

MAWQATMUTI'KW



BECCA
HUNKA '05

OUR CONNECTION

WHY DO YOU SING of your battles, and the warriors you have slain, when the worst enemy of all is near you, and keeps the Young Eagle from his rights? ...

And why have you slain the Mingo warriors? Was it not to keep these hunting grounds and lakes to your father's children? And were they not given in solemn council to the Fire-eater? And does not the blood of a warrior run in the veins of a young chief, who should speak aloud where his voice is now too low to be heard?

... J. F. Cooper

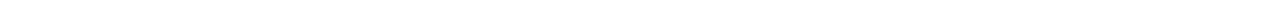




Photo by Jeffery Stevens - Maders Cove overlooking Mahone Bay, May 29, 2013

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Mawqatmuti'kw is also produced to feature articles and information about MAARS work to promote Aboriginal fishing, knowledge about aquatic resources, ocean management, governance and collaborative partnerships.

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GUEST WRITER

World Premiere **EVANGELINE** by JOHN JOE SARK

The world premiere of the musical 'Evangeline' at Charlottetown's Confederation Centre on July 6 2013 was an enjoyable event for the audience and a tribute to the enduring spirit of the Acadian People. As Keptin of the Mi'kmaq Grand Council I am entrusted, for life, with the protection of Mi'kmaq culture and spirituality. This responsibility includes how we are portrayed in the media and arts so it was disappointing to see only very a brief mention of the essential role the Mi'kmaq played in early Acadian history despite many opportunities for inclusion.

In the opening remarks the CEO and the Chairman of the Centre's Board did not acknowledge that they and the

Centre itself are in Mi'kmaq territory and that the story behind the play took place in Mi'kmaq territory. For thousands of years before the French arrived in the territory they came to call Acadia, it was known by the people living here as Mi'ma'ka, meaning the "land of friendship," as that is the meaning of the name of the Mi'kmaq Nation. Our new friends the Acadians would have never survived their first harsh winters in Atlantic Canada without the complete support of the Mi'kmaq who taught them essential winter survival skills: making snowshoes and using them to move about the land, traversing the river-highways and making and the essential birch bark canoe. The survival of the Acadians was

chiefly due to the generosity of the Mi'kmaq; teaching them what to eat and wear, how and what to hunt and fish in our harsh environment.

When Britain warred into this territory it was my Mi'kmaq ancestors who were horrified to witness the British treatment of the Acadian People during the Great Deportation that they fought for and signed the Watertown Treaty with the United States of America in 1776. The Watertown Treaty between the Mi'kmaq and the United States was signed shortly after the US Declaration of Independence and is the first recorded International Treaty signed by the United States of America. The Mi'kmaq were known as the 'Friendly People';



for example, they thought it only natural to share their food, medicine, spirituality and family lives with the homeless French—the new Acadians.

There should be a play showing Mi'kmaq history since they became friends and allies with the French (Acadians). Like the Acadians, the unbeatable spirit of the Mi'kmaq also brought them through incredible adversity like bounties on Mi'kmaq scalps. Even as Canada became a Nation, its founding laws for Aboriginal relations were paternalistic and racist. The detrimental affects of these archaic laws and genocide-like policies continue to ripple through the lives of Mi'kmaq and countless other Aboriginal Nations to this day. Forced to live in conditions of apartheid and the limitations of the Reservation system.

Mi'kmaq people for decades

after the system was created needed permission from an Indian Agent to leave the Reserve. While the Great Wars for the freedom of Europe called every available daughter and son into the armed forces, our children—many barely toddlers were systemically being stolen and taken to Indian Residential Schools along with thousands of Aboriginal children across the country. The snatching of hundreds of thousands of children by a self-titled 'civilized' nation escapes theatrical interest through the same indifference that allows for a play about early Acadian history to ignore the life-supporting role which the Mi'kmaq gave with open hearts.

Keptin John Joe Sark's role as a spiritual leader for the Mi'kmaq people has built a lasting bridge of understanding between cultures. He obtained his Bachelor of Arts degree in Political Science from the University of Prince Edward Island. In 1985, he was honoured by the Grand Chief of the Mi'kmaq Nation who nominated him as Keptin of the Mi'kmaq Nation. Following this, he was elected unanimously by Keptins of the Mi'kmaq Nation, with a lifetime nomination, as Keptin by the Mi'kmaq Grand Council. In his role as guardian of the spiritual and cultural integrity of the Mi'kmaq people, he has fought to have offensive stereotypes removed from schools and institutions in Prince Edward Island.

As a representative of the Mi'kmaq Council, Keptin Sark has lobbied internationally for indigneous rights. He has had audiences with The Pope on the subject of residential schools. He contributed to the drafting of The United Nations' Declaration on the Rights of Indigenous Peoples, and was co-producer, executive director and artistic director of the film "Spirit World – The Story of the Mi'kmaqs".

Keptin Sark also wrote a book on the history of the Mi'kmaq People and he continues to use his expertise to encourage accurate portrayals of Mi'kmaq history. Mr. Sark was appointed as Mi'kmaq Ambassador to the Vatican in 1994, the United Nations Human Rights Commission in Geneva in 1994, the Acadian National Society in New Orleans in 1999, and the Acadian National Society in France in 2002. John Joe Sark lives in Johnston River, Prince Edward Island.

The idea that the English and the French are Canada's two Founding Nations is just wrong but is promoted by the Federal and Provincial Governments of Canada. We, the Mi'kmaq were here thousands and thousands of years before the first boat loads of people, essentially European refugees looking for a richer life, arrived here to be rescued and helped to prosper by us. While it may seem a small issue, at best the play 'Evangeline' represents a missed opportunity to recognize the role of Mi'kmaq in early Acadian history. Worse, it indicates acceptance of a biased version of history during a dark time in Canada—Aboriginal policies.

EDUCATION

CANADA LOSING SEASONS

by STEPHEN LEAHY

“Canada is not a country, it’s winter,” Canadians say with pride. But the nation’s long, fearsome winters will live only in memory and song for Canadian children born this decade.

Winters are already significantly warmer and shorter than just 30 years ago. The temperature regimes and plant life of the south have marched more than 700 kilometres northward, new research shows.

The frozen north is leaving and won’t be back for millennia due to heat-trapping carbon emissions from burning fossil fuels, experts say.

By 2091, the north will

If we don't curb carbon emissions, Arctic Sweden might be more like the south of France by the end of the century.

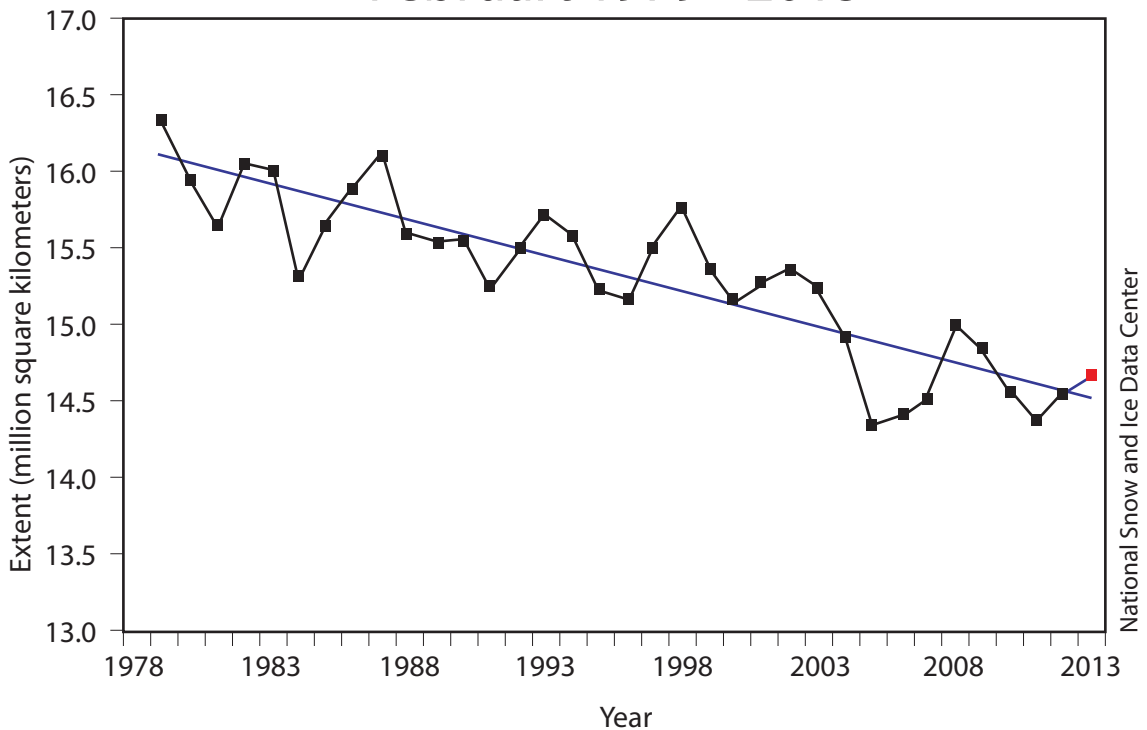
have seasons, temperatures and possibly vegetation comparable to those found

today 20 to 25 degrees of latitude further south, said Ranga Myneni of the Department of Earth and Environment, Boston University.

“If we don’t curb carbon emissions, Arctic Sweden might be more like the south of France by the end of the century,” Myneni, co-author of the Nature Climate Change study published Sunday, told IPS.

Canada, Northern Eurasia and the Arctic are warming faster than elsewhere as a result of the loss of snow and ice, he said. In 90 years, Alaska or Canada’s Baffin Island in the Arctic may have seasons and temperatures

Average Monthly Arctic Sea Ice Extent February 1979 - 2013



Credit: National Snow and Ice Data Center

comparable to those in today's Oregon and southern Ontario.

Myneni is member of an international team of 21 authors from seven countries who used newly improved ground and satellite data to measure changes in temperatures and vegetation over the four seasons from roughly above the U.S.-Canada border (45 degrees latitude) to the Arctic Ocean.

They found temperatures over the northern lands have increased at different rates during the four seasons over the past 30 years, with winters warming most followed by spring temperatures.

There is a huge difference between winter and summer temperatures in the north, but that difference is less and less every year, according to the study, "Temperature and vegetation seasonality diminishment over northern lands". This measured change is happening faster than projected by climate models.

"We are changing seasonality.... The north is becoming like the south, losing its sharp contrasts between the four seasons," said Myneni.

One clear sign is the greening of Arctic. The types of plants that could go no further north than 57 degrees north 30

years ago are now found at 64 degrees.

This change is "easily visible on the ground as an increasing abundance of tall shrubs and tree incursions in several locations all over the circumpolar Arctic," said co-author Terry Callaghan of the Royal Swedish Academy of Sciences and the University of Sheffield, UK.

Seasonality is often called the rhythm of life. Changes will impact many species, considering the enormous numbers of birds, animals and others species that migrate north to feast during the short northern summer.

“The way of life of many organisms on Earth is tightly linked to seasonal changes in temperature and availability of food, and all food on land comes first from plants,” said Scott Goetz, deputy director and senior scientist, Woods Hole Research Center, Falmouth, U.S.

“Think of migration of birds to the Arctic in the summer and hibernation of bears in the winter: Any significant alterations to temperature and vegetation seasonality are likely to impact life not only in the north but elsewhere in ways that we do not yet know,” Goetz said in a statement.

The Arctic is home to millions of square kilometres of permafrost with its vast amount of frozen carbon. The amplified warming of the Arctic will release some of this carbon, leading to greater warming around the planet for hundreds of years, the study also warns.

In recent weeks, satellite images of the Arctic Ocean

have revealed large fractures in the sea ice during the coldest part of winter. Sea ice does not normally begin to break up until at least April. The mid-February fracturing was extensive and unusual, sea ice expert Mark Serreze, the director of the National Snow and Ice Data Center, told IPS.

Last summer’s record melt of sea ice was 80 percent greater when compared to summers 30 or more years ago. This winter, most of the ice in the Arctic is thin, first-year ice that is more easily fractured and likely to melt quickly when the summer comes.

The ramifications of this planetary-scale change are just beginning to be understood.

The 2012 sea ice collapse amplified the destructive power of Superstorm Sandy, researchers reported last week in the journal of Oceanography. The severe loss of summertime Arctic sea ice appears to affect the jet stream, IPS has previously reported.

That helped Hurricane Sandy take a powerful turn west instead of steering northeast and out to sea like most October hurricanes, researchers say in the paper “Superstorm Sandy: A Series of Unfortunate Events?”.

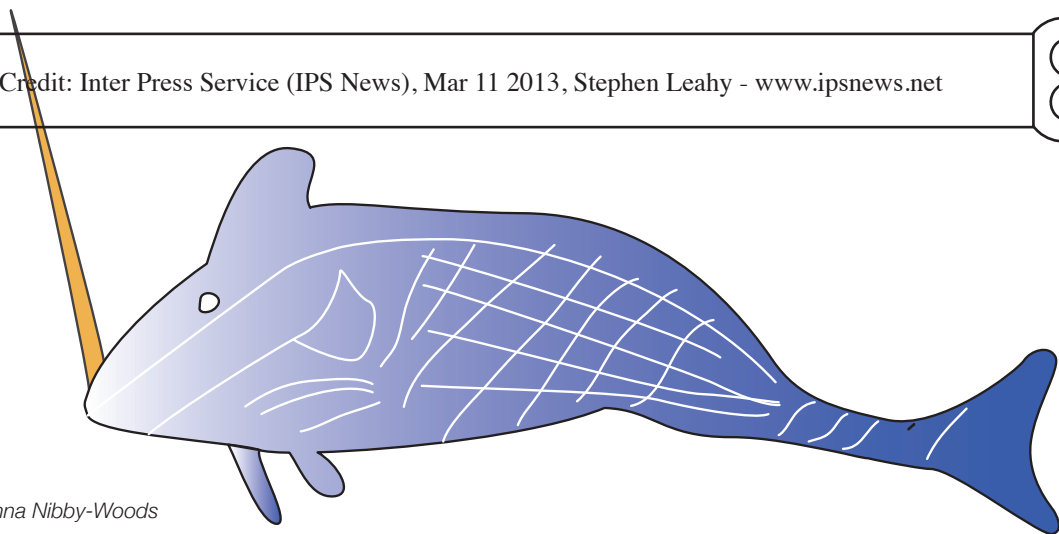
It’s not only sea ice that is in full meltdown mode. Canada’s land-based glaciers are also melting. Little studied until recently, these glaciers are third in volume only to those of Antarctica and Greenland. By the end of this century, 20 percent will have melted, raising global sea levels by 3.5 cm.

Considering oceans cover 71 percent of the planet, that is an incredible amount of ice turning into water.

“We believe that the mass loss is irreversible in the foreseeable future” assuming continued climate change, wrote researchers from the Netherlands and the United States in the journal Geophysical Research Letters.

Story Credit: Inter Press Service (IPS News), Mar 11 2013, Stephen Leahy - www.ipsnews.net

Illustration by Anna Nibby-Woods





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WORLDVIEW

I AM THE RIVER & THE RIVER IS ME

by BRENDAN KENNEDY

The Implications of a River Receiving Personhood Status

When an agreement recently signed in Aotearoa (New Zealand) proposed the acknowledgement of the Whanganui River as a legal person, many saw it as an innovative resource management solution. Indigenous Peoples around the world often struggle with governments that do not recognize their view of the natural environment; when natural resources are involved, Indigenous worldviews are often in direct conflict with non-Indigenous notions of

property ownership. Viewed in this light, the agreement is even more compelling—because it is an agreement to define a natural resource according to the worldview of Māori, the Indigenous people of Aotearoa. A Resource for Profit or Te Awa Tupua?

The natural resources in Aotearoa are often viewed through two different lenses: Māori and non-Māori. Honorable Peter Sharples, noted Māori academic and cabinet minister, describes these competing views best: “Holding a title to property, whether Crown or private, establishes a

regime of rights—to capture, to exclude, to develop, to keep. Rangatiratanga (Maori sovereignty or absolute chieftainship) is asserted through the collective exercise of responsibilities— to protect, to conserve, to augment, and to enhance over time for the security of future generations. Both seek to increase value, but the question is, how do you value the resource? [By] the profit you can make? Or the taonga (treasure’s) contribution to the survival of the group?”

The answer, in this case, is the latter: the Whanganui River will be defined and governed



Whanganui River (Photo by Su Yin Khoo)

by the Māori view of the river. Whanganui Iwi, the Indigenous people that possess rangatiratanga over the Whanganui River, and the river itself will be considered a living, integrated whole, or Te Awa Tupua. This view encompasses more than chieftainship, however. As explained by the late Niko Tangaroa, a Māori elder, Whanganui Iwi have an interdependent relationship with the river: “The river and the land and its people are inseparable. And so if one is affected the other is affected also. The river is the heartbeat, the pulse of our people. . . . [If the river] dies, we die as a people. Ka mate te Awa, ka mate tatou te Iwi.” This unique relationship is not a concept that can be easily understood by non-Māori because its value

exists outside of the profitgenerating notions of property.

According to Honorable Tariana Turia, a member of parliament who is affiliated with Ngati Apa/Wairiki, Nga Rauru, Tuwharetoa, and Whanganui Iwi, the Whanganui River has always been a protected tribal resource—so the Whanganui Iwi do not accept the argument that everyone and no one owns it. In fact, prior to signing the agreement with the Crown, Whanganui Iwi argued that assigning non-Māori ownership rights to the river were the only way that their unique relationship, identity, and rangatiratanga could be protected. So if Whanganui Iwi view the river differently from non-Māori, how did Iwi get the Crown to agree

to define it as they always have, as Te Awa Tapua? Also, why did Whanganui Iwi agree to have their rangatiratanga protected through a non-Māori guardianship model where the river is considered a legal entity? The answers, not surprisingly, are complex.

Defining the River According to the Worldview of Māori

Māori chiefs and agents of the British monarchy began their official partnership when they signed the Treaty of Waitangi in 1840. The partnership continues between the Māori and the Crown today, though it is the Treaty's principles that govern the duties and obligations of this partnership rather than its explicit text. Although these principles will inevitably change to reflect the transforming needs of the country, the courts have found that the Treaty's principle of partnership imposes a duty of good faith and reasonable conduct between Māori and the Crown.

Additionally, the Crown has a duty to make informed decisions and to protect Māori property rights. The spirit of the Treaty also imposes the principle of redress, where the Crown is required to provide active and positive redress for past breaches of the Treaty. In such a case, the settlement process usually begins by the Māori filing a claim with the Waitangi Tribunal; then Māori negotiate with the Crown directly so that Māori can get compensation for proven breaches of Treaty principles. Whanganui Iwi have been engaged in this process for decades. As both parties continue to negotiate a final settlement, the agreement recognizing the river as Te Awa Tapua is an important step forward.

Tu-tohu Whakatupua: A Cause for Cautious Optimism

The agreement that defines the Whanganui River as a legal entity, to be protected

by appointed guardians, is titled Tu-tohu Whakatupua. It states that Māori values of the Whanganui River be central to a final settlement in which the Crown will appoint one guardian, Whanganui Iwi will appoint one guardian, and both guardians will act together for the benefit of the river. If the guardians have to protect the Indigenous property value associated with the river, then they must promote and secure the river as more than just a natural resource. In other words, the guardians must also promote and secure the spiritual and cultural rights of the river— not simply the physical and ecological rights.

Although Tu-tohu Whakatupua is neither a settlement nor a decision with any independent binding authority, if the terms are followed then the final settlement will be governed according to Whanganui Iwi values—values that define the river as a treasure contributing to the survival of the group, rather than a profit-generating resource. However, Whanganui Iwi rights to the river may also end up being restricted by the recognition of the river as a legal entity because once the guardians have been appointed, Whanganui Iwi, like the Crown, will have no power to influence them.

While the guardianship model ensures that the Whanganui River will not be owned by anyone, thereby promoting the Crown's view of natural resources, the Whanganui Iwi maintain that the welfare of the Whanganui River is the most important part of any settlement. As Che Wilson, affiliated with Whanganui Iwi, notes, "the recognition of [the river] as its own legal entity goes a long way to us as descendants of the river [in] ensuring that the protection of the river is upheld and its sanctity is maintained." It is difficult to speculate on the full implications of the agreement because its details have yet to be fully fleshed out. But Tu-tohu Whakatupua is arguably cause for cautious optimism as

Indigenous Peoples continue to fight for the recognition of their views of the natural environment.

—Brendan Kennedy was born and raised in Aotearoa, and is currently a third year law student at Suffolk University Law School in Boston, Massachusetts.

The Whanganui River is a legal entity to be protected by appointed guardians who must also promote and secure the spiritual and cultural rights of the river

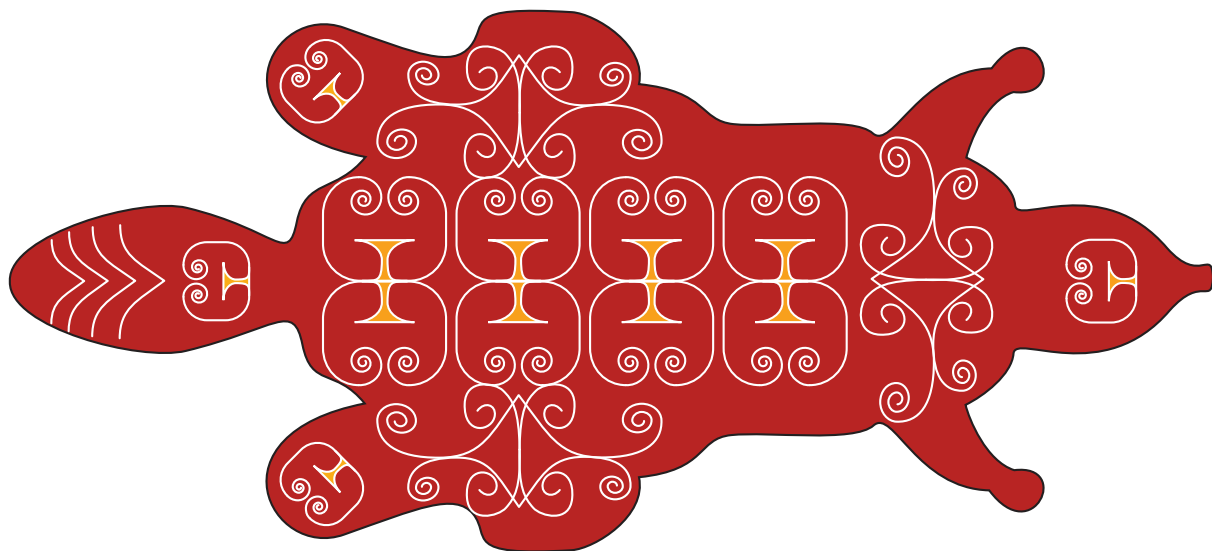


Illustration by Anna Nibby-Woods

Story Credit: Cultural Survival Quarterly, 36-4 Free, Prior, and Informed Consent (December 2012),
Brendan Kennedy - www.cs.org

PRESERVATION

FISH DEFORMITIES IN ALBERTA

by MAX PARIS

Alberta scientist calls for research on fish malformations in Lower Athabasca River

A renowned Alberta water scientist is urging the federal government to take action after he discovered deformities in fish in the Athabasca River downriver from oil sands developments bear a striking resemblance to ones found in fish after spills in U.S. waters.

University of Alberta ecologist Dr. David Schindler said the only way to know for sure which petrochemicals — and in what concentrations — cause the deformities is to conduct whole ecosystem experiments at the Experimental Lakes Area (ELA) in Northern Ontario.

"I propose that the ELA site and laboratory should be kept open to conduct these important experiments, which have implications for future effects of oil extraction and transport in or near both marine and freshwater ecosystems," Schindler wrote in a letter to Environment Minister Peter Kent and Fisheries Minister Keith Ashfield.

The ELA was shuttered on March 31 after its funding was cut in last year's budget. The Department of Fisheries and Oceans (DFO) says it is in negotiations with other parties to take over the operation of the one-of-a-kind facility. The government will save \$2-million a year by off-loading the outdoor laboratory made up of 58 small pristine lakes.

Schindler cited a number of studies that looked into the effects of oil and chemical contamination on fish after the Exxon Valdez spill in Alaska and the Deepwater Horizon accident in the Gulf of



Trent University students conducting an experiment at the Experimental Lakes Area in northwestern Ontario last summer. (Lindsay Furtado/Trent University)

Mexico, as well as in the lower Athabasca River. He included photos of fish from the Athabasca with two tails, bulging eyeballs and gaping sores.

"In both the Gulf of Mexico and the Athabasca River, the high incidence of malformations and the grotesque appearance of some of the fish make consumers reluctant to eat them," wrote Schindler. He added that was a threat to the Gulf of Mexico's commercial fishery and the

Athabasca's subsistence fishery.

Schindler's "eureka moment" came last week when he was forwarded an article about a study done on fish in the Gulf of Mexico.

"I was really struck with how similar some of those malformations were. And of course, they'd come on in only a little over a year since that Gulf spill," Schindler told the CBC.

The timing of the letter is

hard to ignore. It comes hard on the heels of the ELA's closure with a September 1 deadline looming for Ottawa to find a new operator or return the property to the province of Ontario. Schindler is a vocal member of the advocacy group "Save ELA."

Asked if this was just a ploy to keep the facility open, Schindler responded: "That's exactly what they said when I proposed that acid rain was a problem in 1974."

Research from the ELA was instrumental in helping Canada and the U.S. negotiate, draft and sign the Acid Rain Treaty of 1991.

For Ottawa's part, Environment Canada insisted it is taking its responsibilities around the oil sands seriously.

"Our government launched a comprehensive oil sands monitoring plan that enhances

the monitoring of water, air, land and biodiversity," Kent spokesperson Rob Taylor wrote to the CBC.

DFO said it is happy with the freshwater science being done at other facilities across the country.

"On the Experimental Lakes Area, the government continues to actively work towards establishing a new

operator for the ELA site so that research there can continue," wrote Ashfield spokesperson Erin Filliter.

Schindler is glad to hear that.

"Frankly, I would like to see the Experimental Lakes Area funded independently of DFO. It's always been a Cinderella project and for 30 years DFO has been a very bad stepmother."

A Walleye with an enlarged eye caught near Ft. McKay, Alberta, on the Athabasca River in 2010. (David Schindler/University of Alberta)



Story Credit: CBC News, Apr 3, 2013, Max Paris, Environment Unit - www.cbc.ca

3 April 2013

Honorable Keith Ashfield
Minister of Fisheries and Oceans
Parliament Building
Wellington Street
Ottawa, ON
K1A 0A6

Honorable Peter Kent
Minister of Environment
401 Confederation Building
House of Commons
Ottawa, ON
K1A 0A6

Dear Ministers Ashfield and Kent:

Recent publications have revealed some remarkable similarities in the problems suffered by fish in the Athabasca River, and following the Deepwater Horizon and Exxon Valdez oil spills in the Gulf of Mexico and the Gulf of Alaska, respectively. These problems have not been a part of the public debate over the safety of extraction and transport of petrochemicals, yet they are important to the health of marine and freshwater fisheries.

The Deepwater Horizon oil spill in the Gulf of Mexico has caused dramatic increases in the incidence of malformations in fish and crustaceans, as described in the attached:
<http://oceansnrg.com/2013/03/18/gulf-seafood-deformities-alarm-scientists/>

Similar observations were made after the Exxon Valdez oil spill in the Gulf of Alaska (Carls et al. 1998), as well as in the vicinity of heavy industries on the Great Lakes (Karrow et al. 2003).

Remarkably similar malformations occur downstream of the oil sands region of the Athabasca River, where both our university studies and those of the Alberta Regional Aquatic Monitoring Program (RAMP) have found high incidences of abnormalities in fish (see attached photos of some of our specimens taken in 2009 and 2010). According to local people, these began occurring in the 1990s. Investigations by both DFO during the AOSERP studies (Bond and Machniak 1979a,b) and private consultants (McCart et al. 1982) do not record malformations in fish in the early decades of oil sands mining, confirming these observations. It seems that some threshold for exposure has been reached.

Given the parallels in the cases from various locations, it seems likely that some chemical or suite of chemicals in crude oil is causing the malformations. The most likely suspects are probably polycyclic

aromatic hydrocarbons (PAHs), their alkylated derivatives, or closely related dibenzothiophenes. Some of these compounds are known or suspected carcinogens, mutagens or teratogens, while the toxicity of others is largely unknown. Physiological studies also implicate polycyclic aromatic hydrocarbons (PAHs), which are known to cause immune suppression. In the Gulf, the result has been that many fish species have become vulnerable to a broad suite of bacterial and viral diseases and myxosporidian parasites (Dr. James Cowan, Louisiana State University, personal communication). High concentrations of PAHs are also associated with the appearance of lesions in red snapper. Other suspect chemicals in the oil sands may include dissolved compounds found in oil sands processing waters, such as naphthenic acids. In the Gulf, chemical dispersants may also be involved.

In both the Gulf of Mexico and the Athabasca River, the high incidence of malformations and the grotesque appearance of some of the fish make consumers reluctant to eat them. In the Athabasca River, a subsistence fishery of importance to thousands of downstream users is at risk, and there are already complaints about the high incidence of malformations. In the Gulf, the commercial fishery is under threat.

Environment Canada and university scientists have also documented high mortalities of fish embryos from the oil sands hatched on bitumen-rich substrates, with high incidence of malformations in the survivors (Colavecchia et al. 2004, 2007). While in the lower Athabasca River, PAHs and related contaminants occur naturally, the recent high frequency of malformations suggest that industrial inputs have caused some threshold for malformations to be crossed. This seems unlikely in the mainstem river, but it may be occurring in some of the fish-bearing tributaries where watersheds are heavily mined, such as the Muskeg River. This river has an important fishery in its own right (Bond and Machniak (1979a).

While Environment Canada scientists are now doing an excellent job of monitoring the river, it will be impossible to determine which chemicals are responsible for the malformations in the complex chemical soup that occurs downstream of oil sands mining. **A more expeditious way of identifying them would be whole ecosystem experiments where small amounts of selected chemicals are applied to whole lakes, and effects determined on several key species in the food chain. Short term, laboratory studies are unsuitable, because to protect whole ecosystems, it is the response to long-term, chronic exposure that we must know.** Once the chemicals are identified, engineering solutions to eliminate them can be sought, but first we must know what they are.

The Experimental Lakes Area in northwestern Ontario (ELA) is ideal for such a purpose. **I propose that the ELA site and laboratory should be kept open to conduct these important experiments, which have implications for future effects of oil extraction and transport in or near both marine and freshwater ecosystems. I am copying this letter to selected Canadian and American scientists who are familiar with the chemistry and toxicity of petroleum products. You may want to discuss the topic with them, as well as the authors of the attached references. I am also copying it to selected media, because it is an issue that must be addressed in the ongoing public debate over the safety of petroleum extraction and transport.**

Sincerely,



D.W. Schindler, OC, AOE, DPhil, FRSC, FRS

Killam Memorial Chair and Professor of Ecology

UPDATE ON THE STATUS OF THE EXPERIMENTAL LAKES AREA AS OF SEPTEMBER 5, 2013

Dear Colleagues,

The International Institute for Sustainable Development (IISD) is pleased to announce it has signed a memorandum of understanding with the governments of Canada and Ontario to ensure a smooth transition of the freshwater research facility known as the Experimental Lakes Area (ELA) to IISD by March 31, 2014. (View our new video at www.iisd.org/ela)

ELA is located in northwestern Ontario, Canada, and it provides a real-world laboratory in which researchers can isolate the effects of specific pollutants on aquatic ecosystems. Over the past four decades, research conducted at the ELA has provided the scientific evidence-base on the environmental effects of acid rain, phosphorous and other pollutants that has informed policy within Canada and around the world.

ELA has helped us understand the impacts of aquaculture on freshwater ecosystems, observe how reservoir development affects water tables, evaluate how various contaminants — including cadmium, endocrine-disrupting chemicals and flame retardants — affect lakes, and identify solutions to safeguard water quality. The results of ELA experiments have produced an exceptional dataset of water-quality monitoring for over 45 years, helping to provide the lab testing parameters that can be verified in nature.

In recent years, as the global scientific community grapples with the impacts on climate change, ELA has been conducting controlled experiments to observe the effects of changing water levels and flows induced by climate-related extreme weather events. It has also continued work on eutrophication caused by nutrient run-off and the impact of mercury from coal-fired power plants located thousands of kilometres away.

We intend to continue the tradition of applied research and monitoring that has made ELA respected worldwide. Moving ELA from a government department to the institute will broaden the scope of its freshwater research and allow it to identify clear links to management solutions and strategies.

IISD's priorities over the next few months of transition are to learn as much as we can about how to operate ELA and to develop a research program for 2014 season. We are also going to be working to raise the funds necessary to operate ELA over the long-term.

IISD welcomes donations for IISD-ELA at the Canada Helps website (www.canadahelps.org/services/wa/dnm/en/#/page/2824). For more information about ELA and IISD, please visit www.iisd.org/ela.

AWARENESS

ALAOTRA GREBE CONFIRMED EXTINCT

by MATT WALKER

The Alaotra grebe is extinct, according to the latest assessment (2010) of the world's rarest birds.

The last known sighting of the bird was in 1985 and experts have now confirmed its demise, killed off by a combination of poaching and predatory fish.

The Malagasy species, which lived in Lake Alaotra, is the first confirmed bird extinction since 2008.

However, fortunes have improved for rare birds such as the Azores bullfinch and Colombian yellow-eared parrot.

NO ESCAPE

The Alaotra grebe (*Tachybaptus rufolavatus*) was a medium-sized bird with small wings that inhabited Lake Alaotra and surrounding areas in Madagascar.

Due to its tiny wings, the bird was thought incapable of flying long distances, living a mainly sedentary lifestyle on the lake and in surrounding ponds and highland lakes.

Twelve Alaotran grebes were sighted at Lake Alaotra in December 1982, and two near Andreba on Lake Alaotra in September 1985.

Some birds with characteristics of the grebe were seen in 1985, 1986 and 1988, but these are thought to be hybrids with another grebe species.



An artist's rendering of the rarely seen and now extinct Alaotra grebe: by Chris Rose



the only known photo of an Alaotra grebe.

Surveys in 1999 and a visit by experts in 2000 found no individuals, or any grebes belong to the same genus *Tachybaptus*.

No direct observations of the species have been made since and hopes that the bird might survive were dashed after a recent expedition to nearby Lake Amparihinandriamabavy failed to find any grebes.

Officials have now declared the bird extinct in the latest update to the IUCN Red List of endangered and threatened birds.

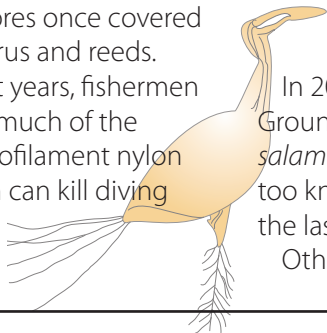
The Red List, regarded as the most authoritative assessment of the state of the planet's species, draws on the work of scientists around the globe.

"No hope now remains for this species. It is another example of how human actions can have unforeseen consequences," says Dr Leon Bennun of Birdlife International, which evaluates the status of rare birds for the IUCN Red List.

The grebe is thought to have been driven to extinction by a combination of factors.

The bird, usually found in pairs, fed almost exclusively on fish in Lake Alaotra, a large brackish lake which had shores once covered in dense papyrus and reeds.

But in recent years, fishermen have covered much of the lake with monofilament nylon gill-nets which can kill diving waterbirds.



These nets were introduced after the grebe had already significantly declined, though they may have killed remaining birds.

Carnivorous fish (*Micropterus* and *Ophiocephalus*) introduced into the lake are also thought to have significantly contributed to the grebe's extinction, while the introduction of other invasive mammals, fish and plants likely depleted the grebe's food sources.

Knowing exactly when a species has gone extinct is extremely difficult, as records of sightings can be patchy or unsubstantiated.

Also, comprehensive surveys must be completed to ensure a species does not survive in previously unexplored habitats.

For those reasons, species are often declared extinct many years after they have last been seen.

The last bird species to be confirmed extinct is the Liverpool pigeon (*Caloenas maculata*), declared extinct in 2008.

However, this Pacific species is known from just two specimens, one of which has been lost. It likely went extinct before Europeans colonised the Pacific.

In 2005, the Thick-billed Ground-dove (*Gallicolumba salamonis*) was declared extinct, it too known from two specimens, the last caught in 1927.

Other birds declared extinct

in the 21st Century include the Hawkins's Rail (*Diaphorapteryx hawkinsi*), Reunion Shelduck (*Alopochen kervazoi*) and Kamao (*Myadestes myadestinus*) among others.

Modern species thought to be extinct, but not yet confirmed, include the Po'ouli (*Melamprosops phaeosoma*).

The last known survivor of this honeycreeper species died in captivity in 2004, despite huge efforts to rescue it.

Surveys have yet to be done to confirm it no longer survives on the remote highland slopes of Hawaii.

Another species suffering from the impacts of invasive species is the Zapata Rail (*Cyanolimnas cerverai*) from Cuba.

Only one nest has ever been found of this species. However the new Red List does highlight some conservation success stories.

The Azores bullfinch (*Pyrrhula murina*) has been downlisted from "Critically Endangered" to "Endangered" after efforts to restore its habitat.

In Colombia, the Yellow-eared parrot (*Ognorrhynchus icterotis*) has also benefited from protection of its nest sites and education programmes, leading to its status being downgraded to "Endangered".

Around 190 bird species out of more than 10,000 known are thought to have gone extinct since modern records began.

Story Credit: Earth News, May 26 2010, Matt Walker, Editor - www.news.bbc.co.uk



photo credit: Félix Uribe, Flickrriver.com

YELLOW-EARED PARROT

Yellow-eared parrots have been downgraded. It has been updated to "Critically Endangered" on the latest Red List, under threat from introduced mongooses and exotic catfish.



photo credit: Leo Boon, worldsrarest.com

AZORES BULLFINCH

Azores bullfinches are faring better. Poaching also reduced its numbers.

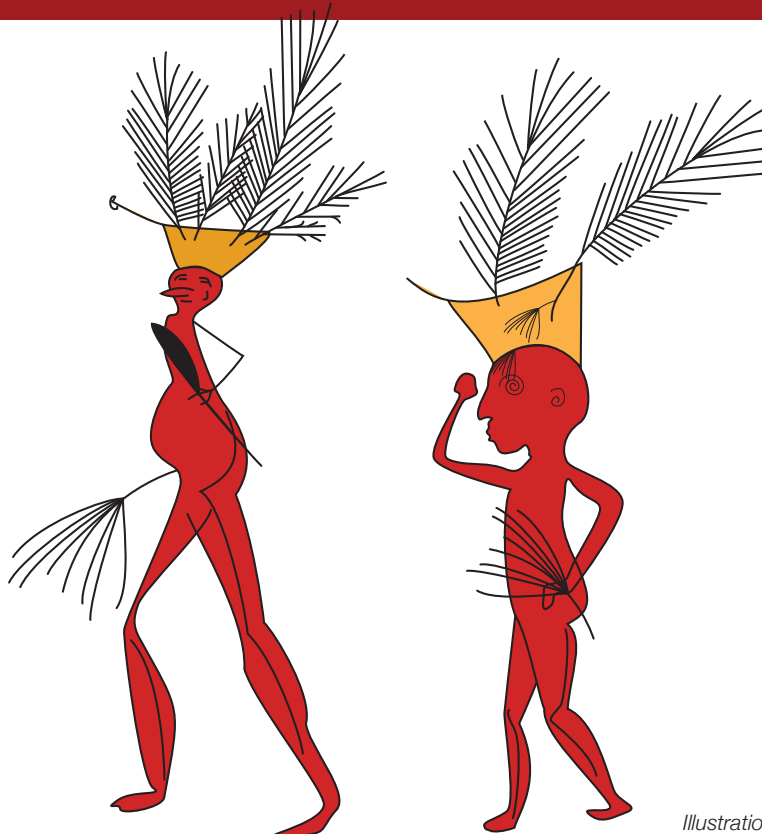


Illustration by Anna Nibby-Woods

AWARENESS

GILLNETS: INDISCRIMINATE FISHERY

An Ocean in Focus Conservation Photography Contest Essay
by ANDY MURCH

Although outlawed in some countries, gillnets are still widely used by artisanal fishermen in the developing world. Gillnets are indiscriminate killers that drown virtually everything that becomes entangled in them, from dolphins to sharks to turtles.

In Baja, fishermen use gillnets to target California halibut, a sought after food fish that fetches a handsome price in the domestic market. The nets are left soaking overnight in inshore habitats that are also important hunting and breeding grounds for many endemic shark and ray species.

Each morning the fishermen retrieve their nets and bring home every fish that they find, regardless of their value or conservation status. On the day that I talked my way onto a fishing panga out of Laguna Manuela Fishing Camp, the crew filled the entire boat with shark and ray bycatch. Four soupfin sharks (listed as globally vulnerable) and a handful of brown smoothhound sharks were all dead upon retrieval but many of the rays were still swimming strongly; still clearly viable enough to survive if the fishermen could be convinced to release them. By the time we headed back to port, the boat was loaded to the gunnels with elasmobranchs. Hidden within all that bycatch (that would not even cover fuel for the day) was a single halibut, the intended catch.

After a gruesome scene on the beach in which the crew cut the wings off of each frantically flapping ray, I accompanied the fishermen to a dumping ground in the desert. While struggling with the overwhelming stench of rotting carcasses, I began to appreciate the sheer magnitude of the problem. Tens of thousands of shark and ray heads lay baking in the sun. Many were beyond recognition but I managed to identify quite a few shortfin makos, blue sharks, some threshers



Bat ray entangled and killed in halibut fishing net, with the fishing vessel in the background.



Loads of bycatch for one halibut.



Soupfin shark entangled and killed by a halibut fishing net.

and lots of soupfin sharks, plus a variety of stingrays, butterfly rays, guitarfish and even a few deepwater skates.

The fifty meter-long ditch was just one of many throughout Baja that would soon be bulldozed over and another dug to receive even more bycatch. It was an incredibly depressing and gory scene, but like the live animals that were struggling in the nets, I felt that it needed to be recorded and shared to expose this fishery for what it really is: when sharks and rays make up more than ninety-nine percent of the biomass recovered in a gillnet, this is clearly unregulated and unmonitored shark fishing under the guise of a halibut fishery.

Gillnetting is both a global and local issue and needs to be addressed on both levels. Hopefully, through education, retraining and legislation, fishermen like those in Baja can move toward more sustainable fishing methods or in some cases, completely alternative revenue sources such as ecotourism.

*Andy Murch is a photojournalist specializing in rare and endangered sharks and rays. His images are frequently used by NGOs to support marine conservation initiatives. Murch's website **Elasmodiver.com** is one of the most comprehensive resources for shark and ray information on the internet. Andy is also the founder of **BigFishExpeditions.com** – an adventure travel company that puts divers in the water with the ocean's largest animals. Murch is currently based on Vancouver Island, British Columbia, Canada.*

Story Credit: Marine Photobank Essay Contest, 2013, Andy Murch - www.marinephotobank.org

RESPECT

INDIGENOUS NICARAGUANS FIGHT TO THE DEATH FOR THEIR **LAST FOREST**

by JOSÉ ADÁN SILVA

Indigenous communities in northern Nicaragua are demanding that the authorities take urgent action to halt the attacks on their lives and territory by illegal invaders.

Mayangna indigenous communities in northern Nicaragua are caught up in a life-and-death battle to defend their ancestral territory in the Bosawas Biosphere Reserve from the destruction wrought by invading settlers and illegal logging.

The president of the Mayangna indigenous nation, Aricio Genaro, told Tierramérica that their struggle to protect this reserve, which is still the largest forested area in Central America, was stepped up in 2010, due to the increased numbers of farmers from eastern and central Nicaragua moving in.

In addition to the destruction of natural resources, this invasion has turned violent and poses a serious threat to the biosphere reserve's indigenous population, estimated at roughly 30,000. Since 2009, 13 indigenous people have been killed while defending their territory, said Genaro.

The latest victim of this violent confrontation was Elías Charly Taylor, who died from gunshot wounds he received in the community of Sulún on Apr. 24, when returning from a protest demonstration against the destruction of the forest.

This protest, initiated in February, has drawn the attention of the government of leftist President Daniel Ortega and publicly exposed the destruction of Bosawas, which encompassed more than two million hectares of tropical forest when it was designated a Biosphere Reserve and World Heritage Site by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1997.



Logging is one of the main threats in the southern area of the Bosawas Biosphere Reserve. Credit: José Garth Medina/IPS

According to a study published in 2012 by the German Agency for International Cooperation (GIZ), the Nicaraguan National Union of Farmers and Ranchers, the European Union and Oxfam, if deforestation were to continue at its current rate, all of the reserve's forests would be wiped out in 25 years.

Vanishing wildlife

The Mayangna live from hunting and fishing, domestic livestock raising and subsistence agriculture, growing crops like corn, beans and tubers with traditional

methods. But their way of life has been severely impacted by the invading farmers.

“They shoot everything, burn everything, poison the water in the rivers, and chop down the giant trees that have given us shade and protection for years, and then they continue their advance, and nothing stops them,” said Genaro.

“You don't see tapirs anymore, the pumas and oncillas (tiger cats) have fled the area, you no longer hear the singing of the thousands of birds that used to tell us when it was going to rain. Even the

big fish in the rivers are gone. Everything is disappearing,” he said.

According to Kamilo Lara of the National Recycling Forum, a network of non-governmental environmental organisations, more than 96,500 hectares of forest have already been destroyed within the protected core of the Bosawas Biosphere Reserve.

Lara added that “55 percent of the forests in the so-called buffer zone, where some 20,000 mestizo farmers (of mixed indigenous and Spanish ancestry) have settled, have

been cleared to sell the timber, to create pastures for cattle grazing, and to grow crops for commercial purposes.”

He further estimated that some 12,000 of the 19,896 square kilometres initially set aside as the original reserve have been damaged due to the expansion of the buffer zone, which was initially less than 5,500 square kilometres in area.

Jaime Incer Barquero, a presidential advisor on environmental affairs, told Tierramérica that the national authorities need to speed up protective measures “before the reserve loses its status (as a UNESCO biosphere reserve) and the world loses the reserve.”

This view is shared by the UNESCO representative in Nicaragua, Juan Bautista Arrien, who believes that “urgent and firm action” must be taken to protect both the indigenous population and the natural environment.

Official response

In response to the denunciations from indigenous communities and environmentalists, the Ortega administration has begun to implement a number of measures to deal with the destruction of the reserve. It has authorised the use of force,

sending in 700 members of the Nicaraguan army’s newly formed Ecological Battalion along with a roughly equal number of police officers, for the initial purpose of controlling the violence between the settlers and the indigenous inhabitants of the reserve.

A commission of national authorities was also formed to coordinate actions and implement an “iron fist” policy against individuals and organisations responsible for damaging the environment.

After visiting the area early this month and observing the damage first hand, the authorities issued Decree 15-2013, which created a permanent Inter-Institutional Commission for the Defence of Mother Earth in Indigenous and Afro-Descendant Territories of the Caribbean Coast.

The main function of this commission, created to “strengthen the regime of autonomy of the Caribbean coast,” will be to enforce ancestral land rights in indigenous territories in conjunction with the corresponding agencies, as well as to promote the joint adoption and implementation of measures with local and regional authorities to protect the reserve’s biodiversity.

In addition, a series of

criminal, administrative and civil court proceedings will be initiated against all individuals charged with destroying or threatening the environment and the rights of indigenous communities.

In accordance with the law that established the North Atlantic and South Atlantic Autonomous Regions, indigenous territories may only be occupied and used productively by members of native communities.

The director of the Centre for Environmental Policy Initiatives, sociologist Cirilo Otero, endorsed the protective measures, but warned that the implementation of coercive measures to protect the environment, unless they are accompanied by policies to support the small farmers who are moving into the reserve as a way of escaping poverty, could give rise to a socio-economic conflict and more violence.

The government has approached the general director of UNESCO, Irina Bokova, to present the problem and request assistance, while the country struggles to halt the destruction of the last major forested area in Central America through its own means.

** This story was originally published by Latin American newspapers that are part of the Tierramérica network.*

VIEWS FROM MAARS

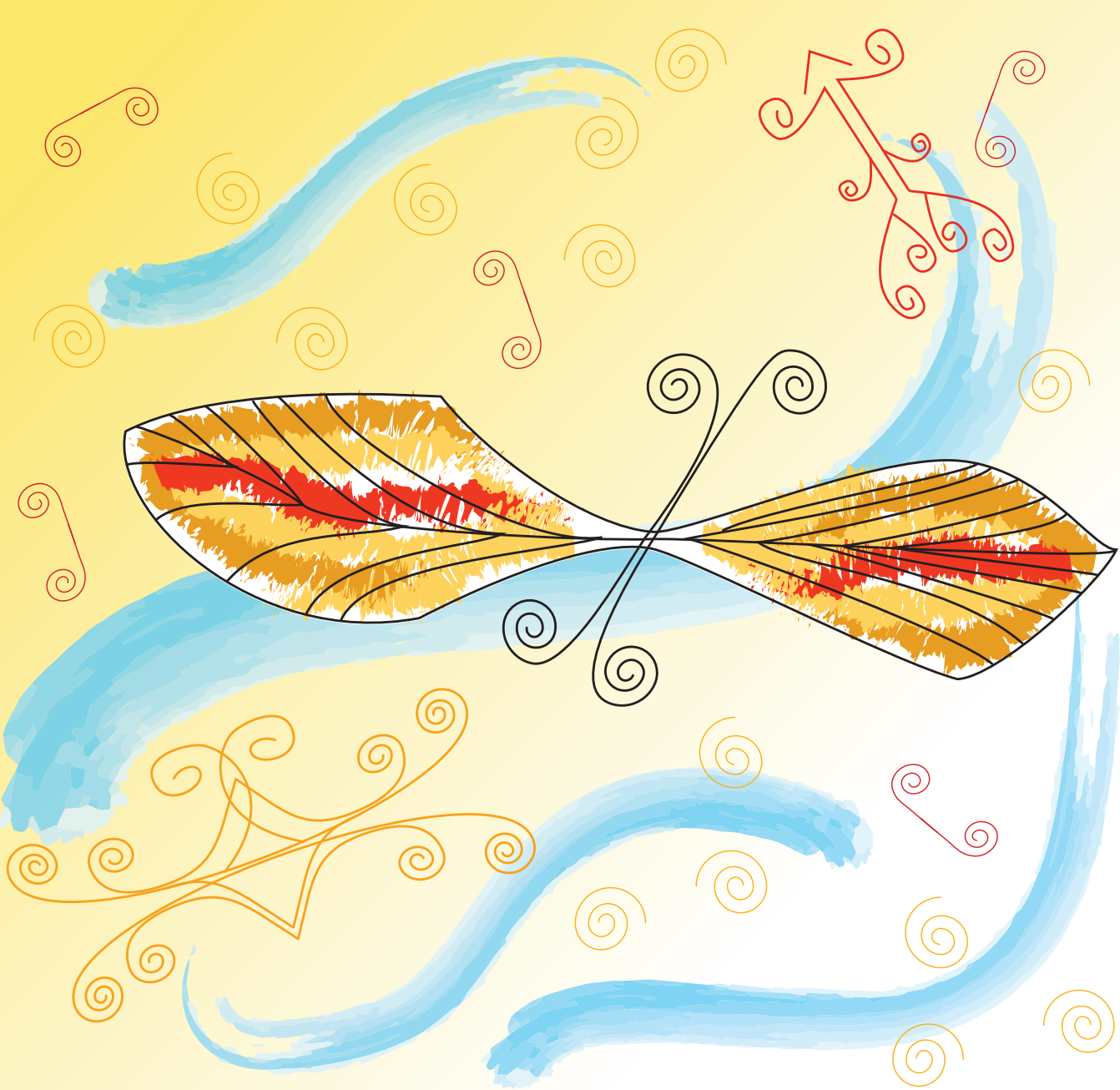


Illustration by Anna Nibby-Woods

ANOTHER THREAT

WE'VE BEEN HADD!

by ROGER HUNKA

The Executive Secretary of the Convention on Biological Diversity, Bráulio Ferreira De Souza Dias, on the occasion of World Ocean Day, 8th June 2013, noted.

"Hundreds of millions of people rely directly on marine biodiversity for their well being and livelihoods. These vast ecosystems are under threat. The oceans are filling with wastes produced by human activities and impacting biodiversity. Marine biodiversity suffers from overfishing and other unsustainable fishing practices. The impacts of climate change and ocean acidification are growing."

"At the United Nations Conference on Sustainable

Development (RIO+20), governments recognized that oceans, seas and coastal areas form an integrated and essential component of the biosphere and are critical to sustaining it."

"The complexities of marine ecosystems show us that cross-sectorial co-operation is critical to move forward in advancing our efforts towards implementation of the CBD and all agreements relevant to the oceans. This is why governments called for close co-operation with various relevant international and regional organizations. In particular fisheries management bodies were invited to play a strong role in addressing

the impacts of fisheries and biodiversity."

In 2006, the Department of Fisheries and Oceans, Canada did have firsthand advantage to learn about projects, works, undertakings, activities, and developments which could impact fisheries, water quality and water biodiversity. This beforehand knowledge came by way of Section 35 of the Fisheries Act, and the "No Net Habitat Loss" Policy, the no "Harmful Alteration Disruption or Destruction" HADD Policy, and the no "Addition of Deleterious Substances" ADS prohibitions of the Fisheries Act. Also, the Navigable Waters Protection Act, triggered and alerted both government

agencies and proponents of development projects or activities to be mindful and to develop mitigation measures to address impacts on fisheries, water quality and water biodiversity. These "alert bells", combined with other processes, provided Canadians - the beneficiaries of the natural world which define Canadians worldwide, assurance that "rampant, feverish frontier type development works, projects, activities, undertakings and developments" would not occur. Assurance that bullish development thrashing of air, water, land, natural life and more, would not occur, or go unnoticed. Assurance that some form of mitigation plans would be in place before work would begin. In some cases projects would require public hearings, at which time complete disclosure of the contemplated work or development would occur.

The effectiveness of the "HADD" policy and Section 35 of the Fisheries Act and the provisions of the Navigable Waters Protection Act worked so well at protecting our fisheries, waters and water biodiversity, that a consortium comprising: the Business Council of British Columbia, BC Chamber of Commerce, Association of Mineral Exploration British Columbia, Council of Forest Industries BC, The Mining Association of British Columbia and the BC Agriculture Council pooled together their resources to commission the production

of a "Lobby Brief" containing 16 Recommendations, for the Federal Government to consider.

Each of the sixteen recommendations dealt with either weakening or muting the HADD Policy. Specific recommendations were made to reduce the trigger of the Navigable Waters Protection Act (NWPA). The NWPA enhances the scope of a review through the application of the Environmental Assessment Act to a proposed works or project.

The "Lobby Brief" also recommended substances "which do not have the potential to harm the environment or fish habitat at the time they are deposited should be deleted or not included in any list of deleterious substances".

And like magic, the "Consortium Lobby Brief" was all but copied into the new "Feverish Frontiers Lands and Waters Resources Economic Renewal Policy" of the Reform minded Government and Cabinet of the day.

Canada's recent aspirational approach and lack of inspirational thought or appetite to manage Canada's natural heritage - our environment in a sustainable manner, is evidenced by statements and actions taken these past six years. The aspirations of the Government are captured in the words explaining Canada's new vision pronounced by Prime Minister Stephen Harper on a trade mission to China February 2012.

"We are an emerging energy superpower. We want to sell our energy to people who want to buy our energy. It's that simple."

The previous policies and practices introduced to mitigate calamities, or to understand some of the sources and causes for global environmental disasters, or to advance Canada's commitment to be a part of the global solution, or to initiate the Canadian Biodiversity Strategy of 1995 towards the implementation of the CBD within Canada, have all been relegated to the back bench.

Canada has slammed the door on Kyoto;

Canada has slammed the door on the Convention to Combat Desertification;

Canada has repealed the Canadian Environmental Assessment Act, new one reintroduced;

Canada has replaced the language in Section 35 and a new Section 6 of the Fisheries Act;

Canada has replaced the Navigable Waters Protection Act with the Navigation Protection Act;

Canada has not approached the implementation of the CBD with the view of reflecting the distinct Indigenous Peoples values, social networks, traditional economies and cultures;

Canada has not supported the development of an Indigenous community analysis of the CBD with reference to the knowledge innovations and

practices of Indigenous Peoples taking into account issues of intellectual property rights and the use of genetic resources, Target 18 of the Aichi Targets;

Canada has not honoured treaties; which have been described as sacred undertakings requiring good faith by each party for their proper enforcement, in relation to resources extraction projects.

The DFO discussion Paper of April 2013 about "HADD", and changes remain silent about the true government reasons for Canada to favour support and adopt of the "Consortium Lobby Brief Recommendations".

After July 14, 2013, projects, works, developments, activities and undertakings will proceed almost post haste with a simple sign off. We can all hold our breaths that the mitigation plans proposed by the proponent are adequate. If they fail, we then have to wait for an impacted person to press charges or file a civil claim for damages against the proponent.

In fairness to DFO in the region, their good offices did send out a very knowledgeable group of DFO officials who went over a deck. They accommodated a good open exchange of questions with answers as far as possible to our group of interested Aboriginal Persons and Organizations who are heirs of Treaty Rights and beneficiaries of Aboriginal Rights. The day long session answered a lot, however there still remain many

uncertainties or unknowns as to how the new approach will or will not work in practice.

We now have a policy where economic benefit trumps environmental caution, the precautionary approach and managed sustainable development. Have we been HADD, or can prosperity replace fish habitat, good water quality, and water habitats nurturing biodiversity?

Among other concerns, which still continue to haunt us; who is looking after water quality, healthy fish habitat and who will measure the loss of fish habitat and level of loss of such habitat each and every year hereafter?

With the government's focus to reduce or rid the public service of scientists, technicians, expertise and generally load up work on a diminished Public Service, or on contracted term employees, who is left to go out into this vast pristine natural wonder of Canada and measure habitat loss due to developments, works, projects and the like? Who will be at the other end of a telephone, or fax machine, or desk, or computer to answer a call, fax, letter, note, or text message?

Who will know or monitor which mitigation plans have failed or are failing within this vast second largest land and water mass on Mother Earth?

Each day, we witness fewer and fewer public servants. There are but skeleton levels in some departments like DFO and Environment Canada. I think that DFO, or Environment

Canada or Natural Resources Canada or the PM Office will be hard pressed to explain the state of fish habitat, water quality, and water biodiversity, and fish habitat loss in Canada in the coming years.

Which agency or organization does DFO envisage to form enabling partnerships to provide Aboriginal fisheries protection services, or that to Canadians in general?

Who is going to look after polluting ponds filled with deleterious substances after the development is completed?

Who is going to look into invasive species introduced into a water course or water habitat?

Who is going to note or take measurements on the effects of climate change on fish populations or fish habitat or water quality or water biodiversity, or the effects of major works, projects, activities, undertakings and development signed off under this new process with extremely relaxed procedures, and all but absent public scrutiny? Who is going to concern themselves with the decrease of fish habitat, diminished water quality and reduced water habitat for biodiversity, when decisions have been underpinned by the new measure for "economic benefit"?

Who is going to determine the precise interpretation of general regulations and general operational guidelines?

In the past the HADD policy was clear and simple. The word "No" was understood.

Over the decades all walks of life in Canada sometime in their lives ran into the situation where they confronted the reality of crossing a stream, building a dock, or a bridge, or considering draining a ditch into a stream or pond. They knew whether they could or could not alter water quality, fish habitat and water habitat biodiversity, or add to habitat loss. The answer was NO, unless there was a mitigation plan, which had to go through a process which took time.

Now, as of July 14, 2013, we are promised clarity, certainty and consistency through the use of "expanded standards, regulations and limits". We are promised almost instant approvals by empowering, although limited in numbers, fisheries officers individual discretion based on a case by case basis, considering a multitude of scenarios and probable determinations thereto, on thousands upon thousands of projects, works, activities, undertakings and developments that could take place anywhere throughout any region of Canada, at any time of the year, where "economic value and benefit" trump precaution, no net loss of habitat, and managed sustainability or environmental integrity.

We are asked to place confidence in discretionary decisions based on an individual's interpretation of a general regulation and or general operational guidelines. Discretionary decisions over which the Minister continues

to hold absolute discretion at all times, favoured with the unfettered privilege of Office to say yes or no, regardless of the environmental consequences, if the economics show benefit to somebody.

There are also other observations to consider about the abandonment of the HADD Policy, and introduction of Section 6, and amendments to section 35 of the Fisheries Act, and the repeal of the Environmental Assessment Act, and changes to the Navigable Waters Protection Act. How will the Minister of DFO, or the Cabinet or the PM Office assure the Aboriginal Peoples of Canada who do not have co-management arrangements, but do have treaties, how are they going to be consulted before a works, activity, undertaken, project or development takes place on fish habitat, water environments, or on water quality, and thus affect their Treaty Rights and Aboriginal Rights to access the waters or harvest fish as usual?

Can DFO or Justice Canada show any Aboriginal Person or Organization the law as it stands today, where the Minister of Fisheries and Oceans has absolute discretion without any limitation or without any fettering of his power whatsoever, to make a decision which will permit the destruction of a water habitat or alteration of water quality, or a fish habitat or water habitat environment, to favour an extractive resources industry's operation to produce an economic benefit? What

law or decision allows the Minister to transgress and trespass Aboriginal Treaties and Aboriginal Lands in favour of economic benefit to another?

Would the favouring decision to an extractive resources company, where it would knowingly infringe an Aboriginal Peoples Treaty Liberty or an Aboriginal Peoples Aboriginal Right to access as usual the water or fish in their preferred manner, with their preferred harvesting methods within their traditional ancestral homelands, hold priority over Aboriginal Liberties and Rights?

Unfortunately where it took almost three decades for the HADD Policy to gain public acceptance, and that time and more to respect Section 35 of the Fisheries Act, and the provisions of sections of the Navigable Water Protection Act, triggering broader scope Environmental Assessments, under the EAA, we are now being asked to reprogram our thinking and processes.

Officers are now given greater latitude, opportunity and encouragement to read "MAYBE" or "YES" instead of "NO" to water habitat loss, or loss of water quality. The process is now so slick and fast that it will take but a few years for Canadians to forget our common inheritance - our affinity to our rich natural pristine environments which define a character quality of the Peoples of the Federation of Canada.

Have we been "HADD" these past thirty years, or will we be left hoping for the next thirty?

PRESENTATION

TO THE STANDING COMMITTEE by MAPC

Joshua McNeely, Executive Director of IKANAWTIKET, made a presentation to the House of Commons Standing Committee on Environment and Sustainable Development, examining the Study on Habitat Conservation in Canada and the National Conservation Plan, April, 18, 2013.

The presentation was made on behalf of the traditional ancestral homelands community in the Maritimes served by the Maritime Aboriginal Peoples Council and IKANAWTIKET.

April 18, 2013

Good morning and thank-you Mr. Chairman and Committee members for inviting the Maritime Aboriginal Peoples Council on the very important

matter of complementing and enhancing habitat conservation in Canada through a National Conservation Plan. I apologize for not being able to provide my speaking notes in advance; however they have been delivered to the Clerk for translation. I also have with me a more detailed submission on the same subject matter which we made to the 11th Conference of the Parties to the Convention on Biological Diversity this past October in Hyderabad, India. English and French copies of that have also been delivered to the Clerk for distribution. On our website www.mapcorg.ca, you can also find several other submissions on topics very similar to this topic, such as the

implementation of the Species at Risk Act; unfortunately, I do not have hard copies of those to distribute today.

To give you a background in a nutshell, the Maritime Aboriginal Peoples Council is the intergovernmental leaders forum for the Native Council of Nova Scotia, New Brunswick Aboriginal Peoples Council, and Native Council of Prince Edward Island representing and advocating for the Mi'kmaq/Maliseet/Passamaquoddy/Aboriginal Peoples continuing on Traditional Ancestral Homelands throughout modern day, Nova Scotia, New Brunswick, and PEI. IKANAWTIKET is our Aboriginal Environmental Respect Organization and registered charity dedicated

JUST

Burchells is Atlantic Canada's leading Aboriginal law firm. For almost 30 years, Burchells has successfully worked on behalf of Aboriginal Peoples in enforcing their Aboriginal and Treaty Rights, and in dealing with a wide range of governance, administrative, resource, business and employment issues.

RIGHT



Aboriginal Law Group

From left to right:
Stuart C. B. Gilby | D. Bruce Clarke, QC | Derek A. Simon
Naiomi W. Metallic | Ann E. Smith, QC

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to educating Canadians about the natural environment and humans place within that natural environment through projects, publications, and intergenerational learning. If you are interested, I have with me a much more detailed brochure and audio CD in English about our family of organizations.

I will start and finish this presentation with a profound distinction regarding the formation of questions concerned with your study about “habitat conservation”. For Aboriginal Peoples, the term ‘conservation’, at least in the colloquial western definition of the term, is a foreign concept. Also the term “habitat” to us means our home, the home of our ancestors, and the future home of our children’s children. From the Aboriginal eco-centric worldview, it is impossible to consider the protection of something to be separate from using it and sharing it. We have been trapped before by the settler’s use of words. Although on its face a National Conservation Plan seems obvious, terms such as ‘habitat’ and ‘conservation’ are tricky, sticky, and icky to our way of understanding. And answering your six questions can quickly become a trap if we are not first conversing in a common language or understanding.

Rather than us at this time supporting or not supporting the recommendations to develop a National Conservation Plan, I respectfully suggest that the questions posed lead us away from the reality that conservation and sustainable

use are inseparable. The State authors of the Convention on Biological Diversity clearly went out of their way to ensure that the term ‘conservation’ would not be used on its own, in fact, the term has never been defined under the Convention. This is for a very good reason. Throughout the Convention the words ‘conservation’ and ‘sustainable use’ are side-by-side, intending to express a single term ‘conservation and sustainable use’ so that no Party to the Convention would emphasize the ‘preservation’ of something over the “use” of it, or attempt to draw lines on maps or in law between what is conserved or preserved and the rest of the world governed by business as usual.

To that thinking, I must add the pivotal preamble aspect of the Convention, which affirms that the conservation of biological diversity is a common concern of humankind. That itself wipes away any notion that the use of natural resources solely falls within the limits of national jurisdiction without regard to other international conventions, accords, and protocols, and indeed internal State supreme laws; in the case of Canada, the Constitution Act, 1867 and the Constitution Act, 1982.

My presentation is derived from the fundamental reality, just recently manifested by the international community in September 2007 that there is a urgent need to respect and promote the inherent rights of Indigenous Peoples which derive from their political, economic,

and social structures and from their cultures, spiritual traditions, histories, and philosophies, especially their rights to their lands, territories, and resources. (United Nations Declaration on the Rights of Indigenous Peoples)

Even with this declaration, we raise an unfulfilled principle in Canada, that was agreed to twenty years ago in Rio: Indigenous People and their communities and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture, and interests and enable their effective participation in the achievement of sustainable development.

It is true that some persons look upon a worm or grub as insignificant or a pest or something to be controlled, used, or squashed. However, to an Aboriginal Person, and the majority of humankind which adheres to an ecocentric worldview having respect for all living things and all Creation, the presence and significance of the worm or grub is monumental. We are an extension of it and it an extension of us through the continuum of our natural world. Mr. Chair and distinguished members, a worm or grub will not make a home in soil which contains toxins. Although we may not die from the spray, we are still lesser because of it. Would you plant food in wormless soil to feed your children?

To bring that a bit closer to

where I am going with this presentation, Aboriginal Peoples in this country have a common nickname or characterization, bestowed upon us by non-Aboriginal Peoples and those with homocentric worldviews. We are the forest dwellers, the bush people, and in French the *peuples aux sauvage*. While it sounds odd to our ears to be singled out as different because we are people of the land, it is nevertheless true. Our homes are the woods, the plains, the mountains, the valleys, the rivers, and the lakes, and the coasts. Our habitat is shared by our extended family of all Creation, those that walk, those that swim, and those that fly. That is why we have in our minds, in our souls, and in our spirit the element of respect for habitats. To us, the English term 'conservation' is misleading, because it suggests that the natural world is something separate from our home and ourselves and that it needs protection from a foreign being that does not belong. That is my meaning when I say, "to Aboriginal Peoples conservation and sustainable use is an intertwined and understood ethic as a way of life".

We don't think of conservation in the same way that those who have a homocentric worldview. We first of all and most importantly think of respect for all living creatures and all natural habitats around us. That is why the Maritime Aboriginal Peoples Council established IKANAWTIKET, which means the path of a leader toward respecting our natural environment. You will

note that our slogan does not use 'conserve', rather we say 'respect the environment'.

And I dare say it is extremely difficult today for Aboriginal Peoples with an eco-centric worldview to talk with non-Aboriginal Peoples with a homocentric worldview about conservation or to encourage all manner of persons in cities, towns, and villages, in the concrete jungle or glass laboratories, to do all that is necessary to respect all life and all that is life-giving. After many generations of settlers within our homelands on turtle island, we are still not talking the same language.

How can we converse when our Indigenous knowledge is not respected as a unique and worthwhile knowledge? Even on the topics of conservation and sustainable use, of which we have intimate and time-tested knowledge, practices, customs, and words encompassing that and much more (e.g., the Mi'kmaq word *Netukulimk*), Indigenous knowledge is still not widely known amongst non-Aboriginal Peoples. In the majority of instances where Indigenous knowledge is invited, when shared by us, decision-makers consider it lesser, or an afterthought, or a plug to fill in a few remaining information gaps which western science has not yet itself answered.

How can we converse towards understanding when Canada does not show respect for the inherent rights of Aboriginal Peoples and continues to posture that Aboriginal Peoples do not have

rights to resources or genetic resources found within their traditional ancestral homelands and territories?

How can we converse or reconcile our differences when Aboriginal Peoples calls to the various levels of governments of Canada go unanswered or are passed-on as a nuisance to economic development? The Maritime Aboriginal Peoples Council and IKANAWTIKET have made several learned submissions to the Government of Canada and the Parties to the Convention on Biological Diversity Conferences, Working Groups, and Secretariat concerning the implementation of the Convention within Canada, including Canada's Species at Risk Act, the Canadian response to the Global Aichi Biodiversity Targets, Canada's signing conundrum about the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, and the need to advance within Canada work on Convention Articles 8(j) and 10(c). Yet to this day, Aboriginal Peoples who continue on traditional ancestral homelands and territories are denied full and effective participation at international venues by Canada and not accepted as rightsholders by Canada. Government continues to exclude Aboriginal Peoples from the decision-making processes affecting our traditional homelands and resources, save possibly a few instances when some of those lands, waters, and resources are depleted to near extinction

and government is desperate to learn any possible solutions and will call on Aboriginal Peoples to hand over knowledge or take on the responsibility to save the day. For us, the promise of full and effective participation has been nothing more than commenting on government pre-approved plans. We continue to demand the full and effective participation of Aboriginal Peoples in all matters that deal with conservation, sustainable use, and the fair and equitable sharing of benefits derived therefrom.

We note that in some presentations before this Standing Committee a common statement was repeated on how important it is for government to find opportunities to support local initiatives and link those initiatives into a greater whole, thus providing a basis for long-term and robust solutions. How on one hand can this Standing Committee hear that statement continually repeated and then witness Canada wage an “us vs. them” war of “environmental integrity vs. unsustainable exploitation”?

What opportunities will the Government of Canada demonstrate as support for the full and effective participation of Aboriginal Peoples in conservation and sustainable use of natural resources:

- when Bills C-38 and C-45 strip away vital protections and no thought given to invite nor consult with Aboriginal Peoples?
- when Aboriginal Peoples continue to be denied access to lands, waters, and

resources due to massive clear-cuts, mega-mining, hydroelectric projects, and other large resource exploitation projects?

- when in the past decade informative and inclusive roundtables, stakeholder committees, advisory bodies, and other forums have been reduced to “updates tables” or cancelled all together under the guise of austerity budget slashing? [Can’t the Government of Canada negotiate appropriate royalties to at least accrue money to fund basic public forums?]
- when in 2012 Aboriginal artefacts have been taken from our territories, against our will, and shipped to Ottawa for deep storage?
- when the Government of Canada has kneeled before corporate resources Canada to allow the abuse of the Metal Mining Effluent Regulations by subsidizing mining companies with capital cost savings by not requiring the construction of multi-million dollar engineered metal mining effluent holding ponds by virtue of Orders in Council which designate natural lakes to be added to the Schedule to be listed as company metal mining effluent holding ponds?

The promise to respect, preserve, and maintain the knowledge and worldview of Aboriginal Peoples was made by the Government of Canada in 1996 with the release of the

Canadian Biodiversity Strategy. Seventeen years later, we are still waiting for Canada to fulfill its promises to Aboriginal Peoples and the international community for Canada to:

- develop an approach to implementing the Convention on Biological Diversity with a view to reflecting distinct Indigenous values, social networks, traditional economies, and cultures;
- develop an Indigenous community analysis of the Convention with reference to the knowledge, innovations, and practices of Indigenous communities and taking into account issues of intellectual property rights and the use of genetic resources; and
- examine ways in which Indigenous groups can share their knowledge and experience, and develop joint programs with Indigenous groups inside and outside Canada.

All promises unfulfilled while we patiently wait.

How can we find ways that this new National Conservation Plan can complement and enhance existing conservation efforts? Obviously we have to continue without the majority of municipal governments because, as manifestations of provincial governments, they have no mandate to implement the Global Aichi Biodiversity Targets. Obviously we have to continue without the provincial governments because they do not have any money. Obviously we have to continue without the

federal government because it only has \$13 million to inject into projects which directly conserve and protect species and their habitats. These are realities for which we need solutions.

We have to turn to the benevolence of individuals and corporations to seek funds. To take from their bottom-lines money to remedy problems caused by others who reap massive resources wealth with environmental subsidies of relaxed regulations, fast-tracking of approvals, absence of oversight, Order in Council privilege, and a government promoting economic development at all costs. With that formula and a simple mindset that we are a frontier resources colony ready for pillage and plunder, obviously a National Conservation Plan would be kicked to the side and Canadians will find it impossible to achieve conservation and sustainable use, let alone advance any national discussion towards a vision of living in harmony with nature. Like the worm, Canadians will not make a home within a National Conservation Plan that is poisoned with toxic promises.

Last week I learned, as did many other Canadians, that Canada has withdrawn from the United Nations Convention to Combat Desertification; a spokesman suggesting that the Convention was costly for Canadians and showed few results if any for the environment. May I respectfully suggest that the Right Honourable Prime Minister and his Cabinet [Executive Council] take an introductory course

on the United Nations as a multilateral discussion forum and learn that the United Nations conventions and protocols represent a culmination of discussion and discourse of representatives of seven billion people to formulate a common humankind global approach to a problem. Aside from the fact that Canada is affected by the creep of desertification, now accelerated by climate change, upon Canadian dry lands, it is now more important than ever before for Canada to remain engaged with the multi-lateral discourse on global environmental issues, such as desertification, climate change, and biodiversity – not to walk away. In a global environment and global economy, it is ludicrous to think that Canada, responsible for the second largest landmass in the world can act alone or not respond to a global call for action – a call which reverberates throughout the Canadian public and most definitely has been raised time and again by generations of Aboriginal Peoples.

I want to end with a comment by Roger Hunka, Director of Intergovernmental Affairs of the Maritime Aboriginal Peoples Council:

“Way back in the late 1950s I could hear the Who’s Who loon signal the beginning of a short film vignette about a unique natural life in Canada. With that vignette there was a brief lesson on biology, habitat, environmental effects, significance of both to the species and its habitat, and the interaction of humans. These vignettes guided a generation of

Canadians to hold dear habitat and species conservation now and for future generations.

Throughout these years and into the 1990s we witnessed Canadians being international leaders for the environment, conservation, and sustainable use.

- The former president of the Canadian International Development Agency, Maurice Strong organized the 1972 United Nations Conference on Human Environment. Many credit him as the person who, with single minded persistence and great diplomacy, overcame obstacles and fears to produce the Declaration on the Human Environment, 1972 – a starting point to the modern international environmental movement.
- The former Canadian Minister of State for Urban Affairs John MacNeill organized and was Secretary General for the Brundtland Commission. He was the lead author under Gro Harlem Brundtland and Mansour Khalid for the Commission’s seminal report *Our Common Future*, 1987, which paved the way for the Rio de Janeiro Earth Summit in 1992.
- At the Rio Summit in 1992, Canadian diplomats worked hard to organize support and help forge international consensus on a set of 27 principles for environment and sustainable development (the Rio Principles) as well as an

action plan for achieving those (Agenda 21).

- Canada championed the Convention on Biological Diversity by being the first industrialized country to sign the Convention and committing \$11 million over 10 years to host the Convention's Secretariat in Montreal.
- The Canadian delegation to the first meeting in 1997 between States and Indigenous Peoples' representatives on the implementation of Article 8(j) included the largest delegation of Aboriginal Peoples: 14 as part of the official delegation and another 16 Aboriginal delegates attending on their own.

Today, against that glorious past we have an elected Government that has chosen at all costs to take a path relegating KA-NA-DA (the place there) to become a resource extraction colony and energy superpower – simply selling energy and resources to those who wish to buy them.

If the Government continues along this path of using Canadians' and Aboriginal Peoples' natural resources and the environment as expendable products to make Canada a superpower, then we will all become lesser peoples, with lesser resources, with lesser natural habitats, with lesser biodiversity, and with lesser worth, merit, capacity, and dignity in the eyes of humankind throughout Mother Earth."

In closing, have I been negative? No. Do I sound despondent and despaired? No. I accepted this invitation to come before this Honourable House of Commons Standing Committee on Environment and Sustainable Development to apprise you of our reality as it stands today and to again raise the important message and recommendations that may make a difference:

1. Canada must recognize that "conservation and sustainable use" of natural resources must be foremost considered as inseparable terms and that "conservation and sustainable use" must be an essential goal and number one public policy of the Government.
2. Canada must accept and support the reality that Canadians across all sectors: Aboriginal Peoples, academics, environmental organizations, public bodies, the private sector, school children, and others are all striving to learn, promote, and live sustainably, and that Canadians are looking for strong political leadership which respects the environment.
3. Canada cannot keep renouncing or minimizing the importance of international conventions and protocols or environmental initiatives at home because they raise the curtain of Canada and its Government minimizing supports, efforts, and the mobilization of Canadians to achieve conservation and sustainable use of our

natural living legacy.

Mr. Chair, distinguished members, I hope that now you see why we approach this new National Conservation Plan with hesitation. We would like to answer your six questions, but to what end? We want to believe that a new plan can harness the power to complement and enhance conservation and sustainable use of resources in Canada. However, until the executive branch of our Government shows a commitment to conservation and sustainable use of resources in a meaningful and tangible way, the use of a National Conservation Plan will yield no new meaningful demonstrations of conservation and sustainable use of natural resources to meet the need and call of Aboriginal Peoples, Canadians, and the international community.

To be positive, it would be imprudent for us to suggest that there is no hope for the Executive Branch of this Government to change or to adopt a course to work with and to support the worth, merit, capacity, and dignity of Canadians and Aboriginal Peoples and to also hold dear the principle of conservation and sustainable use of natural resources and the fair and equitable sharing of the benefits arising therefrom. There is still time.

Our path of the Maritime Aboriginal Peoples Council and IKANAWTIKET is to promote the respect for the environment and to build upon the past track record which has shown that

Aboriginal Peoples, Canadians, and governments can balance and advance social progress, economic development, and environmental integrity through cooperation, collaboration, and honest involvement.

We can adopt the Mission of the Global Aichi Biodiversity Targets: "Take effective and urgent action to halt the loss of biodiversity in order to ensure

that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably use and benefits arising out of utilization of

genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach."

We'lalioq – Thank you

Fortunately, for *Mawquatmuti'kw* (*we all live together*) our consciousness about Mother Earth helps us to make choices for a better future for our generations yet unborn.



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READER'S PAGE

YOU THINK YOU'RE EATING TUNA

by SUNNIE HUANG

THINK AGAIN! Food experts surprised at lack of concern over mislabelled fish in Canada.

While controversy over horse meat in the European beef and pork supply has captivated people around the world, food experts say Canadian consumers are blasé about mislabelled seafood in North America.

DNA analysis shows 33 per cent of fish sold in grocery stores, restaurants and sushi venues in the U.S. is mislabelled, according to a recent study conducted at the Biodiversity Institute of Ontario (BIO) at the University

of Guelph.

The result is consistent with a 2011 study by BIO that looked at samples from five Canadian cities, including Vancouver, Toronto, Gatineau, Que., Montreal and Quebec City and found that 41 per cent of fish was mislabelled.

The latest study of U.S. fish samples, commissioned by the ocean conservation group Oceana, found inferior farmed fish are often substituted for more expensive species. For instance, pangasius is often sold as grouper, sole and cod; tilapia as red snapper; and Atlantic farmed salmon as wild or king salmon.

3 QUESTIONS TO ASK WHEN BUYING FISH

Mike Nagy suggests consumers ask retailers the following questions before buying fish:

- Is the fish wild or farmed?
- What country does it come from?
- How was it caught?

If sellers can't answer these questions about a given fish, "you shouldn't be eating it," Nagy said.

Dirk Steinke, BIO's director of education and outreach who conducted the 2011 study and helped interpret the results of the latest U.S. sample tests,



DNA analysis shows 41 per cent of fish in Canadian seafood outlets is mislabelled, but food experts say Canadian consumers are not paying enough attention. (AP Photo)

said he was "a little amused" by Canadian consumers' lukewarm response.

"Of course the Americans were very shocked. I saw a few reactions from close by in B.C., where people said in Canada that won't be the case. Knowing that in Vancouver we found the same rate [of mislabelling], I'm a little surprised to hear that," he said.

Among the recent study's key findings:

- Red snapper and tuna are the most frequently mislabelled species (87 and 59 per cent,

respectively).

- Only seven of the 120 red snapper samples tested correctly.
- 84 per cent of white tuna samples were actually escolar, which can cause digestive issues for some people.

Mike Nagy, a sustainable food systems consultant in Ontario, said that consumers seldom tolerate fraudulent labelling of land-based food like beef, but there is less diligence when it comes to seafood.

"Somehow in our psyche, especially in Central Canada

where we are not tied to the coast, seafood is sort of off our radar," he told CBC Radio's The Current.

According to Nagy, consumers who fall for seafood mislabelling are not only paying more for lower-grade items, they might also be buying fish that is unsustainable and carry potential health risks.

The Canadian Food Inspection Agency, which enforces the country's food labelling laws, was not available for comment.

LEARNING FROM "SUSHI-GATE"

Seafood fraud has garnered

the interest of researchers since 2008, when two high school students from New York did a DNA analysis that found a quarter of fish products at Manhattan sushi restaurants and seafood markets were mislabelled.

Steinke said that since "Sushi-gate," there has been no improvement in fish labelling, despite numerous studies that confirmed the global trend.

"I don't see anybody being punished for mislabelling anything. I don't see any kind of legislation that actually tracks them down."

FILLET VERSUS WHOLE FISH

Food experts say that fillets are at a greater risk of fraudulent labelling than whole fish.

"It's difficult even for experts to tell ... what it is when there's no head on the fish," said sustainable food systems consultant Mike Nagy.

"The likelihood of somebody putting the wrong label on a full fish is very little. But if you just go into a regular market, there's tons of fillet. Even the people behind the counter don't know if it's the real thing or not," said food researcher Dirk Steinke.

Steinke added that while the horse meat that somehow

managed to show up in the European beef and pork supply is likely an accident that will eventually sort itself out, the rampant seafood fraud is an ongoing global problem.

"It's a systematic way of keeping the entire economy going on the wrong premises," he said.

According to Steinke, the seafood industry's identity crisis is driven largely by the financial pressures on companies having to deal with depleted fish stocks. As a result, they take advantage of the price gap by substituting lower-grade fish for expensive species.

While financial advantage is a factor, the sheer number of transactions from the fishing vessel to the dinner table also complicates the labelling process, Nagy said.

"So you have vast amount of products going through vast amount of hands, and that leaves a lot of room for substitution and fraud," he told CBC News.

'DIFFICULT TO MAKE AN INFORMED CHOICE'

Nagy said the problem is made worse by Canada's lax labelling system, which gives buyers little information about the country of origin and the

capture method of seafood products.

"It's very difficult to make an informed choice just based on basic product [labelling], let alone whether it's the right product in there or not," he said.

Melanie Joy, a Harvard-educated psychologist and author of *Why We Love Dogs, Eat Pigs, and Wear Cows*, said she is "curious about the public's reaction" to the latest seafood fraud study.

"What I find interesting is this study doesn't seem to have been as widely disseminated as the horsemeat one," she told CBC News.

She cited "carnism," a belief system that guides us to eat certain animals. She said that the more we identify with an animal, the more likely we are to feel empathy for it and the less likely we are to want to eat it.

"It's easier for humans to identify with mammals, for example, than it is to identify with fish. It's more difficult to perceive the suffering of fish and other aquatic life," she said.

"The idea of eating horse meat causes a stronger moral reaction and therefore a stronger level of disgust."



SeaChoice works to help Canadian businesses and consumers make smart seafood decisions for today and tomorrow. By working together with Canadians to responsibly choose their seafood, we can support the long-term health of marine ecosystems and coastal communities.

SeaChoice is supported by a coalition of five conservation organizations from across Canada, including the Canadian Parks and Wilderness Society, David Suzuki Foundation, Ecology Action Centre, Living Oceans Society and Sierra Club (B.C. Chapter). SeaChoice draws on and benefits from the wide range of expertise and knowledge of the personnel in each organization.



We assess the sustainability of many common domestic and imported seafood products so we can help Canadian seafood lovers and businesses choose ocean-friendly seafood options. We use well-defined science-based sustainability criteria established by the *Monterey Bay Aquarium's* acclaimed *Seafood Watch*[®] program. Our assessments are available on our website at www.SeaChoice.org.



SeaChoice also produces handy wallet sized seafood guides for consumers that profile the sustainability ranking of the most common seafood items using a simple traffic light system.

Since our launch in 2006, our cards have been translated into French, Mandarin, and Cantonese. We've created a sustainable sushi guide to help all seafood lovers from coast to coast make ocean-friendly choices.

To date, nearly one million wallet guides have been circulated, and our free mobile apps allows users to access our ocean-friendly recommendations on the go.



Best Choice seafood is well managed, abundant, and caught or farmed in environmentally sustainable ways.



Some Concerns seafood should be consumed infrequently or when a green choice is not available. There are concerns with abundance, management, or impact on other marine life.



Avoid items from this list for now. They come from farmed or wild sources with a combination of critical problems - habitat damage, lethal impacts on other species, critically low populations or poor management.

A COMPELLING REASON

NO OXYGEN by JOSHUA MCNEELY

Aerial photo of a deadly anoxic (no oxygen) event in the Mill River Estuary near Bloomfield, PEI on August 6, 2013.

The white colour of the water is sign that the water no longer has enough oxygen to support life. This event would have harmed shellfish, eels, flounder and small fish.

An anoxic condition can occur when nutrient run-off from agricultural fields and warm water temperatures combine to provide optimum growing conditions for algae. When the algae dies, a large amount

of dissolved oxygen is used up as the algae decomposes, robbing other water-life of oxygen.

If you see the water turn milky-white or if the water starts to smell like rotten eggs or if the fish look like they are trying to swim out of the water, immediately contact your local provincial or federal environment office or the Department of Fisheries and Oceans Canada and also report it to your local watershed organization, if there is one in your area.





photo credit: W. MacKinnon, Aug. 6 2013, Mill River Estuary, Bloomfield, PEI

ANOTHER THREAT

BUDGET CUTS WHITEFISH by ROGER HUNKA

The Acadian Whitefish, now referred to as the "Atlantic Whitefish", *Coregonus huntsman* (Scott 1987) lives in only three identified critical habitats, in Southwestern Nova Scotia; Milisigate Lake, Minamkeak Lake and Hebb Lake, on the upper Petite Riviere, as well as the waterways interconnecting these lakes within Lunenburg County. These three habitat areas, excluding the dams and associated structures, account for the entire distribution of the only existing population of Atlantic Whitefish within the natural environment or natural living waters within Canada.

The Atlantic Whitefish is an endemic species of Canada, known historically in the Tusket River and Annis River, and now only in the Petite Riviere watershed in southwestern Nova Scotia. The Atlantic Whitefish is the sole and founding representative of the unique lineage of Whitefish in North America, and as a result of this unique lineage with the only remaining population in the Petite Riviere Watershed system, is determined to be an important component of the biodiversity of Canada.

The Atlantic Whitefish was included as Endangered on Schedule 1 of the Species at Risk Act (SARA), when it was enacted in June 2003. A key responsibility of Canadians under SARA is the development of a "Recovery Strategy" which details specific steps to be taken to protect and recover the species.

Protect or to conserve, and maintain or to sustainably use a resource or species, are two pillars of the three fundamental pillars of the Convention on Biological Diversity (CBD) adopted by 192 states of the United Nations in 1992.

In 1992, Canada was the first nation state to champion for the CBD and endorse the CBD.

The third pillar of the CBD is the fair access and equitable sharing of benefits arising from biodiversity (ABS).

As a result of Canada adopting the CBD in 1992, Aboriginal Peoples, Canadians and elected officials dedicated the next nine years to incorporate the decades of public biodiversity education and expertise advanced by the Canadian Wildlife Service (CWS).

nine taxons. Governments would recognize the efforts of hundreds of Conservation Groups, Indigenous Peoples Knowledge, the significance of natural life to all Canadians, and uphold the promise for complete access to natural resources by Aboriginal Peoples as guaranteed through the Constitutional Protection of the Treaties of the Aboriginal Peoples of Canada. These realities and others, when harnessed under

well known to COSEWIC, and through the contributions of a diverse Atlantic Whitefish Conservation & Recovery Team (AWCRT), the Department of Fisheries and Oceans Canada (DFO) published the 2006 Recovery Strategy. A Recovery Potential Assessment (RPA) was undertaken by DFO to consolidate new information on the Atlantic Whitefish in preparation for the species reassessment by the

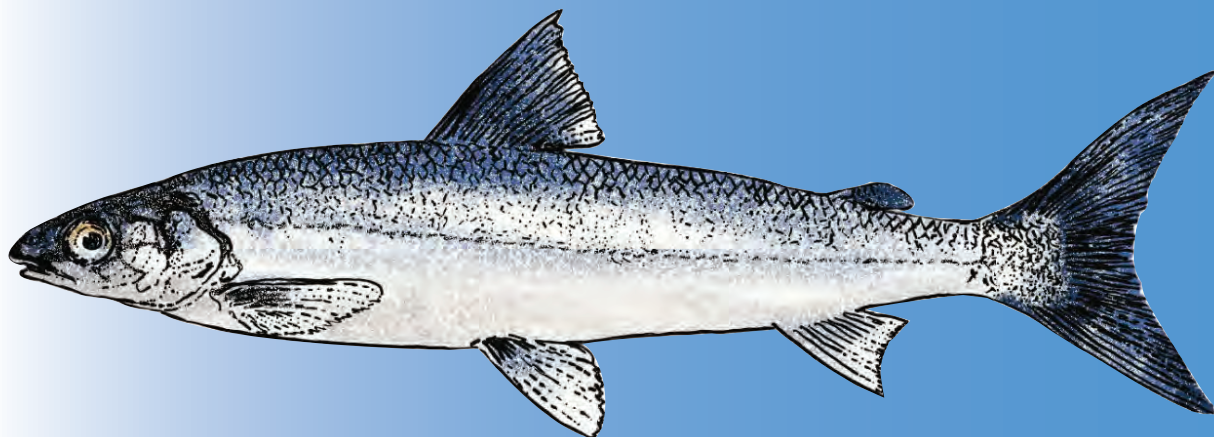


Illustration: Anna Nibby-Woods from Kespiatukstew Wsitqamuey Muk Nqutma Wetaptut'ip - Spices at Risk

Back In 1988, governments through the Wildlife Ministers Council of Canada with responsibility for the Recovery of Nationally Endangered Wildlife (RENEW) made a commitment. Governments would work with experts and the scientists teams known as the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) covering

the umbrella of the intent of the Convention on Biological Diversity (CBD) formed the foundation for public/government/scientific and individual involvement in the implementation of the Species at Risk Act (SARA), assented to in December 2002.

The concern and plight of the Atlantic Whitefish was

Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2010, as well, to support decisions on SARA permitting, and to support ongoing recovery planning efforts by DFO in 2009.

In brief, and to quote, the overall goal of the recovery strategy is to:

"Achieve stability in

the current population of Atlantic Whitefish in Nova Scotia, reestablishment of the anadromous form, and expansion beyond its current range."

In an effort to minimize the species risk of extinction, an attempt was made to establish a back-up population. Captive-reared Atlantic Whitefish from the Mersey Hatchery were released into Anderson Lake, Dartmouth Nova Scotia, from 2005 to 2007, but an established population has not yet been confirmed in this new location.

Efforts were also underway to ensure the survival and promote anadromy on the Petite Riviere by improving fish passage. The success of these efforts will not be known for several years. The facility resources of the Coldbrook Hatchery were introduced into the strategy, to hold brood stock within a controlled water environment. Coldbrook uses well water. Extensive facilities renovations (\$400,000 from the Canada Economic Development Plan) were made to the Mersey Hatchery to facilitate office, meeting and some basic on site laboratory analysis, including repairs for safety.

In December of 2012, DFO published the second draft Action Plan for the Atlantic Whitefish (*Coregonus hutsman*) in Canada under the Species at Risk Act (Action Plan Series).

The Minister of Fisheries and Oceans (DFO) is the competent Minister under SARA with responsibility for the Atlantic Whitefish and under his authority has prepared the action plan to implement a recovery strategy as per section 47 of SARA.

To the extent possible, the Action Plan was prepared in co-operation with the Atlantic Whitefish Conservation and Recovery Team (AWCRT), the Department of Fisheries and Oceans, the Nova Scotia Department of Fisheries and Aquaculture, municipal governments, industry, academia, interested stakeholders, environmental non-government organizations, and Aboriginal Peoples including the Bluenose Coastal Action Foundation, Public Service Commission of Bridgewater, Dalhousie University, the Native Council of Nova Scotia, Maritime Aboriginal Peoples Council, Nova Scotia Museum of Natural History, Nova Scotia Power Corporation, the South Shore Naturalists, Nature Nova Scotia and the Mersey Tobetic Research Institute, Parks Canada Agency, Nova Scotia Department of Natural Resources, and the Nova Scotia Department of Environment. Considering that many of the parties involved did so on their own dime; sort of speak, travelling from far and wide, giving up of their time, the list of those involved

is indeed formidable evidence of interest, concern and involvement.

And then all of a sudden like the zing of a harpoon, in February of 2013, the AWCRT was advised:

"Work on the Action Plan for the Atlantic Whitefish will be guided by the following realities.

1. The remaining grow outs of Atlantic Whitefish at Mersey will be deposited into Anderson Lake;
2. The Mersey Hatchery will be closed and put up as surplus to DFO needs;
3. Some brood stock of Atlantic Whitefish at Coldbrook Hatchery will be milted;
4. The remaining brood stock of Atlantic Whitefish at Coldbrook will be released into the wild;
5. Atlantic Whitefish "Milt" will be preserved at an undisclosed holding facility indefinitely;
6. The next meeting of the AWCRT is unknown."

How can I best end this sad saga of Canadians forced to abandon the meaningful conservation and recovery of the Atlantic Whitefish? Perhaps the most appropriate ending is to hum and sing out the reprise of the song "*...is that all there is my friend, then let's keep on dancing, let's break out the booze and have a ball, is that all there is ...*".

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NEW FINDINGS

UNEXPECTED INSIGHTS... by APRIL FLOWERS

FROM A 300-MILLION-YEAR-OLD FOSSIL RECORD.

The genome of the coelacanth, a creature with an evolutionary history that is both enigmatic and illuminating, has been decoded by the Genome Center of the Broad Institute of MIT and Harvard, and analyzed by an international team of researchers. The findings of this study are published in the journal *Nature*.

The coelacanth, a sea-cave dwelling, five-foot long fish with limb-like fins, was once thought to be extinct until a living specimen was discovered off the African coast in 1938. According to the AFP news agency, only 308 other coelacanths have been reported since.

Questions about this ancient-looking fish commonly referred to as “living fossils” have since loomed large in scientific circles. Modern coelacanths closely resemble the fossilized skeletons of their ancestors of more than 300 million years ago and the genome confirms what has long been suspected: coelacanth genes are evolving more slowly than other organisms.

“We found that the genes overall are evolving significantly slower than in every other fish and land vertebrate that we looked at,” Jessica Alföldi, a research scientist at the Broad Institute, said in a statement. “This is the first time that we’ve had a big enough gene set to really see that.”

The slow rate of evolutionary change might be because the coelacanths have not needed to change. For the most part, they live off the Eastern African coast (a second coelacanth species lives off the coast of Indonesia), at ocean depths where relatively little has changed over the millennia.



“We often talk about how species have changed over time,” said Kerstin Lindblad-Toh, scientific director of the Broad Institute’s vertebrate genome biology group. “But there are still a few places on Earth where organisms don’t have to change, and this is one of them. Coelacanths are likely very specialized to such a specific, non-changing, extreme environment — it is ideally suited to the deep sea just the way it is.”

Despite their resemblance to ancient ancestors, modern coelacanths are not a relic of the past brought back to life. They are a species that has survived and reproduced without large changes in appearance for millions of years. “It’s not a living fossil; it’s a living organism,” said Alföldi. “It doesn’t live in a time bubble; it lives in our world, which is why it’s so fascinating to find out that its genes are evolving more slowly than ours.”

The team has tested other long-debated questions as they decoded the coelacanth genome. Coelacanths have features that seem oddly similar to those seen only in land dwelling animals, for example. These features include “lobed” fins, which resemble the limbs of four-legged land animals known as tetrapods. Lungfish, another odd looking group of fish, also has lobed fins. Scientists have

long thought that one of the ancestral lobed-finned fish species gave rise to the first amphibians, but until now they could not determine which of the two was a more likely candidate.

The team not only sequenced the entire genome of nearly 3 billion “letters” of DNA, they also examined the RNA content from both species of the coelacanth and the lungfish, allowing them to compare genes used in the brain, kidneys, liver, spleen and gut of the lungfish with gene sets from coelacanth and 20 other vertebrate species. The results of this examination suggest that tetrapods are more closely related to lungfish than coelacanths.

In order to understand what is often called the water-to-land transition, however, the coelacanth is still a critical organism to study. Although lungfish may be more closely related to land animals, its genome remains unreadable. The lungfish genome — at 100 billion “letters” — is simply too long and unwieldy for sequencing, assembly or analysis. The more modest-sized genome of the coelacanth, which is close in size to our own, yields valuable clues about the genetic changes that may have allowed tetrapods to flourish on land.

The team made several

unusual discoveries when looking at what genes were lost when vertebrates came on land, as well as what regulatory elements — parts of the genome that govern where, when, and to what degree genes are active — were gained. Among these changes are sense of smell, immunity, evolutionary development and the urea cycle.

- Many regulatory changes have influenced the genes involved in smell perception and the detection of airborne odors. The team suggests that as animals moved from sea to land, a need arose for new means of detecting chemicals in the environment.

- A significant number of immune-related regulatory changes were found when the coelacanth genome was compared to those of land animals. These changes may be part of a response to new land-borne pathogens.

- The team found several key genetic regions that might have been “evolutionarily recruited” to form tetrapod innovations, including limbs, fingers and toes, and the mammalian placenta. One such region, HoxD, harbors a particular sequence that is shared across coelacanths and tetrapods, making it likely that this sequence was co-opted from the coelacanths to help form tetrapod hands and feet.

- Ammonia is excreted into the water by fish to get rid of nitrogen in their systems. Humans and other land animals, however, quickly convert ammonia into less toxic urea using the urea cycle. The team found that the most important gene involved in this cycle had been modified in tetrapods.

For researchers studying the evolution of tetrapods, the coelacanth genome may hold further clues. “This is just the beginning of many analyses on what the coelacanth can teach us about the emergence of land vertebrates, including humans, and, combined with modern empirical approaches, can lend insights into the mechanisms that have contributed to major evolutionary innovations,” said Chris Amemiya, PhD., Director of Molecular Genetics at the Benaroya Research Institute at Virginia Mason (BRI). Amemiya is also Professor of Biology at the University of Washington.

For many reasons, sequencing the full coelacanth genome was a uniquely challenging exercise. Samples for research are nearly non-existent because the coelacanth is an endangered species, meaning that each sample obtained was precious. The researchers

would have “one shot” at sequencing collected genetic material, according to AlfÅ¶lidi. This difficulty also seemed to knit the scientific community together. The LA Times reports that obtaining enough samples for genetic sequencing took decades; partially because they are “crazily endangered” and partially because sequencing technology wasn’t up to speed to decode the entire genome from the tiny samples the team had.

“The international nature of the work, its evolutionary value and history, and the fact that it was a technically challenging project really brought people together,” said Lindblad-Toh. “We had representatives from every populated continent on earth working on this project.”

Further study of the coelacanth’s immunity, respiration, physiology, and more is needed to provide insights into how some vertebrates adapted to life on land, while others remained creatures of the sea. The research team is preparing several companion papers for publication in a special open access issue of the Journal of Experimental Zoology.

John Hutchinson, professor of evolutionary biomechanics from the Royal Veterinary

College, told BBC News it was an interesting study.

“The lungfish-coelacanth question has gone back and forth over the years; the lungfish answer is not new, but this is a much better, bigger dataset so it does tip the balance a bit,” he said. “They are missing some critical animals – it would be interesting to see what addition of salamander or more ray-finned fish would do to their analysis, but it might not change anything important.”

There are other studies concerning the coelacanth, including one from the French organization Andromede Oceanology which is working with the Natural History Museum in Paris to attach acoustic tracking devices to the fish in order to study their behavior and capture 3D moving images of their fins as they swim.



PRESERVATION

& CONSERVATION LAKE UTOPIA by BARRY LABILLOIS & JOSHUA MCNEELY PART ONE

Since time immemorial our ancestors have inhabited southern New Brunswick. Fishing on the many rivers and lakes was a predominant way of life – a tradition and way of life carried on today by the harvesters of the New Brunswick Aboriginal Peoples Council Aboriginal Fisheries Strategy. Interconnecting rivers, streams, canals, and lakes are the vital links to important fishing encampments and the highways of trade for Aboriginal Peoples. Although many of these waters still carry Maliseet, Passamaquoddy, or Mi'kmaq names, such as the Magaguadavic River “the river of eels”, their traditional uses have been supplanted by paved highways.

In a small southern New Brunswick lake called Utopia a peaceful existence of the old ways continues and Mother Earth nurtures the life of a little smelt, only known to a few... well, two smelts actually.

Smelts are a small, highly productive fish which in some cases still remain an important food source for many peoples around the world. Despite their small size, the ease of catch and preparation make them an important part of the winter diet. This also made them a prime fish to be spread into every available waterway which allows them to complete their anadromous life-cycle of living at sea and returning to freshwater to spawn. However, in some instances a population of smelt can become landlocked; in which case they will live in a lake and spawn in its tributaries – such is the case of the Lake Utopia Rainbow Smelts.

Another interesting aspect found in several populations of Rainbow Smelts is a distinct division into two seemingly different species – a large-bodied form (typically greater than 15 cm) and a small-bodied form (under 15 cm). This is also the case of the Lake Utopia Rainbow Smelts. In fact, most Rainbow Smelt populations with a large-bodied and small-bodied form live in completely

different areas of the same waterbody, further supporting the theory that they are different, but closely related species. The aspect of having a large-bodied and small-bodied Rainbow Smelt is not uncommon; in fact, until just recently many scientists supported the designation of all large-bodied Rainbow Smelt in North America as one species, which was widely spread throughout North America, and a separate designation of all small-bodied Rainbow Smelt as a completely separate species,

though they look different, are actually genetically closer to each other than they are to Rainbow Smelts in neighbouring watersheds. This recent scientific find turned the previous classification upside down. Scientists now believe that for each instance where the two body-types exist, each group has independently undergone an evolutionary process called speciation, where one species becomes two or more species. If true, this would be an extraordinary scientific find, because it means that similar evolutionary

a rare evolutionary process for fish, called sympatric speciation. Essentially, what it means is that there are two forms, and for most intents and purposes we should consider them as two species, but technically they are still one species. For example, the large-bodied Lake Utopia Rainbow Smelt typically spawn in different streams and at a different times than the small-bodied Lake Utopia Rainbow Smelt, resulting in two distinct populations. However, the two body types still interact significantly, each supporting

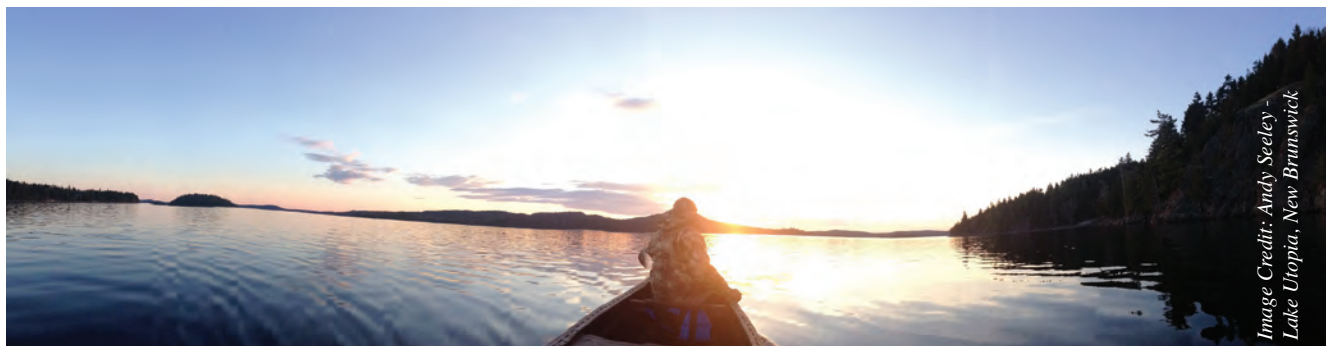


Image Credit: Andy Seeley - Lake Utopia, New Brunswick

Heading out for a night of counting on Lake Utopia, New Brunswick.

which was also spread widely throughout North America.

What is unique with the Lake Utopia Rainbow Smelts is that both the large-bodied and the small-bodied forms co-exist in the same landlocked lake. Only two other instances of this unique phenomena exist in all of eastern North America. Recent genetic studies on the two body types of the Lake Utopia Rainbow Smelts show that the large-bodied and the small-bodied forms,

events would have occurred several times to one species of Rainbow Smelts which produced similar results (two or more body forms of the same species) in several different areas across North America.

If that wasn't enough uniqueness to describe the position held by the Lake Utopia Rainbow Smelts, what if we told you that they are still going through the speciation processes today while at the same time living together –

the evolution and persistence of the other. In other words, if one were to disappear, the other would undoubtedly change drastically or may also disappear.

The short story: the sympatric pair of Lake Utopia Rainbow Smelts are a unique part of biodiversity and have been fished by Aboriginal Peoples since time immemorial. However, despite the scientific interest to continue studying their

evolutionary process and our Aboriginal community's Aboriginal and Treaty Rights to continue harvesting smelts throughout New Brunswick, little information has been captured by the Department of Fisheries and Oceans Canada (DFO) or the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) about the health of the population. Certainly it has a very small range. Knowing that, but with little other information, in 2008 COSEWIC assessed both the large-bodied and the

small-bodied forms of Lake Utopia Rainbow Smelts as "Threatened".

IKANAWTIKET and the New Brunswick Aboriginal Peoples Council don't want to see this important and unique fish slide under the radar and into oblivion, especially when you consider the tremendous cutting and slashing by the federal government to DFO science and environmental programs. Working closely with DFO species at risk officials, Barry LaBillois, a Community Aquatic Resources

Development Advisor for the Maritime Aboriginal Aquatics Resources Secretariate, and Joshua McNeely, the Executive Director of IKANAWTIKET, worked out a plan to begin to fill in some of the largest information gaps, such as pinpointing when and where the two body forms spawn and how many fish are spawning.

The Traditional Ancestral Homelands Aboriginal Community and their elected executive of the New Brunswick Aboriginal Peoples Council became

Biggest threat: exposed smelt eggs.



Image Credit: Andy Sealey

very supportive of the project both at the local level and at the Annual General Meeting. Several members expressed that they wanted to be kept apprised of this 'boots in the water' project. Some knew of other areas or species around the province which could benefit from similar types of projects. Two community members stepped forward to be our 'boots in the water' field technicians: Colby Craig and Andy Seeley, who braved frigid early spring temperatures, ice cold water, high winds, and long nights to start this project off as best we could.

Phase I of the project has been completed – a study to note when, where, and roughly how many Lake Utopia Rainbow Smelts spawned this past spring. The results from this study could impact the proposed SARA Listing for the Large-bodied form and the Recovery Strategy for the Small-bodied form. For example, many more Rainbow Smelts were counted than expected. In fact, more than twice the number of Large-bodied spawners required to meet the stated 5-year recovery target was counted in a single night. Other information also questioned the validity of previously collected 'spot check' data. For example, we noted that much of the previous data was not taken during the best

time of year or best time of the day to get an overall sense of the peak and total spawning runs. Where much of the data previously reported was from day-time or evening sampling, our field experience showed that the peak spawning occurred late at night and into the early morning hours and that spawning may be triggered more by moon-cycle than water temperature. The field technicians also found evidence that the Small-bodied were also spawning in a stream previously noted by scientists as being a spawning stream only for the Large-bodied. This could call into question DFO's delineation of Critical Habitats.

After being on the water for many hours over a two month period doing a dedicated study for Lake Utopia Rainbow Smelt spawning, we noted that the single greatest threat during that critical period was the drastic rises in water levels from rain events, followed by equally dramatic drops (often several feet) in the span of only a few days, which left many millions of eggs exposed.

Phase II of the project is set to begin in early September, where we will attempt to better understand the dynamics of Lake Utopia and both forms of the Rainbow Smelts and the threats to both. We will also try to identify other possible spawning sites on other

tributaries. In Phase II we will continue to work closely with DFO to develop a plan of action for next year's spawning run, particularly a more dedicated and focused search effort and a more detailed estimation of abundance.

There are still plenty of opportunities to volunteer for this project. We are looking for Aboriginal youth to become involved in some research about Lake Utopia and the Lake Utopia Rainbow Smelt for an educational booklet and poster series, which we hope to produce over the winter. We are also looking for a young Aboriginal artist to create the accompanying illustrations. If you live in the Saint George, NB area, we could also use extra hands to help on field days or to help organize a community event to talk about the conservation and sustainable use of Lake Utopia Rainbow Smelt. If you would like to volunteer for any of these activities, please contact Barry at (506) 458-8422 (toll free 1-800-442-9789) or by email blabillois@mapcorg.ca or Joshua at (902) 895-2982 (toll free 1-855-858-7240) or jmcneely@mapcorg.ca.

We will updating our Mawqatmuti'kw readers about this unique study with future articles told through different lenses of "Living Here Together With a Unique Part of Natural Biodiversity".

IKANAWTIKET

environmental respect l'environnement



The objective of IKANAWTIKET Environmental Incorporated is: to promote the preservation of the natural environment by educating and informing the public about environmental issues, biodiversity in the Maritime Provinces, Aboriginal culture, Aboriginal worldview, and traditional knowledge in relation to the environment.

IKANAWTIKET advances education by undertaking research which is made available to the public, providing training and instruction, offering courses, seminars, convening conferences, meetings and developing educational tools related to understanding and respecting the environment.

The charitable work of IKANAWTIKET Environmental Incorporated benefits the community by preserving and protecting the environment through the preservation, protection, and restoration of habitats, and increasing the public's understanding about the environment and its importance to all life.

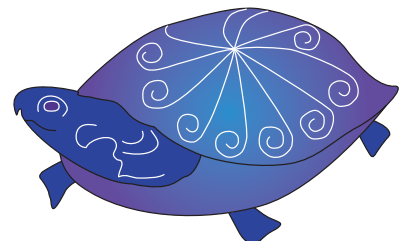
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*"Is controlling nature worth
destroying our environment
and our biodiversity, killing
our young, and poisoning
our food, water, and air?"*



MESSAGE

FROM THE MARINE AFFAIRS PROGRAM



Working with universities, governments, NGOs and the private sector, the Marine Affairs Program (MAP) promotes and conducts timely and relevant research in a broad array of topics. Through its worldwide network of faculty, graduates, and associates, the expertise developed in the MAP program has been, and continues to be, an important influence on marine policy decisions around the globe.

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An aerial photograph of a boat's wake in the ocean. The sun is high in the sky, creating a bright lens flare and reflecting off the water's surface. The wake is a series of white, frothy waves trailing behind the boat, cutting through the deep blue water. The horizon is visible in the distance, separating the ocean from a clear, light blue sky.

The Marine Affairs Program

at Dalhousie University provides an inquiring and stimulating interdisciplinary learning environment to advance the sustainable use of the world's coasts and oceans.

The Master of Marine Management program aims to develop outstanding management professionals, through the promotion of synergies between the humanities, social sciences, Law and natural sciences. Graduates of MAP demonstrate a broad awareness of interdisciplinary knowledge and viewpoints, as well as the skills and tools needed to make informed decisions.



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