

ENVIRONMENT

Aldabra reef monitoring a success



Conducting marine monitoring © SIF



Manta ray and Physogyra coral © SIF and C. Ferguson

The first fully in-house Aldabra Reef Monitoring was a success! A lot of hard work and energy goes into marine monitoring; however there is also nothing quite as enjoyable as two weeks of intensive diving at Aldabra Atoll! The team were very focused, knowing that they had to achieve a great deal in a short space of time, and expecting inevitable disruptions to the plan. The collective effort of the logistics and research teams enabled smooth operations, and the weather, for the most part, was ideal throughout. During the monitoring the team spent some time stationed at Middle Camp on Malabar Island to survey the furthest monitoring sites.

Dives at the 12 monitoring sites have to be timed perfectly to make maximum use of the tides and to ensure the diving is not disrupted by strong currents from the channels. Surveys were completed at two depths per site, with one dive at 15m and another at 5m. At these depths benthic photoquadrats (multiple images of the reef and other substrate), fish surveys and coral juvenile surveys were conducted. Each team member was allocated a role and the underwater operations

ran like clock-work, with everyone knowing what they were supposed to do when. The first task upon entering the water was to locate the start of the permanent transect and then descend near to this, ensuring not to enter into the survey area. The fish team then begin first, counting and identifying the fish within the transect area. The benthic team follow, focussing on surveying the benthic community.

Although each team had to focus on their task and ignore everything else, there were some dives with distractions that were impossible to ignore, for example when a giant manta ray slowly glided past, or divers were flanked by a large silvertip shark, or were surrounded by a wall of shoaling snappers, or (for the benthic lovers) when they encountered a huge thriving patch of *Physogyra* corals. These moments are very special.

The over-riding feeling for the team was that, despite a substantial and obvious shift in coral cover since the widespread bleaching of early 2016, there has been much recovery and the reefs are still thriving. The Aldabra marine ecosystem is doing what it does best, bouncing back from disturbance because it has the capacity to do so!

Tortoise monitoring expanded on Cinq Cases expedition

In December 2016 a team of six were deployed to the Cinq Cases region of Grande Terre Island on Aldabra.

There were multiple aims for this trip, starting with the completion of the standard tortoise and landbird monitoring transects.

The tortoise monitoring programme is currently under review with the aim to ensure that the data collected provides an accurate estimation of population size.

To do this the representation of certain habitat types is being increased, notably mangroves, Pemphis and open pool areas.

Currently there are three relatively short tortoise transects at Cinq Cases.

In December the team cut and marked a new longer transect from the end of the Coco transect (roughly from the centre of the island) to the inner edge (lagoon side).

This new transect traverses terrestrial mixed scrub habitat and mangroves, cover-

ing many open pool areas, including areas that become inundated with lagoon water at extreme high tides.

The team used natural pathways where possible to navigate through the dense areas, using machetes only when absolutely necessary. The work was very rewarding, especially upon arrival in the dense mangroves that skirt Bras Cinq cases.

The team also tracked some of the radio-tagged tortoises, which was difficult at this time of year as the tortoises have seemingly moved from their locations over the south-east season, probably because water is now much more widespread due to heavy rains.

The University of Zurich phenocamera (which takes regular images of the 'greenness' of the vegetation at a fixed point) was checked and all the images downloaded.

The team also conducted the exclusion plot monitoring, which comprises fenced

off areas to prevent tortoise grazing to better understand the role tortoises play in driving the 'tortoise turf' ecosystem.

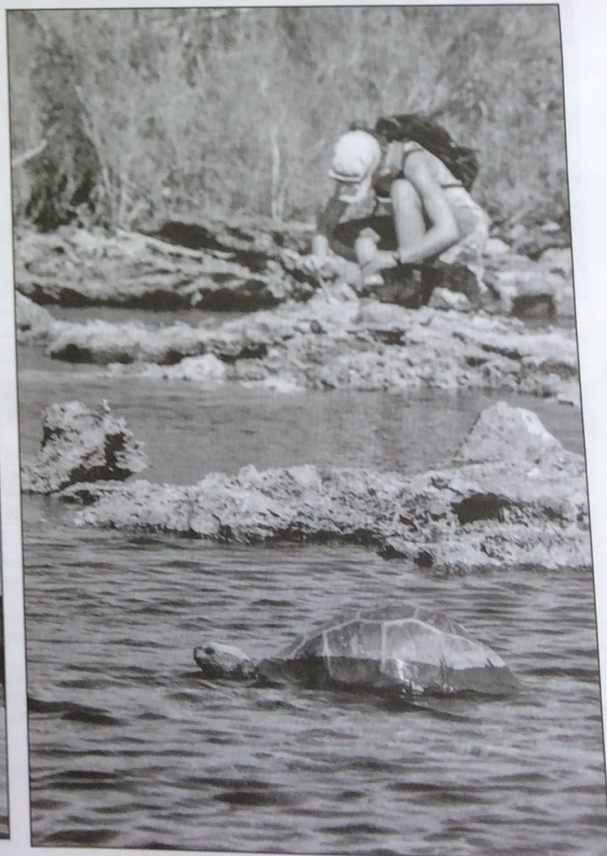
The team found a marked difference in the vegetation between the exclusion plots and the control areas, particularly in the wet season. The whole of the Cinq Cases area was alive, thriving on the ample rainfall, the pools were filled, the tortoises were out in force, even an abundance of baby tortoises was encountered.

The team observed one predation event whereby a land-crab (*Cardisoma* sp.) had captured and was eating a hatchling tortoise, a sad but interesting observation of the Aldabra food web.

To finish off the trip, the team collected rain gauge data and recorded the Green Turtle nesting activities along the coast beaches before heading back to station, very smelly but very satisfied with their work.



Grande Terre island of Aldabra



Cinq Cases monitoring © SIF