MAWQATMUTI'KW

OUR CONNECTION

WE MUST DIVEST OURSELVES of our egotistical anthropocentrism, our habit of seeing ourselves as masters of the universe who can do whatever occurs to us. We must discover a new respect for what transcends us: for the universe, for the earth, for nature, for life, and for reality. Our respect for other people, for other nations, and for other cultures, can only grow from a humble respect for the cosmic order and from an awareness that we are a part of it, that we share in it and that nothing of what we do is lost, but rather becomes part of the eternal memory of Being, where it is judged.

... Václav Havel

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This colourful skyscape features the dusty Sharpless catalog emission region Sh2-155, the Cave Nebula. In the composite image, data taken through narrowband filters tracks the glow of ionized sulfur, hydrogen, and oxygen atoms in red, green, and blue hues. About 2,400 light-years away, the scene lies along the plane of our Milky Way Galaxy toward the royal northern constellation of Cepheus.

mawqatmuti'kw

Summer—Fall 2014/5

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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
Atlantic Sturgeon by Gilbert van Rijckevorsel - the Atlantic Sturgeon has a 200 million year history and is a living fossil.

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VIEWS FROM MAARS

GUEST WRITER

ART & CULTURE – A CONNECTION

by CATHY MARTIN

One in the same, Mi'kmaq art and culture is intricately connected with the environment. There is no word in Mi'kmaq for "art" specifically because it is inherently part of cultural expression, and the environment. Art was and is not a separate entity, it is part of everything we do, see, create. We see the connections to the earth from the petroglyphs, intricate symmetrical quill designs, to heiroglyphics and modern painting, in our clothing, in our ceremonial dress, bakets and everyday objects. Many connections to our land, and culture are found in our songs, in our dance, in our words, the environment is what connects us to our way of life. Our stories about the journey over the thousands of years that Mi'kmaq have walked this land is most often about the environment, the animals, the trees, the earth, the water, and living in it in harmony.

The Mi'kmaq creation story speaks about the intimate connection we have to our environment, to our way of life, our cultural expression. In it, the story speaks about how the Mi'kmaq came to be here on Mother Earth, or Turtle Island. A bolt of lighting struck the sand and a figure was formed. Another bolt struck and the figure came to life, the third bolt of lighting struck and the figure got up, began to walk the land to speak to the animals and the people about how to exist on this earth. This figure was Glooscap. And so it began, the journey of the Mi'kmaq on the very earth that they were made from. We came from the earth, our skin is the colour of the red sand/ mud or clay that is found throughout the land of the Mi'kmaq. Our world like many Indigenous cultures revolves around the sun, moon, stars, ocean tides, and cycles of life. It is no surprise that our cultural expressions through art are connected to the environment, the world around us.

I have had the privilege over my lifetime to have been

part of an Indigenous artistic movement that brought our Indigenous arts and artists recognition. We have successfully lobbied to ensure that Indigenous art especially in Canada receives its proper place in the art institutions, galleries and within the artistic world. Indigenous art and culture has always existed, it has been with us since time immemorial. It has taken today's modern art historians, curators, galleries and collecter's over five hundred years to see this. Today our art is seen in the National Art Gallery, and other art institutions, and the recognition of Indigenous art is growing in leaps and bounds. Indigenous artists throughout Canada have been creating works that are often inspired by the environment in which they come from, the life journey they have travelled, as well as their ancestral connections to their families, to the land and to the spirit world. At one time, Indigenous art was only found in museums among artifacts and sacred objects. Today, we are part of the cultural fabric of our own land, we are in the galleries and part of the discourse as never before.

While the painters and sculptures were making headway into the art world, other artistic mediums were rising up as well. Filmmakers had been working in the NFB creating documentaries about the people of this land, their

Catherine Martin, BA; MEd; is an independent producer, director, writer, facilitator, communications consultant, teacher, drummer and storyteller. She is a member of the Millbrook First Nation and the first woman Mi'kmaw filmmaker from the Atlantic Region. She has been producing and directing award-winning documentaries about her nation since 1989. She has participated in the development of many policies and programs within the Canadian Cultural and Arts Institutions to advance Indigenous Artists in their respective disciplines. She presently teaches Fine Arts and Communications at University College of Cape Breton.

struggles and their culture. They were inspired to tell the stories of this land and the first peoples of this land thus a new movement was born through filmmaking. The creation of a NFB designated Studio for Aboriginal filmmakers, a separate Aboriginal Secretariat at the Canada Council were founded. Eventually, the Aboriginal Peoples Television was created to allow a place for our storytellers, filmmakers, to tell their stories of the land, the environment, our ways of life, our culture and connections to the lands in our own way, through our own eyes and voice. Writers, musicians, dancers, poets, playwrights, crafts people , hunters, fishers, gatherers, had a place to tell their stories on TV. This renaissance has inspired young artists to explore their own connections to the environment and offer their expressions through art to the world. It has offered Canadians and the world a window into the Aboriginal perspectives, stories, culture and art. It is an exciting time for Indigenous artists in this country and around the world.

I co-directed an NFB film in 1991 called Kwa'Nu'Te': Mi'kmaq and Maliseet Artists. This gave me the opportunity to give voice to important contemporary native artists of the maritimes. The journey in making this film gave me a deeper understanding of the artists in the region. It is not only the art that they produce, but the stories that they tell along with the work that helps us to understand our connection to our culture, our environment, our lives. The use of red clay, ash wood for baskets, stone for sculptures,

sweetgrass and shells, have all come from the land, our land. The stars, the cycles of universe, are all part of our designs over the years.

I have had the good fortune to have great teachers on my journey, many of whom come from the world of basket making. As the executive director of Atlantic Indian Arts and Crafts Corporation from 1982 to 1986 I was surrounded by the wisdom, humour and knowledge of basketmakers who had lived through the oppression, the years of silence and attempts at colonization. The Mi'kmaq wooden flower makers have also provided our world with a unique art form using poplar and birch bark splints to make roses, apple blossoms, buds and other flowers. They have kept this tradition alive passing it on to their children. These could not be made without the poplar trees and birch trees.

Throughout the experiences I have had with the basket makers, it was evident that their connection to the earth, to their environment was a reason for our survival today.

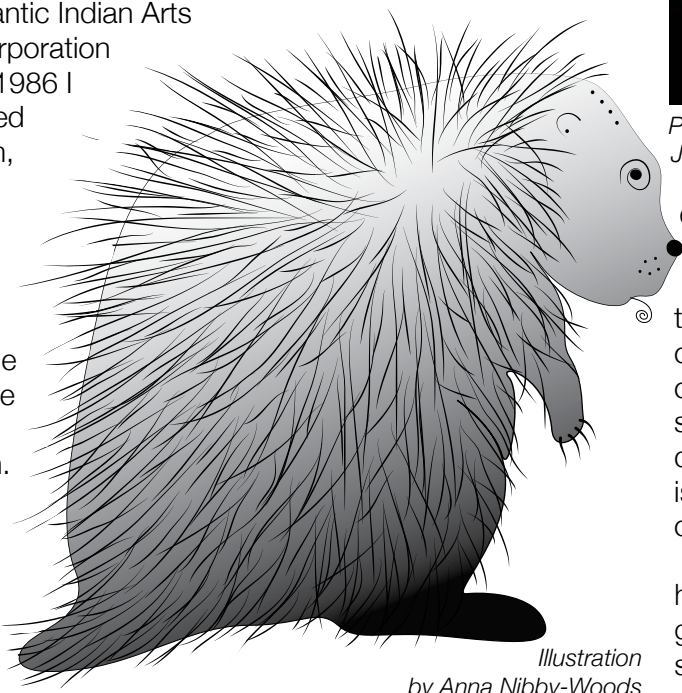


Illustration by Anna Nibby-Woods

Ash basket embellished with sweetgrass. Artist unknown.

As a Mi'kmaq filmmaker, drummer, chanter and performer I have enjoyed being part of this renassaince, this revitalization of our culture. At one time in our dark history of colonization, we as Indigenous peoples were not allowed to practice our language, our culture, our arts, our dances and ceremonies through legislation that would fine or put us in jail for such an offence. Our connection to the earth, our creation from the land, the environment kept us alive. We have survived the over five hundred years of imposed values, laws and other ways of life. We have survived because we cannot disconnect from our land, it is who we are, it is where we come from.

Porcupine quill basket - artist Marlene Joudry.

While having had the honour of being among the great artists, filmmakers and storytellers across the land I cannot deny the very core of my own existence as a Mi'kmaw woman. I have learned so much from my own grandparents, parents, aunties and uncles about who I am in this world and my connection to the earth. I have had great teachers in my life who taught me a great deal about spiritual ways, our songs, stories and dances. Their stories, the language, the worldview that I was raised in has helped me to find my own identity on this earth.

M'sit Nokomaq –
We are all related.

ALL OUR RELATIONS

So much needs to be remembered, but above all we have to remember how those that have gone before us touched our lives. They taught us by example.

Humble, gentle people who exemplified leadership, kindness, compassion, generosity of spirit and self, decency, and loving concern for all mankind. Fighters for the rights of Mi'kmaq men, women and children...they were our friends and relations.

What legacies they left us and what beautiful and challenging obligations. May each of us now follow their lead and honour each of them by continuing their life's purpose. Let us find and strive in our own way to make better this world and to join its entire people in harmony, cooperation and true peace. Let us keep and hold precious the gifts of our Mi'kmaq traditions and knowledge bestowed on us.

Keptin Noel Knockwood
1932 - 2014
Keptin Reggie Maloney
1941 - 2013
Chief Steve Marshall Sr.
1943 - 2014
Chief Lawrence Paul
1934 - 2014
Elder Ellen Robinson
1927 - 2012
Elder Anne Elizabeth Prosper
1933 - 2013
Elder Annie 'Ronnie' Paul
1927 - 2014
Elder Annie Catherine Brooks
1927 - 2014

CANADA: ECOLOGICAL FOOTPRINT INSTRUMENTAL IN SUPREME COURT'S RULING

Global Footprint Network News, 07/18/2014 - A FIRST FOR THE ECOLOGICAL FOOTPRINT AND A NATIVE PEOPLE IN CANADA. The Supreme Court of Canada supported the Tsilhqot'in Nation's title over 1,900 square kilometers in British Columbia in a landmark decision announced in June.

The historic ruling came about a decade after Tsilhqot'in Nation's lawyers called Global Footprint Network to provide an expert study for the case, which centered on clear-cut logging permits granted by the British Columbia government without consulting the native community living on the affected land.

The government defended the so-called *terra-nullis* ("nobody's land") hypothesis—the assumption that pre-European Canada was a vast and empty land—and argued that the First Nation's title claimed was "too large."

The challenge that the Tsilhqot'in Nation posed to Global Footprint Network: provide a scientifically sound evaluation of the capacity of the land to support the native group around 1800, prior to European influence and trade.

Global Footprint Network researchers approached the problem from several angles. One was to study the Ecological Footprint of the current population of bears living on the territory. The theory was that the findings about these omnivorous animals that compete for the same food niche as humans could be used to extrapolate the Ecological Footprint of a human group living off the same land.

A second angle involved studying the current local population of wild horses as a proxy for the hooved animals that would make up the main source of animal proteins

Chilko Lake, a 180 -km lake in west-central British Columbia, hugs the south-eastern side of the Tsilhqot'in Nation's claimed land by Trevor MacInnis via Wikimedia Commons (CC BY-SA 3.0) commons.wikimedia.org/wiki/file:Chilko_Lake.JPG

for the people. And a third approach used anthropological accounts to study the general food habits of the aboriginal population to evaluate how much food they would gather, how much they would store, and what the impact of living on the edge was.

Global Footprint Network's research findings converged to the conclusion that the claimed area had the capacity to support between 100 and 1,000 people – in other words, that this entire area was needed to meet the needs of the smallish (sic) nation – given their traditional hunter gatherer lifestyle. Their Footprint was both wide and light, meaning that it required a wide area given the small volume of natural resources harvested per hectare. Such a Footprint benefits biodiversity, ensuring that the natural capital can regenerate and thrive.

Global Footprint Network was able to show that, at best, *terra nullis* was an erroneous concept sustained over centuries, ignoring the physical reality of the resource flows supporting populations.

For the very first time, the legal pundits acknowledged this physical reality. "My argument was accepted by consensus by both sides of the case. In fact, I didn't even have to appear in court to testify since there was no need for cross-examination," said Mathis Wackernagel, president of Global Footprint Network and lead author of the research report.

After arguing the case in the Supreme

Court in November, Jack Woodward, the lead lawyer representing the Tsilhqot'in Nations, wrote Wackernagel, "We simply stated that because of the climate and geography of the area, only a limited number of people could sustainably live in the area, citing the expert opinion report you prepared for us many years ago."

The historical ruling that followed on June 26 gives the Tsilhqot'in Nation "the right to use and control the land and to reap the benefits flowing from it."

If you want to learn more about Tsilhqot'in Nation v. The Queen, 2014 SCC 44.

The Tsilhqot'in's legal battles began in the 1980s over clear-cut logging permits that were granted by the government of British Columbia without any consultation with the native community living on the affected land. The B.C. Supreme Court issued a non-binding ruling stating that the Tsilhqot'in probably had Aboriginal title over the land, and that the Crown ought to negotiate a fair and honorable settlement. The federal and B.C. governments appealed the ruling to the B.C. Court of Appeal and the Supreme Court of Canada.

Last November, Mathis

Wackernagel, president of Global Footprint Network and lead author of the research report, received this update from Jack Woodward, the lead lawyer representing the Tsilhqot'in Nation:

The court case you helped us on a decade ago finally has wound its way through the levels of court. We had a 339 day trial, then a lengthy appeal to the B.C. Court of Appeal, and last week it was heard on final appeal to the Supreme Court of Canada. In the brief oral submissions (only one hour is allowed to our side at that level of court) your name was mentioned in connection with the "carrying capacity" of the land of the Tsilhqot'in people. This was to counter the position of the Crown that the area for which aboriginal title was claimed was "too large". We simply stated that because of the climate and geography of the area, only a limited number of people could sustainably live in the area, citing the expert opinion report you prepared for us many years ago. (...) We should get a decision on that appeal in about six months.

As it turns out, “my testimony was accepted by consensus by both sides of the case,” Dr. Wackernagel says.

Paragraph 37 of the Supreme Court of Canada’s decision in the case of Tsilhqot’in Nation v. The Queen, 2014 SCC 44 reads:

[37] Sufficiency of occupation is a context-specific inquiry. "[O]ccupation may be established in a variety

of ways, ranging from the construction of dwellings through cultivation and enclosure of fields to regular use of definite tracts of land for hunting, fishing or otherwise exploiting its resources" (Delgamuukw, at para. 149). The intensity and frequency of the use may vary with the characteristics of the Aboriginal group asserting title and the character of the land over which title is asserted. Here, for example, the land, while extensive, was harsh and was capable of supporting only 100 to 1,000 people. The fact that the Aboriginal group was only about 400 people must be considered in the context of the carrying capacity of the land in determining whether regular use of definite tracts of land is made out.

Aboriginal rights are protected by the Constitution of Canada. These include the rights to hunt, fish and trap. Although various court decisions have upheld them in recent years, the courts have typically stopped short of declaring land ownership of First Nations over the territories where they exercise their Aboriginal rights.

Until now, that is. The historical ruling gives the Tsilhqot'in Nation "the right to use and control the land and to reap the benefits flowing from it."

"The law in Canada is leaning towards an ecological interpretation of constitutionally-protected Aboriginal rights so that they are not merely sterile or formal rights, but reality-based and scientifically supported," Jack Woodward told us. "For example, protection of sufficient habitat to produce a sustainable harvestable surplus is the measure of whether the government has fulfilled its responsibilities to afford sufficient access to fish and wildlife harvesting rights."

In its first-of-a-kind decision, the Supreme Court of Canada emphasized that obtaining the consent of the native group affected by resource-management decisions within their land, whether before or after a declaration of Aboriginal title, would allow governments and individuals to avoid a legal infringement.

"Today is a new day," declared Grand Chief Stewart Phillip of the B.C. Union of Chiefs, speaking in Vancouver on the day the Supreme Court's ruling was announced. "We are in an entirely different ballgame. We're moving away from the world of mere consultation into a world of consent."

Indeed, the Supreme Court effectively raised overnight the significance of native groups in decision-making processes, in conformity with the 2007 United Nations Declaration on the Rights of Indigenous Peoples which calls for the free prior and informed consent before development on indigenous lands (it should be noted that Canada voted against it.)

At the end of the day, First Nations currently fighting legal battles against various major projects that risk to encroach on their lands and disrupt their natural ecosystems (see Enbridge's Northern Gateway pipeline proposal and the Kinder-Morgan proposal) are standing on stronger legal grounds than ever before in their history. The B.C. and federal government are currently negotiating some 100 land claims by native groups across Canada.

Story Credit: Global Footprint Network, 7/18/2014. http://footprintnetwork.org

TRADITIONAL KNOWLEDGE

AN UNTAPPED RESOURCE

by SHAYNA WILSON

MONGABAY NEWS, AUGUST 2014

- People from local communities may provide information on area wildlife that is as accurate and cheaper than traditional scientific assessments.

Figuring out what species live in a given area is important to the determination of its conservation importance. Traditionally, these biodiversity assessments have been done directly by scientists via surveys, which can be very time-intensive and expensive. However, a new study published recently in Conservation Letters found that interviewing people in local communities who are familiar with the species of their regions could be just as effective – and much cheaper.

The study, co-authored by Finn Danielsen, an ecologist who works with the Nordic Foundation for Development and Ecology, connects indigenous and western scientific knowledge for biodiversity assessments through the use of focus groups. Bringing together these two sources of knowledge is a goal of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), whose overall aim is to evaluate the earth's environment and recognize changes over time.

To test the usefulness of interviewing local people for data collection, the researchers visited Miskito and Mayangna communities that reside in the Bosawás Biosphere Reserve in Nicaragua, an area regarded as a conservation focal point because of its rich biodiversity. Local community members took part in focus group discussions concerning the presence and abundances of plant, mammal and bird species.

The researchers then compared the focus group data to information collected

The study took place in the Bosawás Biosphere Reserve in Nicaragua, home to many species such as harpy eagles (Harpia harpyja). Photo by Rhett A. Butler.

in the field by trained scientists. The main difference between focus group and field data is that the former focused on qualitative data while the scientists collected quantitative data. The results, which were collected over a period of two years, showed that there were no significant differences between the results of the locals and the scientists, while the focus group method proved to be eight times cheaper.

As well as participating in focus groups, local community members also partook in line transect routes laid out by scientists. They walked these routes on different days than the researchers, but used the same pace and length. The locals who paced these routes every three months were carefully selected by village leaders based on their experience and interest; visual observations, tracks, feces, and sounds of the animals were recorded. Although results were somewhat similar between both groups, local people consistently counted higher numbers of animals than did the trained scientists.

According to Danielsen, the scientific community has previously dismissed contributions from local people, regarding it as largely unreliable "anecdotal information." However, "when scientists survey the

biodiversity of an area, they often begin by asking the indigenous and local communities what species there are and where they are found," since often these communities depend on these natural resources and species for their survival and may therefore be more knowledgeable.

Danielsen said he and his colleagues "were very surprised that the focus group findings matched both the community members' transect results and the scientists' transect results so well. Just by living in the area and observing their environment on a day-to-day basis, indigenous and local communities can have a very detailed knowledge about the abundance of the resources."

The question that remains is if focus groups will or could ever be implemented on a more global basis. Danielsen emphasized the importance of needing a strong network of facilitators to be able to encourage dialogue between community members, as well as facilitating focus groups and training others to do the same.

"If community members can undertake biodiversity assessments and find the same results as scientists, it may be possible for community members to have a more profound role in biodiversity assessments," he said, "and this may

Focus group meeting in session in San Andres. Photo by Sune Holt.

A local indigenous hunter from the Miskiti tribe noting his observations on a line transect route. Photo by Sune Holt.

have the important added benefit that it may create a direct link between the assessments and the management of the area."

Not only are these results important in demonstrating that indigenous and local knowledge is a reliable source of information for biodiversity assessments, but they may also help promote positive relationships between the local communities and scientists. In addition, the use of focus groups could be a proficient, cost-effective way of aiding the increasing demand for environmental intelligence, and provide for better resource management.

"Community leaders and people regularly discuss the availability and quality of natural resources. In this way, they control and monitor access to certain areas and the use of species and resources… IPBES and other efforts to monitor biodiversity and natural resources may be designed to build upon and strengthen such existing community-based monitoring," Danielsen said.

Story Credit: Shayna Wilson (August 12, 2014). An untapped resource: new study finds local people may trump scientists at biodiversity surveys. http://news.mongabay.com

MEXICO'S COCOPAH PEOPLE REFUSE TO DISAPPEAR

by DANIELA PASTRANA

Inter Press Service (IPS) News - EL MAYOR, Mexico , Sep 8 2014 - In their language, Cocopah means "river people". For over 500 years the members of this Amerindian group have lived along the lower Colorado River and delta in the Mexican states of Baja California and Sonora and the U.S. state of Arizona.

They fish and make crafts for a living, have strong family ties, and are united by their Kurikuri or rituals and funeral ceremonies – and, now, by the struggle to keep from disappearing, in a battle led by their women. Today, the Cocopah number just over 1,300 people, most of whom live in Arizona.

"I'm Hilda Hurtado Valenzuela. I'm a fisherwoman. And I am Cocopah," says the president of the Cocopah Indigenous People Cooperative Society.

She and other women of this community introduce themselves this way at an assembly attended by IPS, held to discuss the federal government's promise to finally consult them about a fishing ban which took away their livelihood and practically condemns them to extinction.

"No government has the right to take our habitat from us," Hurtado told IPS during a visit to the El Mayor Cocopah Indigenous Community, where the Red de Periodistas de a Pie (Journalists on Foot Network) and the Mexican Commission for the Defence and Promotion of Human Rights are carrying out a project for the protection of human rights defenders, financed by the European Union.

In May, the 61-year-old Hurtado, a mother of four and grandmother of 10, sat down on the road connecting the port of San Felipe on the Gulf of California with Mexicali, the capital of the

The Zanjón, the nucleus of the Alto Golfo de California y Delta del Río Colorado Biosphere Reserve in northwest Mexico, where the Cocopah have fished for a living for centuries. The restrictions on fishing condemn them to extinction. Credit: Courtesy of Prometeo Lucero

state of Baja California, which abuts the U.S., and refused to budge until the federal government formalised its promise to hold a consultation with the local communities.

"The government agreed to do something that it should have done 25 years ago," said the lawyer Ricardo Rivera de la Torre of the Citizens Commission of Human Rights of the Northwest, an organization that has been documenting violations of civil rights in Baja California since 2004.

Rivera de la Torre and Raúl Ramírez Baena took the case to the Inter-American Commission on Human Rights in 2008.

"The government violated the Cocopah people's right to consultation as outlined in the International Labour Organisation's Convention 169," which Mexico ratified in 1990, said Ramírez Baena.

ILO Convention 169 Concerning Indigenous and Tribal Peoples requires prior consultation of local indigenous communities before any project is authorised on their land.

But in 1993, without any prior consultation, the government decreed the creation of the Alto Golfo de California y Delta del Río Colorado Biosphere Reserve. The nucleus of the reserve is the Zanjón, where the Cocopah have fished for the Gulf weakfish *(Cynoscion othonopterus)* for centuries.

The Gulf weakfish lay their eggs between February and May in shallow waters in the Gulf of California where the

states of Sonora and Baja California meet, and the fish are widely sold during Lent, when Catholics abstain from eating meat on Fridays.

After the biosphere reserve was created, a Reserve Management Plan was adopted in 1995, along with a string of laws and regulations – such as the Law on Ecological Balance and a fishing quota and ban – which restricted the fishing activities of the Cocopah to levels that have made it impossible for them to make a living.

"The case of the Cocopah is an example of how ultra-conservationist policies can endanger the existence of a native community," said Yacotzin Bravo, another lawyer with the Citizens Commission of Human Rights of the Northwest.

The Mexican constitution defines indigenous people as the descendants of the populations that inhabited the area before the state was formed and who preserve their ancestral cultural or economic institutions.

Article 2 of the constitution establishes that native people have "preferential access" to the nation's natural assets.

"Indigenous rights are the rights of peoples," expert in indigenous law Francisco López Bárcenas told IPS. "Not of persons, not of municipalities, not of rural communities. With respect

A group of Cocopah women in the Indiviso ejido, in the El Mayor Cocopah Indigenous Community in the Mexican state of Baja California, during an assembly where they discussed how to carry out a consultation on reforming the regulations and laws that limit their fishing in the biosphere reserve. Credit: Courtesy of Prometeo Lucero

to indigenous rights, we are talking about the appropriation of territory, which is necessary for a people to be able to exist as such.

"They depend for a living on fishing, on a close relationship with their natural surroundings. It's not only about money. First, as a result of the laws on agriculture, their territories were shrunk to small spaces, and now their main livelihood activity is reduced. And if they can't fish, they have to go to other parts to find work," he said.

Every year, just after the waning moon, the weakfish begin their migration to the shallow waters of the Colorado River delta, and fishing season starts.

The Cocopah go to sea in their "pangas" or fishing boats and sit quietly until they hear the weakfish and throw their "chinchorros" or nets. The Cocopah capture between 200 and 500 tons of fish per season.

"What the government has done with us is segregation," Juana Aguilar González, the president of the El Mayor Cocopah Rural Production Society, told Tierramérica. "They know that we Indians don't threaten the environment."

The Cocopah are not the only ones who catch weakfish. There are also two non-indigenous cooperatives in the area – San Felipe in Baja California and Santa Clara in Sonora – with a fishing capacity 10 times greater, according to statistics from the governmental National Commission for Knowledge and Use of Biodiversity (CONABIO).

The weakfish "captured by the Cocopah are approximately 10 percent of the recommended quota, which shows that the fishing done by that indigenous community, even if they fish in the nucleus of the reserve, does not hurt the ecological balance or threaten the species with extinction," says recommendation 8/2002 of the National Human Rights Commission addressed to the ministries of the environment and agriculture.

"The decree creating the reserve changed our lives," Mónica González, the daughter of the late Cocopah governor Onésimo González, said sadly. "Now, instead of being busy organising our dances, we have to be worried about the legal action, the trials, confiscations and arrests."

The Cocopah, descendants of the Yumano people, are one of the five surviving indigenous groups in Baja California.

In the 17th century, some 22,000 Cocopah were living in the Colorado River delta. Today there are only 1,000 in the Cocopah Indian Reservation in the southwest corner of Arizona, and just over 300 in Mexico, in Baja California and Sonora, according to the governmental National Commission for the Development of Indigenous Peoples.

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) , Cocopah is an endangered language. There are only 10 Cocopah speakers still alive. Years ago one of them, 44-year- old Mónica González, began to make an effort to revive the language.

"Sometimes I think our leaders talk about the Cocopah as if we had already died, but we are alive and still putting up a struggle," she told IPS.

Edited by

Estrella Gutiérrez,

Translated by

Stephanie Wildes

Story Credit: IPS News, by Daniela Pastrana, September 2014. This story was originally published by Latin American newspapers that are part of the Tierramérica network., http://www.ipsnews.net.

A BRAZIL TRIBE TEAMS UP TO SAVE RAINFOREST

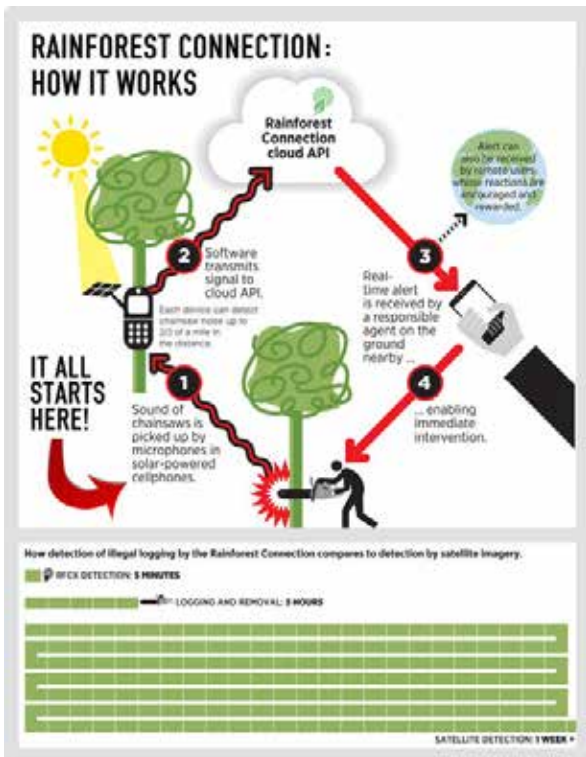
by SOPHIE YEO

Responding to Climate Change (RTTC) News - INDIGENOUS PEOPLE IN BRAZIL join forces with a San Francisco tech start-up to protect the Amazon rainforest from illegal logging.

The company, Rainforest Connection, takes discarded smartphones and transforms them into solar-powered listening devices that register the sounds of chainsaws and trucks in areas where logging is illegal.

The phones then send alerts to rangers and officials, allowing them to respond and prevent deforestation occurring. Now, 30 members of the Tembé tribe are being trained as forest rangers, empowering them to stop unlawful incursions onto their land.

"The technology being developed by Rainforest Connection is an extremely powerful tool for the protection of rainforests, especially in our case, when combined with the on-the-ground presence and determination of local indigenous groups serving as guardians of their



Smartphone devices are hidden in the trees, where they detect sounds of chainsaws (Pic: Rainforest Connection)

traditional lands which occupy over a quarter of the entire Amazon region," said Vasco M. van Roosmalen from Equipe de Conservação da Amazônia, which is running the training programme.

The advantage of the project over traditional satellite monitoring systems is that it transmits real time information directly to those who are able to respond, offering the best chance to stop illegal loggers in their tracks.

Deforestation in the Amazon threatens the rights of indigenous people, biodiversity, and contributes to climate change by destroying a valuable carbon sink.

The Tembé people, with a population of 1,500, have a strong incentive to stand up for the rainforest. They recently recovered their rights to around 600,000 hectares of lost land, but protecting the area has been a challenge, and they have reported massive illegal logging operations.

Despite measures by the Brazilian government to tackle illegal logging, a two-year investigation by Greenpeace released this year claimed that the problem was still "out of control", and that in Para State, the country's largest producer and exporter of timber, 78% of logging is illegal.

The black market for illegal timber puts indigenous people's lands under threat, and drives climate change through cutting down these large stores of carbon.

Rainforest Connection is also planning an additional pilot project in the Mamoni Valley Preserve in Panam. Partnering with the Guna indigenous population of Panama, this would eventually protect thousands of acres of rainforest threatened by logging.

Musician Neil Young has supported the project. "Through the power of sound, this technology can give the forest a voice," he wrote in a letter. "When the forest is threatened, the forest can speak. And for the first time, you can hear it."

OPPORTUNITY

NEXT STEP LAFARGE

by TANYA DIMITROVA

Mongabay News - August 24, 2014. Scientists have discovered a new snail species on a limestone hill near a cement quarry in Malaysia, which as far as they know lives nowhere else in the world. The animal's shell is only one tenth of an inch in size.

"Narrow endemic species are a common occurrence on limestone hills," Jaap Vermeulen, lead author of the new study, told mongabay.com. "A good biologist can quite easily discover several species of endemic invertebrates on an isolated, unsurveyed hill."

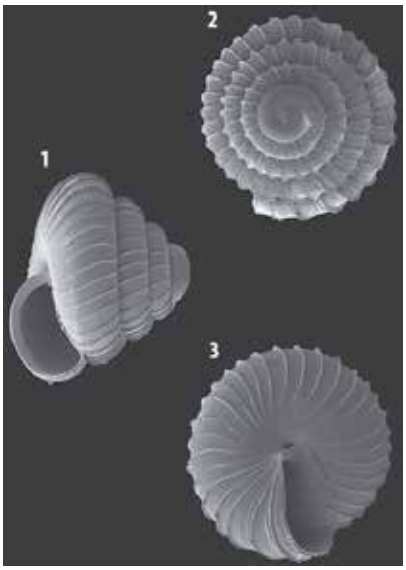
Although just unearthed, the miniscule snail is already threatened with extinction. It lives on a limestone hill called Kanthan given as a concession to an international company Lafarge. The cement producer quarries the hill for raw materials. As a result, the snail will be included as Critically Endangered in the next update of the IUCN Red List for Endangered Species.

The scientists who discovered the animal named it *Charopa lafargei,* after the cement company that will decide its fate.

"I'm not aware of a species threatened with extinction which has been given the name of the company which can determine whether it goes extinct or survives," said Tony Whitten from Fauna & Flora International.

The new snail is not the only endemic species found on the hill. Kanthan is also home to nine plant species that are on Malaysia's Red List of Endangered Plants, one Critically Endangered spider *(Liphistius kanthan),* one gecko *(Cyrtodactylus guakanthanensis)* and two snails *(Opisthostoma trapezium and Sinoennea chrysalis)* that are found nowhere else in the world.

Representatives from Lafarge have attended a number of talks with local environmentalists



Various views of the shell of the new snail species named after Lafarge. Photo courtesy of Vermeulen et al.

Aerial view of cement quarry and limestone hill home to a number of species found nowhere else including a new snail. Photo by: Ong Poh Teck/Basteria.

and discussed potential conservation efforts on the south side of the hill—the confirmed home of the Critically Endangered spider and gecko.

"We are committed to ensuring the preservation of rare biodiversity that may be found on land identified for quarry development," said Jim Ruxton, Senior Vice-President, Industrial Operations, Lafarge Malaysia.

The new snail, however, was discovered on the north side of the hill—an area which is not planned to receive any special protection.

The company offered no comment on the name selection for the new species.

Environmentalists suggest that what is ultimately needed for good limestone hills management in Malaysia is a region-wide environmental assessment which looks at the biodiversity, physical environment, social and economic costs and benefits of quarrying these hills. The industry could come up with a ranking for the hills as potential quarry sites. Some will be low-hanging fruits because they are already heavily explored and don't have much wildlife worth protecting. Others, though, will actually have dozens of endemic species and would better be left alone.

"That would be a strategic and logical way to do it," said Whitten.

Likely part of the issue, however, is that Lafarge has already invested a lot in Kanthan hill. The company has paid a concession to the local government and has built a cement processing plant immediately next to it. The fate of 'their' newly discovered snail remains uncertain.

CITATION: Vermeulen, J.J. & Marzuki, M.E. (2014) 'Charopa' lafargei (Gastropoda, Pulmonata, Charopidae), a new, presumed narrowly endemic species from Peninsular Malaysia. Basteria. 78 (1-3): 31-34 -

Story Credit: Tanya Dimitrova (August 24, 2014). http://news.mongabay.com

AMAZON'S BIGGEST FISH FACES EXTINCTION

by ELIZABETH PALERMO

Live Science News, August 14, 2014 -
Measuring 10 feet (3 meters) long and weighing in at more than 400 pounds (180 kilograms), it's hard to imagine that the arapaima, the largest fish in the Amazon River basin, could ever go missing. But these huge fish are quickly disappearing from Brazilian waterways, according to a new study.

A recent survey of fishing communities in the state of Amazonas, Brazil, found that the arapaima is already extinct in some parts of the Amazon basin. In other parts of the Amazon, its numbers are rapidly dwindling.

However, the researchers also uncovered some good news: In communities where arapaima fishing is regulated, the species is actually thriving, giving the researchers hope that conservation of the species is still possible.

Commonly known as pirarucu, arapaima *(Arapaima gigas)* are the largest freshwater fish in South America. They possess an uncommon quality for fishes— the ability to breathe air. This feat is made possible by a primitive lung, which arapaima possess in conjunction with a gill system that allows them to breathe underwater. The fish developed this function because they typically live in oxygen-poor waterways, according to the Tennessee Aquarium, which is home to several arapaima.

But while this supplemental breathing technique helps the fish survive in its native habitat, it also makes the arapaima much easier to catch, according to the researchers.

"Arapaima spawn on the edges of floodplain forests and come to the surface to breathe every 5 to 15 minutes, when they are easily located and harpooned by fishers using homemade canoes," said Caroline Arantes, a doctoral student in wildlife and fisheries science at Texas A&M University in College Station, who helped conduct the study.

Photo: Sergio Ricardo de Oliveira (Live Science)

FISHY POLICIES

Of the five known species of arapaima, three have not been observed in the wild in decades, according to study co-author Donald Stewart, a professor with the State University of New York at Syracuse's College of Environmental Science. Stewart said that all five species dominated fisheries in the Amazon just a century ago.

A commercially important species, arapaima are traditionally fished by local Amazonian communities, a practice that's largely unregulated, the researchers said. To find out how this lack of regulation might be affecting the giant fish, the researchers interviewed local fishers operating within a 650-square-mile (1,683 square kilometers) floodplain in northwestern Brazil.

In 19 percent of the 81 communities surveyed, the arapaima was found to be already extinct. And the giant fish's numbers are depleted, or approaching extinction, in 57 percent of the communities surveyed. In 17 percent of the communities, the fish were deemed "overexploited," according to the researchers.

"Fishers continue to harvest arapaima regardless of low population densities," said study leader Leandro Castello, an assistant professor of fisheries at Virginia Tech's College of Natural Resources and Environment, in Blacksburg.

But the blame for the arapaima's dwindling numbers doesn't just fall on local fishing communities. Policymakers in Brazil may also be responsible, the researchers suggest. Government officials in the region tend to follow a "bioeconomic" line of thinking, which may have doomed the arapaima, the researchers said.

"Bioeconomic thinking has predicted that scarcity would drive up fishing costs, which would increase price and help save depleted species," Castello said. "If that prediction were true, extinctions induced

by fishing would not exist, but that is not what has happened."

FISHING DOWN

What is happening in the Amazon River basin is in line with something Castello and his colleagues call the "fishing-down" theory. This idea helps explain how large, high-value, easy-to-catch fish — such as the arapaima — can be fished to extinction.

In communities where arapaima are scarce, local fishers stop hunting the fish in traditional ways, such as with a harpoon. However, this doesn't mean fishers aren't killing arapaima; they're simply killing them in a different way.

These fishers use gill nets to harvest smaller fish, including juvenile arapaima. While local fishers don't necessarily catch the smaller arapaima on purpose, by "fishing down" they still end up killing the fish and further depleting the arapaima population.

But there is a bright side to this sad fish tale, according to study co-author David McGrath, a researcher with the Earth Innovation Institute in San Francisco. In communities that have implemented fishing rules, such as imposing a minimum capture size for arapaima and restricting the use of gill nets, the density of arapaima is 100 times higher than in places where no such rules exist.

"These communities are preventing further arapaima extinctions," McGrath said.

Unfortunately, only 27 percent of the communities surveyed have management rules in place for fishing arapaima. One community that does manage these fish, Ilha de São Miguel, banned the use of gill nets two decades ago. It now has the highest arapaima densities in the region, the researchers found.

But regulations like those implemented by the community of Ilha de São Miguel are not common in floodplain regions, Castello said. These areas, he explained, suffer from widespread illegal fishing, a fact that he worries could lead to fishing-induced extinctions for other Amazonian species.

FIXING THE SITUATION

Part of the problem, Castello said, is a lack of economic alternatives for the fishers who survive on the commercial trade of threatened fish species. But the researchers said their findings demonstrate that it's possible to save the arapaima from extinction without jeopardizing local food supplies.

"Fisheries productivity in Ilha de São Miguel is also the highest in the study area," Castello said. "Cast nets are allowed because they are much more selective, yet they yield abundant fishes for local consumption, so food security for the community is not compromised."

This bodes well for both fish and fishermen, said the researchers, who believe that spreading the fishing practices of Ilha de São Miguel to other areas of the Amazon could bring this unique species of fish back from the brink.

"Many previously overexploited arapaima populations are now booming due to good management," Castello said. "The time has come to apply fishers' ecological knowledge to assess populations, document practices and trends, and solve fisheries problems through user participation in management and conservation."

The results of the study were published online today (Aug. 13) in the journal Aquatic Conservation: Freshwater and Marine Ecosystems.

Editor's Note: This story was updated to reflect that the arapaima's ability to breathe air is uncommon, but not unique.

Follow Elizabeth Palermo @techEpalermo. Follow Live Science @livescience, Facebook & Google+. *Original article on Live Science*.

Story Credit: Elezabeth Palermo, Live Science, August 13, 2014 - www.livescience.com

VIEWS FROM MAARS

MARITIME ABORIGINAL AQUATIC RESOURCES SECRETARIATE

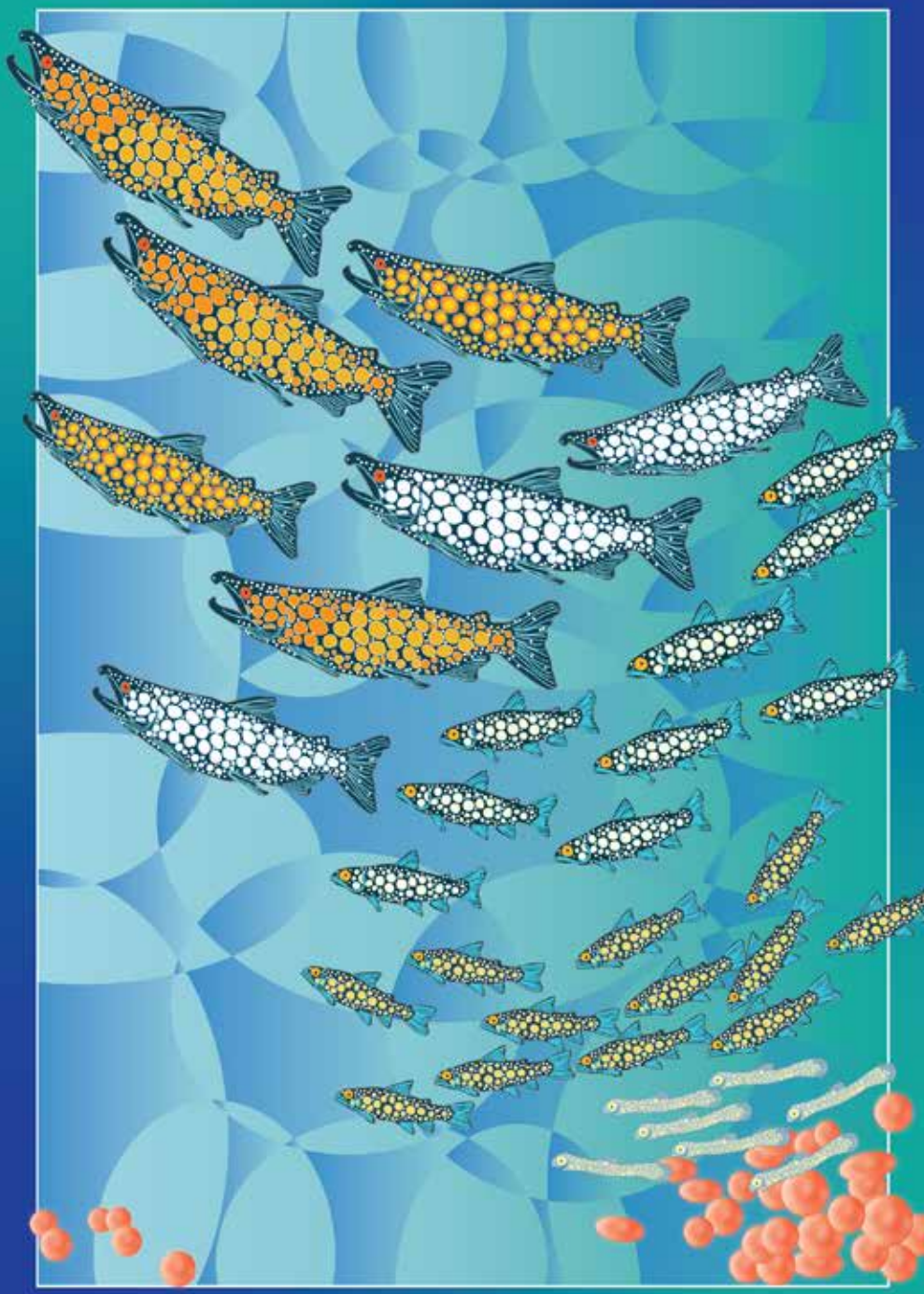


Illustration by Anna Nibby-Woods

NATURAL WEALTH

3 CASE STUDIES REVEAL SOLUTIONS

by ROGER HUNKA

The destruction accumulating in our rivers, streams, waterways, seacoasts, shores, wetlands, and forests, combined with rising sea levels, ocean toxicity, increasing deposits of mercury, acid rain, climate and oceans warming points to a road of oblivion. The never ending obsession of elected legislators and parliamentarians to grant license for unsustainable resources extraction which suck out the last ounce of oil, the last strand of wood fibre, the last gram of precious metals, with the dumping of toxic wastes into crystal clear lakes prevail over the noble values and respect for our natural heritage. The never ending extractive techniques and processes validate human ingenuity to subjugate the "frontier lands, waters and space" of the geographic boundaries of Canada. The politic of wealth creation drowns the trepidation and fear of Canadians being held hostage on the road to the oblivion of our biodiversity and our true national wealth.

Never before in the limited history of the Federation of the Peoples of Canada have Canadians been driven to abandon our belief in our natural heritage as an integral part of our national identity and history for the promise of wealth and everlasting prosperity.

Never before has the aesthetic, cultural, spiritual, recreational, educational, historical, economic, medical, ecological, and scientific reasons and value of natural/wild life occupying century and millennium habitats within waters, lands, mountains and the air over the vast living biosphere Canada, been so undervalued by legislators and parliamentarians in favour of unsustainable resources extraction for wealth creation and greed — the new measure for national wealth and human progress for a higher standard of life.

Illustration by Anna Nibby-Woods

Never before these last two decades have legislators and parliamentarians been so directly implored by so many Canadians in all walks of life, to consider that the national wealth of Canada is the rich lands and waters and the livelihoods of peoples who hold respect for nature as the true national wealth of Canada. When we lose or are denied our natural biodiversity and are unable to recover this natural biodiversity, that is the true loss of national wealth now and forever.

We can trace the abandonment of our values with the legislative and parliamentarian weaselling during negotiations for the implementation of our national "Biodiversity Conservation Legislation" Species at Risk Act (SARA). SARA is Canada's response to the three pillars of the Convention on Biological Diversity, first championed by Canadians in the 70's and 80's and subsequently moved for adoption by Canada in Rio in 1992. Canada was the first Nation to support "conservation", "sustainable use of resources" and "the equitable sharing of benefits arising from the use of biodiversity".

In SARA, Canada recognized the roles of the Aboriginal Peoples of Canada and of wildlife management boards established under land claims agreements in the conservation of wildlife in this country as essential.

With the final enactment, and coming into force of SARA, 2002, we witness a National Aboriginal Committee on Species at Risk (NACOSAR), without wings or song or home to nest. We witness an Aboriginal Traditional Knowledge (ATK) Subcommittee of COSEWIC curtailed in their efforts to introduce Traditional Knowledge in assessments, and to encourage the use of ATK in recovery strategies, action plans, and management actions. We witness a COSEWIC of dedicated independent scientists devoting their time and volunteering their expertise to conserve our national biodiversity, operating without administrative support to locate and secure adequate venues on a timely basis from which to conduct peer reviews and committee reviews and other matters to determine the status of species.

We witness a lack of consultation, accommodation, co-operation, and participation of the Aboriginal Peoples in regard to prospective species listing and the sharing of Aboriginal Traditional Knowledge.

In 2013, NACOSAR prompted Environment Canada to undertake four studies in an attempt to find some causes and some solutions to increase participation.

One such study was a *"Case Study on Consultation, Accommodation and Co-operation with Aboriginal Peoples undertaken by Environment Canada in regard to the Boreal Woodland Caribou, and by Fisheries and Oceans Canada in regard to the Inner Bay of Fundy Atlantic Salmon, and the American Eel; and identification of Gaps and suggestions to Increase the level of Aboriginal Participation in the Species At Risk Act".*

The case study was contracted to the Maritime Aboriginal Peoples Council, which produced a report to NACOSAR in July of 2014.

The Case Study arrived at conclusions for each of the three species studied, and developed six themed recommendations with a total of thirty-nine action items.

RECOMMENDATIONS:

- Bridge the Homo-centric and Eco-centric World Views;
- Advance Full, Effective and meaningful Participation;
- Prioritize Communications, Awareness and Education;
- Uphold the Honour, Duty and Good Faith Conduct of the Crown;
- Support Aboriginal Peoples Involvement in Developing Strategies and Plans
- Resolve Inter-jurisdiction relationships in the implementation of SARA.

The Report is available on line, or to secure a hard copy, contact MAPC.

MAN-MADE NOISE MAKES EELS MORE SUSCEPTIBLE TO PREDATORS

by UNIVERSITY OF BRISTOL

Despite their reputation as slippery customers, a new study has shown that eels are losing the fight to survive when faced with marine noise pollution such as that of passing ships.

Scientists from the Universities of Exeter and Bristol found that fish exposed to playback of ship noise lose crucial responses to predator threats. The study, published today in the journal Global Change Biology, found European eels were 50 per cent less likely to respond to an ambush from a predator, while those that did had 25 per cent slower reaction times. Those that were pursued by a predator were caught more than twice as quickly when exposed to the noise.

Lead author Dr. Steve Simpson, Senior Lecturer in Marine Biology & Global Change at the University of Exeter, said: "Our findings demonstrate that acute acoustic events, such as the noise of a passing ship, may have serious impacts on animals with direct consequences for life-or-death behavioural responses. If these impacts affect whole populations then the endangered eel, which has seen a 90 per cent crash in abundance over the past 20 years due to climate change, may have one more problem to deal with as they cross busy coastal areas."

To understand what may cause this loss

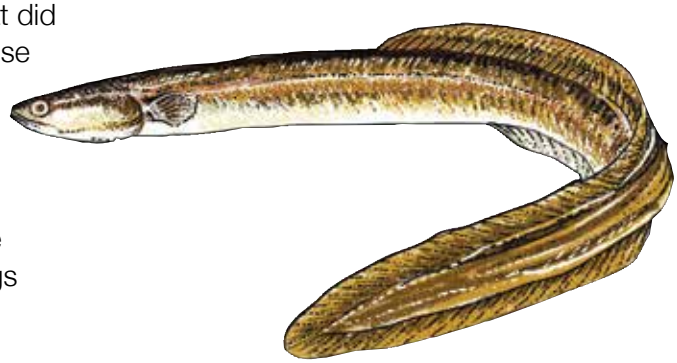


Illustration by Anna Nibby-Woods

Photo credit: University of Bristol. Fish exposed to playback of ship noise lose crucial responses to predator threats.

of crucial anti-predator behaviour, the team also tested physiology and spatial behaviour, and found heightened stress levels (increased ventilation and metabolic rate) and reduced lateralised behaviour (right-left preferences) when eels were subjected to playback of ship noise.

Co-author Dr. Andy Radford, Reader in Behavioural Ecology at the University of Bristol, said: "The fact that eels were affected physiologically and spatially suggests that other important functions may also be affected. We focused on anti-predator responses as, unlike impacts on movement or feeding, there is no way to compensate for being eaten after the disturbance goes away."

This study highlights the importance of assessing the scale of impacts of the anthropogenic noise that now pervades many coastal environments. Dr. Simpson said: "If we want to effectively manage noise in the marine environment, we next need to assess the spatial scale over which individual animals and populations are affected. This means taking experiments like this one to offshore environments near to real-world noise sources."

The research was funded by Defra and the Natural Environment Research Council.
PAPER: 'Anthropogenic noise compromises anti-predator behaviour in European eels' by Steve Simpson, Julia Purser and Andy Radford in Global Change Biology

Story Credit: http://www.bristol.ac.uk/news

FOOD & AGRICULTURE ORGANIZATION SHEDS LIGHT ON DEEP-SEA SHARKS

Food and Agriculture Organization (FAO) News, 28 May 2014, Rome - New identification guide series will help fishers improve reporting on bycatch.

Fishers will have an easier job of identifying deep-sea sharks thanks to a new series of FAO guides designed to improve reporting on catches and make deep-sea fisheries more sustainable.

Although they are not usually targeted, sharks and certain groups of sponges and cold-water corals can be impacted by boats trawling for fish in deep-sea fisheries at depths of between 200 and 2,000 metres.

In most cases, the survival rate of these deep-sea bycatch species after being released back into the sea is low.

Few countries are currently providing detailed information on deep-sea bycatch, making it difficult to understand the effects these fisheries are having on vulnerable marine ecosystems.

"There is a large variety of weird and wonderful species down there that play an important role in deep-sea ecosystems," said Johanne Fischer of FAO's FishFinder Programme. "But scientists and fishers alike can have trouble identifying them as there are few identification tools available. Instead they tend to lump species together as 'deep-sea sharks' when they report their catches."

In general, catch reporting on cartilaginous fish – sharks, rays, skates and chimaeras, all of which have skeletons made of cartilage rather than bone – is poor compared to those on bony fish.

Globally, and including all types of fisheries, only 36 percent of cartilaginous fish catches were identified at species or genus level in 2011, compared to more than 75 percent for bony fish.

"We need a clearer picture of what's happening, and this is especially true for the deep seas," said FAO Fishery Analyst Jessica Sanders. "The new FAO deep-sea guides

The Indian Ocean is home to about 36 percent of the world's deep-sea cartilaginous species, including the frilled shark.

will help fishers provide more detailed information, and as a result countries will be in a better position to implement FAO's International Guidelines for the Management of Deep-sea Fisheries in the High Seas, which set out recommendations for the conservation and management of vulnerable ecosystems."

FAO is supporting the implementation of sustainable fisheries management practices outlined in the International Guidelines through a full-scale programme on Deep-sea Fisheries, which includes improving data reporting by developing identification guides and training programmes.

LARGEST HABITAT ON EARTH

Deep seas are the largest habitat on earth, covering 53 percent of the sea's surface, and fishers have increasingly been exploiting their resources in recent decades.

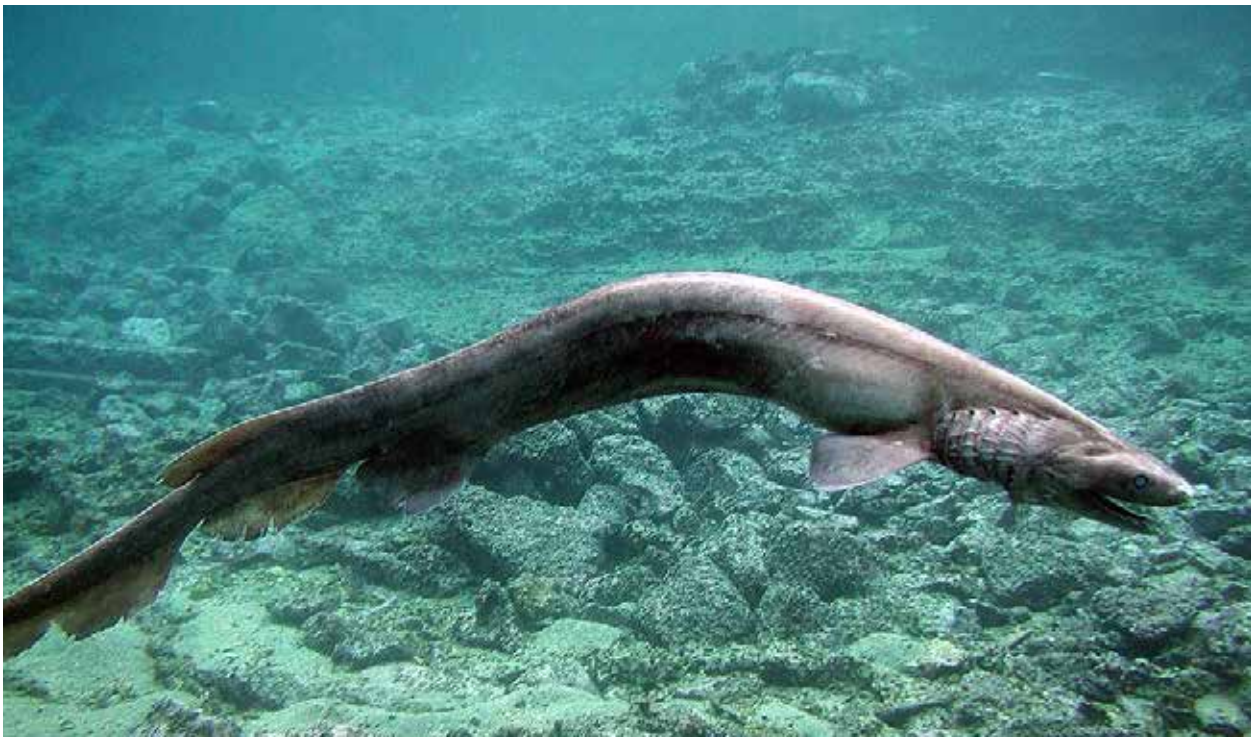
Far from the coasts, the sustainable management of the world's deep-sea fisheries is complex.

Deep-sea fisheries in Areas Beyond Natural Jurisdiction (ABNJs) are outside the control of any one country and frequently take place on the ocean's submerged underwater features such as seamounts. These ecosystems are often sensitive as many deep-sea species are slow to mature and reproduce, making them especially vulnerable to overfishing.

"More than in any other marine area, ensuring the long-term conservation and sustainable use of deep-sea marine living resources relies on the willingness of countries, and fishers themselves, to adopt sustainable and responsible management strategies," said FAO's Jeremy Turner, coordinator of Common Oceans, the ABNJ programme jointly managed by FAO and the Global Environment Facility.

SERIES KICKS OFF WITH INDIAN OCEAN

The first guide in the FAO series on deep-sea vulnerable



The little-known, deepwater-dwelling frilled shark (Chlamydoselachus anguineus) is one of the most primitive species of living shark

species focuses on the Indian Ocean, one of the most diverse and poorly known regions with regard to deep-sea cartilaginous fish.

In total, the Indian Ocean is home to about 36 percent of the world's deep-sea cartilaginous species: 117 deep-sea sharks, 61 skates and rays, and 17 chimaeras – shark-like fish also known as ghost sharks.

Species include the half-metre-long cookiecutter shark, known for gouging cookie-cutter shaped mouthfuls out of larger animals, as well as the bignose shark, the false catshark and the deep-water stingray, all of which can grow to around three metres.

The guide is laminated for use at sea and includes colour illustrations for the sharks most difficult to identify or most commonly caught, as well as entries for other species that are often misidentified.

Developed by FAO's Deep-sea Fisheries Programme in close collaboration with FAO FishFinder and with financial support from Norway and Japan, the guide is accompanied by a more in-depth species catalogue that includes detailed scientific information.

The series will eventually include sponges and corals and cover all of the world's most important deep-sea fishing areas.

FAO AND SHARKS

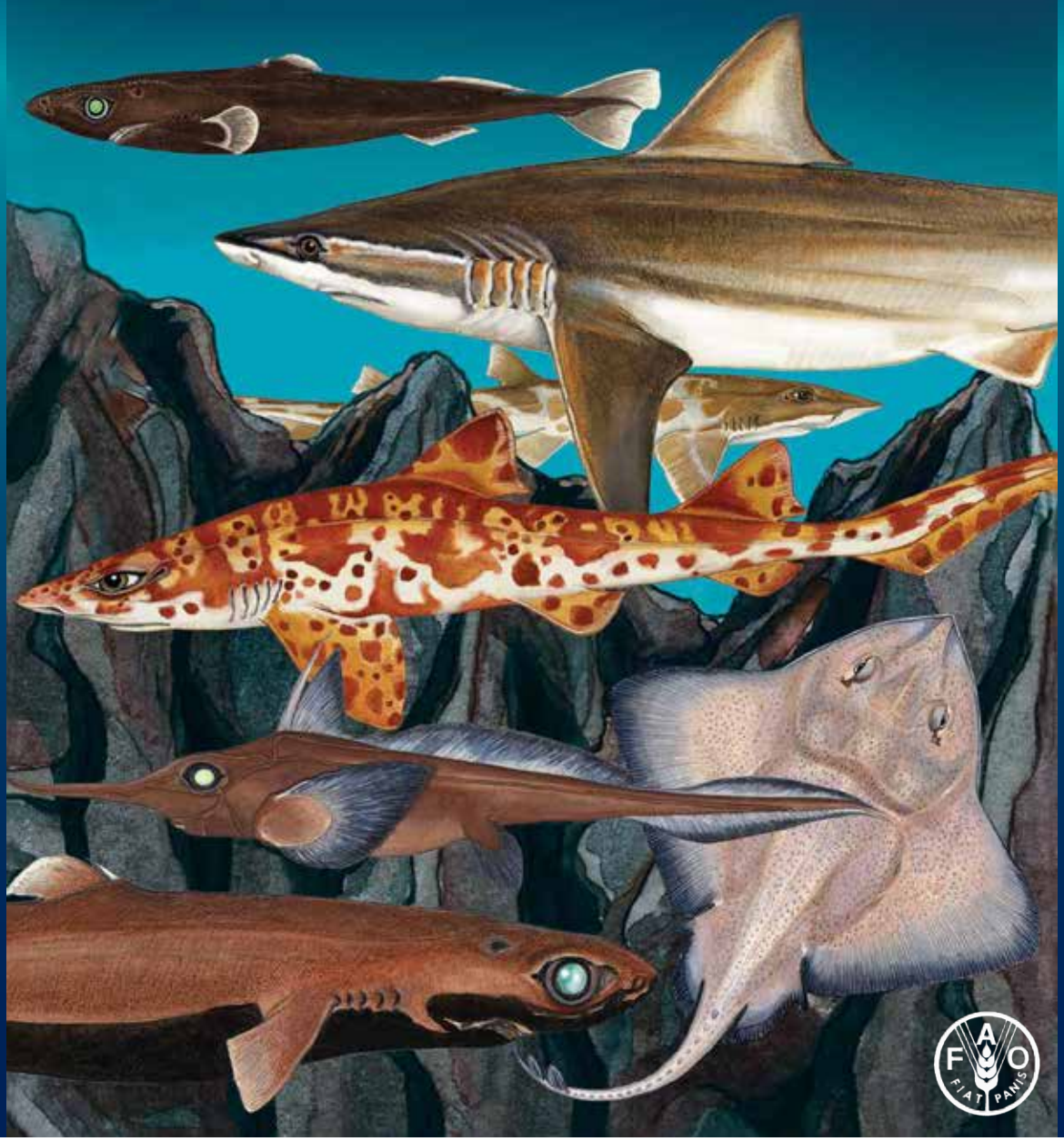
FAO has long been working to improve the management and conservation of sharks. An International Plan of Action for the Conservation and Management of Sharks adopted in 1999 stipulates that shark-fishing countries should produce national programmes for the conservation and management of sharks.

So far 18 of the world's 26 top shark-fishing nations have a national plan on sharks and five more are in the process of developing one.

Story Credit: Food and Agriculture Organization. http://www.fao.org

FAO FISH FINDER

Identification Guide to the Deep–Sea Cartilaginous Fishes of the Indian Ocean



NATURE'S ART

METHUSELAH UNDER WATER

by GILBERT VAN RYCKEVORSEL

A sunken, pine root-crown named by it's finder after the Biblical personality reputed to have reached the lofty age 900 years +). This stuck driftwood was found intact and embedded in the banks of the Shubenacadie River, Nova Scotia. Underwater photographer Gilbert van Ryckevorsel of Mahone Bay found and photographed this amazing, fantasy driftwood he calls 'artwork by nature,' to share with the world.

Driftwood has fascinated us and is well recognized in all its configurations as natural chance form art. This natural art is on display in and outside of homes and gardens as interesting nameless natural décor. Often this abstract art form is inspiration and the subject of legend.

Nova Scotia artist Gilbert van Ryckevorsel specializes in photographing the aquatic environments of Atlantic Canada's inland waters, rivers and lakes and is well known for his ECO TIME ROCKS.

ECO TIME ROCKS is a unique art form and reminiscent of the historic mariners craft known as "scrimshaw". Instead of the traditional engraving on whale-tooth ivory, this artist employs solid granite as his canvas. The black patina on rocks is achieved to permanently contrast when removed by diamond engraving and thereby exposes the underlying quartzite granite as white lines guaranteed to last indefinitely. Timeless buffeting by the waves of the North Atlantic and the powerful currents of inland rivers has created the infinite smooth shapes of ECO TIME ROCKS.

To see this and more visit http://salmonphotos.com.

This image taken in the Shubenacadie River by photographer Gilbert van Rijckevorsel has haunted me since I first saw it. The picture reminds me of something an Elder told me a long time ago about the legends of Shift Changers (as I know it to be…telik ji'jitew ni'n).

... Anna Nibby-Woods

2ND REPORT ON LAKE UTOPIA

by BARRY LABILLIOS

When driving north from Saint George New Brunswick on Route 785 in early April you will still see snow on the ground. To the left you will see the ice covered Lake Utopia, still sleeping after a long winter. Not far into the drive you will come upon a little stream called Mill Lake Stream which flows from Mill Lake into Lake Utopia. Although the two lakes are still slumbering under their blankets of ice and snow, Mill Lake Stream is awake with the arrival of spawning fish. The Large-bodied Lake Utopia Rainbow Smelt are amassing near the mouth of the stream. Shortly after dark nothing is moving, but the bubbling stream. The air temperatures are below freezing and you can hear coyotes howling to each other in the background. The moon is coming up over the horizon. It just appeared full two nights ago, giving the cue for the smelt to prepare for spawning.

Illustration by Anna Nibby-Woods

This is the kind of outing which is medicine for the soul. The murmur of the stream soothes. The chill of the air cleanses. The night sky gives perspective. The crunch of the snow gives focus.The sound of the coyotes reminds of all our kin. The "Tim's" cups in hand remind of the impact humans have had on the natural environment. This signals the time when Mother Nature calls the smelt into the stream.

Upon our return to the site where spawning occured last year we immediately observe that the melting of the snow has not really started compared to last year. At first, the numbers of fish coming in are low and they are very timid of the light. Within half an hour the numbers have increased to about 1,500 hundred smelt and they are now headed to the fast moving waters and starting to group along the shore at the


Over 15,000 Large-bodied Rainbow Smelt and 30 "Giant Smelt" were observed spawning on Mill Lake Stream.

entrance to Mill Lake Stream. Confident that the annual run is underway, we search further upstream to where they have spawned in years past. It is a very difficult walk as the crust of snow is very hard and slippery, with a flashlight in one hand and a hot coffee in the other, struggling to get through the trees and up and down the stream bank, hoping not to fall in the icy cold water. Emergency help is miles away and it is in the middle of the night.

While sitting in the car to warm up between surveys, the stories start about previous years. We recollect about where we had seen the smelt spawn and the numbers of smelt stacked on top of each other. In one evening alone last year, we estimated 5,500 Large-bodied Rainbow Smelt spawning in one evening and we hope that we can see those numbers again.

Once again we are down at the stream and we start taking estimates of the smelt. The number of fish has doubled to 3,000 smelt. This time they are actually spawning. We get as giddy as school children and can walk right up to the water's edge, kneel down along the stream, and actually watch the smelt spawn. They are no longer timid of the light or our presence as they are so focused on what Mother Nature sent them there to do. The Large-bodied Rainbow Smelt that we are seeing are on the small side, averaging 17-25 cm long, and they are spawning along both banks of the stream. However, this year they haven't travelled as far up the stream as in previous years. Probably due to low water levels, although we can see that if they just went through the culvert under the road, they would find better spawning habitat. Smelt are funny that way. Sometimes they will pass all sorts of obstacles, but other years they will stop at the slightest obstruction.

Something else looks different this year. Some of the fish are noticeably larger than the others - over 30 cm long. We know that there are two different types of smelt within Lake Utopia, the Small-bodied Rainbow Smelt and the Large-bodied Rainbow Smelt, so where do these "Giant Smelt" fit into the whole equation?

Over the course of the next couple of days, over 15,000 Large-bodied Rainbow Smelt, including 30 "Giant Smelt", were observed spawning in Mill Lake Stream. This is more than 7 times what is required under the Lake Utopia Rainbow Smelt Recovery Strategy.

A few weeks later, when doing a survey for the Small-bodied Rainbow Smelt, we stop back at Mill Lake Stream. We were totally shocked when we found 7,000 Small-bodied Rainbow Smelt spawning in the stream. No one has ever recorded them spawning there, so why are they there now?

This year, we may have shed some light on the situation of the Large-bodied Rainbow Smelt, but clearly we have raised several more questions. We look forward to next year and the wonders we are sure to witness.

ANOTHER THREAT

MERCURY POLLUTION IN UPPER OCEAN TRIPLED SINCE INDUSTRIAL REVOLUTION

by TOM REVELL

BLUE & GREEN TOMORROW NEWS, AUGUST 10th, 2014 – The amount of mercury in the upper ocean has tripled since the industrial revolution, according to a new study that leaves little doubt that humans are to blame. Mercury, which is made as a byproduct in human activities such as fossil fuel burning and the mining, is toxic not just to marine life but also to us.

Using data collected from 12 sampling cruises over the past eight years, the study found that mercury levels in the upper 100 metres of the ocean have increased by a factor of 3.4 since the 1700s. The Arctic and North Atlantic oceans are the worst affected.

"It would seem that, if we want to regulate the mercury emissions into the environment and in the food we eat, then we should first know how much is there and how much human activity is adding every year," said Carl Lamborg of the Woods Hole Oceanographic Institution, an author of the study.

"At the moment, however, there is no way to look at a water sample and tell the difference between mercury that came from pollution and mercury that came from natural sources. Now we have a way to at least separate the bulk contributions of natural and human sources over time."

When mercury builds up the bodies of fish and other edible forms of marine life, which are then consumed by people, it can be extremely harmful. Scientists already warn that pregnant women should avoid eating certain species of fish for this reason.

The authors of the new study stress that it is unclear how much damage this trend has done to marine life, or might do to us. But the results are alarming.

"You're starting to overwhelm the ability of deep water formation to hide some of that mercury from us, with the net result that more and more of our emissions will be found in progressively shallower water," Lamborg explained.

Photo: Oktaviani Marvikasari via Free Images

"That increases the odds that mercury levels in key food species will rise, increasing humans' exposure."

Don Rice, director of the Chemical Oceanography Program, added, "Mercury is a priority environmental poison detectable wherever we look for it, including the global ocean abyss.

"These scientists have reminded us that the problem is far from abatement, especially in regions of the world ocean where the human fingerprint is most distinct."

FURTHER INTEREST: Mercury levels at Canadian tar sands sites 16 times higher than normal (http://blueandgreentomorrow.com/2014/01/03/mercury-levels-at-canadian-tar-sands-sites-16-times-higher-than-normal/)

A 7,500 sq mile area of tar sands in Alberta, Canada, is displaying worrying levels of the neurotoxin mercury, scientists have claimed.

Story Credit: Blue & Green Tomorrow, August 10, 2014, Tom Revell, - http://blueandgreentomorrow.com

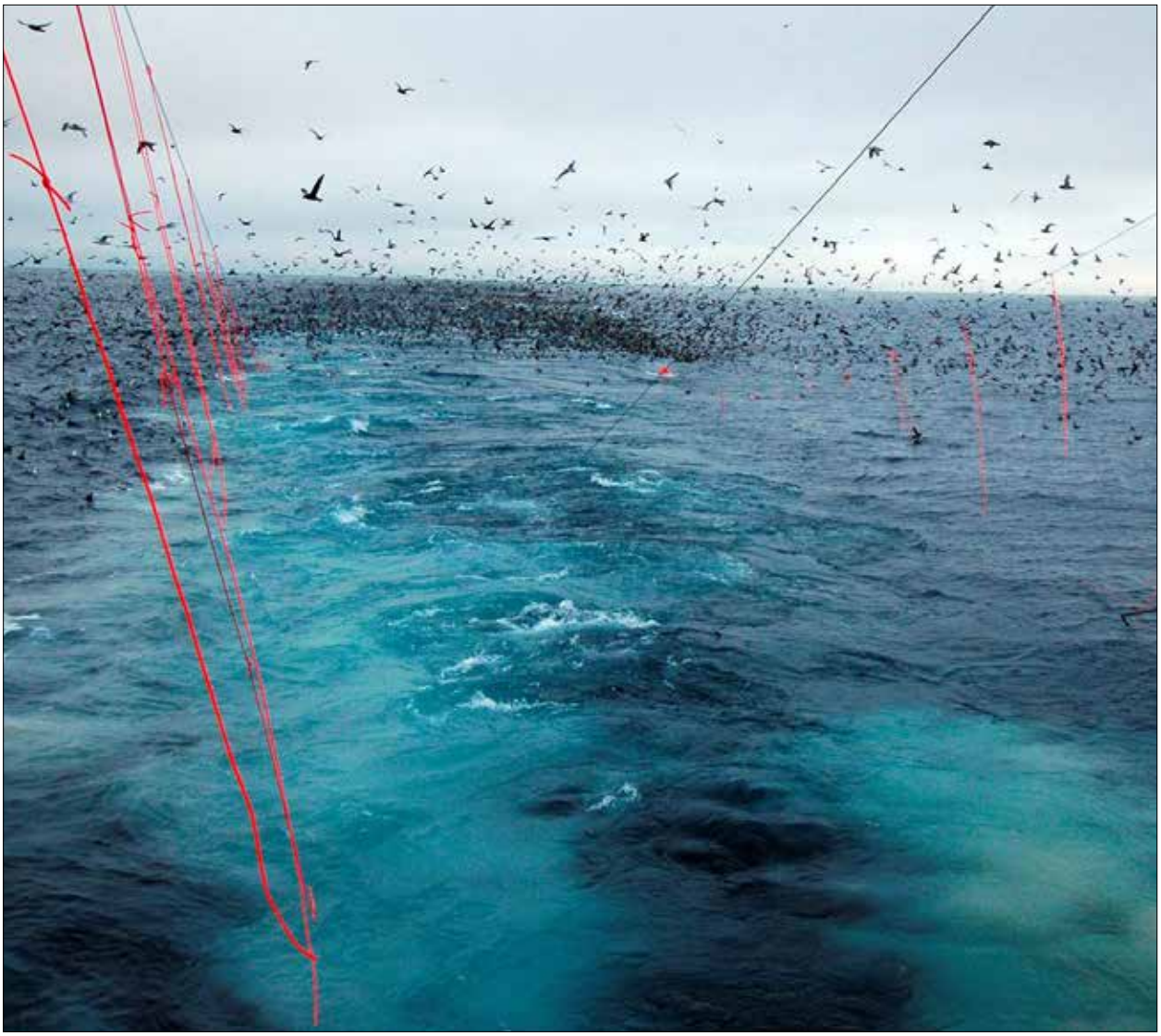
NOAA FISHERIES PROPOSE STREAMER LINES

National Oceanic and Atmosphereic Administration (Fisheries) News, Fall 2014 — NOAA Fisheries is proposing a rule that would require West Coast longline vessels 55 feet and over in the groundfish fishery to use special devices called streamer lines, designed to keep endangered short-tailed albatross from getting caught in their fishing gear. The rule is now open for public comment through Oct. 9, 2014.

Streamer lines have been required in federally managed longline fisheries in Alaska for years and have dramatically reduced the number of seabirds caught in fishing gear. Fishermen who have used the lines to ward off seabirds say there's also a financial benefit: the streamer lines keep seabirds from swiping their bait, saving them money in the long run.

"In terms of regulations on the West Coast, this has been the most effective one I've seen," said Dave Hedrick, who fishes in Alaska and along the West Coast. "It all came about because of really good cooperation between users and the regulatory agency, with a very effective means of accomplishing a goal. Streamer lines do a very good job of not catching birds."

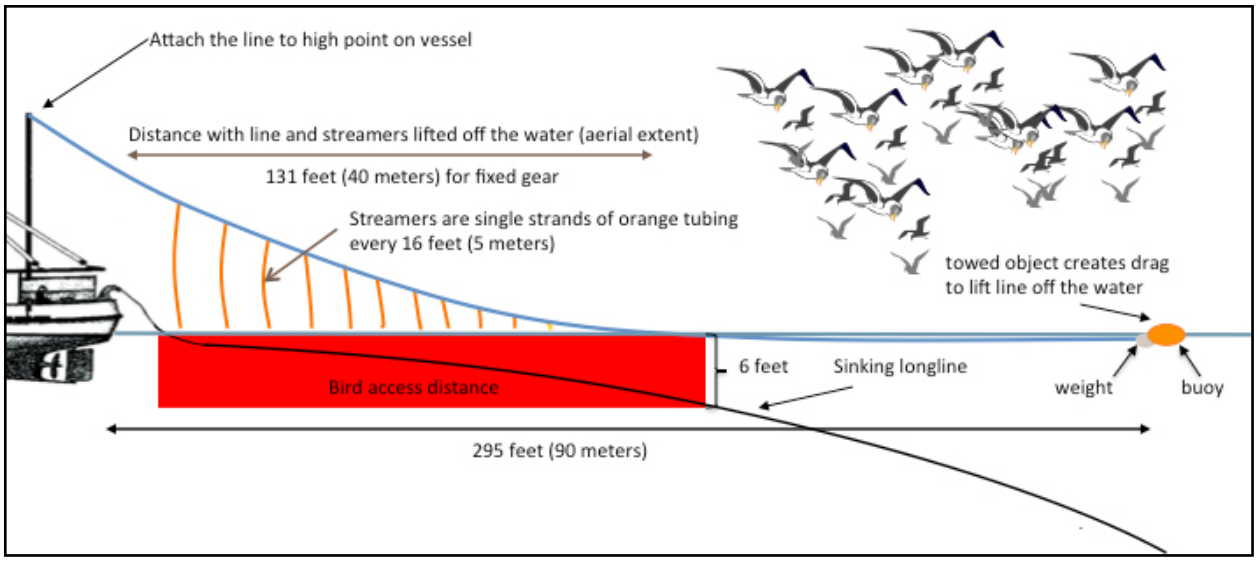
The streamer lines are suspended from masts or booms on fishing boats and descend to floats towed behind the boats. Streamers made of orange tubing hang freely off the line so they sway in the wind and scare seabirds away from baited fishing lines in the water below. The streamer lines are relatively inexpensive to manufacture and fishermen say they effectively eliminate any possibility of birds becoming caught in their fishing gear.



Fishing boat photo: Rob Suryan, Oregon State University. Bright vertical streamers on longline fishing gear scares the endangered short-tailed albatross.

The streamer lines now available on the West Coast are patterned after those used in Alaska. NOAA Fisheries is funding research by Washington Sea Grant and Oregon State University to develop improved streamer line designs for West Coast vessels, including smaller vessels with tighter quarters. Scientists are working alongside fishermen at-sea to test different streamer line designs during real-world operations and compare the effectiveness of different streamer line configurations at preventing birds from getting close to the lines, bait, and hooks.

"That's the environment it's going to be used in, so we want designs that fit in as easily as possible because that increases the chances it's going to be used effectively," said Ed Melvin, a marine fisheries senior scientist at Washington Sea Grant who is leading the research. He said some fishermen go from calling streamer lines "bird savers" to calling them "bait savers" after using them.



Streamers graphic: Washington SeaGrant

It takes some practice to use streamer lines effectively, but the effort is well worth it, Hedrick said.

“The benefits far outweigh the work of figuring out how to incorporate them into your routine,” he said.

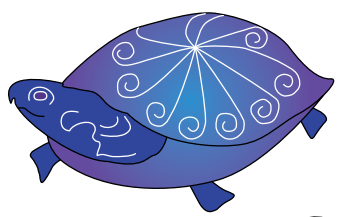
More than half of the Makah Tribe’s longline fleet currently uses streamer lines, said Joe Petersen, a groundfish biologist with the Tribe. He said the fishermen who use the streamer lines like a new and improved design that incorporates swivels and they see them as an asset to the longline fishery.

Although no tribal longline vessel has caught an albatross, they did in the past occasionally hook other birds such as seagulls. The streamer lines have effectively stopped that, he said.

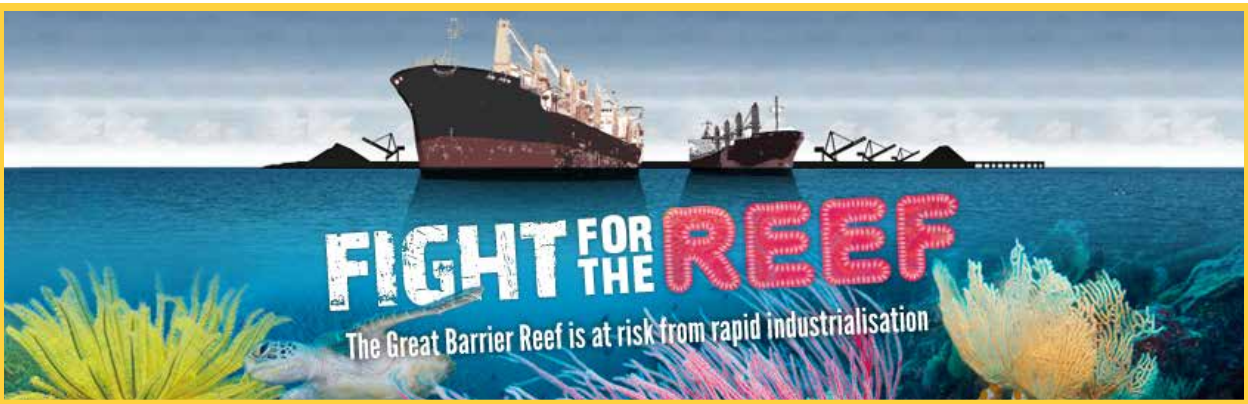
“With the use of the streamer lines many fishermen have noticed substantial reductions in the number of missing baits from longline gear and have had resulting higher catch rates of target species,” Petersen said. In some cases crews have asked for additional streamer lines and have begun using two lines off the back of their boats to boost their effectiveness even further.

"Fishermen deserve great credit for helping us find a solution that's effective and easy to use," said Steve Copps, a NOAA Fisheries policy analyst who led the development of the proposed rule. "It's a win-win on so many fronts: for fishermen, for seabirds, and for sustainable fisheries."

For further information on safeguarding seabirds from fishing gear visit Washington Sea Grant’s seabird bycatch website. Fishermen interested in working with researchers in evaluating streamer line designs are encouraged to contact Melvin through the website.



Story Credit: National Oceanic and Atmospheric Administration (NOAA) , - www.fisheries.noaa.gov



BREAKING NEWS

THIS IS WHAT DUMPING IN THE GREAT BARRIER REEF REALLY LOOKS LIKE

These photos show a dredge ship spewing muddy waste into the World Heritage Area and illustrate what dredging and dumping looks like in the waters of Great Barrier Reef.

PUTTING THE FOCUS ON ENFORCEMENT

by S.FAIZI

[square brackets] ISSUE 7 - BIODIVERSITY SUMMIT: Need For A Rethinking On Treaty Enforcement *by: Dr. S. Faizi - Chair, Indian Biodiversity Forum, biodiversity@rediffmail.com*

The Convention on Biological Diversity (CBD) has the unenviable distinction of being challenged by certain contracting Parties without denouncing the treaty or without attempting to amend the treaty text. The treaty has categorical and legally-binding provisions on access and benefit-sharing (ABS), yet when the proposal for an international instrument on ABS was mooted several Parties thought the instrument too legally non-binding. The ABS Protocol negotiators had to overcome this challenge, not the least with the support of the World Summit on Sustainable Development's decision that called for a legally binding international ABS regime. The Protocol text remains incomplete without addressing the compliance mechanism, and yet when the issue of compliance mechanism came up for discussion at the New Delhi meeting of the Intergovernmental Committee for the Nagoya Protocol, opposition to the legally binding nature of the compliance mechanism was raised by some countries.

Attempts to argue away the legal strength of CBD has been part of an effort to weaken the comprehensive and well balanced treaty that it is. If the CBD is not a legally binding treaty, then what is it? Is it an international declaration like the Rio Declaration, that countries respect but are not obliged to implement? Is it like the World Charter for Nature, a declaration by the UN General Assembly (UNGA), that countries have a moral/political obligation to follow but no legal obligation to implement? Is it like the World Conservation Strategy, a useful document the concepts of which were adopted by many countries voluntarily and through pressure from

The Tourism Development Company Limited of Trinidad and Tobago

the environmental community? Is it like the Agenda 21, negotiated by governments but are not legally obliged to implement though they have a political/moral obligation to follow? Is it a multilaterally agreed program like MAB, which countries have no legal obligation to implement? The CBD is not like any of these.

The CBD is international law. It is a multilateral treaty that contracting Parties are legally obliged to implement. It is not a 'framework convention' that some players tacitly try to portray it as—a framework convention was a very early idea to incorporate all existing biodiversity-related conventions to the new CBD, as came up in the United Nations Environment Programme Governing Council meeting in 1989 but rejected in the subsequent negotiations in the Intergovernmental Negotiating Committee (INC). The articles of the CBD are there for enforcement, not for further negotiation.

However, articles committing Parties to 'endeavour to' or bearing caveats like 'as far as possible' are less binding. There are only two issues in the CBD that called for further development in order to take the implementation course: biosafety and liability and compensation beyond national jurisdiction. (Further, the Nairobi Final Act called for addressing the issue of pre-CBD germplasm collections). The CBD explicitly states that it does not provide for exemptions; and it has also provided an in-built mechanism for dispute settlement, yet to be activated.

The CBD was negotiated, adopted, signed, ratified, and came into force in line with provisions of the Vienna Convention on the Law of Treaties. The Group of 77 (G-77) had negotiated hard, in the INC CBD, to reach the present text of the treaty, and if the treaty's provisions are so easily regarded as being legally non-binding, then it calls for the attention

of the Parties. A legally binding treaty is put to disuse by straying away into legally non-binding programmes of work, Strategic Plan, formulation of new and selective targets etc., and undermines the fairly clear and categorical provisions of the treaty. It is worth noting that the conference of the parties (COP) simply 'urges' the implementation of the Strategic Plan. The US had correctly assessed the legal strength of the treaty, and feared that it can harm their vested economic ambitions and hence stayed away from the treaty. But the enforcement of CBD proved the US wrong—it has been rendered ineffective to combat the vested economic interests such as those engaged in biopiracy, which the provisions of the CBD make an international offense.

The ABS provisions of CBD are categorical and binding. Access to genetic resources is determined by the concerned Party, based on mutually-agreed terms, and prior informed consent; these provisions are categorical and binding. What is its implication?

For example, according to information released by India's Ministry of Environment in 2010, over 2000 patents based on Indian genetic resources and traditional knowledge were taken abroad in the preceding year without the consent of the Indian government.

This continuing biopiracy is in glaring violation of the binding provisions of CBD, but even then, the binding provisions of CBD are not invoked- neither in a civil court in an offending country or raised at a COP or in meetings of its subsidiary bodies. There is no secretariat monitoring infractions, no COP reviewing infractions/non-compliance. Article 15.7 requires Parties to take legislative, administrative and policy measures for benefit sharing, yet over the past two decades the COP has not reviewed or acted upon the failure of Parties to enact these enabling measures.

The weakening of the G-77 in CBD negotiations- that had played an effective role in the formative period of the treaty- and its subsequent disappearance from the CBD parlance is a key reason for the straying of the CBD process. The main reason why the CBD, despite being a progressive treaty, has failed to deliver is the sidestepping of the legally binding nature of the treaty: e.g. escalating biopiracy, no reduction in the loss of biodiversity, continuing alienation of indigenous communities, creation of several sets of administrative, policy and legal measures required by the Convention remains neglected.

Treaties, even as they are legally binding, are implemented based on the interests of powerful countries. The Nuclear Non-Proliferation Treaty is perhaps the most powerful legally binding multilateral treaty, but what happens to its Article VI (that calls for the negotiated elimination of nuclear weapons) even after four decades of existence of the treaty. In spite of several UNGA resolutions this Article is not allowed to be implemented though the massive majority of Parties stand for it. In the case of MEAs, the CBD process has a lot to learn from CITES whose legal status is exactly the same as that of the CBD.

The COP is expected to "keep under review the implementation of the Convention" but a critical review of the progress/failure in implementing the provisions of the Convention has yet to happen at a COP. The SBSTTA is mandated to review the effectiveness of the measures taken in accordance with the provisions of the Convention, but SBSTTA has been kept busy producing more and more documents, and disregarding the need to review the effectiveness of enforcement of the Convention's provisions.

Story Credit: www.cbd.int/ngo/square-brackets/square-brackets-2012-10-en.pdf - Putting the focus on enforcement by S. Faizi, Chair, Indian Biodiversity Forum.

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CAN YOU PUT A PRICE ON THE BEAUTY OF THE NATURAL WORLD?

by GEORGE MONBIOT

The Guardian News Media, 22 April 2014 - Those who reduce nature to a column of figures play to an agenda that ignores its inherent value – and seeks to destroy it.

George Orwell warned that "the logical end of mechanical progress is to reduce the human being to something resembling a brain in a bottle". This is a story of how it happens.

On the outskirts of Sheffield there is a wood which, some 800 years ago, was used by the monks of Kirkstead Abbey to produce charcoal for smelting iron. For local people, Smithy Wood is freighted with stories. Among the trees you can imagine your way into another world. The application to plant a motorway service station in the middle of it, wiping out half the wood and fragmenting the rest, might have been unthinkable a few months ago. No longer.

When the environment secretary, Owen Paterson, first began talking about biodiversity offsetting – replacing habitats you trash with new ones created elsewhere – his officials made it clear that it would not apply to ancient woodland. But in January Paterson said he was prepared to drop this restriction as long as more trees were planted than destroyed.

His officials quickly explained that such a trade-off would be "highly unlikely" and was "very hypothetical". But the company that wants to build the service station wasn't slow to see the possibilities. It is offering to replace Smithy Wood with "60,000 trees ... planted on 16 hectares of local land close to the site". Who cares whether a tree is a hunched and fissured coppiced oak, worked by people for centuries, or a sapling planted beside a slip-road with a rabbit guard around it?

As Ronald Reagan remarked, when

'This is the way it's going now. Everything will be fungible. Place, past, love and enchantment will have no meaning.' Photograph: David Levene

contemplating the destruction of California's giant redwoods, "a tree is a tree". Who, for that matter, would care if the old masters in the National Gallery were replaced by the prints being sold in its shop? In swapping our ancient places for generic clusters of chainstores and generic lines of saplings, the offsetters would also destroy our stories.

So we turn for relief to Natural England, the official body whose purpose is "to conserve and enhance the natural environment". Whoops. Its new chair, Andrew Sells, a major donor to the Conservative party, made his fortune in housebuilding, the industry most likely to benefit from biodiversity offsetting. Its deputy chair, David Hill, is also chair of Environment Bank, a private company set up "to broker biodiversity offsetting agreements for both developers and landowners". The success of Environment Bank is partly dependent on decisions taken by Natural England. How many people believe it is acceptable for Hill to hold both posts?

But this is the way it's going now: everything will be fungible, nothing will be valued for its own sake, place and past and love and enchantment will have no meaning. The natural world will be reduced to a column of figures.

That is the hope expressed in the latest report by the government's Natural Capital Committee, whose chair, Dieter Helm, claims that "the environment is part of the economy and needs to be properly integrated into it so that growth opportunities will not be missed". This, to me, is the wrong way round. The economy is part of the environment and needs to be steered so opportunities to protect our world of wonders will not be missed. Integrating the environment into the economy, Helm believes, is hampered by a lack of "proper

accounting for natural assets", which is what his committee seeks to redress.

So come with me into the faery realm. The government's targets for protecting freshwater ecosystems, the committee claims, would deliver an aesthetic value of about £700m. The enhanced wildlife value of well-managed semi-natural grasslands is £40m. An appropriate disclaimer would be: these figures are rubbish, but we're printing them anyway.

I can understand the temptation. I can see how a financial case might be heeded by people who otherwise take no interest. But it's not just that the output is mostly gibberish. More important, like the offsetting of ancient woodland, it re-frames the urge to protect nature – an urge that springs from wonder and delight – as something completely different.

In his interview with the Guardian a few weeks ago, George Lakoff, the cognitive linguist who has done so much to explain why progressive parties keep losing elections they should win, explained that attempts to monetise nature are a classic example of people trying to do the right thing without understanding frames: the mental structures that shape the way we perceive the world.

As Lakoff points out, you cannot win an argument unless you expound your own values and re-frame the issue around them. If you adopt the language and values of your opponents "you lose because you are reinforcing their frame". Costing nature tells us that it possesses no inherent value; that it is worthy of protection only when it performs services for us; that it is replaceable. You demoralise and alienate those who love the natural world while reinforcing the values of those who don't.

To expect the committee's phoney figures to swing the argument is worse than naive in a world in which cost-benefit analyses are systematically rigged. For instance, the financial case for new roads in the United Kingdom, shaky at the best of times, falls apart if you attach almost any value to the rise in greenhouse gases they cause. Case closed? No: the government now insists, in its draft national policy statement, that climate change cannot be taken into account when deciding whether or not a road is built.

Do you believe that people prepared to cheat to this extent would stop a scheme because one of the government's committees has attached a voodoo value to a piece of woodland? It's more likely that the accounting exercise would be used as a weapon by the developers. The woods are worth £x, but by pure chance the road turns out to be worth £x +1. Beauty, tranquillity, history, place, particularity? Sorry, they've already been costed and incorporated into x – end of discussion. The strongest arguments that opponents can deploy – arguments based on values – cannot be heard.

This is why the government set up the Natural Capital Committee. This is why it promotes biodiversity offsets, even for ancient woodland. It is re-framing the issue. Those who believe they can protect nature by adopting this frame are stepping into a trap their opponents have set.

Story Credit: Copyright Guardian News & Media Ltd (March 2014), George Monbiot - www.theguardian.com

PLAMIL atlantic salmon

Mill River

The Mill River is one of the last rivers in Prince Edward Island to which Atlantic Salmon return. Salmon need clear, cool water with a lot of oxygen and a variety of stream and river habitats for their young. Overhanging trees, cobble riffles and pools are all important features.

Threats

Numerous human activities combine to greatly threaten salmon all across Prince Edward Island and the Southern Gulf of St. Lawrence. Pesticide accidents have directly killed salmon on this river in the past. Today, agricultural run-off, forestry and other land-use practices continue to harm the health of young salmon. Some believe salmon are no longer healthy enough to complete the thousands of kilometers of migration. Others believe they refuse to return because to them the water no longer smells right.

What We Can Do

Join or support IKANAWTIKET or the Cascumpec Bay Watershed Association to raise awareness or undertake restoration projects on Mill River.

(902)895-2982 • contact@ikanawtiket.ca
172 Truro Heights Road, Truro Heights, Nova Scotia B6L 1X1
Designed and illustrated by: Anna Nibby-Woods

This project was undertaken with the financial support of:
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2011-2020 United Nations Decade on Biodiversity

6 of these 'road grade' aluminum signs are placed on Mill River, Prince Edward Island by the Mill River Project Youth Camp. Designed and illustrated by Anna Nibby-Woods

20 % KILLED IN 3 YEARS AFRICA'S ELEPHANTS

by JEREMY HANCE

Mongabay News, August 19, 2014 - Around 100,000 elephants were killed by poachers for their ivory on the African continent in just three years, according to a new paper in the Proceedings of the National Academy of Sciences. Between 2010 and 2012 an average of 6.8 percent of the elephant population was killed annually, equaling just over 20 percent of the continent's population in that time. Elephant deaths are now exceeding births, which on average are 5 percent annually.

"We are shredding the fabric of elephant society and exterminating populations across the continent," lead author George Wittemyer with the organization Save the Elephants told the BBC, noting that old elephants are often the first killed. Elephants are being killed for their ivory, which is then smuggled abroad to mostly to China, but also to Thailand, the Philippines, Europe, and the U.S.

Unfortunately data on elephant populations across Africa is uneven and in many places scant, making continent-wide estimates like these difficult. In this case, the researchers used some of the best studied populations in Samburu, Kenya to determine how many elephants were dying of natural causes versus poachers in the site. They then used two different methods to extrapolate this data.

In the first they employed good data in 12 sites across Africa to estimate the total poachers' butcher bill over the last few years. In the second, they used computer modeling to estimate poaching levels at 306 sites. Both methods came to similar numbers: 101,784 elephants killed versus 99,997 elephants, respectively over three years.

"This is the best work available from the best data we have using officials from the top organization, so in my mind this is the best you are going to get at the moment," Wittemyer told the Associated Press. "Because of the magnitude of the issue and the politics we've been very careful. The scrutiny we did internally was at a much greater level than the questions we got in the peer review process."

The numbers are also quite similar to other estimates from wildlife conservation groups. For example, the Wildlife Conservation Society has estimated that around 35,000 elephants are being killed annually on the continent. Others

Two adult elephants killed in close proximity in northern Kenya. Clustered kills are a sign of professional poaching. Photo by: Chris Leadisimo.

put the number significantly lower, i.e. 22,000-25,000 annually.

In all, conservationists estimate that there are around 400,000 elephants on the continent, but no one knows for certain.

However, the situation is far from hopeless. There are still some countries in Africa where poaching is infrequent and elephant populations are on the rise, such as Botswana. The numbers killed may also be dropping. According to the study, the slaughter peaked in 2011 with an estimated 40,000 elephants poached or about 8 percent of the population. The next year, 2012, the number killed dropped to around 35,000.

"Intriguingly, our analysis suggests the rate of killing slowed after the peak in 2011 both locally in Samburu and globally, although it still remained unsustainable," the scientists write. "It is critical to identify the drivers of this change in the rate of illegal killing."

They note that the drop may have to do with restricting ivory auctions in China at the end of 2011.

Moreover, Africa's elephants have already survived a massive poaching crisis in the 1970s and 80s.

"I have to be an optimist," co-author and founder of Save the Elephants, Iain Douglas-Hamilton, said. "I've been through all of this before in the 70s and 80s. As a collective group we stopped that killing, and in the savannahs there was a reprieve of 20 years. I believe we can do it again."

The conservationists told the BBC that if rates don't slow, the African elephant could be extinct within a century. Complicating matters, is recent evidence that there are actually two, not one, species of elephant on the continent. A 2010 study found that forest elephants *(Loxodonta cyclotis)*—smaller, sporting straighter tusks, and residing in rainforests—are as distinct from their savannah cousins *(Loxodonta africana)* as Asian elephants are from woolly mammoths. Yet, forest elephants are rushing faster to extinction than savannah elephants. A study last year estimated that 62 percent of forest elephants had been slaughtered by poachers between 2002 and 2011.

Read more at http://news.mongabay.com/2014/0819-hance-20-percent-elephant-poaching.

CITATION: George Wittemyer, Joseph M. Northrup, Julian Blanc, Iain Douglas-Hamilton, Patrick Omondi, and Kenneth P. Burnham. (2014) Illegal killing for ivory drives global decline in African elephants. PNAS. doi:10.1073/pnas.1403984111

Story Credit: Jeremy Hance, mongabay.com (August 19, 2014).

USING GENETICS TO MEASURE THE ENVIRONMENTAL IMPACT OF SALMON FARMING

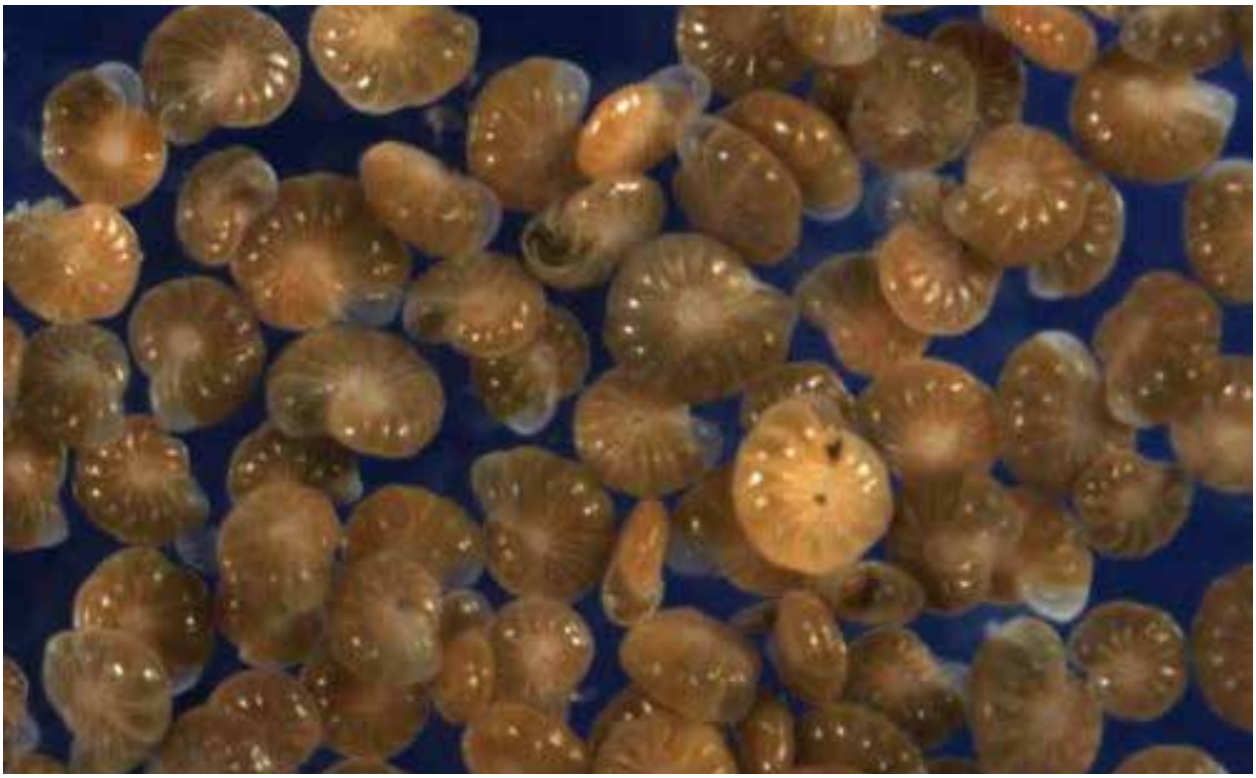
Determining species diversity makes it possible to estimate the impact of human activity on marine ecosystems accurately. The environmental effects of salmon farming have been assessed, until now, by visually identifying the animals living in the marine sediment samples collected at specific distances from farming sites. A team led by Jan Pawlowski, professor at the Faculty of Science of the University of Geneva (UNIGE), Switzerland, analysed this type of sediment using a technique known as "DNA barcoding" that targets certain micro-organisms. Their research, which has been published in the Molecular Ecology Resources journal, reveals the potential of this new genomic tool for detecting environmental changes as accurately as with traditional methods – but more quickly and at lower cost.

Salmon farming is one of the most widespread activities in marine aquaculture. It has a considerable impact on the environment, which is largely due to three factors: the accumulation of food waste and faecal matter; the toxicity caused by the chemicals employed to clean the cages; and the drugs that are used.

The impact of such farms on the coastal environment is traditionally assessed by monitoring some of the small species that live in the sediments beneath the cages. The visual identification of these animals under a microscope is time consuming and extremely expensive. It also requires highly-trained taxonomy specialists, which renders the method unsuitable for large-scale use. But, as Jan Pawlowski, professor in the Department of Genetics and Evolution at UNIGE, explains: "It is now possible to address this problem using sophisticated tools that analyse the DNA and RNA extracted from sediment samples."

GENETIC BARCODES…

Working alongside researchers from the Scottish Association of Marine Sciences (UK) and the University of Aarhus (Denmark), Pawlowski collected sediment samples at specific distances from two salmon farms in the heart of the Scottish fjords. "We used genetic barcodes that recognise specific fragments of DNA and RNA extracted from the sediment samples," explains researcher Franck Lejzerowicz, a PhD student in the professor's team:



This image shows 0.3 mm foraminifera made up of a single cell surrounded by a limestone shell. Credit: Jan Pawlowski, UNIGE. Read more at: http://phys.org/news/2014-05-genetics-environmental-impact-salmon-farming.html#jCp

"These 'genetic hooks' consist of DNA sequences that vary between species but remain stable within a given species."

The DNA barcodes used make it possible to identify the different foraminiferal species that are present in the sediments. These single-celled micro-organisms, which have a great diversity, are already recognised environmental bioindicators. As a result, the geneticists were able to process a large number of samples using high-throughput DNA sequencing. "Our study revealed large variations between foraminiferal species collected near farms and those from remote sites. In addition, species diversity diminishes on sites affected by the farms."

… FOR MONITORING THE QUALITY OF THE ENVIRONMENT

This type of highly-accurate ecological analysis allowed to establish a correlation between species richness and distance from the cages, a correlation that is even more pronounced if the farm is only stirred by weak sea currents. The same type of correlation was also established based on the degree of oxygenation of the sediments. As Jan Pawlowski states: "The vast amount of organic compounds on the farming sites can even sometimes generate anoxic sediments, which makes it impossible for most species to survive." The biologists were also surprised to discover a new species of foraminifera, which could serve as a bioindicator of organic enrichment.

This technology, known as "metabarcoding", is spreading rapidly, and can be used to supply information on the overall diversity of the micro-organisms found in all samples. The method is suitable for large-scale tests because it is much quicker, more reliable and easier to standardise than the processes that are used at present. This study is one of the first attempts to use environmental genomics as a tool for assessing the impact of industries such as marine aquaculture or offshore drilling.

Story Credit: www.phys.org/news/2014

DAMS VERSUS RIVERS - THE GLOBAL BATTLE

The Ecologist News, August 26, 2014 - A new 'State of the World's Rivers' database shows how the world's rivers have been impoverished by dams and their ecosystems devastated - and provides a valuable resource to help save river basins that remain in good health.

International Rivers has launched 'The State of the World's Rivers', an interactive online database that illustrates the role that dams have played in impoverishing the health of the world's river basins.

The database shows how river fragmentation due to decades of dam-building is highly correlated with poor water quality and low biodiversity. Many of the world's great river basins have been dammed to the point of serious decline, including the Mississippi, Yangtze, Paraná and Danube.

"*The evidence we've compiled of planetary-scale impacts from river change is strong enough to warrant a major international focus on understanding the thresholds for 'river change' in the world's major basins, and for the planet as a whole system", said Jason Rainey, Executive Director of International Rivers.*

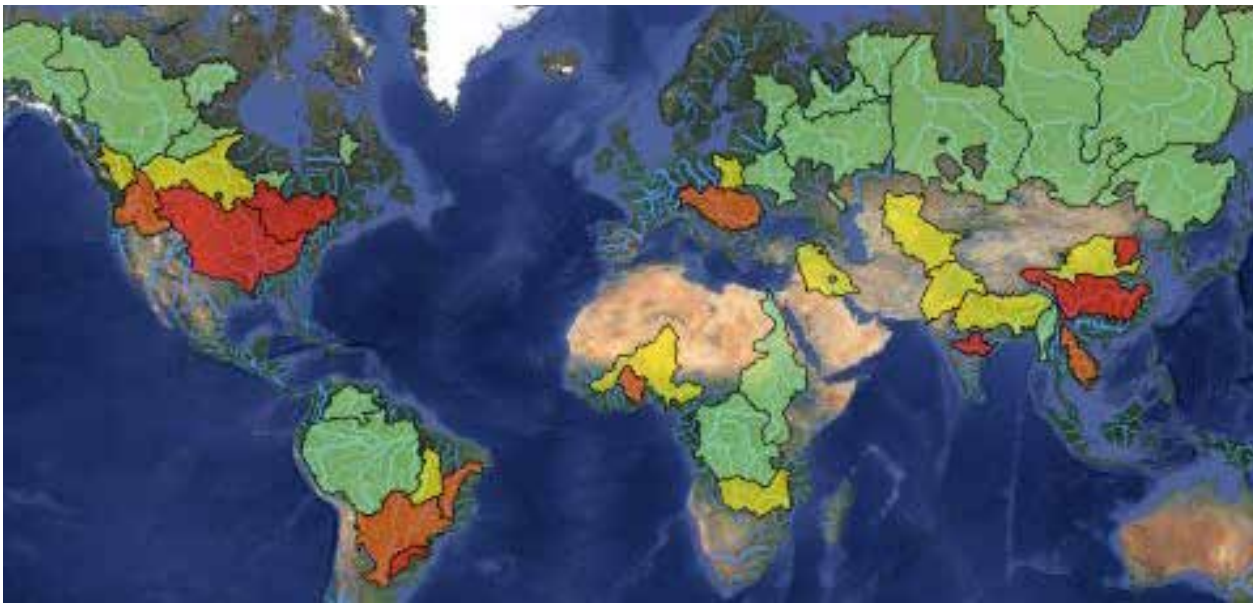
For example, in the Middle East, decades of dam building in the Tigris-Euphrates basin have made it one of the most fragmented basins in the world.

As a result, the basin's flooded grassland marshes have significantly decreased, leading to the disappearance of salt-tolerant vegetation that helped protect coastal areas, and a reduction in the plankton-rich waters that fertilize surrounding soils.

Habitat has decreased for 52 native fish species, migratory bird species, and mammals such as the water buffalo, antelopes and gazelles, and the jerboa.

LARGELY INTACT RIVER BASINS NOW AT RISK

Meanwhile, some of the lesser-dammed basins, which are still relatively healthy at this point, are being targeted for major damming.



The database shows information for the world's 50 major river basins. Map: International Rivers.

For example, the most biodiverse basin in the world, the Amazon, still provides habitat for roughly 14,000 species of mammals, 2,200 fish species, 1,500 bird species, and more than 1,000 amphibian species, like the Amazon River Dolphin, the Amazonian Manatee, and the Giant Otter.

When all dam sizes are counted, South American countries plan to build an astonishing 412 dams in the Paraná basin, while 254 dams are planned or under construction in the Amazon basin.

In Asia, China plans to continue to dam the Yangtze basin with at least another 94 planned large dams. At least 153 more dams are planned for the Mekong basin.

Other basins that are high in biodiversity and water quality which are also targets for dam-building include the Tocantins, the Irrawaddy, the Congo, and the Zambezi.

Zachary Hurwitz, the coordinator of the project, said: "Basins that have been highly fragmented by dams provide important lessons for managing the relatively un-dammed basins that remain. Governments should turn their attention to river preservation to protect these basins' valuable ecosystem services."

> *"Basins that have been highly fragmented by dams provide important lessons for managing the relatively un-dammed basins that remain."*

MAKE DAMMING 'AN OPTION OF LAST RESORT'

In addition to calling for an inter-governmental panel of experts to assess the State of the World's Rivers, International Rivers recommends that no more dams be built on the mainstems of rivers, and that damming rivers becomes an option of last resort.

Created using Google Earth, the State of the World's Rivers website maps nearly 6,000 dams in the world's 50 major river basins, and ranks their ecological health according to indicators of river fragmentation, water quality and biodiversity.

The dams mapped are a small percentage of the more than 50,000 large dams that clog the arteries of our planet.

Users of the site can compare how each individual basin ranks in fragmentation, biodiversity, and water quality, and explore ten of the most significant river basins in more depth.

Each focus basin describes the threats from dam building, and allows users to see how dams can impact Ramsar Sites of Wetlands of International Importance and UNESCO World Heritage Sites.

CAMERAS HEAD TO OCEANS: STREET VIEW REEF

by JENNIFER KAY

The Associated Press, 2014. ISLAMORADA, Fla. – It's easy to go online and get a 360-degree, ground-level view of almost any street in the United States and throughout the world. Soon, scientists hope people will be able to do the same with coral reefs and other underwater wonders.

U.S. government scientists are learning to use specialized fisheye lenses underwater in the Florida Keys this week in hopes of applying "street view" mapping to research and management plans in marine sanctuaries nationwide. Some of the rotating and panoramic images will be available online as early as this week, including a selection on Google Maps, giving the public a window into ecosystems still difficult and costly to explore for long stretches of time.

It will be like scuba diving from your computer.

The images in the U.S. will add scale and details to data that's already been collected, and illustrate the successes and failures of coral restoration. They will also help scientists study the effects of warming ocean temperatures, pollution and hurricanes on reefs, officials said.

"This allows people who can't get underwater to understand what we mean by putting up a special preservation area around this particular spot," said Mitchell Tartt, chief of the conservation science division at the National Oceanic and Atmospheric Administration's Office of National Marine Sanctuaries.

About 400,000 images have been produced so far of reefs off Australia and in the Caribbean, but this is the first time the technology is being used in U.S. waters.

The basketball-shaped, triple-lens SVII cameras use the same technology that's used to produce Google Street View images

The SVII camera is able to capture stunning views of coral reefs around the globe. Catlin Seaview Survey

of neighbourhoods on land. Instead of being placed on top of a car, the 65 kg riggings are tethered to scuba divers and powered through the water by small motors. Smaller versions mounted on tripods also are being tested in the Keys this week.

In images previewed Monday by project director Richard Vevers, endangered elkhorn coral, bleached fields of dead coral and coral nurseries suspended like hanging plants in the Keys' blue waters were in sharp focus as they rotated on screen.

In an hour-long dive, each camera can capture images over an area up to 20 times larger than what's available with traditional underwater photography equipment, Vevers said. The technology also records GPS data and quickly stitches the images together into panoramic views or 360-degree views.

The cameras and training in the Florida Keys National Marine Sanctuary for six NOAA officials are being paid for as part of a partnership with the Catlin Seaview Survey, funded by the global insurance company Catlin. Google also is a sponsor.

The images that have been produced so far from other Catlin surveys are being uploaded online to the Catlin Global Reef Record. The project also moves next into Southeast Asia, Vevers said.

While the main survey continues worldwide, the smaller cameras will be available for targeted projects within NOAA sanctuaries, such as gauging the effectiveness of preservation zones in California's Monterey Bay sanctuary, or they could help measure the impacts of landslides that fall into the water.

The corporate sponsorship offers consistency in equipment, training and data, Vevers said.

Catlin's sustainability director, John Carroll, would only say the cost was "fairly substantial."

The benefit to the Bermuda-based company also would be substantial, he said, because there are a lot of insurable assets that depend on climate change.

"Clearly as an insurance company, we're keen to help manage this risk because, you know, that's our business," Carroll said.

CARING MAKES A DIFFERENCE

by REBECCA J. HUNKA

In 1999 I was given a school assignment to research any endangered species of my choice. It was then that I first learned of a bird whose population at that time totaled 52 on the entire planet. Fifteen years later, I was interested to learn what had become of the "doomed" kakapo population.

It is a common belief that once a species declines to a certain point there is no hope and this species will inevitably become extinct. A group of people in New Zealand are working tirelessly to prevent a very unique parrot from meeting that fate.

The kakapo *(Strigops habroptila)*, a parrot native to New Zealand, was first considered in need of protection in 1894 when the New Zealand government pioneered a programme to aid the failing population of this nocturnal parrot.

The kakapo's decline began almost immediately after Polynesian settlers, known as Maori, settled in New Zealand in the 13th century. This brightly coloured parrot was an easy target for early hunters, as well as the Polynesian dog and rat, which were introduced to the islands with the arrival of the settlers. It wasn't only the colour that made them easy to hunt, but also that the Kakapo is the world's only flightless parrot, as well as the heaviest, weighing in at almost four kilograms. As a ground dwelling bird, there was little chance of survival.

This parrot is also the longest living bird with an average life span of 95 years, which means their reproductive rate is relatively low. The kakapo will only mate if the Rimu tree produces enough fruit. Rimu trees only flower and fruit every 3-5 years, which means the kakapo will only mate at such intervals. A female kakapo will produce 1-3 eggs if the breeding is successful. Many of these eggs and the newly hatched birds will fall prey to rats and other ground mammals, all giving to a dire situation for these unique parrots.

The Kakapo Recovery Programme created

Kakapo. Adult male (Sirocco). Maud Island. Image © Dylan van Winkel by Dylan van Winkel

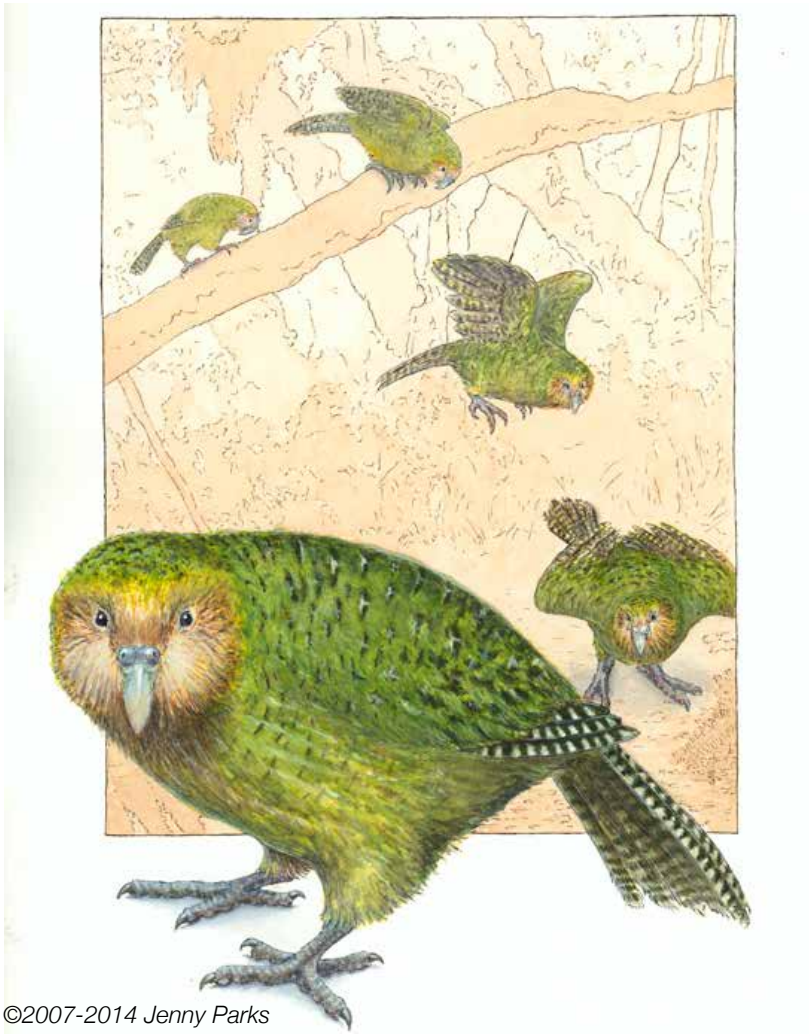
in 1894 recognized the rapid decline and addressed the problem by moving the remaining known kakapos to a neighbouring island, which at the time, was free from predators. Unfortunately, by 1900 that entire population of kakapos was wiped out after stoat, a close relative of the weasel, arrived on the island and took them as easy prey.

By the mid 1900's, very few kakapos were known to exist and many believed the birds would soon be extinct. The New Zealand Wildlife Service was created by the government in 1950, and from then to 1973 groups were sent on recovery expeditions to search for kakapos and bring them to a wildlife reserve where they could be monitored with the hopes of helping to revive the population. Through those expeditions six birds were discovered and rehomed. Unfortunately only one survived in captivity. In 1974, there were no known living kakapos.

Three years later, in 1977, a small population of 18 kakapos were found in Fiordland, NZ, however, the population consisted only of male birds so the situation appeared grim for the fate of this species. A discovery later that year on Stewart Island allowed the recovery of the species to begin when 200 kakapos were found, including breeding females.

The remaining population was still being threatened by predators so the kakapos were moved to off-shore sanctuaries in 1987, allowing them to live and breed naturally without cats, ferrets, or weasels. Rats still proved a problem in 1995 when twelve chicks hatched, but only three survived. This rate of reproduction could not keep up with the mortality, and the population lowered to 51 living kakapos.

The Kakapo Recovery Team and a new ten-year recovery plan were created in 1995. By the year 2000, the population had increased by 11, bringing the total number of living kakapo to 62.



The dedicated men and women of the Kakapo Recovery Team have been charged with saving an entire species. Nearly two decades after their recovery efforts began, the team has more than doubled the population of kakapos. With six more chicks having hatched in 2014, the total population has reached 126, with 60 females and 66 males. The efforts of the Kakapo Recovery Team have allowed the population of kakapos to grow an astonishing 150% between 1995 and 2014.

The remarkable growth has been accomplished through extensive monitoring of each of the surviving kakapos, with every one having its own radio transmitter.

There are nine members of the Kakapo Recovery Team, including four rangers who dedicate 24 hours a day for a month at a time to managing operations onsite, watching and tracking the locations of each kakapo, and ensuring the overall wellbeing of the kakapos on the three secluded islands where the birds now live. The kakapos are never left vulnerable or unprotected. Despite the close monitoring, the members of the team only come into contact with the kakapos twice a year unless an intervention is required to ensure the health and safety of a bird.

Though this is certainly a great achievement in the recovery of a species, there is still much to do to ensure the safety and continued growth of the kakapo population.

The kakapo is rated Critically Endangered by the IUCN (International Union for Conservation of Nature). It is also listed as endangered under the U.S. Endangered Species Act, as well as included in appendix I of the CITES international treaty. Go to www.kakaporecovery.org.nz for more information on kakapos, and the current Kakapo Recovery Plan.

For more information:

- http://www.doc.govt.nz/conservation/native-animals/birds/birds-a-z/kakapo/
- www.kakaporecovery.org.nz
- http://nzbirdsonline.org.nz/species/kakapo
- http://en.wikipedia.org/wiki/List_of_kakapo
- http://cites.org/eng/app/appendices.php
- http://animaldiversity.ummz.umich.edu/accounts/Strigops_habroptila/

World Wetlands Day

Monday, 2 February 2015

Wetlands for our Future

JOIN US AT THE SHUBENACADIE WILDLIFE PARK AT THE GREENWING CENTRE AT 9:30

A COMPELLING REASON

WEST ANTARTIC ICE SHEET COLLAPSE UNSTOPPABLE

This photo shows the Thwaites Glacier in West Antarctic collapsing which scientists say is the result of climate change.

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.

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

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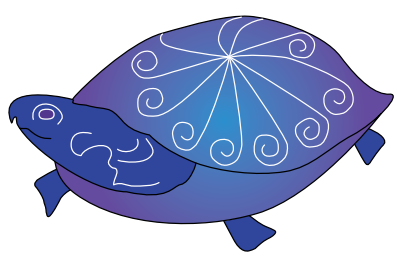

MESSAGE FROM COASTAL ZONES RESEARCH INSTITUTE

The Coastal Zones Research Institute is helping to make the Acadian Peninsula and all of Atlantic Canada a hub for innovation and sustainable value creation through effective partnerships and wise resource management guiding principles.

Institut de recherche
sur les zones côtières inc.
Coastal Zones
Research Institute Inc.

The Aquaculture Division of the Coastal Zones Research Institute offers a complete portfolio of aquafeed research services:

- Fish nutrition trial;
- Digestibility study;
- Gut health assessment;
- Nutrient metabolism and efficiency of utilization;
- Mathematical modelling;
- Laboratory analysis;
- Aquafeed formulation and manufacture.

Our aquaculture research facility includes two 30-tank experimental systems designed to conduct trials with freshwater and marine species from first-feeding to market size. The facility has other smaller aquatic laboratories for small scale experiments.

We consider it both a privilege and responsibility to help customers developing new products and marketing materials as well as getting approval from regulatory agencies.

We are located in New Brunswick and have deep business acumen of the aquafeed industry in Canada as well as globally. Do not hesitate to contact us to learn more about our mission, guiding principles, values and areas of expertise.

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Institut de recherche sur les zones côtières inc.

Coastal Zones Research Institute Inc.

(CZRI) is a private not-for-profit corporation affiliated with the Université de Moncton, Shippagan Campus (New Brunswick)

The Institute encourages a multidisciplinary approach that focuses on three main areas of research: aquaculture, fishery and marine products, and peat and peatlands. A fourth research orientation relating to the sustainable development of coastal zones is currently taking shape. These dominant institutional research focus areas are supported by certified laboratory analysis and environmental services.

We exist to serve our customers by providing innovative and sustainable solutions through collaborative initiatives and services.

Une équipe multidisciplinaire de chercheurs passionnés au service de l'industrie avec ses pôles stratégiques d'innovation et de R&D

André Dumas, Ph.D. (aquaculture), Nadia Tchoukanova, M.Sc. (laboratoires et services d'analyses), Gastien Godin, LL.L (directeur général), Jacques Gagnon, Ph.D. (pêche et coproduits marins), Mathieu Quenum, Ph.D. (tourbe, tourbières et développement durable)