

SIF News Letter

seychelles islands foundation

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SIF in recently approved regional project on Dugongs



Dugong © OSF/D. Fleetham/Animals Animals—Earth Scenes

SIF is part of a recently approved multi-partner regional project to research and conserve Dugongs *Dugon dugon* led by the Association for Conservation and Protection of Dugongs and Marine Mammal Species. The project, entitled "Dugongs (*Dugon dugon*) of the Western Indian Ocean Region: Identity, Distribution, Status, Threats and Management" is being funded by the Western Indian Ocean Marine Sciences Association (WIOMSA) under the Marine Science for Management (MASMA) Programme and started this month. The project activities will span several countries, including Mozambique, Tanzania, Kenya and the Comoros as well as Seychelles with experts and leadership from South Africa and Australia.

Dugongs have substantially declined in the Western Indian Ocean region in recent decades and the population is considered to be in urgent need of conservation research and management. The 3-year project is therefore very timely and will include surveys of dugongs and their habitat, coupled with social surveys and consultations, and provide opportunities to integrate information gathering and development of management strategies across science, management and communities, at both local and regional scales.

SIF's role in the project is to undertake surveys, starting in 2015, to assess the status of Aldabra's Dugong population, which is the last remaining Dugong population in Seychelles. The overall project marks an essential step forward in understanding the distribution and status of this endangered marine mammal in the region as well as identifying measures for its protection.

GEF marine research program continues



Assumption introduced bird eradication update



Assumption Island from the air © SIF

The intensive hunting phase of the Assumption introduced bird eradication is now well underway. The team have recently reached a total of 8500 birds culled, with fewer than 300 of the two species of introduced birds (Red-whiskered Bulbuls and Madagascar Fodies) thought to remain on the island.

The team of seven hunters and invasive species technical officers is still using a combination of observations and targeting with various firearms and mist-netting. Shooting, as expected, is proving much more efficient than mist-netting in this final phase. Assumption's size (approx. 11 km²), despite being much smaller than Aldabra, is still a large area in which to locate and target this small and continually diminishing number of birds. The team members have become experts in the behaviour and movement patterns of both species since observations and an understanding of these patterns and habits have been the key to the progress so far and will be increasingly critical as the project moves towards targeting the very last birds.



Map of transect locations on Assumption © SIF

Regular transects covering a total distance of more than 30 km help to ensure that all parts of Assumption are covered and provide baseline data on bird abundance (including the native sunbirds) in each area. Data from these transects, in combination with the annual landbird census results, confirm a steady decline of the introduced birds in all parts of the



Children make their voices heard in celebration of World Wildlife Day



Children reading their letters at the ceremony © SIF

Children from Praslin voiced their concerns on Coco de Mer poaching this month in celebration of World Wildlife Day. At a ceremony at the Vallée de Mai, student representatives from all four schools on Praslin read out letters they had written about Coco de Mer poaching on Praslin.

World Wildlife Day was proclaimed by the United Nations General Assembly last year to celebrate and raise awareness of the world's wildlife. It also reminds us of the urgent need to step up the fight against wildlife crime which has wide-ranging social, economic and environmental impacts. This new global day was launched only this year and is being facilitated by Convention on International Trade in Endangered Species (CITES). In celebration of this day it was an ideal opportunity for the children to share their thoughts on the threat that the Coco de Mer (whose kernel is listed on CITES) faces from poaching.



The ceremony was attended by Mr Marc Volcere (Member of the National Assembly [MNA] for Grande Anse), Mrs Natasha Esther (MNA for Baie Ste Anne), SIF CEO Dr Frauke Fleischer-Dogley, Vallée de Mai staff, teaching representatives from the four schools on Praslin and the nominated children from the respective Friends of Vallée de Mai clubs. Each school had the children write a letter together which was then read out and presented to the MNA of each respective district at the ceremony. The letters expressed their concern for the future of the Coco de Mer and its impact not only on the wildlife of the Vallée de Mai and Praslin, but also the effects on the tourist industry. The children called for 'tougher punishments for poachers' and declared that they would like 'us all to make



The BRUVs equipment ready for deployment © SIF

The GEF-funded marine research program on Aldabra has continued this month. Using the BRUVs (Baited Remote Underwater Video Systems) and RUVs (Remote Underwater Video Systems) equipment that was trialed late last year, research staff visited various sites around the atoll to collect data. The East and South Coast of Grande Terre and the Lagoon area were completed with many sites, or drop points, covered in each area. The BRUVs/RUVs are a sustainable long-term monitoring method that will allow SIF to detect changes in the fish communities around the atoll. The baited system is useful for assessing the relative abundance of large mobile predators such as groupers and sharks while the unbaited technique is suitable for detecting reef-associated species. The data collected will be used to create a baseline of fish communities at various points around the atoll. The video footage collected this month continues to show a high density of predators including sharks, groupers and rays.



A young Tiger Shark captured from one of the BRUVs

Work also continued to prepare fixed line transects at sites along the south coast of Aldabra and the lagoon. These transects will remain at their permanent locations and be visited periodically to collect data on the benthic cover of the reef using photoquadrat surveys.

More BRUV surveys and dive site preparation will be completed in April and then will begin the task of analysing and processing the mass of data and footage collected. Based on this analysis, recommendations for a long-term marine monitoring programme will be outlined.

Interesting discoveries for tortoise researchers



Giant Tortoise © W Falcon

SIF ranger Julio Agricole and ZARP researchers Rich Baxter, Wilfredo Falcon, and Dr Dennis Hansen are back

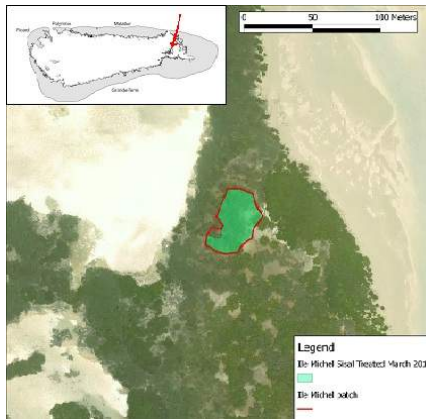
to study some of the introduced birds in all parts of the island, while the population of native sunbirds remains healthy and is possibly even increasing.

Given the current status of the eradication and the estimated population sizes of introduced birds remaining on the island, hopes are high that it will be possible to eradicate introduced birds from Assumption by the end of 2014, although monitoring, follow-up and verification will take longer. Successful eradication, in parallel with eradication of both of these introduced species from Aldabra (see articles about this activity in other issues of the SIF newsletter), will eliminate the threat these invasive birds pose to Aldabra's ecosystem and has the added advantage of kick-starting the ecological restoration of Assumption. The eradication programme is the largest of its kind ever attempted for introduced birds and is a joint initiative of the Islands Development Company, Island Conservation Society and the Seychelles Islands Foundation.

Sisal eradication started on islands of Polymnie and Ile Michel on Aldabra

In mid-November 2014 the eradication program for introduced sisal on Aldabra started with a herbicide application trial on Picard. The aim of this trial was to find out which combination of herbicide concentration and application method would be most effective for large-scale management. The trial has now been running for four months and the results are already very clear. Sisal plants only die after cutting the central growing leaf and applying herbicide directly to the growing tip. Since the herbicide is applied directly to a very small area of the plant and not sprayed, there are no non-target effects and surrounding vegetation, even very close to the treated plants, remains healthy.

The first results from the trial were immediately put to use in early March on a small sisal patch on Polymnie, one of the two other islands where sisal occurs on Aldabra. This patch consisted of a small number of large plants that were rooted deeply in the limestone rock plus two dozen small plants that re-sprouted after being manually cleared in 2012. The plants were all treated and, pending follow-up monitoring, Polymnie is likely to be declared clear of sisal within a few months.



Location of Ile Michel in Aldabra lagoon (inset) and treated part (light green shading) of the sisal patch (red outline) on Ile Michel © SIF

The bigger challenge for the Aldabra team is to eradicate a dense sisal patch on Ile Michel in the eastern side of the Aldabra lagoon. Ile Michel is one of the largest lagoon islands and can only be reached during a limited number of high tides in the month. This sisal patch consists of several thousand large plants (> 2 m high) and a similar number of smaller plants growing underneath and between the large individuals.



our contribution to help the Coco de Mer'.



The threatened Coco de Mer nut © SIF

Honourable Volcere and Honourable Esther accepted the children's letters and assured them that they were supportive of the need to address this issue and will take these to the National Assembly for further discussion. It was heartening and encouraging for the future to see these young ambassadors arguing passionately for the protection of their native species, and it is much hoped that this will help to initiate the necessary legal review to punish Coco de Mer poachers severely and curb these illegal activities.

Learning about the importance of water at the Vallée de Mai



Miss Maria Briocche teaching the children about the water sources of the Vallée de Mai © SIF

World Water Day is a global event that is celebrated each year on the 22nd March. The theme for World Water Day 2014 was Water and Energy. This day is an opportunity to reflect and learn about the importance of continuing to protect and manage the freshwater resources around us.

SIF used this opportunity to bring a group of P6 students from Grand Anse Primary School on Praslin to the Vallée de Mai to learn about the value of this UNESCO World Heritage Site to the water supply of the local communities. The children visited the streams and waterfall of the Vallée de Mai and learned of the need to protect the Vallée de Mai in order to protect the local water supply.



The children on a guided tour of the water treatment station with PUC © SIF

They then visited the water treatment station at Nouvelle Decourverte on Praslin. Staff from the Public Utility Company (who are responsible for Seychelles' water supply) gave the children a guided tour of the water

from a very successful month at Cinq Cases. Their main mission was a great success: Five 6x6 m enclosures, or rather 'exclosures', with paired control areas were erected. The logistics of constructing these exclosures in such a remote part of Aldabra were challenging, with 800-900 kg of wood, wire mesh, and metal bolts hauled up to 2 km inland, across difficult terrain in a huge team effort. During the next 5-10 years the exclosures should yield important insights into the dynamics of the reportedly very close association between tortoises and their habitat. For example, how does tortoise grazing affect plant and invertebrate community dynamics, and nutrient cycling?



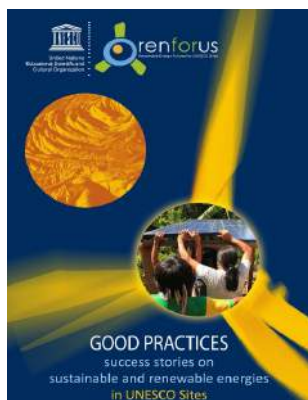
One of the 'exclosures' at Cinq Cases © D Hansen

Staying for so long at Cinq Cases gave the research team a unique opportunity for other lines of research and discoveries. They finished a study of a cave on the coast that was discovered last year, where up to 80 tortoises seek shade during the heat of the day, the results of which will be published soon. Embedded in brown sandstone a fossil tortoise femur was discovered, as large as those of the largest giants found on Picard today. Today Eastern Grand Terre tortoises are by far the smallest of the atoll's giants but this was obviously not always the case. Lastly, two exciting predators were observed. One, a beetle-larvae, is responsible for digging the plentiful circular holes found in the inland tortoise turf. Another, a trap-door spider, was found in sand next to the massive *Guettarda* trees between the Cinq Cases hut and the coast. Both of these ambush predators, which have yet to be identified, wait for unsuspecting prey to walk by, which is then grabbed, dragged into the hole and devoured.



Tortoises entering the 'cave' before the heat of the day © D Hansen

RENFORUS initiative promotes Aldabra's renewable energy project as energy success story



The team kitted out to start the eradication © SIF

On Saturday 29th March 2014 a team of six consisting of team leader Martijn van Dinther, with Marvin Roseline, Catherina Onezia, Sheril de Commarmond, Samuel Bassett and Rowana Walton, set out to Ile Michel. The team suited up in overalls and other protective clothing, and put on safety goggles to protect their eyes. Protective gear is essential for this work as sisal leaves are serrated, and have spikes on the tips of the leaves which are needle sharp and the sap can cause skin irritation. After a short safety and work detail briefing the team divided in pairs and started treating the sisal.



Sisal stand at Ile Michel after treatment © SIF

In each pair one team member used a machete, saw or cutters to remove the growth stem of a plant followed by the other member immediately applying herbicide to the cut. Within a single day the team had treated approx. 60-70% of all of the plants in the Ile Michel patch. With so many large individuals it was difficult to reach the smaller plants in the denser parts of the patch and these will need to be followed up at a later stage.

In the next 2-3 months the herbicide will do its work and the treated plants will die. The next visit is planned in 3 months' time, when the dead plants will be removed from the patch. Their removal will provide access to the remaining untreated plants, so they can be treated during the same visit. If all goes to plan and no further patches are discovered, we are confident that Aldabra will be sisal free by the end of 2014!



Partnering with UniSeY for capacity development



Vicky Barbe, our recent work based experience placement student at SIF

As part of SIF's local capacity building programme, undergraduate students from the University of Seychelles are given the opportunity to complete a work-based experience placement at SIF. This month long placement is part of their BSc programme in Environmental Sciences. This year we welcomed third year student Vicky Barbe to SIF Head Office where she assisted with the development of the Environmental Education programme and contributed substantially to the planning of this programme. This is what Vicky had to say about her time with SIF:

treatment station, for which most of the water collected comes from the Vallée de Mai. They explained the different stages of water treatment before the water is finally delivered to the houses in the local community. As the children were learning about this topic in school this field trip was an ideal opportunity for them to put what they had learned into practice and see the water treatment facilities firsthand!

Exciting positions available on Praslin invasive species team



The Praslin IAS team in action © SIF

New vacancies are available to work/volunteer with invasive plant species management at the Vallée de Mai on Praslin! This is an exciting opportunity to experience and contribute to the conservation of this unique palm forest as part of the EU-funded project activity to remove and control invasive plant species. The aim of the project is to create and sustain a core area of native palm forest without invasive plant species. There are two positions available; (Trainee) Invasive Species Technical Officer (available to local applicants only) and Volunteer (open to international applicants). Both of these positions are to be filled as soon as possible for a six month contract. For more details on the position and criteria please see the SIF Facebook page or contact Dr Nancy Bunbury - nancy@sif.sc. The deadline for applications is Tuesday 8th April. Applications require a CV and cover letter to be sent to the same address.

The Renewable Energies for UNESCO Sites (RENFORUS) initiative selected Aldabra's renewable energy project to be showcased together with other success stories in the new publication "GOOD PRACTICES - Success stories on sustainable and renewable energies in UNESCO sites". With a large number of UNESCO sites around the world the initiative aims at building and sharing comprehensive knowledge based on good practices and policies on the use of environmentally sound renewable energy sources and their adaption to local specific contexts and needs. Today 97% of Aldabra's electricity demand is supplied by PV power, while until 2008 the research station's electricity demand was solely dependent on fossil fuel energy systems. In addition, by changing to more energy efficient appliances Aldabra has managed to reduce its energy demand by 57%. The PV system is so far performing above our expectations and it is hoped that this successful and financially sustainable project can encourage others to follow this path of clean and sustainable energy. To see an electronic copy of this publication please go to this link: http://195.76.147.227/renforus/site/?page_id=2592. A hard copy of the publication will be available soon.

Paper published on genetic structure of Seychelles Hawksbill Turtle population



Hawksbill Turtle on Aldabra © Fotonatura

Seychelles hosts an important population of the critically endangered Hawksbill Turtle with several key nesting sites throughout the archipelago. Research conducted into the genetic structure of this population has produced some interesting results which have been published this month. The genetic analysis, which included samples from Aldabra's Hawksbill Turtles, showed that the Seychelles' hawksbill population is less genetically impoverished and has more gene flow between island nesting sites than had been expected for this small and declining population. It also showed little evidence of 'genetic population structure' between nesting sites, indicating that there is no genetic 'boundary' or segregation between the Aldabra hawksbills and those nesting at other islands, despite the distance of more than 1000km. The Aldabra hawksbills are effectively part of a single larger Seychelles population.

The article is available online at: <http://authors.elsevier.com/sd/article/S0022098114000471> or please contact SIF.

The full citation is: Phillips, K. P., Mortimer, J. A., Joliffe, K. G., Jorgensen, T. H., and Richardson, D. S. (2014) Molecular techniques reveal cryptic life history and demographic processes of a critically endangered marine turtle. *Journal of Experimental Marine Biology and Ecology* 455: 29 -37.

First tracked Red-tailed Tropicbird flies to Chagos Islands



'As a child I always had an appreciation for the things that were around me, and from then on I developed a passion for the environment. To expand my interest and gain a broad and multidisciplinary knowledge of environmental science, with a more specialised understanding in one environmental discipline, I enrolled in the University of Seychelles for a Bachelor's degree. I'm currently following the BSc Environmental Sciences course.

This three year course has built up my knowledge and skills as I have gained both theoretical and practical experience. In order to further develop my skills, the university gave me the opportunity to learn directly about my field of study by working within SIF. I was assigned the task of helping out with the Education and Outreach Programme, planning the children's Holiday Camp Programme which takes place at the Vallée de Mai twice a year.

This placement has helped me develop my analytical skills, academic writing and presentation skills, communication skills, management and planning skills. I have also developed the capacity to be creative and innovative and I acquired the knowledge, skills and attitude to enable me to work on similar programmes in the future. I believe that through such Work-Based Experience, SIF is facilitating and strengthening relationships within environmental science networks to allow for more strategic planning and local capacity building.'

We'd like to thank Vicky for her great work on this project and her cheerful and friendly presence in Head Office. We wish her all the best in completing her degree and applying her newly developed skills.

Participation in marine mammal observer course



Humpback Whales are regularly seen on Aldabra © N Doak

By Aldabra Senior Ranger, Catherina Onezia

Having the privilege to work on Aldabra is a unique experience, but due to the site's remoteness it's not easy for Aldabra staff to participate in many courses or training opportunities on Mahé. However, during my leave on Mahé, I was given the opportunity to participate in a three day course from 3rd to 5th of March 2014 on marine mammal visual monitoring training organised by the Marine Conservation Society Seychelles (MCSS) and conducted by Mr Pete Holden and Dr Jo Bluemel. The aim of this course was to familiarise the different organisations and public on the importance of conserving Seychelles' marine mammals. I grasped this opportunity without hesitation to broaden my knowledge in marine mammal identification and monitoring techniques that could be useful in my work for SIF on Aldabra. One aspect of SIF's monitoring programme on Aldabra is opportunistic monitoring of cetacean species so the course was of direct value to this work.

During the first two days of the course, we learned extensively about marine mammals in Seychelles, the protection measures in place, and primarily how to monitor these species, e.g. using visual cues to identify them. Much time was spent on identification of the different cetacean species documented in Seychelles waters and to my amazement; I learned that we have a total of 27 species! This can be broken down as follows: 13 toothed whale species (Odontoceti), 13 baleen whales (Mysticeti) and one sea cow or Dugong (order: Sirenia). Our last day was devoted to fieldwork, spending a morning and afternoon at sea where we tried to spot marine mammals and were shown how to record data on the different forms that MCSS are working on. Our group unfortunately did not observe any cetaceans but we learned a lot, including how to conduct range estimation techniques.

The course was useful in providing information on

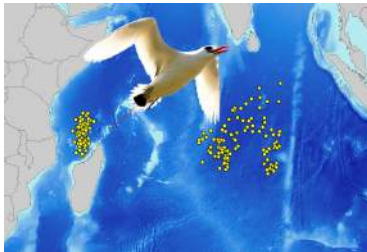


Red-tailed Tropicbird at Aldabra © Fotonatura

Research into movement patterns of animals and birds has increased with rapid technological advancement in this field. It is now possible to track a wide range of species and much of this research has focussed on migratory birds and large marine species. As yet, Aldabra's breeding seabird species have not been tracked so the links between breeding and foraging areas and the repercussions for conservation of these species are not known.

SIF was able to start looking into this question in early 2012 with the help of Dr Jannie Linnebjerg and Dr Jerome Fort from the University of Aarhus, who generously provided several dataloggers to attach to nesting red-tailed tropicbirds. Tropicbird nests are monitored on several islets in the Western Channels of Aldabra so it was possible to attach loggers and have a relatively good chance of retrieving them from returning birds.

Following initial attachment of all loggers in 2012 the first logger was retrieved from a returning bird after 18 months of monitoring. The raw data from this bird's logger has been mapped by Jannie and points from the journey can be seen in the map below (yellow points show approximate logged positions). This bird's logger was attached in May 2012 after which it completed its breeding attempt on Aldabra, and then flew more than 2000 km east to the Chagos Islands area where it stayed from October to December 2012, before returning to Aldabra in early 2013, a round trip of some 5700 km!



Map showing the tropicbird's movements

The research team on Aldabra is keeping an enthusiastic eye out for other returning birds but several ringed individuals have since been seen without their devices and the chances of retrieving another logger are increasingly slim. For the time being, this bird may therefore provide the only window into tropicbirds' whereabouts when away from Aldabra.

The course was useful in providing information on identification of cetaceans in Seychelles waters and what we can do to help protect those species, as well as data collection for a better understanding of the movement and distribution of these amazing animals. We would like to thank Mr Holden and Dr Bluemel for planning and leading this useful training course.

SIF on Twitter!



Continuing the development of SIF's communications and social media tools, we have launched our official page on Twitter! We hope that Twitter will allow us to reach and communicate with an even wider audience. As one of the top ten most used social media websites, Twitter offers us a chance to connect and share with a truly international audience.

If you are regular Twitter user then you can find us under @SIF_Seychelles. For those of you new to this social media page why not sign up now? You can find the link to our page here, https://twitter.com/SIF_Seychelles, and can follow all of our latest updates and news.



Don't forget to join us on our Facebook page that was launched last year! The page has regular news and updates on research and events at both World Heritage Sites and has been well received. 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!

Articles contributed by: Rowana Walton, Nancy Bunbury, Maria Brioche, Catherina Onezia, Martijn van Dinther, Vicky Barbe, Dennis Hansen.