

Applying science in Belize: From taxonomy to policy

by Sarah Harper

The *Sea Around Us* project and Oceana teamed up for a conference to discuss what's at risk, from a marine biodiversity perspective, if plans go ahead to drill for oil off the coast of Belize. The conference, co-hosted by Daniel Pauly and Deng Palomares, held in Belize City on June 29 and 30th was titled "Too precious to drill: The marine biodiversity of Belize". At the conference marine biologists, taxonomists and economists provided an exhaustive list of reasons why the precious and pristine marine environment of Belize could be at risk. With some of the healthiest coral reefs, manatee populations, shark diversity and reef fish spawning aggregations in the Caribbean, Belize would lose a lot from an oil spill¹. Tourism and fisheries are particularly at risk as these both rely on a healthy marine

environment, and provide jobs, revenue and food to the people of Belize.

Just over a year ago, the International NGO Oceana, which recently opened an office in Belize City, caught wind of plans to develop an offshore oil industry in Belize. Leaked government documents revealed a map of the waters off Belize that were a checkerboard of oil exploration concessions. Oceana, the largest international NGO focused solely on ocean conservation, raised the alarm bell and decided that quick action was needed to engage and empower the people of Belize to stand up to these plans and protect their precious natural wealth. A campaign was launched with a petition to be signed by the people of Belize demanding a referendum on oil exploration offshore and in protected areas on land. Oceana met their target with over 10% of the voting population signing the petition (17,000+ signatures), the minimum requirement for a referendum to be called, and continues to raise awareness throughout the country with their colourful campaign bus and heavy media engagements.

Further to their in-country efforts to engage the public, Oceana teamed up with the *Sea Around Us* project to deliver the scientific evidence required for a strong case against offshore drilling in Belize. A conference was set for the end of June 2011 and international scientists selected to share their expertise, including Andrés Cisneros-Montemayor, Dirk Zeller and myself. One of the goals of the conference was to repatriate the

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A typical Belizean reef. Photo by Gordon Kirkwood.

The Sea Around Us Project Newsletter

Issue 66 – July/August 2011

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This professional statement re-iterated the importance and value of the marine environment and the need to protect it from anthropogenic threats; offshore oil drilling in particular.



Oceana's colourful campaign bus. Photo by Sarah Harper

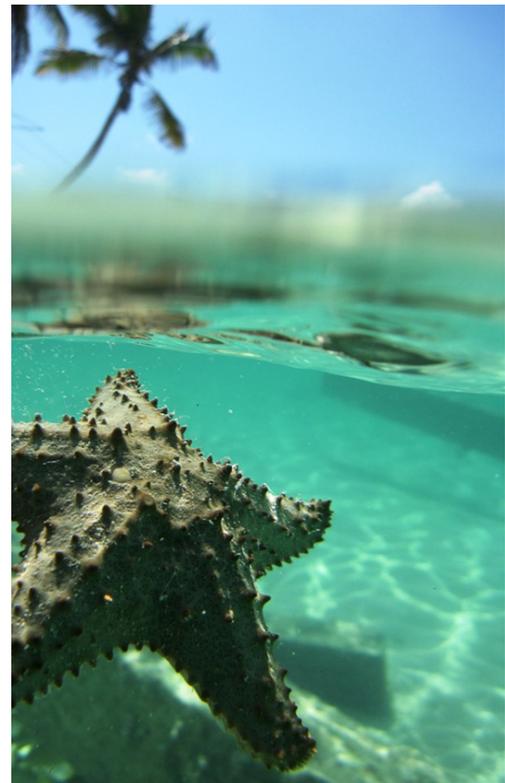
knowledge and expertise that had been gleaned from years of scientific study within Belize but that had not necessarily stayed within its borders. Many detailed studies have been conducted on diverse aspects of the Belizean marine environment but have been published abroad. The conference aimed to bring this knowledge back to Belize and use it as a tool to inform and improve decision-making.

Attendance at the two-day conference included fishers, government delegates, the US ambassador to Belize, media, NGO's and citizens

of Belize. While the conference was well-attended, the main outlet for disseminating this information to the general public was the media, via breakfast television shows, radio, talk shows, etc.

The conference concluded with a letter to the government of Belize signed by 20 scientists from 10 nationalities, most with decades of experience studying the marine environment of Belize. This professional statement re-iterated the importance and value of the marine environment and the need to protect it from anthropogenic threats; offshore oil drilling in particular.

With the conference concluded, a scientific report just released², and a flurry of media exposure, the question remains: to drill or not to drill? The hope is that the government wakes up to an informed public who are now asking the tough questions.



Starfish image captured at Caye Caulker.

Photo by Gordon Kirkwood.

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The **Sea Around Us**

Project newsletter is published by the Fisheries Centre at the University of British Columbia. Six issues of this newsletter are published annually. Subscriptions are free of charge.



Our mailing address is: UBC Fisheries Centre, Aquatic Ecosystems Research Laboratory, 2202 Main Mall, Vancouver, British Columbia, Canada, V6T 1Z4. Our fax number is (604) 822-8934, and our email address is SeaNotes@fisheries.ubc.ca. All queries, subscription requests, and electronic address changes should be addressed to Megan Bailey, Sea Around Us Newsletter Editor.

The Sea Around Us website may be found at www.searounds.us and contains up-to-date information on the Project.

The Sea Around Us Project is a scientific collaboration between the University of British Columbia and the Pew Environment Group that began in July 1999. The Pew Environment Group works around the world to establish pragmatic, science-based policies that protect our oceans, wild lands and climate. Pew also sponsors scientific research that sheds new light on the dimensions of and solutions to the problems facing the global marine environment.

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Who will benefit from offshore oil drilling? Who will pay the price for the high environmental costs associated with this industry?

Perhaps I am biased, given my background in marine conservation, but I think that in the waters of Belize, drilling for oil just doesn't make sense. On the last day of the conference, the scientists and media adventured offshore to Turneffe Atoll, a typical reef for this area known for its excellent diving, snorkeling and sportfishing opportunities. We stopped for lunch at a lodge nestled in amongst the mangroves lining the atoll and heard about the decade long struggle to get it designated as a marine reserve in order to better preserve its natural beauty. Unfortunately, this atoll lies within the largest of the oil concessions, owned by Princess Petroleum Ltd., and is likely to be one of the first areas drilled. This atoll alone brings in 40 million USD annually from flyfishing for bonefish, tarpon and permit. This is money that goes directly into the Belizean economy and to the people of Belize. Conversely, the majority of oil revenue from drilling in the waters adjacent to this popular fishing hole would go mainly to the international investors of the oil companies. Simply looking at the economic picture, drilling for oil would likely not improve the economic situation in Belize and the risk in terms of losses both in fisheries and tourism are huge.

On the biological side, Belize also stands to lose a lot. The conference highlighted over 2,000 marine species of fish, invertebrates and plants, found in the waters of Belize and now documented in FishBase and SeaLifeBase. I was able to experience first hand some of this incredible diversity and abundance of life with a snorkel through the reef at Hol Chan marine



*An octopus shows off for the camera.
Photo by Gordon Kirkwood.*



*A sponge serves as a home for this banded coral shrimp.
Photo by Gordon Kirkwood.*

reserve, not far from Turneffe Atoll. A glance around the marine reserve revealed a tremendous array of sharks, rays, turtles, reef fish, dolphins, corals, and much more. Belize has arguably the healthiest Antillean manatee population in the world and still has relatively abundant shark populations, including whale sharks. Looking around as I snorkeled through the reef, I could see that an oil spill in the waters of Belize would have an incredibly devastating effect. A catastrophic oil spill, given recent events in the Gulf of Mexico and other parts of the world, is quite possible. Drilling for oil offshore is much riskier than onshore, and in a biologically rich and diverse marine environment such as Belize, the risks are too high—in my opinion. An oil spill could wipe everything out and Belize would be left with nothing—no tourism, no fishing!

Throughout the conference, Audrey-Matura Shepherd, VP of Oceana Belize, emphasized the importance of the reef in providing food security and jobs, "Think about Belize without the reef? Where would we be without that?" The Belize barrier reef, the largest barrier reef system in the northern hemisphere and a UNESCO World Heritage Site, is a sense of national pride, a source of livelihoods, food security and jobs for the people of Belize. That is definitely worth protecting!

For more information visit the website: <http://www.seaaroundus.org/conference/belize/home.htm>

Endnotes

- ¹ McCrea-Strub, A. and Pauly, D. (2011) Oil and fisheries in the Gulf of Mexico. *Ocean and Coastal Law Journal* [in press].
- ² Palomares, M.D. and Pauly, D. (2011) Too precious to drill: The marine biodiversity of Belize. Fisheries Centre Research Report 19(6), University of British Columbia, 175 pp. <ftp://ftp.fisheries.ubc.ca/FCRR/19-6.pdf>

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Dreams can come true

by Robin Ramdeen

Skeletons of sea mammals, a picture of a salmon, a project called 'Seahorse'; it is a blossoming marine scientist's dream come true.

Last year, from a porch on a tiny Caribbean island called Carriacou, I vowed to learn everything about fisheries, especially in the Caribbean context. There, I had been placed for 6 months on a CIDA internship as a Marine Protected Area Management Assistant for the new Sandy Island Oyster Bed MPA. My island upbringing – I am a native of Trinidad and Tobago - and affinity for seawater made a career as a marine scientist a good fit for me. Upset and confused by a scarcity of choice and prohibitive prices at the fish markets in the Grenadines Islands- I wondered...where are all the fish going?

Unfortunately, reading material on fish and other foods was as scarce as the food items themselves in these secret islands. But one sunny day I happened upon a National Geographic magazine. It was a special Gulf of Mexico edition and it detailed the suffering and strife facing the marine life in the Louisiana wetlands, as a result of yet another oil rig disaster. Somewhere towards the centre of the magazine I stumbled upon an article entitled Seafood Print. It was a clever term for the ecosystem impacts that we bring about by our piscivorous choices. Like the fate of many a fish, I was hooked! The field of ecology was very interesting to me and soon I began to learn about a scientist named Dr Daniel Pauly and the work of a project named after a phenomenal book by Rachel Carson (which I am in the middle of reading), the *Sea Around Us*. From my CIDA intern peers, I also heard about the International Marine Conservation Congress, taking place in Victoria, Canada, in May 2011 – which I did attend (see photo evidence above).

In Trinidad and Tobago, we say “yuh reach” when you have attained something really big, and that is the feeling I have being at the UBC Fisheries



The Author (right) at the International Marine Conservation Congress, with Jahson Alemu (Research Officer, Institute of Marine Affairs, T&T) and Daniel Pauly. Photo by Aylin Ulman.

Centre. Skeletons of sea mammals, a picture of a salmon, a project called 'Seahorse'; it is a blossoming marine scientist's dream come true. Here, I will be working with Sarah Harper and the talented *Sea Around Us* team to piece together the puzzle of how the current and deplorable state of Caribbean fisheries came to be. Caribbean fisheries are threatened by the same factors that are affecting global fisheries, including collapsing fish stocks resulting from overfishing and environmental degradation.

'Bacchanal' or confusion is an inherent part of island life, where our small populations compete for limited resources. Issues like the disregarding of CITES recommendations on trade and under-reporting fish catches to the FAO, the selling flags of convenience and fighting over flyingfish will all be dissected in the Caribbean context. To say that every fish in the Caribbean will be counted would be exaggerated, even in this technological age. I will, however, say that we are working like dogs to use every bit of accessible data (FAO and national, grey and white), and transforming market data into landings data. We hope to dispel the notion that there is insufficient information to enable proper management of our precious fisheries resources. From Algeria to Zanzibar, we are the *Sea Around Us*.

