



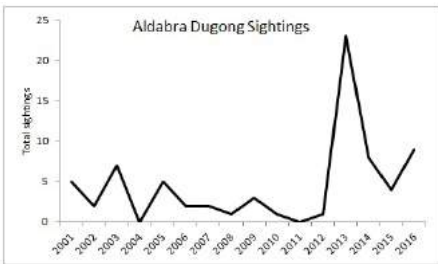
Record-breaking month for dugong sightings!



One of the incredible dugong sightings this month © SIF

During July and August the Aldabra team were excited and surprised by nine separate dugong sightings! These have been the only sightings of dugong so far this year and is already the highest number of opportunistic sightings recorded annually in the history of the Aldabra research station (more dugongs were seen in 2013 when a dedicated aerial survey was conducted), and 2016 is not over yet. The location and size of the dugongs encountered, along with photographic evidence, suggest that of the nine encounters, there are at least three individuals.

In the Seychelles archipelago dugongs are now only known from Aldabra Atoll. Historically there were large numbers of dugongs in Seychelles but persecution by early settlers and traders to the islands led to their local extinction around all islands, except Aldabra. Even at Aldabra the population steeply declined and there were many years during which dugongs were not recorded. It is unconfirmed but there is a high possibility that dugongs returned to Aldabra less than 20 years ago. Dugong populations worldwide are declining and the species is currently listed as Vulnerable to extinction on the IUCN Red List, due to population decreases and habitat loss, a trend that is particularly accelerated in the Western Indian Ocean (WIO).



Graph showing number of dugong sightings per year at Aldabra © SIF

There are indications (i.e. increased frequency of sightings) that Aldabra's dugong population is increasing; furthermore, several observations of female dugongs with juveniles in Aldabra's lagoon suggest that the site plays an important regional role as a dugong breeding/nursery area. The distribution and status of the dugong population at Aldabra remains little-known however, despite previous attempts at aerial surveys. Aldabra's well protected seagrass beds provide a critical foraging ground for dugongs, as well as food, shelter and nursery grounds for many species of fish, invertebrates and other migratory species.

There are extensive gaps in the quantitative knowledge of dugong population status, distribution and behavioural characteristics at Aldabra. Research into these aspects will help to fill these knowledge gaps and determine the most appropriate management strategies for their protection at a national and regional level. SIF are hoping to secure funding to conduct research on this species to unravel some of the mysteries of the Aldabra population, including whether the population is indeed increasing and determining whether the Aldabra dugongs are resident or migratory.



SIF staff capacity building with Eden Project, UK



The Eden Project © SIF

Two SIF staff members from the Vallée de Mai joined the Eden Project in the UK for a short but very valuable work placement in August. The aim of this visit was to allow for exchange of ideas and practices with the hugely successful Eden Project to improve the visitor experience and education programme at the Vallée de Mai.

The Eden Project, in Cornwall, England, is one of the most popular visitor attractions in the UK. Eden has an outside botanical garden which is home to thousands of plants native to the UK, however the main visitor attractions are the two large biomes that are filled with various plants from different climates and environments. The largest biome houses a rainforest environment and the second biome recreates the Mediterranean environment.



SIF Education and Outreach Programme Supervisor Maria Brioché with a group of students at the Eden Project © SIF

One of the core principles of the Eden Project is education and they have a well developed and structured programme carried out by the education team at the site. Many schools groups visit Eden every day and the education team carry out interactive workshops to allow the students to discover and connect with the natural environment around them. SIF Education and Outreach Programme Officer, Maria Brioché, spent four days at Eden working with this team to experience how they implement their education programme. Maria worked alongside the education team conducting their sessions which taught her new ideas and skills which will help to strengthen the education programme at the Vallée de Mai. Maria said of her experience at Eden, "This has helped me improve how I approach and deliver environmental education sessions. I have gained tips on how to deal with difficult learners and have a better connection with the children under my care. I have also gained new ideas to develop a better community programme for the Vallée de Mai which will help connect the local community to this site."



Holiday camp programme at the Vallée de Mai



The group of students from this August holiday camp programme © SIF

Through its holiday camp programme SIF has once again ensured that schoolchildren on Praslin are not left behind when it comes to learning about the natural environment. The environmental education programme at the Vallée de Mai aims to teach the children on Praslin about the local flora and fauna and examples used from Seychelles' two UNESCO World Heritage Sites. This programme allows the children to be more engaged and connected to the natural world around them. A total of 24 children from Praslin attended the programme.



The holiday camp students exploring the Vallée de Mai forest © SIF

A variety of interesting activities were organized during the holiday camp for the children at the Vallée de Mai. They took a guided tour of the forest on the first day of the programme to learn about the local flora and plant species in the Vallée de Mai. Then as birds are one of the most admired species in the Vallée de Mai, a presentation was given on them to increase the pupil's knowledge of the birds and were quick to learn the birds' names and enjoyed identifying them when they went birdwatching later that day. After experiencing the forest first-hand the students took this learning further through a presentation and a craft activity where they had to build a forest ecosystem model. This activity helped them to understand the value of all the organisms in the forest environment.



For an exciting glimpse of the mysterious Aldabra dugong there is a short film here made by the Aldabra staff of their recent encounters - <https://vimeo.com/177892436>

My experience on Aldabra

by Ella Nancy



Ella at work at Aldabra © SIF

I am currently working with SIF as a research ranger at Aldabra Atoll. I arrived at Aldabra at the start of May and it all felt like a dream in the beginning. Aldabra was that one destination in Seychelles I always wanted to visit and experience but I never thought that I would get this opportunity. From the first day I arrived here I started to notice things in nature that one would never see elsewhere.

Life on Aldabra is simple, but at the same time adventurous and exciting. The size alone of this place is impressive and every part of Aldabra I have been to has its own unique features and its own unique beauty. Even though my job is physically demanding I am always keen to go out into the field. When I am working in the field I have a better chance of spotting something fascinating. There is a constant stream of entertainment provided by the wildlife here! As it is the southeast monsoon season it was the ideal time for me to come here as I have the opportunity to learn as much as I can before it gets busier in the northwest season. As a team we also take this time to explore and enjoy Aldabra. We often organise snorkelling and diving trips at weekends, and recently I was lucky enough to see a dugong!



Ella with a unique bat discovery on Aldabra © SIF

It's been four months since I arrived on Aldabra and it has exceeded all my expectations. I love the lifestyle of the community on Aldabra and I have learned so many new things in conservation and I am still learning every day. I am very grateful to all the people that gave me this opportunity. The beauty of this place is therapeutic, and it never ceases to amaze me. Aldabra is another world, a mind-blowing experience that I would recommend to all young Seychellois who are interested in nature and conservation.



Vallée de Mai souvenir shop supervisor, Elna Stravens, at work at the Eden Project © SIF

The Vallée de Mai souvenir shop supervisor, Elna Stravens, also visited Eden Project with Maria. Elna spent her four days working with the sales team at the Eden shop, which encouraged many new ideas for products that could be sold at the Vallée de Mai, as well as the importance of branding for these items to promote the site. Elna said of her placement, "The work placement at the Eden Project has been a great experience for me. I have gained new ideas in marketing and how to encourage better customer service in the Vallée de Mai souvenir shop. I hope to use the things I have learned to implement more activities in our programme, like weddings, developing a conference and meetings room, increasing the display of information around the site, implementing an online shop and ticket sales, and including different packages for entry."

SIF presents at international symposium on sustainable oceans



SIF CEO Dr Fleischer-Dogley presenting at the international symposium in Japan © SIF

SIF CEO, Dr Frauke Fleischer-Dogley, recently attended the *International Symposium on Capacity Building for Sustainable Oceans* hosted by the Nippon Foundation and the Government of Japan at the Capitol Hotel in Tokyo, Japan. This forum, organized in collaboration with The Nature Conservancy, explored innovative practices and pragmatic approaches, from communities around the world, to improve the health of the world's oceans and coasts. They profiled practical examples of successful programmes at the community level, as well as cross-boundary networks to identify what works, what doesn't, and where there are opportunities to improve on how we care for the ocean. Specifically, the forum explored practices which are particularly effective at building capacity in relation to issues such as ocean education, fisheries, marine and coastal planning, climate change adaptation, and multi-stakeholder networks. Dr Fleischer-Dogley received very positive feedback on her presentation on the Seychelles and SIF's experience of the national Marine Spatial Planning initiative led by The Nature Conservancy. This initiative was presented as an excellent example of a successful programme that will protect and preserve ocean health.

The surprising history of Wright's and Seychelles' skinks



The Seychelles Skink © L Chong-Seng

SIF is very pleased to present newsletter articles by external researchers who have worked on the biology, ecology and conservation of Seychelles biodiversity. The following article is contributed by Dr Sara Rocha, a geneticist and



The students helping remove invasive plants at the stev plot © SIF

It is essential to also educate the students about the invasive species to the Vallée de Mai biodiversity. Vicky and the research team gave a presentation on the species threat to the Vallée de Mai. The pupils then used some invasive species, such as the seeds of the lagati tree, jewellery and photo frames. The holiday camp programme with a small ceremony to present a certificate of participation to each of the students. There was a song, poem and performance by the participants during the ceremony.

Research staff start further education at UniSeY



Previous Field Research Assistant Mariette Dine © SIF

Two valued research team members at the Vallée de Mai, Mariette Dine and Brian Souyana, left SIF this month to start their Environmental Science course at the University of Seychelles.

Mariette has been working with SIF at the Vallée de Mai as a Research Assistant since 2014. She had previously worked as an Environmental Office Assistant on North Island and now she is expanding her knowledge and developing her passion for the environment even further. She has played an important role in managing the coco de mer regeneration scheme. She is truly proud to have been part of the SIF Vallée de Mai family and that I have gained the necessary skills and knowledge to move forward in my career. A big thank you to my colleagues who I surely miss you all, and to SIF for all their support and guidance.



Previous research team member Brian Souyana © SIF

Brian began working with SIF as a Trainee Field Research Assistant during a work attachment placement in 2018 and returned to work full-time at the Vallée de Mai in November 2019 and has been a crucial part of several research projects including the black parrot monitoring and the recent giant brood research. Brian said, "Throughout the time I've been working with SIF I have learned and developed skills through teamwork, persistence, and I am grateful to have been part of the SIF team. A big thank you to all my colleagues and SIF for the opportunity I received. All the good memories will be cherished. I look forward to working once again with such an excellent team after my studies."

We wish Mariette and Brian all the very best with their future careers, and thank them both for their hard work and substantial contributions to the Vallée de Mai biodiversity programme.

New volunteer assisting with Vallée de Mai research programme



The following article is contributed by Dr Sara Rocha, a geneticist and herpetologist based at the University of Vigo in Spain. Sara and her colleagues have been studying the genetics of Seychelles' reptiles for a number of years and have produced several papers on the subject which have led to a new understanding of the evolutionary history and biogeography of Seychelles herpetofauna. Most recently they have published a paper on the two *Trachylepis* skink species, including the Seychelles skink, which is a frequently seen inhabitant of the Vallée de Mai. Thanks to Sara and over to her...

It is no surprise that the Seychelles islands are an amazing setting for evolutionary studies. Being ancient, and having a naturally fragmented landscape, populations of many taxa from different islands or even within the same island have considerable differences. Recent studies have highlighted how intricate the evolutionary history of some of these taxa can be, and how much there is still to be known about Seychelles' biodiversity. With this in mind a group of researchers from the Universities of Vigo (Spain) and Porto (Portugal) recently published research on the evolutionary history and geographic structure of the endemic Seychelles and Wright's skinks (*Trachylepis sechellensis* and *T. wrightii* respectively) across the Seychelles inner islands.



Seychelles Skink (left), Wright's Skink (middle) and researcher Sara Rocha (right) in action © S Rocha

The researchers used morphological and molecular data to examine the diversity and relationships of these two species across the islands. A long-standing question was whether each species represented exclusive groups, having differentiated from each other at some point in the past. The Wright's skink, now restricted to some offshore islands and islets, is a gigantic form in relation to other skink species and gigantism has certainly evolved multiple times in other oceanic island taxa.

The results showed that the two skink species did diverge a few million years ago, and that there is also ancient hybridization between them. In fact, all the populations of Seychelles skink from Mahé, Silhouette, North, and Fregate currently have DNA which seems to be originally from the Wright's skink, so they can, to a certain point, be considered hybrids. In other words, at some point in the past, female Wright's skink mated with male Seychelles skinks, producing fertile hybrid offspring that expanded across these islands. Interestingly, current hybridization does not seem to happen, although more research would be needed to confirm this. The geographic location of these species is also important, with a clear separation between populations from 'southern' (Mahé, Silhouette, North, and surrounding) and 'northern' (Praslin and surrounding) islands both at a molecular (genetics) and morphological (body measurements) level. The results also show contrasting population trends of these species with an expanding Seychelles skink population versus a decreasing Wright's skink population.

The online version of the paper can be found in: <http://onlinelibrary.wiley.com/doi/10.1111/bji.12803/abstract> The full citation is: Rocha S, Perera A, Silva A, Posada D, Harris J. 2016. Evolutionary history of *Trachylepis* skinks from the Seychelles islands: introgressive hybridization, morphological evolution and geographic structure. *Biological Journal of the Linnean Society* 119: 15-36.

SIF on Twitter!



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Don't forget to like our Facebook page! The page has regular news and updates on research and events at both World Heritage Sites. We would invite all friends, supporters, partners, colleagues, and anyone else who has an interest in staying up to date with the management and protection of the UNESCO World Heritage Sites in the Seychelles, or in Seychelles' biodiversity and conservation in general to become a fan of our page. For those who have a Facebook account already please use this link https://www.facebook.com/pages/Seychelles-Islands-Foundation-SIF/1414466072110654?hc_location=stream and 'Like' our page. For those that are not on Facebook then perhaps you can receive updates through a friend or family members account, or maybe now is the time to join Facebook for yourself! We look forward to welcoming you onto this page!



New volunteer Meagan Selvig working in the field © S Rocha

In June, Meagan Selvig, an MSc student studying in Nature Conservation with Georg-August University, Germany, joined the team at the Vallée de Mai to provide for the coco de mer regeneration scheme and giant brooding gecko (*Ailuronyx trachygaster*) research.

The coco de mer regeneration scheme was developed to ensure the sustainable harvesting of coco de mer nuts, to prevent the nuts from poaching activities and to monitor the seedlings are monitored each month by field and research. Meagan has been cleaning and analysing 4 years of coco de mer nuts to examine the developmental stages of the nut and to understand when a nut is free from the threat of poaching. Data analysis and collaboration with research and Meagan will assess the scheme's feasibility and make recommendations for the future management of the scheme.

Meagan has also been providing field assistance to Christoph SIF research on the giant bronze gecko. This involves capturing and tagging the geckos with tiny electronic transmitters. The information generated from this project will provide valuable information on the population density and ranges of this little-known species.

Combating desertification and drought on Curieuse Island



The team on Curieuse Island © SIF

A large team from several organisations on Praslin, joined together to commemorate desertification and drought day by planting endemic seedlings on Curieuse Island.



Digging to plant the endemic seedlings on Curieuse Island © SIF

World Desertification and Drought Day is celebrated every year and this year SIF and many of its long-term partners from the community joined together on Curieuse Island National Park to plant some endemic trees. Curieuse was chosen as it still has areas of exposed earth from previous historical fires. As the home of the coco de mer, Curieuse faces many of the same challenges as Praslin such as poaching and land degradation. The committee felt that it therefore deserved their attention. 200 endemic seedlings were planted on the island over the course of the day in challenging conditions. The organisation participated in the planting activity were SPTC, district service groups, Duke of Edinburgh Award members, Praslin Landfill Association, Landscape Waste Management Agency, District of Health, JJ Spirit Foundation, District Youth Council, Vallée de Mai club and SIF. All participants are grateful to the Seychelles National Parks Authority for facilitating this project and look forward to participating in other such activities to rehabilitate areas of the island that have been affected by