Vol. 65, Number 2 • Summer 2008

THE CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS Newsletter / Bulletin

In this Issue:

CSEB Newsletter / Bulletin SCBE

VOLUME 65, NUMBER 2, 2008

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

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Date of Issue- July 2008

Cover Photo: "High school students from Kugluktuk, Nunavut, learning to collect benthic invertebrates on the Coppermine River during an "Introduction to Biomonitoring Workshop" hosted jointly by Golder Associates and the Kugluktuk Hunters and Trappers Organization in 2007.
Photo Credit: Shannon Miller, Golder Associates Ltd., Edmonton,AB

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

CSEB NEWSLETTER 2008

Vol. 65, Number 2 Summer 2008

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/layout: Gary Ash; Production: Gary Ash.

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

LE BULLETIN de la SCBE 2008

Vol. 65, Numbre 2 Été 2008

Le Bulletin de la SCBE est une publication trimestriel de la Société Canadienne des Biologistes de l'Environnement. Le Bulletin informe les membres des activité 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 diverssifié d'environmentalistes Canadien. Les membres sont invités a contribuer des articles, photos (noir et blanc) ou des messages qui sont d'intérêt nationale en sciences biologiques et envrionmentales. Les lettres à l'editeur sont bienvenues.

Tout la correspondence 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'editeur: Gary Ash, Editor, courriel: gash@golder.com**

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

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

- de conserver les ressources naturelles candiennes.
- 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.

NATIONAL

President's Report

Submitted by: Brian Free, CSEB President

Greetings!

Summer is here, so I'm sure your focus is on enjoying the great outdoors. As biologists, we notice things about our immediate environment that others will miss. Take these opportunities to point out that rare plant, interesting bug or quirky bird or fish. Explain how that wetland you just drove by is recharging the groundwater while serving as home for countless interesting animals and plants. Help others to learn about the environment wherever you are!

Planning for the 2008 annual meeting and conference is underway. We're looking into potential venues in Vancouver, B.C, with mid-November as the potential time frame. Please mark November 13-15 in your calendars for this CSEB event. And if you want to help plan this 50th anniversary event, please contact me or BC Director Jim Armstrong at Jim.Armstrong@metrovancouver.org.

CSEB is a volunteer-run organization and nothing gets done without member participation. Please contact the national office or your regional director and volunteer to contribute to the success of the CSEB.

Brian Free
President

Good to the last drop!
Put a Tiger in your tank!
Just do it!

CSEB Slogan Contest

Put on your thinking caps! Your Board of Directors thinks that CSEB needs a by-line or slogan that reflects the essence of the CSEB. What would be a sensational, short, snappy sentence or phrase that we could feature on our website, in our recruitment drives and for general promotion of the Society. How does "Biologists who care!" grab you? Send me your suggestion by August 31, 2008 and your slogan will be entered into the contest. First prize will be a free CSEB membership when you renew for 2009. Send your suggestions to bfree@cseb-scbe.org.

Brian Free
President

British Columbia News

Submitted by: Jim Armstrong, CSEB British Columbia Director

Planning for the 2008 CSEB conference has started with a call to all British Columbia members for their input into possible conference topics and assistance. As the proposed dates for the conference are November 13-15/08, time is quickly passing for the conclusion of planning and implementation of the event.

The National Executive has chosen waste management as the theme for the conference, specifically focusing on municipal and mining waste issues. I am requesting presentations from Metro Vancouver's Policy and Planning Department in regard to the initiatives that are currently underway for the composting of municipal yard wastes and the disposal/energy recovery through the use of multiple wastes to energy facilities. As the current practice of land filling the majority of the Lower Mainland of BC's municipal wastes at the Cache Creek landfill will cease in 2010, the task of planning and implementing a long-term solution to the waste issue is an overwhelming task. Tours are being planned of the first waste to energy facility that commenced operation in 1987 and composting operations in the Lower Mainland.

Input from the mining sector would be appreciated.

B.C. wild salmon in short supply: report

Updated: Mon., Jun. 16 2008 13:06:17
Ethan Ribalkin, ctvbc.ca

A new report on Pacific salmon stocks warns that the number of fish returning to British Columbia rivers could be at their lowest levels in 50 years.

In its third annual salmon assessment, The David Suzuki Foundation is giving Pacific stocks a "yellow" listing, which means there are sustainability issues that need to be taken seriously.

SeaChoice, a conservation group that was commissioned to write the 2008 study, uses a traffic light system to rank sustainable seafood options. Species with the lowest numbers would get a red rating.

David Suzuki Foundation aquatic biologist Jeffery Young says there are two issues affecting the overall status of the fish: Widespread decline in numbers and habitat loss from things like logging, mining and urban development.

"We've also had some fisheries mismanagement issues where we've opened some risky fisheries, primarily before the 1990s," he explained.

"We're still dealing with a very poor time for salmon and our fisheries are still not resilient to that challenge."

The foundation advises consumers to eat yellow-listed fish sparingly—and to learn more about the source of the fish they are purchasing.

"We do not have enough people enforcing habitat," Young added. "We're kind of reducing our efforts there and that's a huge problem."

The Nass River sockeye salmon is considered a better choice than other yellow-listed wild salmon species. While still yellow overall, the Fraser River and Skeena River sockeye salmon have serious challenges this year.

When shopping for salmon, Young admits it can be difficult to know where the salmon comes from.

He says Canada should follow in the footsteps of the United States where companies say on the label which river the salmon is from.

When this information is not available, he suggests a simple solution — ask an employee at the store.

For more information on the 2008 Pacific Salmon Ratings, visit the SeaChoice website at www.seachoice.org. To find out more about Pacific salmon under threat and solutions to their recovery, visit www.davidsuzuki.org.

Alberta News

Submitted by: Shannon Miller, CSEB Alberta

Keyano College Environmental Monitoring Program builds capacity in Aboriginal communities

Keyano College has initiated an Environmental Monitoring Program (EMP) geared toward First Nations' and Métis adults in Alberta. Beginning 2007, this 7-month program has provided a unique opportunity for students to receive in-class instruction, academic accreditation and field skills necessary to become environmental monitors.

EMP is offered in partnership with Golder Associates, Encana, Conoco-Phillips, and other industry partners, Métis Nation of Alberta, Environment Canada, Chipewyan Prairie First Nation, Ft. McMurray 468 First Nation and Alberta Employment, Industry & Immigration. Experts from these program members provide support in the form of funding, teaching, and/or co-op job placements to the students.

EMP graduated its first class of 7 monitors last November in Conklin, where the program was based. It was during the graduation ceremony that EnCana along with ConocoPhillips pledged to continue the EMP at Keyano for the next three years with a funding commitment of $1 million.

With demonstrated commitment by the students, new doors of opportunity are opening. Beverly Knibb, EMP Coordinator succinctly puts it, "The program empowers Aboriginal communities. Thanks to the knowledge monitors gain from this initiative, they now know the pros and cons of what is being negotiated. Futhermore, graduates can expand their employment options in the industrial field. In the future, Alberta may even witness community based environmental monitoring programs initiated by communities potentially impacted by development."

For more information or if interested in becoming an instructor for the Keyano EMP program, please contact: Beverly Knibb, Coordinator, Environmental Monitoring Program, Community & Upgrading Education, Keyano College, at (780) 715-3941.

Saskatchewan News

Submitted by: Curt Schroeder, CSEB Saskatchewan

Nuclear industry spins new mythology

by Paul Hanley, The StarPhoenix

Reprinted from the StarPhoenix, Tuesday, June 24, 2008

The nuclear myth of the 1950s and '60s was atomic power would be "too cheap to meter." That didn't pan out, so the nuclear industry is spinning a new mythology, also designed to win popular support.

At a meeting of the Regina Chamber of Commerce last week, Hugh MacDiarmid, president and CEO of Atomic Energy of Canada, described nuclear power as "environmentally sustainable." At the same time, Premier Brad Wall stated that Saskatchewan would not proceed with the nuclear option "unless we can demonstrate, obviously, environmental sustainability."

If sustainability is the basis upon which we decide for or against the nuclear option, we can stop the debate right now. The claim of nuclear "sustainability" is perhaps the most egregious case of green washing (i.e., lying about environmental performance) ever.

According to the Canadian Oxford Dictionary, "sustainable" refers to a development "that conserves an ecological balance by avoiding depletion of natural resources." The undeniable fact is that nuclear depends on the depletion of a natural resource — uranium. Uranium, like, oil, coal or natural gas, is not an unlimited resource; it is non-renewable. Therefore, like fossil fuels, nuclear power is not sustainable.

A second myth is that nuclear is now gaining worldwide acceptance, that it is experiencing a kind of renaissance. The reality is quite different.

Global nuclear capacity stands at 372,000 megawatts, but its growth rate is lower than any other energy source. Growth was just 0.5 per cent in 2007, compared to 27 per cent for wind energy.

In total, global nuclear power capacity grew by less than 2,000 megawatts in 2007, a figure equivalent to just one-tenth of the new wind power installed globally that year.

By the end of 2007, reports the Worldwatch Institute, 34 nuclear reactors were being built worldwide. Twelve have been under construction for 20 years or more. Meanwhile, more than 124 reactors have been retired by the commercial nuclear industry since 1964, reducing capacity by 36,800 megawatts.

A recent Time magazine article, 'Is Nuclear Viable?' reports that the American nuclear industry is so unattractive that it is unable to attract private investment. While the red-hot renewable industry, including wind and solar, attracted $71 billion in private investment last year, the nuclear industry attracted nothing.

"Wall Street has spoken — nuclear power isn't worth it," said energy analyst Amory Lovins, author of the study The Nuclear Illusion. Even with multibillion-dollar government subsidies, private investors are still not interested.

Capital costs are too high. Construction delays and cost overruns continue to be the norm for the nuclear industry. Cost estimates for identical Westinghouse-designed nuclear plants more than doubled in 2007, to $12-$18 billion, raising questions about the plants' economic viability and doubts as to how many electric utilities would be willing to add liabilities of that scale to their balance sheet. The U.S. credit rating agency Moody's has cautioned that many utilities are underestimating the cost of new plants and that nuclear investment could damage their credit ratings.

It is no wonder then that the United States saw no nuclear construction starts for the 29th straight year in 2007.

Meanwhile in Japan, a 6.8-magnitude earthquake struck the largest nuclear complex in the world in 2007. It shut down the Kashiwazaki-Kariwa nuclear plant's seven reactors, which account for 8,000 megawatts of Japan's nuclear capacity. The quake was 2½ times more powerful than the reactors were designed to withstand, reports Worldwatch, raising questions about whether they should ever be returned to service.

According to Amory Lovins, reducing carbon emissions would be cheaper and safer if nuclear was rejected in favour of alternatives that are sustainable. "The bottom line is that nuclear buys two to 10 times less climate protection than its competitors."

Investing in the nuclear option in Saskatchewan would suck up all the capital that would be spent more cost-effectively on renewable energy, efficiency and conservation.

Moving?

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Ontario News

Submitted by: Natalie Helferty, CSEB

Riding Coat-tails: Where is the Environmental Movement Going in Canada?

This year of 2008 feels like one that is holding its breath with one eye open and one closed, grimacing with shoulders hunched in anticipation of something bad about to happen, shying away from the reality of the ultimate blow about to befall it. The United States has uttered the r-word, recession, after the mortgage housing fiasco, their trillions of dollars in credit debt, and the war in Iraq continuing unabated as predicted. Canada as usual is lagging behind the USA, but in this case it may be a bit of a blessing to be riding the coat-tails of our southerly neighbours. We then can see what's about to hit us, as long as it doesn't sneak up from behind and boot us in the butt.

And what is about to hit us may be bigger than economic down-turns. In the USA, the issue of climate change has been a long-running battle, but with allegations that VP Dick Cheney's office was seeking to interfere with testimony by the Center for Disease Control (CDC) at Senate hearings on the health implications of climate change, this issue may become the next cause célèbre in the USA. But where is Canada standing in this fractious fighting in the USA over climate change? What are we doing up here that is any different? It seems we still have no intention of jumping off the coat-tails to avoid being crushed as the USA stumbles over backward tripping over its own heavy-soled and soiled feet. Canada may have its sleeves sewn onto those coat-tails a bit too tightly to get out of the way.

The fact that the industrial era is waning in North America as jobs move overseas to developing countries such as China and India seems to be a 'taboo' subject in climate change discussions. Multinational corporations are fine with this arrangement, but local companies and workers are feeling the pinch here at home. But, it does make it much easier to set emission reduction targets when there are no emissions. They will get moved overseas with the multinational companies. Only Alberta's oil sector seems to be going full steam and tar ahead as everyone is dependent

on oil, despite the dire predictions from climate change, so maybe they will be the only sector left to have to deal with emissions reductions strategies in Canada in future. As local economies fail, the local environment benefits—a strange, but true outcome. As the saying goes, "Recessions are good for the environment."

So, that leaves us with a bit of a question to ask about our future in Canada. The government federally seems to be also taking a 'wait and see' approach to the economy and environment, with the Liberal Party touting a 'green shift', although getting more press coverage for getting in 'green sh*t' over its label. I personally have not heard one substantial report in the news about what their plan will entail, just a lot of synchronized clapping, which may be a way to try to wake us up and hypnotize us at the same time—governments have that effect on the public, sort of like a tsetse fly. The first sting hurts, but then you dose off pretty quickly.

Here in Ontario, infrastructure jobs seem to be the only option offered up. Municipal governments are crying for incentives up north as mills shut down, logs piling up at depots just to keep the loggers employed for awhile, and in the south the builders are happy enough to keep 'intensifying' with condo-building and continued suburban sprawl development to 'keep the economy going', while rural central Ontario gets more and more hot under the collar with being ignored. And now the Ontario government is touting all those highways and other aggregate-intensive infrastructure jobs that will 'save our bacon' as the planet fries. And so much for the Endangered Species Act in Ontario saving anything either—industry is exempt.

The fundamental vision of where we are going in future is missing while the environment is a top priority in the public's mind. Why is this, we have to ask. Has nobody bothered to see how the economy as the engine and the environment as the vehicle cannot be separated very effectively?

We have done a lot of disassembling in the past that has caused separation among the parts, but ultimately, we're all sitting as passengers in one very big old van, hoping the driver knows where he's going. It seems political drivers are a bit lost on the back roads and as 'typical males' won't ask for directions and keep telling the back-seat drivers to shut up.

So, the environmental movement sits as a passenger, maybe even in the passenger seat as navigator at times, but ultimately has no control over the steering wheel. The environmental movement needs to have the navigation map well marked out and this just doesn't seem to be the case. So, where are we going people?

Society as a whole was conceived as an idea, a concept that was formed over many battles outside and inside individual people, a structure assembled to keep us sheltered and transport us. But, when a driver is so totally lost as to get your vehicle stuck in the mud on a back road, you have one of several choices to make. Sit in the vehicle and wait for someone to rescue you (CAA does feel like Jesus coming on a white cloud—I've been in those 'my saviour!' situations), get out and help push the vehicle out of the mud, or ultimately abandon the vehicle and start walking instead.

The environmental movement, as per its name, has often been the one to do all the pushing. But at some point, one has to wonder if there is a lot of wisdom in this if the vehicle keeps wandering down roads, getting stuck, and has no destination in mind. To be a better helper, we ought to help chart our course with our co-passengers. And many of those passengers are also starting to see the folly of the drivers' actions too in wandering aimlessly, speeding along faster and faster then careering around a corner into a dead-end road and getting stuck. That seems to be where we are sitting now, as James Howard Kunstler says, "We're literally stuck up a cul-de-sac in a cement SUV without a fill-up."

But, as diligently as the environmental movement is in pushing their agenda, they have to look around and see where they came from and why and what's around them too and especially where they are going—what is our destination? When you realize that a lot of people have no trust in the driver, nor you as the navigator now either, and they are getting out of the vehicle to walk down the road and find a nice spot to picnic on the land, having a more enjoyable time, it is tempting to follow suit.

They see that the vehicle is old and rusty, no matter how many coats of green paint are sprayed on. The engine's mileage is well over its usefulness as an honestly profitable sale, despite the chop-shop used car deals we're selling overseas. The rust is so bad that its eating holes in the chassis that is supporting this vehicle. How much longer before the wheels fall off? This is the state of our current economic model and yet nobody seems to be designing a new vehicle for society that will service us far into the future. We are too attached to our old clunker it seems.

So, I propose to the navigators out there as the movers and car-shakers of the environmental movement that perhaps getting out and walking for a bit in nature might be in order, at least until the driver figures out that he cannot move the car without you there to help him. Then perhaps government will start looking around, asking itself how it got here, and notice the lovely surroundings and feel at peace within itself.

Each person is a passenger in the vehicle afterall, including the driver, so we just have to let everyone have a good long wait in a hot car for them to perhaps get uncomfortable enough to open a window, then finally get out of the car to examine the situation they're in, even if there is an occasional annoying mosquito in the woods. The air is fresh out here in nature, and maybe they will remember how much they missed it all along and how enjoyable walking really is.

As Thoreau, the great-grandfather of the environmental and civil disobedience movements stated in his 1862 essay,

Walking, "in Wildness is the preservation of the World." He is very much correct… but we'll see if the passengers realize that before the car causes their demise by heat stress. Maybe everyone will come to the same conclusion, that a Restoration Economy is the new path forward, but we need a new way to do that and also directions and destination mapped out by consensus. But as usual with things we're too attached to, I bet it will take a disaster to realize it finally when the old van runs out of gas and falls apart completely after we spray mud all around while spinning our wheels and digging ourselves ever deeper.

Atlantic News

Submitted by: Pat Ryan, CSEB Newfoundland & Labrador contact
Newfoundland and Labrador News

CSEB Member Honoured

Two individuals and three groups received accolades for their demonstrated commitment to protecting the province's environment. The Newfoundland and Labrador Environmental Awards were presented in June by the Honourable Charlene Johnson, Minister of Environment and Conservation; John Scott, Chair and Chief Executive Officer, Multi-Materials Stewardship Board (MMSB); and Barbara Taylor, President, Newfoundland and Labrador Women's Institutes. The ceremony took place at the Battery Hotel in St. John's.

"Thank you and congratulations to this year's winners for their outstanding efforts," said Minister Johnson. "The initiative, dedication and hard work that these individuals, communities, schools and organizations have put into caring for our environment are reasons to celebrate and encourage others to participate in their community environmental initiatives."

The environmental awards recognize individuals, groups and organizations who are making an exceptional effort to protect and enhance the environment and quality of life in the province.

Minister Johnson also recognized Dr. John Gibson, in particular, on receiving the Lifetime Achievement Award. The award is given for significant lifetime environmental contribution. "Dr. Gibson's work with the protection and promotion of this province's watersheds, his knowledge and active role in promoting the need for watershed preservation and restoration is to be commended," said Minister Johnson. "I extend congratulations to Dr. Gibson for his lifetime dedication to the environment."

Dr. John Gibson has been a leading and inspirational advocate for the protection and promotion of this province's watersheds since his arrival in the province almost 30 years ago.

His professional career as a Research Scientist in Limnology has included private consulting, a career with the Department of Fisheries and Oceans (DFO) and an Adjunct Associate Professor with the Department of Biology at Memorial University. While officially retired, he is a Scientist Emeritus with DFO. Much of his professional career has been committed to fisheries research on the life cycle of salmonoids, the province's freshwater environments, stream ecology, behaviour ecology and conservation biology.

In his personal life, Dr. Gibson has been involved in numerous organizations that focus on ecology and conservation issues including:

- Executive member and honourary member of the Quidi Vidi Rennies River Development Foundation;
- Designed the original concept for the Fluvarium at the Freshwater Resource Centre;
- Standing member of the Natural History Society; and,
- Chairman of the Newfoundland and Labrador Chapter of the Canadian Society of Environmental Biologists in 1997.

For three decades of his residence in the province, Dr. Gibson has been an invaluable source of knowledge and he has continued to take an active role in promoting the need for watershed preservation and restoration. He is a willing volunteer when clean-up, campaigns and field surveys are organized. Dr. Gibson has provided guidance to organizations in the campaigns to have ecologically sensitive areas preserved.

Source: Press release of the Government of Newfoundland and Labrador, June 2, 2008.

Territories News

Submitted by: Anne Wilson, CSEB Territories Director

Occasionally I get to do some field work and that is often challenging and always rewarding. However, most of my work these days consists of reviewing environmental assessment documents, and looking at municipal wastewater issues. As I sit at my desk reading over work done by "real" biologists out in the field, I've been thinking about what it means to be a biologist (defined by the dictionary as "a specialist in biology"). In the times after graduation I would always tell people what I had studied (as opposed to what I was). I wondered at people who stated that they were biologists, as one of the effects university had was to impress on me truly how much I didn't know! After a bunch of years working in the environmental assessment field on water quality aspects, I would describe myself as a generalist in the field of limnology, which falls under the umbrella of the "environmental biologist" description. I still look forward to career-long learning in the biological sciences, and one the best ways this occurs is through rubbing shoulders with others in similar lines of work, and being inspired by and informed through the interesting things colleagues are doing. The CSEB provides great networking opportunities, and I hope to meet many of you this fall at our 2008 AGM and conference. In the meantime, I would be happy to hear

from any of my northern colleagues, to let me know what is going on with biologists north of 60, and to talk about what types of activities we might initiate in connection with the objectives of the CSEB!

As far as activity goes, there has been no slowdown in mineral sector in the North! High commodity prices continue to drive exploration and development in the NWT and Nunavut for a variety of targets. For base metals, Tamerlane's Pine Point Pilot Project is proceeding to licencing, with construction to get underway this summer, and Canadian Zinc Corp. has applied for permits to develop the Prairie Creek Mine in the Nahanni watershed. In Nunavut, Sabina Silver Corp.'s proposed Hackett River Mine (lead, silver, copper, lead, and gold) is undergoing environmental assessment, OZ Minerals Ltd is proceeding with pre-development work on the Izok Lake lead-zinc project, and Baffinland's Mary River iron ore project is at the bulk sample stage with 5 shiploads of ore to be shipped to market this year. Fortune Minerals' NICO gold project has applied for permits and will be going to environmental assessment once land tenure issues are addressed. Uranium exploration is very active in both territories. The Giant Mine Remediation project has been referred to Environmental Assessment by the City of Yellowknife, which will unfortunately delay the start of remediation work by one to several years.

The Taltson Hydroelectric expansion assessment is proceeding, and may look even more favorable as fuel prices continue to rise.

Work continues on the municipal front to evaluate performance standards that can be met by northern systems for total suspended solids and cBOD5. This will involve developing a better inventory of existing systems and their performance, and looking at how systems might be optimized.

I wish all of you a wonderful summer, and hope that each of us can take time to enjoy the things that are important to us!

Build Arctic network for sovereignty: report

Randy Boswell, Canwest News Service

June 26, 2008 - The federal government's main advisory body on Arctic issues is urging the establishment of a "pannorthern network" of research stations to not only build Canada's scientific capacity in the region but also to strengthen its sovereignty claims across the frontier.

The Canadian Polar Commission released the results Wednesday of a two-year study of the country's Arctic research facilities, concluding that the Conservative government should make a 25-year commitment to construct new facilities throughout northern Canada, an investment that would "also support the sovereignty agenda by demonstrating Canada's commitment to its North."

The Ottawa-based agency is mandated to monitor the state of Arctic affairs and give federal policy advice. "Climate change, the environment, health and social stability, economic development, sovereignty and security — these are all major issues that will continue to demand our attention over the next few decades," commission chairman Dr. Tom Hutchinson said in a statement.

The report's key recommendation is the network of research stations — "with a lifespan of at least 25 years, along with a funding commitment of 25 years" — that will serve as "an essential building block for constructing a national polar science policy."

The report also recommends forging close links with northern communities to help establish and operate the new research facilities.

And anticipating the future decommissioning of two of the Canadian Coast Guard's icebreakers — the CCGS Louis St. Laurent and CCGS Amundsen — the polar commission urges their replacement with "science-capable vessels" better suited to research uses.

The 50-page report, to be officially released today, says a key motivation for bolstering Canada's scientific capacity in the Arctic is the planned reinforcement of its sovereignty claims in the North, including control over the disputed Northwest Passage.

The U.S. and other countries dispute Canada's claim that the passage is part of this country's internal waters.

Arctic research station belongs in Northwest Passage: polar commission

Thursday, June 26, 2008 | 2:00 PM CT, CBC News

The Canadian government's promised world-class Arctic research station should be located in the Northwest Passage and connected to a network of other research bases across the North, says the Canadian Polar Commission.

In releasing the results Wednesday of a two-year study on research logistics and infrastructure in Canada's North, the commission says current interest in polar research and Arctic sovereignty would make the Northwest Passage a good location for the High Arctic research station.

Ottawa promised the new station in its most recent throne speech.

"It would be a very smart thing to have a station that could be involved in international research… and involving communities along the Northwest Passage and so on," commission chairman Tom Hutchinson told CBC News Wednesday.

The commission, a federal government agency that specializes in polar research, also concluded that Ottawa needs a 25-year plan and $25 million to set up a pan-northern network of about 12 major research stations from Labrador to the Yukon.

Many existing field research facilities in the region are old and falling apart, the commission found.

Despite a surge in polar research over the last decade, northern field stations have suffered from three decades of neglect and cannot keep up with the current demand, Hutchinson said.

John Smol, a longtime Arctic researcher with Queen's University, agreed.

"Canada is a polar nation, and we really haven't been holding up our own in infrastructure and the facilities to do this," he said Thursday.

The Canadian Polar Commission's study also recommends setting up a comprehensive northern surveillance and monitoring network, as well as replacing the Canadian coast guard research ships Amundsen, Louis St. Laurent and Nahidik with vessels capable of accommodating scientific research once the existing ships are decommissioned.

Hutchinson said a northern research network could complement work being done at the federal High Arctic research station.

Basing the new High Arctic station by the Northwest Passage would also make logistical sense, as ships can enter the area, added Bill Doidge, director of the Nunavik Research Centre in Kuujjuaq, Que.

"But I think there's a lot of things to weigh up in terms of what the scientific priorities may be in a certain area," Doidge said.

"Actually, if you get a bunch of scientists together, they won't agree totally on where the location should be."

It isn't just scientists who may disagree on where a High Arctic research station would go — Nunavut, the Northwest Territories and the Yukon have all been hoping to have a major research centre based on their territory.

Ban chinook salmon fishing on Yukon River: fish conservationist

Less than half the usual number of salmon have reached river this year

Thursday, June 26, 2008 | 11:04 AM CT, CBC News

A total moratorium on chinook salmon fishing on the Yukon River may be necessary to save the fish, said the chairman of the Yukon Salmon Committee.

This year's Yukon River salmon run appears to be in trouble, said Richard Sidney, whose committee is mandated to look after the salmon's welfare. About 32,000 Yukon-bound chinook salmon have reached the mouth of the river to date — less than half the normal numbers, he said.

"My family has gone without salmon for… this is going to be the third year we don't get any," Sidney told CBC News on Wednesday.

While a ban on sport and commercial salmon fishing is likely in the Yukon this year, Sidney said a voluntary moratorium on First Nations' subsistence fishing may be needed as well.

"This fish is in so much trouble, you know? I think we should just leave it alone for at least five years," he said.

"We all have to get in this together.… [Otherwise], we may as well just kiss it goodbye."

While Yukon First Nations know that dramatic conservation measures are needed, fisheries managers upstream in Alaska don't seem to be ready to do what it takes to protect the fish, Sidney said.

"We are at the end of the line, and we're the ones that see this fish is in trouble… and they will not listen," he said. "They wouldn't listen, and they kept [their] commercial fishing and their subsistence fishery over there. That's totally out of hand."

Earlier this week, Alaskan officials cut the subsistence fishery in half. Nevertheless, Sidney said, people there are still fishing salmon, even though there are currently not enough fish to meet the minimum number required under a U.S.-Canadian treaty.

How You Can Donate to the John Lilley Environmental Scholarship Fund

Last year, the CSEB entered into discussions with the University of Alberta about establishing a scholarship to honour John Lilley, a former national president and long-time active CSEB member. John passed away in July 2007 but before he died, the Alberta Chapter had a chance to talk with him about his ideas for the scholarship. We have incorporated those into the terms of reference for the award, which we expect to be available in 2008 for the first time.

In accordance with John's wishes, the scholarship will be available to students enrolled in Environmental and Conservation Sciences at the U of A, before they enter their second year of the program. If no suitable candidates are available from that program, students entering their second year of Biological Sciences will be considered. Demonstrated experience with a not-for-profit environmental organization will be given a high priority, along with superior academic achievement.

Donors to the scholarship fund will receive a tax receipt from the U of A. If you would like to contribute in memory of John, please send your donation to:

Emily Lennstrom
Senior Development Officer, Faculty of Science
G222 Biological Sciences Building
University of Alberta
Edmonton, Alberta T6G 2E9
Tel: 780-492-6688

Converging Ecological Crises and the Need to Escape the Box of Conventional Response

By G.F. Hartman Ph.D., CSEB BC Member

INTRODUCTION

This perspective reflects ideas and concerns developed from over five decades of research, university teaching, and resource management, including three years of related experience in the 'under-developed' world.

The discussion is offered in an attempt to generate a fuller awareness of large-scale social and ecological issues. We will not be able to deal with complex societal challenges, such as those that loom before us, without the fullest possible appreciation of their nature. The aphorism, 'Know your enemy', may have held in the past. In this day and age, it may be more appropriate to 'Know your situation'. I suspect that many people will read a part of this article and dismiss it as too pessimistic. I believe that dismissal of concerns about the scale of issues, as "gloomy pessimism", may, unfortunately, only help to ensure that we experience the problems 'sooner and harder' in the future.

Some of the concerns touched on, in this essay, are not new. Many other people, over the past three decades have expressed concern about the kinds of questions that I will try to deal with here (see D. Pirages and P. Ehrlich *"Ark II"*, Clive Ponting *"A Green History of the World"*, J. H. Kunstler *"The Long Emergency"*, Bill McKibben *"The End of Nature"*, and Roy Woodbridge *"The Next World War"*). However, the idea that we face several simultaneous challenges, as elements in a developing **'convergence'**, is not frequently presented as such.

As a species we are at a 'cross-roads'. Humankind has only a few decades left in which to 'get it right'. The combination of elements, i.e., human numbers and per capita resource use, may vary in different geographic regions, but the sum of it all remains the same. This "sum" involves our belief systems, our attitudes and our increasing numbers which drive the processes of change leading to overuse of resources and degradation of the environment around us.

CHALLENGES AHEAD IN OUR VOYAGE AS A SPECIES

The challenges, many at crisis level, are formidable:

1) We add about 75 million people per year to an already overloaded planet. Writers who hold the darkest vision suggest that after reaching 8 or 9 billion people on earth, environmental collapse may drive human numbers back by two thirds. In the Pacific Northwest (Oregon, Washington, Idaho, and British Columbia), population is forecast to reach between 50 and 100 million by 2100 (see Chapter 3 in *"Salmon 2100: The Future of Wild Pacific Salmon*"). California is already in a 'run-away' state. In British Columbia, like almost everywhere else, we are 'in the growth game'. In this province, we add about 55 thousand per year to our own province with its southern portions already people-stressed.

2) We are at, or past, 'peak oil'. The major reserves have been located and we are now using them up. In the past few months of early 2008, we have begun to witness the impacts of sharply rising fuel prices. In the face of declining oil and gas supply, the corporations with the acquiescence of governments, are maximizing their profits at an increasing rate. Even at the present levels of supply and profit-taking, transportation, manufacturing and agriculture are all being affected.

   For the future, there are no comparable and flexible substitutes for this energy bonanza, laid down over millions of years but consumed in only one or two centuries. The sub-urban sprawl of North America, the long-range transport of food, the operation of our great sky-scrapers, and life built around the automobile are all in peril (see J.H. Kunstler's *"The Long Emergency"*). The influence of declining oil supplies will affect nations, worldwide. In Canada, declining supplies and increasing costs of oil and gas will be critical to people living in colder regions, wherever these may be as climate warms up. Across the globe, recently increasing demands for oil by such large consumers as China and India, plus the high rates of use already occurring, will lead to competition and, potentially, warfare.

3) Climate is changing with a powerful array of potential impacts on water availability, forests, fishes, infrastructure, health conditions, and livability in the many regions 'cheap energy' is not available (see Al Gore's movie, *"An Inconvenient Truth"*, or read the book). The impacts of climate change are many and diverse. At this very time the people of central British Columbia are living with one of major importance to their future livelihood. The population explosion of Mountain Pine Beetle over vast areas of central British Columbia is, in large measure, due to warming winter climate conditions. It is projected that pine beetles will destroy over 900,000,000 m^3 of pine before the outbreak ends.

4) In association with increased CO_2, ocean pH is decreasing, i.e., acidity is increasing. The effects of such change on corals reefs, and production and composition of marine plankton, are not known. Prof. D. Pauly, Head of the Fisheries Centre at the University of British Columbia, in a recent interview on CBC radio, regarded ocean pH change as enormously significant and risky. I know little about this issue. However, a major concern is that many

species of marine plankton and corals may not be able to develop the hard shells that they need for survival.

5) Freshwater resources of the world, are dangerously over-taxed with use, or are being degraded. It is projected that by 2025, between 2.4 and 3.4 billion people will live in conditions of water scarcity or stress. If we consider local British Columbia situations, we find that the Okanagan region is already in a 'water shortage' state. In the lower mainland of 'Supernatural British Columbia', water quality is a developing problem. In the valley of the lower Fraser River, groundwater is being heavily charged with nitrate from chicken farms. Nitrate is well above the level of 10 mg/L, the acceptable standard for drinking water. *(This level was set because there is particular risk to children under four months old. The gut of <4 month old children has a higher pH than that of older people. The high pH enhances the conversion of nitrate to nitrite, which oxidizes the hemoglobin to methemoglobin. There is also a risk of nitrate poisoning for livestock foraging under drought conditions).*

   Groundwater is a critical water source for hundreds of thousands of people. Worldwide, about 460 million people depend, almost entirely, on groundwater reserves that are being used faster than replenishment. Such use includes that of the 450,000 km^2 Ogallala Aquifer underlying eight U.S. states. When that aquifer is depleted, American water users will come to Canada for water. If such required water is deemed to be of "national security" to the USA, it is an ominous question as to how effectively we will be able to "negotiate".

6) Major fisheries of the world are under assault. According to a study in the scientific journal *"Nature" (2003),* industrial fleets have fished out about 90% of all large ocean predator fish – tuna, marlin, swordfish, sharks, cod, halibut, skates, and flounders. This, done in the last 50 years. Mid-water fish species, that were at one time considered unusable, are now being fished down as well. Pacific salmon are in decline from central B.C. southward through the US Pacific Northwest. California has been hit the hardest with salmon population loss already. In British Columbia, climate change (warming), and associated population explosion of Mountain Pine beetle will lead to the loss of about 85% of the Lodgepole pine in the province. These effects combined with active salvage logging threaten stream and river hydrology, sediment budgets, and thermal regimes.

   The challenges involved in saving salmon in the Pacific northwest, if it is possible to do so at all, are daunting (see *"Salmon 2100: The Future of Wild Pacific Salmon"*, edited by R. Lackey, D. Lach, and S. Duncan). On a wider scale, freshwater resources and non-marine fish in many countries across the planet are put in jeopardy by human activities. Much of this, with an emphasis on forestry, is covered in a book by T.G. Northcote and G.F. Hartman, *"Fishes and Forestry: Worldwide Watershed Interactions and Management"*.

7) Since the dawn of agriculture we have lost about half of the earth's natural forest. The annual, worldwide, loss of natural forest is currently about 120,000 km^2 per year. Tropical forests are under assault from both the forestry and agriculture sectors. Twenty percent or more of the Amazon rainforest has already been lost to agriculture and logging, much of the latter of which is illegal. About 50% of the rainfall in that basin is recycled; i.e., it has fallen, been transpired by the forest, and has fallen again. The possibility of two or three successive years of drought plus agriculture and logging threaten the very existence of vast areas of the Amazon rainforest. The disruption or loss of this gigantic climate engine and oxygen generation system has serious implications for the all of us (see the January 2007 issue of *NATIONAL GEOGRAPHIC magazine*). Rain forests in Africa fare no better than those in South America. From 1980 to 1995 Africa lost about 0.7 million km^2 of forest due to forestry, mining, agriculture, and elephant damage (see Chapter 34 in *"Fishes and Forestry:…"* edited by T.G. Northcote and G.F. Hartman). Boreal forests across the world are at risk of loss due to northward expansion of logging, direct climate warming impacts and indirect impacts (insect population explosion). Russia contains about 70% of the world's Boreal forest. Large parts of it are at risk. In Siberia, 65% of the Boreal forest is located within the permafrost zone. Illegal logging and melting permafrost put this zone at risk.

   The Boreal forests of the world may be just as vulnerable as are the tropical rainforests.

8) Our perennial demand for economic growth, which invariably results in conversion of ecosystems to human use, reduces biodiversity, which ultimately affects the stability of these systems (see *http://www.countercurrents.org/cc-dawe030406.htm*). Functional ecosystems of the earth provide us with vital services such as water treatment and detoxification, waste assimilation, regulation of air quality, control of erosion, regulation of local climate, spiritual fulfillment, and many other things. These services, valued at near 33 trillion dollars per year, have been put at risk by our collective activities. The "Millennium Ecosystem Assessment Synthesis Report" (2005) states that 60%, 15 out of 24, ecosystem services evaluated are being degraded or used unsustainably.

ON THE 'PLUS' SIDE

On the 'plus' side, there are important positive elements in our future. Even though they are over-balanced by the 'negatives', they must be pursued even more than they are now:

1) The powerful documentary movie and the book, *"An Inconvenient Truth"* by Vice-President Al Gore has reached millions of North Americans. Awareness of our plight is increasing. Currently, hundreds of thousands of individuals and groups are actively involved in scores of ways in dealing with environmental issues. I am

doubtful that such well-intended activities can offset the major ecological shifts that are in motion now, given their momentum and scale. They may, on the other hand ameliorate impacts and assist in providing mind-sets that will help the environment, and assist humanity in facing a dangerous future.

2) Most recently, *the NATIONAL GEOGRAPHIC magazine* (January 2007) has shown the plight of the Amazon rainforest in its ecological, demographic, and socio-economic dimensions. While the latter components of the problem are Brazilian, the ecological implications of Amazon rainforest degradation are global. The article is disturbing but it has great value because of the scale of the readership of the magazine.

3) Means and scale of communication have increased. Television and the internet, if used responsibly, have wonderful potential to inform and connect people. The David Suzuki shows have increased awareness among tens of thousands of viewers in Canada.

4) The development of the concept of sustainability offers a foundation around which to build future relationships among all living things and the environment. However, the application of the idea must transcend its simple use or sloganeering for some particular agency or interest sector. Sustainability, in the best sense of idea, should imply the maintenance and normal functionality of natural (or near natural) ecological conditions and processes.

SINGLE PROBLEM SOLVING IS NO LONGER ENOUGH

If there was such a thing as a report card on humanity, at the beginning of the 21st century, the failing grades would outnumber the passes and pluses. Ecological and demographic dangers are not offset by the positive and encouraging things that are occurring. Not only that, when we do look at issues, the examinations are too often only skin-deep. If and when media coverage is given to large-scale environmental crises, the coverage is on a single problem basis. In addition, mass media coverage is, far too often, absorbed with the symptoms of problems rather than base causes. Blood and tears sell, penetrating analysis does not.

We have arrived at a time in which we face demographic challenges and global ecological disruptions on scales like nothing that people have seen before. These are the 'cross-roads'. For many, this is no longer news; the information is 'out there'. In spite of this, however, most people in more fortunate areas like North America are still 'sleepwalking' into the future. In less fortunate areas, e.g., Africa, parts of Asia and the Middle East, destroyed landscapes, starvation, and war preclude almost any development of an ecological, long-term perspective.

What is crucial to understand, is the fact that we are not confronted by a single issue such as climate change, depletion of oil, or loss of fish resources, serious as each of these may be. We face a 'convergence' of inter-connected, complex, environmental and resource loss and/or breakdown challenges. These will have enormous cumulative effects on the shape of societies of the future.

INADEQUACY OF POLITICAL SYSTEMS

Part of the quandary we face is that the more complex and long range the issues are, the less suited our political system is to meet them, and the less inclined people are to think about them. For the politician, discussion of mega-environmental issues and the politics involved does not attract votes for the next election. Indeed, thinking beyond the next election does not fit the agenda in our power-obsessed political system. For much of the public, discussion of impending crises is apt to lead only to dismissal – *"Doomsday talk; now let's see who is winning the hockey game"*. It is a societal failure that, at a time when we need political people to share responsibility as we face rough seas ahead, there is neither leadership nor vision. There is no one at the wheel. The irony of this lies in the fact that there are many thoughtful politicians who understand, but do not know how to fit such thinking into the current political process without rejection by the public or rebuke by political competitors. The politicians do, indeed, 'represent' us.

The list of demographic, environmental, and resource challenges indicates the powerful but unbalanced array of processes occurring on our planet. One way or another, some or all of these will affect people everywhere. Many of these dangerous and disturbing processes are interconnected, and the interconnections lead back to the reality that excessive numbers of people and their consumptive demands are overstressing the planet. As it stands, and as we behave now, increasing crowding and "shortages" will exacerbate the ongoing lawlessness and civil strife on earth.

HUMANS: LIKE ANY OTHER SPECIES IN THE END

If we go back to biological principles, every animal species on earth lives in some state of balance with other species and the physical environment. Whether it is a population of snowshoe hares in the Arctic, salmon in Canada's Fraser River system or in a (healthy) California river, the numbers go up and down, but they don't rise indefinitely. We too, are bound by this ecological reality. Compounding technology, as we have too often used it, has served only to increase, our numbers, our developmental pressures on the environment, and ultimately, the distance we may fall when the system collapses.

I believe that the next few decades will make it even more clear to us that we can not sustain the kind of social and economic systems that have prevailed over North America. Environmental and resource changes will force us into a very different relationship with the earth. It will be one that involves less consumption, less waste, and less travel. Life

in the future may, in fact, be less comfortable. Our legacy may be that future generations look back at us with dismay and resentment.

CHANGING RELATIONSHIPS WITH THE EARTH

There are three attributes of ecological processes that we might try to recognize in regard to the expanding environmental disruptions caused by the rampant growth of human numbers and resource use. These three are *momentum*, *feed-back*, and *complexity*.

Momentum

I will use a small-scale example of momentum. In the Carnation Creek watershed on the west coast of British Columbia, we studied the effects of logging on ecological processes in the system. Early logging cleared riparian vegetation from limited sections of the stream bank. After stream bank logging was ended and the first breakdown of stream banks occurred, there was a continuing cascade of effects. Stream-bed gravel movement increased, stable woody material in the channel moved, the channel continued to widen and impacts were transmitted downstream beyond the area of cutting. A cascade of events has changed, and will continue to change that small stream for may years to come. If we go from 10 square km to global scale, processes still have momentum. A role of CO_2 in climate change is accepted by most who think about it. However, if we stopped putting CO_2 into the atmosphere now, the effects of that which is there now would continue.

Feed-back

I will cite a large-scale example of feed-back. The CO_2 that is being put into the atmosphere now, by our fuel uses, is causing warming of peat deposits, wetlands, and permafrost. Warming and drying of these areas will release enormous stores of carbon in the form of CO_2 and methane. The *"Stern Review: The Economics of Climate Change"* says that peat deposits and wetlands contain around 1600 Gt CO_2, and permafrost areas contain about 1500 Gt CO_2 (one Gt is a billion tons). The release of even part of this carbon will feed back contributing to the climate warming process independent of what we do in reducing auto emissions.

Complexity

The history of much of the human 'success' on earth is a story of solving 'immediate' problems with technical innovation. It is also a history of recent population increase to the point where our technologically supported activities cause ecological disruption on a planetary scale. The disruption and its complexity evolved and increased with our growing numbers and technology.

Our beginnings were modest and our impacts were light. However, we have been a restless animal, and whatever we had was never good enough. At the earliest stages, we needed warmth and protection – we developed the use of fire; we needed sharp edged tools to skin, or cut, dig, or fight with. We developed them from stone, then copper, then iron. Earlier in our history, we existed in simple communities. Across the centuries, we changed and now we exist in cities of tens of millions. Our needs and impacts on nature became heavier.

In modern times, we needed to grow food (and make money) faster – we developed huge, energy-dependant, farm machines and agro-business. To get more fish, and catch them faster, people developed more powerful boats, equipped them with better fish-finding gear, and fished harder, deeper, and farther away from home. This voyage from the 'cave' to 'modern society' has been built on a linearly expanding technology, i.e., problem-solution, the creation of new problems, new technology to solve these, followed by a consequent array of further problems.

Our expanding technology, based on use, has led us to the point where we now use resources of the earth rapidly and with heavy impacts. We might view these types of resource use as points of contact with the environment around us. In meeting our expanding population-driven needs for the resources around us we have escalated our technologies to "solve" whatever problem of "needs" that existed.

The solutions escalate the levels of impact and/or create new problems. For example, to meet the problems of depleting oil, we drill in sensitive marine or Arctic areas. If not that, we use more 'bio-fuels' thus reducing our own food supplies. To culture more fish, we cut down mangroves that protect coast lines. In the temperate zones of the world we "farm" salmon. To do this, we use in a large part, pellet-form meal from smaller marine fish for salmon food. In some respects this is analogous to feeding sheep and rabbit to lions, and then eating the lions. To sustain high levels of catch of marine fishes, we fish harder with destructive methods (large bottom trawls), and we fish deeper in the ocean. To grow more food, and to grow it faster, we use chemical fertilizers and we have filled in wetlands. The expansion of use in one sector eventually impinges on others.

It has become progressively more apparent during the past five or six decades that resource use in one sector creates impacts in others. The use of forests for logging creates impacts for fishery resources in fresh-water environments. The expanding use of water for irrigation depletes rivers or ground-water supplies and may result in degraded water for other users. The expansion of farms, cities, industrial infrastructure, etc, degrades biodiversity and the function of ecosystems that support us. The point is that there is a cost and an impact with each new "solution".

With rising numbers of sectors of use and increasing intensity of such use, the numbers of points of interaction and conflict among them rise. As a result, the level of complexity continues to increases in the world around us. Problems that were once inter-sector in nature have been 'globalised'.

In the past three decades our species has expanded numbers, activities, and environmental impacts to the point where we affect global climate systems and marine ocean water chemistry. These changes now reverberate with further disruptions back into forestry, fresh-water resources, fisheries and agriculture. The convergence of ecological crises into mega-issues demands that we go further than trying to deal singly with climate change, or depletion of oil, or some other single sector problem. We must strive for enough vision to allow us to move beyond the 'problem - solution' trap in which each new techno-fix creates it own next generation of problems.

MOVING BEYOND THE 'TECHNO-FIX'

The complexity and uncertainty about the future is so great and so daunting that the response may be to simply give up and take what comes. This may be a matter of personal choice. However, by our choice or through processes of nature, the human numbers and resource-use growth syndrome will have to stop. Anything else seems counter-intuitive in the extreme.

In the end the convergence of resource and environment crises will demand that we move to 'steady state' economies and populations, not those growing endlessly upward (see Brian Czech ***"Shoveling Fuel for a Runaway Train"***). A 'steady state' will demand, also, a form of human behavior in which we are part of the system, not an increasingly dominant element within it. Perhaps, most difficult, it will require that we recognize that our numbers, like our use of resources, can not rise much further. They may be well beyond the limits of the earth by now.

The things that recent human society has done to get us to where we are now involve the legacy of our history, our ethics, values and basic human behavior. In that regard, changes that involve an interlocked 'triumvirate' of economic growth, religion, and politics that currently guide our society may be very difficult to make. However, the driving forces behind such processes as climate change, forest loss, degradation and depletion of freshwater, destruction of fisheries, are locked within this behavioral triumvirate. These are interconnected, macro-ecological issues that will have to be dealt with at the core of their being. In the long term, it will be futile to deal with them at the points where the symptoms, which we call "shortages", and our behavior that we call conflict, occur.

Politically and socio-economically, our society is at a point where it will have to make a quantum shift in behavior. The challenge of doing so, and having a vision-driven, earth-centered role, one that is beyond growth and profit, may be one of the most difficult that we have faced, or will have to face, as a species. It will require changes in beliefs, values, and our relationship to the environment. This part of the message from my brief discussion is not new. In 1974 Dennis Pirages and Paul Ehrlich published *"Ark II: Social Response to Environmental Imperatives"*. They wrote about the challenges (and implied need) of changing the "Dominant Social Paradigm" (DSP) of the USA. They regarded the DSP as the collection of norms, beliefs, values, habits, etc that are transmitted from generation to generation, and form the world view that is held within a culture. Time has only made their writing more meaningful and our thoughtful response more urgent.

The political systems of today seems to be quite unsuited for dealing with the massive and complex ecological and social challenges that are either here or on the horizon. These challenges eclipse most of the issues that currently occupy our politicians. Normally, individuals and groups, followed by politicians, act in their perceived self-interest. Such self-interest is usually short-term. In many regards, the pursuit of short-term self-interest is the companion of the techno-fix.

NEED FOR A LONG-TERM BRAIN

I believe that we should seek some national or international forum whose role it would be to discuss and understand these complex 'macro-issues', and to inform and encourage elected people everywhere to become involved in dealing with challenges that may not be popular in the short term. I do not know exactly what the structure of such a forum might be, but we need a *'long-term brain'* for government. It will probably be very difficult to create the best arrangement and sell the idea. It is clear, however, that as part of the foundation for this, we need awareness and an understanding of the urgency.

This critical foundation requires that we recognize and begin to understand the full nature of our situation. This situation is indicated by the eight challenges listed earlier in this paper. As we attempt to deal with these eight issues, each of which involves resource use and ecological responses, it is necessary to understand: first, that the processes involved may already have momentum that may cause them to continue, and second, that they may create feed-back that causes secondary processes to occur, thus driving a spectrum of new responses and problems. Third, it must be remembered that the processes are complex and can not be dealt with through simple 'problem – solution' responses.

The framework of our thinking for the future should include hope and positive thinking set in a context of realism. We cannot avoid our future challenges with blind optimism any more that we can live with them in total pessimism. The extent to which we can wrestle with such a complex of challenges and have some influence on our own future, rather than having nature make the decisions for us, may tell us just how much we deserve the *"sapiens"* in *Homo sapiens*, the Latin species name we have so immodestly given ourselves. In the near future, we had better be "sapient" (wise) because 'nature bats last'. Hurricane Katrina has told us that she also bats hardest.

Jellyfish Outbreaks a Sign Nature is Out of Sync?

By JEROME CARTILLIER
Agence France-Presse, PARIS' France
Reprinted from the Edmonton Journal, 22 June 2008

The dramatic proliferation of jellyfish in oceans around the world, driven by overfishing and climate change, is a sure sign of ecosystems out of kilter, warn experts.

"Jellyfish are an excellent bellwether for the environment," explains Jacqueline Goy, of the Oceanographic Institute of Paris, "The more jellyfish, the stronger the signal that something has changed."

Unchecked Growth / Over-exploitation of the ocean by man has helped create near perfect conditions

"Brainless creatures composed almost entirely of water, the primitive animals have quietly filled a vacuum created by the voracious human appetite for fish."

Dislodging them will be difficult, marine biologists say.

"Jellyfish have come to occupy the place of many other species," notes Ricardo Aguilar, research director for Oceana, an international conservation organization.

Nowhere is the sting of these poorly understood invertebrates felt more sharply than the Mediterranean basin, where their exploding numbers have devastated native marine species and threaten seaside tourism.

And while much about the lampshade-like creatures remains unknown, scientists are in agreement: *Pelagia noctiluca*—whose tentacles can paralyze prey and cause burning rashes in humans—will once again besiege Mediterranean coastal waters this summer.

That, in itself, is not unusual. It is the frequency of appearances that worry scientists.

Two centuries worth of data shows that jellyfish populations naturally swell every 12 years, remain stable for four or six years, and then subside.

The year 2008, however, will be the eighth consecutive year in which rnedusae, as they're also known, will be present in massive numbers.

The over-exploitation of ocean resources by man has helped create a near-perfect environment in which these most primitive of ocean creatures can multiply unchecked, scientists say.

"When vertebrates, such as fish, disappear, then invertebrates—especially jellyfish—appear," says Aguilar.

The collapse of fish populations boost this process in two important ways, he added. When predators such as tuna, sharks, and turtles vanish, not only do fewer jellyfish get eaten, they have less competition for food.

Jellyfish feed on small fish and zooplankton that get caught up in their dangling tentacles.

"Jellyfish both complete with fish for plankton food, and predate directly on fish" explains Andrew Brierley from the University of St. Andrews in Scotland, "It is hard, therefore, to see a way back for fish once jellyfish have become established, even if commercial fishing is reduced."

Which is why Brierley and other experts were not surprised to find a huge surge in the number of jellyfish off the coast of Namibia in the Atlantic, one of the most intensely fished oceans in the world.

Climate change a has also been a boon to these domed gelatinous creatures in so far as warmer waters prolong their reproductive cycles.

But just how many millions, or billions, of jellyfish roam the seas is nearly impossible to know, said scientists.

For one things, the boneless, translucent animals - even big ones grouped in large swarms - are hard to spot in satellite images or sonar soundings, unlike schools of fish.

They also resist study in captivity, which means a relative paucity of academic studies.

"There are only 20 percent of species of jellyfish for which is well know the life cycle," said Goy.

And the fact that jellyfish are not commercially exploited, with the exception of a few species eaten by gastronomes in East Asia, has also added to this benign neglect.

But the measurable impact of these stinging beasts on beach-based tourism along the Mediterranean has begun to spur greater interest in these peculiar creatures whose growing presence points to dangerous changes not just in the world's oceans, but on the ground and in the air as well.

Pelagia noctiluca

Biologists Give Dire Biofuels Warning

INVASIVE CROPS THREATEN HUMAN HEALTH
Agence Prance-Presse, BONN
Reprinted from the Edmonton Journal, 22 May 2008

Countries thinking of joining the rush for biofuels run the risk of planting invasive plant species that could wreak environmental and economic havoc, biologists warned on Tuesday.

In a report issued on the sidelines of a major UN conference on biodiversity, an alliance of four expert groups urged governments to select low-risk species of crops for biofuels and impose new controls to manage invasive plants.

"The dangers that invasive species pose to the world couldn't be more serious," said Sarah Simons, executive director of the Global Invasive Species Program.

"They are one of the top causes of global species loss, they can threaten livelihoods and human health and they cost us billions in control and mitigation efforts. We simply cannot afford to stand by and do nothing."

The report, Biofuel Crops and Non-Native Species: Mitigating the Risk of Invasion, points the finger in particular at the giant reed *(Arundo donax)*, a native of West Asia that has become invasive in parts of North and Central America.

Proposed as a biofuel crop, the reed is naturally flammable and thus increases the likelihood of wildfires.

It is also very thirsty, sucking up 2,000 litres of water for one metre of standing growth, which adds to stress in dry regions.

Another problem plant is the African oil palm, which is grown for biodiesel. In parts of Brazil, it has turned areas of forest with mixed biodiversity in a homogenous layer of palm trees, GISP said.

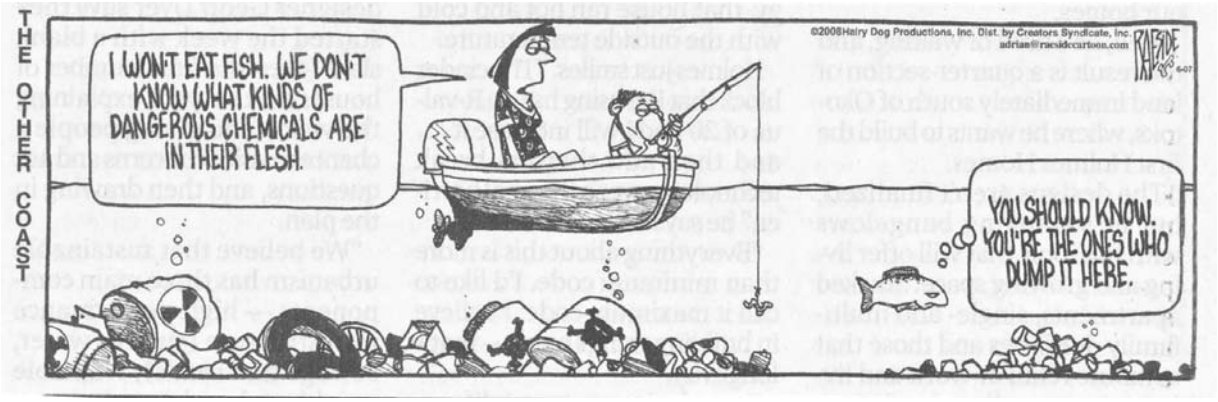
The GISP is a partnership gathering the International Union for Conservation of Nature; CABI, formerly known as the Commonwealth Agricultural Bureaux; the South African National Biodiversity Institute and the Nature Conservancy.

According to figures cited by a GISP press release, invasive species cost the world $1.4 trillion US annually, or five per cent of the global economy.

The United States alone spends $120 billion annually to tackle more than 800 kinds of invasive pests.

The report was issued on the second day of an 11-day meeting of the UN Convention on Biodiversity (CBD), established at the Earth Summit in Rio de Janeiro in 1992.

Bio-Humour



Conferences & Courses

WDA 2008 Annual International Conference of the Wildlife Disease Association

August 3-8, 2008, University of Alberta, Edmonton, Alberta, Canada

Contact: Margo Pybus
Tel: (780) 427-3462
Email: margo.pybus@gov.ab.ca
Website: http://www.biology.ualberta.ca/parasites/WDA08/

138th Annual Meeting of the American Fisheries Society: Fisheries in Flux: How Do We Ensure Our Sustainable Future

August 17-21, 2008, Ottawa Congress Centre and Westin Hotel, Ottawa, Ontario

Fisheries and fish communities are not static properties of ecosystems. Stressors such as overexploitation, species invasions, habitat degradation, climate change, and water resource demand are a few of the factors that drive changes. These changes potentially threaten sustainable use. Some notable examples include the collapse of the cod fishery on the east coast, declines in the B.C. salmon fishery and fish community changes in the Great Lakes as a result of the introduction of zebra mussels. Can we find solutions to these threats? What are we doing to ensure a sustainable future and what changes need to be made in our management of aquatic ecosystems? Come to the meeting and explore possible answers to these and many other issues affecting North America's fisheries.

For further information, see ***http://www.fisheries.org/afs08/***

Canadian Urban Forest Conference

September 23-26, 2008, Sherwood Park, Alberta

Urban forests—benefiting our communities and improving the health of people in centres where we work, live and play. "People who will not sustain trees will soon live in a world which cannot sustain people." - Bryce Nelson

We welcome those responsible for municipal green spaces, landscape architects, developers, biologists, forestry engineers, arboriculturists, researchers in the health care industry and students in these fields as well as forestry specialists interested in the health of trees in urban environments.

Conference Highlights:
* Carbon Neutral event
* World class speakers
* First-ever Children's Tree Conference held in conjunction with 8th Canadian Urban Forest Conference
* Exchange ideas with fellow professionals who are in your industry and share your passion

More information and registration: www.cufc8.ca

Niagara Escarpment Biosphere Conference: Leading Edge 2008

(Oct 1 & 2) Wed Oct 1 to Thu Oct 2, 2008, Orangeville, ON

8th Biosphere Conference

Leading Edge 2008, the NEC's 8th biosphere conference, takes place October 1st and 2nd at Monora Park in Orangeville, Ontario

Conference Overview
Leading Edge 2008 gets "back to the roots" of the conference series begun in 1994, with a focus on Niagara Escarpment research and "State of the Escarpment" reporting. The conference is presented by the Niagara Escarpment Commission in association with the Ontario Heritage Trust, Ontario's Ministry of Natural Resources and the Canadian Biosphere Reserves Association.

Highlights include:
* Guest speakers Roy MacGregor and Margaret Wente
* Five award-winning research presentations
* Eco Cities
* Special panels featuring guests from Canadian Biosphere Reserves
* A series of interactive and informative sessions on sustainable tourism and economic development
* New insights into adaptation to climate change at the local level
* Practical presentations on ecosystem health and monitoring
* Unmatched opportunities for you to connect, share and learn!

Location
We are pleased to bring Leading Edge 2008 to the beautiful Headwaters region of the Escarpment in the Town of Mono. The conference venue, Monora Park Pavilion, is conveniently located in Orangeville, Ontario on Highway 10/124. The venue's surrounding forested parkland will be at its peak of autumn colours during the conference. Monora Park is approximately 15 km south of Mono Cliffs Provincial Park.

Accommodations
Delegates can arrange accommodations from a wide variety of options ranging from Bed & Breakfasts to resorts: view a list of accommodations in the area.

Registration
Online registration will be available the week of July 21, 2008.

More information and registration:
www.escarpment.org/leading_edge/leadingedge.htm

Canadian Environmental Network (RCEN) AGM & Conference

(Oct 24 - 26) Fri., Oct. 24 to Sun., Oct. 26, 2008, Toronto, ON

The Canadian Environmental Network's (RCEN) 2008 AGM and Conference is currently being planned for the month of October. This year's event will take place in Toronto, from October 24 to 26.

For more than thirty years, this annual fall event has gathered Environmental NGOs from across Canada in an effort to strengthen the environmental movement, build lasting relationships between groups and provide a forum for discussions on present-day environmental issues. It is also where representatives from many of the RCEN's hundreds of member groups meet to participate in the Network's Annual General Meeting.

Following on last year's 30th Anniversary Celebration, 2008 will see a rejuvenated RCEN aspire to further establish itself as the most important independent, non-partisan environmental organization in Canada, whose mandate is to Protect the Earth and Promote Environmentally Sound Ways of Life.

Please visit www.cen-rce.org for further information or send an email to bulletin (at) cen-rce.org to subscribe to the RCEN's weekly E-Bulletin.

COREGONID 2008

Tenth International Coregonid Symposium

The Tenth International Symposium on the Biology and Management of Coregonid Fishes will be held from August 24th (registration) to August 29th, 2008, in Winnipeg, Manitoba, Canada.

For information, see http://coregonid2008.net/index.php

North American Lake Management Society. Lake Management in a Changing Environment

Nov. 11-14, 2008, Château Lake Louise, in beautiful Lake Louise, Alberta.

Contact: Al Sosiak
Tel: (403) 297-5921
Website: http://www.nalms.org/Conferences/2008LakeLouise/

Stampede Turns Off Lights To Go Green

Wednesday, July 2, 2008 CBC News

The Calgary Stampede is introducing utensils and plates made from corn starch and turning off the midway lights during the day in an effort to reduce the environmental impact of the 10-day event.

Signs will direct the Stampede's 100,000 daily visitors to dispose of the cornstarch dishes and utensils in compost bins. The biodegradable items will be tried out by a handful of concession stands.

"Instead of sending it to city landfill, we're going to attempt to try to take them out of the waste stream and compost them with our regular composting programs as bedding waste manure," operations manager Gerry McHugh said Wednesday.

To save electricity, lights for vendors and rides on the midway will be shut off during sunny days, and turned on at dusk when they're needed, he said.

The Stampede is also stepping up its efforts to recycle the leftover grease from deep fryers to turn into biodiesel.

The barns already boast more than 10 skylights that reduce the need for artificial lighting, and the operations/trades building is heated with roof solar panels.

McHugh even showed off a machine in a back shop that crushes fluorescent tubes and separates the mercury and phosphor vapours, so they don't end up in the landfill.

"We are going to continually improve and look at our programs," said Cherie Schmidt, the Stampede's environmental co-ordinator. "Start with the major ones, and then start going through the rest of them and see what else we can do to lower our footprint."

A new bin at the exit to the Stampede for donating plush toys to charity is among the new green initiatives.

"A lot of people are trying to get the big prize so they may have no use for the smaller ones," said McHugh.

Government Appoints Chair to the National Round Table on the Environment and the Economy

OTTAWA, ON — June 17, 2008 — Canada's Minister of the Environment, John Baird, today announced the appointment of Robert Page as chair of the National Round Table on the Environment and the Economy (NRTEE). This appointment is effective immediately.

"Mr. Page brings with him a wealth of experience and expertise that will continue to greatly complement the work that the Round Table does," said Minister Baird. "As acting Chair since March of this year, it is clear that his combined abilities and understanding of the issues that the NRTEE addresses make him an ideal choice to help push forward the Round Table's agenda."

NRTEE is dedicated to exploring new opportunities to integrate environmental conservation and economic development in order to sustain Canada's prosperity and secure its future. Its mandate has recently been enhanced to provide advice to Canada's Government on Turning the Corner: An Action Plan to Reduce Greenhouse Gases and Air Pollution.

NRTEE was created in October 1988 by then Prime Minister Brian Mulroney and its independent role and mandate were enshrined in the National Round Table on the Environment and Economy Act. Its members are drawn from distinguished leaders in business and labour, universities, environmental organizations, Aboriginal communities and municipalities.

For more information, please contact:
Eric Richer, Press Secretary
Office of the Minister of the Environment
(819) 997-1441

Environment Canada Media Relations
(819) 934-8008
1-888-908-8008

Biography

Robert Page, is currently the TransAlta Professor of Environmental Management and Sustainability, Energy and Environmental Systems Group, Institute for Sustainable Energy, Environment, & Economy, University of Calgary, where he is also an Adjunct Professor in the Haskayne School of Business.

From 1997 to January 2007 he was the Vice President Sustainable Development, TransAlta Corporation, Calgary with operations in Canada, US, Mexico, and Australia. Dr Page led their efforts on climate change, emissions, and sustainable development.

Prior to joining TransAlta in 1997, Dr. Page spent 25 years in consulting, academic teaching and research. Most recently, he was Dean of the Faculty of Environmental Design at the University of Calgary, where he taught in the Environmental Science program

Dr. Page is known nationally and internationally for his work on energy and the environment in areas such as climate change, emissions trading, biodiversity and protected spaces, environmental impact assessment, and policy and regulation.

He is Chair of the Board of Directors of BIOCAP Canada, a national research partnership on biological carbon capture and bio-energy, and a past Chair of the Board of the International Emissions Trading Association (Geneva). Dr. Page also chaired the Banff Bow Valley Study (federal inquiry into the ecological intensity of Banff National Park) and served on the Alberta Special Places 2000 Committee.

Dr. Page's activities have been varied, and have included the Board of Directors of Clean Air Strategic Alliance of Alberta (CASA), the International Institute for Sustainable Development, the Business Environmental Leadership Council, (Pew Center on Global Climate Change, Washington, DC) and the Canadian Water Network. He is also a member of the Environment Committee of the National Chamber of Commerce and the Banff Calgary Board of the Canadian Parks and Wilderness Society.

Dr. Page has served for the Government of Canada in international negotiations on the Conference of the Parties for Kyoto, the NAFTA negotiations, and trade and the environment. He is the author of many articles and several books on energy and the environment, and has been recognized nationally and internationally for his work.

Dr. Page holds an honours Bachelor of Arts degree, a Master of Arts degree from Queen's University and a doctorate (international relations) from Oxford University. He and his wife Jocelyne spend free time roaming the wilds of the Rockies and the Shield Country of Ontario.

Please Renew your Membership

For more information please contact Gary Ash at gash@golder.com

Wanted: Regional Newsletter Contributors

CSEB needs to set up a network of regional newsletter contributors to gather newsworthy information and solicit regional based articles for inclusion in the quarterly CSEB Newsletter/Bulletin. If you are interested, please contact Gary Ash at gash@golder.com.

CANADIAN SOCIETY OF ENVIRONMENTAL BIOLOGISTS
LA SOCIETE CANADIENNE DES BIOLOGISTES DE L'ENVIRONNEMENT

FORMULAIRE D'ABONNEMENT
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Regular Members: persons who have graduated from a college or university in a discipline of biological sciences, and who are or have been professionally engaged in teaching, management, or research related to natural resources and environment.

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.

Complete this form and return with cheque payable to:
The Canadian Society of Environmental Biologists

Membres Réguliers: les personnes ayant un degré ou diplôme d'un collège ou une université dans une discipline des sciences biologiques et qui sont ou qui ont déjà éte engagé professionnellement en aménagement, enseignement ou recherche tenant a l'environnement ainsi que ressources naturelles.

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Membres Associés: les personnes qui supportent les activités et les objectifs de la Société mais qui ne se qualifient pas comme membre régulier ou étudiant.

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Occupation/Emploi: _____ Employer/ Employé par: _____

Responsibilities/Interests/Responsabilités/Intérêts d'emploi: _____

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