



THE CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS Newsletter / Bulletin

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CSEB Newsletter Bulletin SCBE

VOLUME 71, ISSUE 2, 2014

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

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Date of Issue- July 2014

Cover Photos:

Front Cover: Fish biologists from Golder Associates Ltd. capturing and tagging Arctic Char at Nulahugyuk Creek, near Kugluktuk, Nunavut, as part of a study to enhance Arctic Char migration conditions. Arctic Char migrate from the Arctic Ocean to spawn and overwinter in the upstream lake. The study is being conducted in conjunction with the Kugluktuk Hunters and Trappers Organization, and local community members, with funding and support from Environment Canada, NSERC, Nunavut Department of Environment, MMG Group, and Golder Associates Ltd.

Back Cover: Fish biologists (Ryan Popowich, Davin Swift, and Matthew Gilbert) from Golder Associates Ltd., capturing Arctic Char for tagging to monitor migrations in Nulahugyuk Creek, near Kugluktuk, Nunavut.

Photo Credit: Jonathon Niptanatiak (Kugluktuk Hunters and Trappers Organization)

Back Cover: (Lower Right): Arctic Char struggling to make it up Nulahugyuk Creek during low flows prior to construction of a channel to facilitate upstream migration. Mortality from stress caused from strandings was commonly observed. (Lower Left): Community members from Kugluktuk with biologists from Golder Associated Ltd applying traditional rock weir methods to enhance migration conditions in Nulahugyuk Creek for Arctic Char

Photo Credits: Davin Swift, Golder Associates Ltd.

Printed in Canada ISSN: 0318-5133

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CSEB NEWSLETTER 2014

Vol. 71, Number 2 Summer 2014

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

Editor: Gary Ash

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

All original text in the Newsletter / Bulletin may be reprinted without permission with a citation to the Canadian Society of Environmental Biologists.

LE BULLETIN de la SCBE 2014

Vol. 71, Numéro 2 Été 2014

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.

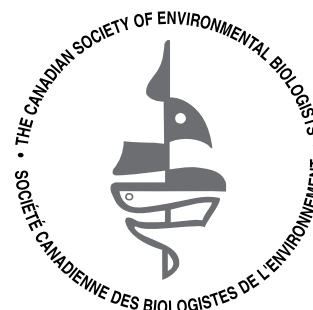
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Impression: LaserText Digital Print & Copy Centre, Edmonton, AB sur le papier recyclé.

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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

By Robert Stedwill, CSEB President

I am encouraged. Although Saskatchewan has suffered terribly this summer from unusual amounts of rain, with mallard ducks swimming in the community gardens where I garden, and geese and their goslings floating across the walkway around Wascana Lake here in Regina, our provincial and federal governments are doing something positive for the environment.

The federal government is implementing the National Conservation Plan whereby money (\$250 million over five years) will be invested in “buying land, support[ing] volunteer conservation efforts and expand[ing] the preservation of marine and coastal territory”. It will also underwrite new initiatives to restore wetlands and encourage Canadians to connect with nature close to home. This latter point is very important in my view, from the perspective that in recent years the economy has had the higher profile, and there has been a definite disconnect with the environment.

Saskatchewan is revisiting legislation dating back to the 1980s that sheltered crown land from sale or development under the *Wildlife Habitat Preservation Act*. Some may argue that no changes to the designated lands should be made, however, when first implemented; all lands thought to be sensitive were included, including adjacent lands, just to be safe. This second look at the original lands designated for protection will address land specificity to determine its future practical designation under the Act.

These two initiatives on the part of the federal government and the government of Saskatchewan are about engaging Canadians, to better understand the environment around them and appreciate it more, and looking at practical applications of the statutes and regulations, with Canadians in mind. It behooves us as biologists to use our skills in both instances, ensuring that participants in both undertakings understand the responsibility of the respective outcomes. Done properly, everyone can come out a winner.

REGIONAL News

BRITISH COLUMBIA News

Signals of Systemic Unsustainability?

By Loys Maingon (RPBio.), BC Director

Perhaps the most important event in BC for environmental scientists this summer has been the surprising June 26 Supreme Court's Tsilhqot'in ruling (*Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44).¹ Hailed as a "game changer," that took both appellants and respondents aback, this judgment may just signal a broader and more sweeping revision in our global approach to the way we manage the environment and the economy. As the business sector has been quick to note, the implications inherent in this judgment go to the core of how we do business and how we set our social and economic priorities.

In many ways, this judgement should be taken as a recognition that even business which, in keeping with the goals and assumptions set out in the 1987 Brundtland Report, has been perceived until now to be "sustainable," is reaching its limits, or tolerance point.

Tsilhqot'in has been hailed by some as a watershed moment in environmental management, but the question is: in what sense does this local judgement really affect globalized business? How does it fit into current environmental management trends touted by federal and provincial governments alike?

The importance of this judgement is not just that this is the first time that the Supreme Court has declared Aboriginal title to the land outside a reserve.² It re-affirms the fiduciary obligations of government - not to business, but to people and the land. In doing so, it casts doubt on the potential changes made by the current federal government in the environmental assessment process for energy projects, which has given the National Energy Board extraordinary powers that seem weighted in favour of the oil and gas industry.

The apprehensions of the business community are well laid out by Ravina Bains in the Fraser Institute's report: *A Real Game Changer: An Analysis of the Supreme Court of Canada Tsilhqot'in Nation v. British Columbia Decision*.³

There is a kind of quiet desperation in the articulation of alternatives open to a government that could still act on behalf of business interests (all of which stands in contradiction to the de-regulatory free-enterprise mantra that would keep government out of business and let "the market" determine everything). As Baines stresses:

"The judgment reaffirms that consultation processes and the justification of infringements of Aboriginal rights and title are the responsibility of the Crown and not project proponents. It will mean that if development is to occur on Aboriginal title land against the wishes of the First Nation, governments will have to be advocates for third party projects."

*Where there is no consent, and the potential infringement cannot be justified, proposed projects may be set aside by the court. This is also true for existing development projects. This puts current and potential development at risk and results in increased uncertainty for economic development in British Columbia."*³

Tsilhqot'in shifts the priorities that successive governments have given to the interests and leadership of the business community, to the interests that a local population has in its environment and the obligations that a government has to that population.

In this sense, *Tsilhqot'in* may be part of global trend heralding a much needed paradigm shift consistent with the objectives set out by Robert Costanza et al. in their 2012 United Nations report: *Building a Sustainable and Desirable Economy-in-Society-in-Nature*.⁴ For those who are not familiar with this document, it is a must-read - if only because although much of what it proposes might at first seem Utopian, a judgement like *Tsilhqot'in* reminds us that, while business priorities are based on the economic paradigm of GDP, which marginalizes human capital and natural capital as residuals to economic activity - it is still natural and human capital, not GDP, that remain the real bottom-line and cornerstone of any economy. The market needs resources and social license, even if it takes them for granted. *Tsilhqot'in* makes human and natural capital the principal bases for economic activity, and treats development as a residual.

The judgement took everyone by surprise because it stands on their head all the assumptions inherent in GDP.

That human and natural capital are the priority for *Tsilhqot'in* is self-evident in the immediate outcome of this judgement. On July 14, the Union of BC Indian Chiefs launched nine constitutional challenges to the Northern Gateway Project.⁵ Grand Chief Stewart Phillip and others have made it clear that natural capital and building a different economy in which natural capital is accounted for are their priority:

"When I am standing out on the land ...shoulder to shoulder, it's not going to be for a better deal. It's going to be to protect the land and the environment.....This is a tremendous waste of taxpayers' money when we are all trying to build an economy".⁵

This question is not unique to British Columbia. Although the government of Nunavut has expressly rejected fracking, the federal government has just approved fracking, based on the National Energy Board process, which is seen by many to favour business interests. Again *Tsilhqot'in* will undoubtedly prove instrumental in redirecting priorities, and proposing new economic paradigms, since "business as usual" is deemed untenable.

Building a Sustainable Desirable Economy-in-Society-in-Nature is founded on a pragmatic economic and environmental assessment of the unsustainability of the economic models that grew out of the postwar conditions at Bretton Woods in 1944. The report analyses the ability of three types of economic models to meet the economic changes human society needs to make to address the challenges posed by climate change. The three models are 1) the current economic model based on GDP measures, 2) the green economic sustainability model of the Brundtland Report, which decouples GDP from carbon impacts, and 3) the ecological economic model, which restrains development and fully accounts for natural and social capital using the ISEW (Index of Sustainable Economic Welfare) and GPI (Genuine Progress Indicator) to measure economic performance.

Conventional economic models propose that human well-being can be measured in terms of national gross domestic product, and that well-being is a product of an economy of endless growth. It is the vision we have grown up with, but it is not the only paradigm available. Any paradigm based on GDP is very closely associated with the concept that a rising tide lifts all ships, that is, that growth will benefit everybody. This is the concept that the French economist, Thomas Picketty has recently debunked by analyzing three centuries of economic data, which demonstrate the growing economic and income inequalities that have vast negative environmental and social impacts.⁶

Paradigms change when they can no longer answer the sets of problems before us. GDP answered global economic problems posed at Bretton Woods in 1944 to re-build the European economy. The set of problems we now face have changed, and GDP is no longer adequate to meet the challenges of this century.

As Costanzo et al. have been repeatedly discussing for the past three decades in key publications such as *Science*, and *Nature*, for earth scientists or environmental biologists, these

economic considerations have very important ecological and environmental consequences. The central environmental outcome of the current economic model is climate change. The economy's impact on natural capital is the principal driver of global environmental changes. Inasmuch as endless development requires an endless energy supply, business structured around the concept of GDP has played a direct and disproportionate role in both the causation and the politics of climate change.

In the light of the ongoing and developing reality of climate change, the assumptions of endless development and what they continue to imply for the loss of natural and social capitals, the authors remind us:

"As Paul Raskin has said: Contrary to the conventional wisdom, it is business as usual that is the utopian fantasy, forging a new vision is the pragmatic necessity".⁷

Just how unsustainable the pro-business fiction has become was made obvious on July 8 when the provincial associations of professional planners, foresters and biologists, found it necessary to issue a joint statement recognizing that: "*climate change is occurring and it has fundamental impacts on British Columbia's communities and ecosystems*".⁸ Contrary to the media fanfare that this felicitous recognition is a first, what should strike the reader is that these groups have a vested interest in the business community's success, and have until recently been in the forefront of climate change doubting. It is only the unsustainability of the current developing economic and environmental situation and the growing gap between the state of natural capital and the economy that forces, even upon its strongest supporters, a realization that the system cannot be made sustainable, as the Brundtland Report proposed. Large-scale social changes are now inevitable if we are ever to meet the challenges of global environmental changes.

Globally, the links between the unsustainability of the economic paradigm and the environmental changes it is driving, and our failure to respond decisively, were brought home this week in two parallel articles on the impacts of neo-nicotinoids. The summer issue of *BirdWatch* published a good but very cautious article "*Pesticides and Bird Health: Neonicotinoids in the Crosshairs*",⁹ with extensive industry comment just as Dutch research on the same topic was published in this week's issue of *Nature*. The Dutch study demonstrates that a mere 20 nanograms per litre of the neonicotinoid imidacloprid in aquatic environments results in a regional 3.5% decline in insectivorous birds, which amounts to a 30% decline in 10 years.¹⁰ The important point that Hallmann et al. make is that, in keeping with previous reviews, neonicotinoids are not simply the "selective toxins" industry claims. They are working their way up the food chain

at concentrations equivalent to past persistent pollutants in soil and water, and are altering entire ecosystems.¹¹ This research confirms part of the review undertaken in 2012 from an immunological perspective.¹²

The striking reason why the Dutch study has been possible is because, as Dr. Dave Goulson has pointed out, politicians and regulators have turned a blind eye to the potential impact of neonicotinoids in order to enhance business. Unlike other European nations or Canada and the USA, Holland has been monitoring its waters for neonicotinoids since the introduction of their use in agriculture, and, therefore, could provide empirical evidence, not available from industry research. In Canada, Dr. Chrissy Morissey at the University of Saskatchewan's Ecotoxicology Unit, is beginning to monitor neonicotinoids in prairie waters.

As de Kroon, one of the authors of the Dutch study has pointed out:

"We can't go on like this, it has to stop." *Tsilhqot'in Nation v. British Columbia* is perhaps the beginning of a practical realization that the uncoupling of Built, Human and Natural capital is unsustainable. It is probably a first clear marker of the unsustainability of placing business interests first and relegating natural capital to a residual role. To be sustainable an economy must prioritize the preservation and enhancement of natural capital.

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ALBERTA News

By Joseph Hnatiuk, National CSEB Director and
Director Alberta Chapter.

The past several months were extremely busy for me in Alberta. Some of the activities included attending the first two day meeting of the Alberta Endangered Species Conservation Committee at Handhills Lake Stampede as a representative of Nature Alberta and the Canadian Society of Environmental Biologists.

The major topics discussed in varying details included the following:

- Recovery Plan for Limber Pine in Alberta;
- Recovery Plan for Athabasca Rainbow Trout in Alberta;
- Species At Risk from a Rancher's Point of View;
- Information about Alberta's Special Areas; and
- A Round table discussion.

The details of these discussions will be published in future CSEB newsletters.

A substantial amount of time was spent discussing the current sage grouse status in Saskatchewan and Alberta. The University of Calgary also noted that to this point in (first attempt), they have been able to hatch some sage grouse chicks in their University laboratory in Calgary. This effort is one of several partnership attempts to restore the sage grouse population.

The second day was a field trip to several protected areas as well as an award winning ranching operation. A great opportunity to see the cooperative grass roots efforts by Government, Industry, Ranchers, and NGOs.

One additional meeting was held of the Stakeholder Advisory Committee to the Alberta Government to discuss the draft scenarios for the Little Smoky and A La Pêche Caribou Range and Action Plan. The Plan may be completed within a year.

Several meetings/planning sessions were held regarding continued development of an odour management protocol/handbook that should be available for Government, Industry, and the Public to use. The document also will have information regarding effects of various pollutants on the ecosystem. Part of the work will supplement the work being done on Ambient Air Quality Objectives Stakeholder Advisory Committee, of which I am a member of on behalf of CSEB.

SASKATCHEWAN News

Summer – 2014

By Robert Stedwill, CSEB Regional Director

There has been no activity in Saskatchewan with respect to the provincial chapter. Certainly I have discovered that the time to be contacting biologists is not in the summer, as most self-respecting biologists would rather be in the field! I remember all too well.

As referenced in the president's report, the provincial government announced on May 12 "a new land management initiative that balances economic growth with responsible land management. The Southern Conservation Land Management Strategy will offer agricultural lessees the opportunity to purchase eligible parcels of Crown land previously designated under *The Wildlife Habitat Protection Act (WHPA)*." Although of some concern, it is felt by the provincial government that "the strategy accommodates both public and private ownership, using modern conservation tools to make sure that ecological values are maintained, regardless of ownership." There is a belief, one presumes, that conservation and agricultural stakeholders are knowledgeable about the lands in question, and contributed to the development of the strategy.

As it turns out, "all WHPA-designated land in southern Saskatchewan has been evaluated using a science-based ecological assessment tool and has been classified into three categories:

- Approximately 1.7 million acres with high ecological value will be retained under Crown ownership and WHPA protection;
- Approximately 1.3 million acres with moderate ecological value may be eligible for sale with the protection of a new Crown conservation easement; and
- Approximately 525,000 acres with lower ecological value may be eligible for sale, without restrictions.

Not all land classified as low or moderate will be available for sale. An additional review will occur to assess other factors that may influence land eligible for sale. Land with high ecological value will not be considered for sale. Additionally, vacant Crown land in the south with high ecological value will be considered for protection under WHPA.

The Conservation Easements Act was amended to create a new Crown conservation easement, which can be applied to Crown lands prior to sale. The amendments include new compliance tools, including stop-work orders, equipment seizures, and injunctions. In addition, maximum fines

for contravention have been increased from \$2,000 to \$100,000 for individuals and from \$50,000 to \$500,000 for corporations. Additional fines may be charged for continuing offenses.”

Time will tell whether the strategy is working for the benefit of farmers and ranchers for whom the strategy is designed; but more importantly, to the benefit of the environment.

MANITOBA News

Ecological Services Assessment Published

By Bill Paton, Manitoba Regional Director

Manitoba’s vast boreal forest wetlands have been estimated to be worth \$117 billion in carbon offsets.

In the 20-page study, “Manitoba’s Blue Mosaic,” a collaborative effort of Ducks Unlimited and the Boreal Songbird Initiative and funded by the Pew Charitable Trusts, offers a glimpse into a scientific reality few people know about.

The study focuses on the province’s wealth in its hundreds of lakes and wetlands that filter water across the north and act as a gigantic nursery for birds and animals, including endangered species such as woodland caribou.

“Covering more than three-quarters of the province, Manitoba’s boreal forest is home to millions of migratory birds (including dense regions of nesting waterfowl), some of Canada’s most iconic large mammals, deep carbon stores that help to cool the planet and some of the most impressive networks of wetlands and waterways on Earth,” an announcement for the study noted.

Looking at nature with dollar signs is a way that scientists can emphasize the importance of nature to the public, government and industry.

Cattail wetlands have been demonstrated to be the largest carbon dioxide sink in boreal regions around the world. Recent action on the part of the Manitoba government to prohibit further removal of wetlands recognizes the importance of these ecosystems in nutrient removal from water. Financial incentives need to be offered to encourage landowners to restore wetlands in the prairies. It has been estimated that approximately 60% of wetlands have been removed in the prairie landscape.

To read the full report Google Manitoba’s Blue Mosaic and commentary, or visit the Pew Charitable Trust website at www.pewtrusts.org.

Manitoba Clean Environment Commission Approves License for Keeyask Hydro Dam

The proposed location of this new dam is on the Nelson River at Gull Rapids about 30 km west of Gillam. This will produce 695 megawatts and will cost \$6.5 billion. Manitoba Hydro is partnering with four area first nations.

The project will affect an area of 13,350 ha during construction and 13,880 ha during operation. Of this area, the reservoir will make up 9,300 ha, growing by 700 to 800 ha over the first 30 years due to shoreline erosion and peatland degradation.

The Clean Environment Commission (CEC) did not agree with all of Hydro’s conclusions. For example, it said Hydro is being “optimistic” about its ability to mitigate habitat losses for lake sturgeon. The CEC said Hydro’s proposal for restocking the fish has never been done in a northern river environment and is “at best experimental”. It recommended that the partners stock Lake Sturgeon “for at least 50 years” to allow time for a self-sustaining population to be reestablished.

The CEC also recommended the partners do more to track caribou migration in the region and to minimize the disturbance of habitat, including the “retirement”, where possible, of roads and trails used during the construction phase.

It also recommended the partners widen the scope of their proposed mercury monitoring and check fish levels currently before the flooding of the reservoir.

The partnership had already contracted the Pembina Institute to assess the impact of the project on climate change. It was estimated that the dam will produce the equivalent of 979,000 tonnes of carbon dioxide over its lifetime.

Source: Report on Public Hearings, Keeyask Generation Project, Manitoba Clean Environment Commission. April 17, 2014.

ATVs Banned to Protect Piping Plovers

All-terrain vehicles are now outlawed from two Lake Winnipeg sandbanks until mid-September to protect endangered piping plover breeding and nesting grounds. The two new special conservation areas are the Grand Marais sand spit near Grand Beach and the Riverton Sandy Bar.

With cottage and recreational development on Lake Winnipeg and Lake Manitoba, sightings of the birds has become quite rare. Counts of 130 birds in 1990 dropped to fewer than 20 in more recent years. Sightings now are almost non-existent. Source: Bruce Owen, Winnipeg Free Press, June 21, 2014.

ATLANTIC News

Improved Framework for Aquaculture in Nova Scotia Recommended

By Patrick Stewart, Atlantic Regional Director

Excerpted from CBC News, July 14, 2014

An independent review panel has produced a draft report for public comment on approaches to regulate the aquaculture industry in Nova Scotia. The draft report, by the Doelle/Lahey Commission on July 4, sets forth an assessment of the issues involving aquaculture development in Nova Scotia, as well as a possible approach to managing them. It held a series of public meetings July 21 to 24, 2014 to elicit public comment on the draft regulations. The panel held 40 public meetings, workshops and consultation with more than 20 organizations since 2013 in reaching its conclusions.

The rapid growth of finfish and shellfish aquaculture operations in Atlantic Canada's coastal waters has been putting significant pressure on coastal resources and creating conflicts with existing fishing activities such as lobster harvesting. In particular, marine fish farming has been a target of environmentalists and conservationists alike. Other issues, like escapes of Atlantic salmon that potentially compete with dwindling and threatened natural stocks, use of pesticides to combat sea lice, salmon diseases, and fears some coastal environments will not be able to handle the quantities of fish wastes, have also led to problems for the industry.

Dalhousie University law professors Meinhard Doelle and William Lahey recommend fundamental changes to the regulation of aquaculture in the Province. While not rejecting outright marine fish farming, the panel indicated that it could be an important feature of the aquaculture spectrum if approached with a view to incremental development and continuous improvement to minimize negative impacts and risks. They suggest a new regulatory framework that ensures that marine-based finfish farming only occurs in coastal waters that are suitable for that kind of aquaculture and where it is compatible with other important uses of those waters.

An important core recommendation is for Nova Scotia to create a classification system under which coastal areas would be rated as green, yellow or red based on their relative suitability for finfish aquaculture. Under this system, the classification of a coastal area would determine how applications for licences would be evaluated and the likelihood of applications being approved.

Halifax's Ecology Action Centre, a prominent environmental group and watchdog organization, says the 143-page draft review of Nova Scotia's aquaculture regulations addresses important issues like the need for more fish farming regulations and a balanced licensing approach.

Decline in Birds, Not Just Bees, Linked to Neonicotinoid Pesticides

It's not just the bees that are harmed by controversial crop pesticides called neonicotinoids – the birds are also disappearing in places where there are high concentrations of the pesticide in the environment, a new study suggests.

The study led by researchers at Radboud University in the Netherlands compared concentrations of the neonicotinoid pesticide imidacloprid measured in lakes and other surface waters around the Netherlands to local changes in 15 farmland bird species from 2003 to 2010.

They found that in areas where concentrations of the pesticide were more than 20 nanograms per litre, populations of birds such as barn swallows, tree sparrow and common starlings fell 3.5 per cent a year, compared to the average population trend for their species. They published their findings in the most recent issue of the journal *Nature*.

"Neonicotinoids were always regarded as selective toxins. But our results suggest that they may affect the entire ecosystem," said Hans de Kroon, a co-author of the paper, from Radboud University.

Neonicotinoid pesticides have been used since 1995 in the Netherlands and are also commonly used in North America. They are typically coated on agricultural seeds for crops such as corn and canola to protect the plants from insect pests such as aphids. Studies showing harmful effects of the pesticides in bees have prompted the European Commission to introduce a partial, temporary ban on three kinds of neonicotinoids, including imidacloprid, in Europe.

Studies showing harmful effects of neonicotinoid pesticides in bees have prompted the European Commission to introduce a partial, temporary ban on three kinds of neonicotinoids.

Neonicotinoids act as a neurotoxin for insects, but previous studies have shown they're not very toxic to birds. Because of that, the Dutch researchers think the decline in birds is probably due to pesticides unintentionally killing off the insects they rely on to feed their young during the breeding season.

However, they said they can't rule out the possibility of other ways the pesticide may be affecting birds, such as

through direct ingestion. According to a study published by Environment Canada researcher Pierre Mineau in 2013, a single kernel of imidacloprid-treated corn can kill small and 'blue-jay sized birds' and sicken larger ones. However, in the Dutch study, all the birds either ate exclusively insects or fed their young exclusively insects during the breeding season. In a video posted by Radboud University, de Kroon said his team "looked very thoroughly" for other possible factors besides neonicotinoid pesticides that could explain the results.

"Our analysis shows that based on our data imidacloprid was by far the best explanatory variable for differences in trends between areas," he added.

The researchers discovered the trend by looking at bird count data along with data about imidacloprid concentrations in waterways collected by the local water boards. While many bird species started declining before farmers started using imidacloprid in 1995, local differences in their decline didn't appear until after that time.

In an analysis piece accompanying the paper in *Science*, University of Sussex biologist Dave Goulson, who studies bees and other insects, noted that only five per cent of imidacloprid applied to crops is actually taken up by the crops themselves. The rest blows away or gets washed into waterways, and may get taken up by other plants.

A number of other researchers have previously suggested that neonicotinoids could be having a negative effect on birds, including Mineau and University of Saskatchewan biologist Christy Morrissey.

TERRITORIES News

NU Summer 2014 Regional Update:

Submitted by Paula Smith, CSEB Regional Director

In the last few months, there have been developments regarding proposed mining projects in Nunavut. Baffinland received its amended Project Certificate for their Mary River Project in May. The amendment allows for open water shipping along the proposed northern shipping route, along the coast of Baffin Island through Davis Strait. Also, the proposed Meliadine Gold Project near Rankin Inlet continues through the environmental assessment process, and the final hearing is expected in August.

Seismic testing has become a contentious topic in the territory after the National Energy Board approved two proposed projects in Baffin Bay and Davis Strait. Various groups, including local communities as well as the chairs

of the Nunavut Impact Review Board, the Nunavut Water Board, the Nunavut Planning Commission and the Nunavut Wildlife Management Board, have urged that these projects be delayed until after a strategic environmental assessment for the region.

In local news, Iqaluit's Waste Management Site (WMS) continues to burn. The fire started in May and has shown little signs of subsiding after various attempts at extinguishing it. The Government of Nunavut has been monitoring air quality since June, and average air pollution concentrations are reportedly low and below established health standards. As city council has retracted their earlier motion to let the WMS burn out itself, the recent proposed plan includes extinguishing the fire using millions of litres of seawater and with a cost of at least \$4.5 million. The WMS currently has its own Twitter account, #dumpcano, which is pretty entertaining. Rankin Inlet has also been battling their own dump fire, but that dump doesn't seem to be as savvy with social media!

On July 9th, Nunavut celebrated Nunavut Day – the anniversary of signing the Nunavut Land Claims Agreement in 1993 and the creation of Nunavut in 1999, making this Nunavut's 15th year. Looking back, it has been a long process of change, which will continue for the foreseeable future. Nunavut has developed a reasonably fair and diligent system of doing environmental assessments and regulating developments. They state that Nunavut is "open for business", but this does not seem to be at the cost of the environment. There are many good proponents working in the territory, and we are continuing to learn much from all the biological monitoring that is done in connection with all the projects.

There is also some interesting research underway in Nunavut, from air particles to climate change effects on community coastlines and erosion.

NWT Summer 2014 Regional Update:

Submitted by Anne Wilson, 2nd Vice President

The big news this summer is around the forest fires burning in the NWT; smoke from these has now reached the three Prairie Provinces and continues to affect people living in the NWT. It is the worst fire season in decades, with tinder-dry conditions and no rain in the forecast. There have been 284 fires so far this year, and there are 236 still burning, with only 14 being fought that are considered under control. Most are caused by lightning strikes. While fire is a natural process in forest renewal, it alters all facets of the environment and fauna in proximity to the burn. Runoff takes particulates and contaminants into surface waters; the alkaline ashes

influence the regeneration of vegetation communities, all biological life is altered in the local area for decades to come. In the short term, air quality is poor, with high PM2.5 levels. Extensive burns challenge biologists to track and interpret data in the area, when trying to monitor for effects of anthropogenic developments.

The seasonal weather forecast for north of 60 is predicting temperatures that are above normal for most of the NWT and mainland Nunavut. Precipitation is supposed to be near normal through much of the area, and above normal in the northwest regions. Here's hoping for some good rains with no electrical activity.

Current information is available on the Territorial Government's site: http://up.nwtfire.com/sites/default/files/2014-07-09_currentfiresituation.html

Mining and other development news

A number of projects are under development in the NWT, with several mining proposals getting closer to construction.

Several environmental assessments are underway, three in connection with existing projects and several in progress:

- Snap Lake Diamond Mine (DeBeers Canada Inc.): How much is too much for total dissolved solids? The company has asked to increase the levels of TDS that can be discharged into receiving waters, and are proposing site-specific water quality objectives with some new toxicity data in support of this. A decision from the Mackenzie Valley Review Board is the next step.
- Prairie Creek Mine (Canadian Zinc Corp.): The long and winding road...part all-season construction proposed from the mine site through the Nahanni National Park, to the ore staging facility, and part winter road, to get from there to the Liard Highway. The process is in the scoping stage for the environmental assessment of the road and an airstrip.
- Ekati Diamond Mine (Dominion Diamond Ekati Corp): The Jay Pipe is located under Lac du Sauvage, and could be accessed by constructing a ring dike around the kimberlite pipe. The impact statement is expected in September.
- The Mackenzie Valley Highway project has recently been reduced in scope, due to funding realities, and now consists of 333 km of all-season gravel road connecting Wrigley and Norman Wells. The original proposal was almost 500 km longer to the north, so the impact assessment scope will need to be revised.

- The Yellowknife Gold Project (Tyhee) is still on the books, but not active.
- The Giant Mine Remediation project is awaiting Ministerial approval for finalization of the environmental assessment report, before it can proceed to the regulatory processes.

With respect to oil and gas activity, there has been a slowdown in the Sahtu region, with a pause on fracking activity. The Beaufort Sea Exploration Joint Venture is actively undergoing review in the Inuvialuit Settlement Area. Imperial Oil's Norman Wells refinery water licence renewal is underway. Paramount Resources is active in the south-west NWT.

In the regulatory forum, several mining projects are moving towards development or have applied for amendments to their water licences:

- In June Fortune Minerals received their Land Use Permit and Water Licence approvals to construct the NICO project (cobalt/gold/copper/bismuth). This was the first Type A licence signed by the Territorial Minister following devolution from the federal government
- Canadian Zinc Corp.'s Prairie Creek Project was issued a water licence in September and the company is seeking financing to proceed.
- Following public hearings in May on the new DeBeers Canada Inc.'s Gahcho Kue Diamond Project water licence application, the Mackenzie Valley Land and Water Board is looking at comments on the draft permits and will be issuing licences in the near future.
- Avalon Rare Metals has applied for a water licence, and the technical review is under way. Public hearings are scheduled for Oct. 21-23rd.
- North American Tungsten have applied to dry stack their tailings and re-mine some of the old tailings areas, which may have stability issues. This involves a new tailings disposal area in the Flat River valley.

Various municipal water licences are up for review, and there are numerous management plans submitted for comments – more reading than can be readily tackled!

Full details for current environmental assessments are available on the Board's web site at <http://www.reviewboard.ca/registry/> and regulatory files at <http://www.mvlwb.ca/Boards/mv/SitePages/registry.aspx>.

Closing

If you are doing work north of 60 that you would like to highlight in the newsletter, or running some seminars or other training opportunities, please let us know. The CSEB provides a valuable networking and communication forum, and a voice for biologists if there are any issues to be raised. There is also the option of instigating other CSEB activities – both of the fun and/or of the informational variety - with colleagues in the North. Please email your thoughts to anne.wilson@ec.gc.ca or paula.c.smith@ec.gc.ca.

Smoke From N.W.T. Fires Reaches Saskatchewan, Manitoba

Fire conditions remain extreme in the regions north and south of Great Slave Lake

CBC News Last Updated: Jul 09, 2014 9:46 AM CT



Smoke hovers in the sky near Kakisa, N.W.T. The community of about 50 people was evacuated as fires raged. Smoke from the 137 forest fires burning in the territory is now travelling as far as Saskatchewan and Manitoba. (Sheila Chicot)

Smoke from the roughly 137 wildfires burning in the Northwest Territories is travelling as far away as southern Saskatchewan and Churchill, Man., in the worst fire season many in the territory can remember.

The smoke is also reaching North and South Dakota, according to The Associated Press.



The jet stream is carrying smoke from near Yellowknife to parts of southern Canada.

“The drought conditions that we're seeing and the fire behaviour that we're seeing is something we haven't seen, as I said, in about 30 years,” Bill Mawdsley, who's in charge of forest management for the N.W.T. Department of Environment and Natural Resources, told the CBC.

Highway 1 — Yellowknife's primary road connection to the rest of the country — re-opened around 9 a.m. Wednesday morning after being closed due to smoke from fires burning between the small communities of Enterprise and Kakisa.

The situation remains extreme in the regions north and south of Great Slave Lake.



Environment Canada has issued a special advisory related to smoke from N.W.T. forest fires. (Environment Canada) Environment Canada has issued a special air quality statement for all of Saskatchewan, as well as several communities in the N.W.T, including Yellowknife, Dettah, Fort Resolution, Fort Smith, Gameti, Whati, Behchoko and Lutsel K'e.

"Children, the elderly and those with respiratory problems should take care," it reads. "People in good health should consider reducing strenuous activities outdoors."

Rain in some parts of the region around Great Slave Lake is expected to quell some of the smoke Wednesday.

In Saskatchewan, the smoke is expected to move east and become less dense throughout the day.



A live fire map, updated daily by the N.W.T.'s environment and natural resources department, shows fires burning throughout the territory. (nwtfire.com)

Officials in the N.W.T. are also keeping a close eye on fires near Wekweeti, Gameti and Fort Reliance. People in Kakisa, which has a population of 50, had to leave the community for a week as a fire raged around and through the town. They began returning home on the weekend.

The territorial parks at Reid Lake and Lady Evelyn Falls remain closed, and fire bans are in effect in all territorial parks in the North Slave, South Slave and Dehcho Regions.

Fires this summer have forced the territory's power corporation to temporarily close a hydroelectric dam. At one point, fires threatened crucial infrastructure that brings internet and cellular service to Yellowknife.

Last week, a fire destroyed a homestead on a remote part of Great Slave Lake, the life's work of two people who first settled in the area 27 years ago.

NEWS: Nunavut July 04, 2014 - 12:36 pm

Ottawa Botanists Back on the Land in Western Nunavut

"Being in the field, that's where we get our primary information for understanding biodiversity"

LISA GREGOIRE

Canadian Museum of Nature botanist Jeff Saarela collects plant specimens during a 2012 expedition down the Soper River. He and his colleagues are making collections near the Coppermine River this summer as part of a multi-year Arctic Flora project. (Photo by Roger Bull)



It's backbreaking work and the mosquitoes might drive them all batty, but a team of botanists have returned to Nunavut this summer to collect plants for a snapshot of what's growing here, and how that might soon change.

Dr. Jeff Saarela from the Canadian Museum of Nature in Ottawa, along with colleagues Paul Sokoloff and Roger Bull, are currently collecting specimens about 50 km south of Kugluktuk near the Coppermine River.

"Being in the field, that's where we get our primary information for understanding biodiversity," said Saarela.

"Being out in nature, making those collections and exploring, it's fundamental. And that kind of work doesn't happen as much as it used to, at a time when we need more of it because things are changing due to climate impacts, human impacts — all kinds of stuff, not just climate change."

Saarela and his team took a trip down the Soper River two years ago as part of a multi-year Arctic Flora of Canada and Alaska project.

A flora survey is an inventory of plant species growing in a specific location and Saarela is particularly interested in the Arctic because there are many areas where no specimens have ever been collected and knowledge gaps are wide.

CSEB REGIONAL DIRECTORS NEEDED

Paula Smith, CSEB Territories (Nunavut) Director has resigned due to personal reasons. I would like to thank Paula for her support over the last 3 ½ years (her term would have expired at the end of 2014), and her great contributions to our Newsletter/Bulletin.

CSEB has Regional Director vacancies as follows:

- Territories
- Atlantic
- Ontario
- Manitoba
- Saskatchewan

If you are interested in taking on one of these positions, please contact Robert Stedwill at rjstedwill@live.ca. It is not an onerous task, and will greatly help strengthen the organization.

How You Can Help the CSEB

- **Contribute to the quarterly newsletter and/or website.** Give us an article on something you are interested in
- **Write a short paragraph about what you have been doing, articles or reports you have written**
- **Provide us with points of views on issues.** Your Executive is always interested in learning what issues concern you
- **Write a book review for the newsletter**
- **Become a Chapter Chair, or offer to join the Board of Directors**
- **Promote CSEB - put up a poster, distribute membership forms - download from our website**
- **Set up a Chapter - contact any Director for help**
- **Organize a CSEB event - contact any Director for help**
- **Attend the annual conference and maybe present a paper on your work.**

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2014 WORKSHOP AND ANNUAL GENERAL MEETING
Biological Monitoring – Are We Making Progress?

Friday, October 3rd, 2014 (Field trip Oct 4th)

Location: King's University College

9125 - 50th Street • Edmonton, Alberta • T6B 2H3

Registration Fee: **CSEB Members = \$60 (includes lunch)**
 Non-members = \$75 (includes lunch)

Walk-in - same, but lunch not included.

Students - free (pre-registration, no lunch); Walk-in - \$20

Registration Deadline: September 26, 2014

Note: Cafeteria available on-site to purchase lunch if not included in registration.





Potential Topics:

1. **Introduction: Biodiversity 101 – the “So What” of why we monitor biodiversity and activities or conditions that affect it.**
2. **Monitoring Programs: who is doing what, various programs (Federal government, Alberta government, non-profit organizations, research institutes, universities, e.g., AB Biodiversity Monitoring Institute, Joint Oil Sands Monitoring Program, Ducks Unlimited Canada, Alberta Environmental Monitoring, Evaluation & Reporting Agency).**
3. **Invasive Species and Species at Risk: talks on key studies on species of special concern.**
4. **Research: new and interesting monitoring techniques and tools; e.g., DNA, GIS, remote sensing, hydroacoustics.**
5. **Grass roots activities: ENGOs, bird counts, other...**
6. **Emerging issues: threats to biodiversity from contaminants, climate change, other aspects to be monitored?**

Please submit an abstract and appropriate contact information for presentation or poster session to

Anne Wilson, M.Sc.
Cell: 867-765-8480
Telephone: 780-951-8856
anne.wilson@ec.gc.ca

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(cost = \$30 incl. transportation, park fee and bag lunch) minimum 15 registrants

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