

TERMS OF REFERENCE (TOR)

THE BEHAVIORAL ANALYSIS STUDY OF SHARKS IN THE EGYPTIAN RED SEA REGION

International consultancy

Country:	Arab Republic of Egypt
Project Title:	Mainstreaming the conservation and sustainable use of biodiversity into the tourism development and operations in threatened ecosystems in Egypt
Post Title:	INTERNATIONAL CONSULTANCY SENIOR PROJECT RESEARCHER
Duty Station:	Egypt
Duration:	100 working days over a period of 15 months
Expected Starting Date:	June 2021

Project Background:

This 4-year project is designed to mainstream biodiversity into the Egyptian tourism sector and government. It comes at a critical time in Egypt's recent history with the political changes that are currently underway to make government institutions more accountable and to develop the economy, both of which are resulting in considerable changes in the way that both tourism and biodiversity resources may be managed in the future. Therefore, the project will work on two levels:

The first level will engage directly with the industry and government to fill gaps in the existing planning and regulatory framework, namely a Strategic Environmental Assessment to identify key areas, habitats and ecological processes and assess their vulnerability and guidelines for the existing EIA regulations specific to biodiversity and linked to an offsetting mechanism and developing a monitoring programme to track the impacts of tourism on biodiversity for conservation management purposes.

The second level will engage the tourism industry by developing Responsible Tourism Grading and promoting Egypt as a global destination for ecotourism and developing community-based systems to allow those closest to the resources to benefit and manage them sustainably.

The project will also create one new protected area and increase the size of two more while building management capacity and developing these and four more protected areas for sustainable tourism. All of these areas are currently under threat from tourism development. Because of the uncertainty and dynamic nature of the challenge and because the tourism industry faces an adaptive challenge and to a lesser extent a

technical challenge, the project will be guided by a scenario planning exercise as a means to bring about the individual and institutional behavioral changes and to ensure that the project is highly adaptive.

Study Background:

Sharks are one of the most renowned apex predators in marine ecosystems. They play a vital role in the maintenance of the ecological equilibrium that leads to healthy underwater ecosystems. With an increase in tourism pressure, stress on habitat integrity and fisheries continue to increase, making resources scarce for these predators and therefore, causing detrimental behavioral changes that often intercept human activities.

Shark attacks are rare events, and unprovoked shark incidents are even rarer (Naylor and Bowling, 2019). These unprovoked encounters could be linked to the misidentification of the shark towards its prey resulting in a singular bite after which the shark recognizes the error in choice and leaves. Other encounters could be attributed to errors in human behavior and anthropogenic disturbance which consequently, results in alterations in the environmental factors governing the lives of these marine predators (such as the scarcity in prey items as a result of overfishing) leading to a heightened sense of stress and agitation for the shark populations.

The past 10 years in Egypt witnessed a relative increase in the rate of shark incidents, with the initial and first recorded incident in 1992 by a Tiger Shark in Ras Mohammed National Park, followed by another in 1996, 2009, 2010, 2015, then 2 accidents in both 2017 and 2018. They are mainly caused by three Red Sea dwelling shark species; the Oceanic White-tip Shark (*Carcharhinus longimanus*), the Tiger shark (*Galeocerdo cuvier*), and the Shortfin Mako shark (*Isurus oxyrinchus*).

In light of these incidents, the project alongside the Egyptian Environmental Affairs Agency (EEAA) is interested in a short-term study of the three aforementioned shark species in the Red Sea, in order to understand their movement, behavior, ecology and to minimize the probabilities of shark related injuries (fatal or otherwise). Additionally, we aim to bridge the gap between our assumption of the root causes of these changes in behavior to be able to best manage and conserve sharks in the Red Sea.

This study is expected to contribute to a foundation of a “shark management program” in Egypt. Therefore, a participatory approach and a highly professional capacity building of a national team of experts, is a very crucial component of this TOR. The national team of experts is expected to carry out the activities of the study in the future as a whole.

Stakeholders:

1. EEAA- Egyptian Environmental Affairs Agency NCS- Nature Conservation Sector
2. MoT- Ministry of Tourism
3. CDWS- Chamber of Diving and Water Sports / Hotels Tourism Chamber
4. General Authority Fish resources development (GAFRD)
5. Universities and Scientific institutions
6. Fishermen Association
7. NGOs

Scope of Work:

1. Prepare a tracking program to investigate and analyze spatial and temporal scales of the movements of the Oceanic Whitetip, Tiger and Shortfin Mako sharks in the Egyptian Red Sea
2. Explore the relationship between depth profile and water temperature in the study area.
3. Identify movement, residency patterns and activity hotspots of the targeted species in proximity to recreational sites in Sharm El Sheikh, Hurghada and Marsa Alam.
4. Identify and analyze areas of anthropogenic disturbance, stress in the study region (to be included in the Preparatory Phase Report)
5. Obtain a list of recommendations to offset and mitigate stress factors to ensure the adequate conservation and elimination of factors that cause behavioral changes to shark species in the Red Sea
6. Capacity development and surveillance training of Red Sea rangers and research staff of Egypt's Protected Areas.
7. Prepare a first responder operational manual/protocol for immediate action in the case of abnormal observation or incident.
8. Identify the likelihood of snorkelers and divers encountering sharks in the Red Sea

Professional Skills and Experience

- The International consultant should have 10 years of intensive experience in marine megafauna telemetry and movement ecology.

- 5 years of empirical and theoretical experience in shark satellite tagging and movement data analysis. (Preferably on the targeted shark species)
- Proven capabilities of working with an international and multicultural team.
- English is the official language of communication and reporting.
- Willingness of working in Egypt, with the Egyptian team.
- Experience of working in the Red Sea will be an advantage.
- Familiarity with the latest related technology of satellite tracking and data analysis in marine aspects.
- Team building and communication skills are required. The candidate must be able to deal with central agencies, local administrations, Private Voluntary Organizations, representatives of the donor community, and investors. She/He should have an excellent command of the English language (both written and oral communication).

Deliverables:

1. A proposal for suggested long term shark tracking system with cost benefit analysis for models of satellite, visual and acoustic transmitters and bio-loggers
2. A detailed research methodology and fieldwork logistical plan and the list of equipment needed and boat specifications for the completion of the study (Field visits, survey duration, experts and assistants required...etc.)
3. Monthly progress reports on the assessments conducted
4. A workshop for stakeholders aimed at discussing the current situation and threats affecting sharks in the Red Sea. Workshop report is required.
5. Training manual for the team that will be working on capture, tagging, and shark release.
6. A technical training workshop, for the Egyptian experts who will be working alongside the consultant team. Workshop report is required.
7. Statistical analysis workshop materials to be delivered 3 weeks in advance. Workshop report is required.
8. (2) days workshop on marine movement data analysis and a list of attendees. Workshop report is required.
9. Final assessment report on findings and mechanisms of mitigation and offsetting

Application:

Interested **individual consultants** must submit the following documents/information to demonstrate their qualifications: subject of email “Consultant application for the Shark Analysis Study”:

1. Proposal;

- (i) Explaining why she/he is the most suitable for the work
- (ii) Provide a brief methodology on how they will approach and conduct the work

2. Financial proposal including the daily rate.

Payments are made to the Individual Consultant based on the number of days worked.

3. CV/Personal History Form including past experience in similar projects and at least **3 references**

Proposal should be submitted at the following email address to:

procurement@mbdtegypt.org no later than **22/4/2021**

In the case of travel, payment of travel costs including tickets, DSA and terminal expenses shall be covered by the project

Evaluation:

Individual consultants will be evaluated based on the following methodology:

Lowest price and technically compliant offer

When using this method, the award of a contract should be made to the individual consultant whose offer has been evaluated and determined as both:

- a) responsive/compliant/acceptable, and*
- b) offering the lowest price/cost*