

MAWQATMUTI'KW



OUR CONNECTION

“**T**HERE ARE 9 DIFFERENT Maya words for the colour blue in the Porrua Spanish-Maya dictionary, but only 3 Spanish translations, leaving six butterflies that can only be seen by the Mayas, which proves that when a language dies, six butterflies disappear from the Earth’s consciousness.”

... *Earl Shorris*



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

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Front Cover Credit

Ralph Pace (Conservation Photographer) - *Lampris guttatus*, (opah, moonfish) is a large, colourful, deep-bodied pelagic lampriform fish belonging to the family *Lampridae*, which comprises the genus *Lampris*, with two extant species. **The mysterious opah is just found to be the 'first fully warmblooded' fish.**

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GUEST WRITER

A QUESTION OF PERSPECTIVE by ANNA NIBBY-WOODS

The lure of *The Oxford English Dictionary* causes cravings, and then it becomes a matter of consumption before one becomes fat in layers of meaning. This activity is dangerous just like eating too many trans-fats because if not consumed in moderation one will damage the mechanism that sustains life. In the instance of the dictionary one could seriously cripple, if not destroy the heart of one's culture.

Original languages or aboriginal languages are unique because phonology, morphology, syntax, and semantics are all derived from nature. English on the other hand is made up of borrowed words with half meanings. Wilfred Funk in *Word Origins* says that, "sixty percent of English words reflect their Greek or Latin origins. Some are unchanged from their old Greek and Latin forms." Hundreds of others contain ancient roots, prefixes, or suffixes that allow word building in modern English. Hardly an

English sentence appears that doesn't contain one or more components of Greek or Latin. The resources of other languages were poured into English, giving English a multifold verbal power. French words topped the vocabulary grab in 1475. Chaucer's *English Vocabulary* recorded 8,072 words of which forty-eight percent were Old or Anglo-French. To top this off, as war and trade interests of English speakers spread over the world, many strange and exotic languages were drawn upon. Words were adopted and borrowed from every culture the English crossed, but the influence of Greek and Latin are so great that a person wanting to learn to speak and write in English would do well to learn Latin first.

From one point of view, this freedom of borrowing has added greatly to the richness of the resources of English. Yet, it curtailed the ability of English to create new words out of its

native elements. This taking in and borrowing so freely has given the language, according to Kemp Malone, the American philologist, “a chronic case of linguistic indigestion.” It is a moot point—do the great store of loan-words in English represent a treasure or merely indigestion.

Caroline Preston reviewed *Lost For Words: The Hidden History of the Oxford English Dictionary* by Lynda Mugglestone and says, “Consumers of language tend to grant the dictionary an almost biblical authority, and since its completion in 1928, *The Oxford English Dictionary*, has been celebrated as the most definitive of all such



Joel Denny is an Elder, a linguist, composer, musician, writer, lecturer and artist - all of which centre around his Mi'kmaq heritage and culture. Our Mi'kmaq language is the essence of who we are as people and a nation.



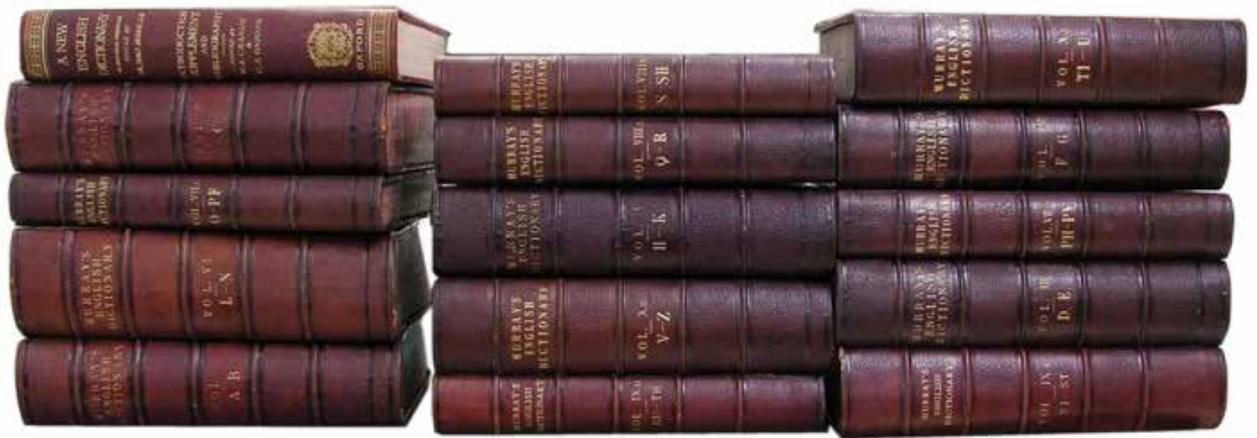
Anna Nibby-Woods is a Mi'kmaq, an artist, an entrepreneur. Nibby-Woods, a hyphenated combo, is a pre-contact name meaning leaf and pronounced Nip-peech. Interestingly Anna married a woods. For the past thirty-five years Anna has worked in print, advertising and communication industries in one capacity or another as a graphic artist, production manager, art director, estimator, illustrator, copy writer, etcetera. Over the years Anna has diversified into several other fields including diversity management, cultural sensitivity and cultural eco-tourism. Images, stories and concepts gleaned from her Mi'kmaq culture become inspiration for her painting, sculpting, drawing, and writing

secular oracles.” Paul Dean also reviewed *Lost for Words* and reminds us that “Decisions about what to include in, and what to exclude from, the dictionary, and about how to define what was included, tormented the editorial team.” However, the writers were from a time of colonial conquest, an important aspect to keep in mind.

Unlike English, aboriginal languages don't need a dictionary because speech sounds and meaning are taken from nature. Everything that is the *Mi'kmaq tongue* is based on the environment—the land, the sea, the forest, and the animals. Joel Denny, a fluent speaker of the Mi'kmaq language says, “A person who speaks an aboriginal language finds it difficult if not

impossible, to describe himself in English because there are no English words that suffice or even approximate the ‘role’ and relationship between people and all that we interact with.”

Because Mi'kmaq is an oral tradition, there has never been a need for dictionaries. The meaning is built into the words. For instance, the words for the cures for a headache is the same words that describes the plants from which the cures is derived. The word is the relationship between the being (you) and the object (it) and it's the interaction and relationship. In English, the cure for a headache is not called headache, its called aspirin. English words don't have built-in teachings; you would not know that aspirin was the cure for a headache



FIRST EDITIONS, 15 volumes in superb Zaehnsdorf morocco bindings. PMM 371. A monumental production by any standards, the first edition of the Oxford English Dictionary took 70 years to complete, contains 15,490 pages, 252,200 entries, and a staggering 1,861,200 quotations from the more than 5 million quotations submitted by contributors. Not simply a dictionary, the OED offers a “biography” of each word, presenting illustrative quotations from literature to demonstrate how each word has evolved and changed throughout each century. *A New English Dictionary on Historical Principles [The Oxford English Dictionary]*. Oxford: at the Clarendon Press, 1884-1928. Large quarto, contemporary three-quarter brown morocco. Ten volumes bound in fourteen. WITH: *A Supplement*, 1933. In total (with supplement): 15 volumes. Due to the prohibitive cost involved in binding such a large set, first editions of the OED in contemporary leather bindings are rare. Light wear to bindings, very small stamp to title page. A very handsome set. \$8500.

just by virtue of the word. The word loosely translated to mean women in Mi'kmaq is 'epit,' but 'epit' (*means carrier of the egg within*) and describes the relationship of a mother, wife, and creator of life. There is no class system, aureate quality, or gender in the Mi'kmaq language. No individual in Mi'kmaq society could be elevated above the rest of the community because of education, heredity, or possessions and in fact, inclusion, respect, and acceptance were the norm. Mi'kmaq words come from this total respect for everything and describe a state of being, inanimate become animate depending on the relationship with a human being and

proximity. Missionaries governed by a hierarchy made their impact. Today we're still suffering from that impact in more ways than all the diseases, loss of lands, residential schools, and genocide put together. The impact of the English language has devastated the culture. To the Mi'kmaq, dictionaries rob relationships between children and elders. Because Mi'kmaq have accepted the meaning of the English word and language, the fate of the culture is slowly being sealed. Mi'kmaq speakers who think in English then transcribe and translate are losing the original meaning of the Mi'kmaq word in the translation. Acceptance in this

form is what's so devastating to one's culture. Subconscious thought, dreaming, and spiritual thought are no longer in Mi'kmaq. There are words that just describe types of dreams and what happens in the dream world; words to describe the continuation of thinking in the dream state, unconscious thinking, and the spiritual memory that occurs during sleep. And other words that just describe serious conceptual thinking and speaking that communicated new approaches to life and society, ideas about creation and the universe, formulas for governance and environment.

Katherine Barber, Editor of *The Canadian Oxford Dictionary*, who sets the

standards for Canadian English reminds us that, unless defined otherwise, dictionaries are descriptive not prescriptive. Dictionaries don't set standards as such; they describe the words being used by a society, good and bad. Imperial mores also drove what appears in *The Oxford English Dictionary*. Condom, for instance, did not make an appearance until a later edition. Other words carried ideological baggage. "Chief" was defined as "the head man . . . of a small uncivilized community"; "blanket" was said to be worn "by savages or destitute persons, for clothing." Even the sources of citations were subject to evaluative prejudice, classic authors being preferred to periodicals.

The dictionary is dangerous to an aboriginal language because it is part of the overall assimilation of a dominant culture and unfortunately, there is no escape. English is a necessity if we want to function in our environment but this is dangerous because it weakens the capacity to communicate effectively with children. Joel Denny says, "So much is being lost by not communicating in one's native tongue. Language lets us pass down information from one generation to the next and create a rich cultural heritage, which in turn affects not only the language that we use but also the way that

we think about the world." Everything in Mi'kmaq daily life is affected by television, movies, games, computers, fashion, architecture, dictionaries, and yes even dreaming. All of these things are bad for the Mi'kmaq language because they are used to communicate and support an English ideology.

Canadian Broadcasting Corporation's Bill Bryson wrote in 1990, "No other language has anything even remotely approaching *The Oxford English Dictionary* in scope. Because of its existence, more is known about the history of English than any other language in the world." Does this mean that *The Oxford English Dictionary* is the authority? Probably. However, one can't help casting an eye back on the nun's at residential school who pruned the bad speakers and spellers of English out with brutal efficiency. It's all too easy to forget that Canada's indigenous peoples are still living in a state of colonization. Indigenous lands, resources, food, culture, and language are still not under the exclusive control of tribal peoples—but are subject to the politics, and the whims, of the dominant culture and non-native cultural norms. In the nineteenth century, traditional languages and culture were beaten out of children at residential

schools. "Kill the Indian, save the man," was the motto of the day. It's no coincidence that on Wednesday, November 24 2005, Ottawa made a key announcement on the contentious issue of residential schools. Deputy Prime Minister Anne McLellan revealed details of a \$1.9-billion compensation package for survivors of residential school abuse. Under the deal, which was praised by the Assembly of First Nations, survivors will be offered \$30,000 each. This turn of events begs the questions; how much does culture, heritage, and language cost, is this another attractive and tempting morsel with hidden dangers, and what will the word be that's added to *The Oxford English Dictionary* to describe this action?

The Oxford English Dictionary was conceived and created centuries ago by an Imperialist Empire that obsessed in a collecting codification mania. Dictionary making also fell into this mania by a gentrified, biased, authoritarian society. *The Oxford English Dictionary* is a marvel of dedication and commitment that illustrates the richness of a resource but it is also a tool of a dominant culture. Although attractive and tempting, it should be consumed in moderation, otherwise there is the danger of seriously crippling the heart of one's culture.

TRADITIONAL KNOWLEDGE

SECRET POWERS OF THE ASH TREE by DELLA MAGUIRE

From the moment of birth, to the time of passing, the ash tree has traditionally played a vital role in the lives of many Mi'kmaw families.

My name is Della Maguire. My parents, Abe and Rita Smith, were internationally renowned basket makers who had been taught the art by their parents. Unfortunately, I was not part of that process, as watching my parents making baskets seemed to me 'just a part of life'. Nor did I realize that they were living off the land, skillfully using the environment and that their basket making was a cultural form of art, Mi'kmaq Art!

The art of basket making was passed to my parents, from their parents. My mother admits to pretending she was sick so that she could stay home and make baskets instead of going to school. Basket making is a process and starts with the knowledge of the ash tree. There are a few different species or ancestors of the ash trees that can be found in Mi'kmaw territory,

such as brown, black, and white ash. My parents used white ash while I use both white and black ash.

This is a small portion of a "teaching" conversation I had with my father regarding the ash tree.

- Q: *"Dad, how do you know where the best place ash trees would grow and what would that look like?" With a small grin he says.*
- A: *"By the growth of the woods. If the woods are too thick the grain of the wood will be too thin. You need to go to the open woods and if the woods are too open, then the ash will have thick grains because the ash will grow faster" "Oh my goodness! So little do I know about the art of making baskets? I continue with my questions.*
- Q: *"How did you know what was a good tree?" Without hesitation he says,*



Della Maguire is Mi'kmaq and grew up in a home of constant basket making. Her parents Abe and Rita Smith were known as the finest Mi'kmaq basket-making team in Nova Scotia. "The art of basket making in our Mi'kmaq culture is a dying art" says Della. "My goal is to build on my skills as a basket-maker, continuing on the tradition of the Smith family and become the next emerging artist and a carrier of our Mi'kmaq culture". Della has become a skilled teacher and will begin delivering basket-making course of studies to interested Mi'kmaq communities, thereby helping to preserve our basket-making heritage. Today, Della's intention is to pursue this fading art of basket making with the same pride and appreciation of Mi'kmaq culture that her parents possessed. Della's baskets are sold at "Flight of Fancy" Bear River, Nova Scotia.

A: *"Most of the time you would follow the lines in the bark and if it's straight you can cut it down. "First you cut a little notch in the bottom of the tree to see the grains. Look to see how thick they are and if they are too thick you don't cut it down."*

Q: *"When you went to get ash, would you go in the summer time to stock up for the winter?"*

A: *"No you can cut ash all year round."*

Q: *"Have you gone in the winter time too?"*

A: *"Oh yes, was the response."*

Q: *"When you cut the tree down, then what would you do?"*

A: *"Bring it home," he says with a grin. (Of course I knew that)*

Traditionally storytelling is a cultural form of teaching, and I was honored to have experienced this with my father.

The Mi'kmaq people have a special relationship

with the ash tree and the environment. We have been living off the land and using ash tree materials for centuries, making different kinds of baskets; for fishing, storing, carrying food and material. With the coming of the Europeans fancy baskets were mostly made to be sold or traded.

Legend has it that Glooscap, taking up his great bow, shot arrows into the basket tree known as ash and our people came out singing and dancing. It is difficult to explain how special and powerful the ash tree is. When the ash tree is pounded it comes alive with the fibers heating up, each growth ring separating to produce individual strips that have the durability and flexibility like no other basket material. The addition of a new growth ring each year can support the creation of many ash baskets. Black ash is like a shape shifter, because when it is damp it can form many different, beautiful baskets and ornaments. The ash tree is considered sacred, and has saved lives, for this is how many of our people supported themselves. My father told me he would alternate between the areas where he received permission to cut down an ash tree. Harvesting too many ash trees from one area would allow the wind to alter the environment. The force of the wind would twist the smaller ash trees, so that they would not be good to use for making baskets. Dad's knowledge of resource management was



The story behind this basket goes like this: Caroline Gould always had a pot of tea brewing and it sure was good to have while she taught me the art of basket making. The name of her tea pot was 'Brown Betty' in honour of Caroline I named my basket Brown Betty. Brown Betty is embellished with sweetgrass.

connected to protecting the environment as he protected the quality of the ash tree. It is common knowledge that what aboriginal people take from the land they give thanks, and every part of the product has a use. Reuse, recycle and reduce is and has been part of the Mi'kmaq code of ethics.

My fondest memories growing up were associated with the ash tree, although at the time I had no idea of the connection. I can remember coming home from school, the back yard being filled with apple baskets that Mom had woven, and the sound of the pounding machine coming from

Dad's work shop told me that both my parents were home working. Most summers we would go camping and I would spend my days following the river, fishing and picking berries, while my father would gather the ash wood they needed to fill their many apple basket orders.

My conversation with my father regarding ash trees was the same time I became interested in pursuing this fading art of basket making. So I began my journey as a carrier of our Mi'kmaq culture learning the art of basket making from two Basket Masters, Caroline Gould and her daughter Margaret Pelletier. I set forth

with my inherited skills, my dedication and my duty to pass on the art of basket making.

I am pleased and honoured to be able to write this article about the ash tree, basket making, and how it has contributed to my life as a Mi'kmaq. I consider myself fortunate to come from a long line of basket makers. Families and communities are literally woven together with tradition passed on through storytelling and interactions while basket making. Therefore it is a responsibility to also weave the knowledge that we have regarding our connection to the environment, and to the secret power of the ash tree.

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HOMELANDS

A NEW “REPUBLIC” TO SAVE CHILE'S GLACIERS

by MARIANELA JARROUD

SANTIAGO, Feb 4 2015 (IPS) - Chile's more than 3,000 glaciers are one of the largest reserves of freshwater in South America. But they are under constant threat by the mining industry and major infrastructure projects, environmentalists and experts warn.

The lack of legislation to protect them allowed the global environmental watchdog Greenpeace to create the Glacier Republic in March 2014 – a virtual country created on 23,000 sq km of glaciers in the Chilean Andes, which already has over 165,000 citizens and 40 embassies spread around the world.

“The Glacier Republic emerged in response to a need, because the glaciers in this country aren't protected,” the executive director of Greenpeace Chile, Matías Asún, told Tierramérica.

A glacier is a huge mass of ice and snow that

forms where snow in the wintertime gathers faster than it melts in the summer and flows slowly over an area of land. Most of the world's freshwater — 69 percent — is locked away in glaciers and ice caps.

“These are strategic reserves of water that contribute in a significant manner during periods of drought and are found not only in the high mountains but also in the south of the country,” Asún explained.

“Many glaciers have been buried and conserve important reserves of water,” he added. “These supply water to the river basins, and not only the most basic human activities but also agriculture and the economy of the country depend on the basins.”

Chile, a mining country whose main source of wealth is copper, has 82 percent of South America's glaciers, according to Greenpeace.



A display of what the harvest of fruit and vegetables would be like without the water from the glaciers, in the Jan. 23, 2015 Fair Without Glaciers organised by Greenpeace in Santiago's Plaza de la Constitución. Credit: Marianela Jarroud/IPS

However, most of them have visibly retreated due to the impact of climate change and large-scale mining activities.

Addressing the Chilean legislature in 2014, glaciologist Alexander Brenning, from the University of Waterloo, Ontario said the magnitude of interventions on glaciers in Chile was unparalleled in the world, and urged that the cumulative effects be assessed.

“The experts are emphatic: Chile has one of the worst records in the world in terms of destruction of glaciers,” Asún said. “This is the sad situation that forced us to found the Glacier Republic.”

“Because the glaciers were in no man’s land, we used that legal vacuum to found the Glacier Republic. We took possession of the entire surface area of glaciers in Chile and declared ourselves an independent republic,” he added.

The Glacier Republic, created as an awareness-raising campaign, was founded on the basis of the Convention on Rights and Duties of States, better known as the *Montevideo Convention* after the city where it was signed in 1933. The first article of the convention establishes four requisites for declaring the creation of a state: a permanent population, a defined territory, a government,

and the capacity to enter into relations with other states.

The aim of the Glacier Republic is to push for what the citizens describe as a “five-star” law on glaciers, which would guarantee the total protection of Chile’s glaciers.

The activists want protection of the glaciers as a national asset for public use to be introduced in the constitution.

They also argue that the law should establish that “the glaciers represent strategic reserves of water in a solid state,” and that it should include a legal definition of glaciers and descriptions of the different kinds of glaciers and their ecosystems, and specify what kinds of activities are permitted and prohibited in each ecosystem.

In addition, the idea is to establish in the law a grace period and specific time frame for activities currently carried out in protected or potentially protected areas to adapt to the new law.

In May 2014, lawmakers from the self-described “glacier caucus”, which includes the former student leader and current Communist legislator Camila Vallejo, introduced a draft law in Congress to create a legal framework to protect the country’s glaciers.

The current legislation allows activities like mining or the construction of infrastructure to affect a glacier, if the impact is spelled out in the environmental impact assessment and compensated for in some way.

In August, Congress agreed to try to move towards passage of a new law. But the draft law, which has drawn criticism from different sides, has not yet been approved.

Chilean glaciologist Cedomir Marangunic, who works with different technologies to save and create new glaciers, told *Tierramérica* that he believes certain well-regulated activities, such as tourism or development projects, can

be allowed in the areas of the glaciers, unless prohibiting all human activity is indispensable for the survival of a specific glacier.

But he said glaciers, especially the ones located on privately owned territory, should be in the public domain by law.

Marangunic, a geologist at the University of Chile with a PhD in glaciology from Ohio State University in the U.S., said that although “some mining” hurts glaciers, “the pollution caused by large cities like Santiago or the smoke from the burning of grasslands and forests” also damage them.

But for the Diaguita Community of Huasco Valley in the arid northern region of Atacama, where the Canadian company Barrick Gold’s Pascua Lama gold and silver mine is located, there is no room for doubt.

“Glaciers are the reservoirs of water that we have had for thousands of years. And today, in times of drought, it is the glaciers that keep us alive and supplied with water,” the indigenous community’s spokesman, Sebastián Cruz, told *Tierramérica*.

Huasco Valley, in the Atacama desert, the driest in the world, runs across the Andes mountains to the sea and is fed by water from the glaciers, added the representative of the Diaguita native community, who live in that vulnerable ecosystem.

Far from living up to the commitment expressed in the environmental impact study, the Pascua Lama gold mine has destroyed “nearly 99 percent of the Esperanza glacier and the Toro 1 and 2 glaciers,” Cruz said.

The Diaguita community argues that a new law on glaciers must guarantee protection for certain conservation areas and must ban any extractive or mining activities in the glaciers and the surrounding landscape.

Socialist President Michelle Bachelet promised



The El Morado glacier in the Andes mountains in central Chile. Credit: Orlando Ruz/IPS

to protect the glaciers, in a May 2014 speech to the nation. But since then she has not referred publicly to the issue. A group of legislators from the governing Nueva Mayoría have backed the draft law.

The citizens of the Glacier Republic promise

they won't back down until a strong law on glaciers is passed.

“For the time being, the glaciers belong to the Glacier Republic, and we will be in a dispute with the Chilean state until we see a determined commitment to a real law,” Asún said.

Story Credit: Marianela Jarroud, edited by Estrella Gutiérrez/Translated by Stephanie Wildes. This story was originally published by Latin American newspapers that are part of the Tierramérica network, ipsnews.net.

A NEW REPORT: WE ARE NOT AFRAID by FIDH

Paris-Geneva, December 2, 2014 – Land rights defenders are increasingly the target of repressive measures, says the Observatory in a new report published which presented in Geneva at the United Nations Annual Forum on Business and Human Rights. The pressure on land has become unbearable and mobilisation for the respect of the economic,

social and cultural rights of affected communities has become a high risk activity.

“This Report shows the daily struggle conducted by land rights defenders, often confronted to(sic) by “economic predators” greedily supportive of unbridled development. Land rights defenders often live in isolated areas, far from actors of

protection. These factors facilitate acts of violence against them, the level of violence being proportional to sky-rocketing profits”, declared Karim Lahidji, FIDH President.

Between 2011 and 2014, the Observatory documented 43 assassination cases targeting land rights defenders and the judicial harassment of 123 defenders, sometimes together with their arbitrary detention. These figures only reflect a small fraction of the real picture. All regions in the world are concerned, Asia and Latin America being the most affected.

The Observatory found that authors of repression are





Land right defenders: targeted for confronting unbridled development. Visit the report's interactive website WeAreNotAfraid.org

often the police, the military, private security agents and “henchmen”. Their objective being to silence dissenting voices likely to slow down investment projects.

In addition to violence, numerous States also use judicial harassment and arbitrary detention to intimidate defenders. Thanks to laws that violate fundamental freedoms or in violation of their own laws, they jail any person deemed to be a nuisance. “Terrorism”, “misleading propaganda”, “infringement to State security”, “public unrest”, there are many abusive charges which can result in heavy prison terms.

Land rights defenders are often powerless when they face physical attacks and

arbitrary arrests. According to the Observatory, 95% of violations against them remain unpunished today.

Judicial bodies in countries where such violations occur are characterised by a lack of independence, resources and expertise. Regarding the possibility of prosecuting business corporations responsible for human rights violations, the legal battle – if any – is often lengthy, perilous, unequal and costly.

At the heart of the problem lies the issue of the participation of individuals and communities affected by the development policies and investment projects. The Observatory calls for meaningful consultations that ensure the direct participation

“Land rights defenders speak for millions of victims. When a defender is jailed or killed, thousands of victims are silenced”, declared Gerald Staberock, OMCT Secretary General.

of populations affected by the projects and the recognition of land rights defenders as the legitimate spokespersons in order to prevent conflicts and put an end to serious human rights violations. Furthermore, it is necessary to strengthen the capacity and independence

of domestic judicial systems, including in States hosting the headquarters of business corporations, in order to allow defenders to access justice and seek redress in the event of human rights violations.

The Observatory also recommends to strengthen international law in order to trigger effectively the responsibility of business corporations when the latter commit human rights violations

and to guarantee the adequate protection of land rights. Read the 2014 Observatory Annual Report : "We are not afraid": Land rights defenders: attacked for confronting unbridled development.



Photo taken from Video Interview with Yorm Bopha, land rights activist (Cambodia) - FIDH (International Federation for Human Rights). Published on Dec 1, 2014.

Yorm Bopha was arrested on September 4, 2012 and sentenced to three years in prison on December 27, 2012 after being found guilty on bogus charges of assault. Her prosecution was widely perceived as related to her activism. Her conviction was upheld on appeal on June 14, 2013 when the original custodial sentence of three years was reduced to two on the grounds that she did not directly commit violence.

Story Credit: <https://www.fidh.org/International-Federation-for-Human-Rights/human-rights-defenders/annual-reports/16546-we-are-not-afraid>



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HOMELANDS

SHALE OIL FUELS INDIGENOUS CONFLICT IN ARGENTINA

by FABIANA FRAYSSINET

CAMPO MARIPE, Argentina, Nov 18 2014, Inter Press News Agency - The boom in unconventional fossil fuels has revived indigenous conflicts in southwest Argentina. Twenty-two Mapuche communities who live on top of Vaca Muerta, the geological formation where the reserves are located, complain that they were not consulted about the use of their ancestral lands, both “above and below ground.”

Albino Campo, “logko” or chief of the Campo Maripe Mapuche community, is critical of the term “superficiary” – one to whom a right of surface occupation is granted – which was used in the oil contracts to describe the people living on the land, with whom the oil companies are negotiating.

“We are the owners of the surface, and of what is above and below as well. That is the ‘mapu’ (earth). It’s not hollow below ground; there is another people below,” he told IPS.

Nor is it hollow for the oil companies, although the two conceptions are very different.

Three thousand metres below Campo Maripe

lies one of the world’s biggest reserves of shale gas and oil.

The land that the community used for grazing is now part of the Loma Campana oilfield, operated by the state-run YPF oil company in partnership with U.S. oil giant Chevron.

“More or less 160 wells have been drilled here,” Campo said. “When they reach 500 wells, we won’t have any land for our animals. They stole what is ours.”

Because of the urgent need to boost production, YPF started a year ago to make roads and drill wells in the Campo Campana oilfield in the southern Patagonian province of Neuquén.

The Mapuche chief and his sister Mabel Campo showed IPS what their lands had turned into, with the intense noise and dust from the trucks continuously going back and forth to and from the oilfield.

They carry machinery, drill pipes and the products used in hydraulic fracturing or fracking, a highly criticised technique in which water, sand



Jorge Nahuel, a spokesman for the Mapuche Confederation of Neuquén, in Argentina's southern Patagonia region, complains that local indigenous communities were not consulted about the production of unconventional oil in their ancestral territories. Credit: Fabiana Frayssinet/IPS

and chemicals are injected into the rock at high pressure to fracture the shale and release natural gas and oil trapped in the underground rocks.

"They say fracking and everything above ground doesn't pollute... maybe it'll be a while but we'll start seeing cancer, skin cancer, because of all the pollution, and we'll also die of thirst because there won't be any water to drink," said Mabel Campo.

YPF argues that it negotiated with the provincial government to open up the oilfield, because it is the government that holds title to the land.

However, "we try to have the best possible relations with any superfiiciary or pseudo superfiiciary or occupant, in the areas where we work, Mapuches or not," YPF-Neuquén's manager of institutional relations, Federico Califano, told IPS.

The families of Campo Maripe have not obtained title to their land yet, but they did score one major victory.

After protests that included chaining themselves to oil derricks, they got the provincial government to recognise them legally as a community in October.

"Registration as a legal entity leaves behind the official stance of denying the Mapuche indigenous

identity, and now the consultation process will have to be carried out for any activity that affects the territory," Micaela Gomiz, with the Observatory of Human Rights of the Indigenous Peoples of Patagonia (ODHPI), stated in a communiqué released by that organisation.

"The company should respect our constitutionally recognised right to participate in the management of natural resources. Those rights have been completely violated by the oil company's arrival."
 – Mapuche leader Jorge Nahuel

According to ODHIP, as of 2013 there were 347 Mapuche people charged with "usurpation" and trespassing on land, including 80 lawsuits filed in Neuquén and 60 cases in the neighbouring province of Río Negro.

In the case of Vaca Muerta, Jorge Nahuel, spokesman for the Mapuche Confederation of Neuquén, told IPS that the local indigenous communities were not consulted, as required by

International Labour Organisation (ILO) Convention 169 concerning Indigenous and Tribal Peoples, which Argentina ratified 25 years ago.

Convention 169 requires prior consultation of local indigenous communities before any project is authorised on their land.

“What the state should do before granting concessions to land is to reach an agreement with the community over whether or not it is willing to accept such an enormous change of lifestyle,” he said.

Furthermore, said Nahuel, “the company should respect our constitutionally recognised right to participate in the management of natural resources. Those rights have been completely violated by the oil company’s arrival.”

The Mapuche leader said similar violations are committed in the soy and mining industries. “Indigenous people are seen as just another element of nature and as such they are trampled on,” he complained.

In this South American country of 42 million, nearly one million people identified themselves as indigenous in the last census, carried out in 2010. Most of them belong to the Mapuche and Colla communities, and live in Neuquén and two other provinces.

Nahuel noted that of nearly 70 Neuquén indigenous communities, only 10 percent

hold legal title to their land.

“The logic followed by the state is that the weaker the documentation of land tenure, the greater the legal security enjoyed by the company,” he said. “It’s a perverse logic because what they basically believe is that by keeping us without land titles for decades, it will be easier for the companies to invade our territory.”

Some have cast doubt on the real interests of the Mapuche.

Luis Sapag, a lawmaker of the Neuquén Popular Movement, triggered the controversy last year when he remarked that “some of them have been doing good business...YPF didn’t go to the Mapuches’ land to set up shop....some Mapuches went to put their houses where YPF was operating, to get this movement started.”

“Until Loma Campana was developed, there were never any demands or complaints from a Mapuche community,” said YPF Neuquén’s manager of unconventional resources, Pablo Bizzotto, during a visit by IPS and correspondents from other international news outlets to the oilfield in the southwestern province of Neuquén.

Nahuel compared that reasoning to “the arguments used by the state when it invaded Mapuche territory, saying this was a desert, we got here, and then indigenous people showed

up making demands and claims.

“They’re using the same logic here – first they raze a territory, and then they say: ‘But what is it that you’re demanding? We hadn’t even seen you people before’,” he said.

Nahuel said the production of shale gas and oil, an industry in which Argentina is becoming a global leader, poses “a much greater threat” than the production of conventional fossil fuels, which he said “already left pollution way down in the soil, and among all of the Mapuche families in the area.”

“It is an industry that has a major environmental and social – and even worse for us, cultural – impact, because it breaks down community life and destroys the collective relationship that we have with this territory, and has turned us into ‘superficiaries’ for the industry,” Nahuel said.

He added that as the drilling moves ahead, the conflicts will increase.

He said the country’s new law on fossil fuels, in effect since Oct. 31, will aggravate the problems because “it serves the corporations by ensuring them the right to produce for 50 years.”

The logko, Campo, said: “When YPF pulls out there will be no future left for the Mapuche people. What they are leaving us here is only pollution and death.”



DECLARATION OF THE WORLD URANIUM SYMPOSIUM 2015

Quebec City, Canada | April 16 2015 | www.uranium2015.com/en

WE SOLEMNLY DECLARE THAT:

1. We reaffirm the Declaration of the World Uranium Hearing in Salzburg, Austria in 1992, of the Indigenous World Uranium Summit in Window Rock, Navajo Nation, USA in 2006, and of the IPPNW-World Conference in Basel, Switzerland in 2010;
2. Uranium and its associated radioactive substances must remain in their natural location.
3. We demand a worldwide ban on uranium exploration, mining, milling and processing, as well as the reprocessing of nuclear waste, and the irresponsible management of radioactive waste;
4. We call on all states, authorities and Peoples to recognize and respect the rights of Indigenous Peoples including the right to self-determination and to free prior and informed consent achieved through an independent, fair, transparent and impartial process, and to cease the pursuit of uranium- and nuclear-related activities on Indigenous Peoples' lands in violation of these rights;
5. We urge all states, authorities and Peoples to provide full, fair and equitable redress to all those harmed by uranium- and nuclear-related activities and to ensure that those responsible are held accountable for their actions and failures;
6. We demand that all states, authorities and Peoples phase out and eliminate nuclear power generation and use, and dedicate themselves to the development and use of intelligent energy services based on sustainable, safe and renewable energy resources;
7. We call on all states, authorities and Peoples to strengthen their commitments to nuclear non-proliferation and disarmament, to eliminate all existing nuclear weaponry, to cease any and all development of nuclear weapon technologies, and to support and advance a legal treaty to ban all nuclear weapons;
8. We call on all states, authorities and Peoples to ensure that all existing radioactive products, material and structures from all phases of the nuclear weapons and power systems are secured and managed in accordance with the best and safest available technology for the people, animals and plant life.

THE DECLARATION IN ITS ENTIRITY CAN BE DOWNLOAD AT
<http://uranium2015.com/en/news/quebec-declaration-uranium>

CONSERVATION

LOCAL COMMUNITIES RISE TO THE FOREFRONT

by FRED NELSON

Mongabay News, October 29, 2014 - A few weeks ago, a remote aboriginal community in western Australia made headlines when it completed the establishment of an Indigenous Protected Area (IPA) containing over 4.2 million hectares of desert and grassland. The Kiwirrkurra IPA, as the area is known, is billed as the largest protected expanse of arid land on Earth. IPAs, which are managed by negotiated agreements between the native landowners and government conservation authorities, now cover roughly 48 million hectares, equivalent to about 36 percent of the country's total protected area network.

Australia, which in November will host the World Parks Congress, a decadal gathering of thousands of conservationists from around the world, is a leading example of the increasing leadership role indigenous and local communities are playing in conservation policies and practice today. Even as much of the public and media attention around the environment gravitates towards inherently global problems related to climate change, today the delivery of conservation

increasingly depends on supporting local rights, capacity and stewardship.

Human communities have practiced conservation for centuries, and traditional ways of using and managing nature tends to be intertwined with local belief systems, cultural values, and livelihoods. For example, indigenous cultures often possess sacred sites such as forests and springs that are revered for religious or spiritual reasons, and often strictly protected as a result. Other communities, dependent on the ecosystems within which they live for food and sustenance, have developed and adapted their own local governance institutions to control resource uses. Developing an understanding of the ways by which local communities develop such rules to protect and manage shared resources such as fisheries, livestock pasture, and forests was the heart of work that earned American scholar Elinor Ostrom the Nobel Prize in Economics in 2009.

Historically, conservation practice evolved not in support of such traditional management practices,



Community leader in Aceh, Indonesia. Photo by Rhett Butler.

but in fact often contributed to their erosion and dissolution. Protected areas such as national parks emerged within a historical context of territorial conquest and the displacement of native people, from the American West to colonial-era Africa. National parks were conceived as pristine islands of nature free from human influence, despite the bitter irony that their establishment tended to involve forceful eviction of the people who had previously shaped and inhabited those landscapes for millennia. Anthropologists estimate that millions of people have been evicted to make way for conservation since the beginnings of the national park movement in the late nineteenth century.

By the 1980s a range of factors converged to question these conventional ways of thinking about and pursuing conservation. Conservation practices that in many respects had been so strongly shaped in a pre-colonial world order and worldview were increasingly called into question on grounds of social justice. The rise of powerful

and assertive indigenous people's movements in the 1970s and 1980s, calling for the restoration of rights to land and to self-determination, created a direct challenge to conservation efforts that often targeted those same lands. Anthropologists and other social scientists increasingly documented the impacts of exclusion and appropriation on local communities. The rise of grounded scholarship around community natural resource management (known as "common property" or "commons" scholarship), embodied by publication of Ostrom's "Governing the Commons" in 1990, gradually laid the basis for legitimizing local management practices within the scientific community.

Today, examples of large-scale conservation impacts driven by local communities are increasingly mainstream and incorporated into global conservation policies such as the Convention on Biological Diversity. For example, in the Amazon Basin roughly 20 percent of all land is held by indigenous groups in countries such as



Farmer in Indonesian New Guinea. Photo by Rhett Butler.

Brazil, Bolivia, and Colombia, which were generally able to obtain title following a wave of regional constitutional and legal reforms recognizing indigenous land rights in the 1980s and 1990s. In Brazil, indigenous lands have been demonstrated to be as or more effective than government protected areas in preventing deforestation and forest fire, and are pointed to as a key factor in the decline of deforestation rates in the Brazilian Amazon over the past decade. Other countries where rural communities and indigenous lands play key roles in forest conservation include examples as diverse as Mexico, the Philippines, and India.

Globally, indigenous and local communities now own or control 513 million hectares, about one-eighth of all the world's forests.

In Africa, local communities play an increasingly prominent role in conservation outcomes, including confronting the challenge of commercial ivory and rhino poaching that has swept across the region. In Kenya, pastoralist groups such as the Maasai and Samburu have now established their own "conservancies" across four million hectares of communal savannahs and grasslands, protecting elephants, lions, and highly endangered species such as Grevy's zebra. In Namibia, one of Africa's great

conservation success stories, 16 million hectares – more than 19 percent of the entire country – lies within community conservancies where local people have legal rights to manage and utilize wildlife. Populations of black rhino, elephant, mountain zebra, lions, and numerous other species have steadily rebounded over the past 20 years of conservancy expansion, in turn helping to drive the growth of Namibia's national tourism industry.

A critical common feature of these different examples is legal reforms that vest local communities and indigenous people with clear rights over

their lands and resources. Historically, governments centralized rights over forests and wildlife, and the land itself, particularly in colonial states in Africa and Asia. A key contributor to contemporary changes in conservation practice, enabling the creation of new partnerships with local communities and indigenous people, has been the reform of those regimes and returning rights over valuable resources to local people.

The challenge for conservation in many parts of the world – and indeed at the aggregate global scale – is that such reforms to land and natural resource rights are inconsistently applied and often undermined by vested interests. In contrast to the Amazon, in both the Congo Basin and peninsular Southeast Asia, roughly 99 percent of all forests are still controlled by governments, and local land rights and claims are not recognized. In sub-Saharan Africa as a whole, most countries maintain central government ownership of land, including most of the estimated 1.6 billion hectares – roughly 70 percent of the entire sub-continent's land area – that is customarily used and claimed by rural communities.

There are numerous implications of such situations, including rendering communities vulnerable to land grabbing and displacement, which in turn can lead to social conflict, violence, and political instability,



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Maasai ceremony in Kenya

as well as the failure to observe fundamental human rights. For conservation, the lack of recognition of local land rights effectively prevents local communities in many part of the world from managing and protecting their resources and environment – they lack the legal authority and support to do so, particularly when faced with growing external pressures.

While the global conservation movement has increasingly come to recognize the importance of indigenous and other local communities in terms of delivering conservation on the ground, much more needs to be done in terms of actively contributing to efforts to secure and strengthen local land and resource rights. Such rights are the foundation for rural livelihood security and a key part of recognized human



Kenya

rights, but also the building block for local conservation systems. The upcoming World Parks Congress provides an opportunity to advance dialogue and new collaborations around these issues, and further ground durable conservation practices in local rights, interests, and actions.

Story Credit: Fred Nelson, (the views expressed in this commentary are those of the author) Local Communities Rise to the Forefront of Global Conservation Practice - 2014, news.mongabay.com

INVASIVES

JAPANESE KNOTWEED INVASIVE SPECIES

by PAMELA MILLS

Department of Natural Resources, June 2015
- Japanese knotweed (*Fallopia japonica*) was introduced to Nova Scotia in the early 1900s for ornamental purposes. It is native to eastern Asia (Japan, China, Korea and Taiwan). Japanese knotweed is found most often in disturbed sites, old homesteads, roadsides and riverbanks. Where it grows it creates a dense thicket of bamboo like vegetation. It grows in all counties in Nova Scotia

Japanese knotweed is an herbaceous perennial. The stems are purple to green in colour, cylindrical, hollow and taper to a point at the end of branches. It can grow to over two meters tall. The stems have numerous nodes (joints) along the stem making it look similar bamboo. The leaves are arranged alternately on the branches forming a zigzag pattern. They have a flat base and are oval to triangular with a pointed tip. Each leaf is 8 -15 cm long and 5-12 cm wide with a 1-4 cm long petiole (stalk). Creamy white flowers are carried on elongated clusters (panicles) that grow in the axils of the leaves near the top of the plant. Each flower produces a single small (3mm) winged brown seed.

The plant may be spread by seed but is most often spread by transport and disposal of soil containing plant material or rhizomes (root-like underground stem), or by movement of rhizomes by water after a storm or flooding event. The below ground rhizome structure can be extensive. Plants can sprout from the crown of the rhizome or from nodes along rhizome branches. Plants can also sprout from the nodes of cut branches laying on the ground. Only a small portion of plant material is needed for a new plant to grow.

Eradicating Japanese knotweed is not an easy task and requires a long term approach. Smaller populations can be cut down and covered with a tarp or other material. The covering must be held down year round for about 3 growing seasons. Coverings need to overlap and be free of rips or tears so that no light can get in and there is no place for plants to grow up through.

A combination of foliar herbicide and repeated mowing can be used to eradicate Japan knotweed populations. Herbicide application must be done properly to be effective. It also needs to



Patch of Japanese Knotweed. Photo credit: Pamela Mills

be done safely for both humans and the environment. Care must be taken to prevent herbicides from entering water courses or contacting other plants. When plants are mowed/cut in the spring the herbicide must be applied in late summer early fall. Repeated mowing alone will work over time but takes longer than when combined with herbicide applications. It requires mowing plants at least twice a month during the growing

season and once a month until frost. Both methods will work but take up to 5 growing seasons to be successful.

Any original mowed/cut plant material must be disposed of in a manner that will not allow it to sprout new shoots (i.e. burning, drying, bagging in black bags and allowing to decompose). Do not compost. Any new populations should be treated as soon as possible to prevent

further spreading. Digging up of plants is difficult and only a small piece of rhizome can start a new population. This method can be used successfully when used on small young new infestations. Really large populations are best managed by keeping them in check and controlling their spread. One of the best ways to prevent the spread of Japanese knotweed is to not move contaminated soil.

Several links with additional information on the biology, ecology and management of Japanese Knotweed:

- http://dnr.wi.gov/topic/invasives/documents/japanese_knotweed_control.pdf
- <http://www.invadingspecies.com/invaders/plants-terrestrial/japanese-knotweed/>
- <http://www.agf.gov.bc.ca/cropprot/jknotweed.htm>
- <http://www.agannex.com/top-crop-manager/sight-set-on-japanese-knotweed>
- <https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&cad=rja&uact=8&ved=0CEUQFjAH&url=http%3A%2F%2Fdalspace.library.dal.ca%2Fbitstream%2Fhandle%2F10222%2F21449%2FLarsen-Todd-MSc-AGRI-March-2013>
- http://dnr.wi.gov/topic/invasives/documents/japanese_knotweed_control.pdf

TRADITIONAL KNOWLEDGE

ABORIGINAL KNOWLEDGE COULD UNLOCK CLIMATE SOLUTIONS

by NEENA BHANDARI

CAIRNS, Queensland, Dec 17 2014 (IPS) - As a child growing up in Far North Queensland, William Clark Enoch would know the crabs were on the bite when certain trees blossomed, but now, at age 51, he is noticing visible changes in his environment such as frequent storms, soil erosion, salinity in fresh water and ocean acidification.

"The land cannot support us anymore. The flowering cycles are less predictable. We have to now go much further into the sea to catch fish," said Enoch, whose father was from North Stradbroke Island, home to the Noonuccal, Nughie and Goenpul Aboriginal people.

Aboriginal and Torres Strait Islander people, who comprise only 2.5 per cent (548,400) of Australia's nearly 24 million population, are part of the oldest continuing culture in the world. They have lived in harmony with the land for generations.

"But now pesticides from sugarcane and banana farms are getting washed into the rivers and sea and ending up in the food chain. We need to check the wild pig and turtles we kill for contaminants before eating," Enoch told IPS.

With soaring temperatures and rising sea levels, indigenous people face the risk of being further disadvantaged and potentially dislocated from their traditional lands.

"We have already seen environmental refugees in this country during the Second World War. In the 1940s, Torres Strait Islander people were removed from the low-lying Saibai Island near New Guinea to the Australian mainland as king tides flooded the island", said Mick Gooda, Aboriginal and Torres Strait Islander Social Justice Commissioner at the Australian Human Rights Commission.

Global sea levels have increased by 1.7 millimeters per year over the 20th century. Since the early 1990s, northern Australia has experienced

"Our communities don't have to rely on handouts from mining companies, we can power our homes with the sun and the wind, and build economies based on caring for communities, land and culture that is central to our identity."

-- Kelly Mackenzie



William Clark Enoch of Queensland. Aboriginal and Torres Strait Islander people, who comprise only 2.5 per cent of Australia's nearly 24 million population, are part of the oldest continuing culture in the world. Credit: Neena Bhandari/IPS

increases of around 7.1 millimetres per year, while eastern Australia has experienced increases of around 2.0 to 3.3 millimetres per year.

For indigenous people, their heart and soul belongs to the land of their ancestors. "Any dislocation has dramatic effects on our social and emotional wellbeing. Maybe these are some of the reasons why we are seeing great increases in self-harm," Gooda, who is a descendant of the Gangulu people from the Dawson Valley in central Queensland, told IPS.

Displacement from the land also significantly impacts on culture, health, and access to food and water resources. Water has been very important

for Aboriginal people for 60,000 years, but Australia is becoming hotter and drier.

2013 was Australia's warmest year on record, according to the Bureau of Meteorology's Annual Climate Report. The Australian area-averaged mean temperature was +1.20 degree Centigrade above the 1961–1990 average. Maximum temperatures were +1.45 degree Centigrade above average, and minimum temperatures +0.94 degree Centigrade above average.

"On the other side, during the wet season, it is getting wetter. One small town, Mission Beach in Queensland, recently received 300mm of rain in one night. These extreme climatic changes in the wet tropics are definitely

impacting on Indigenous lifestyle," said Gooda.

Researchers warn that climate change will have a range of negative impacts on liveability of communities, cultural practices, health and wellbeing.

Dr. Rosemary Hill, a research scientist at the Commonwealth Scientific and Industrial Research Organisation (Ecosystem Sciences) in Cairns said, "The existing poor state of infrastructure in indigenous communities such as housing, water, energy, sewerage, and roads is likely to further deteriorate. Chronic health disabilities, including asthma, cardiovascular illness and infections, and water, air and food-borne diseases are likely to

be exacerbated.”

Environmental and Indigenous groups are urging the government to create new partnerships with indigenous Australians in climate adaptation and mitigation policies and also to tap into indigenous knowledge of natural resource management.

“There is so much we can learn from our ancestors about tackling climate change and protecting country. We have to transition Australia to clean energy and leave fossil fuels in the ground. Our communities don’t have to rely on handouts from mining companies, we can power our homes with the sun and the wind, and build economies based on caring for communities, land and culture that is central to our identity,” says the Australian Youth Climate Coalition (AYCC) communications director, Kelly Mackenzie.

AYCC is calling on the Australian government to move beyond fossil fuels to clean and renewable energy.

Indigenous elder in residence at Griffith University’s Nathan and Logan campuses in Brisbane, Togiab McRose Elu, said, “Global warming isn’t just a theory in Torres Strait, it’s lapping at people’s doorsteps. The world desperately needs a binding international agreement including an end to fossil fuel subsidies.”

According to a new analysis by Climate Action Tracker (CAT), Australia’s emissions are set to increase to more than 50 percent above 1990 levels by 2020 under

the current Liberal-National Coalition Government’s climate policies.

The Copenhagen pledge (cutting emissions by five per cent below 2000 levels by 2020), even if fully achieved, would allow emissions to be 26 per cent above 1990 levels of energy and industry global greenhouse gases (GHGs).

It is to be noted that coal is Australia’s second largest export, catering to around 30 per cent of the world’s coal trade. Prime Minister Tony Abbott has declared that coal is good for humanity. His government has dumped the carbon tax and it is scaling back the renewable energy target.

The United Nations Intergovernmental Panel on Climate Change (IPCC) in its fifth and final report has said that use of renewable energy needs to increase from 30 per cent to 80 per cent of the world’s energy supply.

Dr. Hill sees new economic opportunities for indigenous communities in energy production, carbon sequestration, GHG abatement and aquaculture. “Climate adaptation provides opportunities to strengthen indigenous ecological knowledge and cultural practices which provide a wealth of experience, understanding and resilience in the face of environmental change,” she told IPS.

With the predicted change in sea level, traditional hunting and fishing will be lost across

significant areas. A number of indigenous communities live in low-lying areas near wetlands, estuaries and river systems.

“These areas are important culturally and provide a valuable subsistence source of food, particularly protein, unmet by the mainstream market,” said Andrew Picone, Australian Conservation Foundation’s Northern Australia Programme Officer.

Picone suggests combined application of cultural knowledge and scientific skill as the best opportunity to address the declining health of northern Australia’s ecosystems. Recently, traditional owners on the Queensland coast and WWF-Australia signed a partnership to help tackle illegal poaching, conduct species research and conserve threatened turtles, dugongs and inshore dolphins along the Great Barrier Reef.

The Giringun Aboriginal Corporation and Gudjuda Aboriginal Reference Group together represent custodians of about a third of the Great Barrier Reef.

Elaine Price, a 58-year-old Olkola woman who hails from Cape York, would like more job opportunities in sustainable industries and ecotourism for her people closer to home.

“Our younger generation is losing the knowledge of indigenous plants and birds. This knowledge is vital to preserving and protecting our ecosystem,” she said.



MARINE ANIMAL RESPONSE SOCIETY

To report dead or distressed marine animals, please call:

1-866-567-6277

As we head into the summer, whales, dolphins and porpoises are returning to our waters. The Marine Animal Response Society (MARS) is interested in receiving information regarding dead and distressed marine animals found in Nova Scotia, New Brunswick and Prince Edward Island as soon as possible. This is especially important for live stranded or entangled animals, which have to be responded to as quickly as possible by trained individuals.

If possible, please provide an exact location, a description of the animal(s) (e.g. approximate size, presence of grooves on throat, one or two blowholes) and the condition of the animal (live or dead, injuries, signs of gear entanglement or ship strike, whether the skin is peeling or not). Sending photographs of the animal by email (marineanimalresponse@gmail.com) or text (902-483-9055) will help us determine what response is required.

The Marine Animal Response Society (MARS) is a charitable organization dedicated to the conservation of marine animals through response, education and research. As coordinator of the Maritime Marine Animal Response Network (MMARN), MARS works with other expert groups and government agencies to respond to calls of dead and distressed marine animals in the Maritime Provinces. Responding to all calls of dead and distressed marine animals enables us to document as many incidents of species at risk as possible and gather critical information necessary to enable their recovery and protection.

Thank you for your time.

Sincerely,
Andrew

Andrew Reid
Response Coordinator
Marine Animal Response Society
marineanimalresponse@gmail.com
www.marineanimals.ca
1-866-567-6277



70 YEARS

HIROSHIMA AUG. 6, 9:15AM - 1945
NAGASAKI AUG. 9, 12:02PM - 1945

In memory of the thousands of civilians and children who were erased from existence in less than a second, the tens of thousands who suffered horrific deaths in the days that followed, the hundreds of thousands of Hibakusha "the explosion affected people" who have suffered ever since, and the heavy weight of history and moral burden we must now all bear.

The decisions which led to the atomic bombing of Hiroshima and Nagasaki, Japan were not made by you and me, but it is our choice of the legacy we will pass to our children.

Do we passively accept our servitude to The Bomb or will we free ourselves and our children from its fear?



Pope Francis prays during the Way of the Cross torchlight procession at the Colosseum on Good Friday on April 3, 2015 in Rome. FILIPPO MONTEFORTE—AFP/Getty Images

A PRAYER FOR OUR EARTH

Pope Francis, May 24, 2015

*All-powerful God,
you are present in the whole universe
and in the smallest of your creatures.
You embrace with your tenderness all that exists.
Pour out upon us the power of your love,
that we may protect life and beauty.
Fill us with peace, that we may live
as brothers and sisters, harming no one.
O God of the poor,
help us to rescue the abandoned
and forgotten of this earth,
so precious in your eyes.
Bring healing to our lives,
that we may protect the world and not prey on it,
that we may sow beauty,
not pollution and destruction.
Touch the hearts
of those who look only for gain
at the expense of the poor and the earth.
Teach us to discover the worth of each thing,
to be filled with awe and contemplation,
to recognize that we are profoundly united
with every creature
as we journey towards your infinite light.
We thank you for being with us each day.
Encourage us, we pray, in our struggle
for justice, love and peace.*

ECOLOGICAL COMMITMENT

TIMELY CALL ON CLIMATE CHANGE by TOMÁS INSUA

BOSTON, Jun 22 2015 (IPS) - On June 18, Pope Francis issued *Laudato Si*, the first ever encyclical about ecology, which promises to be a highly influential document for years to come. The encyclical, which is the most authoritative teaching document a Pope can issue, delivered a strong message addressing the moral dimension of the severe ecological crisis we have caused with our “throwaway culture” and general disregard for our common home, the Earth.

One of the most important points of this document is that it connects the dots between social justice and environmental justice. As a parishioner from Buenos Aires I have seen firsthand how Jorge Bergoglio cared deeply about both issues, and it is beautiful to see how he is bringing them together in this historical encyclical.

The most prominent example of this connection is how our role in causing climate change is hurting those who had nothing to do with this crisis, namely the poor and future generations.

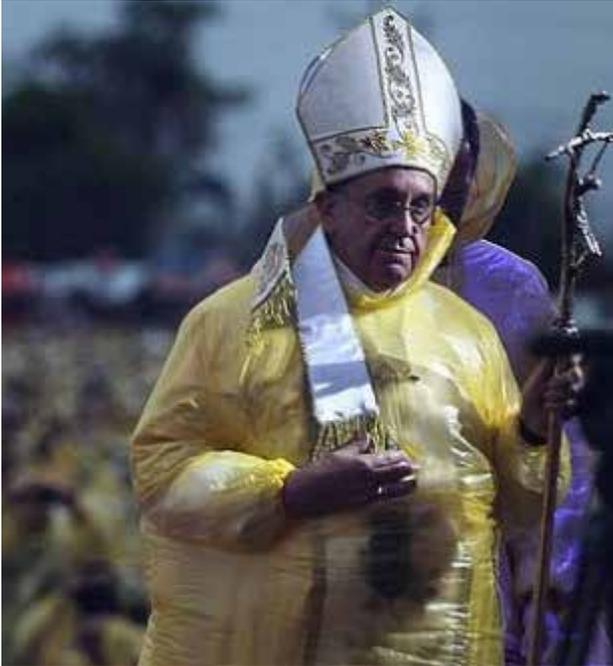
Although the encyclical will have an impact on

Catholic teaching for generations to come, its timing at this particular juncture is no accident. As the Pope himself stated, “the important thing is that there be a bit of time between the issuing of the encyclical and the meeting in Paris, so that it can make a contribution.”

The Paris meeting he referred to is the crucial COP21 summit that the United Nations will convene in December, where the world's governments are expected to sign a new treaty to tackle human-made climate change and avoid its worst impacts.

This is significant because the international climate negotiations have been characterized by a consistent lack of ambition during the past two decades, allowing the climate change crisis to exacerbate. Greenhouse gases emissions have grown 60 percent since world leaders first met in the Rio Earth Summit of 1992, and continue to accelerate setting the foundation for a severe disruption of the climate system.

Scientists are shouting at us, urging humankind to change course immediately, but we are not listening.



Pope Francis celebrates mass amidst heavy rains and strong winds near the Tacloban Airport, January 17, 2015. After the mass, the Pope visited Palo, Leyte to meet with families of typhoon Yolanda victims. The Pope's visit to Leyte was shortened due to an ongoing typhoon in the area. Credit: Malacanang Photo Bureau/public domain

That is why strong moral voices such as the one of Pope Francis have the potential to change people's hearts and overcome the current gridlock.

Faced with the clear and present threat of climate change, governments have long used the supposed passivity of their citizens as an excuse for inaction.

The climate movement is growing fast and is building up pressure at an increasing scale, but its growth rate needs to be boosted to meet the size of the challenge. Pope Francis' encyclical has the potential to draw a huge amount of people to the climate movement by inspiring the world's 1.2 billion Catholics, as well as non-Catholics who are open to his message, to mobilise in this important year.

Catholics are already responding to the Holy Father's call by scaling their mobilisation, mainly through the

Climate change is a moral issue, so the exasperating lack of ambition of our political leaders in the climate negotiations raises the urgency of mass civic mobilisation this year.

recently founded Global Catholic Climate Movement. This is a coalition of over 100 Catholic organizations from all continents, aiming to raise awareness about the moral imperative of climate change and to amplify the encyclical's message in the global climate debate by mobilising the Church's grassroots.

The flagship campaign of the movement is its recently launched Catholic Climate Petition, which the Pope himself endorsed a month ago when we met him in the Vatican, with the goal of collecting at least one million signatures for world leaders gathered in the COP21 summit in Paris. The ask (sic), to be delivered in coalition with other faith and secular organisations, is for governments to take bold action and keep the global temperature increase below the dangerous threshold of 1.5 degrees Celsius, relative to pre-industrial levels.

At the same time, people of all faiths are coming together with a strong moral call for action through initiatives such as Fast for the Climate – whereby participants fast on a monthly basis to show solidarity with the victims of climate change – and the People's Pilgrimage – a series of pilgrimages in the name of climate change led by Yeb Saño, former Philippine climate ambassador, and designed to culminate in a descent on Paris around COP21.

Leaders of other faiths will furthermore join their Catholic counterparts in celebration of the encyclical on June 28, when the interfaith march "One Earth, One Human Family" will go to St. Peter's Square as a sign of gratitude to Pope Francis.

Whatever happens, this year will go down in the history books. Be sure of that. The Pope has made a massive contribution to making sure it's remembered for all the right reasons. Now it's our turn to step up and finish the job.

Story Credit: Tomás Insua is the founding Movement Coordinator of the Global Catholic Climate Movement, and a Fulbright Scholar at the Harvard Kennedy School - 2015, ipsnews.net

CLIMATE

2014 ANOTHER RECORD- SHATTERING YEAR FOR CLIMATE

by KITTY STAPP

NEW YORK, 2015 (Inter Press Service) - A new report by the U.S. National Oceanic and Atmospheric Administration (NOAA) Center for Weather and Climate has found that 2014 was the warmest year ever recorded, with Eastern North America the only major region in the world to experience below-average annual temperatures.

“The variety of indicators shows us how our climate is changing, not just in temperature but from the depths of the oceans to the outer atmosphere,” said Thomas R. Karl, director, NOAA National Centers for Environmental Information.

“It’s been a pretty persistent and continuous message over the past 10 years at least that we are seeing a planet that is warming,” Karl told reporters.

The report is based on contributions from 413 scientists from 58 countries around the world.

The report’s climate indicators show patterns,

changes and trends of the global climate system. Examples include various types of greenhouse gases; temperatures throughout the atmosphere, ocean, and land; cloud cover; sea level; ocean salinity; sea ice extent; and snow cover.

The greenhouse gases causing this warming continued to climb to historic highs, with atmospheric carbon dioxide (CO₂) concentrations increasing by 1.9 ppm (parts per million) in 2014, reaching a global average of 397.2 ppm for the year. This compares with a global average of 354.0 in 1990 when the report was first published just 25 years ago.

Record temperatures were also observed near the Earth’s surface, with almost no region escaping unscathed.

Europe had its warmest year on record, with more than 20 countries exceeding their previous records. Africa had above-average temperatures across most of the continent throughout 2014, Australia saw its third warmest year on record,



Tacloban City, in the Leyte Province of the Philippines, after Super Typhoon Yolanda/Haiyan. Credit: UN Photo/Evan Schneider

Mexico had its warmest year on record, and Argentina and Uruguay each had their second warmest year on record.

Sea surface temperatures, sea levels and global upper ocean heat content also hit record highs.

As a result, there were 91 tropical cyclones in 2014, well above the 1981–2010 average of 82 storms.

Greg Johnson, an oceanographer at the NOAA's Pacific Marine Environmental Laboratory, told reporters on a conference call that climate change is now irreversible.

"I think of it more like a fly wheel or a freight train," he said. "It takes a big push to get it going but it is moving now and will continue to move long after we continue to (stop) pushing it.

"Even if we were to freeze greenhouse gases

at current levels, the sea would actually continue to warm for centuries and millennia, and as they continue to warm and expand the sea levels will continue to rise."

The report adds to a mountain of data warning of the catastrophic effects of climate change.

This December, government and civil society delegations will assemble for COP21, also known as the 2015 Paris Climate Conference. It will be the first time in over 20 years of U.N. negotiations that a new (a sic) and legally binding and universal treaty will be agreed on climate change, with the goal of keeping global warming below two degrees C.

But many are sceptical that COP21 will achieve the drastic and immediate CO2 cuts required to avert the worst.

Story Credit: Kitty Stapp (Edited by Kanya D'Almeida), Inter Press Service, 2015 - www.ipsnews.net

CONSERVATION

GRANADA REBUILDS **BARRIER REEFS** by **DESMOND BROWN**

BASSETERRE, St. Kitts, Jun 24 2015 (IPS) - The Eastern Caribbean nation of Grenada is following the example of its bigger neighbours Belize and Jamaica in taking action to restore coral reefs, which serve as frontline barriers against storm waves.

Coral reefs also play an extremely important role in the Caribbean tourism economy, as well as in food production and food security, but they have been adversely affected by rising sea temperatures and pollution.

An assessment of the vulnerability of Grenada, conducted between September and October 2014, identified several areas that are particularly vulnerable that did not already have interventions. Two such areas were Grand Anse on mainland Grenada and the Windward community on the sister island Carriacou.

“What we will be doing through this project is actually establishing coral nurseries and this is the first time it will be done in the Organisation of Eastern Caribbean States (OECS),” Kerricia

Hobson, Project Manager in the Environment Division in Grenada’s Ministry of Agriculture, Lands, Forestry, Fisheries and the Environment, told IPS.

“We will actually create coral nurseries where we will harvest live coral from some of the healthy colonies around the island. We will propagate them in the nursery and when they are sufficiently mature, we will plant them on existing reef structures.”

The reef restoration is being done jointly by the Government of Grenada and the United Nations Environment Programme (UNEP) under the Coastal Eco-system Based Adaptation in Small Island Developing States (Coastal EBA Project).

Hobson spoke with IPS on the sidelines of a communication symposium to demystify the complexities of communicating on climate change and its related issues.

The June 18-19 symposium was held here under the OECS Rally the Region to Action on Climate Change (RRACC project), which is funded by the United States Agency for International Development (USAID).



Globally, 75 percent of coral reefs are under threat from overfishing, habitat destruction, pollution and acidification of the seas due to climate change.

Hobson noted that Grenada and its Caribbean neighbours get a lot of economic benefits from their coastal ecosystems, particularly through tourism and fisheries; and they also provide protection to the coastlines.

But she said a number of factors have led to the destruction of coral reefs.

“A lot of them are climate-related but some of them are the result of human activities. In the Caribbean we have a history of not recognising the importance of some of these structures,” she said.

“Like mangroves, with coral reefs some of the destruction is actually due to things like

pollution which comes from land run-off. For example our agricultural sector, there is a tradition of farming close to water sources because it’s easier to get the water for your plants and your animals but it also means that when it rains all of the excess fertilizers and the faeces from your animals wash into the river and because we live on an island, five minutes after it rains these things end up on the reef.

“So what you end up having is a reef that is dominated by algae which overgrow the reefs,” Hobson explained.

The findings of a three-year study by 90 international experts, released in 2014, said restoring

parrotfish populations and improving other management strategies, such as protection from overfishing and excessive coastal pollution, can help reefs recover and even make them more resilient to future climate change impacts.

In Belize, live coral cover on shallow patch reefs has

“We will actually create coral nurseries where we will harvest live coral from some of the healthy colonies around the island.”

— Kerricia Hobson



Kerricia Hobson says Grenada is launching a coral reef restoration project, the first in the Eastern Caribbean. Credit: Desmond Brown/IPS

decreased from 80 percent in 1971 to 20 percent in 1996, with a further decline from the 20 percent in 1996 to 13 percent in 1999.

In 1980, Hurricane Allen – the worst storm to hit Jamaica in the past 100 years – smashed the reefs, decimating the ecosystem.

Globally, 75 percent of coral reefs are under threat from overfishing, habitat destruction, pollution and acidification of the seas due to climate change.

The Inter-governmental Panel on Climate Change (IPCC), in its fifth assessment report on climate change impacts and adaptation, said that damage to coral reefs has implications for several key regional services.

It said coral reefs account for 10 to 12 percent of the fish caught in tropical countries, and 20 to 25 percent of the fish

caught by developing nations.

Coral reefs contribute to protecting the shoreline from the destructive action of storm surges and cyclones, sheltering the only habitable land for several island nations, habitats suitable for the establishment and maintenance of mangroves and wetlands, as well as areas for recreational activities. The report noted that this role is threatened by future sea level rise, the decrease in coral cover, reduced rates of calcification, and higher rates of dissolution and bioerosion due to ocean warming and acidification.

In the tourism sector, the IPCC said more than 100 countries benefit from the recreational value provided by their coral reefs.

With the advent of climate change, Caribbean countries have been told they have to start

acting now, since their future viability is based on their present responsibility.

Dr. Dale Rankine, a researcher at the Caribbean Institute for Meteorology and Hydrology (CIMH) in Barbados, said there are certain things countries have to start doing now, if they have not already started.

“One is mitigation, which is really to limit the amount of greenhouse gases. We have to lobby all the major emitters because collectively all of the small island states really emit very little. We have to pursue a green economy,” Rankine told IPS.

“Adaptation is also a major thing. For adaptation, we have to weigh the cost of action versus inaction right across the different sectors.

“Climate change is not an add-on. Some of the very things that are being advocated for climate change adaptation are the same things that we want to do for sustainable development. So it is not an add-on, it is really something that we can pursue whilst doing the same things but in a more sustainable manner,” he added.

Rankine also suggested that countries start embedding climate change considerations in all of their development planning and look at diversification in the agricultural sector “because some of the crops are just not going to survive in the future”.

VIEWS FROM MAARS

MARITIME ABORIGINAL AQUATIC RESOURCES SECRETARIATE

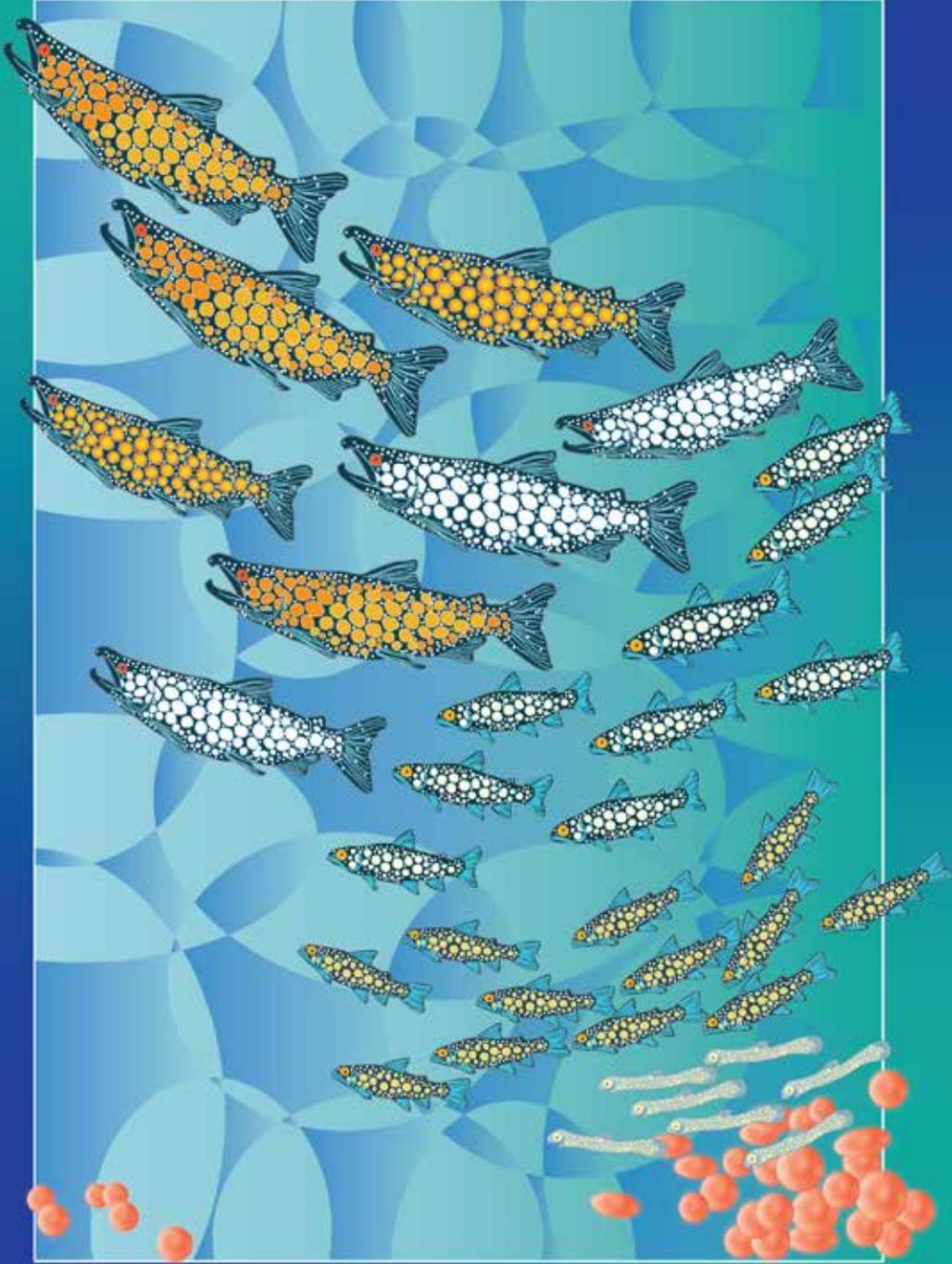


Illustration by Anna Nibby-Woods

CELEBRATION

CLIPPIE CELEBRATES

by JOSHUA MCNEELY,
ROGER HUNKA, & JEANNIE HOPKINS

Most people were not likely to see a turtle in February, that is unless you were at the Shubenacadie Wildlife Park, Nova Scotia celebrating World Wetlands Day February 2nd.



The IKANAWTIKET mascot CLIPPIE popped in to say “Hi” to the children and visitors and tell them that wetlands are important. “I didn’t want to usurp the

spotlight on Shubenacadie Sam”, since February 2nd is also Groundhog Day in Nova Scotia. There were several TV cameras around him, however it was warm and cozy inside the Ducks Unlimited Greenwing Legacy Centre where many visitors came in to get out of the cold.

About 200 students and visitors came in for a cup of cocoa and to learn about wetlands and World Wetlands Day. The team from MAARS and IKANAWTIKET gave out World Wetlands Day caps and educational materials.

CLIPPIE made a presentation

about the invasive Red-eared Slider Turtle. Volunteer Marsha Hayward-Hopkins informed the visitors that it is illegal to own a turtle in Nova Scotia unless you are sanctioned and approved by the Maritime Reptile Zoo who will qualify you to adopt and care for a turtle.



In March, the MAARS Team prepared to celebrate the United Nations World Water Day March 22.

MAARS and IKANAWTIKET compiled a booklet about



CLIPPIE (aka Joshua McNeely) and Marsha Hayward-Hopkins pose with Shubenacadie Sam on Groundhog Day after a wetlands presentation at the Greenwing Legacy Centre.

known water facts and issues, which affect humanity throughout the world.

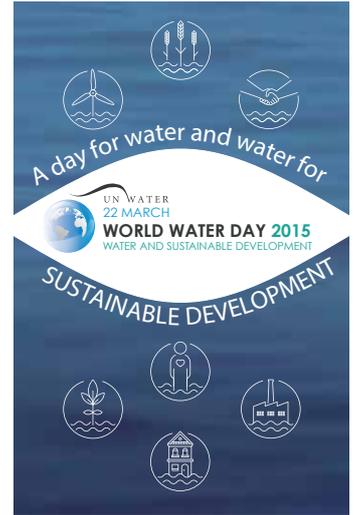
“Water is a precious resource which the Creator has gifted to us for our survival”, said MAARS Director Roger Hunka. “Water is our life-blood and the life-blood of all species.” The booklet was sent to local schools in Truro NS, Fredericton NB, and Morell

PEI and is available from the MAARS office. The booklet contained many facts.

Less than 2% of all the water in the world is potable (drinkable). A vast amount of water is being polluted where it is no longer potable and adds to water scarcity in many regions throughout the world. Water scarcity falls disproportionately on

Indigenous Peoples, women, and the poor.

Mr. Hunka warned, “we may have a lot of water in Canada



today, however water scarcity is growing daily throughout the world. Our government views water as a commodity to be bought and sold for profit. Indigenous Peoples, United Nations and a growing world population view water as a fundamental human right.”

“I fear the next conflict will be over water and the right to life.”



As in many years past MAARS celebrated World Oceans Day on June 5 at the Museum of the Atlantic.

The bright sun and warm



CLIPPIE supporters and Reduce Ocean Plastic Garbage pledgers celebrating World Ocean Day and showing-off their World Oceans Day t-shirts.

weather brought about 1,000 people to the event. MAARS set up two play pools which encouraged children to try to navigate a toy Leatherback Sea Turtle through the pool to catch a toy jellyfish, (which is a food for Leatherback Turtles) while avoiding a bunch of plastic garbage in the pool.

“I’ve seen the real plastic garbage out in the ocean”, remarked one old-timer fisherman while he watched the children. “In some places the garbage was so thick and it would stretch for miles and miles and you wouldn’t throw in a fishing net”.

He isn’t the only one to notice all the plastic. This year

we contacted the 5 Gyers research group, the Algalita Marine Research Institute, and *The Story of Stuff* about ocean plastic and they indicated that as much as 269 million tons of plastic is blown away and ends up in the oceans. The plastic found within the five ocean gyers create giant “plastic garbage patches”, some as thick as six feet.

There is also a new plastics problem and that is “microplastics” or “microbeads” which are being used more and more in everyday consumer products and which municipal waste water treatment plants have no way to filter out. CLIPPIE was entangled in several plastic

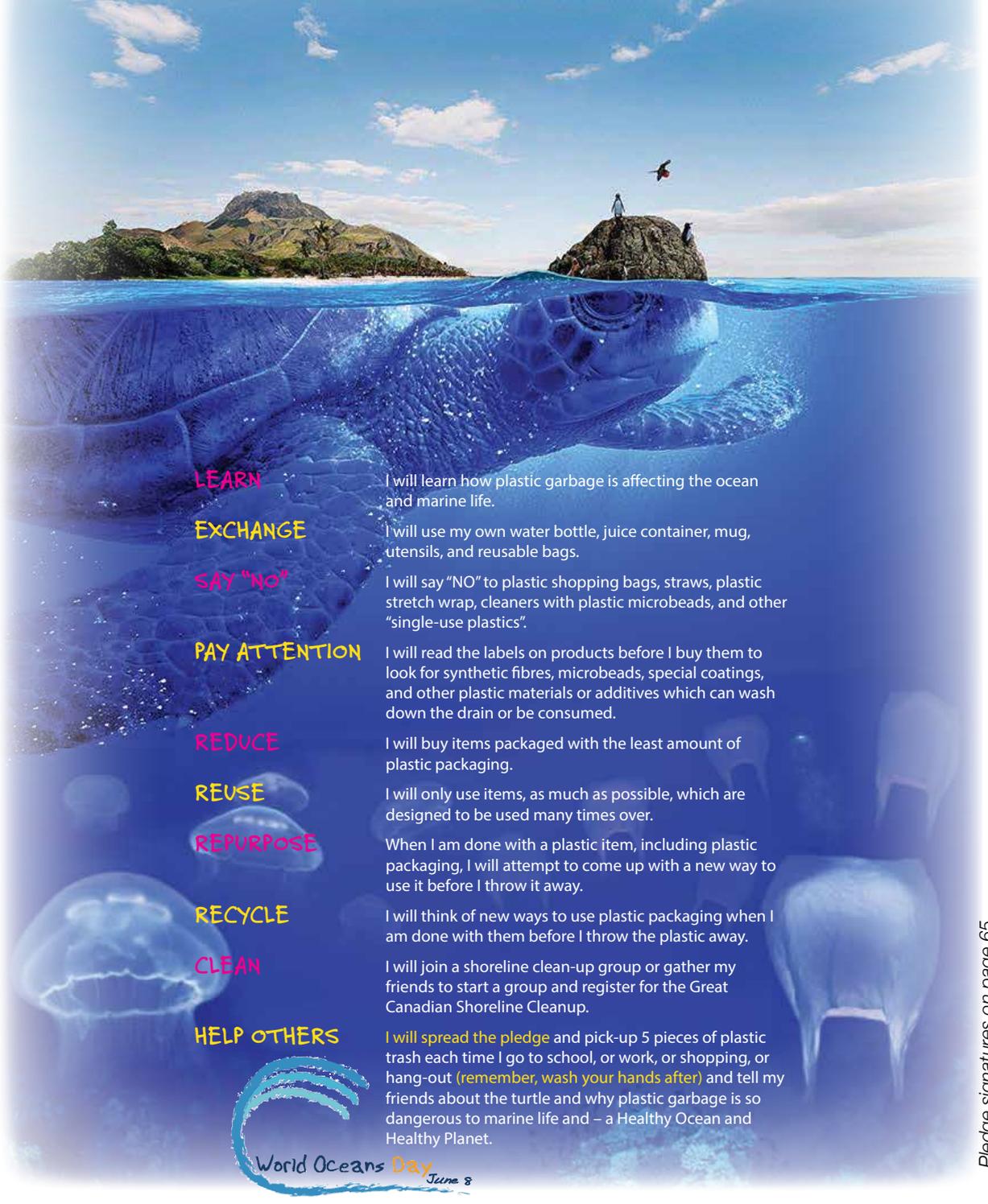
grocery bags for the duration of the event to illustrate that to a sea turtle, a jellyfish and a plastic bag in the water look almost the same and would be swallowed by a sea turtle.

MAARS displayed a “Reduce Ocean Plastic Garbage Pledge,” and hundreds of people signed the pledge. In return, they received a free World Oceans Day t-shirt, made possible through donations from BP and others. See pledge on page 49 and pledge signatures on page 65.

Call the office to receive a free copy of the 16-page booklet about ocean plastic garbage and the pledge.



OCEANS DAY PLASTIC PLEDGE



LEARN

I will learn how plastic garbage is affecting the ocean and marine life.

EXCHANGE

I will use my own water bottle, juice container, mug, utensils, and reusable bags.

SAY "NO"

I will say "NO" to plastic shopping bags, straws, plastic stretch wrap, cleaners with plastic microbeads, and other "single-use plastics".

PAY ATTENTION

I will read the labels on products before I buy them to look for synthetic fibres, microbeads, special coatings, and other plastic materials or additives which can wash down the drain or be consumed.

REDUCE

I will buy items packaged with the least amount of plastic packaging.

REUSE

I will only use items, as much as possible, which are designed to be used many times over.

REPURPOSE

When I am done with a plastic item, including plastic packaging, I will attempt to come up with a new way to use it before I throw it away.

RECYCLE

I will think of new ways to use plastic packaging when I am done with them before I throw the plastic away.

CLEAN

I will join a shoreline clean-up group or gather my friends to start a group and register for the Great Canadian Shoreline Cleanup.

HELP OTHERS

I will spread the pledge and pick-up 5 pieces of plastic trash each time I go to school, or work, or shopping, or hang-out (remember, wash your hands after) and tell my friends about the turtle and why plastic garbage is so dangerous to marine life and – a Healthy Ocean and Healthy Planet.

World Oceans Day
June 8

Pledge signatures on page 65

RESTORATION

NSLC ADOPT A STREAM & ALTON NATURAL GAS STORAGE HELP TO IMPROVE SHORTTS LAKE FISHWAY

by GINA MACINNIS

Representatives from Alton Natural Gas Storage LP (Alton) noticed something fishy at the Shortts Lake fishway last fall. The fishway located near the Lafarge cement plant in Brookfield was not working. Alton president David Birkett noticed that despite enormous efforts, the gaspereau trying to move up the fishway were not having any success. “The majority of the fish were actually trying to go up the spillway which is impassible and those that were trying to make it up the fishway could not” said Birkett. Fishways are crucial pieces of infrastructure to connect fish habitat when an artificial barrier such as the dam on Shortts Lake is put in place.

Alton knew something should be done to repair or improve the fishway but was unsure about the logistical process of taking on such a project. Alton contacted Bob Rutherford, a consultant habitat biologist and the Nova Scotia Salmon Association’s NSLC Adopt a Stream Aquatic Habitat Restoration Biologist for advice

on how to move forward with repairs. Rutherford was able to navigate the regulatory side of the project and put the fishway on Adopt A Stream’s priority list for repairs in the spring in time for the gaspereau run while Alton secured the funding. The Adopt A Steam program already had Department of Fisheries and Oceans support and a Nova Scotia Environment permit to assess and repair fishways in the province.

Fishways enable fish to pass a barrier by swimming and jumping up a series of low steps. The water velocity flowing down the steps needs to be fast enough to attract the fish but cannot be so great as to flush the fish back downstream or exhaust them. “The fishway at Shortts Lake is an unusual design so we sought the expertise of retired DFO fishway engineer Vern Conrad”, explained Rutherford. “The fishway pools were not big enough to dissipate the energy of the plunging water. They were too turbulent for the gaspereau and the notches in the baffles

were not staggered to reduce the water velocity as it came downstream.”

To make the fishway functional, the baffles were narrowed, an additional pool was created on the downstream end, rocks were removed from the pools to increase pool volume, and all the low flow was directed to the fishway rather than maintaining a flow at the spillway.

When asked what it means for the fish in the area if the fishway is not in working order Rutherford explained, “for fish such as gaspereau, if they can’t get into the lake they will not spawn that season, they will simply go back to sea. This has obvious negative consequences for the population.”

NSLC Adopt A Stream’s Will Daniels, Beth Schaffenburg, and Ryan Currie set to work in May repairing the fishway in the nick of time. The crew were rewarded for their efforts by getting to witness the immediate use of the fishway by the waiting gaspereau.

Thanks to Alton Natural Gas Storage funding and the great expertise and organization from NSLC Adopt A Stream, fish wanting to make the journey into Shortts Lake can now do so with ease.

Visit their facebook page [adoptastreamprogram](#) to see a video of the fishway in use.

GASPEREAU LIFE CYCLE

Gaspereau (*Alosa pseudoharengus*) are found in rivers and lakes along the eastern coast of North America from Newfoundland to Florida.

Gaspereau are anadromous and ascend coastal rivers in the spring to spawn. In the Maritimes, gaspereau spend most of their life growing in salt water and feeding on small invertebrates and zooplankton. In Nova Scotia, adults are 25-30 cm (10-12 in) long and weigh up to 340g (12 oz). Each spring from April to July large runs of adult gaspereau migrate up coastal rivers to spawn in freshwater lakes, ponds and streams.

Like trout and salmon, gaspereau return to the streams and lakes where they hatched or nearby watersheds. Female gaspereau begin spawning at age 4 and repeat spawning each year. Gaspereau live on average 10 years. They can move into coastal areas in late winter but will not migrate into fresh water until river temperatures begin to warm. Migration into freshwater usually occurs during daylight hours but they always move through built structures like fishways in the day time. Spawning occurs at night and usually occurs in standing water, but can occur in slow moving river water. A single female can lay as many as 200,000 eggs.

After spawning the adults begin the downstream migration to the sea within a few days.

Gaspereau eggs are about 1mm in diameter and are left to lie on the bottom or float with the current. Depending on the water temperature, eggs hatch in about a week. After the yolk-sac is absorbed the small larval fish stay near the spawning grounds preferring shallow, warm and sandy areas. They feed on tiny species of zooplankton. From August to October, young-of-the-year (sizes from 32-152 mm [1.25-6 in]) migrate downstream in large schools to live in estuaries and coastal areas until they join the main population the next spring.

Gaspereau are an important part of the food web and are eaten by many freshwater and marine fish species including striped bass, salmon, trout, smallmouth bass, eels, perch, and coastal birds (NSLC Adopt A Stream Manual: *A Watershed Approach to Community-Based Stewardship*).



Will Daniels and Beth Schaffenburg

THREATS

NOAA, PARTNERS PREDICT AN AVERAGE 'DEAD ZONE' FOR GULF OF MEXICO

by UNIVERSITY OF BRISTOL

Joint News Release: National Oceanic & Atmospheric Administration & U.S. Geological Survey, 17 June 2015 - Outlook incorporates multiple hypoxia models for first time. Scientists are expecting that this year's Gulf of Mexico hypoxic zone, also called the "dead zone," will be approximately 5,483 square miles or about the size of Connecticut—the same as it has averaged over the last several years.

The dead zone in the Gulf of Mexico affects nationally important commercial and recreational fisheries and threatens the region's economy. Hypoxic zones hold very little oxygen, and are caused by excessive nutrient pollution, primarily from activities such as agriculture and wastewater. The

low oxygen levels cannot support most marine life and habitats in near-bottom waters.

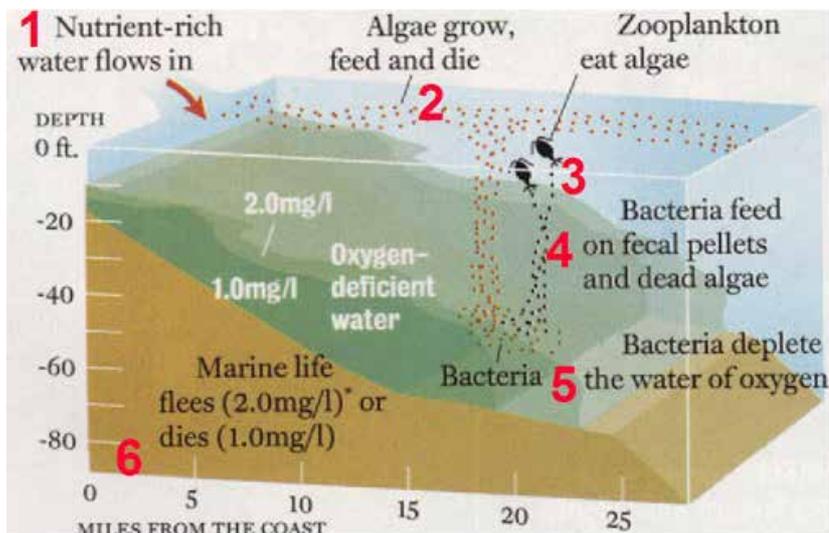
This year marks the first time the results of four models were combined. The four model predictions ranged from 4,344 to 5,985 square miles, and had a collective predictive interval of 3,205 to 7,645 square miles, which take into account variations in weather and oceanographic conditions.

The NOAA-sponsored Gulf of Mexico hypoxia forecast has improved steadily in recent years, a result of advancements of individual models and an increase in the number of models used for the forecast. Forecasts based on multiple models are called ensemble forecasts and are commonly used in hurricane and

other weather forecasts.

The ensemble models were developed by NOAA-sponsored modeling teams and researchers at the University of Michigan, Louisiana State University, Louisiana Universities Marine Consortium, Virginia Institute of Marine Sciences/College of William and Mary, Texas A&M University, North Carolina State University, and the United States Geological Survey (USGS). The hypoxia forecast is part of a larger NOAA effort to deliver ecological forecasts that support human health and well-being, coastal economies, and coastal and marine stewardship.

"NOAA, along with our partners, continues to improve our capability to generate environmental data that can help



Nutrient-based hypoxia formation. (Credit: Nancy Rabalais, LUMCON.)

1) Nutrient-rich water flows in, 2) Algae grow, feed, and die, 3) Zooplankton eat the algae, 4) Bacteria feed on fecal pellets and dead algae, 5) Bacteria deplete the water of oxygen, 6) Marine life flees or dies

mitigate and manage this threat to Gulf fisheries and economies,” said Kathryn D. Sullivan, Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator. “We are adding models to increase the accuracy of our dead zone forecast.”

The Gulf of Mexico hypoxia forecast is based on nutrient

runoff and river stream data from the USGS. The USGS operates more than 3,000 real-time stream gauges, 50 real-time nitrate sensors, and collects water quality data at long-term stations throughout the Mississippi River basin to track how nutrient loads are changing over time.

The USGS estimates that 104,000 metric tons of nitrate and

19,300 metric tons of phosphorus flowed down the Mississippi and Atchafalaya rivers into the Gulf of Mexico in May 2015. This is about 21 percent below the long-term (1980-2014) average for nitrogen, and 16 percent above the long-term average for phosphorus.

“Real-time nitrate sensors are advancing our understanding of how nitrate is transported in small streams and large rivers, including the main stem of the Mississippi River,” said William Werkheiser, USGS associate director for water. “Long-term monitoring is critical to tracking how nutrient levels are changing in response to management actions and for improving modeling tools to estimate which sources and areas are contributing the largest amounts of nutrients to the Gulf.”

The confirmed size of the 2015 Gulf hypoxic zone will be released in early August, following a monitoring survey led by the Louisiana Universities Marine Consortium from July 28 to August 4.

USGS provides science for a changing world. Visit USGS.gov, and follow us on Twitter @USGS and our other social media channels. Subscribe to our news releases via email, RSS or Twitter.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Join us on Facebook, Twitter, Instagram and our other social media channels.

Contact:

- Ben Sherman, NOAA, 301-713-3066, ben.sherman@noaa.gov
- Jon Campbell, USGS, 703-648-4180, joncampbell@usgs.gov
- Jim Erickson, University of Michigan, 734-647-1842, ericksn@umich.edu
- Dave Malmquist, VIMS, 804-684-7011, davem@vims.edu
- William (Matt) Shipman, NCSU, 919-515-6386, matt_shipman@ncsu.edu

Story Credit: Joint News Release: National Oceanic & Atmospheric Administration & U.S. Geological Survey, 17 June 2015. coastalscience.noaa.gov

RESEARCH

PUGET SOUND'S CLINGFISH COULD INSPIRE BETTER MEDICAL DEVICES & WHALE TAGS UNIVERSITY OF WASHINGTON

University of Washington, May 2015. Researchers are looking at how the biomechanics of clingfish could be helpful in designing devices and instruments to be used in surgery and even to tag and track whales in the ocean. Clingfish are considered one of the world's best suction cups, scientists say - Scooting around in the shallow, coastal waters of Puget Sound is one of the world's best suction cups.

It's called the Northern clingfish, and its small, finger-sized body uses suction forces to hold up to 150 times its own body weight. These fish actually hold on better to rough surfaces than to smooth ones, putting to shame industrial suction devices that give way with the slightest uneven surface.

Researchers at the University of Washington's Friday Harbor Laboratories on San Juan Island are studying this quirky little fish to understand how it can summon such massive suction power in wet, slimy environments. They are beginning to look at how the biomechanics of clingfish could be helpful in designing devices and instruments to be used in surgery and even to tag and track whales in the ocean.

"Northern clingfish's attachment abilities are very desirable for technical applications, and this fish can provide an excellent model for strongly and reversibly attaching to rough, fouled surfaces in wet environments," said Petra Ditsche, a postdoctoral researcher with Adam Summers'

team at Friday Harbor Labs.

Ditsche presented her research on the sticky benefits of clingfish last month in Nashville at the Adhesive and Sealant Council's spring convention in a talk, "Bio-inspired suction attachment from the sea."

Clingfish have a disc on their bellies that is key to how they can hold on with such tenacity. The rim of the disc is covered with layers of micro-sized, hairlike structures. This layered effect allows the fish to stick to surfaces with different amounts of roughness.

"Moreover, the whole disc is elastic and that enables it to adapt to a certain degree on the coarser sites," Ditsche added.

Many marine animals can stick strongly to underwater



A Northern clingfish is shown in its natural environment. Credit: Petra Ditsche, University of Washington

surfaces - sea stars, mussels and anemones, to name a few - but few can release as fast as the clingfish, particularly after generating so much sticking power.

On land, lizards, beetles, spiders and ants also employ attachment forces to be able to move up walls and along the ceiling, despite the force of gravity. But unlike animals that live in the water, they don't have to deal with changing currents and other flow dynamics that make it harder to grab on and maintain a tight grip. (Read a recent paper by DitsClingfish's unique ability to hold with great force on wet, often slimy surfaces makes them particularly intriguing to study for biomedical applications. Imagine a bio-inspired device that could stick to organs or tissues without

harming the patient.

"The ability to retract delicate tissues without clamping them is desirable in the field of laparoscopic surgery," Summers said. "A clingfish-based suction cup could lead to a new way to manipulate organs in the gut cavity without risking puncture."

Researchers are also interested in developing a tagging tool for whales that would allow a tag to noninvasively stick to the animal's body instead of puncturing the skin with a dart, which is often used for longer-term tagging.

Ditsche, Summers and the UW graduate and undergraduate students who are studying the Northern clingfish have no shortage of specimens to choose from. This species is found in the coastal waters

near Mexico all the way up to Southern Alaska. They often cling to the rocks near the shore, and at low tide the researchers can poke around in tide pools and turn over rocks to collect the fish. If they can unstick them, that is.

There are about 110 known species in the clingfish family found all over the world. The population around the San Juan Islands is robust and healthy.

Now that they have measured the strength of the suction on different surfaces, the researchers plan to look next at how long clingfish can stick to a surface. They also want to understand why bigger clingfish can stick better than smaller ones, and what implications that could have on developing materials based on their properties.

Citation: University of Washington. "Puget Sound's clingfish could inspire better medical devices, whale tags." ScienceDaily. ScienceDaily, 4 May 2015. <www.sciencedaily.com/releases/2015/05/150504141853.htm>.

GENETIC ENGINEERING

PEI: BIRTHPLACE OF FIRST GMO FOOD ANIMAL

by MARK BUTLER &
CATHARINE GRANT

[Small Scales News](#), posted on April 8, 2015 by seamouse - When most people think of Prince Edward Island, they think of potatoes, red beaches, Anne of Green Gables and fresh, wild-caught seafood. Unfortunately, beneath these idyllic images lies a more disturbing reality: PEI is also home to Canada's first genetically-modified fish, one which poses a major threat to our wild Atlantic salmon stocks.

In late 2013, the federal government approved the development of genetically modified Atlantic salmon eggs in a facility in PEI. These eggs contain the DNA from Atlantic salmon spliced with genetic material from Chinook pacific salmon and ocean pout (an eel-like marine fish). The purpose of this genetic modification is to create a fish that grows faster, so fish farms can produce more fish in a shorter time. The eggs are being grown by the American company AquaBounty, and are being shipped

to a facility in Panama to grow to market size. AquaBounty's goal is to get approval from the US Food and Drug Administration and Health Canada to sell full size GM salmon to consumers. If approved, this will be the first ever genetically modified food animal in the world to hit grocery store shelves.

Setting aside health concerns regarding GM technology, the biggest concern we have is the possible impacts on wild Atlantic salmon. The GM salmon being developed are supposed to be sterile, but according to DFO's own analysis, up to 5% of them will be able to breed. And it's been documented that they will be able to breed with Atlantic salmon and brown trout.

Imagine this scenario: GM salmon escape from a facility and start to breed with our wild Atlantic salmon stocks, thereby forever changing their fundamental genetic make-up



A salmon angler with his catch (EAC/Ray Plourde)

– the essence of what they are. Equally worrisome is the prospect of GM salmon (which grow faster and get to be bigger than normal Atlantic salmon) escaping and out-competing our already endangered wild salmon for

food and habitat. Even with all Canadian commercial fisheries for wild Atlantic salmon closed, the outlook for the species is already so dire that, just yesterday, the Minister of Fisheries and Oceans announced that this year, even

the Maritimes' anglers will not be permitted to keep fish. This announcement came in response to a drastic drop in the returns of salmon last year.

For this reason, the Ecology Action Centre and Living Oceans Society are taking

A close up of an Atlantic salmon (EAC/Ray Plourde)





The ocean pout (Wikimedia Commons/Steven G Johnson)

the federal government to court. We don't think they've adequately assessed the risks that GM salmon pose to our wild fish stocks, and we think the "Frankenfish" needs to be stopped.

We're also astounded by the fact that the federal government made the decision to allow the production of GM salmon in Canada without consulting with Canadians. We could set a global precedent and there has been no opportunity for Canadians to ask questions of the company or the regulator or to debate the pros and cons.

Everyday municipal planning decisions involve more consultation and transparency.

We have heard that aboriginal communities have not been consulted, despite the importance of wild salmon to them. Salmon anglers and outfitters are worried about the implications for wild salmon. Even the current aquaculture industry is concerned about public perception.

In the United States, more than 60 retailers have already said that they won't sell GM salmon if it's approved by the FDA. We expect that retailers in Canada will also be wary of

selling a genetically modified animal that could harm our wild salmon stocks. Some things in nature are worthy of protection, and we believe that North America's wild Atlantic salmon are one of those things.



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What does it do?

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How does it help whales?

- The app provides regional reporting numbers for whales in distress to facilitate a timely response.
- The information you enter through Whale Alert is used to warn vessel operators when right whales are in the area.

To download **Whale Alert** for free, scan the QR Code or download the app online at whalealert.org.

You can start reporting whale sightings immediately!



SAFETY

LOSS OF LIFE ON FISHING VESSELS by TSB

TRANSPORTATION SAFETY BOARD OF CANADA (TSB) 2015 – THE NUMBER OF ACCIDENTS INVOLVING LOSS OF LIFE ON FISHING VESSELS REMAINS TOO HIGH.

The Transportation Safety Board of Canada (TSB) has long sought to improve fishing vessel safety. It issued its first recommendation on the subject in 1992, and since then, has issued 41 more. Despite this, an average of 134 fishing vessel accidents per year was reported between 2009 and 2013, which together comprised 40% of all marine accidents. Furthermore, the average number of fatalities has remained at about one per month.

In 2012, the TSB released a report on its Safety Issues Investigation into Fishing Safety in Canada. Since then, with nation-wide recognition that the loss of life on fishing vessels is still unacceptable, federal and many provincial regulatory authorities, as well as fishing safety

associations have begun to increase safety initiatives. But more still needs to be done.

Fish harvesting carries risks, and the reality is that a wide range of safety deficiencies persist. In particular, fatalities in occurrences such as those involving Cap Rouge II, Hope Bay, Ryan's Commander, Melina and Keith II, Lannie & Sisters II, Big Sister, Craig and Justin, Silver Angel, and Marie J, show that vessel stability, crew training, unsafe operating practices, and carriage of immersion suits require greater attention. Every time the TSB investigates an occurrence, it issues findings as to causes and contributing factors. But many of these factors are bigger than any one event: they are systemic problems, which need systemic solutions. Concerns also remain about issues such as vessel modifications and their impact on stability; the use and availability of lifesaving equipment; regulatory oversight; and the impact



Photo: courtesy Transportation Safety Board of Canada - bst-tsb.gc.ca

of fishery resource management plans and practices on the overall safety of fishing vessels.

Solution

Although regulations have been proposed to address several of the safety deficiencies, there have been significant delays in the implementation of some of these initiatives.

Furthermore, new regulations alone are not enough. Concerted and coordinated action is required by federal and provincial authorities and by leaders in the fishing community to improve the safety culture in fishing operations, recognizing the interaction of safety deficiencies.

A PDF of the REPORT is available at

<http://www.tsb.gc.ca/eng/surveillance-watchlist/marine/2014/marine.pdf>

Story Credit: Transportation Safety Board of Canada, 2015, tsb.gc.ca

BIODIVERSITY

UN TAKES FIRST STEP TOWARDS TREATY TO CURB LAWLESSNESS IN HIGH SEAS

by THALIF DEEN

UNITED NATIONS, Jun 19 2015 (IPS) - The 193-member General Assembly adopted a resolution Friday aimed at drafting a legally binding international treaty for the conservation of marine biodiversity and to govern the mostly lawless high seas beyond national jurisdiction.

The resolution was the result of more than nine years of negotiations by an Ad Hoc Informal Working Group, which first met in 2006.

"This groundbreaking decision puts us on a path toward having a legal framework in place that will allow for the comprehensive management of ocean areas beyond national jurisdiction." -- Elizabeth Wilson

If and when the treaty is adopted, it will be the first global treaty to include conservation measures such as marine protected areas and reserves, environmental impact assessments, access to marine genetic resources and benefit sharing, capacity building and the transfer of

marine technology.

The High Seas Alliance (HSA), a coalition of some 27 non-governmental organisations (NGOs), played a significant role in pushing for negotiations on the proposed treaty and has been campaigning for this resolution since 2011.

Asked if the treaty will be finalised by the targeted date of 2018, Elizabeth Wilson, director of international ocean policy at The Pew Charitable Trusts, a member of the HSA, told IPS: "Not exactly, although we do expect significant progress."

The first round of formal negotiations is expected to take place in 2016 and continue through 2017.

The General Assembly will decide by September of 2018 on the convening of an intergovernmental conference to finalise the text of the agreement and set a start date for the conference.



A turtle swims in a Marine Protected Area. Credit: Foreign and Commonwealth Office

Wilson said it is likely that the intergovernmental conference would then meet multiple times over approximately two years to accomplish this goal.

Asked how the treaty will change the current “lawlessness” in the high seas, Wilson said: “This groundbreaking decision puts us on a path toward having a legal framework in place that will allow for the comprehensive management of ocean areas beyond national jurisdiction.”

Today, she pointed out, the high seas are governed by a patchwork of inadequate international, regional, and sectorial agreements and organisations.

A new treaty would help to organise and coordinate conservation and management.

That includes the ability to create fully protected marine reserves that are closed off to harmful activities. Right now there is no way to arrange for such legally binding protections, she added.

Sofia Tsenikli of Greenpeace said: “The high seas accounts for nearly half our planet – the half that has been left without law or protection for far too long. A global network of marine reserves is urgently needed to bring life back into the ocean – this new treaty should make that happen.”

In a statement released Friday, the HSA said the resolution follows the Rio+20 conference in 2012 where Heads of State committed to address high seas protection.

The conference came close to agreeing to a new treaty then, but was prevented from doing



A trawler in Johnstone Strait, BC, Canada. Human activities such as pollution, overfishing, mining, geo-engineering and climate change have made an international agreement to protect the high seas more critical than ever. Credit: Winky/cc by 2.0

so by a few governments which have remained in opposition to a Treaty ever since.

Asked about the significant difference between the 1982 landmark Law of the Sea Treaty and the proposed high seas treaty, Wilson told IPS the U.N. Convention on the Law of the Sea (UNCLOS), which is recognised as the “constitution” for global ocean governance, has a broad scope and does not contain the detailed provisions necessary to address specific activities, nor does it establish a management mechanism and rules for biodiversity protection in the high seas.

Since the adoption of UNCLOS in 1982, there have been two subsequent implementing agreements to address gaps and other areas that were not sufficiently covered under UNCLOS, one related to seabed mining and the other related to straddling and highly migratory fish stocks, she added.

This new agreement will be the third implementing agreement developed under UNCLOS, Wilson said.

According to HSA, Friday’s resolution stresses “the need for the comprehensive global regime to better address the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction.”

It allows for a two-year preparatory process (PrepCom) to consider the elements that could comprise the treaty.

This will begin in 2016 and culminate by the end of 2017, with a decision whether to convene a formal treaty negotiating conference in 2018.

The “high seas” is the ocean beyond any country’s exclusive economic zone (EEZ) - amounting to 64 percent of the ocean - and the ocean seabed that lies beyond the continental shelf of any country, according to a background briefing released by the HSA.

These areas make up nearly 50 percent of the surface of the Earth and include some of the most environmentally important, critically threatened and least protected ecosystems on the planet.

On World Oceans Day, June 5th 2015
Halifax, Nova Scotia, Canada, I made the

REDUCE OCEAN PLASTIC PLEDGE

The map is a large-scale drawing of Nova Scotia, filled with handwritten signatures and names in blue ink. The signatures are densely packed across the landmass and surrounding waters. Some names are circled or written in larger letters. At the bottom right of the map, there is a logo for "HEALTHY OCEANS HEALTHY PLANET" which includes a globe and a fish. The overall appearance is that of a community pledge or a collection of signatures for an environmental cause.

LEADERSHIP

US CONTINUES GLOBAL LEADERSHIP TO ADDRESS ILLEGAL, UNREPORTED & UNREGULATED FISHING

NOAA (Fisheries) News, February 2015 — *Reaffirms commitment to level playing field for legitimate U.S. fishermen.* In its 2015 biennial report to Congress on illegal, unreported, and unregulated fishing (IUU), NOAA has identified six nations - Colombia, Ecuador, Mexico, Nigeria, Nicaragua, and Portugal - as engaging in the practice. IUU fishing and seafood fraud undermine international efforts to sustainably manage and rebuild fisheries, and creates unfair market competition for fishermen playing by the rules, like those in the United States.

“Protecting our country’s reputation as a leader in sustainable fishing is at the heart of the President’s efforts to combat illegal, unreported, and unregulated fishing and seafood fraud around the world,” said Kathryn Sullivan, Ph.D., under

secretary of commerce for oceans and atmosphere, and NOAA administrator, during remarks she made at the SeaWeb Seafood Summit in New Orleans. “As one of the largest importers of seafood in the world, the United States has a global responsibility and economic duty to ensure that the fish we import is caught sustainably and legally. Tackling this challenge will require sustained collaboration between industry, conservation groups, and government.”

The report also highlights U.S. findings and analyses of foreign IUU fishing activities and of bycatch of protected species and shark catch on the high seas where nations do not have a regulatory program comparable to the United States.

IUU activity of the identified nations included violations such as fishing

in restricted areas, tuna discards, misreported catch, and improper handling of turtle entanglement. NOAA Fisheries will work with each of the cited nations to address these activities and improve their fisheries management and enforcement practices. If the nation does not take sufficient action and does not receive a positive certification in the next biennial report, the U.S. may prohibit the import of fisheries products from that nation and deny port privileges to their fishing vessels.

The 2013 report identified ten nations — Colombia, Ecuador, Ghana, Italy, Korea, Mexico, Panama, Spain, Tanzania, Venezuela — whose vessels engaged in IUU fishing activities. Over the last two years, the United States worked with these 10 nations and determined that each took appropriate action by



Worldwide economic losses from IUU fishing from ships such as this are estimated to be between \$10 billion and \$23 billion annually. (Credit: U.S. Coast Guard)

adopting new laws and regulations or amending existing ones, sanctioning the offending vessels, improving monitoring and enforcement, or asking for a reexamination of the activities of certain vessels. While all 10 nations took appropriate action to address IUU activity in the 2013 report, three (Colombia, Ecuador and Mexico) have been reidentified in the 2015 report for new IUU activity.

No countries were identified for bycatch of protected living marine resources or for shark catch on the high seas in the 2015 biennial report. However, Mexico was identified in the 2013 report for a lack of management measures for mitigating bycatch of North Pacific loggerhead sea turtles in the gillnet fishery in Mexico's Gulf of Ulloa. Mexico has since made meaningful progress in developing a regulatory program to address this issue. NOAA Fisheries will continue to work with Mexico and will delay its certification decision until May 2015.

"The United States is committed to working with all nations to combat illegal fishing, and to ensure the effective management of bycatch

of protected species and shark catch on the high seas," said Eileen Sobeck, assistant NOAA administrator for NOAA Fisheries. "We are encouraged by the positive steps these nations took to address IUU fishing and will continue to explore all avenues to combat IUU activity on a global scale."

In addition to undermining international fisheries efforts, IUU fishing can also devastate fish populations and their productive marine habitats, threatening global food security and economic stability. Global losses attributable to IUU fishing have been estimated to be between \$10 billion and \$23 billion annually, undermining the ability to sustainably manage fisheries as well as economic opportunities for U.S. fishermen.

The report is a requirement of the High Seas Driftnet Fishing Moratorium Protection Act, as amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act and the Shark Conservation Act.

At the State Department's Our Ocean conference in June 2014,

the White House announced a Presidential Task Force on IUU fishing, co-chaired by the departments of state and commerce and made up of a broad range of other federal agencies. The Task Force, which was directed to report to the President within six months with "recommendations for the implementation of a comprehensive framework of integrated programs to combat IUU fishing and seafood fraud that emphasizes areas of greatest need," made 15 recommendations in December which, if implemented, would combat IUU fishing and seafood fraud, strengthen enforcement, create and expand partnerships with industry and state and local governments, and track seafood from harvest to entry into the United States.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Join us on Facebook, Twitter, Instagram and our other social media channels.

Story Credit: NOAA (Fisheries) News, February 2015, noanews.noaa.gov

A COMPELLING REASON

A NEW PHENOMENON OPEN WATER DEAD-ZONES

The picture to the right may look like an approaching hurricane; actually it is a new phenomenon discovered by researchers this year "open water dead-zones".

Dead-zones are water areas with little or no oxygen, in which marine life cannot survive. In rivers, lakes, estuaries, and coastal waters dead-zones are caused by nutrient run-off from the land into warm, shallow water, making perfect conditions for an algal bloom. When large matts of algae die and decay, the decomposition process uses up all the available oxygen in the water, causing a dead-zone. [In

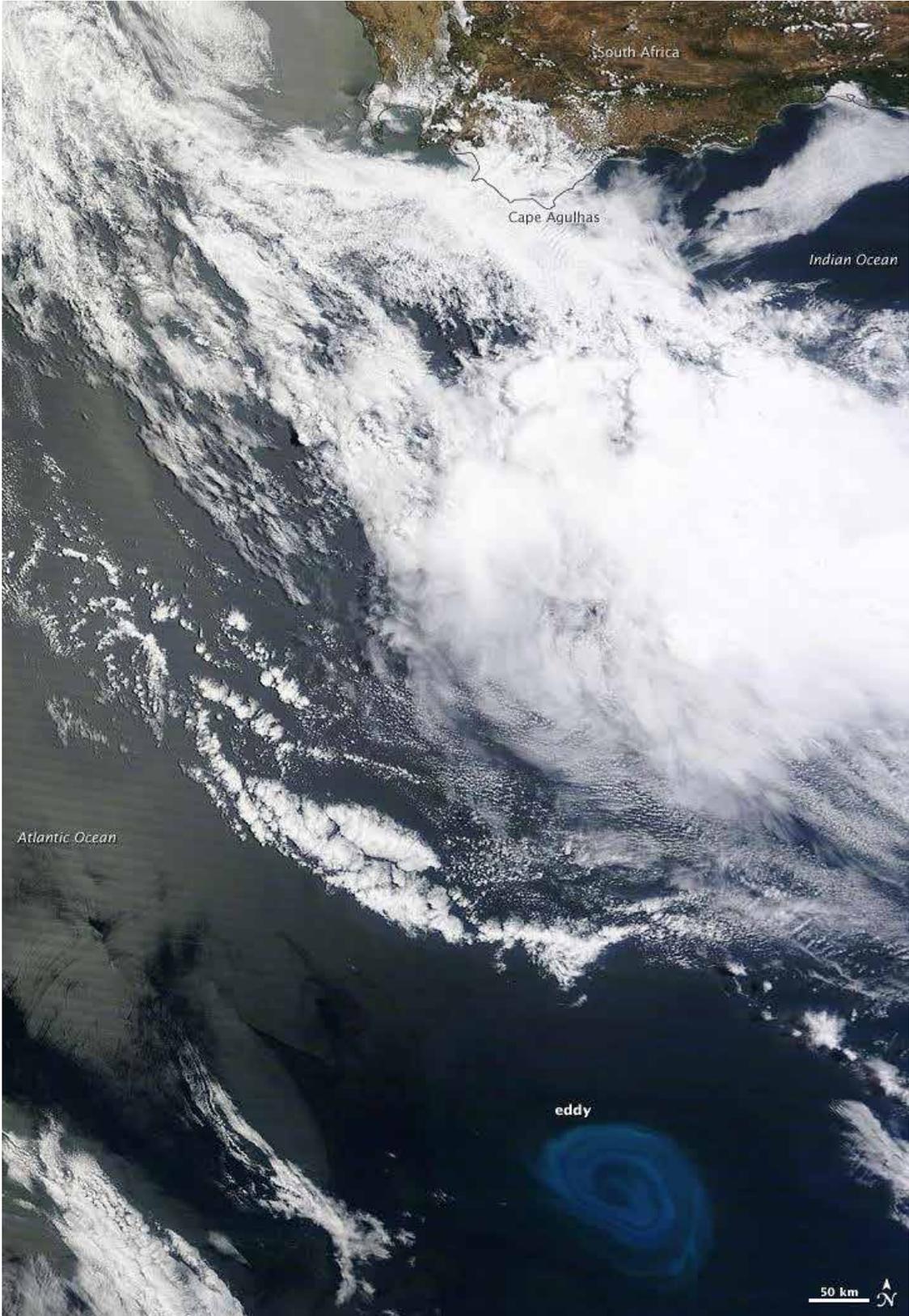
the Mawqatmuti'kw Summer-Fall 2013/3 issue we showed a picture of a dead-zone in the Mill River estuary, PEI.]

This new phenomenon of "open water dead-zones" is like a combination of a dead-zone and a hurricane - thus, a "Dead-Zone Hurricane".

A Dead-Zone Hurricane is unique in that the dead-zone is created within a swirling vortex or eddie of ocean water. In the shallow, warm, nutrient-rich waters off the west coast of Africa are destabilized, an eddie of swirling

water can form and entrap a pocket of the warm water. The eddie protects the warm interior water and the algae that grow there, creating an ideal condition for an algae bloom. The Earth's rotation, can cause the eddie to move across the Atlantic Ocean towards the Americas.

Depending on initial conditions of water temperature, nutrient level, and current speed, Dead-Zone Hurricanes can grow to be quite large. This process has strikingly similar processes to those which can create a hurricane.



Dead-Zone Hurricanes were unknown to science until their discovery last year by researchers from the GEOMAR Helmholtz Centre for Ocean Research and University of Bremen in Germany and the Halifax Marine Research Institute. The Dead-Zone Hurricanes documented so far range up to 150 km in diameter and 100 meters deep, with oxygen levels 100 times lower than the surrounding ocean water. It is expected that if a Dead-Zone Hurricane hit an island, it would cause massive fish kills, though no such events have been recorded yet.

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.

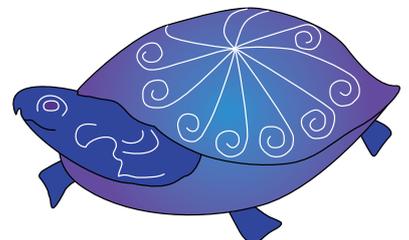
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*"Is controlling nature worth
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and our biodiversity, killing
our young, and poisoning
our food, water, and air?"*





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