seychelles islands foundation

Newsletter

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Still searching!

Ring-necked parakeet © SIF

The ring-necked parakeet eradication team has spent another month conducting wide scale monitoring for wild ring-necked parakeets or kato ver (*Psittacula krameri*) on Mahé. The team covered more areas in the West, South and South East of Mahé with a focus on the East coast. This was following reports of ring-necked parakeets in the area. The team undertook exhaustive observations at key viewpoints and previous ring-necked parakeet habitats in these areas and did not see or hear any birds.

Ring-necked parakeets pose a significant threat to native biodiversity; the birds are potential vectors for a number of diseases which would prove to be catastrophic if transferred to the endemic Seychelles black parrot. This monitoring is part of the final phase of the eradication of wild ring-necked parakeets. The project started in 2013, and over the past five years several staff and police escorts have participated in the project. This month, past team members and police escorts were contacted and they happily informed us that they have not seen nor heard of any ring-necked parakeets.

The team interviewed members of the public © SIF

Over the next few weeks the team will focus on the North of Mahé covering areas like North East point, Glacis, Beau Vallon and Bel Ombre. We continue to reach out to the public for any information on recent sightings of ring-necked parakeets. SIF is offering a bounty award to all who can help with sighting of the bird. There are bounty awards of **SCR 1000 for a parakeet sighting which is confirmed by the eradication team** and **SCR 5000 for a confirmed sighting which then leads to a cull by the team.** The ring-neck parakeet eradication team can be contacted on 2523623. It is important that you do not attempt to catch or approach any remaining ring-necked parakeets. Kindly take note of what the bird is doing and the date, time and place, and then call SIF. Thank you to everyone who has cooperated and assisted us during the monitoring thus far!

SIF staff member attends training in coral and sponge taxonomy

SIF staff member Jessica Moumou recently participated in training in coral and sponge taxonomy. The Indian Ocean Commission (IOC) Biodiversity Programme recently organised a training course aimed at increasing regional knowledge of coral and sponge species. The course aimed to facilitate capacity building, sustainable use, and conservation of coastal and marine resources. The one-week course took place at the University of Dar es Salaam Institute for Marine Science in Zanzibar, Tanzania and was attended by participants from six countries: Comoros, Seychelles, Madagascar, Mauritius, Kenya and Tanzania.

The course entailed both theory and practical sessions, with participants in a variety of activities and discussion sessions. During the week presentations were given by lecturers from the Institute, shedding light on the different coral and sponge species that are found in the Indian Ocean.

Group photo at the Institute of Marine Science © SIF

Most of the group already had some experience in reef monitoring and identifying coral, and the course took a more in-depth look at identifying corals from their family name to genus. This was done in three ways: using visual identification in the lab, via power point presentation, and by identifying corals and sponges while diving or snorkelling.

Sponge taxonomy was the second pillar of the training course. Since most participants did not have much background in identifying sponges, the course was aimed at familiarising the group with the different sponges that are found, and their role they play in the ecosystem.

Lab practical, identifying sponge spicules © SIF

As part of the training the participants were also exposed to different database management programs such as Geodatabase, MASDEA database and AfReMas. Jessica found the course to be extremely rewarding, stating that "for me this was a great experience, it was an opportunity to learn more about something I love doing, and to learn from professionals. With the knowledge I gained in this course I will now be able to identify corals and sponges and also share what I have learned with my colleagues. I can happily call myself a young coral taxonomist and it was a pleasure see the beauty of Zanzibar!"

International Year of the Reef *Coral News*: Corals meet mangroves!

Corals meet mangroves © Anna Koester

Ever heard about ecosystem connectivity? In terms of tropical coastal areas, it refers to mangrove forests, seagrass beds and coral reefs, pointing out the importance of these areas by themselves, but also for each other. Mangroves and seagrass beds stabilize the shoreline, filter land-based rainwater runoff and are home to a multitude of terrestrial, avian and marine organisms. They are important nurseries for many species of coral reef fish,

including sharks. Aldabra's lagoon hosts all these ecosystems, making it an incredibly important and interesting place. Passe Gionnet on the north of Aldabra's lagoon allows for some rather unusual sightings where 'fields' of hard corals live right next to mangrove trees. Here, thousands of these long Goniopora polyps sway softly in the surge of the waves, thereby capturing small particles from the water column. A truly fascinating sight!

SIF Vacancies

We have several vacancies at the head office on Mahé, in the Vallée de Mai and at Aldabra which need to be filled urgently. The deadline for applications is the 31st August. Details can be found on 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:

Mahé

- Senior Accountant/Financial Controller
- Accounts Technician
- IT and Database Development Officer

Aldabra:

- Relief Skipper (60NM)
- Tourism Coordinator
- Shopkeeper
- Cook/gardener
- Ranger, preferably with boat experience

Vallée de Mai:

- Visitor Centre Service Coordinator
- Visitor Attendant
- Vallée de Mai Science Coordinator
- Field Worker
- Sales Clerk

Sea turtle festival marches on Praslin

The sea turtle festival march took place in August. Organised by the Sea Turtle Friends Seychelles Committee, for the first time this year the march took place on Praslin instead of Mahé with the event aiming to raise awareness of sea turtle protection amongst the Praslin community.

Minister Cosgrow and PS De Comarmond led the march © SIF

Historically it was legal and common to kill sea turtles for their meat and carapaces, and it has been a challenge to get rid of the traditional practices amongst the community. There are still people who believe that they should be allowed to continue with these traditional practices,

despite the threats turtles face worldwide and their legal protection in Seychelles.

Even turtles participated in the march! © SIF

In order to raise awareness about sea turtles and their status in Seychelles among Praslinois the march took place on Praslin on the 11th August. A large group of participants including school children, staff from environmental organisations and other concerned citizens gathered at the Baie Ste Anne jetty spread sea turtle awareness messages. Present at the march were the Minister for Environment Energy and Climate Change, Wallace Cosgrow, and the Principal Secretary for Environment, Alain De Comarmond.

The children are passionate about sea turtle conservation © SIF

After a brief opening speech by Minister Cosgrow the participants marched down the road shouting messages, they were also equipped with signs, banners and recycled musical devices to help promote the cause. Some schools had also constructed models of sea turtles and sea turtle costumes to ensure that the message came across loud and clear!

Upon arrival at the Baie Ste Anne football field each schools delivered a poem, song or drama performance. As there would be best float and best performance prizes for this year's march the children gave their best effort. After all the performances had been presented the judges announced the winners, first place went to Baie Ste Anne School, second to Praslin Secondary School and in third position was Grand Anse Primary School. All participating schools and organisation did exceptionally well; we have no doubt that some spectators were touched by this important event.

It's holiday camp time again!

SIF remains committed to environmental education, and this month in particular to engaging children in fun educational activities during the school holidays. The holiday camp programme not only helps children learn about the environment, it also provides a safe and conducive learning environment to keep them busy during the holidays.

Black parrot inspired art © SIF

The 14th edition of the holiday camp ran from the 20th to the 24th August, with a group of 24 children from the primary schools on Praslin

participating in the programme. During the week of activities at the Vallée de Mai they learned about a variety of environment topics including the birds of Seychelles, seeds around the world, the river ecosystem, Aldabra Atoll and invasive alien species.

Participating in tree planting © SIF

Staff from different departments at Vallée de Mai shared their expertise during the programme and for the first time there was also an exchange programme between SIF and Raffles Resort Praslin. The kids club of the hotel were invited to join in the activities at Vallée de Mai, and participants of the holiday camp joined the kids club at Raffles Hotel for a tree planting activity.

The happy holiday camp participants © SIF

At the end of the week, viewed by their parents, the students were presented with certificates for the participation in the programme. The parents also had the opportunity to view an exhibition of the work their children had produced. This year we were delighted to conduct a presentation on invasive alien species for the parents present at the ceremony, with the aim of increasing their knowledge about the threats invasive species pose to the native species in the Vallée de Mai.

We are looking forward to the special 15th edition of the SIF holiday camp which will take place in December and invite children aged 5 to 8 years to join us! If you are interested in your children attending the December holiday camp please contact the SIF education and outreach officer Maria Brioche on email address maria@sif.sc or phone number 4236220.

Vallée de Mai staff trained in first aid and safe herbicide use

During August several staff at the Vallée de Mai took part in a first aid training course or a refresher session, run by Mrs Anita Soomery, the Praslin Branch Coordinator from the Red Cross Society of Seychelles. The Red Cross Society of Seychelles was founded in August 1989 and is a member of the International Federation of Red Cross and Red Crescent societies.

The first aid training included how to deal with head wounds © SIF

The four day training course introduced staff to methods used to assist people that have been

involved in accidents or have sudden illnesses requiring immediate medical attention. Periodic first aid training is vital in ensuring that staff are capable and confident to assist in cases of emergency when needed. During the four day course staff learned the theory of basic fist aids techniques and participated in practical first aid exercises and scenarios. Various forms of medical condition were discussed including how to correctly handle injuries, recognise signs and symptoms and give appropriate advice.

Practical scenarios helped the participants to feel more confident with their first aid response © SIF

For staff that already had first aid knowledge the aim of the one day refresher was to reiterate the importance of giving basic life support, running through methods and techniques for a series of injury scenarios. Participants felt that their skills had been renewed after attending the refresher course!

In addition to the first aid training, the Vallée de Mai research staff attended a short introduction to herbicide handling and safety. The training was important for Vallée de Mai staff given the amount of herbicide work being undertaken in controlling various exotic or invasive plant species. The session was part of efforts to integrate the Vallée de Mai research programme with Inva'Ziles project and will help to ensure that the methodologies developed by the Inva'Ziles team slot into the ongoing work at the Vallée de Mai.

Safe herbicide use © SIF

Plant phenology monitoring in the Vallée de Mai

Plants and animals have life cycle events that seem to occur like clockwork, for example birds migrate, flowers bloom, some mammals hibernate and the leaves of deciduous trees change colour and drop off. The study of how and why these natural events happen at the times they do is called phenology. The three main factors that affect the timing of natural events (phenology) are sunlight, temperature and precipitation. Plant phenology is the scientific study of cyclic biological events of plants such as budding, flowering, fruiting, leaf shedding, leaf flushing, and seed setting in relation to seasonal and climatic changes.

Plant phenology monitoring has been ongoing in the Vallée de Mai since 2009 on a selection of trees of different species every two weeks. Plants are the first stage in the food chain and are essential for all other species to live. Plant dynamics, population abundance, reproduction and survival affect those of all other species.

Regular long-term monitoring of plant phenology therefore provides essential baseline data for plant ecology and broader ecosystem studies such as frugivory, seed dispersal, pollination, herbivory, species population dynamics, as well as for more species-focussed research on animals and birds. Furthermore, as seasonality in flowering and fruiting is directly influenced by climatic factors, collecting phenology data is one way of monitoring and providing insights into the impacts of both long-term climate change and short-term events - such as very wet or dry years, storms, or cyclones. The collection of continuous and accurate data on plant phenology is therefore one of the most fundamentally important monitoring programmes in any ecological research framework.

As well as providing information which can be used to directly assess the plant species being monitored, plant phenology data from the Vallée de Mai can also be linked to data on climate (particularly rainfall), black parrot breeding activity, gecko movements and density, and potentially invertebrate population dynamics and abundance. The data can also help inform research plans, by indicating appropriate periods for research of various species, interactions or ecological processes.

For all our long term monitoring programmes, protocols are essential to maintain and ensure standardized data collection procedures. The protocol of the plant phenology monitoring was recently updated with some clarifications on methodology, and five introduced plant species were removed, including mango, starfruit, guava, papaya and santol as these plants are now being removed from the Vallée de Mai. Finally new data entry procedures were updated to align with the new Access database (see January 2018 newsletter). The next step is to analyse the eight-year dataset and undertake a review the monitoring programme. We are eager to find out the trends and patterns of plants in the unique forest of the Vallée de Mai.

Different stages of fruiting stalks on a palmiste (Deckenia nobilis) © SIF

aldabra atoll

Looking for scale insects

While Aldabra is known for having animals with gigantism – such as the iconic Aldabra giant tortoise and large population of coconut crabs – less is known about the little guys. For instance, there is a scale insect (*Icerya seychellarum*; 0.5mm-7.5mm in size) on Aldabra that is not native to Seychelles , despite it's name. It was originally documented on Aldabra in 1968 and by 1975 it could be found atoll-wide. The species distribution varied in the late 1970s and through the 1980s and in a 1988 peer reviewed article reporting the trends in abundance and a case was made to start biological control.

Icerya seychellarum on giant-leaved figs (Ficus lutea) © SIF

You may be wondering what a scale insect is and why they are bad… They get their name from the waxy coating they secrete as a form of defence, which can resemble fish or reptile scales. Most scale insect species start off in life with legs and are also blown by wind (helping them disperse) until they settle in a favourable spot to feed. Once there they change their skin and females lose the use of their legs (males keep their legs in order to find a female for mating). Scale insects are generally parasitic and feed on the sap of their host plant, excreting droplets of honeydew, a sugary liquid with which a sooty mould can then easily grow. In some cases high levels of infestation by scale insects have been shown to reduce plant growth rates of some plant species and the outbreak may lead to changes in some species.

Ladybird (Rodolia chersmina) © SIF

Since no scale insect predators exist on Aldabra the introduction of a biological control species was approved. The predator, ladybird *Rodolia chersmina*, was chosen due to the positive effects it was having on this same scale insect on Mahé and it was introduced on the atoll in 1989. A review of 20 years of scale insect monitoring was performed in 1999, finding that overall infestation levels had decreased significantly in the 1990s, with the exception of a few locations and tree species. It was concluded that the biological control may be the cause in this decline in scale insects, and monitoring continued twice a year on Aldabra until 2002.

Some leaves had an unusually large number of Icerya on them © SIF

Fifty years since it was first documented on Aldabra an assessment for the scale insect was initiated in July/August 2018. Under the direction of Dr David Newbery and Dr Garry Hill (both of whom started the original monitoring programme) SIF staff travelled to various part of the atoll, targeting specific tree species, and the hunt for the scale insect began! In order to allow for comparisons, the methodology follows the one used in the 1980s, and the abundance of the introduced ladybird is also being noted. The team has now completed the dry season survey, and a second survey will be done in February during the wet season to account for any seasonal differences in abundance. A full analysis will be completed by Dr Newbery and Dr Hill once all data has been collected.

Bat monitoring at the Aldabra station

Three species of insectivorous bats have been described on Aldabra: the free-tailed bat (*Chaerephon pusillus*), leaf-nosed bat (*Triaenops pauliani*), and Mauritian tomb bat (*Taphozous mauritianus*). Two of these species (free-tailed bat and leaf-nosed bat) are endemic to the atoll. Very little research has been done on these species; therefore they are poorly known and understood. One of the endemic species, the free tailed bat, roosts in the roofs and walls of staff houses, and has been observed to do so since 2013. In many of the staff houses these bats are only found seasonally; with the exception of one house that has bats roosting in it year-round. Last December a pup was found on the floor of a staff house that has seasonal bat activity, and it is believed that they expand their roosting sites to the other houses when breeding.

A bat leaves the roost at dusk © SIF

For the past three months, the research team has been monitoring bat activity. There are two reasons for the monitoring, firstly there is very little is known about these bats and it will increase understanding of the species and secondly house maintenance is required on some of these houses, and before this is done the team will ensure that there are no bats living in them. If bats are found to be resident in a house that needs maintenance different options will be explored in order to minimise disturbance, possibly by providing bat boxes as alternative roost sites.

So far the team has started documenting the year-round roost by counting the number of bats that leave at dusk in the evenings. During this three month period of monitoring, the population of this roost has grown from 35 to 85 bats and the next step will be to verify whether it is just one bat species using the houses or if it is in fact a few species. This monitoring will help us to learn more about the population and the

behaviour of these bats, hopefully giving more insight about when they breed and when they expand their roost.

A bat pup was found on the floor of one of the staff houses © SIF

There is also discussion about doing a whole atoll survey to find the distribution and other roosting sites of all the three species on Aldabra. An atoll-wide survey would help to improve knowledge of the population dynamics and distribution of insectivorous bats as a first step to understanding their role in the unique Aldabra ecosystem.

Aldabra Clean-Up Project activities picking up!

August was a busy month for the Aldabra Clean-Up Project. On the 15th August public holiday a group of the Seychelles based volunteers and Jeremy, the SIF project officer, spent the morning cleaning up Grand Anse beach, one of Mahé's longest beaches. For three and a half hours the team combed the beach for rubbish. Unfortunately much of what was found was rubbish that had been left behind from parties and trips to the beach, including plastic bottles, cutlery and snack packets, and also some more unusual debris such as pieces of a canoe were also found. It is particularly sad to find rubbish that has undoubtedly originated in Seychelles but the team were happy to prevent it from ending up in the sea. Local beach cleans like this are one of the ways in which the team is physically and mentally preparing for the big clean-up on Aldabra next year, and it's also a great form of teambuilding.

The volunteers collecting rubbish on Grand Anse beach © SIF

On the 17th August Jeremy took part in 'Stir it UP!' a dialogue between local environmentalists and artists. UP! is an initiative of the Seychelles Arts Project Foundation and aims to increase environmental awareness and good practice, as well as develop individual and community capacity to achieve sustainability in Seychelles. The dialogue, held at Kaz Zanana, was a great opportunity to present the Aldabra Clean-Up Project to people dealing with some of the same issues, and also learn what others are up to. After the environmentalists gave presentations on marine plastic pollution, coral bleaching, turtle poaching and food waste, it was the artists turn to give their thoughts on what they had learned and reflect on the given issues. Questions included trying to understand whether positive/beautiful pieces of art created from marine debris would be more or less effective than negative/graphic displays in generating public awareness and action. In the coming months the Aldabra Clean-Up Project team hopes to begin identifying artists that would be interested in working with marine debris brought back from Aldabra.

The last activity for August was the exciting event 'An afternoon at the Museum,' hosted by the Natural History Museum. The event was attended by school children, aged between six and 11, parents and teachers who came to learn more about marine pollution. The Aldabra Clean-Up Project volunteers and SIF staff joined MCSS, Wise Oceans and museum staff for the two hour event which included a presentation on marine plastic pollution and how they can help solve it, and enjoying educational activities and games. There were approximately 60 children and 10 adults and the children were split up into several groups. It was particularly encouraging to see that some children had ideas about the problem and how to help solve it!

Ivan plays the 'How long until it's gone' game with children at the museum © SIF

The project reached an important milestone on the 30th August when the project's crowdfunding page closed with over £73,000/ SCR 1.294 million raised! This is an incredible achievement with £13,000 raised from individual sponsors, thank you so much to everyone that has supported the project so far. Though the crowdfunding page has closed individual donations are still possible through the project website. We are still raising funds through corporate sponsors and grants. To stay on top of these and other updates please make sure to follow the Aldabra Clean-Up Project on Facebook and Twitter.

Microbial communities of Aldabra presented at the ISME17 conference

This month University of Göttingen PhD student Avril von Hoyningen-Huene presented the first results on the divergent microbial community structures within lagoon and pond mud of Aldabra at the International Society for Microbial Ecology (ISME) conference in Leipzig, Germany. During a two-hour poster session the research was shared and discussed with conference attendees.

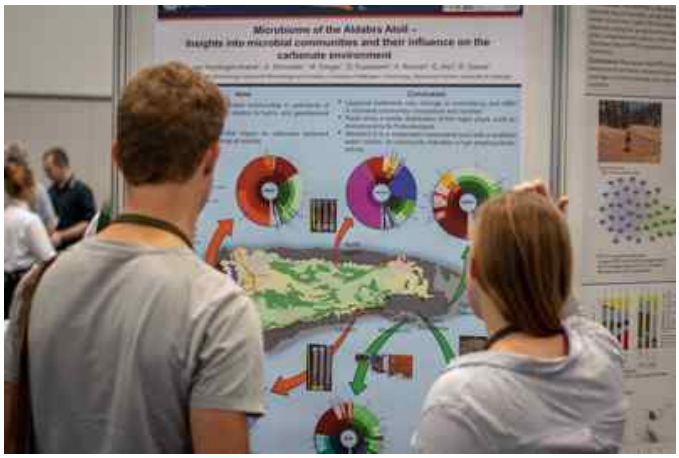
Avril collecting samples in the field © SIF

The joint research project by the Genomic and Applied Microbiology, Göttingen Genomics Laboratory and the Geobiology in Göttingen aims to understand the impact of microbial communities on the microbially mediated formation of limestone sediments, such as those found on the Aldabra Atoll. The samples were taken during a three-week expedition to Aldabra in November 2017 funded by the German Research Foundation (Deutsche Forschungsgemeinschaft). During the fieldwork 30 to 50 cm long sediment cores from the north, south and east and west of the atoll were sampled. The cores consist of different sediment layers, such as mud, sand and silt, and show different bacterial communities. While the landlocked pools, such as Cinq Cases in the east and Bassin Mackenzie and Westpool

D in the south are inhabited by similar bacterial groups, the lagoon sediments of the north, south and west lagoon differ strongly.

The University of Göttingen team with Aldabra senior ranger Ronny © SIF

The geochemical parameters of this project are measured and evaluated by the Geobiology department, while the Genomic and Applied Microbiology is focusing on the microbial communities, in particular the bacterial communities, through state of the art metagenomic approaches. Detection of DNA-based markers of each microorganism allows the identification of all microbes thriving within the samples and places them within a phylogenetic tree, showing their genetic relationship to each other. The genetic information can also provide an insight into the ecosystem functions and processes of the bacterial community. Through these methods, the microorganisms are analysed along the depth gradients of the mud cores, which contribute to our understanding of the way microbes shape and change an environment such as Aldabra.



Avril's poster at the conference © SIF

Articles contributed by: *Julio Agricole, Jennifer Appoo, Maria Brioche, Anna Koester, Terence Mahoune, Jessica Moumou, Ella Nancy, Cheryl Sanchez, Vicky Stravens and Avril von Hoyningen-Huene.* **Editing by**: *Jennifer Appoo and Lynsey Rimbault*