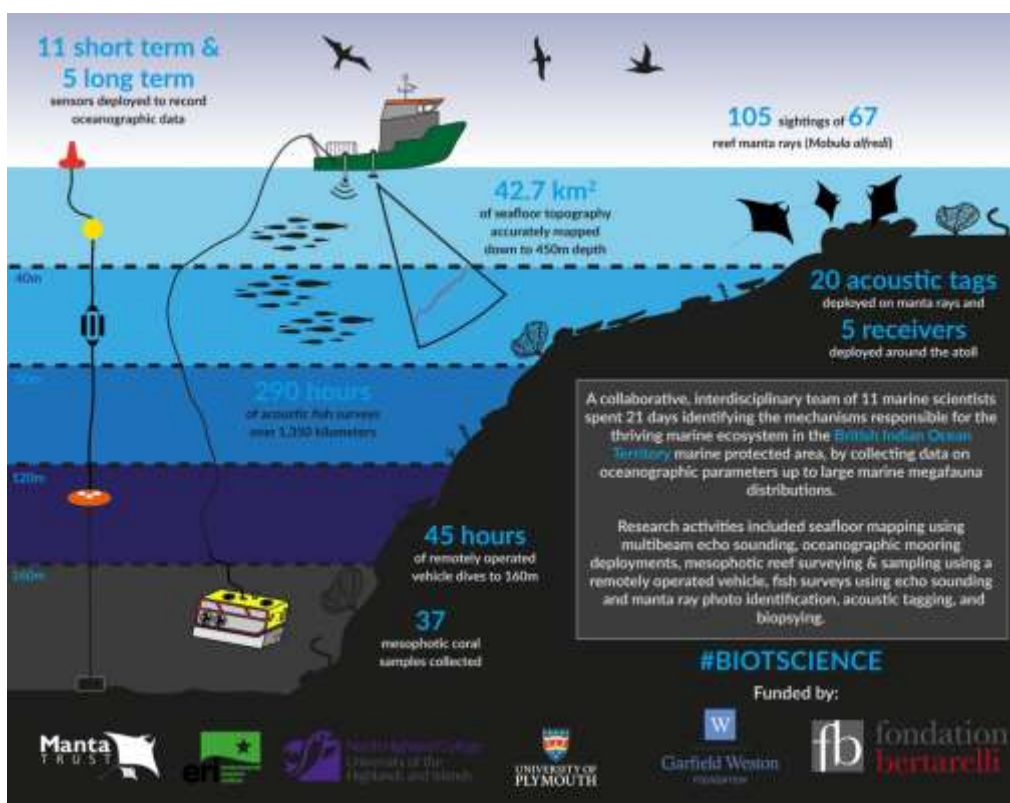


SUMMARY OF UNIVERSITY OF PLYMOUTH BIOT EXPEDITION, NOVEMBER 2019

The University of Plymouth team, comprising 9 scientists with expertise in physical oceanography, mesophotic reefs, fisheries acoustics, manta ecology and seafloor mapping, undertook their first expedition to BIOT between November 11th – December 7th, 2019. The expedition represented the team's first field effort in BIOT as part of their project co-funded by the Garfield Weston and Bertarelli Foundations. The team were further accompanied by Simon Hilbourne from the Manta Trust, Benjamin Williamson from the University of Highlands and Islands, and Katherine Robinson from Torquay Hospital (as expedition medic) and conducted operations aboard the *MV Tethys Supporter* based in Victoria, Seychelles.

Without exception, the team exceeded all expectations for the acquisition of data during the 21 day cruise. The highlights are illustrated in the infographic below but the key achievements include:

- A complete survey, with triplicate repeat surveys, to a depth of 160 m of the mesophotic reef community off Ile de Rats, Egmont, in addition to a complete survey of 'Manta Alley' on the north shore
- Collection of 37 coral samples from the mesophotic reef for genetic analysis
- Deployment of 20 acoustic tags and 5 receivers at Egmont alongside sightings of 67 reef manta rays
- Comprehensive, survey-grade multibeam bathymetry surveys to a depth of 400 m of Sandes seamount, Egmont Island, and the western half of Salomon Island
- Deployment and recovery of comprehensive mooring arrays over Sandes and Egmont to resolve how internal waves aggregate biomass and cause zonation in the mesophotic reef community
- Extensive surveys (>290 hours) of fish aggregation over the flanks of Sandes and Egmont, including 2 continuous 24 hour surveys (one over Sandes, one over Egmont) combined with vessel-based physical oceanographic measurements.



The success of the mission was notable against the backdrop of poor weather during the first 2 weeks; the transit south from Gan in particular was characterised by rough seas that prohibited the anticipated equipment preparation aboard the vessel. However, the determination of the crew and scientists to find solutions to the adverse weather resulted in unexpected successes, most notably in the extensive remotely operated vehicle (ROV) surveys conducted in the shelter of Ile de Rats at Egmont Island.

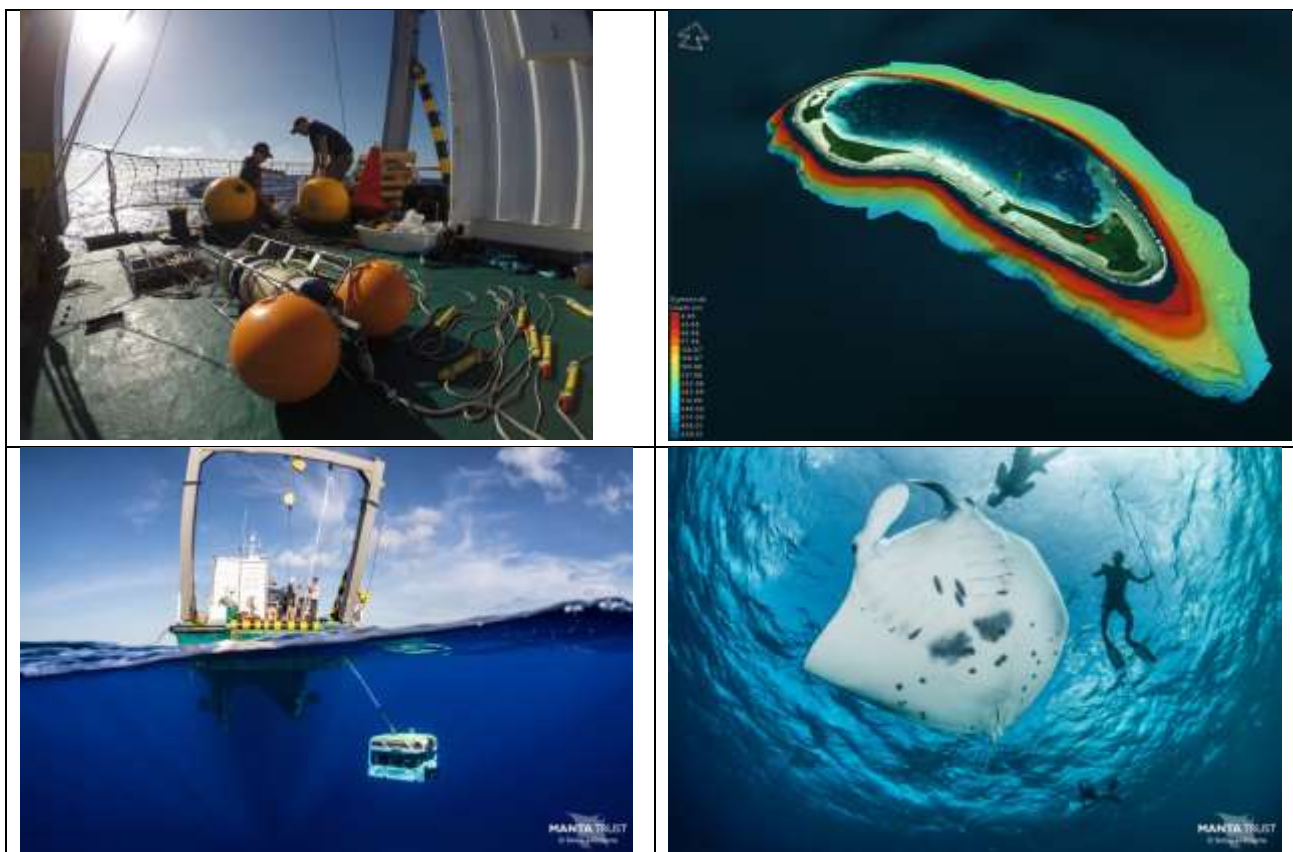


Figure 1. (clockwise from top left) Preparation of oceanographic moorings on deck of the Tethys Supporter, multibeam depth chart of Egmont, tagging of reef manta at Egmont, and deployment of ROV.