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A red banner advertisement for Absa Bank. On the left is the Absa logo (a white circle with the word "absa" in lowercase). To its right is the text "Grow your business with a free online tool" in white. Below this text is a small line of fine print: "Terms and conditions apply. Absa Bank (Seychelles) Limited (registered no.81.0505-1) is regulated by the Central Bank of Seychelles." On the right side of the banner is an image of a person sitting on a stack of sacks, using a laptop.

ENVIRONMENT

Giant Trevally research and conservation at the Alphonse Group | 29 October 2020



Retrieving the acoustic transmitter

In 2018 the Alphonse Foundation initiated a research programme, investigating the impacts of recreational angling pressure on the spatial ecology and behaviour of an iconic target species – the Giant Trevally.

The remote Alphonse Group supports an internationally renowned fly-fishery, and catch-and-release fishing – a policy whereby fish are released rather than harvested – which is a growing sector of tourism.

Little is known about the ways different species respond to this practice, so this project aims to address questions regarding species information, habitat use and patterns of human use.

The goal is to gather data which can ultimately inform science-based management actions, such as rotating flats open to fishing, rod limits and best handling practices.

This initiative was brought together by a diverse group of stakeholders, including tourism investors (Alphonse Island Lodge), fishermen (Alphonse Fishing Company), conservation managers (Island Conservation Society and Alphonse Foundation), island managers (Islands Development Company) and researchers (Carleton and Massachusetts Amherst Universities), with the cooperative aim to ensure long-term sustainability and ecosystem function. It is being supported through a grant under the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT). There are three main components to the project:

1. Spatial ecology

The spatial ecology of the Giant Trevally, in other words, their activity and movement patterns, are monitored using acoustic telemetry. This technology includes transmitters, which are surgically implanted into the fish and emit a series of coded pings into the surrounding water, and an underwater network of receivers throughout the lagoons and outer reefs of Alphonse and St François Atolls. So far, over 400,000 Giant Trevally detections have been recorded.

2. Angling pressure

Fishing guides have been trained in the procedure for implanting Passive Integrated Transponder (PIT) tags into Giant Trevallies caught by recreational anglers and the database is updated weekly. PIT tagging is essential for identifying individuals that are recaptured in the fishery, providing information on movement patterns, growth rates and population size. To date, over 400 PIT tags have been used, but only 14 recaptures have been observed so far.

3. Response to catch-and-release

To evaluate the short-term physiological effects of catch-and-release, we use externally and temporarily attached accelerometer loggers. These experiments incorporate different amounts of air exposure and fight time, to test reflex impairment and post-release condition and behaviour. Once complete, this data will be used to refine the Code of Conduct which can improve health and survival outcomes of released fish.

This project will provide the first detailed assessment of the spatial ecology of Giant Trevally in the western Indian Ocean and how it intersects with recreational fisheries. Preliminary results indicate considerable site fidelity for individual Giant Trevally, meaning that they tend to be resident to particular areas. Understanding these traits can be critical to informed decision-making concerning their management. The establishment of PIT tagging and catch monitoring has proven an effective means for monitoring the recreational fishery, a method which could be emulated throughout the Outer Islands of Seychelles and, also, used to study a broad range of species.

Small-scale, environmentally sound and sustainable recreational fisheries contribute to the blue economy and can also provide economic benefit to conservation of whole ecosystems. Through this research project we have already generated important data that can be used to guide management at the Alphonse Group and improves the conservation of Giant Trevally, their habitats, and the catch-and-release fisheries that rely on them.

Visit us on Facebook: ICS Seychelles or www.islandconservationseychelles.com

By Gail Fordham

ICS conservation officer, Alphonse



Preparing to download the detection data from the acoustic receivers



Gail (the writer of this article) is pleased that the acoustic receivers have been retrieved to access detection data



Surgically implanting a transmitter into a Giant Trevally



Preparing to surgically implant the transmitter into a Giant Trevally

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