died from being crushed or stampeded. Several thousand walrus had been congregating in the area, a situation that scientists from the agency said was highly unusual.

Last month, a team from the World Wildlife Fund reported seeing 20,000 walrus on the shore at Cape Schmidt, Russia. In that same area, scientists in 2007 reported several thousand crushing deaths after tens of thousands of walrus crowded on the shoreline.

Walrus have endured more than 15 million years of climatic ups and downs, so experts do not foresee the species' becoming extinct, particularly if hunting remains controlled. (Thousands

are legally killed each year by indigenous communities in both countries.)

But there has been growing confirmation that the walrus is suffering substantial losses as the sheath of sea ice in coastal waters erodes in the summer.

The floes normally provide a floating nursery for pups while adults dive to root for clams and other food in the seabed in shallow coastal waters along the continental shelf. Last month, the federal Fish and Wildlife Service, responding to a lawsuit by the Center for Biological Diversity, an environmental group, concluded that there was sufficient scientific evidence of rising stress on the animals from climate change to consider granting the Pacific walrus protection under the *Endangered Species Act*.

That review is under way, and the service is taking public comment until Nov. 9.

The polar bear, which is similarly dependent on sea ice, was listed as threatened under the species act last year.

"I think there is reason to be concerned," said Brendan P. Kelly, a marine biologist at the University of Alaska, Fairbanks, who has been studying walrus for several decades.

Fatal stampedes among walrus have occurred in past years, Mr. Kelly said, citing research he conducted on a similar event in 1978 and reports by hunters on islands in the Bering Sea more than a century ago. But the expansion of open waters along the coasts raises the odds and adds to other pressures on the animals, he said.

For the moment, the Pacific walrus remains abundant, numbering at least 200,000 by some accounts, double the number in the 1950s.

The Atlantic walrus, a subspecies in Canada, Norway, Russia and Greenland numbering about 22,000, has never recovered from sustained slaughter.

Dr. Kelly said the long-term forecast of warming and less summer ice for the Arctic did not bode well for the Pacific walrus.

"The Pacific population did recover," he said. "But it is hard to imagine that it will not decline in the coming century." ☼



## ENVIRONMENTAL MONITORING: The Basis for Better Decisions PRELIMINARY PROGRAM

### Wednesday, October 14, 2009

5:30 – 7:00 pm Poster Session Setup  
5:30 – 7:00 pm Registration  
7:00 – 9:00 pm CSEB Board of Directors Meeting

### Thursday, October 15, 2009

#### Opening of the Conference ROOM: Courtyard 1

8:00 – 8:30 *Registration*  
8:30 – 8:45 **Welcome from the National Society**  
Brian Free, National President, CSEB  
8:45 – 9:00 **Welcome To Alberta**  
Hon. Rob Renner, Alberta Minister of Environment

#### Plenary Session: Environmental Monitoring – Setting the Scene

9:00 – 9:50 **The Boreal Biome: A Climate Change Time Bomb?**  
Dr. David Schindler, University of Alberta  
9:50 – 10:20 *Coffee and Networking Break*  
10:20 – 11:10 **The Real Principles of EIA Monitoring Programs**  
Dr. Bill Ross, Independent Environmental Monitoring Agency  
11:10 – 12:00 **Effective Environmental Monitoring – More Honoured in the Breach Than the Observance**  
Dr. Peter Chapman, Principal/Sr. Environmental Scientist, Golder Associates Ltd.

**Lunch: 12:00 – 1:30 PM**

*(included as part of registration if registered before 7 October)*

#### Government Approaches to Environmental Monitoring ROOM: Ballroom

1:30 – 1:55 **The Evolution of the Environmental Effects Monitoring Programs**  
Bonna Ring, National Environmental Effects Monitoring Office  
1:55 – 2:20 **Integrated Monitoring, Evaluation & Reporting Framework**  
Albert Poulette, Director, Integrated Monitoring, Evaluation & Reporting, Alberta Environment

2:20 – 2:45 **Water quality and aquatic ecosystem monitoring cases in Alberta and their influence on environmental management and policy**  
Leigh Noton, Alberta Environment  
2:45 – 3:15 *Coffee and Networking Break*

#### Concurrent Sessions Case Studies

	ROOM: Linden Oak Room	ROOM: Tamarack Room
3:15 – 3:40	<b>Aquatic Effects Monitoring - Diavik Diamond Mine</b> Gord MacDonald, Principal Advisor Sustainable Development and Seth Bohnet, Senior Environmental Coordinator, Diavik Diamond Mine Inc.	<b>Development of an Environmental Monitoring Program for Fish Community, Population and Individuals Exposed to Multiple Municipal Wastewater Discharges, Canada</b> G. Tetreault <sup>1,2</sup> , C. Brown <sup>1</sup> , M. McMaster <sup>2</sup> , J. Bennett <sup>2</sup> , B. Knight <sup>2</sup> , Kallie Shires <sup>2</sup> , and M. Servos <sup>1,3</sup> : <sup>1</sup> University of Waterloo, <sup>2</sup> Environment Canada, <sup>3</sup> Canadian Water Network
3:40 – 4:05	<b>Analysis of Water Quality Variability in Two Lakes near the EKATI Diamond Mine</b> Mark Wen, Rescan Environmental, Simon Bonner, Simon Fraser University, and Carl Schwarz, Simon Fraser University	<b>A Fish-Based Index Of Biological Integrity For Assessing River Condition In Central Alberta</b> Cameron E. Stevens, Golder Associates Ltd.; Trevor Council, and Michael G. Sullivan, Alberta Sustainable Resource Management
4:05 – 4:30	<b>Monitoring and Remediation of Fish Passage at an Undersized Road Culvert at Hill Creek, NWT</b> Scott MacNeill and Nathan Schmidt, Golder Associates, Edmonton	<b>Assessing the Effectiveness of a Constructed Arctic Stream Using Multiple Ecological Attributes</b> N.E. Jones <sup>1</sup> , G.J. Scrimgeour <sup>2</sup> , & W.M. Tonn <sup>3</sup> (Presenter) <sup>1</sup> Ontario Ministry of Natural Resources, <sup>2</sup> Parks Canada, <sup>3</sup> University of Alberta

Thursday, October 15, 2009 (continued)

- 4:45 – 5:30 **CSEB Annual General Meeting**
- 6:30 – 8:30 **CSEB Banquet** (Ballroom)  
Guest Speaker: Dr. Lu Carbyn, Emeritus Research Scientist, Canadian Wildlife Service

## Friday, October 16, 2009

- 8:30 – 9:00 *Pastries, Coffee, Networking and Poster Session Viewing*

<b>Focusing in on Species Groups</b> <b>ROOM: Linden Oak Room</b>	<b>Ecosystem Monitoring</b> <b>ROOM: Tamarack Room</b>
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|---------------|---|--|
| 9:00 – 9:25   | <b>Analysis of Water Quality Variability in Two Lakes near the EKATI Diamond Mine</b><br>Mark Wen, Rescan Environmental, Simon Bonner, Simon Fraser University, and Carl Schwarz, Simon Fraser University | <b>A Fish-Based Index Of Biological Integrity For Assessing River Condition In Central Alberta</b><br>Cameron E. Stevens, Golder Associates Ltd.; Trevor Council, and Michael G. Sullivan, Alberta Sustainable Resource Management |
| 9:25 – 9:50   | <b>Caribou Monitoring at Arctic Diamond Mines</b><br>Damien Panayi, Golder Associates Ltd., Yellowknife   | <b>Boundary Bay Assessment and Monitoring Program (BBAMP):</b><br>Jim Armstrong, Utility Analysis & Environmental Management Division, Metro Vancouver   |
| 10:15 – 10:45 | <i>Pastries, Coffee, Networking and Poster Session Viewing</i>  |  |
| 10:45 – 11:10 | <b>Monitoring the Western Grebe in Alberta: Occurrence or Abundance as the parameter of interest?</b><br>M.E. Erickson., M.S. Boyce, and C. Found, University of Alberta                                  | <b>Ekati Incineration Effects On Sediments</b><br>Anne Wilson, Environment Canada  |
| 11:10 – 11:40 | <b>Woody Trees and Shrubs as Long-Term Monitoring Systems for Air and Soil Pollution</b><br>Dr. Bill Paton, University of Brandon   | <b>Mackenzie Delta Monitoring</b><br>Dr. Steve Kokelj, INAC  |

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|---------------|--|---|
| 11:40 – 12:00 | <b>Merging Aboriginal Traditional Knowledge and Western Science to assess diversity in ciscoes (<i>Coregonus spp.</i>)</b><br>Dr. Andrew Muir, Paul Vecsei, Hilary Machtans, Golder Associates, Yellowknife; Kristin Floress, Univ. of Wisconsin; Todd Slack, and Jennifer Drygeese, Yellowknives Dene First Nation. | <b>Using Lichens As Bioindicators of Air Pollution Deposition Near Remote Mining Operations</b><br>Shanti Berryman and Justin Straker, Stantec, Sidney BC |
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### Lunch: 12:00 – 1:30 PM

(included as part of registration if registered before 7 October)

## Afternoon Single Session and Wrap-up

ROOM: Ballroom

- 1:30 – 2:00 **Scientific Design of an Integrated Environmental Monitoring Program for the Boundary Bay Watershed**  
Jim Armstrong, Utility Analysis & Environmental Management Division, Metro Vancouver
- 2:00 – 2:30 **Cumulative Effects Monitoring Programs**  
Dr. Bill Ross, University of Calgary
- 2:30 – 3:00 *Coffee, Networking Break and Poster Session Viewing*
- 3:00 – 3:45 **Workshop Wrap-up**  
Dr. Peter Chapman, Golder Associates Ltd., Burnaby BC
- 3:45 – 4:00 **Closing Remarks**  
Anne Wilson & Gary Ash, Co-Chairs

## Saturday, October 17, 2009

### Field Trip (Optional at Extra Cost)

- 8:30 – 3:30 Clifford E. Lee Nature Sanctuary and/or Wagner Bog, West of Edmonton

## Poster Session

- Title: **From Biodiversity Monitoring to Biodiversity Science in Boreal Alberta**  
Authors: S.J. Mayor, S. Boutin, E.M. Bayne, F. He, University of Alberta, Edmonton
- Title: **The Importance of Reference Site Selection In Environmental Effects Monitoring Studies**  
Authors: Eva Kuczynski, Paula Siwik, and Shelly Boss, Environment Canada



# Canadian Society of Environmental Biologists

## Environmental Monitoring – The Basis for Better Decisions

Workshop and Annual Meeting  
October 15–17, 2009 | Edmonton, Alberta



**Plenary Keynote Speakers:** Dr. David Schindler, University of Alberta  
Dr. Bill Ross, University of Calgary | Dr. Peter Chapman, Golder Associates Ltd., Burnaby  
**Rapporteur:** Dr. Peter Chapman, Golder Associates Ltd., Burnaby



<b>FULL:</b>	Members: \$150
	Non-Members: \$190
	2 Day Conference, lunches + banquet
<b>STUDENTS:</b>	Members: \$ 50
	Non-Members: \$ 70
	2 Day Conference, no banquet
<b>SINGLE DAY:</b>	Members: \$ 75
	Non-Members: \$105
	Banquet: \$ 35
	Field Trip: \$ 35

**REGISTRATION**

### NOTICE OF WORKSHOP

**Workshop Sessions:** Thursday October 15 & Friday October 16, 2009

**Local Field Trip:** Saturday Oct 17, 2009 - Clifford E. Lee Nature Sanctuary

Days Inn & Suites West Edmonton, 10010 - 179A Street NW, Edmonton, Alberta

### SESSIONS

- **Plenary Session: Environmental Monitoring — Setting the Scene**
- **Case Studies**
- **Government Approaches to Environmental Monitoring**
- **Focusing in on Species Groups — Aquatic and Terrestrial Species**
- **Ecosystem Monitoring**
- **Scientific Design of Monitoring Programs**
- **Cumulative Effects Monitoring**

**CONTACT:** Anne Wilson or Gary Ash | [anne.wilson@ec.gc.ca](mailto:anne.wilson@ec.gc.ca) | [gash@golder.com](mailto:gash@golder.com)

**Program & Registration: Go to [www.cseb-scbe.org](http://www.cseb-scbe.org)**



## The Canadian Society of Environmental Biologists

48<sup>th</sup> Annual Meeting

Environmental Monitoring – The Basis for Better Decisions

**October 15 & 16 2009, Field Trip October 17**

Days Inn West at 10010 179A Street NW,  
Edmonton AB T5S 2T1

### REGISTRATION FORM

Name: \_\_\_\_\_  
First Last Title

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
City Province/State Postal Code/Zip Code

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

Registration Fee:\*

**Full** (member) \$150.00 \_\_\_\_\_ Includes two-day workshop, lunches, one banquet ticket  
(non-member) \$190.00 \_\_\_\_\_ Includes two-day workshop, lunches, one banquet ticket

**Student** (member) \$50.00 \_\_\_\_\_ Includes two-day workshop, lunches  
(non-member) \$70.00 \_\_\_\_\_ Includes two-day workshop, lunches

**Single Day** (member) \$75.00 \_\_\_\_\_ Includes lunch Check Day: Thursday October 15 ☐  
(non-member) \$105.00 \_\_\_\_\_ Includes lunch Friday October 16 ☐  
(student) \$40.00 \_\_\_\_\_ Includes lunch

**Extra Banquet Ticket** \$35.00 \_\_\_\_\_ Note Any Dietary Requirements? \_\_\_\_\_

**Attend Local Field Trip (to be held on Sat. 17 Oct.)** \$35.00 \_\_\_\_\_

**TOTAL FEES:**

\$

**DO YOU PLAN TO ATTEND THE BANQUET  
(Thursday 15 Oct)?** Yes ☐ No ☐

**\*Note: No Refunds after 5 October 2009**

**PAY BY CHEQUE:** Please make cheque payable to "CSEB"

Mail To: CSEB Annual Meeting  
C/o Danette Sahulka, Stantec  
#103-611 Corydon Avenue  
Winnipeg, MB R3L 0P3

**PAY BY CREDIT CARD: \*\***

Check Credit Card Type: Visa ☐ MasterCard ☐ (Sorry no American Express)

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Authorized Signature: \_\_\_\_\_

**\*\*Note: Credit Card charge will show as Golder Associates Ltd.**

Fax Form: Attention Danette Sahulka, Stantec at (204) 284-4795

# CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS

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**Student Members:** persons who are enrolled in an accredited college or university in a discipline of the biological sciences, and who are preparing themselves for professional work in teaching, management, or research related to natural resources and to the application of sound ecological principles to management of the environment.

**Associate Members:** persons who support the purposes and activities of the Society but who do not qualify for Regular or Student membership.

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**Membres Étudiants:** les personnes qui étudient dans un collège ou une université reconnu dans une discipline des sciences biologiques, et qui se préparent à travailler comme professionnel soit en enseignement, aménagement ou recherche tenant aux ressources naturelles et à l'application de principes écologiques à l'aménagement de l'environnement.

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*Complétez cette formule et retournez avec un chèque payable à:  
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