

Final Evaluation Report

Your Details							
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Project Title	Enabling Support for Sharks in the Miskito Cays of Honduras						
Application ID	29637-1						
Grant Amount	6000 GBP						
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Date of this Report	February 28, 2022						



1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To establish a fisheries- independent baseline for sharks in the Miskito Cays of Honduras by which to measure changes in abundance, distribution, and density by the completion of the project.				In total 37 BRUV deployments were conducted in the northern MC sampling location. A total of 40 sharks were sighted within the 60 min review period and were used for the data analysis. The team identified five distinct species of sharks belonging to two families - sharpnose sharks (<i>Rhizoprionodon</i> sp.) were the most abundant species, second most abundant species, second most abundant species encountered were Caribbean reef sharks and nurse sharks. Regarding the longlines, the team was able to conduct 16 sets of scientific longline resulting in 58 captures.
Build capacities in artisanal fishers in monitoring techniques and key marine topics through education workshops.				Three local fishers and one university student received training and were part of the monitoring. We were only able to host one workshop with artisanal fishers due to COVID-19 restrictions. It was difficult for some team members to travel to the Moskitia. Luckily, we had team members already based in the area which facilitated the workshop we held in August 2021.
Results from this project would be shared back to government ministries to aid in the management of these incidental captures				Thanks to this body of work, and knowledge of this remote indigenous area the team members were asked by the DIGEPESCA to support in the revision and monitoring of incidental shark captures regulations in the Moskitia. The team also continues to be a part of the National Shark Advisory Committee for Honduras, where our goal is to translate our work to management decisions and species friendly policy.



2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

During the project execution one of the biggest obstacles was the COVID-19 pandemic. We had planned several education activities which had to be readjusted due to limitations in group gatherings, traveling and the risk of getting sick. The field component of the project went very well because we had team members based in the Moskitia to support education activities and coordination. Without them it would have been impossible to execute this project. The team also took advantage of the time spent in quarantine to host virtual events and stay connected with fishers via telephone. Regarding our methodologies, these all proved to be cost effective methods to assess shark diversity and abundance.

3. Briefly describe the three most important outcomes of your project.

The team generated key information to improve shark management in Honduras Our baseline data highlighted that the Miskito Cays (MC) is a key area for sharks in the country, and the Caribbean. The Miskito Cays had 61% of BRUVs with sharks present which is double the regular average of 25% based on the Global Fin Print. Juvenile reef sharks dominated the longline captures this suggest that the MC are critical habitat for juveniles. The COVID-19 survey and workshop conducted with fishers also highlighted the intricacies of the shark fishery and how it is driven by both demand of shark meat product and the need to provide sustenance to Miskito families. Thanks to this body of work, and knowledge of this remote indigenous area, two team members were asked by the DIGEPESCA (Honduras Fisheries Authority) to support in the revision and monitoring of incidental shark captures regulations in the Moskitia.

Building support and understanding for sharks in one of Central America's most remote and Indigenous regions

The community and education work were led by local Miskito professionals, who inspired as young children and adults as role models. Our fisher workshop helped build relationships with local artisanal fishers and begin a dialogue about sharks and their barriers to conservation. It was evident from the knowledge acquired from the workshop that fishers understand that sharks are in peril but do not fully comprehend their ecological importance. They also pointed out that gear like gillnets need to be regulated and seasons where fish are spawning or mating in the case of sharks protected.

Developing our very own project called "ILILI"

The Rufford funded project gave us the confidence to establish ILILI which translates to "shark" in Miskito dialect. Our goal is to develop and grow ILILI into a fully functioning Honduran and US registered not-for-profit, collaborating with communities to support the conservation of sharks and rays. Now, we have developed a logo, social media channel and recently purchased a domain: ilili.org.

Establishing long-lasting collaborations in the region to support the conservation of sharks



The team was invited to be a founding member of the first Mesoamerican (MAR) Network from Chondrichthyans (MAR-CHON) as representatives for Honduras. The network brings together experts from all four countries in the MAR and will be a starting point for regional projects. The team also continues to be a part of the National Shark Advisory Committee for Honduras, where our goal is to translate our work to management decisions and species friendly policy.

4. What do you consider to be the most significant achievement of this work?

5. Briefly describe the involvement of local communities and how they have benefitted from the project.

Local artisanal fishers in the Moskitia region were integral to the project. They benefited by receiving training in monitoring techniques for elasmobranchs and received compensation for their time spent on the field. We also collaborated with local Miskito biologists, who led the artisanal workshop in Brus Laguna. Thanks to the Rufford project, we have begun a collaboration with the Artisanal Fisher Association in Brus Laguna, who we hope to continue engaging in future projects. We hope in the next few months to host a meeting to share the results back to the fishers that supported our work and the Artisanal fisher Association.

6. Are there any plans to continue this work?

Yes, the team has continued to actively fundraise to support plans regarding sharks in the Miskito Cays (MC). Ideally, we would like to continue the monitoring and conduct an annual assessment of elasmobranchs in the northern MC and most southern Cays in the border with Nicaragua. One important aspect is understanding the market for shark meat and derivatives which drive the fishery. In the future we hope that with the relationships forged through the project we can conduct fisher surveys, landings monitoring and perception surveys to understand the fishery and drivers for demand.

7. How do you plan to share the results of your work with others?

The project and its proposed activities were presented during the "Sharks and Rays of Latin America" symposium by team member Ely Augustinus in July 2020. During quarantine in July 2020 the team hosted a virtual symposium titled: "Sharks and Rays of Latin America". The idea was to commemorate Shark Awareness Day which is held on July 14. The symposium hosted a total of 15 presentations from colleagues from Mexico, Belize, Guatemala, Honduras, Costa Rica, Panama, Peru, Brazil, and Chile. The symposium was a success, with over 200 participants per day and 1,200-1,500 views on Facebook. Additionally, in October 2021 team leader Gabriela was invited to the first Mesoamerican Network for Chondrichthyans meeting in MOTE Marine Laboratory in Sarasota, Florida. During the meeting, she briefly presented the preliminary findings of the project and future plans. We were also invited to a Rufford Foundation Conference in Nicaragua (February 2022) to present our results. We hope this first meeting in Nicaragua can lead to future collaborations in the Nicaraguan Miskito Cays. We hope to be able to present the work in Sharks



International Conferences in Valencia in 2022 and through a peer reviewed publication.

8. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

Our Rufford grant's timeline was initially March 2020- March 2021, unfortunately COVID-19 halted all project activities, and the initial disbursement was received in February 2021 which delayed the project 1 year. Despite the delays the funds were executed as intended regarding the actual length of the project (1 year) and activities proposed.

9. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in \pounds sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Fisher Workshop	534	534		
Travel to Moskitia	728	708	-20	
Fisher Stipends	900	900		
Bait for Longlines	170	163	-7	Bait prices fluctuated between different fishers
Olympus Tough Camera	309	217	-92	We did not have to incur in shipping fees and the camera price had dropped significantly due to delays in project disbursement
Go-pro Cameras	840	1095	+255	The team did not account in budgeting for underwater housing, charging cables, extra batteries, and SD cards
Waterproof paper	80		-80	We got waterproof paper donated by our colleagues at the Roatan Marine Park
Buoys	300	204	-96	We bought the buoys in a marine store which has lower prices than we had quoted initially.
Delorme In-reach	389	252	-137	We were able to buy a refurbished Delorme in-reach through amazon which was cheaper than what we



				estimated
Roto tags	200	301	+101	The roto tag distributor had a minimum number that needed to be purchased for custom printed roto tag. Therefore, we had to order more tags. Additionally, we ordered two different tags for both adult and juvenile sharks.
BRUV structures	600	577	-23	We received a small discount from the welder for the BRUV structures
Longline Equipment	800	899	+99	The team had to buy tools to make the longline such as crimpers, and monofilament cutter which elevated the costs of the longline.
GPS	150	150		
TOTAL	6,000	6,000		*Exchange rate was 0.7271 GBP=1USD based on 2021 average exchange rate

10. Looking ahead, what do you feel are the important next steps?

Regarding the research aspect of the project, we hope to expand our work to the mainland of the Moskitia and southern Miskito cays. The idea would be to increase our sampling effort with more replicates of the BRUVS and longlines sets for a more robust data set. The team is also interested in understanding the market for shark meat and derivatives, trade routes and seasonality. We have made strong connections with the community which will enable us to collect more detailed information on the landings of sharks despite It being illegal. Important steps include identifying local fishers or biologists that can support this work as community monitors based in the Moskitia. Additionally, we hope to continue collaborating with Miskito fishers for all data collection and expanding our outreach efforts to other fishing communities. Two team members continue as members of the National Shark Advisory Committee, where we hope to that our data can facilitate management decisions that support the conservation of sharks in Honduras.

11. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

The Rufford logo was used in outreach materials created from this project including a video of highlights collected from BRUV footage, presentations given during the project's life and t-shirts used by the team.



12. Please provide a full list of all the members of your team and briefly what was their role in the project.

Gabriela Ochoa- Team Leader

During the project execution, Gabriela was responsible for the team leadership, reporting, data analysis and BRUV review, field coordination and fundraising.

Ely Augustinus

Ely was responsible for data input, finances, financial reports, and development of artisanal fisher workshops.

Wildres Wood

Wildres was responsible for coordinating outreach activities in Brus Laguna.

Marcos Odair Rodriguez- Biology student

Marcos is a local Miskito biology student. He joined the project in 2021. He was crucial to the project success and was responsible leading fisher workshops, and dissemination of educational material.

Exson Flores

Exson Flores is an artisanal fisher who was been collaborating with the team since 2015. He was responsible for training fishers in monitoring techniques during the field work in the Miskito Cays.

13. Any other comments?

Our Rufford funded project has established a fisheries independent base line for sharks in the remote Miskito cays. This information will support authorities and managers of this area to identify changes in abundance and diversity over time. The data collected has highlighted the importance of this area for endangered Caribbean reef sharks and protecting the Miskito cays can ensure that individuals can reach sexual maturity and populations can remain healthy. However, we have also come to understand that shark fisheries are extremely complex in this region and to address the root problem we need to take closer look at the commercialisation of shark products and understand the economic significance it has to artisanal fishers and coastal communities. We are extremely grateful to the Rufford Foundation for their support for this project.



