

## **Elasmobranchs survey in the Mascarene Archipelago (La Réunion, Mauritius, Rodrigues): creation of an observatory to improve scientific knowledge**

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### **Submission:**

#### **Background**

The Mascarene Archipelago is part of the global biodiversity *hotspots*. For several years, there has been an awareness of the need to protect and preserve its natural heritage. A good knowledge on these ecosystems is the first essential step for the implementation of management and conservation measures. An emblematic group of species is still very little known within the archipelago: Elasmobranchs. In order to fill this gap, ARBRE in collaboration with the University of Mauritius and support of Europe, created the Mascarene Archipelago Elasmobranchs Observatory (MAEO) in April 2021. The three main objectives of this observatory are to (1) characterize the elasmobranch populations in the Mascarenes and study their spatial and temporal distribution, (2) raise public awareness of the richness and conservation needs of marine ecosystems, and (3) educate young people to make them aware of rays and sharks, and their roles in the ecosystems.

#### **Methods**

In order to reach this goal, MAEO established a sightings network and is running an *in situ* scientific study. The latter consists of deploying underwater cameras and underwater visual census (UVC) all around the three Mascarene Islands (La Réunion, Mauritius and Rodrigues).

#### **Results**

MAEO recorded 421 sightings of elasmobranchs so far, including 18 species. The most common rays observed in Mauritius and La Réunion were eagle rays, whip rays and black spotted stingrays. The most observed species of sharks differ according to the islands: in La Réunion, we observe larger species such as bull sharks, tiger sharks, scalloped hammerhead sharks or great hammerhead sharks. While in Mauritius, the species observed were coral sharks and grey reef sharks. A seasonality could be observed in certain species, for example the grey reef shark birth season are in October/November and the whip ray mating period between December and January.

#### **Conclusion**

To conclude, the biodiversity of elasmobranchs in the Mascarenes appears to be lower than expected with only about ten different species usually observed. Moreover, we more regularly observed species that seem rather rare in the literature such as whale sharks and manta rays in La Réunion. The occurrence of observations compared with the prospecting efforts tends to show that elasmobranch populations are not large and could be highly sensitive to fishing or environmental degradations. The sustainability of MAEO's actions will make it possible to consolidate or invalidate these initial observations. MAEO is composed of researchers specialized in ecology, conservation and modelling to analyse exhaustively overall data in the future steps to better understanding the role of elasmobranchs in the marine ecosystem of the Mascarene Archipelago.