

Report on LOF Trip to the Pedro Bank
March 10 – 20, 2012

Introduction

The Khaled bin Sultan Living Oceans Foundation (LOF) is in the middle of its global coral reef expedition (Expedition) from 2010-2013. The Pedro Bank, located off Jamaica's south coast, is the Expedition's first site for 2012. The Expedition aims to enable scientists of many nations, under the LOF Science Without Borders program, to conduct applied research on coral reefs that will provide information and tools needed to develop regional and global conservation measures to counter the most serious threats impacting these ecosystems. Using the *M/Y Golden Shadow* as a research platform, the research scientists will implement a standardized protocol to map, characterize, and evaluate coral reefs throughout the western Atlantic, Pacific and Indian Oceans, and the Red Sea. Comparative assessments of coral reefs across gradients of biodiversity, oceanographic conditions and human pressures will be undertaken to determine their status and major threats, and identify factors that enhance their health and resilience. The Expedition will fill serious knowledge gaps regarding the future of coral reefs and their capacity to adjust to climate change.

The research will be accomplished by LOF scientists and partners from academic institutions, in collaboration with scientists and managers from local resource management agencies and graduate students supported through the *Science Without Borders* program.

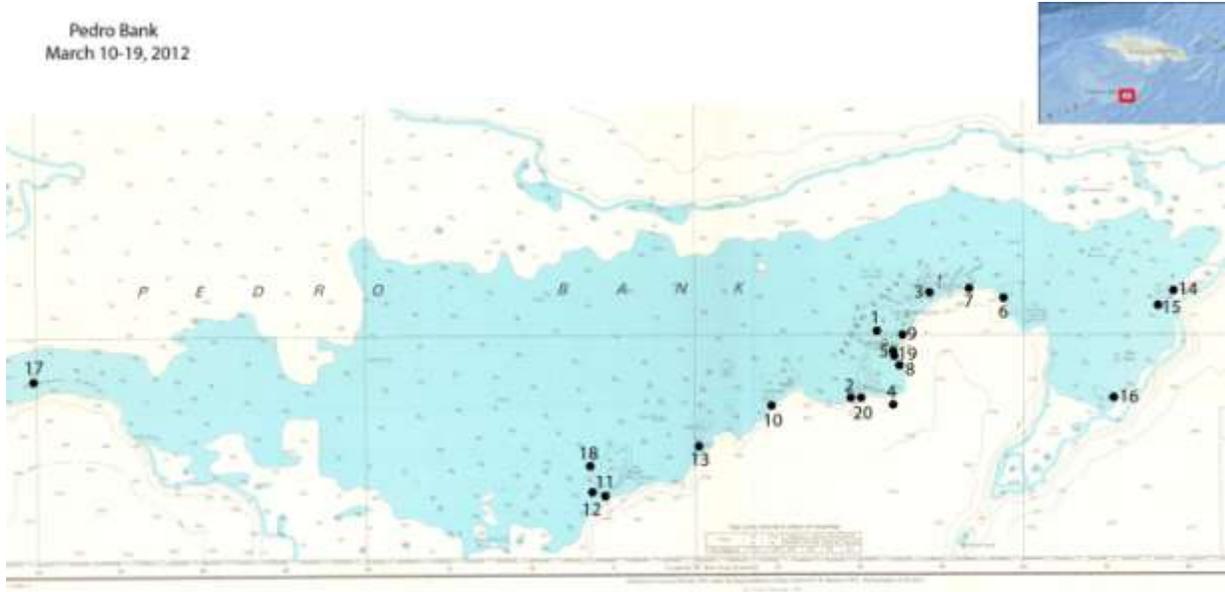
For Jamaica, the agencies involved included The Nature Conservancy (TNC), the Jamaica Fisheries Division (FD), National Planning and Environmental Agency (NEPA), Veterinary Services Division and University of the West Indies (UWI). Apart from participating in the scientific aspects of the Expedition, TNC was integral in the planning of the event having:

1. Liaised with local partners to determine their research needs, collated them and relayed them to LOF Science Lead.
2. Procured Side Scan Sonar and underwater camera equipment for the gathering of benthic mapping data
3. Helped coordinate media events and before and after Expedition
4. Helped coordinate VIP Tour after Expedition
5. Helped coordinate Educational Outreach session in Portland, Jamaica
6. Helped in the gathering of fish vending footage at the renowned Coronation Market in Downtown Kingston, Jamaica

The Expedition

- The research vessel, Golden Shadow, set sail from Port Antonio, Portland, on the evening of March 10, 2012 and returned to Kingston on the morning of March 20, 2012
- Research started on the afternoon of Sunday March 11 and had 3 major components:

- a. **Marine surveys** that used Atlantic & Gulf Rapid Reef Assessment (AGRRA) methods and focused on the status of reefs, reef fish, invertebrates and algae. This was conducted by the team of scientific divers provided by LOF and the local scientific divers that came from UWI, FD and TNC.

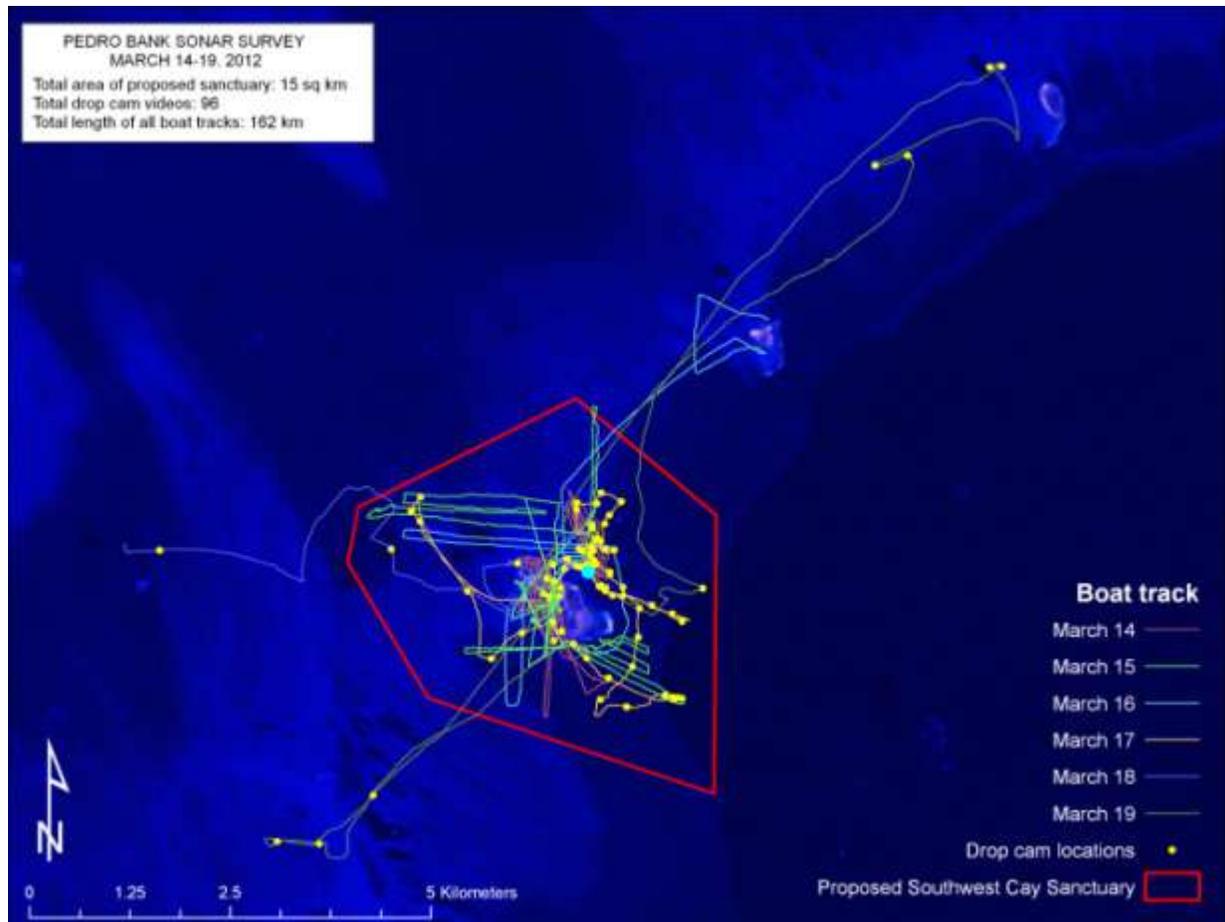


Dive Sites covered by scientific divers on the Pedro Bank during LOF Expedition



Line transect laid during LOF Expedition

- b. **Habitat Mapping** that used sonar technology and video transects to determine the extent of various habitat types, particularly within the proposed South West Cay Fish Sanctuary and around the Pedro Cays. This was conducted by TNC and representatives from NEPA, FD and Vet Services Division through the kind help of the LOF boat captains.



ALGAL REEF FLAT



BARE CARBONATE SAND



HARD BOTTOM WITH LOW RELIEF CORAL MIX



GORGONIAN HARD GROUND



SEAGRASS BEDS



Images of 'Side Scan' sites and drop cam videos generated during benthic surveys

- c. **Plankton sampling** that focused on the collection of planktonic organisms with the aim of determining what is in the plankton, the types and abundance of fish, lobster and conch larvae that comprise the plankton, and how these may relate to the relative fisheries. Plankton tows were conducted while gathering the habitat mapping data and was led by the Vet Services Division.

Findings

Note that these comments on findings are very preliminary as no analysis has been done and will not be completed for months to come.

Coral – There were good signs for coral. There were few signs of disease in many areas. As expected, there were large areas of Elkhorn and Staghorn corals that had been decimated by hurricanes but there were also signs of recovery and also a few extensive stands left. There were coral colonies that the scientists didn't expect to see but were seen in good health. There were also colonies that were hardly seen elsewhere in the Caribbean.

Fish – The stand out observations were the absence of seabass and snappers, the limited numbers of large parrotfish and the absence of large schools of doctorfish that were so abundant in the 2005 AGRRRA surveys coordinated by TNC in partnership with other Programme partners.

There is cause for concern as it relates to fin fish and the fishable resources of the Bank on a whole. An unsustainable fishing activity witnessed on the North Western Ridge of the Bank provided insight as to why fish were so scarce. A large fishing vessel carrying approximately 40 men and 6 smaller tenders with compressors were seen close to a site that we dived at. We pulled alongside a canoe and saw numerous parrot fish and doctor fish being "cleaned" having been speared by divers. When the divers on the tenders are tired, the captain of the tender goes back to the mother vessel to drop off the catch and the tired divers and pick up a different set of divers to repeat the process.



Fishing vessel spotted on the North Western Ridge of the Pedro Bank during LOF Expedition

Invertebrate surveys –

The invertebrate study was done by TNC scientific divers. The species targeted were those of economic significance such as conch, lobster, sea urchins, sea cucumbers and crabs. Lionfish were also counted during these surveys given the fact that they remain in one place for extended periods.

Many spotted lobsters (*Panulirus guttatus*) were seen during the survey. Disturbingly, very few of the marketed spiny lobster, (*Panulirus argus*), were seen throughout the surveys. Reports from the fishers indicate that these lobsters move from the deep to the shallower areas at night and that is a possible reason why very few were seen. Very few crabs of economic value were seen. *Mithrax spp.* was being observed.

Queen conch, dead and alive were abundant throughout the survey period. Within the proposed sanctuary, there were encouraging signs as both adult and juvenile conch were seen. The North West Ridge had a particularly high amount of dead conch on the site that was surveyed.

There were a few sites (2 or 3 of the 20) that had great abundance of the black sea urchin, *Diadema antillarum*. Apart from these sites, sea urchins were infrequent. So too sea cucumbers.

Overall, the numbers of lionfish were low. There were one or two sites (in deeper water – 80 feet – along the drop off of the South West Cay Fish Sanctuary) where there was a greater abundance of lionfish .

Trip to Middle Cay

On the evening of Monday the 19th a group of us including Andy Brucknor (lead scientist), Nathalie, Meggs (TNC), Azra Blythe-Mallet (Vet Services), and Anna-Cherise Ebanks (Fisheries Division) met with Pedro Community members to discuss our presence on the Bank. Dr. Brucknor did a picture presentation on coral reefs, the threats to the reef fishery and the importance of sustainable fishing practices. Fishers were quite keen and outspoken and they again confirmed their support for the Fish Sanctuary.

Next Steps

- Analysis of AGRR data and dissemination by LOF
- Declaration and management of South West Cay Fish Sanctuary and keeping LOF coral reef scientists in the loop with that effort.
- Obtain satellite imagery for the areas around the Pedro Cays, classify side scan sonar data then train satellite imagery for complete classification of imagery obtained – focusing initially on sanctuary and waters surrounding other cays.
- MSP in 2013

Living Oceans Foundation Report – Outreach Section

In conjunction with The Living Ocean's Global Reef Expedition, Jamaica was selected as the fifth stop on the five year tour of reefs around the world. The site for investigation was the Pedro Bank and associated reef to be researched using the vessel, the Golden Shadow. TNC being partners assisted with various aspects of the expedition. From an external affairs perspective we were critically involved in liaising with the Government of Jamaica to ensure all related activities and permits were secured prior to and during the stay of the vessel and its team. The following are the main events and their outcomes.

1. Press Conference

A press conference announcing the launch of the expedition was held on 9th March at the Ministry of Water, Land, Environment and Climate Change. The press conference was attended by the Government of Jamaica through the Minister with responsibility for the environment the Hon. Robert Pickersgill and his Permanent Secretary Mrs. Genefa Hibbert, as well the State Minister in the Ministry of Foreign Affairs and Foreign Trade, the Hon. Arnaldo Brown. The LOF's was represented by Capt. Phil Renaud - Executive Director and Dr. Andrew Bruckner - Chief Scientist. Several government agencies were represented particularly the Environment Management Division (Ms. Leonie Barnaby, Executive Director; Mr. Jerome Smith, Director of Natural Resources), the National Environment and Planning Agency (Mr. Knight, CEO; Ms. Andrea Donaldson, Manager for Ecosystems Management Branch), and the Meteorological Service of Jamaica (Mr. Jeffrey Spooner, Director; Mr. Clifford Mahlung, Head of the Climate Branch). TNC was well represented by Donna Blake, Llewelyn Meggs and Orville Grey.

The event was also attended by the government information service arm (the Jamaica Information Service) as well as other local print and radio press personnel. Chaired by Mr. Jerome Smith, greetings were brought by PS Hibbert and remarks were made by Mrs. Donna Blake (TNC) and the Hon. Min. Arnaldo Brown. An overview of the mission, its importance and value was given by Mr. Renaud and Dr. Bruckner of LOF and proceeding concluded with an address by the Hon. Min. Pickersgill. Following the formal presentations, the LOF team was presented with their environmental permits by the Hon. Min. Pickersgill.

This event was facilitated through joint discussions between LOF, TNC and the GoJ.

2. VIP Ship Tour & Reception

On March 20th a VIP ship tour of the research vessel and reception was held culminating the research expedition to the Pedro Bank. The Golden Shadow was docked in the Kingston Harbour to facilitate guests. The Ship Tour was attended by various members of academia, private sector interest group, the NGO community, government agencies such as the Fisheries Division and the Veterinary Services. Other members of government were invited but unfortunately were not able to attend due to the days Parliament meeting addressing the country's business.

The reception which followed was held at the Morgan's Harbour Hotel in Port Royal. Invitees to the reception included a wider cross section of those attending the ship tour. We were privileged to have

the minister with responsibility for the environment, the Hon. Min. Pickersgill attending despite the long day in Parliament. The reception was headlined by a presentation of the activities undertaken on Pedro Bank by Mr. Renaud and Dr. Bruckner highlighting areas of concern and importance. Unfortunately the Minister was unable to make a statement to the press that was also invited or attend to a short interview as part of the LOF mission activities. An attempt is being made to address this when the research vessel gets back to Jamaica after their mission to Navassa Island.

This event was facilitated through joint discussions between LOF, TNC and the GoJ.

3. Education & Outreach Workshop

An education and outreach workshop was held at the Errol Flynn Marina in Pt. Antonio (docking location) in the parish of Portland on 24th March. Two working groups were facilitated: a group of students and their instructors and a group of fishermen and associated fisheries interest. This component was led by Mr. Eddie Gonzalez of LOF.

The morning session revolved around students and teachers at the secondary and tertiary levels. Secondary school students were from the local high school (Pt. Antonio High School) and tertiary students were from the College of Agriculture and Science (CASE), both local institutions. At least 40 individuals were represented at this workshop. The tertiary students represented two primary focus groups; Bachelor of Technology degree in Environmental Science and Associate degree in Natural Science. The workshop was broken down in three components: an LOF presentation, ship tour, and a mapping exercise. A presentation on LOF's Global Reef Expedition was provided highlighting the need for research and the importance of coral reef communities. The ship tour was led by Mr. Renaud and the mapping exercise was led chiefly by Mr. Eddie Gonzalez with support from Mr. Machel Donegan (PEPA) and Orville Grey.

The afternoon session included the fisherfolk from the local region, NGO (Blue Lagoon Alliance) and GoJ enforcement officers. The workshop was led by Dr. Bruckner and supported by Eddie Gonzalez and Orville Grey. A lively discussion was initiated through a pictorial presentation of coral reefs and associated issues. Fishermen were able to identify the various types of fishes that comprise their catch and provide estimate on their catch effort. The various stages of fish life cycle were analysed and their impact from the perspective of fisheries addressed. This included; size of catch, recruitment areas, life cycle, size of nets and mesh in use, fishing techniques employed, and national guidelines and standards. A fisherman from the Priory/St. Ann's Bay area was also on hand to compare fishing activities and issues at another north-coast fishery. Fisheries enforcement officers were also able to highlight areas of need, particularly as it relates to practice and regulations.

This event was facilitated through joint discussions between LOF, TNC and local NGO - PEPA. TNC continues to facilitate the LOF team in securing a permit to conduct research in the Joint Regime Area that is managed by the governments of Jamaica and the Republic of Colombia.