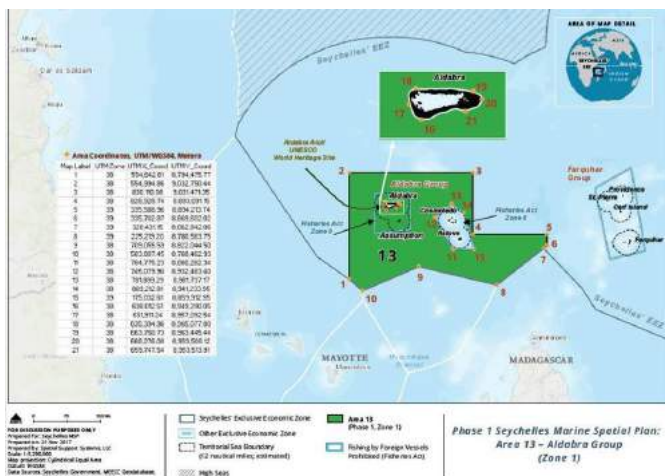




SIF attends governance workshop for Seychelles' Marine Spatial planning Initiative



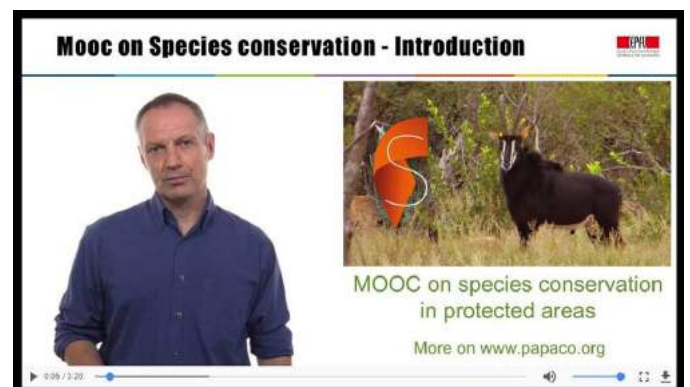
Map of proposed designation for the Aldabra Group © MSP Phase 1 Nomination Package

On Thursday 25th January, SIF CEO Dr Frauke Fleischer-Dogley and project officer Jeremy Raguain attended the final workshop of phase one of the Seychelles Marine Spatial planning (MSP) Initiative. The workshop aimed to define governance arrangements for the MSP. The MSP, which is the first of its kind in the world, involves not only protecting 30% of Seychelles' Economic Exclusive Zone (EEZ), but also creating a comprehensive and sustainable management plan of how Seychelles will administer its marine territory of over 1.4 million square kilometres. Through The Nature Conservancy, Seychelles' commitment to the protection of a third of its marine space is remunerated with a debt swap which reduces Seychelles' sovereign debt. Phase one, which focuses on the "no take" half of the 30% protected area, involves increasing the Aldabra group's protected area to 74,400 square kilometres or 5.4% of Seychelles' EEZ

and making it a National Marine Park. Phase one is thus aligned to, and informed by the Aldabra Atoll Management Plan (2016). Thus, the MSP effectively reinforces SIF's mandate on a national level and promulgates that all allowable activities must comply with the Aldabra Atoll Management Plan by 2020.

The workshop was well attended by relevant stakeholders, which included mainly marine oriented NGOs, government departments and authorities. Aldabra's centrality in phase one undoubtedly required SIF's input and the foundation has been a faithful partner and supporter since inception in 2014. The discussion and activities within the workshop encompassed reviewing existing institutional and legal frameworks and understanding the proposed Governance options. A large part of the workshop consisted of a plenary that focused on considering the various governance scenarios for the MSP's main coordinating body. In February phase one of the MSP will be signed into Seychelles' legislation, and in the coming months SIF will continue to participate in future MSP workshops.

MOOC featuring SIF success stories



MOOC Introductory session © SIF

The IUCN Massive Open Online Course (MOOC) featuring several SIF conservation success stories on Species Conservation in Protected Areas started in January. MOOCs are online courses aimed at unlimited participation and open access for anyone with internet access. They contain course materials, including filmed lectures, readings, tests, and interactive user forums to facilitate interactions between participants and their course leaders. The MOOC started on the 15th January, with new modules released weekly, but all course material will still be available until the 13th April, and a new session will start in mid-April, so it's not too late to sign up!



The ring-necked parakeet eradication is featured © SIF

The MOOC contains a wealth of relevant information and is relevant for anyone in the conservation sphere. The course modules are: species conservation in context, the Red List, global threats, local threats and ex situ

conservation. The SIF case studies showcase tangible success stories from SIF's conservation of Aldabra and the Vallée de Mai over the past 35 years including the successful re-introduction of the flightless Aldabra rail on Picard Island, the avian eradications on Assumption Island and reversing the unsustainable harvesting trends of coco de mer nuts in the Vallée de Mai. The MOOC can be found at: https://courseware.epfl.ch/courses/course-v1:EPFL+species-conservation+2018_T1/info

SIF Vacancies

We have several vacancies in the Vallée de Mai and Aldabra which need to be filled urgently, check out our website at <http://www.sif.sc/jobs> or contact HR on 432 17 35 if you are interested in any of the following positions:

Vallée de Mai:

- Sales Clerk
- Visitor Attendant
- Property Maintenance Supervisor
- Field Research Assistant
- Housekeeper

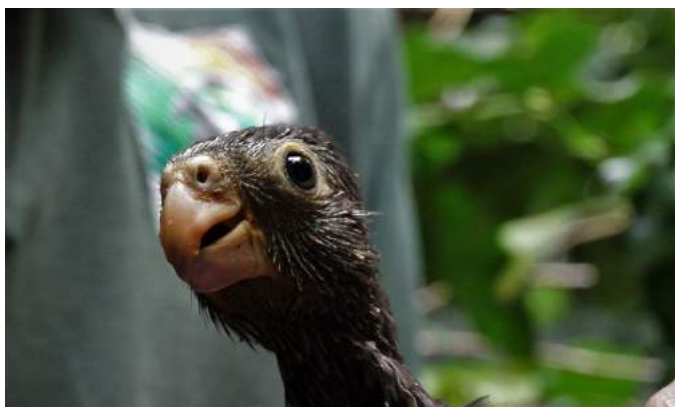
Aldabra:

- Cook/Gardener
- Maintenance and Logistic Assistant
- Data Management Volunteer



21 Black parrot chicks hatched!

January was an exciting month for the team, with 21 Seychelles black parrot chicks hatching at the Vallée de Mai. Unfortunately, with the increasing number of chicks, the black parrot team also witnessed increased predation by invasive species such as black rats and yellow crazy ants. Of the 21 chicks known to have hatched so far 11 have either gone missing or been predated. Although this level of predation is upsetting it is very encouraging for the team that the nesting sites that are subject to rat control methods appear to be successful at this point, as the parrots in these nests are growing fast and soon enough will be able to fledge. The team were able to ring five chicks older than 25 days by the end of the month and they expect



Black parrot chick being ringed © SIF

to ring another seven in the near future. Despite the predation these relatively high numbers are the sign of a good breeding season. The team hopes that all the ringed chicks will successfully fledge by the end of February and that they will be able to keep an eye on them later, using the colourful rings on their legs to identify them.



Black parrot feeding on starfruit © SIF

In other black parrot news, an exciting outcome of the yearly research meeting between the Vallée de Mai research team, and Vallée de Mai and SIF management was to begin planning an extensive census of the black parrot population on Praslin and Curieuse. The census it planned to take place in the next few months. The last such survey was carried out about seven years ago; therefore new data on population size is necessary in order to better protect this unique species.

Protected Area Day celebrated with activities on Praslin

Protected Area Day is celebrated on the 31st January each year to raise awareness about the important role that protected areas play in conserving biodiversity, supporting livelihoods, and maintaining ecosystem services. SIF organised several activities around Praslin to celebrate the day, the first of which was the presentation of stationary, games and craft supplies to the children at the Centre for Disabled Children. SIF contributed the majority of the funds to purchase items for the children,

and the remaining funds were collected from a donation box that was placed at the Vallée de Mai visitors' centre during the festive session.



The presentation of books to students © SIF

The presentation of schools items to disabled children was done in a short ceremony held at Baie Ste Anne Primary School on Wednesday 31st January. Present at the ceremony were the district administrator Mr Denis Antat, teachers and pupils from the Centre for Disabled Children Praslin, members of school management team and Vallée de Mai staff including the CEO and the Vallée de Mai site manager. Mr Antat expressed his pleasure that SIF has remained faithful and committed to helping the disabled children on Praslin, saying that he hopes that other organisations on Praslin do the same with other less fortunate groups of the community. The children showed their appreciation through a song performance and by presenting gifts to members of SIF staff present at the ceremony.



Staff were presented with artwork done by the students © SIF

Another activity organised by SIF to commemorate Protected Area Day was an Invasive Species Control Workshop held at the Baie Ste Anne District

Administration Office. The workshop was organised for Baie Ste Anne and Grand Anse farmers. The aim of the workshop was to share SIF's vast experience of environmentally friendly pest control with farmers in the area. Invasive species are a challenge shared by farmers and conservationists alike and the workshop was a wonderful opportunity to also share solutions.



Invasive Species Control Workshop © SIF

The workshop began with an ice breaking activity, followed by a presentation showing the various invasive plant and animal species on Praslin, including examples of how they are a threat to people. The farmers were presented with the techniques that have been used to help control invasive species in the Vallée de Mai. There were discussion sessions whereby farmers were given the opportunity to share their experiences and the challenges they face with invasive plant species on their farms. There were also demonstrations to show the various techniques used by SIF to control invasive species.

The farmers present actively participated in the discussions and they were very pleased to have learnt more about invasive species, especially those invasive plants species which are already a problem on their farms. After the demonstrations the participants received a presentation on the Seychelles back parrot.

In 2014 SIF conducted a black parrot survey with farmers, school children and people in the community. Through this survey it was found that farmers were the least knowledgeable group regarding the black parrot. The workshop was therefore a good opportunity to give them more information the species and educate them on the value of protecting them. After a fruitful day the farmers were presented with a certificate for their participation in the workshop.

Skills transfer between sites sees updates to the Vallée de Mai databases and photographic catalogue

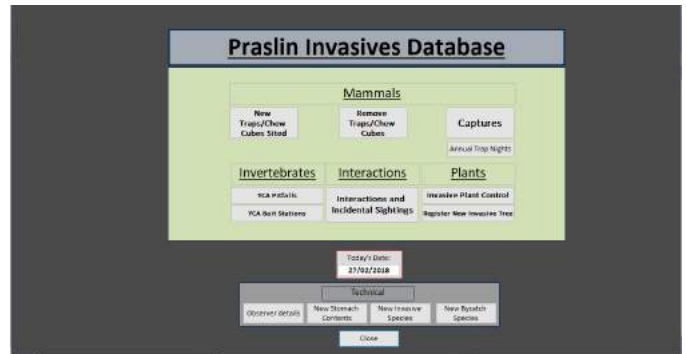


Black parrot database © SIF

After the success of last year's big data review on Aldabra, where almost 50 years of data from various projects were collated, cleaned and entered into newly-created bespoke databases, data manager Adam Mitchell has moved to Praslin in order to carry out a similar project at the Vallée de Mai. He will be reviewing long-term data sets, cleaning the data and constructing new databases in order to standardise and improve data collection at the Vallée. Once this project has been completed in mid-March, we're confident that SIF will have one of the most effective data management regimes of any such organisation in Seychelles!

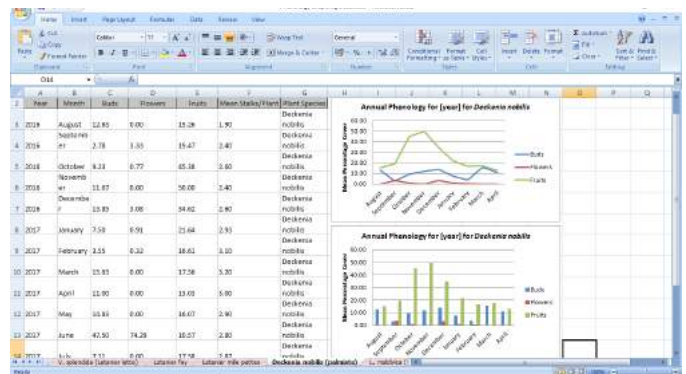
A workshop was conducted on the use of the new databases, and all research staff and volunteers were able to give constructive feedback on databases for weather; invasive mammals, plant

and invertebrates; plant phenology; and black parrots. The databases will be modified based on this feedback, ensuring that all the research team's needs are met. In addition, based on feedback from the team, the databases will be able to automatically produce statistics and graphs for use in monthly and annual reports, saving the research team valuable time each month.



Invasive species database © SIF

Adam will also be compiling a photographic catalogue of the Vallée's unique wildlife for SIF to use in future publications and on social media (check out the SIF social media accounts, and Adam's Instagram account can be found at https://www.instagram.com/ad_mitchell_photos/). He has also been filming a recruitment advertisement; this advertisement will be broadcast in a shorter form on national television, but will primarily be used on social media and in schools to raise awareness about the role of SIF at the Vallée de Mai and to encourage students to consider the opportunities that SIF can provide as an employer.



The databases can automatically produce graphs © SIF

New Friends of Vallée de Mai members visit the Vallée de Mai

At the beginning of each new school term the Friends of Vallée de Mai leaders from Vijay International School organise a visit to the Vallée de Mai for the benefit of the new members of the club. This term the visit took place on Friday 26th January and the students were accompanied by Ms Paulette Cappell.

The students went on a tour of the Vallée de Mai and were lucky to interact with several members of staff while in the forest. They participated in an outreach video that was being filmed in the Vallée at the time, before meeting with the black parrot team for an exciting behind the scenes glimpse of black parrot conservation. The black parrot team leader and Vallée de Mai science coordinator taught the group about the important work that SIF is doing to protect the Seychelles black parrot. They demonstrated the techniques that are being used to monitor black parrot chicks when they are still in the nest. The eager students watched as a camera was lowered down into the black parrot nest, with a

monitor revealing the chicks. The students were extremely excited, and the expressions on their faces were priceless! After a memorable visit to the Vallée de Mai we hope to see them again soon.



The group interacting with Terance, the black parrot team leader © SIF



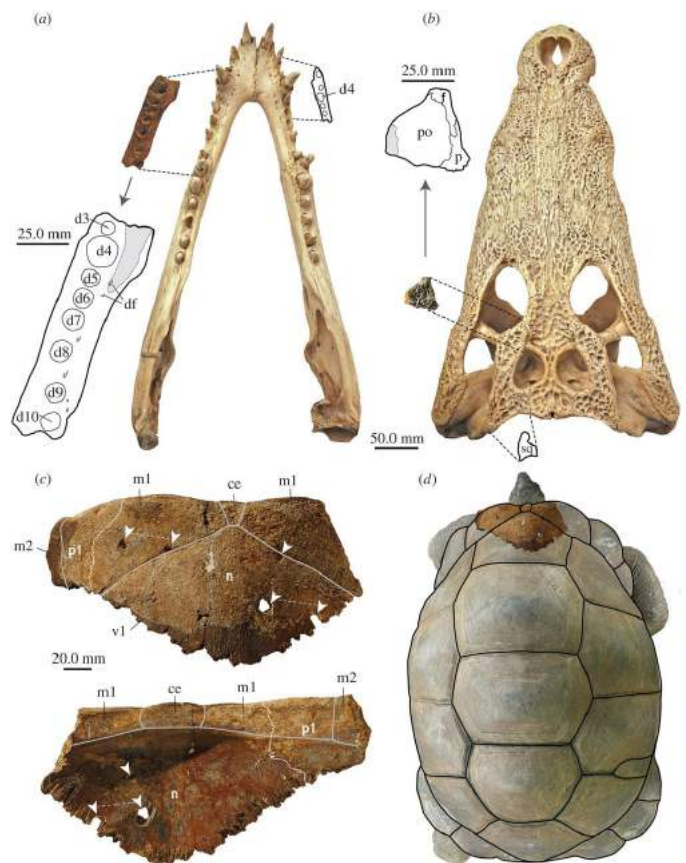
aldabra atoll

New research published on interactions between extinct crocodiles and giant tortoises

In December 2015 members of the Zurich-Aldabra Research Platform (ZARP) group visited Aldabra and discovered several exciting fossils in a dried-out pool. The analysis of the fossils was published in the journal Royal Society Open Science in January. The fossils were revealed to be from about 90 – 125 000 years ago and to have come from giant tortoises and ancient crocodylians. It was already known that there were crocodylians on the atoll during that period, but these fossils come from significantly larger specimens than previously seen. Even more exciting evidence came from the circular holes, pits and scratch marks seen on some of the tortoise bones which were interpreted as bite marks of crocodylians, this is the first evidence of predation on Aldabra's fossil tortoises!

Adult Aldabra giant tortoises have no natural predators, but these findings suggest that this may not have always been the case. The fossils indicate that the crocodylian specimen may have had a total body length of approximately 290 – 370 cm, while the tortoise exhibiting bite marks was likely an overall size of 100 – 120

cm curved carapace length. The bite marks could be explained by two possible scenarios, either living giant tortoises were attacked by the crocodylians, possibly as an ambush attack in a water hole, or the crocodylians scavenged on tortoise carcasses. This is the first evidence of direct interactions between giant tortoises on Aldabra and their extinct crocodylian neighbours, hopefully future discoveries will shed further light on the nature of their relationship.



Size comparison of crocodylian and giant tortoise remains © Scheyer et al., 2018

The fossils were transported to the researchers in Zurich in a shipment sponsored by Hunt Deltel, SIF would like to sincerely thank Hunt Deltel for their support enabling the research.

The paper can be found at: <http://rsos.royalsocietypublishing.org/content/5/1/171800>

The full citation is: Scheyer TM, Delfino M, Klein N, Bunbury N, Fleischer-Dogley F, Hansen DM. 2018 Trophic interactions between larger

crocodylians and giant tortoises on Aldabra Atoll, Western Indian Ocean, during the Late Pleistocene. *R. Soc. open sci.* 5: 171800. <http://dx.doi.org/10.1098/rsos.171800>

Understanding the response of Aldabra's corals after the 2016 bleaching event



Skeleton of coral recruit that settled on study tile viewed through the microscope (1 mm diameter) © A Koester

Two years after the global coral bleaching event in 2016 the Aldabra Reef Monitoring programme is continuing to monitor Aldabra's reefs. Last season's monitoring, the first after the bleaching event, recorded a 50% reduction of Aldabra's reef building corals, information gathered this season is still being analysed but will provide us with new information about the development, and hopefully signs of recovery, of Aldabra's reefs. For an even more detailed understanding of this early post-bleaching stage of our reefs, SIF welcomed back last year's SIF marine research volunteer and now PhD student Anna Koester for a collaborative research project between SIF and the University of Bremen in Germany.

Anna arrived in December and despite very challenging weather, the team completed all

the planned monitoring surveys and in addition measured turf algae height, assessed microbial activity in the reef sand and paved the way to study the density of successfully settled coral larvae, which are critical for repopulation and recovery of the reefs. The aim of these additional surveys is to better understand processes that potentially promote or hinder recovery; in practice this required a ruler, several jam jars, common kitchen tiles and concrete blocks!

Turf algae are tiny filamentous algae that rapidly populate dead coral and reef substrate, and are commonly present on coral reefs. Even though they are only a few millimetres in height, they can impact the survival of newly settled coral recruits and thus influence recovery – measurement is quick and easy and allows assessment of differences over space and developments over time on a finer scale. Coral reefs are naturally poor in nutrients and recycling processes are thus crucial, sand samples were collected along the reefs to study this. Reef sands are filled with microbial organisms which recycle organic matter that sank to the sea floor – with the help of an oxygen probe, patience and a steady hand, the activity of these reef sands was measured, indicating organic matter turnover and potential differences in relation to the benthic cover of the survey sites. Additionally, common kitchen tiles where screwed on top of heavy concrete blocks



Freshly retrieved settlement tile, ready for preparation to analyze under the microscope © A Koester

and deployed across the survey sites to provide removable surfaces for coral larvae to settle on. These tiles were left in the water for about two months and tile retrieval of the most accessible sites is now almost completed.

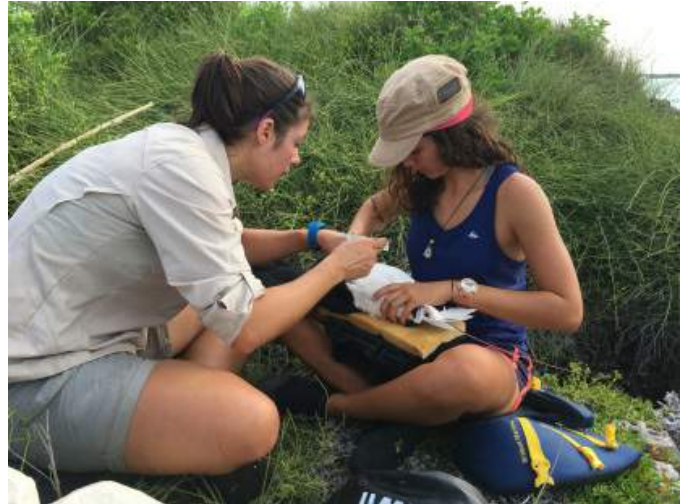
Data analysis is still in progress, but first glimpses on some tiles under the microscope already revealed a few coral recruits – which is very exciting and motivating for the many hours of analysis to come! Stay tuned for updates...

How to spy on tropicbirds: new research from Aldabra



A red-tailed tropicbird in its nest with its newly hatched chick © A Fayet

Tropicbirds are a key seabird species in Seychelles, with the elegant white-tailed tropicbirds breeding on many inner and outer islands, and the rarer, larger red-tailed tropicbirds mostly breeding on Aride and Aldabra. Recent research on Aldabra by Annette Fayet, Junior Research Fellow at Oxford University tried to discover what these little studied species are up to when we're not watching. The breeding success of the two species on Aldabra is poor, and the project used new technologies to spy on the birds at the nest and at sea, in order to learn more about their breeding behaviour and hopefully understand why the species are not doing so well.



Attaching the data loggers © A Fayet

Tropicbirds feed away from the coast, making it impossible to observe their behaviour at sea. During the breeding season they return to the nest every few days to feed their chick or incubate their egg. Annette used tiny loggers attached to the birds to record their movements while away from the nest. While the birds were more clever than expected and took some of the devices off, she still managed to record the movements of a few. She found that some birds went several hundreds of kilometres away from Aldabra, covering over a thousand kilometres in a week. The loggers, which weigh less than 2g, will continue recording the birds' movements after the breeding season ends.

In order to identify why so many fail before the chick is old enough to leave the nest Annette also deployed infra-red motion activated cameras to observe tropicbirds' nests. Her cameras, installed on rocky islets in the lagoon, photographed worrying events. Many white-tailed tropicbird nests failed because of rats eating the egg when left unattended, showing that rats are likely to have a substantial detrimental impact on Aldabra's seabird populations. On other occasions red-tailed tropicbirds evicted their smaller cousins out of their nest, which no one thought would happen!

Overall this research project helped fill a gap

in our knowledge of tropicbirds and will have important implications for the protection of these magnificent birds. With seabirds being more threatened than ever by ocean pollution, overfishing, and climate change, such research and conservation are critically needed.



A rat visiting a white-tailed tropicbird nest at night
© A Fayet

For photos and details of the research expedition check <https://twitter.com/AldabraSeabirds> and <https://aldabratropicbirds.wordpress.com/>.

Cleaning up Aldabra

With the change in wind and current direction during the north-west monsoon, Aldabra's northern and western coasts receive a huge amount of marine litter. Since the start of the year, the team has been conducting regular beach clean-ups on Settlement beach, the main beach in front of the research station on Picard. During January alone the team collected almost half a ton of beach debris!

In the October 2017 Newsletter we introduced the marine debris issue and gave an overview of how it has been affecting Aldabra Atoll. We also introduced the new marine debris project which aims to conduct research and raise awareness on the impacts of marine waste on Aldabra's

wildlife. The project has officially kicked off and was brought to the attention of President Danny Faure during his recent visit to the atoll.



President Faure collecting marine debris off Settlement beach © SIF

Daily clean-ups are undertaken in the morning during the turtle track monitoring and more intense collection events are carried out by the whole Aldabra team, mostly on Saturday mornings. Overall, during the month of January a total of 424.5kg of beach debris has been collected. Some of the debris being removed is fish aggregating devices (FADs) washed ashore or drifting close to the atoll. FADs are man-made objects used to attract pelagic fish such as tuna. Constructed using a variety of materials



Weighing rubbish © SIF

including fish nets, plastic sheets and synthetic ropes, free-floating FADs have a huge impact on marine life. Removing FADs is strenuous and requires good coordination; it took the team over an hour to remove a long-line drifting FAD near Malabar Island!

The team will continue to collect marine waste on accessible beaches throughout the year. With the marine debris project, SIF plans to tackle the far away beaches of Grand Terre that are less visited, and therefore not actively cleaned by staff, where marine litter has been accumulating for decades. A video has been produced to raise awareness on the marine debris threat to

Aldabra's biodiversity and can be viewed on the following link <https://vimeo.com/245532236>



FAD removal © SIF

Articles contributed by: Jennifer Appoo, Maria Brioche, Annette Fayet, Anna Koester, Julia Kovacs, Adam Mitchell, Jeremy Raguain and Lynsey Rimbault; **Editing by:** Frauke Fleischer-Dogley, Jeremy Raguain and Lynsey Rimbault