aldabra atoll

SIF

seychelles islands foundation

vallée de mai

ANNUAL REPORT 2018


SIF Annual Report 2018

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Message from SIF's CEO

"I AM IMMENSELY PROUD TO BE AT THE HELM OF THIS FOUNDATION AND A TEAM THAT HAS NEVER BEEN STOPPED BY THE CHALLENGES OF THE DAY, IF NOT THE CENTURY, BUT INSTEAD INSPIRE OTHERS ACROSS ISLANDS AND OCEANS."

Over the last 10 years we have made sure that we annually report to you, our friends and supporters, in and outside Seychelles, on the progress made in the management of Seychelles' World Heritage Sites.

This year we celebrated 35 years of World Heritage Status for the Vallée de Mai. This unique palm forest attracted nearly 120,000 visitors in 2018. For the fifth consecutive year and the sixth time since 2012, Trip Advisor awarded its Certificate of Excellence to this extraordinary site. Such results can only be celebrated when a fully committed team on site receives support from the community. We are grateful to everyone who has engaged with us over the years, in big ways and small, and would like to say, **THANK YOU!**

At the same time the perpetually changing world has also confronted us with new challenges. This year we witnessed the giant bronze gecko, a key species in the coco de mer forest, become a highly prized pet on the international market creating a wave of poaching activity that we were not prepared for. Our collaboration with the authorities and other stakeholders is being put to the test and requires rapid and effective action. Furthermore, 2018 marks the year when one of the world's most invasive ants, the yellow crazy ant was found to have spread throughout the whole of the Vallée de Mai. To address such an emergency requires substantial resources and we are grateful to International Union for Conservation of Nature (IUCN) for supporting our efforts to identify the best possible control methods. As I write, we are preparing to the best of our ability to prevent a catastrophic meltdown of the unique coco de mer forest ecosystem, caused by this invasive alien species, as has happened on other islands.

This emergency situation has also led to intensified recruitment of Seychellois and international early career conservationists to join our research team. Today we can say proudly that long-term monitoring and research is an integral part of the Vallée de Mai's management, and provides us with critical information, such as a new estimate of the black parrot population and better understanding of the fragility of our endemic geckos.

2018 will also be a year that SIF will remember because of the substantial headway we made in creating awareness, engaging, receiving support and forging new collaborations to combat ocean pollution. When the SIF board of Trustees decided last year to remove the ever-growing mountains of marine plastic litter landing on Aldabra's shores, we did not foresee the whirlwind or impact this project would create. None less than our Patron the President of Seychelles, Danny Faure, is in the front row supporting us and ensuring the highest political engagement in one of the biggest undertakings SIF has ever set out to do. Twelve volunteers who never dreamed of going to see one of the most remote places in the world are now gearing up to make the difference our world needs today.

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Making a difference by changing behaviour needs courage, commitment and a sound basis of understanding on why such change is important. This is the essence of our outreach and education programme and so in addition to fun educational activities, both World Heritage Sites have become among the most popular outdoor classrooms. This year's public speaking competition in secondary and post-secondary schools was on the theme of biodiversity and focused on the uniqueness of both sites, bringing their value closer to home to engage and inspire, and to celebrate the Convention on Biological Diversity's (CBD) 25-year anniversary.

I am immensely proud to be at the helm of this foundation and a team that are never stopped by the challenges of the day, if not the century, but instead inspire others across islands and oceans.

Thank you for your interest in our work, support and engagement and happy readings!

Dr Frauke Fleischer-Dogley,
Chief Executive Officer,
Seychelles Islands Foundation

Highlights of 2018

Aldabra's protected area zonation was officially expanded under a new order of the National Parks and Nature Conservancy Act, which SIF has been working towards since 2010.

SIF declared the yellow crazy ant (Anoplolepis gracilipes) invasion of the Vallée de Mai to be a major crisis after the annual survey revealed that the highly invasive ant had spread across the entire reserve. Further control and research into their impacts are now urgent priorities for SIF.

The Inva'Ziles project concluded in the Vallée de Mai, having achieved a significant reduction in the presence of invasive plants in the firebreak, a reduction in rat density, and information on new methods to control yellow crazy ants. Much of the work undertaken was new to the Vallée de Mai and in some cases, to Seychelles.

ACUP surpassed its fundraising target, an outstanding feat made possible by the staggering response and support of people, organisations and corporations in Seychelles and world-wide.

The Aldabra Clean-Up Project (ACUP) was launched at State House on World Environment Day, attended by President Danny Faure, the Vice-President, several Ministers, Secretary of States, the British High Commissioner to Seychelles, and Principal Secretaries. The six local volunteers were announced at the event.

SIF's co-authored paper was published in the journal Royal Society Open Science on interactions between extinct crocodiles and giant tortoises.

The Aldabra House project was submitted to the Planning Authority.

The Vallée de Mai celebrated 35 years as a UNESCO World Heritage Site with a ceremony and reception on 7th December.

New research was initiated on the breeding behaviour of tropicbirds on Aldabra by a research fellow at Oxford University, Dr Annette Fayet, to determine why their breeding success is poor.

The 38th SIF Annual General Meeting (AGM) was hosted by the Vallée de Mai in April. Yellow crazy ants, poaching of the giant bronze gecko (Ailuronyx trachygaster) and Aldabra House were high on the agenda.

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The first Seychelles black parrot (Coracopsis barklyi) census in five years estimated 1382 (1096–1742) black parrots on Praslin.

New research was initiated on the breeding behaviour of tropicbirds on Aldabra by a research fellow at Oxford University, Dr Annette Fayet, to determine why their breeding success is poor.

New research was initiated on the breeding behaviour of tropicbirds on Aldabra by a research fellow at Oxford University, Dr Annette Fayet, to determine why their breeding success is poor.

An SIF-authored paper was published on the completion of the goat eradication on Aldabra in the journal Biological Invasions.

From 28th March to 4th April the 2017 Eco-schools award winners visited Aldabra; the group consisted of 12 lucky students, aged between nine and 17.

An SIF co-authored paper was published in the journal Conservation Biology confirmed the presence of a lethal parrot virus (BFDV) in ring-necked parakeets that were culled as part of the eradication of this species on Mahé. This research further validates the eradication.

SIF's Indian Ocean Commission (IOC) funded biosecurity project ended in November with much progress made, including biosecurity training, the purchase of biosecure aluminium boxes to transport produce, and the near-completion of a biosecurity building on Aldabra.

SIF organised a march to raise awareness about poaching of Coco de Mer (Lodoicea maldivica) nuts and giant bronze geckos. This march was held as part of activities to commemorate World Environment Day.

SIF held a public speaking competition in secondary and post-secondary schools on the theme of biodiversity to celebrate the Convention on Biological Diversity's (CBD) 25-year anniversary.

Construction of the Aldabra water tower was completed by the Aldabra logistics team.

SIF Staff

Changes & New Positions

Julio Agricole

Vallée de Mai Site Manager

Julio joined the SIF team in 2012 as a ranger on Aldabra. Since then, he has been involved in and led several successful invasive alien species eradications conducted by SIF on Aldabra, Assomption and Mahé. After graduating with honours in BSc Environmental Science at the University of Seychelles, he is now the Acting Site Manager for the Vallée de Mai. His role is to organise and supervise departments in the Vallée de Mai to ensure that they all run effectively and efficiently. Julio also acts as relief manager for Aldabra when needed. He sees his new role as an opportunity to obtain greater experience in the field of management, overcoming new adversities and finding ways to bridge the gap between scientific research and tourism.

Ralph Legaie

Visitor Centre & Services Coordinator

Ralph joined the Vallée de Mai team at the end of 2018 after graduating with a First Class Honours from his BSc in Environmental Science at the University of Seychelles. His role is to ensure the smooth operation of the visitor centre and to oversee the tourism services on offer, such as the ticketing booth, souvenir shop and the Kokosye café. Prior to working for SIF, he was a secondary level science teacher for several years. He also has extensive experience working in tourism, as well as auditing and accounting. His vision for the visitor centre is for more efficient operations, a stronger online presence and high quality service delivery through staff professional development.

Vanesa Lebon

Senior Accountant

Vanesa Lebon joined SIF in October 2018 as the new senior accountant. She graduated from the Association of Chartered Certified Accountants (ACCA) as a chartered accountant in 2016 and became a member of ACCA in 2018. Prior to joining SIF, she worked at ACM and Associates as senior auditor. Vanesa is currently managing the accounting department and oversees three staff. The accounts team work together to ensure that the Vallée de Mai and Aldabra have the financial support they need. Vanesa is very proud to be able to assist and work towards protecting Seychelles' two World Heritage Sites.

Jake Letori

Tourism Coordinator

Jake is the Tourism Coordinator on Aldabra Atoll. He is involved in planning activities for visitors, communicating SIF's research and conservation work, leading land and lagoon tours and joining snorkelling and diving excursions where guests get to experience the protected ecosystems and wildlife found on Aldabra. Jake previously volunteered for one year with SIF in the research team on Aldabra, assisting with monitoring programmes, creating maps and reviewing datasets. Before joining SIF, Jake graduated with a Masters in Conservation and Biodiversity from the University of Exeter. He prefers life on waves or underwater and takes every opportunity to explore Aldabra's marine world.

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Lorraine Cook

Aldabra House Science Officer

Lorraine Cook joined the team at head office in May 2018 after returning from one year on Aldabra where she was a volunteer in the research team. During this time, she reviewed several monitoring programmes and enjoyed exploring and analysing decades of data. She also became familiar with the atoll's flora and updated botanical records. Prior to coming to Seychelles Lorraine spent ten years with the Department of Conservation in New Zealand where she managed threatened species and ecosystems, led large-scale restoration projects and, most recently, was part of New Zealand's national biodiversity monitoring and carbon evaluation programme. In her new role she is responsible for developing the scientific content for Aldabra House. She also played a key role in the Aldabra biosecurity project. Lorraine has a strong interest in plants and the outdoors and is grateful for the chance to spend time in the Seychelles.

Jennifer Appoo

Science and Projects Coordinator

Jennifer joined the head office team as Science and Projects Coordinator after serving as the Assistant Aldabra Science Coordinator from April 2017 until April 2018. Prior to joining SIF, she was the Project Manager at Green Islands Foundation where she coordinated and assisted in several conservation projects encompassing protected area proclamation, invasive alien species control, community outreach and education. She is experienced in habitat, species and environmental monitoring. Jennifer holds an MSc degree in Marine and Coastal Zone Management from the University of Montpellier in France, and is passionate about marine biodiversity conservation. In her new role, Jennifer is responsible for facilitating and overseeing some of SIF's major projects as well as research programmes at both sites.

SIF Staff

Long Service Awards

Human resources are the key to success for any organisation and in early December SIF held a special awards ceremony to honour eight staff who have worked for SIF for ten years or more. These people represent both sites and the head office, and their efforts over the past decade have ushered SIF into a new era of effective science-driven management.

The long service awardees are:

Vallée de Mai

Marc Jean-Baptiste
Vallée de Mai Site Manager

Andrea Radegonde
Security Officer

Aldabra Atoll

Jude Brice
Aldabra Island Manager

Alain Banane
Senior Mechanic

SIF Seychelles Islands Foundation

Dr Frauke Fleischer-Dogley
Chief Executive Officer

Mary Hoareau
Financial Controller

Dr Nancy Bunbury
Director of Research and Conservation

Christina Quanz
Project Coordinator

Further Education for SIF Staff

Annabelle Constance, SIF's former Science and Projects coordinator, started her PhD at the University of Zurich in early 2018, where she will investigate to what extent global change drivers, like climate change, will threaten the persistence of ecosystems on low-lying atolls of the Indian Ocean. Annabelle is an in-service student and her PhD research direction was identified using the Aldabra management plan. We are thrilled that she is taking the next step in her academic career and look forward to her first field trip on Aldabra.

Marc Jean-Baptiste, the long-serving Vallée de Mai Site Manager embarked on his MSc in Conservation Biology at the University of Kent, UK. Marc has been with SIF since 2008 and has managed the Vallée de Mai operations with a passion for nature that infuses everything he does. This MSc will be an opportunity for him to delve deeper into the realm of conservation biology and we wish him the best of luck.

Dylis Cedras, SIF Marketing and Product Development Officer started her Masters in Business Administration (MBA) with the University of West of Scotland, administered by the University of Seychelles. Dylis came to her position in 2015 with the task of developing products and services that enhance visitors' experience in the Vallée de Mai and Aldabra. Over time she has also taken on the role of attaché to the CEO. With her MBA she hopes to expand her role at SIF to include a greater focus on finance and management.

Julio Agricole & Jessica Moumou, who first joined SIF in 2012 both graduated from the University of Seychelles three-year Bachelor's Degree course in Environmental Science. Both specialised in climate change resilience. Julio's dissertation investigated the perceived importance of the Anse Royale beach to its users, exploring the socio-ecological costs and opportunities associated with beach usage. Jessica, our second recipient of the Professor David Stoddart scholarship, researched the factors influencing the population distribution of the Praslin Sooglossid frog, including proximity to water, vegetation cover and invasive species. They didn't waste any time after graduation and both are back working with SIF. The knowledge they gained from the degree course will complement their conservation experience and SIF is thrilled to have them both back on board.

Further Education for SIF Staff

Ella Nancy, an Aldabra Ranger, became the fourth SIF staff member to attend the highly regarded Durrell Endangered Species Management (DESMAN) graduate certificate course based at the Durrell Institute in Jersey, UK. Although the fourth SIF staff member on the course, Ella is the first Aldabra-based team member to attend the three month international conservation course. The aim of the course was to increase participant's critical understanding of the theory and practice of endangered species management and recovery, better equipping them to develop and realize their own species and/or habitat conservation projects. This course will lead to many other opportunities in the field of conservation for Ella and we are delighted that she was able to take part. With the successful completion of the course, she was promoted to a senior ranger.

Six staff members attended short training courses throughout the year. Vickay Alis, Aldabra Field Research Assistant, and Ronny Marie, Aldabra Senior Ranger, both joined the Global Vision International (GVI) marine training based in Cap Ternay, Mahé. Although already qualified divers, Vicky and Ronny joined GVI to improve their fish and coral identification skills, develop the techniques needed to survey coral reefs and become more confident and accomplished under water. They put their experience to good use during the Aldabra marine monitoring towards the end of the year.

Shanone Adeline, the Vallée de Mai Invasive Species Technical Officer had the opportunity to travel to Madagascar to attend the first session of the course: "From Mauritius to Madagascar: Building regional capacity for biodiversity conservation and monitoring", and in November Terance Payet, the Vallée de Mai Senior Ranger was able to attend the second session. The course taught different monitoring methods used for different groups of species and will be beneficial for Shanone and Terance's work in the Vallée de Mai.

Jennifer Appoo enjoyed two weeks of training aboard the Norwegian research vessel Dr Fridtjof Nansen. The vessel departed from Port Louis, Mauritius and surveyed an oceanographic transect across the Indian Ocean until Colombo, Sri Lanka. Aboard the vessel, Jennifer learnt multiple methods and technologies used for surveying several oceanographic and biological parameters. The training was assisted by researchers from the Institute of Marine Research in Norway and included other participants from South Africa, India and Sri Lanka. The main aims of the Nansen research vessel surveys are to contribute to capacity development in less developed countries and to assist other countries in obtaining oceanographic data.

Jessica Moumou participated in training organised by the IOC Biodiversity Programme in coral and sponge taxonomy, shortly after the completion of her BSc, and before travelling to Aldabra as a Field Research Officer. The one-week course took place at the University of Dar es Salaam Institute for Marine Science in Zanzibar, Tanzania and aimed to facilitate capacity building, sustainable use, and conservation of coastal and marine resources.

We wish Annabelle, Marc and Dylis all the best for their degrees, and congratulate everyone who completed courses and training this year.

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2018 MARKED 35 YEARS OF THE VALLÉE DE MAI BEING A UNESCO WORLD HERITAGE SITE

Vallée de Mai Management

The 35th year of the Vallée de Mai as a UNESCO World Heritage Site gave an opportunity to reflect on the management successes at the site and the reasons for its UNESCO designation. The site received almost 120,000 visitors in 2018 and for the sixth time was awarded a Trip Advisor Certificate of Excellence. Both legal coco de mer nut harvesting and illegal poaching of the nuts were lower in 2018 than in previous years, meaning that more nuts remained in the Vallée de Mai to contribute to the regeneration and the long term health of the forest. Giant bronze gecko poaching continued to be one of the biggest threats to the wildlife of the Vallée de Mai. The poaching of this vulnerable reptile and the invasive yellow crazy ant crisis were major points discussed at the SIF AGM, also held at the site in April.

35 years as a UNESCO World Heritage Site

On the 9th December 1983, the Vallée de Mai joined the list of sites across the world that are recognised by the United Nations Educational, Scientific and Cultural Organisation, or UNESCO, as having cultural, historical, or scientific significance. These sites are protected in the interests of all of humanity and the Vallée de Mai is one of the smallest natural sites with this designation worldwide. The 35th anniversary was marked with a ceremony and reception in the Vallée de Mai in December 2018, and SIF staff were joined by partners from Praslin.

During the ceremony SIF's CEO Dr Fleischer-Dogley gave a speech that reflected on the reasons that the palm forest was inscribed as a UNESCO site, and she highlighted the changes that the Vallée de Mai has seen over the past 35 years. Through its outreach and education programme SIF strives to build relationships with the local community, and one of these community members was invited to address those gathered in the Vallée de Mai. Mr Wasson Joubert, a Praslinois who is very involved in SIF activities, spoke about the changes in the Vallée de Mai, the achievements of SIF, and about his hopes for the future. He also expressed the readiness of the Praslinois community to engage more in the protection of the World Heritage Site by being actively involved as part of the Friends of the Vallée de Mai club.

Vallée de Mai Tourism

The Vallée de Mai received 119,121 visitors in 2018, slightly fewer than the 121,482 in 2017; 114,611 of whom were tourists. The number of Seychelles residents visiting the Vallée de Mai was 4510, representing nearly four percent of visitors and comparable with the 4596 who visited in 2017. Many of these visitors come to the forest on school visits.

Visitor numbers in the Vallée de Mai peak several times during the year, notably in February, August and October, whereas June received the fewest visitors. The majority of the visitors to the site are independent, but 28,201 or 24% come through various destination management companies such as Masons Travel or Creole Travel. Numbers increase between October and March as a result of cruise ship visits that often offer the Vallée de Mai as an excursion.

The Vallée de Mai was awarded a TripAdvisor Certificate of Excellence again in 2018. This was the fifth consecutive year that the Certificate of Excellence was received by the Vallée de Mai, and the sixth time since 2012.

Figure 1: **Vallée de Mai visitor origins**

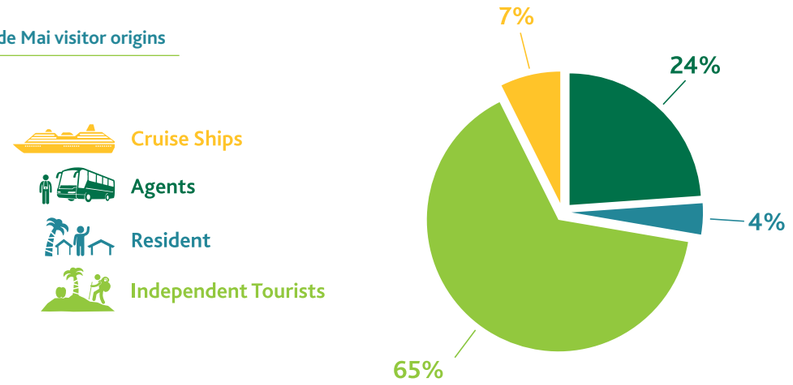


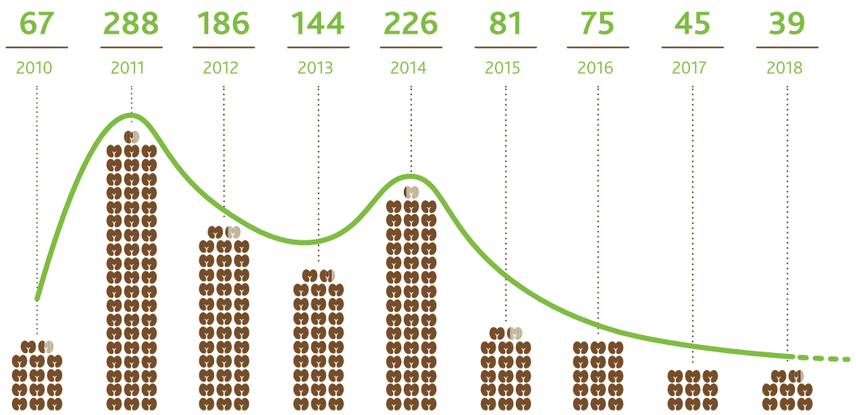
Figure 2: **Vallée de Mai Visitors by month and origin**

Total	Month					
8,830	January	2,020	4,684	1,696	430	
11,539	February	2,791	6,558	1,776	414	
10,887	March	3,076	6,914	534	363	
9,407	April	2,261	6,639	507		
9,338	May	2,521	6,414	403		
7,129	June	2,140	4,640	349		
9,023	July	2,256	6,513	254		
11,469	August	2,661	8,430	378		
7,942	September	2,136	5,505	301		
1,2036	October	2,486	8,481	792	277	
1,1261	November	2,331	6,785	1752	393	
9,223	December	1,522	5,096	2,164	441	

Coco de Mer Statistics

The number of coco de mer nuts harvested from the Vallée de Mai for sale in 2018 was 360, slightly lower than the 381 collected in 2017. The downward trend in coco de mer nut poaching continued in 2018 with 39 nuts poached during the year. It is reassuring to see the sustained decrease in poaching over time. With continued monitoring and surveillance, and ongoing anti-poaching awareness we hope that this trend will continue.

Figure 3: **Coco de Mer Statistics**



Giant Bronze Gecko Poaching Trafficking

2018 brought new concerns about the status of giant bronze geckos (*Ailuronyx trachygaster*) with more reports of the species being sold online and at reptile fairs. The giant bronze gecko is one of the largest geckos in the world and has become highly sought after in the pet reptile trade. It is almost certainly the most endangered reptile in Seychelles. The species is restricted to mature coco de mer forest with an intact canopy, and therefore has a global wild distribution of approximately only four kilometre square. The total species population was estimated at 3389 individuals in 2005 and the Vallée de Mai is probably the stronghold area for the species. Recent reports suggested that up to 40 or more pairs were for sale online in early 2018 and these individuals were almost certainly taken from the wild as they were not known at the time to have bred in captivity. If this number is correct it represents at least 4% of the giant bronze gecko population in the Vallée de Mai and a significant proportion of the total wild population given the tiny overall population size.

Although SIF and partners including the Ministry of Environment, Energy and Climate Change (MEECC) are actively trying to intercept wildlife traffickers, the lack of appropriate legislation pertaining to reptiles urgently needs to be addressed. There is currently no national legislation in Seychelles which prohibits the capture of any reptiles although there are plans to amend the schedule of the Wildlife and Animal Act to prevent such activity. International legislation is also vitally important to allow for the prosecution of individuals found to be transporting giant bronze geckos in Europe or elsewhere, and SIF and the MEECC are working towards listing the species on one of the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The submission will be made to CITES in May 2019 at the 18th meeting of the Conference of the Parties in Colombo, Sri Lanka, after which we hope that it will be illegal to transport a giant bronze gecko without a permit, and that permits will be issued only for captive-bred individuals or for conservation purposes.

SIF Annual General Meeting

In April 2018 the 38th SIF AGM was hosted at the Vallée de Mai, and with the inspiring setting of the palm forest the Vallée de Mai was in focus.

Following last years' finding that the invasion of yellow crazy ants in the Vallée de Mai constitutes an emergency, requiring immediate intervention, the SIF board of Trustees assessed the invasive alien species management methods and research in the Vallée de Mai. They acknowledged that progress has been made and re-asserted that the integration of invasive alien species and biosecurity management into operations in both World Heritage Sites is imperative.

Illegal wildlife trafficking is an emerging issue that was discussed at the AGM. The board members are highly concerned with rapid development in the trade of rare reptiles, specifically the giant bronze gecko. The SIF board is calling upon the Seychelles Government to take urgent steps towards the legal protection of the species nationally. Given the appeal of giant bronze geckos to the international reptile trade, the board also believes that they should be listed on CITES.

Another important agenda item was Aldabra House. The project has made significant progress since last year's AGM with the overall building design and concept now finalised, the board members are satisfied that the plans for Aldabra House have been submitted to the Planning Authority *(see article on page 26)*.

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ALDABRA SPECIAL RESERVE EXPANDED TO BE THE SIZE OF LUXEMBOURG

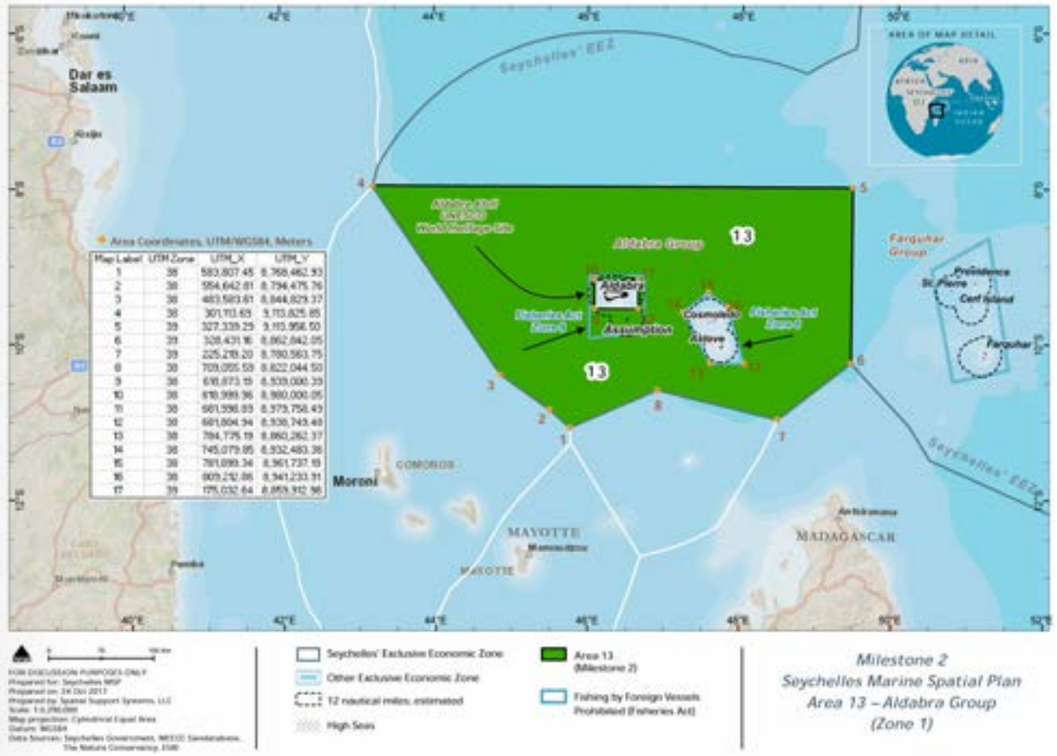
Aldabra Management

In 2018 Aldabra's protected area was substantially increased and strengthened, with the official expansion of the Aldabra Special Reserve, and the approval by cabinet to extend the Aldabra Group Marine National Park. After many years of planning, the Aldabra House plans were finally submitted to the Planning Authority and the team made great progress on the scientific content for the visitor centre. The Aldabra logistics team successfully completed their biggest project to date and Aldabra now has a new water tower. SIF launched one of the Foundation's highest profile projects to date: the Aldabra Clean-Up Project, a collaboration between SIF and the University of Oxford to respond to the global marine plastic pollution crisis.

The Aldabra Special Reserve and the Aldabra Group Marine National Park

Aldabra's protected area zonation was expanded in 2018 under a new order of the National Parks and Nature Conservancy Act. Aldabra was first designated as a Strict Nature Reserve in 1976 under the Protection and Preservation of Wild Life Ordinance, of 1970, and then as a Special Reserve in 1981, but the marine protected area around the atoll extended to only one kilometre from the shore. SIF has been conducting research and monitoring to provide a scientific basis for the expansion since 2010, and it is one of the main outcomes of the major reef-mapping exercise from 2013 to 2015 as part of the Global Environment Facility (GEF)- United Nations Development Programme (UNDP) Protected Area project (please see the 2014 Annual Report for more information). This project revealed that Aldabra's reefs extend much further than one kilometre on its eastern coastlines, covering an area of 3.5 km2, approximately the size of 500 football pitches. We discovered a reef area rich in marine life, including numerous large predators such as sharks, groupers and snappers, significant hard and soft coral deposits and structurally diverse habitat, warranting an increase in the area under protection. In addition, the biodiversity-rich deeper reef and open water areas close to Aldabra were found to be in need of protection.

Along with the scientific input from the reef mapping exercise, the motivation for the expansion included extensive stakeholder consultation and engagement, including with the National Assembly. The expansion means that the Aldabra Special Reserve has been enlarged from 439 km2 to a massive 2582 km2. The size of the Special Reserve is significant because this is the area that SIF is mandated to manage and protect (i.e., almost six times the size of the original protected area with the same resources and number of staff).



The Aldabra Special Reserve is one of two protected areas around Aldabra. The Special Reserve is embedded within the larger Aldabra Group Marine National Park, also newly designated in 2018 under the National Parks and Nature Conservancy Act. It is to be noted that a Special Reserve is "area set aside in which characteristic wildlife requires protection and in which all other interests and activities are subordinated to this end" where as a National Park is an area set aside for the propagation, protection and preservation of wildlife or the preservation of places or objects of aesthetic, geological, prehistoric, historical, archaeological or other scientific interest for the benefit, advantage and enjoyment of the general public. In the case of a Marine National Park this includes an area of shore, sea or sea bed together with coral reef and other marine features. The Aldabra Group Marine National Park is a result of the Seychelles Marine Spatial Planning exercise, which focuses on the sustainable use and health of the Seychelles territorial waters. The National Park was created as an outcome of phase one of the Marine Spatial Planning, but in late 2018, as part of phase two, the cabinet of Ministers approved the National Park's expansion from 71,612 km2 to a massive 177,479 km2. This will be gazetted in 2019. Once finalised this huge expansion will give the protected area 13% coverage of the Seychelles Economic Exclusive Zone, making it by far the largest in the country. The National Park includes the entire Aldabra Group of islands, which is Aldabra, Assomption, Cosmoledo and Astove. The next important step will be to develop regulations for enforcement of protecting this extensive area.

These two expansions showcase how scientific evidence is used to inform and advise management strategies and policies for Aldabra. The expansion of Aldabra's protective status is a milestone and demonstrates the government's commitment towards the continued protection of this universally outstanding treasure.

Aldabra's tourism capacity upgraded to manage increase demand

As one of the world's largest raised coral atolls, Aldabra is a highly sought-after tourism destination due to its pristine settings as well as intact and connected ecosystems that support wildlife found nowhere else. Due to Aldabra's remoteness and high protection levels, very few visitors will ever have the chance to experience this UNESCO World Heritage Site. However, those lucky enough to reach the atoll leave better informed of Aldabra's unique biodiversity and have a greater appreciation for conservation in general while also contributing to the funding of the atoll's management through the visitor impact fees.

Over the last years, with piracy in the East African region decreasing, Aldabra's tourism 'season' which takes place within the calmer northwest monsoon (October and April), has seen a rise in demand. In 2018 a total of 1048 tourists visited Aldabra and for the 2017/2018 season a total of 727 tourists visited on 11 vessels. These vessels range from small liveaboard chartered yachts, with the smallest this season carrying five passengers and 10 crew to larger expedition cruises that host 213 passengers and 144 crew. This increased demand vis a vis the need to ensure the smooth running of tourist visitations and the atoll's continued protection, necessitated the creation of a new, seasonal, role this year; the Aldabra Tourism Coordinator. The Tourism Coordinator is responsible for coordinating tourist visits on top of all ongoing work on the atoll liaising with other SIF team members and specifically the Aldabra management as well as monitoring and evaluating every tourism activity that takes place and puts pressure on Aldabra's ecosystem if not managed properly. With the Aldabra Management Plan (2016) recommending that SIF refrains from mass tourism and the potential for larger vessels, such as the vessel with 213 passengers, which is considered to visit if half of the visitors visit one and the other half the other day, its vital that SIF reports and analyses trends over time and if necessary, reviews rules and regulations, to avoid endangering Aldarba's ecology.

Additionally, through the inaugural Tourism Coordinator, Dr Janske van de Crommenacker's work and the full involvement and making use of every talent of the Aldabra team inclusive graphic design, SIF staff now has a new dedicated tourism package that will assist us during tourist operations. The tourism package includes guides for tour operators and visitors, as well as materials for the Aldabra team such as tour guiding and nature interpretation guide, a banner research presentation and a donation catalogue. The package will allow the rising number of visitors to be better accommodated while upholding Aldabra's strict regulations. Dr van de Crommenacker also trained all staff involved with tourism operations to assist the Tourism Coordinator, providing knowledge on walking routes, diving and snorkelling platforms as well as how behave around and present to visitors. Spefic and technical training on biosecurity, photography, drone regulations and sales also took place and like all other trainings will be repeated with new staff and seasons.

Working during the tourism season in addition to the other research, project and monitoring activites is extremely demanding for the Aldabra team who must be flexible and remain openminded while working long hours in sometimes difficult and unforeseen circumstances such rough weather which may change plans. Still the rise in demand for visits to Aldabra and the creation of this new role as well as investment in resources creates unique opportunity for SIF to increase capacity to supersede visitor expectations and better manage and protect the atoll during the peak season. Now if you are ever one of the lucky few that has the chance to set foot on Aldabra you will know the steps that have been taken ensure a visit is not only a bucket list goal attained but one that is safe for you and Aldabra's pristine ecosystem.

Aldabra House

In early 2018 much effort was put into developing the final building plans for Aldabra House, the long-planned remote access Aldabra visitor centre on Mahé. The plans were presented to the SIF board of Trustees during their AGM in April. Having received the green light by the SIF board, the project was consequently submitted to the Planning Authority for approval. This was a major milestone in the development of the project. SIF's CEO Dr Frauke Fleischer-Dogley and the local architect of the project Harry Tirant presented the project to the Planning Authority in May. Unfortunately, shortly after the project had been submitted to the Planning Authority the Department of Transport submitted an objection to Aldabra House because the design conflicts with a planned amendment to the road that passes the site. SIF has since been working with the Department of Transport to find a solution acceptable to both parties.

In June a follow-up workshop was held with the exhibition designers in the UK to finalise the scheme design stage and move the exhibition development forward into the detailed design phase. Before the workshop the SIF team worked hard to develop all the background information and content for exciting and engaging stories to share with visitors. SIF is very excited for the day that both Seychellois and visitors will be able to visit the state-of-the-art exhibition space and experience a taste of Aldabra for themselves.

Aldabra Water Tower

The logistics team on Aldabra enjoyed a major achievement in 2018 with the successful construction of a new water tower. In late 2017 the 15-year-old water tower collapsed. Over time the metal structure had corroded and the tower collapsed under the weight of two 2800L water tanks, one filled with salt water and the other with fresh water. Luckily, the logistics team had noticed the corrosion before it collapsed and had been preparing for the construction of a new water tower. A temporary wooden structure was installed to support the station water tanks, and in 2018, after more than a year of planning and building, the new structure was completed.

The first two bases and pillars of the new water tower were started in November 2016 with assistance of the crew from the vessel Enterprise II. This first phase took four days. The other two bases were constructed in May 2017 during a second phase and required tremendous efforts from members of both the logistics and research teams.

After the collapse of the old tower, the work became a high priority for the atoll. This final phase involved a lot of planning and design work. The team spent over three months working on the welding of the metal structure, which is now made up of galvanised steel. There were several constraints, such as a lack of materials and difficulties with the welding. However, the team did not give up and managed to hoist the heavy steel bars up to 20 metres high. The structure was finally completed in February 2018. Two new 1000L tanks were installed and the new tower is now fully functional, providing water to all staff houses and buildings on the research station.

This project represents one of the biggest achievements for the logistics team as it was conducted almost entirely in-house without external contractors or the use of heavy machinery. The work involved extensive planning, great team work and determination, and with the improved and reinforced structure, the team is confident that the new tower will last for many years.

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The Aldabra Clean-Up Project

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The Aldabra Clean-Up Project

At the 37th AGM of the SIF board of Trustees, which took place on Aldabra in 2017, the board members were shocked to witness the amount of marine plastic debris that has accumulated, particularly on the atoll's southern beaches. This provided the catalyst for one of SIF's biggest projects so far: the Aldabra Clean-Up Project (ACUP). The project is a collaboration between SIF and the University of Oxford and is a response to a global issue of marine plastic pollution, and in particular its impact on one of the most remote places on earth. For decades Aldabra's shorelines have been inundated with human-created waste, predominantly plastic. It blocks the paths of nesting green turtles, entangles and is ingested by sea birds and waders, and strangles marine mammals such as dolphins and whales. Pieces of plastic from this washed up debris are even increasingly found in the droppings of giant tortoises. While SIF staff based on Aldabra make continuous efforts to contain and mitigate the impact of such pollution it has become clear from the dramatically increasing volume of marine pollution that these efforts are not enough.

SIF CEO Dr Frauke Fleischer-Dogley and Trustee Professor Lindsay Turnbull, who is a fellow at Queen's College, Oxford, committed a substantial amount of time alongside Jeremy Raguain, SIF Project Officer and April Burt, Aldabra's former Science Coordinator and current Oxford PhD student, to fundraise and solicit support for the realisation of the project. Through these connections SIF united a team of five Oxford graduate student volunteers with six Seychellois volunteers, selected through a national video competition. The project was launched in the UK in May 2018 at the Royal Society, and in Seychelles by President Danny Faure, SIF's Patron, at State House in June 2018. The team, led by April and Jeremy, along with SIF staff and members of the Seychelles People's Defence Forces (SPDF), will remove waste from Aldabra's shores on a five-week expedition in early 2019, which will then be transported over 1000km back to Mahé for proper processing.

The project encompasses much more than just a beach clean-up; throughout 2018 the volunteers fundraised to cover the substantial costs of the project and worked to raise awareness locally and globally about the impacts of marine plastic pollution as well as alternatives to single use plastic. By the end of December, the project had surpassed its fundraising target of SCR 2.6 million or £150,000, an outstanding feat only possible through an outpouring of support received from individuals, organisations and corporations in Seychelles, the United Kingdom (UK) and around the world.

Preparation for the project also included substantial infrastructural and logistical work on Aldabra. There is no readily available fresh water on the atoll, and all water for drinking and washing needs to be collected as rainwater. With the rainy season starting in November, the Aldabra team needed to install extra rain water tanks to be able to store enough water for the influx of people. Several of the field camps also needed repairs and a large amount of food had to be delivered to these sites. To help ensure preparations took place and that Aldabra staff were familiarised with the project, Jeremy was stationed on Aldabra at the end of 2018 and heavily involved with these logistical considerations.

In early 2019 the ACUP team will travel to Aldabra for one of the most ambitious beach clean-up projects ever to take place in the Indian Ocean, if not the world. The project will entail massive logistical challenges, traversing the atoll is very difficult, often across razor sharp rocks and in extreme heat, the team will be based at different remote field camps with no natural water sources and often very little shade. The SIF team will be working around the clock to facilitate food drops and team transport within the constraints of Aldabra's challenging tides. The team will also have to work out how to transport many tonnes of rubbish from the beaches, to small boats and then onto a larger vessel for transport back to Mahé, this will depend on luck, flawless teamwork and good weather. Also, in 2019, the team will be working to find creative and innovative ways to repurpose the waste that is collected, and conducting research which seeks to understand how plastic pollution arrives on Aldabra and affects its fauna. As such, the project goes beyond just moving the problem from Aldabra to Mahé, and seeks to find a lasting solution to waste management in Seychelles and further afield.

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THE VALLÉE DE MAI IS THE REPTILE HOTSPOT OF THE INNER ISLANDS, WITH 13 OF THE 15 ENDEMIC REPTILE SPECIES OCCURRING WITHIN THIS 20-HECTARE AREA.

SIF Research in the Vallée de Mai

In 2018 the Seychelles black parrot population had a successful breeding season and the first population-wide black parrot census in seven years revealed a seemingly stable population, larger than was previously known. A survey of naturally regenerating coco de mer nuts in the Vallée de Mai was conducted and the research team prepared for the start of sooglossid frog monitoring in the palm forest. The Inva'Ziles research was also conducted this year in the Vallée de Mai with the aim of managing invasive animal and plant species in the forest. *Please see page 53 for more details.*

Ninth season of the Seychelles black parrot breeding monitoring programme

The 2017/18 Seychelles black parrot *(Coracopsis barklyi)* breeding season was the ninth consecutive season to be monitored by SIF. Nest monitoring provides information on the development of black parrot offspring from egg to fledgling and allows the comparison of nest success within and between breeding seasons. The monitoring programme aims to find and monitor as many nests as possible across a broad area, including the Vallée de Mai, Fond Peper and Fond Ferdinand. This will allow us to build on information gathered over the past eight parrot breeding seasons to provide insight into longer-term patterns in breeding success.

Over previous seasons, all potential nest cavities have been mapped and are revisited by the team at the start of each season to assess the continued suitability of the site for nesting parrots. Suitable nest sites have deep cavities with solid walls and a flat base, covered by the canopy of surrounding trees, which ensure that the cavity stays relatively dry. Once a nesting cavity is confirmed as 'active', the team starts nest observations twice a week for every active nest in the monitored area.

The first breeding call was noted in mid-October in the Vallée de Mai, with the first egg discovered by the end of November in Fond Ferdinand. The breeding season continued until the last monitored chick fledged in mid-March 2018. This season saw similar breeding success to last season. The total number of eggs discovered in monitored nests this breeding season was 36, from 18 nests, 21 of which hatched and 12 chicks successfully fledged *(from eight nests)*, giving a nest success rate of 47%. After fledging, seven of the 12 fledglings were re-sighted by the black parrot team, these fledglings were already capable of flying.

As usual, most of the nests this season were in coco de mer trees, however, two new nests were in the hollow trunks of living albizia trees *(Falcataria moluccana)*. The predominant nesting of black parrots on coco de mer palms is just one way that this healthy ecosystem supports the rare endemic species that occur in it.

Rat predation continued to be the main suspected reason for nest failure, with evidence of rats found in six active nests that failed at egg or chick stage. It is also possible that yellow crazy ants may cause nest failures, as dead chicks were found covered in the ants. It is unclear if the ants are causing the chicks to die or are scavenging opportunistically. A third possible cause of nest failure is cat predation.

The activity and productivity of the parrot breeding seasons shows high fluctuation, and the reasons for this are unknown. Compared to previous seasons the ninth season was a good year and we look forward to monitoring this season's 12 fledglings as they mature.

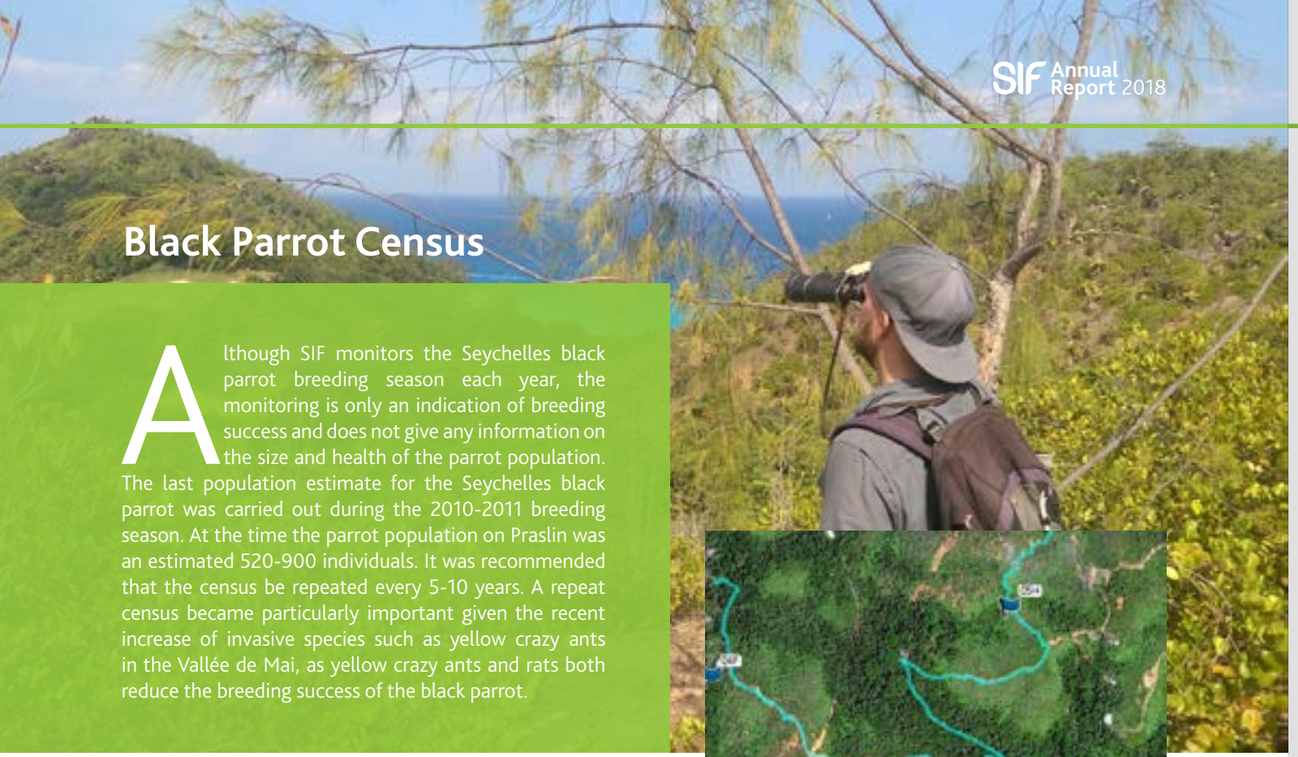
Silver/Silver: a special black parrot

The first Seychelles black parrot ringed as part of the SIF monitoring programme is a female that was ringed with silver on both legs. She was ringed on the 28th January 2010 when she was already an adult and is still alive and doing well. That season she nested in a cavity near the visitor centre known by the black parrot team as cavity N03. Since she was first ringed Silver/Silver has been recorded in the black parrot database a total of 133 times, and is often seen on a daily basis by the Vallée de Mai staff as she continues to breed near the Vallée de Mai visitor centre. With this long history of observations Silver/Silver provides us with an exceptional opportunity to gather long-term data about the lifespan and productivity of an individual black parrot.

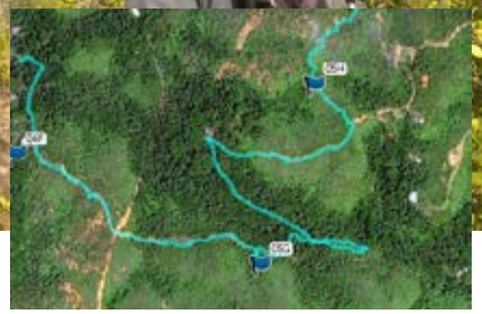
Silver/Silver successfully reared seven chicks over the last nine years. The first two successful nests were in N03 in the breeding seasons 2009/2010 and 2010/2011. These two seasons were followed by a poor breeding season for black parrots in 2011/2012 and Silver/Silver did not nest that year. In 2012/2013 she again nested in N03, but the nest was predated by rats (recorded by a trail camera). After the predation in 2012/2013, she did not attempt to lay eggs in N03 again. For the next three years the black parrot team could not find any evidence of her breeding activity, however, she remained in the same area near the Vallée de Mai visitor centre and was regularly sighted by staff. In the 2016/2017 breeding season she was found nesting again, in a different cavity known as P63, only 22 metres from N03, and at the end of the season her two chicks successfully fledged. She returned to the same cavity this season and again had two healthy chicks fledge the nest.

Silver/Silver has been repeatedly sighted with her offspring after fledging. In 2009/2010 she was still seen feeding her fledglings four months after they had fledged. At the beginning of the 2017/2018 breeding season, she was still accompanied by her two offspring from the 2016/2017 season, six months after they fledged. Later, when this season ended, she was sighted with the one-year-old juveniles as well as the new chicks. She seems to be an excellent mother and an extremely interesting study individual for the parrot programme. As well as providing fascinating insight into the lifespan of an individual black parrot, the repeated sightings of Silver/Silver over the years have made the Vallée de Mai team quite attached to her. We know that she is at least 10 years old and we hope to see her and her chicks during the next breeding seasons.

Black Parrot Census



Although SIF monitors the Seychelles black parrot breeding season each year, the monitoring is only an indication of breeding success and does not give any information on the size and health of the parrot population. The last population estimate for the Seychelles black parrot was carried out during the 2010-2011 breeding season. At the time the parrot population on Praslin was an estimated 520-900 individuals. It was recommended that the census be repeated every 5-10 years. A repeat census became particularly important given the recent increase of invasive species such as yellow crazy ants in the Vallée de Mai, as yellow crazy ants and rats both reduce the breeding success of the black parrot.



Between March and June 2018, the Vallée de Mai team led by Black Parrot volunteer Sascha Dueker undertook fieldwork for a full census of the black parrot population on Praslin. The survey was done along transects located 500m apart, with survey points situated every 300m, giving a total of 248 survey points across the island of Praslin. Despite sometimes challenging vegetation and terrain, the team were able to access all but three of the points, access was restricted for the three missing points, in one case because of the airport runway.

The analysis revealed an estimated population of 1382 (1096–1742, 95% CI) individuals. The results bode well for the species and the relatively high estimated population size shows that the black parrot population is established within the given habitats on the island of Praslin. The 2018 estimate is higher than the previous census, however the new estimate is not directly comparable to the 2010-2011 result because they were done in different seasons and black parrot behaviour, especially vocalisations, differs substantially between breeding and non-breeding seasons. 2018's survey was done after the breeding season, and therefore the census is likely to have identified more birds, since none of them were nesting. The results from 2018 will now serve as a baseline for future studies.

Although the primary goal of the census was to estimate the number of black parrots on Praslin, the survey team also included three other avian species in the survey, and Praslin-wide population estimates have been done for these as well: the Seychelles blue pigeon (Alectroenas pulcherrimus) is estimated at 7360 (5498–9854) individuals, the Seychelles bulbul (Hypsipetes crassirostris), at 37,616 (28,380–49,858) and the introduced Indian myna (Acridotheres tristis), at 6671 (5448–8169). These numbers can be compared to the 2011 estimates and worryingly, the invasive alien Indian myna was found to have increased two-fold and to have encroached substantially inland since the last survey seven and a half years ago.

Despite the black parrot population showing good numbers, the species remains vulnerable to invasive species, diseases or major catastrophic events (such as fires) due to its range being restricted to a single small island. Rigorous monitoring will be continued by the SIF team to enable us to better understand and manage threats to the species.

The curious case of the white black parrot

Since 2015 there have been sightings of a very unusual black parrot that appears to be entirely white. It has been seen by SIF and members of the public in various locations around Praslin and although the black parrot team tried to catch it during mist-netting sessions they were not successful. During the 2017/2018 breeding season a member of the public contacted the team to report that the parrot was on the ground, looking wet from the rain. The bird was transported to the Vallée de Mai for inspection, ringing and blood sampling. The bird looked healthy although its weight was relatively low. It was kept overnight and flew away the next morning when released at the same place it had been found. The bird was then spotted a few days later feeding a female black parrot, and it is therefore assumed to be a male. The bird's plumage is completely white and it has red eyes, suggesting that it could be an albino. SIF is searching for an institution where its blood samples can be processed to confirm albinism.be continued by the SIF team to enable us to better understand and manage threats to the species.

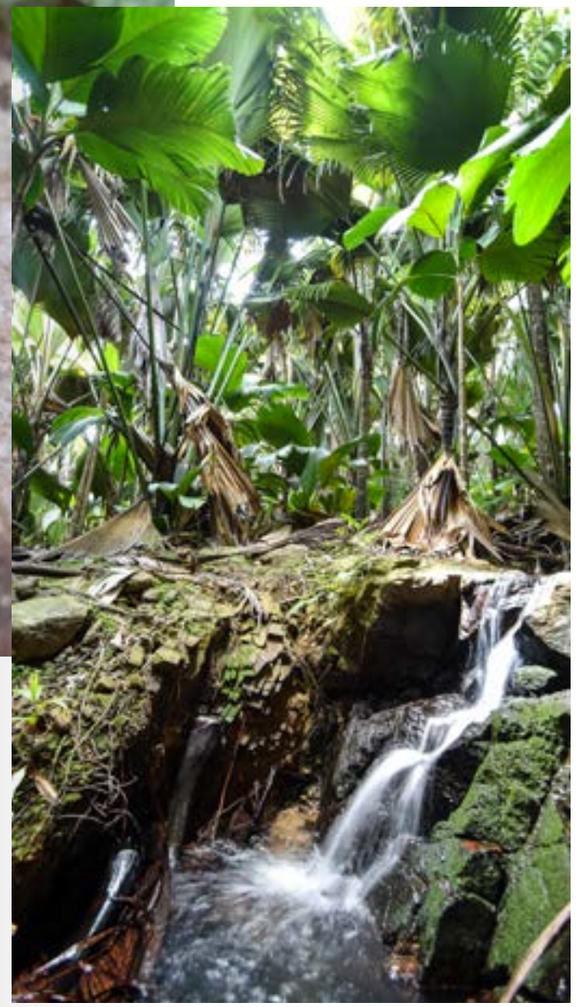
Survey of naturally regenerating coco de mer nuts

With growing demand for coco de mer nuts and kernels since the mid-1990s, these iconic nuts are an important economic resource for Seychelles. SIF collects coco de mer nuts for tourists and locals, and this revenue source provides a small percentage of the Foundation's annual income. Prior to the initiation of the regeneration scheme in 2012, almost all of the easily spotted fallen coco de mer nuts in the Vallée de Mai were collected for sale and this legal nut collection was thought to reduce the risk of poaching, while allowing the less detectable nuts to regenerate. However, 100% collection of known nuts, even if other undiscovered nuts are left to grow, is not sustainable and research supported by SIF in 2009 estimated that regeneration of at least 20% of fallen coco de mer nuts per year is necessary to maintain a stable population in the Vallée de Mai.

Every month field workers collect coco de mer nuts from the forest floor to sell as souvenirs in the shop. Nuts which are left in the forest to grow are tagged by the research team for monthly monitoring. These nuts are referred to as being in the 'regeneration scheme'.

Much of the Vallée de Mai is inaccessible and with the steep and rocky terrain and thick leaf litter on the forest floor, many nuts are not detected, particularly those that are further from paths. These nuts are referred to as 'natural regeneration' nuts and the number and stage of these nuts and seedlings is unknown. Between March and October 2018, the Vallée de Mai team set about mapping and quantifying these nuts. All nuts not in the regeneration scheme that were between the stages of 'nut' and 'seedling' were recorded. This survey of naturally regenerating nuts was important to assess the regeneration potential of the coco de mer population in the Vallée de Mai, particularly given current known legal harvesting and known and unknown poaching incidents. 315 coco de mer nuts and seedlings were documented in this exercise, which represents the last three to four years of natural regeneration and suggests that we are surpassing the target of a minimum of 20% of nuts regenerating.

Sooglossid frog monitoring starting in the Vallée de Mai



Seychelles is home to the sooglossid frogs, famous for being some of the smallest frogs in the world. A new national project aimed at the long-term monitoring of this group began in Seychelles this year, and monitoring in the Vallée de Mai will begin in early 2019. This is part of a national project to establish long-term monitoring of endemic amphibian fauna on several Seychelles islands and was developed by Dr Jim Labisko, who completed his PhD on the Praslin sooglossid in 2016. The monitoring of sooglossid frogs under this project will take place on several islands for all four endemic species of sooglossid: *Sooglossus sechellensis, Sooglossus thomasetti, Sechellophryne gardineri and Sechellophryne pipilodryas*. This project will improve understanding of sooglossid ecology and the environmental requirements of the species, laying the foundations upon which adaptive conservation management plans can be developed and enacted, conservation needs assessed, and effective measures put in place to safeguard the Seychelles' sooglossid populations.

In the Vallée de Mai the project will monitor the absence and presence of the endemic Seychelles sooglossid *(Sooglossus sechellensis)* through bioacoustic monitoring. The Seychelles sooglossid occurs mostly in undisturbed areas of the forest with good plant cover and water availability. Sooglossid frogs are difficult to observe and cryptic in their behaviour, hiding in deep leaf litter, root material, and in crevices among piles of boulders. The only way to confirm their presence or absence is to listen out for their unique vocalisations. Static/passive bioacoustic monitoring through the use of song meters is a method that permits researchers to continually monitor habitats over periods of days to months and even years, necessitating far less time spent in the field. Once deployed, song meters record at regular intervals and need only be checked as often as required.

Early in 2018 Dr Labisko, with the help of Island Conservation Society staff, started trialling the monitoring on Silhouette Island. The next site to be included in January 2019 will be the Vallée de Mai, and SIF has received four song meters and training from Dr Labisko to prepare for the official kick-off of the monitoring. The Vallée de Mai research team have been spending some time operating and gaining familiarity with the units in preparation for deployment and are looking forward to learning more about this poorly understood species, and its distribution in the Vallée de Mai, in 2019.

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THE COMBINATION OF LONG-TERM MONITORING, ANALYSIS OF MONITORING DATA, STUDENT-LED RESEARCH, AND STRONG COLLABORATIONS HAS PROVEN TO BE A POWERFUL FORMULA FOR EVIDENCE-BASED CONSERVATION DECISION-MAKING ON ALDABRA.

SIF research at Aldabra Atoll

Research on Aldabra in 2018 provided an updated estimate of the number of tortoises on Aldabra: 130,746! The team also completed the annual marine and frigatebird monitoring programmes. The long-term monitoring programmes for landbirds and waders were reviewed, with a pilot study conducted on landbirds to chart a way forward for this programme. Research was started on the breeding success of Aldabra's tropicbirds and on the connectivity of Seychelles reefs. Papers were published on interactions between tortoises and extinct crocodiles and on Aldabra's lagoon mapping.

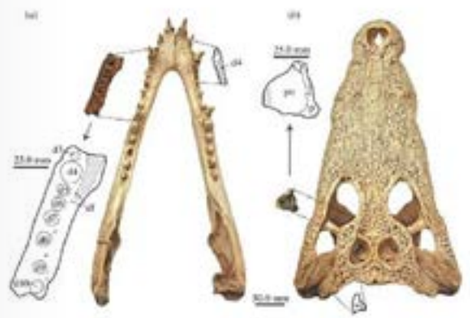
Tortoise monitoring

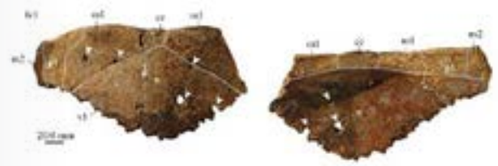
The Aldabra giant tortoise *(Aldabrachelys gigantea)* monitoring protocol was amended in 2017 in order to accommodate a new multi-level monitoring programme that applies two methods; distance transects and sweep surveys. Distance transects now allow management to estimate the total population of tortoises on the atoll and follow this trend. The sweep surveys provide vital information on tortoise biology, such as size, sex and age, as well as distribution, mortality and recruitment on the atoll. *See the 2017 Annual Report for details.*

From November 2017 and throughout 2018 the research team surveyed tortoises on the islands of Grande Terre, Malabar and Picard. The results of these distance-transects produced an atoll-wide tortoise population estimate of 130,746 (82,654–208,728). Based on out-dated estimates the population has been thought to be about 100,000 tortoises, so an estimate that is 30% higher is very exciting news for Aldabra. However, the confidence intervals for the estimate are large, and we will be looking into the reasons behind this to refine the methods.

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 in a remote area of Grande Terre. The analysis of the fossils was published in the journal Royal Society Open Science in January 2018. The fossils were revealed to be from about 90–125,000 years ago and to have come from giant tortoises and ancient crocodiles. It was already known that there were crocodiles on the atoll during that period, but previous descriptions were of a dwarf crocodile and the new fossils come from much larger specimens than previously found. Even more exciting evidence came from the circular holes, pits and scratch marks seen on some of the tortoise bones which were revealed to be bite marks of crocodiles; this is the first evidence of crocodile predation on Aldabra's fossil tortoises!





Adult Aldabra giant tortoises have no surviving natural predators in their native range, but these findings suggest that this may not have always been the case. The fossils indicate that the crocodile 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 crocodiles, possibly as an ambush attack in a water hole, or the crocodiles scavenged on tortoise carcasses. This is the first evidence of direct interactions between giant tortoises on Aldabra and their extinct crocodilian neighbours; hopefully future discoveries will shed further light on the nature of their relationship.

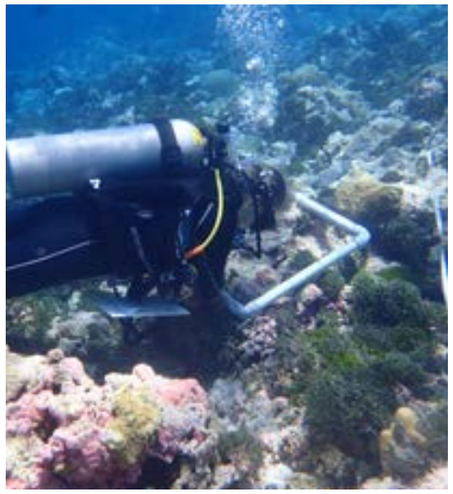
The citation details for the paper can be found towards the end of the report, under publications.

Aldabra Marine Monitoring Season Five

The fifth season (2017/18) of the Aldabra Reef Monitoring Programme was completed in December 2017. All 12 monitoring sites were visited and surveyed for benthic coverage – which is the composition of species on the ocean floor – and fish assemblages. Season five marks the second monitoring season carried out after the devastating global coral bleaching event which struck Aldabra between December 2015 and April 2016.

Benthic coverage is monitored using photo surveys in which divers take photos of the sea bed along transects. A total of 2516 photographs were collected along 63 transects. The good news is that a 16.7% increase of hard coral cover was recorded compared to season four, with greater increases observed at 15m than 5m. Although their cover remains low, soft coral and macroalgae cover also increased compared to last season. Turf algae on the other hand, dropped to pre-bleaching levels with a decrease of 29% since season four. These are encouraging signs for the recovery of Aldabra's reefs.

Monitoring of the fish community is also done by transects and 7546 fish were recorded on 59 transects. This is a 38% decrease in the abundance of the monitored fish species compared to last season. Sites at 5m recorded the biggest decline in fish numbers compared to 15m sites. Herbivorous fish, e.g., surgeonfish and parrotfish, comprised 37% of all fish encountered but, they were also the fish group that declined the most compared to season four.



During the mass bleaching event in 2016, 51% of hard corals were lost from Aldabra's reefs and replaced by rubble and turf algae. Loss of coral cover is usually followed by a reduction in fish numbers and sizes, which is exactly what was observed in season five. Fortunately, the general increase in hard coral cover indicates that the reefs are recovering. The limited direct human threats to Aldabra make the monitoring of its reefs very important as they serve as a biological reference point to monitor change induced by global environmental pressures.

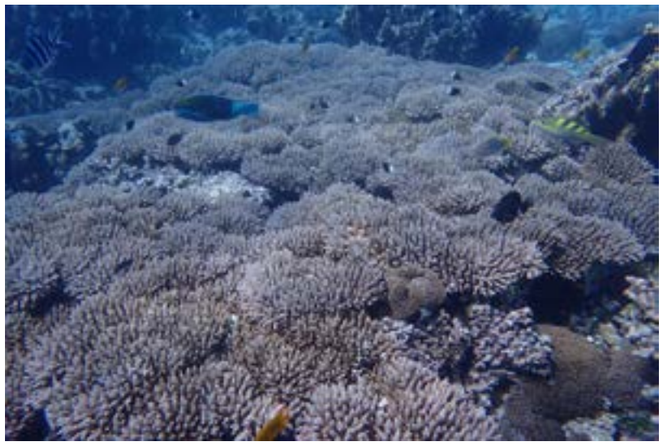
PhD research on island ecosystem management and coral connectivity

University of Oxford PhD student, and Aldabra's former Science Coordinator, April Burt, returned to Seychelles in late 2018 to conduct research that aims to enhance management effectiveness of island ecosystems by investigating the theme of connectivity, both at a management and an ecological level.

The research will conduct an assessment of island ecosystem management using social science methods to conduct in-depth interviews with island management and conservation practitioners across Seychelles. This will then be scaled up to an online questionnaire, which will be distributed to island ecosystem networks globally. The aims of this study are to understand first-hand how island ecosystems are currently being managed, what factors influence effective management and how management of these unique ecosystems can improve.

April will also map coral population connectivity across Seychelles using genetic techniques to understand how coral reefs across the country's huge marine area are connected to each other, with the aim of informing management and policy of the coral reef system. This involves collecting coral samples from as many reefs in Seychelles as possible. The research will identify which reefs in the region are most highly connected, i.e., which are the keystone reefs supplying coral larvae to the region. This is extremely important to inform effective management of Seychelles reefs, especially under the current climate of increasing threats and disturbance events such as coral bleaching. This was the main activity for the first field season and April collected samples from a large number of Seychelles' inner and outer islands, including Aldabra.

The third pillar of April's PhD research is to investigate the threat of marine plastic pollution to island ecosystems. In collaboration with the Aldabra Clean-Up Project, April will conduct research that will determine the quantity, composition and accumulation rate of waste arriving on Aldabra and the resources required to remove this waste in the long-term. She will also investigate the threats posed by accumulation and the increased rafting opportunities that marine debris present for non-native species. Her aim is to gather information that will be useful for effectively managing the threat of plastic pollution arriving at islands. The majority of this research will be done during the ACUP in March 2019.



Wader Monitoring Programme Review

A variety of bird species, known collectively as waders or shorebirds, use Aldabra's coastal habitats for foraging, often on a seasonal basis. Because they bridge marine and terrestrial environments, these species have the potential to be indicators of change in coastal environments and so are the focus of a monitoring programme. Data has been collected since 2003 under a regular monitoring programme on these wading birds and some seabird species, due to their common usage of the same shorelines.

The main aim of the wader programme is to monitor changes in the relative abundance and species composition of foraging bird species on the exposed reefs of Aldabra. Wader counts can also provide information on the movement of migratory species which breed elsewhere. In 2018, after 15 years of monitoring, the data was analysed to identify trends in individual species, assess monitoring effectiveness and provide recommendations for the future of the programme.

Monitoring is done at Settlement beach, next to the research station, and at Dune d'Messe and Dune Jean-Louis, on the south of the atoll, and much more difficult area to access. The analysis revealed that of the 29 monitored species only 12 are commonly sighted at Settlement beach, and that only half that number are commonly sighted at Dune d'Messe and Dune Jean-Louis. It was very difficult to discern any meaningful trends from the Dune d'Messe and Dune Jean-Louis data because of the varied survey conditions, low bird numbers and low number of counts per year. It was therefore recommended that this monitoring be stopped.

The results from Settlement beach revealed that recent declines are evident in some resident shorebird species such as the grey heron, green-backed heron and dimorphic egret. Historical patterns of abundance suggest declines may not be permanent, rather being part of natural population fluctuations. Many migratory waders also exhibit declines in annual abundance. Based on patterns seen elsewhere in the range of these species, declines are most likely the result of threats at their breeding grounds or along their migration route rather than a lower survival rate at Aldabra. Daily counts of the migratory crab plovers on Settlement Beach have shown a robust index of relative abundance and a relatively stable trend in numbers since 2007. While overall numbers of waders coming to Aldabra are comparatively small, seasonal abundance trends may add to an increasing field of literature on wader declines internationally and along the East African flyway, the pathway used by all migratory waders overwintering at Aldabra. For terns and other seabirds, it was found that the wader monitoring programme is less suitable for detecting trends in their abundance due to the typically low numbers observed within the monitoring area.

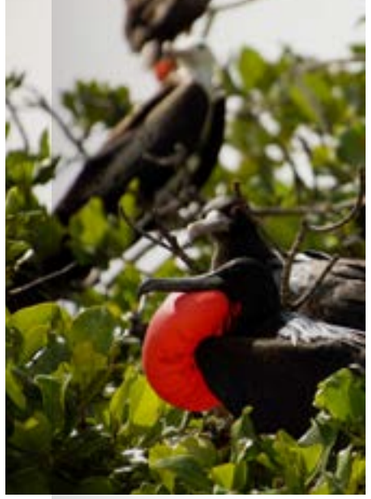
Eighth Aldabra frigatebird breeding survey

In February 2018 the Aldabra research team conducted the annual frigatebird survey. In this monitoring event all four breeding colonies are surveyed and all nests of both the lesser frigatebird (Fregata ariel) and the greater frigatebird (Fregata minor) are counted. During the survey the number of nests is equated with the number of breeding pairs. If adults are present on the nest they are counted per species. However, often parents go away to find food leaving their chick alone on the nest; since chicks of the two species are largely indistinguishable without close inspection they are counted as one group.

This year nest numbers were high: a total of 7703 nests were counted, compared to 4453 in 2017. This large difference in counts is common; due to the very long breeding cycle of frigatebirds (15-18 months), the proportion of the population that is able to breed fluctuates between years. The 2018 nest total is similar to that recorded in 2011, 2013 and 2015 suggesting that the combined frigatebird breeding population has not declined over this time period.

Although the annual frigatebird breeding survey allows us to monitor whether the total combined frigatebird population is increasing or decreasing (relative numbers), this methodology is not suitable for estimating the actual size (absolute numbers) of the populations of both species as this would require additional data on the seasonal nesting peak for each species, breeding success and species composition. For example, of the total nest count in 2018, unguarded chicks and adult lesser frigatebirds on nests each numbered around 3800 while only 140 greater frigatebird adults on nests were counted. The actual number of breeding greater frigatebirds this season is certainly much higher than this so, in August 2017, the Aldabra research team started a two-year in-depth study on frigatebird breeding cycles. This programme is designed to document the timing of breeding cycle stages for greater and lesser frigatebirds in each breeding colony and will give context to the annual survey results by showing when each species' seasonal nesting peak typically occurs. Since August 2017 breeding cycle monitoring has taken place every three to five weeks in a small subsection of each of the four colonies on Aldabra. Birds are counted within three categories of adult breeding activities per species and one combined category for unaccompanied chicks.

The in-depth study will only be complete in August 2019, but preliminary results show that the peak nesting time of greater frigatebirds is in October. By February, when the annual breeding survey is done, many of their chicks have fledged or are old enough to be left unaccompanied so the number of adults left sitting on nests was much reduced compared to numbers at peak nesting time. In contrast, lesser frigatebirds did not reach their nesting peak until February, exactly when the annual survey is conducted. Seeing such stark differences in breeding chronology between species highlights the importance of timing in surveys and the difficulties in estimating the breeding population size of each species. We expect that the continuation of the breeding cycle monitoring over a two-year period will give us a deeper understanding of the population dynamics of the breeding colonies.



Landbird monitoring review and pilot study

Many landbirds on Aldabra are either endemic species or subspecies, and their populations are therefore extremely important to monitor. They have been monitored through a point count monitoring programme since 1999. The historical data from the monitoring was reviewed in 2015, with a paper published on the increasing population trends (see 2015/2016 Annual Report for details). The data also highlighted several limitations of the programme which were reviewed during 2017-2018.

Monitoring of Aldabra's landbird species is done along seven transects, six of which are the same as the original (established in 1999) tortoise monitoring transects. A 2016 review of the tortoise monitoring protocol revealed that the transects did not sample habitat types relative to their actual occurrence on the atoll, with some habitats over-represented and some under-represented. The tortoise monitoring transects were consequently amended in 2017, with some sections remaining the same, but new transects and new portions added to increase representativeness *(See 2017 Annual Report for details)*. An analysis in 2017 of landbird point count stations showed that habitat types are also severely misrepresented in the landbird monitoring design relative to their actual coverage. The analysis further showed that the landbird monitoring design would be more representative of all habitat types if the new tortoise transects were included in the monitoring along with additional points along some existing transects and an additional transect in a little sampled area of Aldabra.

Point counts are done every 200m along the transects every three months. The results allow us to monitor changes in the relative abundance of species over time, and investigate species population trends and habitat preferences, however it is not currently possible to determine the true abundance and density of the 13 landbird species. The review of the monitoring programme investigated the feasibility of using distance sampling as a methodology for determining the abundance of Aldabra's landbird species. Distance sampling is widely used to estimate density and absolute abundance for a range of organisms. However, it can be problematic for some species, including some birds because of their complex habitat structure, how mobile they are, and their cryptic behaviour. Distance sampling for birds is done either by counting all birds observed along a transect or at certain points along transects. By estimating the distance of each bird from the observer, with the assumption that the number of birds observed will decrease as their distance from the observer increases, these observations can be extrapolated to an area or habitat type, and thus produce an abundance estimate.

The extent to which distance sampling is a suitable method for Aldabra's landbirds depends on the environment and on the species being considered. A pilot study was carried out over five days in February 2018 to discover which bird species could be monitored using this method. Eight landbird species were considered in the study: the Aldabra drongo *(Dicrurus aldabranus)*, Aldabra fody *(Foudia aldabrana)*, Madagascar white-eye *(Zosterops maderaspatanus)*, Madagascar bulbul *(Hypsipetes madagascariensis)*, Madagascar turtle-dove *(Nesoenas picturatus)*, Comoro blue pigeon *(Alectroenas sganzini)*, souimanga sunbird *(Cinnyris sovimanga)* and Madagascar coucal *(Centropus toulou)*.

The pilot study aimed to discover whether the methodological requirements of distance sampling were feasible for landbirds on Aldabra, determine which species could be monitored using this method, and facilitate the optimal design for the landbird monitoring programme. The transects were surveyed using the distance sampling point transect method with observations made for four minutes at each point. Distances were measured with a laser rangefinder that was accurate to one metre.

The pilot study concluded that with further sample design and methodology considerations, distance sampling could potentially be used to estimate the absolute abundance of the endemic drongo and fody, the bulbul, turtle dove, sunbird and blue pigeon.

Endemic Aldabra fody assessed by the International Union for Conservation of Nature

The Aldabra fody was until recently considered to be a subspecies of the much more widely distributed red-headed fody *(Foudia eminentissima)* of Madagascar. In 2015 genetic research published by former SIF Aldabra Science Coordinator Dr Janske van de Crommenacker and several other researchers and SIF staff resulted in the species being considered a distinct species, which is now reflected in the scientific literature, and on the IUCN Red List. However, until this year the species was still designated the threat status of 'Least Concern' on the IUCN Red List, which reflected the much broader distribution of the red-headed fody.

As a consequence of this research, BirdLife International set up a Globally Threatened Birds Forum, proposing online that the Aldabra fody be uplisted on the IUCN Red List, to reflect its species status, tiny range and vulnerability, and invited public comments and participation. The forum was contributed to by SIF and the decision was made in November 2018 by IUCN to uplist the Aldabra fody to 'Endangered'. Importantly, in this case, the uplisting does not reflect any increased threat to the species, rather that it has been accurately assessed for the first time. The assessment acknowledges that the population might be increasing and that the threat from the Madagascar fody has been removed, but given the other threats (such as invasive alien species and climate change) facing this species, especially its limited distribution, it is listed as Endangered as a precaution. The Red List uplisting in this case is good news for the Aldabra fody as it will emphasise the importance of appropriate conservation management of the species and aid in the direction and prioritisation of resources.

IUCN

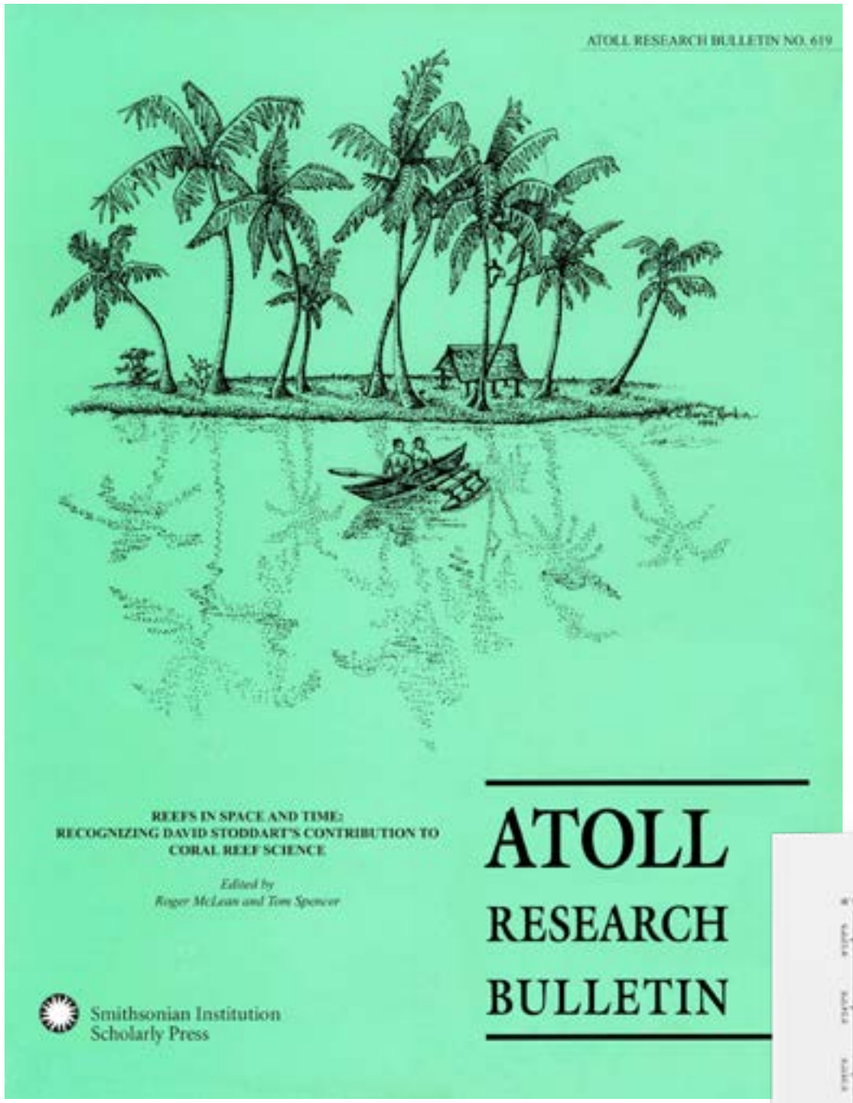
Tropicbird lifecycle research

Tropicbirds are a common seabird species in Seychelles, with the elegant white-tailed tropicbirds *(Phaethon lepturus)* breeding on many inner and outer islands, and the rarer, larger red-tailed tropicbirds mostly breeding on Aride and Aldabra. The breeding success of the two species on Aldabra is relatively poor, and Dr Annette Fayet, Junior Research Fellow at Oxford University embarked on research in early 2018 to discover why. The project uses new technologies to gather information on the birds at the nest and at sea, to learn more about their breeding behaviour and hopefully identify reasons for their poor breeding success.

Tropicbirds feed far 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. Dr Fayet used tiny immersion and depth loggers, which weigh less than 2g, attached to the birds to record their movements while away from the nest. Unfortunately, some of the loggers became detached, but Dr Fayet did manage to record the movements of several birds. She found that some birds went several hundreds of kilometres away from Aldabra.

To identify why so many breeding attempts fail, Dr Fayet also deployed infra-red motion activated cameras to observe tropicbird nests. Her cameras, installed on rocky islets in the lagoon, photographed some interesting but 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 even on tiny islets. A range of predators causes nest failure in both species, which is currently being further explored.

This research project began to shed light on the behaviour of the elusive tropicbirds and the threats they face. With seabirds being more threatened than ever by ocean pollution, overfishing, and climate change, such research to inform conservation efforts is critical. More data is needed to determine the reasons for poor breeding success and Annette will be back in 2019 to deploy more loggers to hopefully find out! The Environment Trust Fund (ETF) have agreed to support the project in 2019.



Reefs in Space and Time:
Recognizing David Stoddart's Contribution to Coral Reef Science

Scan the QR code to read the complete bulletin.

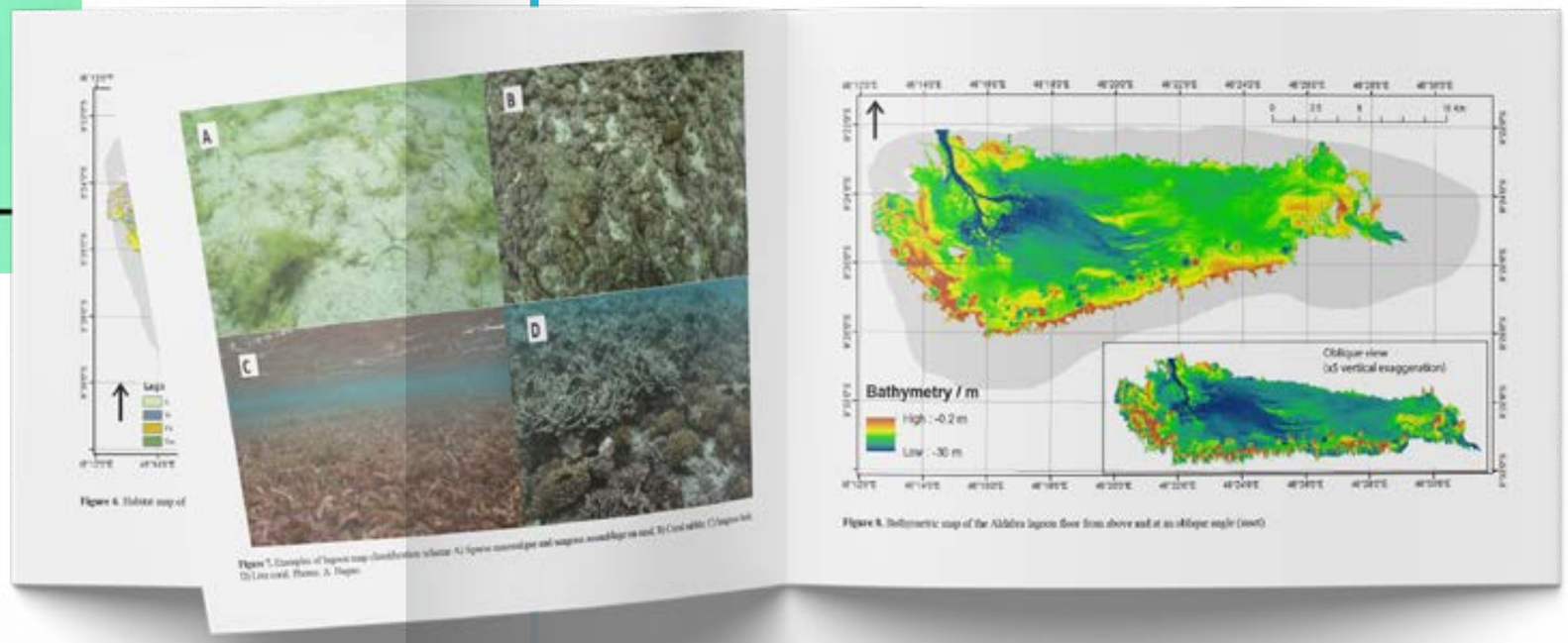
Atoll Research Bulletin

The Professor David Stoddart memorial issue of the Atoll Research Bulletin was published in September 2018 and features the first birds' eye view bathymetry map of the Aldabra lagoon. This edition of the Atoll Research Bulletin, entitled "Reefs in space and time: Recognising David Stoddart's contribution to coral reef science", honours Professor Stoddart, a life-long champion of Aldabra and one of the founders of the Aldabra research station. He was a world authority on coral atolls and a leading figure in coral reef science and conservation.

The bulletin features research representing the phases and locations of Professor Stoddart's long career, and Aldabra is represented in a paper on the benthic communities and bathymetry of the lagoon, "Mapping the lagoon at Aldabra Atoll, Western Indian Ocean". The research, led by Sarah Hamylton from the Cambridge Coastal Research Unit, used satellite remote sensing techniques and detailed in situ ground-referencing within the lagoon to provide a detailed snapshot of the habitats and bottom topography of the lagoon. The fieldwork was undertaken in 2009 with some results, including the lagoon habitat and bathymetry maps, published in 2012, but this is the first time that the bathymetry map produced by the team has been published as a birds' eye view and provides a fascinating image of the depths across Aldabra's lagoon. Bathymetry is the study of underwater depths and the Aldabra lagoon floor has an elevation range of 0.2 to 30 metres. Much of the lagoon is a flat and shallow platform and the deep areas occur in the channels.

Understanding bathymetry is important for navigating the lagoon, which is highly tide dependent and can be very challenging, and for understanding the possible habitats and distribution of species within the lagoon. In the context of a changing climate the bathymetry and habitat maps also provide a detailed record of the lagoon at present, against which changes can be monitored.

The citation details for the paper can be found towards the end of the report, under publications.



SIF Annual Report 2018

2018 SAW SIF MAKING MAJOR HEADWAY IN TACKLING ONE OF THE GREATEST THREATS TO ISLAND BIODIVERSITY - INVASIVE ALIEN SPECIES - ACROSS AND BEYOND ITS SITES

Invasive Species Activities

Two large invasive species projects were completed in 2018, the IOC biosecurity project for Aldabra, and the IUCN-implemented Inva'Ziles project in the Vallée de Mai. Both projects have helped SIF make significant progress in invasive alien species management at the respective sites. Biosecurity measures have been substantially strengthened on Aldabra and will continue to be in the coming years. Invasive alien species control has been diversified in the Vallée de Mai through the Inva'Ziles project and will be further strengthened in 2019, building on the lessons learned during the project. New monitoring on scale insects on Aldabra was conducted in 2018, and the Mahé ring-necked parakeet eradication moved ever closer to completion. Research was published detailing the final stages of Aldabra's goat eradication, and confirming the presence of beak and feather disease virus in ring-necked parakeets on Mahé – providing further validation for the eradication. Yellow crazy ants in the Vallée de Mai reached alarming new levels and control of this species will be a major priority in 2019.

Invasive alien species in the Vallée de Mai

Annual yellow crazy ant survey

The ninth annual yellow crazy ant survey was conducted in November 2018 in the Vallée de Mai by the research team. The results indicate that this highly invasive ant has now spread across the entire reserve.

Yellow crazy ants were first documented in the Vallée de Mai in 2009. Annual surveys have been conducted since then to monitor the spread and distribution of the invasive ant over time. The survey deploys pitfall traps at 50 points across the reserve, which are left for 24 hours and collected the following day. All ants in the traps are then sorted, identified and counted. The distribution of yellow crazy ants was relatively stable after its detection and covered <50% of the site until 2016, when there was a marked increase. Survey results from November 2018 show that the ants now cover 100% of the Vallée de Mai as well as the highest average abundance ever recorded across survey points.

Research on the yellow crazy ants published in 2014, as well as experience gained from other islands, suggests that, unless the numbers of yellow crazy ants can be reduced, we can expect major impacts on the biodiversity of the forest, particularly on arboreal molluscs and geckos.

Indeed, declines in the slug and snail populations have already been noted anecdotally and are in the process of being confirmed. It is likely that the ants will also affect ground-dwelling fauna, including caecilians, skinks and arthropods. It is a crisis situation for the Vallée de Mai, making further ant control and research into their impacts urgent priorities for SIF.

So far, due to earlier expansion in their distribution revealed by the annual monitoring SIF has trialled methods to control the yellow crazy ants in the Vallée de Mai. Through the EU-funded Inva'Ziles project, which was sought primarily as a response due to the increasing yellow crazy ant distribution, ant-specific bait stations using boric acid solution were trialled from March 2018. The trials have not yet shown a major impact on yellow crazy ant numbers but research elsewhere suggests a potentially long-term impact of the bait stations. The boric acid solution is known to be slow-acting so the bait stations are a potential option for long-term control of yellow crazy ants across the Vallée de Mai in an attempt to curb and ultimately reverse the species' spread. Alongside this, the research team is monitoring abundance of other native and endemic species to document the impacts of this highly invasive ant.

The yellow crazy ant is listed as one of the top 100 worst invasive species by the IUCN and the Global Invasive Species Database. They can form super colonies (inter-connected 'united' colonies of multiple nests with multiple queens and workers which do not attack one another) and are aggressive to and competitive with other ants and insects, which enables them to out-compete and displace other species and dominate food resources. The ants also spray formic acid which can subdue even large prey when many ants are attacking. These traits cause yellow crazy ants to have substantial impacts on the ecosystems into which they are introduced and it was this species that triggered the concept of 'invasional meltdown', following their catastrophic impacts after being introduced to Christmas Island. The yellow crazy ant is present on a number of islands in Seychelles, including Praslin, but until recently it did not occur throughout the endemic palm forest.

SIF has substantially increased efforts on yellow crazy ant control after the survey results and further control and management trials, as well as research into impacts of this invasive ant, will be intensified in 2019. We very much hope that any impacts can be mitigated with continued and increased control efforts and that we are not too late to act.

Inva'Ziles Project

The Inva'Ziles project titled "Preparation and testing of a comprehensive model for preventing and managing the spread of invasive species on island ecosystems", was concluded in the Vallée de Mai in 2018. The EU-financed project was facilitated by the IUCN. It included funding for demonstration projects in the three main target countries of the project, Comoros, Mauritius and Seychelles. The aim of this funding was to assist the three countries to increase the effectiveness and amplify the range of invasive alien species management activities.

The Vallée de Mai project: 'Pioneering a holistic approach in managing invasive species in protected areas and testing it in the Vallée de Mai UNESCO World Heritage Site' was completed in August 2018.

The overall objective of the project was to develop new methods for holistically managing several invasive animal and plant species in the Vallée de Mai. Many of the methods were new to Seychelles and potentially the region. The first five months of the project concentrated on planning, preparation, consolidation of partnerships and launching of the most urgent objectives. The following nine months were spent researching and designing trials for novel techniques on all aspects of the project, delivering these trials and expanding on the scope of SIF's invasive plant management programme to new and problematic species.

The project team undertook experimental fieldwork on a variety of species. While controlling numbers of introduced tenrecs *(Tenrec ecaudatus)* and their impacts on endemic fauna, the team analysed the stomach contents of tenrecs to shed light on their diet. While the trial gathered useful baseline data on biometrics, the results on stomach contents proved inconclusive, and the trial indicated that further research into tenrec ecology and diet is required.

A pilot management study to reduce rat *(Rattus rattus)* density around Seychelles black parrot nests was also undertaken, with the aim of determining the impacts of control on parrot breeding success. The results of the trial suggested that rat trapping substantially increases nesting success of Seychelles black parrots but there were not enough nests for this to be statistically meaningful so the experiment will be repeated during the next black parrot breeding season.

Next, a range of potential deterrence methods was applied to trees to prevent yellow crazy ants from accessing the canopy and black parrot nests. The trial suggested that Eucalyptus oil and car grease could be effective at restricting yellow crazy ants from accessing the canopy, although this method was extremely labour intensive and had to be reapplied each time it rained so it would not be feasible for more than a few trees. Ant specific bait stations, using a boric acid solution, were also deployed to trial its effectiveness in reducing numbers of yellow crazy ants.

THIS YEAR WE TRIALED NEW METHODS FOR HOLISTICALLY MANAGING A RANGE OF INVASIVE ANIMAL AND PLANT SPECIES IN THE VALLÉE DE MAI TO FURTHER MAINSTREAM THEIR CONTROL.

New methods were also trialled for 'basal bark' herbicide treatment of invasive philodendron or devil's ivy *(Epipremnum pinnatum)*, and to control and prevent strawberry guava *(Psidium cattleianum)* and coco-plum *(Chrysobalanus icaco)* re-invasion along the boundary of the Vallée de Mai. All adult trees of these species have been removed from the core area of the Vallée de Mai. Trials involved cutting saplings and treating stumps with herbicide. Follow-up checks have shown excellent results, with no regrowth of stumps after approximately two months. This work has been incorporated into the existing Vallée de Mai invasive alien species plant work plan and management of the site.

In addition to all of the control trials, public awareness was a major component of the project. The project team hosted a forum on invasive alien species entitled 'Sharing Good Practices' in June 2018 on Praslin. The forum was open to other organisations working with invasive alien species in Seychelles. The forum was attended by 30 delegates, representing 11 organisations from eight of the inner islands. During the forum there was a range of presentations covering topics from bird eradication to invasive plant management, followed by interactive workshops to discuss each other's invasive alien species work. The forum was a great success and was inspiring and helpful for participants.

A Funded Project

Invasive Alien Species on Aldabra

Aldabra biosecurity project completed

Invasive alien species are one of the most significant threats to island ecosystems. Between May 2017 and October 2018 Aldabra's biosecurity measures were substantially improved through a project to "Institutionalise and implement biosecurity measures to ensure sustainable conservation management of biodiversity on Aldabra". Implemented by the IOC and funded by the European Commission, the biosecurity project aimed to adopt and institutionalise the detailed Aldabra biosecurity plan that was developed in 2014. It will strengthen biosecurity measures to prevent future accidental introductions of invasive species to Aldabra, and provide an essential foundation for sustaining the outcomes of future eradications on the atoll.

The project included a combination of procedural and practical elements. Including reviewing and strengthening Aldabra's biosecurity plan, creating guidelines for relevant invasive flora and fauna, and developing incursion response procedures to train all staff for the prevention of establishment of invasive alien species. This was done in consultation with a team of biosecurity specialists from New Zealand. In April and May 2018 SIF hosted one of these specialists on Aldabra and at the Mahé head office to conduct training for all staff and to help the team combine international best practice for biosecurity with the practical challenges and opportunities presented by Aldabra.

At the SIF Head Office on Mahé a temporary biosecurity store was setup. This will be used until Aldabra House is operational, which will host specifically designed biosecurity stores. This store is used to check all supplies properly prior to departure and to pack them into newly purchased pest-proof containers to send them to Aldabra. The containers are sturdy, air- and water-tight aluminium boxes and were a major investment under the project. These containers will help to reduce one of the biggest risks in our supply chain by eliminating the use of cardboard boxes for transport, always a very easy and likely place for insects like ants to enter and travel unnoticed.

Biosecurity measures were scaled up for all visitors to the atoll. For tourists on cruise ships this includes briefing all guests on biosecurity threats and then inspecting all shoes and bags for signs of invasive alien species before they disembark from the ship. For staff on their way to Aldabra this means searching their bags for any seeds, insects or other potentially invasive species.

Another key part of the project is the construction of a secure biosecurity building on Aldabra. Once completed, this building will be used to check all supplies arriving on Aldabra to ensure that no invasive stowaways can reach the atoll. Although everything is checked on Mahé before sending, the check on Aldabra is an essential backup in the event that something is missed on Mahé or able to stowaway during transit. The building was started early in 2018 and after delays due to transportation and recruitment challenges it will be completed in early 2019.

Despite the project officially coming to an end in 2018, as all of those in island conservation are well aware, biosecurity is a never-ending job and activities are ongoing to continually strengthen Aldabra's biosecurity. SIF is determined to achieve the best biosecurity practices possible to prevent any harmful species introductions to Aldabra.

Scale insect assessment

IA scale insect *(Icerya seychellarum; 0.5mm–7.5mm in size)* that is not native to Seychelles (despite its name) was first recorded on Aldabra in 1968. Scale insects 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 attached to a host plant, they change their skin and females lose the use of their legs (males keep their legs to help 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 on which a sooty mould can 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.

On Aldabra the species distribution varied in the late 1970s and through the 1980s, and in a 1988 paper reporting the trends in abundance, a case was made to start biological control. Since no native scale insect predators exist on Aldabra the introduction of a biological control species was approved. The predator, a ladybird (Rodolia chersmina), was chosen due to the positive effects it was having on this same scale insect on Mahé and it was introduced to the atoll in 1989. A review of 20 years of scale insect monitoring was then performed 10 years later, in 1999, and found 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 was likely to have caused this decline in scale insects, and monitoring continued twice a year on Aldabra until 2002.

Fifty years since it was first documented on Aldabra, an assessment for the scale insect was initiated in July/August 2018 by the research team on Aldabra. Under the direction of Professor David Newbery and Dr Garry Hill (both of whom started the original monitoring programme) SIF staff travelled to various parts of the atoll, searching specific tree species for scale insects. To allow for comparisons, the methodology follows the one used in the 1980s, and the abundance of the introduced ladybird is also being noted. A second survey will be done in February 2019 during the wet season to account for any seasonal differences in abundance. A full analysis will be completed by Professor Newbery and Dr Hill once all data has been collected.

SIF Annual Report 2018

Paper published on late stage dynamics of the goat eradication on Aldabra

The goat eradication on Aldabra was one of the most ambitious and large-scale invasive alien species eradications in SIF's history, with goats finally eradicated from the atoll in 2012 following 25 years of efforts. The results and process of the final stage of the eradication are presented in a paper published in 2018 in the journal Biological Invasions. Although some information about the eradication has been published previously on the earlier stages of the programme, this paper details the final phase of the eradication; including the methods, eradication dynamics, outcomes and financial costs.

Goats were present on Aldabra for well over 100 years, with eradication efforts beginning in 1987; 2297 goats were culled over the entire 25-year period. Over the 25 years various eradication and control methods were employed intermittently, and in 2007 an intensive final campaign was launched using the Judas goat method. This campaign ran from 2007 to 2012, culminating with the complete eradication of goats from Aldabra in August 2012.

The Judas method relies on the social nature of goats, and on their tendency to seek out other goats and congregate. Individual goats are selected and sterilised, radio-collared and then released. As an additional attractant, female goats were injected with hormones to make them more attractive to male goats. The eradication team then used the radio collars to track the Judas goats on foot, culling any non-collared goats that were found associating with. As with most eradications the final stages were the most challenging, with a much lower density of the target species and remaining individuals likely to be the best at avoiding detection. During the five year effort 227 goats were culled, 202 in the first four months of intensive culling and Judas goat establishment, and a following 25 animals over the final years, six of which were the Judas goats themselves. The total cost of the five-year eradication was US$ 185,105, an average of US$ 815/goat, or US$ 31/ha.

The eradication was not the largest goat eradication from an island, but it is a notable conservation achievement because of the outstanding value of Aldabra, and the extremely challenging logistical difficulties that had to be overcome. These included tidal restrictions, virtually no infrastructure on site, limited fresh water availability and challenging terrain as well as tropical conditions. The use of the Judas goat method was highly effective and was probably the only feasible method with which the eradication could have been completed. Although the cost of the eradication was fairly high, goats have had serious impacts on Aldabra's ecosystem, and their eradication was an essential intervention for conservation of Aldabra's unique biodiversity.

The citation details for the paper can be found towards the end of the report, under publications.

Invasive Alien Species on Mahé

Ring-necked parakeet eradication on Mahé

Between July and September 2018, the ring-necked parakeet eradication team continued to monitor Mahé for any sightings of wild ring-necked parakeets or kato ver (Psittacula krameri). The last known ring-necked parakeet in the wild on Mahé was culled by the eradication team in August 2017 (See 2017 Annual Report for details). After almost a year of no parakeet sightings, in late 2018 comprehensive and systematic follow-up surveys were conducted across Mahé to confirm if the eradication could be declared complete. Julio Agricole and Jessica Moumou, long-term team members, were recruited as the ring-necked parakeet project team to conduct these surveys and verify eradication. Jessica and Julio had both recently graduated from the BSc course in Environmental Science at the University of Seychelles, and they re-joined the SIF team with a wealth of bird eradication experience, having both worked on and led bird eradication projects on Assomption and Aldabra, and on previous phases of the ring-necked parakeet eradication on Mahé.

Jessica and Julio were in the field every day searching previous ring-necked parakeet habitats for any remaining birds. The main places visited were the west, south and south-east coast of Mahé. Positioning themselves at strategic viewpoints and along previous known flight lines, the team monitored at dawn from 6am to 10am and in the evening between 3pm and 6.30pm. During these observation sessions, Jessica and Julio also actively engaged with surrounding community members, inquiring about recent sightings of ring-necked parakeets. In addition, the team reached out to the general public for information and a bounty was offered for information which led to a sighting or cull by the SIF team. In four months, Julio and Jessica saw or heard no sign of a ring-necked parakeet, which bodes well for imminent completion of this project.

SIF is extremely grateful to the SPDF, the Ministry of Employment, Immigration and Civil Status, the MEECC and the ETF for their strong support throughout the eradication. Without their support this eradication project would never have been possible. A key part of the eradication has been the public information campaign, which could not have been done without tip-offs and support from the public. Final observations will be conducted in March 2019 to determine if there are any remaining birds on Mahé or if this invasive alien species has finally been eradicated from the country.

Research published confirming beak and feather disease virus in ring-necked parakeets on Mahé

Important research was published in September 2018 which confirmed the presence of a lethal parrot virus, beak and feather disease virus (BFDV) in introduced ring-necked parakeets that were culled during the eradication of this species on Mahé. The ring-necked parakeet has been implicated in introducing diseases that have threatened other endemic parrot populations, such as the echo parakeets (Psittacula eques) in Mauritius. The ring-necked parakeet eradication was initiated to prevent the same from happening in Seychelles to the endemic black parrot and this research provides further validation for the eradication.

The research was led by Dr Debbie Fogell, a PhD researcher at the Durrell Institute of Conservation and Ecology (DICE), UK, who analysed blood samples collected by SIF from 24 black parrots on Praslin and 23 ring-necked parakeets on Mahé. All of the black parrot samples tested negative for BFDV, but the virus was detected in nearly 50% of the ring-necked parakeet samples. Another important finding was that the strain of BFDV found in Seychelles was most closely related to the UK strain, indicating that the virus entered the country - and subsequently infected the wild ring-necked parakeet population - by way of a parrot or parakeet imported from the UK. Although it is extremely worrying that the wild ring-necked parakeets on Mahé were carriers of the BFDV, it is encouraging that all of the black parrot samples were BFDV free and that the ring-necked parakeets were restricted to Mahé, with one individual on Silhouette and one on Praslin, but nowhere near any of the black parrot areas. It has been well over a year since the last known wild ring-necked parakeet was culled on Mahé (see above article) and it appears that the eradication was just in time for the black parrot.

The citation details for the paper can be found towards the end of the report, under scientific publications.

> ***"THE RING-NECKED PARAKEET ERADICATION PROJECT IS A TRUE TEST OF SIF'S PERSISTENCE AND DEDICATION TO CAUSE. IT HAS BEEN VITAL TO KEEP GOING AND NOT LET OUR GUARD DOWN IN THESE FINAL STAGES."***
>
> ***Dr Frauke Fleischer-Dogley***

Education & Outreach

SIF PLACES A LARGE EMPHASIS ON OUTREACH AND EDUCATION AND THIS CONTINUED IN 2018.

Friends of Vallée de Mai

142
children enrolled
6.7% of the school children on Praslin

4
Schools

Education

Friends of Vallée de Mai club

In 2018 there were 142 children enrolled in the Friends of Vallée de Mai club from all four schools on Praslin (Praslin Secondary, Grande Anse Primary, Baie Ste Anne Primary and Vijay International), this amounts to over 6.7% of the school children on Praslin.

School activities

In 2018 a total of 893 students in 25 school groups, visited the Vallée de Mai from 25 different schools. For many teachers and students, the visit to the Vallée de Mai is one of the highlights of the school year and we are delighted that so many are able to experience this UNESCO World Heritage Site. We will continue to welcome all schools that are interested.

As part of SIF outreach efforts in schools' presentations were given in five different schools and a hotel in 2018, reaching over 300 students. Many of the presentations focused on the Seychelles black parrot in an effort to help the students prepare for the black parrot competition held in schools during the year.

This year SIF held a national public speaking competition in secondary and post-secondary schools in Seychelles. The theme encouraged students to reflect the importance of the biodiversity of Aldabra and the Vallée de Mai, particularly as the CBD celebrated 25 years of existence in 2018. We were very pleased that nine secondary schools and three post-secondary schools registered to compete in the competition and the event was held on Friday 18th June. The presentations were very well researched and the large amount of effort put in was evident!

Holiday Camp held in August and December

Every August and December during the school holidays SIF holds a holiday camp programme to teach students about the Vallée de Mai, Aldabra and the environment in general. 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 environmental topics including the birds of Seychelles, seeds around the world, the river ecosystem, Aldabra Atoll and invasive alien species. In December we held the milestone 15th edition of the holiday camp from the 17th to 21st December 2018. A group of 27 children participated. To celebrate this being the 15th edition, the programme was developed in collaboration with several partner organisations. In addition to some of the usual activities that take place each holiday camp in the Vallée de Mai, there were several new activities for the children to enjoy. Staff from the education unit of the MEECC taught the participants how to make use of 'waste' items. A number of lovely recycled items were produced using things that would normally be sent to the landfill. Children also had the opportunity to plant some native species in separate activities with the Seychelles National Park Authority, Le Ravin Fond Ferdinand, the MEECC department on Praslin and Terrestrial Restoration Action Society of Seychelles. They met some of the tortoises from Curieuse Island and had the chance to visit the nature reserve of Fond Ferdinand where they received interesting and detailed information on the reserve.

Eco-Schools trip to Aldabra

In March 2018 the Aldabra team had the pleasure of hosting a group of 12 students and four teachers from Mahé and Praslin who were the top performers of the 2017 Seychelles Eco-Schools Programme.

The national Eco-Schools Programme is coordinated by the Education for Sustainable Development Unit within the Ministry of Education and Human Resource Development. All schools in Seychelles are encouraged to participate by engaging in environmental activities, conducting environmental projects at school and generally adopting more environmentally friendly practices at their school. The trip to Aldabra is the star prize of the programme. The winning schools in the primary and secondary categories respectively were Anse Royale primary school, Baie Lazare primary school, and Anse Etoile primary school; and Beau Vallon secondary school, English River secondary school and Plaisance secondary school. Also on the trip were a teacher and student from Friends of Vallée de Mai clubs on Praslin.

For the group the excitement began during the journey to Aldabra as they learned first-hand the remoteness of the outer islands. Once on the atoll their schedule was packed. The Eco-Schools group participated in routine station activities such as giant tortoise and sea turtle monitoring, invasive plant control and beach cleaning while also learning the background to these tasks and their value. Students and teachers were given guided tours around some of the atolls significant sites with each tour focusing on a particular feature such as seabirds, landbirds, mangroves or lagoon habitat. A particular highlight was the overnight trip, where they were able to see a remote part of Aldabra at night.

In addition to lessons and monitoring, Aldabra staff and the Eco-Schools group took the opportunity to have some fun with conservation in mind. The students developed their water skills with snorkelling and swimming coaching by Aldabra staff, and together students and staff showcased their creativity building sculptures from marine debris and painting a variety of ocean life on a concrete water tank. These exercises have left a permanent and happy mark on Aldabra in the form of a vibrant marine scene and a large, colourful octopus and turtle made from flip flops, plastic bottles and rope.

The 2018 Eco-Schools trip to Aldabra was once again a hugely rewarding experience for the selected teachers and students, who had a unique encounter with one of the most remote and least accessible parts of their country, and, as usual, was also a highlight for Aldabra staff who loved interacting with the children.

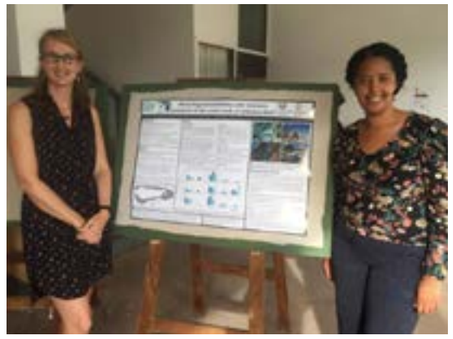
Outreach - Conferences, Festivals & Expos

SIF participated in the Seychelles International Year of the Reef Symposium in October 2018. Over 80 researchers, marine conservation practitioners and students gathered at the University of Seychelles for a marine science symposium held to commemorate the International Year of Coral Reefs in 2018. The symposium included 15 presentations across a broad range of topics from coral reef restoration to crown of thorns management and sustainable fisheries management.

Through affiliated researchers SIF contributed three presentations to the programme:

- **Four years of the Aldabra reef monitoring programme: trends and lessons learned**
- **Mapping coral population connectivity to inform management and policy of the coral reef system in Seychelles.**
- **Movement patterns of blacktip reef sharks along the northwest coast of Aldabra**

The symposium was an extremely valuable forum for hearing what other organisations are doing and opening up the channels of communication, sharing lessons learned and successes to improve all of our efforts towards effective conservation of Seychelles coral reefs.



In 2018 SIF Science and Projects Coordinator, Jennifer Appoo presented SIF's research achievements at a national scientific conference held at the Seychelles Hospital. The primary objective of the conference was to bring together researchers from different fields and create a platform through which research information can be exchanged. Various organisations and researchers presented their research work and Jennifer highlighted some of the main scientific achievements and breakthroughs from the two UNESCO World Heritage Sites. The two-day conference was also an opportunity for various organisations and researchers to discuss how to build a stronger culture for research, and the support mechanisms in place to sustain research in Seychelles.

The Seychelles Sea Turtle Festival, organised by the Sea Turtle Friends Seychelles Committee, took place in August as it has for several years, however 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 Praslinois. The festival took place in the form of a march. A large group of participants including school children, staff from environmental organisations and other concerned citizens gathered at the Baie Ste Anne jetty to 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. All of the participating schools and organisations did exceptionally well; we have no doubt that some spectators were touched by this important event.

Once again Creole Festival was celebrated in October in the Vallée de Mai with a range of activities that aimed to give visitors the opportunity to experience Seychelles' traditions and cultures. Performances of the traditional dances kanmtole, sega and moutya allowed staff to introduce visitors to the different forms of dance and music in Seychelles. There was a fantastic atmosphere at the visitors centre as the music played in the background. Staff, senior citizens and some guides also gave a few vocal performances of some of Seychelles' most popular creole songs. Although Creole Festival is often viewed as an opportunity to introduce visitors to the Seychelles local culture, an even more important impact of the festival should be promoting traditional culture with the youth. Students from Baie Ste Anne primary school were privileged to spend some time with senior citizens during the week, and they learned about some of the popular traditional games that were played in the past. Local artisans on Praslin were invited to showcase their products to visitors and Creole Festival wouldn't have been complete without providing the visitors with the chance to taste Seychelles creole food, snacks and beverages. On sale at the Vallée de Mai Kokosye Café was a variety of creole food such as moukat, creole cakes, banana fritters, local lime juice and many others for visitors to choose from.

The annual National Show took place on Mahé on the last weekend of June, and we were happy to once again participate in the Eco-Village. The Eco-Village was organised by the Ministry of Environment, Energy and Climate Change, with participation by many of Seychelles' most enthusiastic environmentalists and the organisations they represent. This year the SIF stand was focused on Aldabra, with games and activities to learn about marine plastic pollution and what each of us can do to reduce our environmental impact. The most popular game at the SIF stand involved matching seven common plastic consumer items with the number of years it would take for them to decompose in the sea. The average time it takes for a plastic bottle to degrade is 450 years, and foamed plastic cups take 50 years to degrade. Also popular was a microscope showing various personal hygiene products, including toothpaste and facewash, which contain plastic microbeads. Although the game and microscope were popular, the stars of the show were undoubtedly the life-sized turtle and tortoise. They made friends and stole hearts every day of the 2018 National Show!

Theme Days

Each year SIF celebrates a large number of environmental theme days. Popular theme days include World Wetlands Day which is usually celebrated with planting activities in the wetlands on Praslin and La Digue, World Water Day for which SIF collaborates with the Public Utilities Company on Praslin to teach children about water management, and Earth Day which is marked by a visit from Praslinois school children to the GVI base on Curieuse Island.

For International Biodiversity Day in 2018, SIF celebrated on many fronts, on Mahé SIF head office staff joined in on an exhibition organised by the MEECC to celebrate the day and the third Year of the Reef. The exhibition showcased the work of a variety of environmental organisations. The SIF stand showcased the marine diversity of Aldabra with videos and photos, as well as the marine research and monitoring being done at the atoll. This was the first time the Aldabra Clean-Up Project was introduced to the Seychelles public and the SIF display included examples of common marine debris and solutions to avoid using plastic. The Aldabra team organised a beach-clean event on several beaches on west Grande Terre, all very important nesting sites for green turtles. All staff participated and between them they managed to collect a total of 175kg of rubbish in just two and a half hours. At the Vallée de Mai a series of activities were organised for visitors to learn more about the palm forest's biological diversity. A display of the different animal species found in the Vallée de Mai was placed on the deck at the visitor centre, special information stations and educational games were set up in the forest to inform visitors about the work being done, and a night safari was held to allow visitors to discover the Vallée de Mai's nocturnal species.

For World Environment Day SIF organised a march on Praslin to raise awareness among the community about the issue of poaching in the Vallée de Mai and elsewhere on the island. As with previous years the coco de mer was highlighted, but new this year was a focus on another Praslin endemic, the giant bronze gecko (Ailuronyx trachygaster). As well as highlighting poaching, in this year's march the Vallée de Mai team also wanted to incorporate the importance of fitness for a healthier lifestyle into the event, and the team therefore worked in close collaboration with both the Ministry of Health and the National Sports Council to merge these themes. 36 organisations joined us against poaching, offering their support towards the protection of the coco de mer and the giant bronze gecko. They gathered on the day of the event to make their voices heard to other people in the community, aiming to sensitize them to this issue that affects not only the Vallée de Mai but also the whole community of Praslin. Although most of the participants were local Praslinois, this year SIF staff were happy to be joined by some tourists.

Clean Up The World Day

Earth Day

African World Heritage day is an opportunity to celebrate the exceptional cultural and natural heritage of the African continent and islands. The aim of the day is to increase awareness of African World Heritage Sites, locally and globally. This year the Vallée de Mai and iSimangaliso, a protected area in South Africa's KwaZulu-Natal Province, teamed up with an exchange of letters between children in and around the sites. Through poems, pictures and stories, the students from each site shared facts about their unique natural heritage. The students at Vijay International School and English River Secondary School, as well as Ikusasalethu High School and Echwebeni Primary School in South Africa were very excited to share their precious UNESCO Sites with people in another country, and equally to hear about another African protected area. For all the students that participated in the exchange their passion for the sites was obvious, we were delighted to give them the platform to share it!

To celebrate Clean Up the World Day and to tie in the activities with the Aldabra Clean-Up Project, SIF implemented several clean-up campaigns across the country. These included clean-ups at both Aldabra and the Vallée de Mai, as well at Anse à La Mouche on Mahé and Anse Georgette on Praslin. On Aldabra, the team cleaned the beaches around the research station, removing marine debris from the water's edge up to top of the beach line to give better access to female green turtles coming up the beach. A big focus was on removing the large nets and ropes that had been washed ashore and caught on the champignon in front of the station. In the Vallée de Mai, the clean-up activity focused on the sides of the main road starting at the reserve all the way down to Nouvelle Découverte. The amount collected was larger than has been collected in previous clean-ups of the same area and suggests a worrying trend in littering on Praslin. The team at SIF's head office participated in the 'Seychelles biggest Clean Up' event coordinated by the local NGO 'The Ocean Project Seychelles'. SIF coordinated a clean-up at Anse à La Mouche beach, and staff were joined by the local volunteers of the Aldabra Clean-Up Project, scouts from Anse Boileau and members of the Anse à La Mouche community. The Vallée de Mai team also participated in another 'Seychelles biggest Clean Up' event at Anse Georgette beach together with staff from Lemuria Hotel and members from other organisations such as the Duke of Edinburgh Awards and the Baie Sainte Anne watershed committee. These coordinated efforts have helped to remove an enormous amount of beach debris washed ashore from the sea, but also prevented a large amount of litter from making its way into the ocean to be carried away by currents.

World Enviroment Day

International Biodiversity Day

World Wetland Day

VIP Visits

VICE-PRESIDENT OF CUBA

Vallée de Mai management and staff were honoured to welcome the Vice-President of the State Council of the Republic of Cuba, Mercedes Lopez Acea to the Vallée de Mai in February 2018. Vice-President Acea was accompanied by the Minister of Environment, Energy and Climate Change Didier Dogley, the Secretary of State Barry Faure and other officials. SIF CEO, Dr Frauke Fleischer-Dogley, Vallée de Mai site manager, Mr Marc Jean Baptiste and Vallée de Mai staff warmly welcomed the Vice-President and her delegation to the World Heritage Site. The honoured guests were given a guided tour of the Vallée de Mai by Dr Fleischer-Dogley, during the tour she described some of the endemic flora and fauna of the site, including the iconic coco de mer. The Vice-President participated in guessing the weight of a coco de mer nut, and surprised those in attendance with a perfect guess! She also witnessed the de-husking of the coco de mer nut performed by security officer Andrea Radegonde. The vice president was happy with how well preserved the site was and she thanked SIF for protecting this amazing place.

MINISTER OF TOURISM OF CAPE VERDE

In May 2018 the Vallée de Mai received a visit was from the Minister of Tourism of Cape Verde, Minister José Da Silva Gonçalves. Upon arrival at the visitor centre Minister Gonçalves was welcomed by the visitor centre services coordinator Yanny Didon, and then he and his delegation received a guided tour in the Vallée de Mai conducted by senior visitor attendant Missia Dubignon. During the tour the Minister witnessed the dehusking of a coco de mer nut before heading back to the visitor centre for the signing of the visitors' book. The minister described the Vallée de Mai as a "paradise on earth" and stated that it is so well cared for.

SEYCHELLES' NEW MINISTER FOR ENVIRONMENT ENERGY AND CLIMATE CHANGE

The new Minister for Environment Energy and Climate Change, Minister Wallace Cosgrow also visited the Vallée de Mai in May 2018. The aim of his visit was to familiarise himself with the site in terms of his role as the newly appointed minister, while there he interacted with staff, discussing their duties and their role at SIF. Minister Cosgrow spoke to all the different teams at the Vallée de Mai; with each team Yanny explained their work and staff were able to answer any questions from the Minister. In his comment in the visitor book the Minister said that it was a pleasure for him to visit the Vallée de Mai, and commented on the amazing work being done by SIF to preserve this World Heritage Site.

PRESIDENT OF SRI LANKA

Sri Lankan President Maithripala Sirisena visited the Vallée de Mai in October 2018. He was accompanied on his visit by high level officials from Sri Lanka, the Minister of Fisheries and Agriculture Minister Charles Bastienne, and the Principal Secretary for Environment, PS de Comarmond. Upon arrival at the Vallée de Mai visitor centre President Sirisena and his delegation received a warm welcome from SIF's CEO Dr Frauke Fleischer-Dogley and Vallée de Mai staff. President Sirisena was given a guided tour through the Vallée de Mai, where he learned about the Vallée de Mai reserve and about the endemic species occurring in the forest, with a particular focus on the unique coco de mer.

Staff Training & Overseas Events

In 2018 SIF staff experienced a variety of training courses and attended a number of international events.

Staff Training

When?	Who?	What?
January	Jeremy Raguain, Dr Frauke Fleischer-Dogley	Marine Spatial Planning & Initiative
February	Ella Nancy	DESMAN Durrell Conservation Academy
February	Victoria Alis	GVI Seychelles, Fish and coral identification
February	Annabelle Constance	Worlds Ocean Day conference
March	Samia Auguste, Kathleen Ladouce, Stephanie Dugasse, Elsa Lesperance	Behavioural Change for Enhanced Productivity workshop
March	Ronny Marie	GVI Seychelles, Fish and coral identification
March	Inva'Ziles and Research teams	Cost benefit analysis workshop
April	Yanny Didon, Elna Stravens, Eveline Cecile	Customer Service
April	Shanone Adeline	Building regional capacity for biodiversity conservation and monitoring
May	Annabelle Constance	Coastal Zone Monitoring and Management
June	Jennifer Appoo	Oceanographic research
August	Jessica Moumou	Coral and Sponge Taxonomy
August	Samia Auguste	Basic First Aid
August	All Vallée de Mai staff	Basic First Aid/ Refresher training
September	Dylis Cedras	MSc Business Administration, University of Seychelles and University of West Scotland
September	Marc Jean-Baptiste	MSc Conservation Tourism, University of Kent
November	Terance Payet	Building regional capacity for biodiversity conservation and monitoring

Overseas Events

When?	Who?	What?
February	Dr Frauke Fleischer-Dogley, Christina Quanz`	Aldabra House Project- workshop
May	Dr Frauke Fleischer-Dogley	Inva'Ziles project steering committee meeting
June	Dr Frauke Fleischer-Dogley Christina Quanz	Aldabra House Project- workshop
July	Dr Frauke Fleischer-Dogley Christina Quanz	World Heritage Marine Programme expert meeting
November	Jeremy Raguain	2018 National Oceanic and Atmospheric Administration Explorer Forum: "All Hands on Deck"
November	Jeremy Raguain	Africa Oxford Travel Grant for ACUP Meeting with Oxford volunteers
November	Dr Frauke Fleischer-Dogley Christina Quanz	Impacts on Marine Litter on World Heritage Sites

Publications

Media *(Newspaper and magazine articles)*

Date	Publication Name	Article Title
08-01-2018	Seychelles Nation	Landbird breeding season in full swing
08-01-2018	Seychelles Nation	Aldabra House project makes major progress
09-01-2018	Seychelles Nation	SIF starts monitoring as black parrot breeding season starts
10-01-2018	Seychelles Nation	IUCN commends Aldabra and the Vallée de Mai conservation programmes
15-01-2018	Seychelles Nation	Crowdfunding new tropicbird research is underway
15-01-2018	Seychelles Nation	20 years of in-water turtle monitoring reveals interesting findings
15-01-2018	Seychelles Nation	8th yellow crazy ant survey conducted as control methods begin
16-01-2018	Seychelles Nation	Seychelles' elusive 'white' black parrot caught and released
23-01-2018	Seychelles Nation	Drones considered as a conservation tool at Aldabra
23-01-2018	Seychelles Nation	Marine debris on Aldabra atoll
23-01-2018	Seychelles Nation	Inva'Ziles project - SIF continues fight against invasive plants in Vallée de Mai
05-02-2018	Seychelles Nation	Aldabra becomes part of region-wide tropical cyclone forecasting system
17-02-2018	Seychelles Nation	Cuban VP amazed by natural beauty of Praslin
17-02-2018	Seychelles Nation	SIF's position on possible development on Assomption island
05-03-2018	Seychelles Nation	Drones to gather data on dugongs in Seychelles' Aldabra Atoll
19-03-2018	Seychelles Nation	21 back parrot chicks hatched
19-03-2018	Seychelles Nation	Cleaning up Aldabra
26-03-2018	Seychelles Nation	Skills transfer between sites sees updates to the Vallée de Mai databases and photographic catalogue
26-03-2018	Seychelles Nation	New research published on interactions between extinct crocodiles and giant tortoises
26-03-2018	Seychelles Nation	Understanding the response of Aldabra's corals after the 2016 bleaching event
27-03-2018	Seychelles Nation	Youth and elderly learn about the coco-de-mer
29-03-2018	Seychelles Nation	Eco-warriors depart for Aldabra
09-04-2018	Seychelles Nation	Vallée de Mai to participate in Sooglossid research
09-04-2018	Seychelles Nation	SIF congratulates Seychelles for the signing of the Marine Spatial Plan Phase 1
09-04-2018	Seychelles Nation	SIF staff embark on training
17-04-2018	Seychelles Nation	38th Seychelles Islands Foundation AGM
23-04-2018	Seychelles Nation	Research published on phylogeny of weaverbirds shows Aldabra fody as separate species
12-05-2018	Seychelles Nation	Eco-Schools trip to Aldabra
14-05-2018	Seychelles Nation	Once in a lifetime chance for six Seychellois to visit Aldabra
21-05-2018	Seychelles Nation	Aldabra gets a new water tower
28-05-2018	Seychelles Nation	Vallée de Mai staff attend cost benefit analysis workshop
28-05-2018	Seychelles Nation	Seychelles black parrot census underway
28-05-2018	Seychelles Nation	Friends of Vallée de Mai visit La Digue
04-06-2018	Seychelles Nation	Aldabra 2018 frigatebird census completed
05-06-2018	Seychelles Nation	Message from President Danny Faure, SIF patron, for the Aldabra Clean-Up Project launch

Date	Publication Name	Article Title
06-06-2018	Seychelles Nation	Aldabra Clean-Up Project officially launched: Turning the tide on plastic pollution
09-06-2018	Seychelles Nation	Vice-President's message on World Oceans Day 'We can turn the tide on ocean pollution'
11-06-2018	Seychelles Nation	President Faure captivates Sids roundtable at G7 summit
04-07-2018	Seychelles Nation	'Citizens' wins the International schools debate competition.
09-07-2018	Seychelles Nation	Yellow crazy ant update
16-07-2018	Seychelles Nation	Vallée de Mai staff member attends training in Madagascar
16-07-2018	Seychelles Nation	Introducing Coral News – our International Year of the Reef feature!
16-07-2018	Seychelles Nation	Aldabra ranger attends DESMAN course at Durrell, UK
23-07-2018	Seychelles Nation	Paper published on late stage dynamics of the goat eradication on Aldabra
23-07-2018	Seychelles Nation	Biosecurity consultant visits Aldabra
06-08-2018	Seychelles Nation	Sixth annual Seychelles Sea Turtle Festival to take place on Praslin
20-08-2018	Seychelles Nation	Environmental sustainability through art Environmentalists and artists join forces to raise awareness of environmental sustainability in Seychelles
13-08-2018	Seychelles Nation	Aldabra research team monitors tortoises
27-08-2018	Seychelles Nation	Children educated on plastic pollution in our ocean
21-11-2018	Seychelles Nation	Vallée de Mai celebrates 35 years as a UNESCO World Heritage Site
17-12-2018	Seychelles Nation	Vallée de Mai celebrates 35 years as a UNESCO World Heritage Site
18-10-2018	Kapisen	Halting the march of invasive alien plants and ants in the Vallée de Mai
03-01-2018	Seychelles News Agency	2 conservation sites in Seychelles deemed mostly good by international conservation body
07-01-2018	Seychelles News Agency	Seychelles Islands Foundation begins monitoring of black parrot breeding season
11-01-2018	Seychelles News Agency	Seychellois island to become part of region-wide cyclone forecasting system
14-01-2018	Seychelles News Agency	Seychelles' elusive 'white' black parrot is caught and released
11-02-2018	Seychelles News Agency	Project brings faraway Aldabra Atoll to visitors on Seychelles' main island
16-02-2018	Seychelles News Agency	Military agreement will benefit both Seychelles and India, high commissioner says
22-02-2018	Seychelles News Agency	2 cool UNESCO World Heritage Sites to visit in Seychelles
23-02-2018	Seychelles News Agency	Seychelles protects patch of ocean the size of Great Britain; Leonardo DiCaprio cheers the news
03-03-2018	Seychelles News Agency	Drones to gather data on dugongs in Seychelles' Aldabra Atoll
22-05-2018	Seychelles News Agency	Competition will award 6 trips to exotic Aldabra to help clean remote atoll
11-06-2018	Seychelles News Agency	President of Seychelles shocks G7 meeting with photos of ocean trash
20-06-2018	Seychelles News Agency	Coral making a come-back on Seychelles' Aldabra, but fish numbers down
28-07-2018	Seychelles News Agency	Seychellois benefit from research training on board Norwegian vessel
19-11-2018	Seychelles News Agency	New alliance to highlight, conserve Aldabra giant tortoises in Seychelles
02-12-2018	Seychelles News Agency	Seychelles expands protection around two islands to counter improper fishing
05-12-2018	Seychelles News Agency	Tiny frog endemic to Seychelles to be monitored by audio recorders
06-12-2018	Seychelles News Agency	Seychellois experts study ocean litter problem alongside other UNESCO World Heritage site managers
26-12-2018	Seychelles News Agency	PhD student studying Seychelles and region's coral larvae and coral connectivity
26-12-2018	Seychelles News Agency	Indian Ocean Commission lauds Seychelles' work to protect, improve biodiversity
27-12-2018	Seychelles News Agency	Seychelles' Vallee de Mai, home of world's largest nut, marks 35 years as World Heritage Site

Scientific publications in 2018
(peer-reviewed articles)

Aldabra

Bunbury, N., von Brandis, R., Currie, J.C., van de Crommenacker, J., Accouche, W., Birch, D., Chong-Seng, L., Doak, N., Haupt, P., Haverson, P., Jean-Baptiste, M., Fleischer-Dogley, F. (2018) Late stage dynamics of a successful feral goat eradication from the UNESCO World Heritage Site of Aldabra Atoll, Seychelles. Biological Invasions 20 (7): 1735–1747 (DOI: 10.1007/s10530-017-1657-0).

Hamylton S., Hagan A., Bunbury N., Fleischer-Dogley F. & Spencer T (2018) Mapping the lagoon at Aldabra Atoll, Western Indian Ocean. Atoll Research Bulletin 619. 45 – 59

Read more..

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

Read more..

Vallée de Mai

Fogell DJ, Martin RO, Bunbury N, Lawson B, Sells J, McKeand AM, Tatayah V, Trung CT, & Groombridge JJ (2018) Trade and conservation implications of new Beak and feather disease virus detection in native and introduced parrots. Conservation Biology 32(6) doi: 10.1111/cobi.13214.


Late stage dynamics of a successful feral goat eradication from the UNESCO World Heritage site of Aldabra Atoll, Seychelles

Abstract

Read more..


Trade and conservation implications of new beak and feather disease virus detection in native and introduced parrots

Abstract

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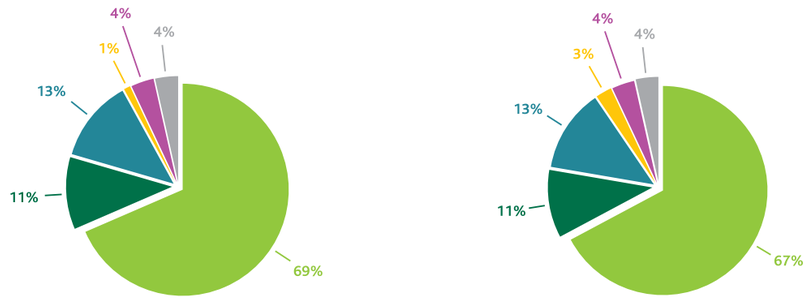
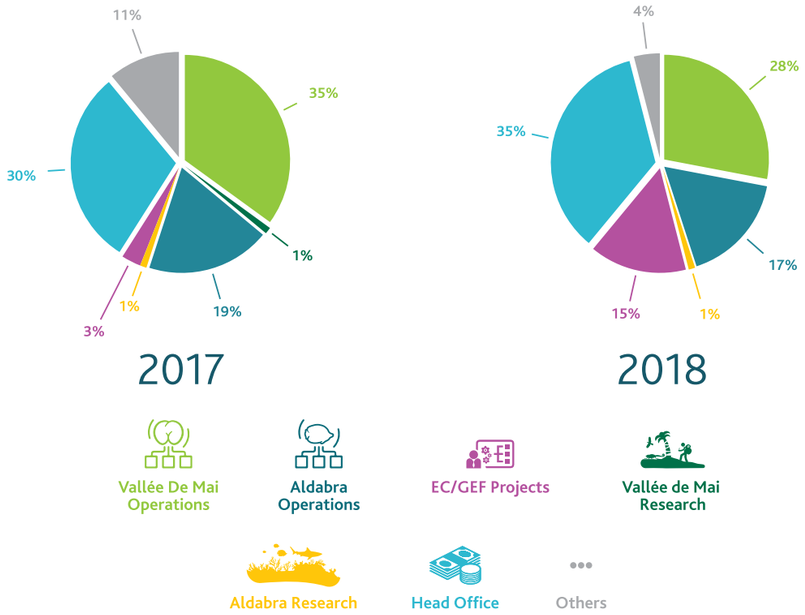
Financial Information

Revenue in %



Expenditure in %



In 2018 SIF was in a position to maintain the diversification of its 2017 revenue. Overall, the Foundation's reliance on the Vallée de Mai entrance fees is now 67% compared to earlier years when it stood at nearly 80%. However, the goal to further increase revenues from services at the Vallée de Mai's café and souvenir shop was unfortunately not achieved.

Nevertheless, impact fees from visit's to Aldabra by small cruise ships is continuously contributing to SIF's overall revenue generation. Less than five years ago Aldabra's contribution stood at only six percent, but since 2016 it has doubled. In 2018 Aldabra's impact fees made up 12.8%, a slight increase from 2017 which was 12.5%. The continuing trend is a great result and reduces Aldabra's reliance on Vallée de Mai entrance fees for funding of its daily operations.

Overall project funds originating from overseas remained unchanged in 2018, but with the completion of the biosecurity funding and the onset of the Aldabra Clean-Up Project as well as the support of IUCN funded Inva'Ziles Project, project fund spending has increased substantially compared to the year before and stood at 15% of the overall expense in 2018 compared to 3% in 2017. Project funds have also been used to assist with site operation and as a result reduced operation cost. This has consequently proportionally increased spending at head office. Though it should be noted that head office expenses also include communication, education and outreach activities organized on Mahé, specifically the production and printing of the material necessary to do so. Overall, the fiscal analysis of 2018 is satisfying and confirms the SIF team's commitment to ensure financial effectiveness across the organisation.

Acknowledgements

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Ms Vanesa Lebon	Senior Accountant
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Ms Jennifer Appoo	Science and Projects Coordinator (incoming)
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Ms Dylis Cedras	Marketing and Product Development Officer
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Ms Cheryl Sanchez	Aldabra Science Coordinator
Ms Jennifer Appoo	Assistant Aldabra Scientific Coordinator (outgoing)
Mr Alain Banane	Senior Mechanic
Mr LeeRoy Estrale	Shopkeeper/Logistic Assistant
Mr Gerold Henriette	Cook/Gardener
Mr Joel Bonne	Skipper
Mr Albert Belmont	Skipper
Mr Trevor Henriette	Junior Skipper
Ms Victoria Alis	Field Research Officer
Mr Marvin Roseline	Logistic Assistant
Mr Ronny Marie	Field Research Assistant
Mr Germano Soru	Field Research Officer
Ms Jessica Moumou	Field Research Officer
Ms Ella Nancy	Senior Ranger
Mr Andre Bonne	Shopkeeper/Gardener

Vallée de Mai staff

Mr Julio Agricole	Acting Site Manager
Mr Marc Jean Baptiste	Site Manager
Ms Vicky Stravens	Vallée de Mai Science Coordinator
Ms Maria Brioche	Education and Outreach Programme Officer
Ms Sarah Atkinson	Project Coordinator Inva'Ziles
Mr Sascha Dueker	Volunteer/Project Officer
Mr Terance Mahoune	Field Research Officer
Ms Véronique Couttee	Inva'Ziles Project Officer
Ms Julia Kovacs	Project Officer
Mr Adam Mitchell	Data manager/Volunteer
Ms Elsa Lesperance	Assistant Administration and Accounts Officer
Mr Perry Cedras	Property Management Supervisor
Mr Andy Nourrice	Senior Security Officer
Mrs Elna Stravens	Shop Supervisor
Ms Missia Dubignon	Senior Visitor Attendant Visitor Centre Service
Mr Ralph Legaie	Visitor Centre Service Coordinator (incoming)
Mr Yanny Didon	Visitor Centre Service Coordinator (outgoing)
Mr Terance Payet	Senior Ranger
Mr Emmanuel Morel	Field Research Assistant
Ms Shanone Adeline	Invasive Species Technical Officer
Ms Monica Griffith	Black Parrot Project Officer
Ms Louise McLaughlin	Herpetofauna Officer
Ms Katherine Collins	Volunteer
Ms Eveline Cecile	Café Supervisor
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Mr Elvis Labrosse
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Mr Gerry Rose
Mr Nelsona Etienne
Mr Alvin Lewis

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International Union for the Conservation of Nature (IUCN)
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Seychelles People's Defence Forces (SPDF)
Seychelles Police Force
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University of Zurich
United Nations Development Programme (UNDP) – Project Coordination Unit (PCU)

Our Partners & Associates

Island Conservation Society (ICS)
Islands Development Company (IDC)
Ministry of Education and Human Resource Development
Ministry of Environment, Energy and Climate Change (MEECC)
Praslin Development Fund (PDF)
Seychelles Coast Guard
Seychelles Fishing Authority (SFA)
Seychelles National Parks Authority (SNPA)
Seychelles National Meteorological Service

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Our Research Collaborators

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Professor Christian Wild	(University of Bremen, Germany)
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Dr Gabriela Schaepman-Strub	(University of Zurich, Switzerland)
Dr Lindsay Turnbull	(Queen's College, University of Oxford, UK)
Dr John Turner and Dr Rebecca Klaus	(University of Bangor, UK)

SIF in a Nutshell & How to Help

The Seychelles Islands Foundation (SIF) is a non-profit charitable organisation which was established as a Public Trust in 1979 to manage, protect, research and promote sustainable ecotourism in the Seychelles' two UNESCO World Heritage Sites of Aldabra Atoll and the Vallée de Mai on Praslin. A major focus is on scientific research to support and improve conservation management of the unique biodiversity and ecosystems of these two very different sites.

To successfully operate and protect two World Heritage Sites, which are more than 1000 km apart and each with their specific set of challenges, SIF relies primarily on income generated by entrance fees and sales from the Vallée de Mai. This is supplemented by project funding, grants and donations. Aldabra also provides some direct income through visitor impact fees. SIF's management and work at these sites will continue to be dependent on visitor numbers and the generosity of our supporters for the foreseeable future.

There are a number of ways in which you can help us with this work:

- **Visit the Vallée de Mai any day of the year and experience the magic of this unique site for yourself.**
- **Purchase SIF products and souvenirs directly from the Vallée de Mai shop or the SIF head office in Mont Fleuri, Victoria.**
- **Stop at the Vallée de Mai cafeteria and support local Praslinois producers and suppliers.**
- **Tell other people about SIF and our work.**
- **Volunteer for SIF – depending on active projects, there may be limited opportunities for suitably qualified volunteers to help with research, conservation work or specific projects for four - six month periods.**

www.sif.sc

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SIF Annual Report 2018

If you would like to contribute, receive more information or are interested in receiving further news about SIF via monthly e-newsletters please sign up on the home page of our website or contact us by email at **info@sif.sc**.

You can also find more information on our website: **www.sif.sc**

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