



SIF

ANNUAL REPORT

2008



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SEYCHELLES ISLANDS FOUNDATION ANNUAL REPORT 2008

The Seychelles Islands Foundation is delighted to present our 2008 Annual Report. 2008 proved to be an excellent year for SIF in terms of launching new projects and seeing development at an institutional level which is strengthening the organisation from within and making our conservation work more effective and broader. Details of our progress can be found within the following pages. We hope that you will enjoy reading about our advances and that the report will stimulate your interest in and support for the Seychelles Islands Foundation.



MESSAGE FROM THE SIF CEO

We live in challenging times. 2008 will be remembered as the year in which the price of oil exceeded US \$100 a barrel for the first time in history and returned, within 10 months, to below US\$50/barrel. The dramatic changes in oil prices followed a major crisis in the global financial market. But what has this to do with the Seychelles Islands Foundation, an organisation involved in neither the financial markets nor in the oil business?



Chief Executive Officer of the Seychelles Islands Foundation, Dr Frauke Fleischer-Dogley, in the field on Aldabra (L. Chong-Seng)

In 2008, having long considered the introduction of renewable energy technology on Aldabra, we secured funding from the Indian Ocean Commission to introduce an environmental management system to improve the sustainability of operations at the Aldabra Research station. I am very glad to report that a comprehensive audit of all electrical appliances has now been completed alongside a systematic review of water and waste management. In collaboration with researchers and students the next challenge will be how best to combine and down-scale the existing conventional system with suitable renewable energy technology for installation on the atoll.

In 2008, transport of supplies and fuel alone constituted 56% of the operational costs of the research station and 30% of our overall expenses. It goes without saying that, as an environmental organization, we strongly support and are keen to champion the application of clean energy systems. However, following on from the UNESCO evaluation of management effectiveness (see 2007 Annual Report), additional measures are needed to reduce the vulnerability of Aldabra and its financial dependency on the Vallée de Mai.

In December the Vallée de Mai celebrated its 25th anniversary as a UNESCO World Heritage site and the new Visitor Centre to commemorate this is well underway. We have not been able to open the doors of this new centre quite as early as we had hoped, but the building is now nearing completion and will very soon guarantee a new and more stimulating experience for our visitors. Additional facilities will bring added value and interest to what is already the most visited natural site in Seychelles.

Finally, what is left for me to say is that, with the setting up of a project programme unit, we have added a new ingredient to the SIF recipe for success. Over the last 25 years, burning conservation idealisms and steadiness have been SIF's responses to challenges and crises. Recent consolidation at the head quarters and the assembling of a dynamic team to make strategic management decisions has made us more resilient to problems and crises and ready to face new opportunities with enthusiasm and proficiency.

Dr Frauke Fleischer-Dogley
Chief Executive Officer
Seychelles Islands Foundation

SIF CREATES NEW POSITION FOR PROJECT COORDINATION

SIF created the new position of Projects Programme Coordinator in early 2008 when it was becoming increasingly clear that the number of ongoing and planned projects run by the organisation would require a specialised coordinator to develop and manage. We have been keen to expand our range of projects and start new initiatives with education, conservation and research programmes and this was not possible with the existing capacity. The new PPC is Dr Nancy Bunbury who conducted scientific research in the Seychelles for 6 months prior to taking this position. Before coming to the Seychelles, Nancy worked for 7 years in Mauritius with the Mauritian Wildlife Foundation in avian species conservation management and maintains strong links with this organisation. She conducted her PhD on Pink Pigeon disease and population dynamics and now brings her island ecology experience and knowledge to the Seychelles Islands Foundation. The PPC is responsible for developing SIF's project portfolio, identifying gaps in the research and conservation programmes at both sites, supervising students, and coordinating existing and new projects. 2008 has already been a good year for projects, with funding raised for several much-needed initiatives, and new collaborations identified and solidified. New projects in 2008 include: (1) securing funding for a remote-sensing project of the Aldabra lagoon and terrestrial area to go ahead in early 2009 with the Cambridge Coastal Research Unit and the Environment Trust Fund; (2) establishing a research link with the University of East Anglia, UK, which has started with an MSc on the Seychelles black parrot helped by additional support from the World Parrot Trust; and (3) initiating a monitoring programme on one of the most endangered species on Aldabra, the Madagascar pond-heron. These projects mark the start of what we hope will be a more comprehensive and evolving programme of conservation, research and management projects run by SIF.



New SIF Projects Programme Coordinator,
Dr Nancy Bunbury

2008 HIGHLIGHTS

In 2008, despite the global economic crisis, SIF's total income increased. Aldabra hosted its highest number of tourists ever in one year and the Vallée de Mai saw the second highest number of visitors in the last 8 years (p6 & p11).

The Vallée de Mai celebrated 25 years as a UNESCO World Heritage Site (p4)

In the Vallée de Mai, new research projects were launched on the coco de mer and Seychelles black parrots (p7 & p8).

On Aldabra, new scientific projects included initiating remote-sensing imaging of the lagoon and terrestrial area (p16) and research into Madagascar pond-heron ecology (p13)

Project funding was received from the Indian Ocean Commission to initiate the planning and implementation of a much needed Environmental Management System on Aldabra, starting with a comprehensive energy audit in 2008 (p16).



Photo, courtesy Raymond Sahuquet - STB

25 YEARS OF THE VALLÉE

DE MAI AS A UNESCO WORLD HERITAGE SITE

In December 2008, just over a year after SIF celebrated Aldabra's 25th anniversary as a UNESCO World Heritage Site, the Vallée de Mai has been granted the same honour. The Vallée de Mai was the second and only site in the Seychelles since Aldabra to be granted such special significance. Both of these sites have therefore been globally recognised for their outstanding natural heritage and importance to humanity for over a quarter of a century and SIF is extremely proud to be in a position to manage both of them.

The Vallée de Mai was nationally recognised as an important site as early as 1966 when it was officially de-

clared a nature reserve under Seychelles law. In 1979, the Vallée was afforded further protection when it became part of the Praslin National Park. Four years later, its significance as a natural site was acknowledged internationally with the UNESCO inscription. Even amidst the outstanding Seychelles natural heritage, the Vallée de Mai and Aldabra have special status as both are exceptional examples of fully functioning unique natural ecosystems.

The Vallée de Mai, at 19.5 ha in area, is one of the smallest World Heritage Sites yet is one of the very few sites to contain all six of the Seychelles endemic palm species. The Vallée is also home to a significant population of coco de mer and a suite of endemic plant and animal species, including the Seychelles black parrot, for whose population the Vallée acts as a stronghold. The site also boasts an impressive array of Seychelles endemic reptiles and amphibians, including two species of day gecko, three species of bronze-eyed gecko, the elusive tiger chameleon, two species of snake, two species of skink, three caecilians and the Seychelles tree frog.



Unveiling of the UNESCO World Heritage plaque in December 1983 (L. Chong-Seng)

A site of such ecological interest and significance clearly requires effective protection and management at several levels as well as research to deepen our understanding of the ecology and evolution of this ecosystem. The Seychelles Islands Foundation has achieved this via sustainable measures, using ecotourism to support active management and protection of the site, for the last quarter of a century. Management measures have so far included making and keeping the site easily accessible to visitors, running programmes to successfully eradicate and control introduced species in the area, and providing educational information for the over one hundred people visiting the Vallée every single day of the year. In 25 years, the Vallée has become the number one visitor attraction in Seychelles, drawing over 60,000 visitors per year, almost half of the total number of tourists coming to Seychelles.

To enhance visitor experience and provide a stronger base for research and education in the Vallée de Mai, a new visitor centre, including a souvenir shop, cafe and information centre, has been under construction throughout 2008 and is due to open in late 2009. The new centre's educational area will be designed to provide information to local visitors and tourists and to old and young alike and will include a number of new displays to achieve this.

The Vallée de Mai is a rare example of successful and highly sustainable ecotourism, even more so because it also supports the management and protection of Aldabra. It is rare for a country as small as Seychelles to have two sites of World Heritage Status and the twinning of these sites by their status as well as their management, has been a great success for 25 years.



Black parrot *Coracopsis nigra barlyi* (A. & V. Brisini)

SIF has celebrated this silver anniversary in several ways. Two new books were published at the end of 2008 to coincide with the anniversary. The first is a beautifully photographed monograph on the coco de mer which was co-authored by SIF CEO and world expert on this species, Dr Frauke Fleischer-Dogley, which will be available in Seychelles in 2009. The book was edited by SIF, is available in English and German and contains a foreword by the SIF Chairman. It is a must for anyone interested in the Seychelles wildlife. In addition, a comic book for children, designed and illustrated entirely by talented local artist and cartoonist Peter Lalande called "Operation Kato Nwar", was launched on 2nd December 2008. The book is the second instalment in the adventures of the appealing character Zak, a young environmentalist who in this episode turns his attention to black parrots and the Vallée de Mai. The book sends a strong message about wildlife conservation and environmental responsibility to young people and includes up to date scientific information on the black parrot. SIF is proud to have supported both books.

The two SIF-supported books now available at the Vallée de Mai; (left) 'Coco de Mer: Myths and Eros of the Sea Coconut' by Fischer and Fleischer-Dogley; and (right) 'Zak Episode II: Operation "Kato Nwar"' by Peter Marc Lalande.



In addition to these publications, a newsletter celebrating the broader anniversaries of SIF and the UNESCO birthdays of both sites is also available at SIF and a centre page article about the anniversary was published in the Seychelles Nation in early 2009. Finally, and most importantly, SIF asks everyone to celebrate with us by visiting the Vallée de Mai and the new visitor centre in 2009. Entry is free for all Seychelles residents and we would love to see more local visitors alongside the international admirers, enjoying their unique national heritage.

VISITOR AND COCO DE MER STATISTICS FOR THE VALLÉE DE MAI IN 2008

Visitors statistics and tourism contributions

Despite the decline in international tourism due to the global recession, 2008 saw the second highest number of visitors to the Vallée de Mai in the last eight years. The exception was 2007, which saw a record of almost 69,000 visitors (Fig. 1) to the site but 2008 was not far below this total, with just over 67,000 visitors during the year. That the Vallée continues to attract over 50% of international visitors to the Seychelles even in the face of declining tourism is very reassuring for SIF, particularly given the predicted further decline in tourism in 2009 and beyond. Of note, is that 2008 marked the highest number of children visiting the Vallée, more even than 2007's record (Fig. 1). Higher numbers of children visiting is a promising sign for natural sites anywhere and we hope to increase the number of children visiting the Vallée still further with the opening of the new visitor centre in 2009.

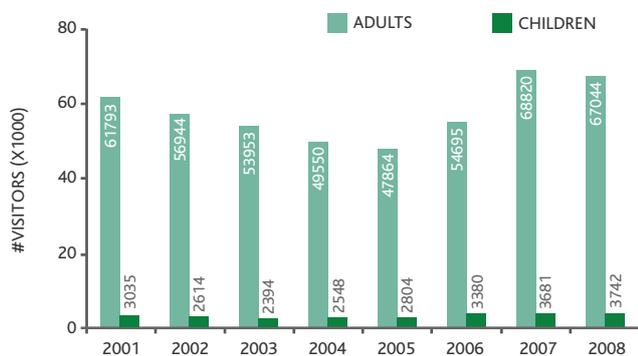


Figure 1. Annual number of visitors to the Vallée de Mai: 2001–2008.

A breakdown of the number of visitors per month during 2008 is shown in Figure 2. The low tourist season can clearly be seen in June and there were visitor peaks

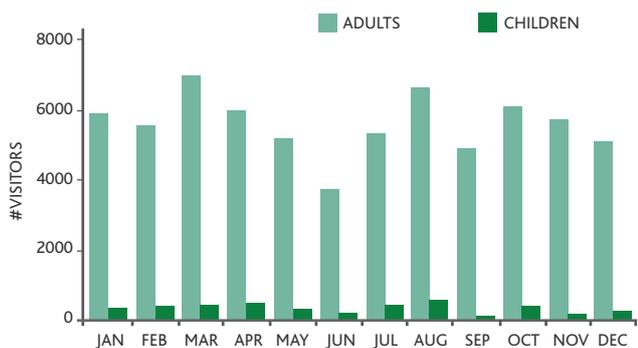


Figure 2. Breakdown of monthly visitors to the Vallée de Mai in 2008.

in March and August. The number of visiting children also peaked in August, which corresponds with the European school holiday season and family holidays. SIF also supported the Seychelles tourism industry substantially in 2008. 575 journalists were admitted to the Vallée de Mai at a much-reduced price, peaking in June, when the Vallée was visited by 105 journalists in this month alone. Across the year, this equates to an in-kind contribution by SIF of SCR. 115,000 towards the marketing of tourism in 2008.

Coco de mer nuts

The nuts of the coco de mer continue to be an important source of revenue for SIF although the number collected has gradually dropped over the past few years despite more nuts being collected from the Fond Peper area (Fig. 3).

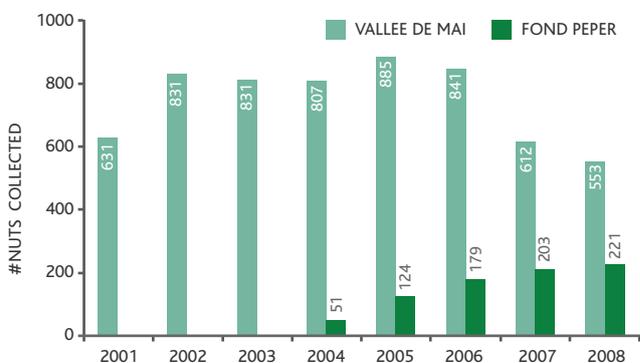


Figure 3. Number of coco de mer nuts collected annually from the Vallée de Mai and Fond Peper from 2001 to 2008.

In 2007, the number of nuts dropped from over 1000 per year in 2005 and 2006 to 815. In 2008 this had dropped to less than 800 for the first time since 2001. Collecting effort has remained consistent throughout so whether this fluctuation is due to natural cycles in productivity or a potential problem is something SIF are looking into (see next section on research). The number of nuts collected per month varied throughout the year (Fig. 4), with around double the number of nuts collected from the Vallée de Mai in June than in any other month and no nuts collected in August.

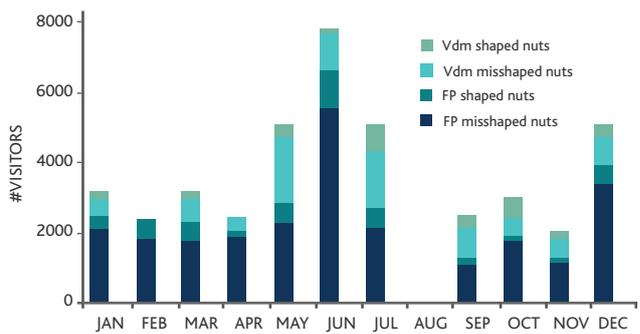


Figure 4. Number of coco de mer nuts collected monthly during 2008 from the Vallée de Mai and Fond Peper.

SIF RESEARCH PROGRAMME IN 2008

SIF has been very active on the research front throughout 2008, having established several new monitoring and research programmes at both sites, but particularly in the Vallée de Mai. This section will cover both sites and focus on the projects as well as core ongoing programmes of research and monitoring.

Research in the Vallée de Mai

In the Vallée de Mai, new research projects were launched on both the coco de mer *Lodoicea maldivica* and the black parrot *Coracopsis nigra barklyi* in 2008. Both research programmes are set to continue and intensify into 2009 and a number of additional research directions are planned, which will shed more light on the ecology of the Vallée de Mai ecosystem and are likely to strengthen the reasons for its strict protection.

Unravelling the mysteries of the Coco de Mer

The coco de mer, with its still unknown longevity and slow life-history, is an extraordinarily difficult species to study and this has only been attempted to date by Frauke Fleischer-Dogley, who finished her PhD on the species in 2006. Dr Fleischer-Dogley's PhD answered many questions but, as with all good research, it raised even more, and highlighted how little we still know about many aspects of the ecology of the coco de mer. To address these gaps in our knowledge, in 2008 SIF launched a comprehensive programme of research focussing on the coco de mer. To ensure high quality research, SIF are collaborating on this project with a group of researchers at the ETH Zurich, several of whom are long-term collaborators of SIF and have a strong history of research in the Seychelles. The research has several foci, which will include:

- Population dynamics; including monitoring of growth rates and fecundity
- Sustainable harvesting; modelling different harvesting strategies based on the above growth rates to determine the most sustainable harvesting strategy in the long-term
- Pollination ecology; to determine the primary pollinating mechanism of the species
- Population genetics; of all three subpopulations to examine genetic differences between the populations and determine whether there is any gene flow between them.

The research programme is being coordinated by Dr Fleischer-Dogley and Dr Christopher Kaiser-Bunbury, a post-doctoral researcher based at the ETH specialising in pollination and island ecology and plant conservation techniques. Dr Kaiser-Bunbury will be coordinating the field research on the ground, collecting samples, setting up monitoring programmes and investigating pollination ecology. Prof. Peter Edwards, who advised Dr Fleischer-Dogley's PhD thesis and has been involved with SIF since the review of the Vallée de Mai's Science Programme in 2006, will be the primary ETH group leader of this research programme. Dr Lucy Rist, a specialist in modelling sustainable harvesting rates of plants, has successfully secured funding from the Rufford Foundation to launch this project for the coco de mer in 2009 and Dr Chris Kettle, a molecular geneticist, will be leading research on the population genetics.

The coco de mer occurs more widely than the Vallée de Mai and must be studied across its range if the research is to be comprehensive. Thus, crucial to the success of this project is the cooperation of other coco de mer site managers of the Praslin Development Fund (PDF; Fond Ferdinand) and Seychelles Centre for Marine Research and Technology (SCMRT; Curieuse) as well as the Department of Environment. An initial working group including all of these parties has been established and early stages promise a highly successful collaboration.

So far, in addition to securing external funding for the sustainable harvesting work, the first coco de mer samples from the Vallée de Mai, Fond Ferdinand and on Curieuse have been collected for genetic analysis in 2009. 2008 therefore marks the start of this exciting and ambitious research collaboration on possibly the most culturally and economically important plant species in Seychelles.



BLACK PARROTS

Black parrots are probably the most important avian flagship species of the Vallée de Mai and the Vallée is thought to form the population's stronghold. To assess the importance of this mature palm habitat for the parrots and complement the census work carried out on the species by the Department of Environment and ICS, SIF hosted an MSc student from the University of East Anglia (UEA), in Norwich, UK, for 3 months on Praslin. Ellen Walford studied the parrots in the field from March to June 2008, looking into the feeding ecology and

habitat preferences of the population. She estimated the parrot population to be around 600 individuals and encountered more parrots in native palm forest habitat than in any other habitat type, indicating that the palm forest is extremely important for the parrots, even in the non-breeding season, when they are less dependent on tree cavities in dead and dying palms. Ellen also recorded four new food plant species for the parrot on Praslin, which has important implications for future conservation work.

The work has received an impressive amount of publicity for such a short-term project. During Ellen's 3-month trip she also gave several well-attended presentations to interested members of the public, government representatives, NGOs and Praslin schools.

An article about the project was published in the Nation and an invited article was published in the parrot ecology and conservation magazine Psittascene in November 2008. The project also marked an extremely successful collaboration between SIF, UEA and the World Parrot Trust, who helped to fund the field work and we are hopeful that this will mark the start of more work on this endemic population.



Top Left - Black parrot juvenile in the Vallée de Mai. (C.Kaiser-Bunbury) Above - Ellen Walford (right), University of East Anglia student, and Excianne Volcere (left; SIF staff) present information on the black parrots to a local school. Right - Article in the Nov 2008 issue of Psittacene, the magazine of the World Parrot Trust, which specialises in parrot research and conservation.

OTHER RESEARCH IN THE VALLÉE DE MAI



SIF Vallée de Mai team with volunteer Christina Quanz on the far right.

In addition to the above projects, several other researchers and volunteers have visited and conducted research in the Vallée de Mai. A research group from

the University of Porto including PhD student Sara Rocha, studying reptile genetics of the various endemic reptile populations across the Seychelles islands collected material from several reptile species in the Vallée in June 2008. This work is still being analysed and written up and should provide valuable information on the population genetics of these species as well as possibly identifying new subspecies.

Volunteer, Christina Quanz, a geography student from Germany, arrived in January 2008 and spent 3 months with SIF surveying all immature coco de mer trees in the Vallée de Mai. Her survey provided SIF, for the first time, with a better understanding of the stand structure of the population. In addition to the survey, she archived statistics, e.g. rainfall and comprehensive visitor numbers for 1999–2007, and collection of coco de mer nuts from 2001–2007. She also assisted the rangers in compiling an appropriate format to enter information on plant phenology and produced a first map of Fond Peper. One result of her work is confirmation that all palm trees flower and produce seeds throughout the year.

Parrots in Paradise

By Ellen Walford

I tramped down to the Seychelles with a fading remembrance of Dorothy finding herself in Oz. The black, white and grey shades of early morning London drizzle transformed into a thousand different shades of turquoise ocean, vibrant green vegetation outlined with sparkling, sooty beaches against a cornflower sky. I was there as part of a Master's course at the University of East Anglia in Norwich, England. With support of the Seychelles Islands Foundation (SIF) I spent three months conducting field research on the Seychelles Black Parrot to gain a clearer picture of their ecology and the threats they face.

The project concerned an priority area of research previously highlighted by SIF in collaboration with the government and the Island Conservation Society (ICS), a local wildlife conservation NGO. Goals included identifying the Black Parrot's preferred habitat and obtaining a current population estimate. I also investigated the parrot's feeding ecology and the relationship between humans and parrots on the Seychelles, with semi-structured interviews of local farmers, teachers, visitors and secondary school children. I also looked for any evidence of illegal trade in parrots, a query of particular interest for the WFP.

My first week was spent making preparations on Mahé, the largest of the islands, before embarking on the one hour journey to Praslin, the main island where the parrot occurs. Skimming across the glassy calm ocean as composed by flying fish was a fantastic way to arrive at the island I would be staying home for the next three months.

The first morning when I awoke - what should be unremarkable about the first one in the garden, but two lovely parrots. What a great start. I caught the low up to the peak of the island - the towering Vallée de Mai palm forest, one of the world's UNESCO Natural World Heritage Sites. After meeting several smiling SIF staff and my Seychellois field assistants Ulrice, Ismael and Eric'sr Volant, we made our way into the Vallée to begin work.

On entering the forest, great overhead like a blunder, a randomly located with the low "parrot pattern" of the Seychelles Blue Parrot (*Cyanus nadia*), or the frequent flock of the Seychelles Red-tailed Tropicbird (*Phaps excelsa*). Occasionally there will be a soft, double tone whistle of a Black Parrot, always high up in the palms and always in a shadow. In this patterned palm forest, our attempts to come across slightly larger meerkats, a porcupine or two, or perhaps one of those white-eyes from Praslin. But beyond the only parrot-like gliding above the canopy and the only white-eyes an intricate and helpful like streamers called Gulls (two species), standing above in the black but here the well-known insects and birds that cross their path.




© Praslin Wildlife Station 2008



SIF volunteer Daniel Foltyn working in Fond Peper (B.Koch)

The second volunteer in the Vallée de Mai, Daniel Foltyn, spent 6 months with SIF from August 2008 surveying and mapping all coco de mer trees at Fond Peper. Daniel also worked extremely hard and produced an important report on the population size and stand structure in Fond Peper, as well as a distribution map of the coco de mers in this area, which is vital for the management and monitoring of this area in the future.



ALDABRA RESEARCH

Scientific work on Aldabra has faced some turbulence in 2008, with two changes in Research Officer during the year. Dr Pierre Pistorius left the atoll in May after two highly productive years, and Gavin Hellström took the reigns from July to October. In November, after Gavin's unexpectedly early departure, Dr Naomi Doak stepped into the role. Naomi is Australian and, prior to working for SIF on Aldabra, has had two years of experience working with Seychelles conservation in the NGO arena, notably with frogs, turtles, seabirds, land birds, and marine monitoring. She also brings a wealth

of diverse experience in scientific and field research on many different species in Australia and Thailand, in addition to genetic expertise, and has already proved a superb person to lead the research and monitoring team on the Atoll (Photo 12). SIF is looking forward to improving and advancing Aldabra's research and monitoring programme with Naomi in 2009 and implementing a number of new initiatives and projects, while increasing the capacity of our research staff.

SIF coordinated research and monitoring on Aldabra

2008 was a busy and occasionally turbulent year for research on Aldabra, with unexpected changeovers of research staff, several periods with no Research Officer on the atoll and a number of boat and engine problems. There were also more visitors to the atoll in 2008 than in any other year on record (Fig. 5). Despite this, throughout 2008, most of the long-term monitoring programmes continued largely unperturbed and updates on the main monitoring programmes are detailed in the following pages.



New Aldabra Research Officer Dr Naomi Doak (I. Valmont)

Turtle monitoring and research

TRACK COUNTS.—Track counts of green *Chelonia mydas* and hawksbill *Eretmochelys imbricata*, turtles occur on beaches across the atoll and turtles are tagged in the lagoon. The track counts for green turtles in particular were highly successful in 2008. A total of 353 counts for green turtles were conducted along Settlement Beach, producing the most complete set of daily track counts for any year since the turtle monitoring programme began in 1981. 4189 emergences were recorded, 3547 of which attempted to nest, with a peak in both emergences and nesting attempts occurring between April and June. On other, less accessible, beaches around the atoll, track counts were conducted at least monthly and emergences peaked during the same period.

Monitoring of hawksbill turtle breeding was restricted to only three occasions in 2008, all in January and February. This species is more difficult to monitor on Aldabra because breeding activity is primarily restricted to September–March, the species only nests on the inner lagoon beaches and the population of breeding females is much smaller than the green turtles. Problems with boats and shortage of staff meant that these counts could not be conducted more frequently but the counts conducted early in the year detected several fresh or fairly fresh tracks and staff will follow up on this programme in 2009.

TAGGING.—A total of 378 individual green turtles were recorded during the track counts, which included 219 turtles being newly tagged in 2008 and the remaining 159 having at least one tag present. One of these newly tagged females was encountered a total of five times (including the initial tagging) during track counts in 2008. An additional 66 juvenile green turtles were captured in the lagoon and tagged. 38 juvenile



Green turtle *Chelonia mydas* nesting on Settlement Beach (Foto Natura)

hawksbill turtles were also caught, 18 of which had been captured and tagged previously while the rest were newly tagged.

RESEARCH.—Marine turtle expert and long-term SIF Science Committee member, Dr Jeanne Mortimer, was contracted by SIF to conduct detailed analysis of the last 30+ years of Aldabra's turtle data beginning in 2008. Dr Mortimer established the turtle monitoring protocol on Aldabra in the 1980s, has trained many of the staff working on the atoll and remains involved with the programme as an advisor and data checker. The data resulting from such monitoring mount up over the years and it has become necessary for SIF to comprehensively analyse the turtle data collected so far to assess the programme and apply its results. The aims of the research are to thoroughly clean the dataset, compile all relevant literature, and, through data analysis, detect nesting and population trends, examine seasonality, assess population size and health, and investigate causes of mortality. The Aldabra turtle trends can then be compared to turtle datasets from other areas to identify broader patterns and, ultimately, link the data to climate and regional datasets to determine any climate change effects on marine turtle ecology. This research is ongoing into 2009.

Giant tortoise monitoring

Data on giant tortoises *Geochelone [Aldabrachelys] gigantea* on Aldabra has been collected monthly since 1998 from 12 transects around the atoll. The number, sex and size of tortoises on transects are

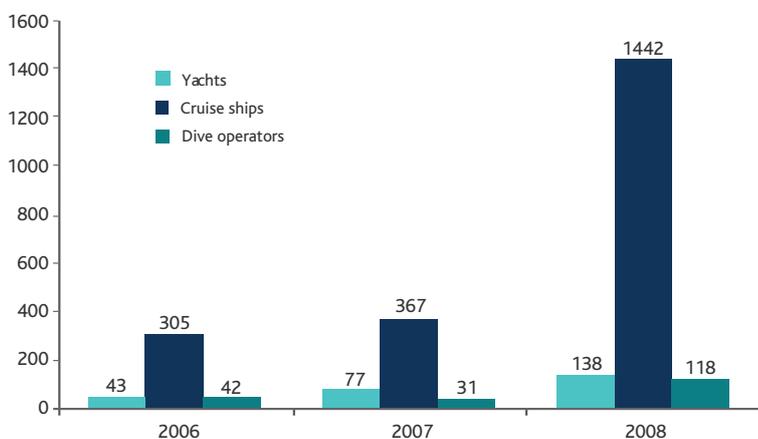


Figure 5. Tourist numbers on Aldabra during 2006–2008 from yachts, cruise ships and dive operators.



Giant tortoises *Geochelone [Aldabrachelys] gigantea* on Aldabra (Foto Natura)

recorded, providing valuable information on the population size, structure and distribution of the species around the atoll. Data from 2008 were in line with previous trends, showing a higher number of tortoises on the island of Grande Terre with significantly smaller individuals than on the other islands. This is thought to be due to more intense competition on the main island. The population models indicated that there has been no significant change in total population size for the last few years. The tortoises on Grande Terre are undoubtedly benefiting from the decreased number of goats on this island so we may expect an impact on the population in years to come.

Bird monitoring

There are a number of monitoring activities for birds on Aldabra, which cover land birds, wading birds and sea birds. Land bird populations have been monitored monthly with the current methodology since 2002, using seven transects across the atoll to provide valuable information on passerine abundance. All seven transects were monitored every month during 2008 and all 13 land-bird species were recorded. The most abundant land bird species was the Souimanga sunbird *Nectarinia sovimanga aldabrensis*, followed by the Madagascar turtle-dove *Streptopelia picturata*, and the Madagascar white-eye *Zosterops maderaspatana aldabrensis*. Results for most of the passerines (songbirds) are very consistent across years using this monitoring methodology indicating that landbird populations are stable.

Seabird monitoring in 2008 was conducted on red-tailed tropicbird *Phaethon rubricauda* breeding activity. Almost all of the nests failed at egg or early chick stage due to high rates of predation due to either crabs or rats. An important observation of a rat on one of the lagoon islets, which was believed to be rat-free, was made by volunteer, Bernard Coetzee, and this could have serious implications for nesting sea-



Red-tailed tropicbird *Phaethon rubricauda* over Aldabra (N. Doak)

birds. This monitoring programme requires reviewing and possible action to be taken regarding rats on islets.

Counts of wading birds are conducted at least twice a month on Aldabra but detailed analysis of the majority of this information is problematic due to the wide range of factors influencing wader abundance. Nonetheless, two scientific papers on waders of Aldabra were published in 2008 (both Pistorius & Taylor 2008; see list of publications on p17). 28 species of wading bird were recorded across the atoll in these surveys, with the most common species being dimorphic egrets *Egretta dimorpha* and crab plovers *Dromas ardeola*. In addition, two species, flamingos *Phoenicopus ruber* and Madagascar pond-herons *Ardeola idae*, were not recorded during surveys, but were observed during other monitoring activities bringing the total to 30 species of wader observed during 2008.

Following a Species Action Plan workshop in Nairobi, which was attended by SIF Science Coordinator, Lindsay ChongSeng, a new monitoring project has been launched on the Madagascar pond-heron *Ardeola idae* on Aldabra. The pond-heron is one of the species of highest conservation concern on the atoll as the global population is estimated at only 6000 individuals, spread over an enormous range, and is thought to be rapidly declining. Very little is known about the species as it is extremely difficult to study in the wild. Aldabra may provide one of the pond-heron's only protected breeding areas and it is thus critical for its conservation for SIF to map, census and study the species on Aldabra. The monitoring project was started in November 2008, led by volunteer Jennifer Stockdale, who brought valuable previous experience of work with endangered bird species in Mauritius to Aldabra. The project is ongoing into 2009 and initial results will be reported in the next Annual Report.

Robber crab *Birgus latro* monitoring

Robber crabs *Birgus latro* are found, mainly on islands, pan-tropically, but populations are in decline across much of their range due to human poaching. Aldabra is fortunate in having a healthy population which is important at a global level as a natural study population in a protected site. A monitoring programme for the species was established in 2006 with monitoring efforts intensifying in 2007. This recent start makes it a relatively 'young' programme by Aldabra's standards. The monitoring has continued on a twice-monthly basis since then with the aim to provide information



Robber crab *Birgus latro* on Aldabra (Foto Natura).

on seasonal and size related activity patterns as well as population density. We are beginning to see from the data that there is a seasonal pattern in the abundance and size distribution of the crabs with abundance peaking in March–April and males being larger than females. These data, however, require detailed further analysis which is currently being conducted by Dr Pierre Pistorius, who also established this monitoring programme during his time on Aldabra as the Research Officer.

Other monitoring programmes and volunteer research on Aldabra

Regular monitoring programmes on and around Aldabra are also conducted for climatic variables, crab plovers, butterflyfish, subsistence fishing, flowering and fruiting phenology of plant species, and cetaceans. In addition, all observations of vagrant bird species, dugongs and any unusual sightings are recorded.

Volunteer projects included a fish bar-coding project by South African volunteers Rowan Yearsley and Amanda Northropp who stayed on Aldabra from January to May 2008. Rowan and Amanda helped out with the general monitoring programmes on Aldabra and conducted their own research project on using fish DNA as a barcode for species identification in collaboration with the Ichthyology Institute, SA. The analysis is still in progress.

Three volunteers arrived in November 2008, Jennifer Stockdale, who worked on the Madagascar pond-heron as described above, Rebecca Scott, who had experience in turtle monitoring and conducted a research project on turtle foraging patterns in the Aldabra lagoon, and Bernard Coetzee, who started compiling information for the planned Ramsar application for Aldabra. Outcomes of their work will be reported in the 2009 Annual Report.

RESEARCH BY VISITING SCIENTISTS

Several scientific expeditions were undertaken to Aldabra in 2008 by researchers collaborating with SIF. These included:

- The SOPTOM Expedition, a team of ten French scientists led by Bernard Devaux for a fortnight in February, aimed to investigate a new tortoise population census method using balloons. Unfortunately, the team found that the wind would be too strong for the balloon method so they instead conducted a photo reportage of the atoll's tortoises which later appeared in French publication *La Tortue* (see publications list, p17, for details).
- SIF Board member Dr Carl Gustaf Lundin included Aldabra in a reef resilience study undertaken by CORDIO East Africa in March–April 2008. The team was led by David Obura and included Jerker Tamelander from CORDIO Indian Ocean and IUCN Global Marine Programme, and Monika Zavagli from Ramsar, who assessed the potential of Aldabra to be nominated as a Ramsar site. The resulting report (available at: http://cmsdata.iucn.org/downloads/resilience_assessment_final.pdf) shows that the amount of damage to corals depends not only on the rate and extent of climate change but also on the ability of coral reefs to tolerate and adapt to change. It also outlines a protocol for defining basic resilience indicators for rapid assessment, which was showcased at the IUCN World Conservation Congress.
- A group of five members of the Save Our Seas Foundation visited Aldabra in March to document the abundance of shark species around the atoll and obtain images for the Aldabra Foundation exhibition. A blog of the visit is available at: <http://www.saveourseas.com/Aldabra>
- The Aldabra Marine Programme (AMP) spent several weeks on Aldabra in December. AMP founders Dr Nigel Downing, Dr Ray Buckley and Dr Ben Stobart, supported by MPA-SCMRT staff member Rodney Quatre, followed up their research on coral cover and fish species diversity and abundance around the atoll. The new data will be added to their dataset on long-term trends in the region which will enable important information to be drawn on long-term coral reef resilience and adaptation following ocean warming events.
- An expedition to Aldabra as part of a regional research project on South-western Indian Ocean islands and coordinated by the Paris Natural History Museum saw four scientists (Dr Gerard Rocamora, Dr Vincent Robert, Dr Simon Julienne and Prof Steve Goodman) visit the atoll in December 2008 at the same time as the AMP project above. The group collected and identified insects, particularly phlebotomine flies, around the atoll and the project will attempt to link species distribution to disease risk across the region.
- Prof. Steve Goodman from Madagascan NGO Vahatra visited the atoll as part of the Phlebemos project in December and spent time conducting his own research on insectivorous bats of the atoll. He was successful in recording, catching and sampling tissue from one of the three species (see publications list, p17, for more details).

GOAT ERADICATION PROJECT:

MAKING GOOD PROGRESS BUT END NOT YET IN SIGHT



In the 2007 Annual Report we summarised the latest feral goat eradication attempt on Aldabra, which is utilising 'Judas' goat technology to eliminate this introduced mammal. Rainer von Brandis, who led the team in the intensive first phase of the eradication, gave a well-attended presentation about the programme to date at the Seychelles Fishing Authority conference room in early 2008, which was later featured on SBC news.

The third and final phase of the programme, which involves monitoring the radio-collared sterilised Judas goats and eliminating associated non-Judas individuals, has been underway throughout 2008 with the goats being tracked and hunted for several days each month by SIF staff on Aldabra. The monitoring has been very challenging for staff as the remaining goats are increasingly wary of humans and are becoming even more difficult to track. Moreover, the vegetation can be extremely dense, the terrain underfoot harsh, the mosquitoes unremitting, and the heat relentless during most of the year. We would therefore like to recognise and praise the key staff on this project in 2008, namely Alex Underwood and Marc Jean-Baptiste who, despite the harsh conditions, managed to locate the Judas animals on almost every tracking occasion and shoot a minimum of another 17 associate goats during the year (5 males, 9 females, 2 adults of unknown sex and 1 kid). They have been supported

by the entire Aldabra team, who should all be commended for their efforts to eliminate the goats from Aldabra for good.

Despite excellent progress in 2008, SIF cannot afford to let our guard drop during 2009. We are at a critical juncture, with so few goats remaining that success seems almost within grasp. The prospects of success may prove fickle however, as removing these last few animals will also be the most difficult. These individuals will be the most wary and fearful of humans, and the most likely to retreat into impenetrable vegetation at the slightest hint of human scent, sight or sound. In addition, the batteries powering the radio-



Left, - Island Manager, Marc Jean-Baptiste, and (above) Senior Ranger, Alex Underwood, working hard on the goat eradication on Aldabra.

collars on the Judas goats are expected to start running flat around mid-2009, which may be too early to finish the programme as we are aware of at least three non-Judas goats as it stands at the end of 2008, which suggest there are likely to be several more. A change in radio-collars is therefore likely to be necessary in late 2009 and SIF will need to raise the funds to continue this vital programme. It is therefore not time to relax yet, and success may take another few years of follow-up monitoring but we are definitely getting closer to realising one of the most important conservation goals in Aldabra's history.

ECO-SCHOOL VISIT 2008

The 2007 winners of the annual Seychelles Eco-school competition enjoyed their trip of a lifetime visiting Aldabra from the 22nd to the 31st March, courtesy of SIF. The trip included 14 pupils and four teachers from Anse Etoile Primary, Anse Boileau Primary and Secondary, Silhouette Primary, Grand Anse Praslin Primary, Anse Kerlan Crèche, La Digue School and Praslin secondary. The children's visit featured as an SBC news item and a centre page article in the Seychelles Nation. The children participated in a range of exciting activities from scientific monitoring to recreational activities during their 10 days on Aldabra. The lucky win-

ners had time to experience the different aspects of life and work on the atoll including day and night turtle monitoring and tagging, bird identification and observation, crab monitoring, snorkelling and hiking, as well as learning from several presentations given by permanent staff members and research visitors from the Save Our Seas expedition.

The annual trip is partially funded by the proceeds of the SIF Annual Lottery, with the remaining costs being covered by SIF. SIF's intention is to provide this special privilege annually to children who have excelled in environmental studies and extracurricular activities, and stimulate their interest and passion for the ecology of their natural heritage. By creating and supporting these young environmental ambassadors for the Seychelles, and developing their knowledge of one of the most undisturbed locations on the planet, SIF hopes to encourage them to become ecologically aware adults environmental and leaders, from a local to an international level.

2008 SIF PROJECT SUMMARY AND PARTNERS

2008 has seen SIF move up a gear regarding project planning and funding applications. We have already had some success with these applications. In 2008 we secured funding for several major new projects including:

1) An important initiative in collaboration with the Cambridge Coastal Research Unit (CCRU) to accurately map Aldabra's lagoon and terrestrial area using the newest techniques in satellite remote-sensing technology was secured with generous support from the Environment Trust Fund, Seychelles. SIF and CCRU are also contributing substantially to make this a truly collaborative project. The mapping will involve dividing Aldabra into different habitat types using a combination of satellite imagery and ground-truthing work. The project will result in a high resolution image mosaic of Aldabra with ca. 15 habitat types, which will aid SIF in: (a) assessing and adapting conservation management techniques and identifying new conservation actions; (b) quantitatively and qualitatively identifying key atoll habitats; and (c) establishing baseline habitat data with which environmental change due to climate change and invasive species can be monitored in the future. Fieldwork is due to start in early 2009.

2) A long-planned and crucial project to improve and streamline the management of Aldabra (entitled: "Introduction of an Environmental Management System to improve the energy and waste management at the Aldabra research station") was launched when SIF was awarded \$70,000 from the Indian Ocean Commission in May 2008. The overall objective of this project is to identify and implement ways to sustainably fund and manage Aldabra in the long-term using measures to improve the sustainability of management. Specific objectives of this initial part of the project under COI include: (a) completing a comprehensive audit of energy use breakdown to identify and address all energy-wasting practices and appliances; (b) identifying and sourcing technology to replace the current non-sustainable energy supply; and (c) address fuel wastage and loss. The energy audit was carried out in Nov-Dec 2008 by former SIF volunteer, Christina Quanz, a Geography Diploma student at the Martin Luther University of Halle-Wittenberg, Germany and the report and next stages of the project will be conducted in 2009.

In addition, smaller scale species-focussed projects were launched on:

- 3) Seychelles black parrots supported by the World Parrot Trust and the University of East Anglia, UK (p8).
- 4) Coco de mer population ecology and modelling supported by the Rufford Foundation, UK (p7).
- 5) Madagascar pond-heron status and distribution on Aldabra (see p12) supported by the British Ornithologists' Union, UK (p13).

We are planning to strengthen SIF's project programme further in 2009 by continuing and expanding the above projects as well as launching new projects for which details will follow in the next annual report.

2008 PUBLICATIONS BY AND ABOUT SIF

Scientific publications on Aldabra species (peer-reviewed)

- Goodman SM & Ranivo J. 2008. A new species of *Triaenops* (Mammalia, Chiroptera, Hipposideridae) from Aldabra Atoll, Picard Island (Seychelles). *Zoosystema* 30: 681–693
- Hermans A & Pistorius P. 2008. Marine mammal diversity in the remote waters of Aldabra Atoll, Southern Seychelles. *Atoll Research Bull.* 564: 1–6
- Pistorius P. 2008. Grey heron (*Ardea cinerea*) predation on the Aldabra white-throated rail (*Dryolimnas cuvieri aldabranus*) *Wilson Journal of Ornithology* 120: 631–632
- Pistorius PA & Taylor FE. 2008. Abundance, trends and seasonal occurrence of Palearctic waders on Aldabra, Indian Ocean. *Wader Study Group Bull.* 115: 84–90
- Pistorius PA & Taylor FE. 2008. Population status and conservation of crab plovers *Dromas ardeola* on Aldabra, Indian Ocean. *Wader Study Group Bull.* 115: 36–40
- Wanless RM & Hockey PAR. 2008. Natural history and behaviour of the Aldabra rail (*Dryolimnas [cuvieri] aldabranus*). *Wilson Journal of Ornithology* 120: 50–61

Newspaper articles (all appeared in the Seychelles Nation)

- 18th February. New stamps highlight the wonders of untouched Aldabra. P. Matyot
- 10th March. SOSF Aldabra Expedition assesses abundance of large sharks. Anon.
- 31st March. Winners of Eco-school competition visit Aldabra. Anon.
- 12th April. The Aldabra adventure. J. Larue.
- 2nd June. Judas lures Aldabra goats to their deaths. Anon.
- 16th June. SIF mounts vital research into black parrots. E. Walford & N. Bunbury.
- 14th July. Could Seychelles become a whale watching paradise? P. Matyot (for SIF and ICS).
- 13th October. Aldabra to star online in new marine conservation project. N. Bunbury
- 22nd December. Killer whales sighted at Aldabra. BWT Coetzee & N. Bunbury

Magazine articles

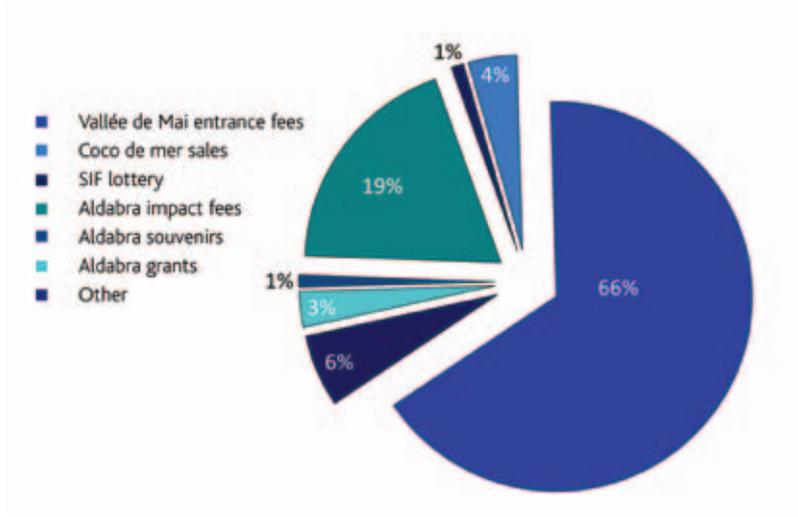
- August. Port-folio sur Aldabra. Born O, Fertard B & Bonin F. *SOPTOM – La Tortue* 80: 32–44
- August. Avis de tempete sur Aldabra. Deveaux B. *SOPTOM – La Tortue* 80: 4–31
- August. Exposition parisienne sur Aldabra. Dupre A. *SOPTOM – La Tortue* 80: 44–46
- September. Aldabra, un paradis pour les animaux, l'enfer pour les hommes. M. Lescroat & Foto Natura. *Ça m'intéresse* 331: 22–25
- November 2008. Parrots in Paradise. E. Walford. *PsittaScene*: 12–15

SIF Staff movements in 2008

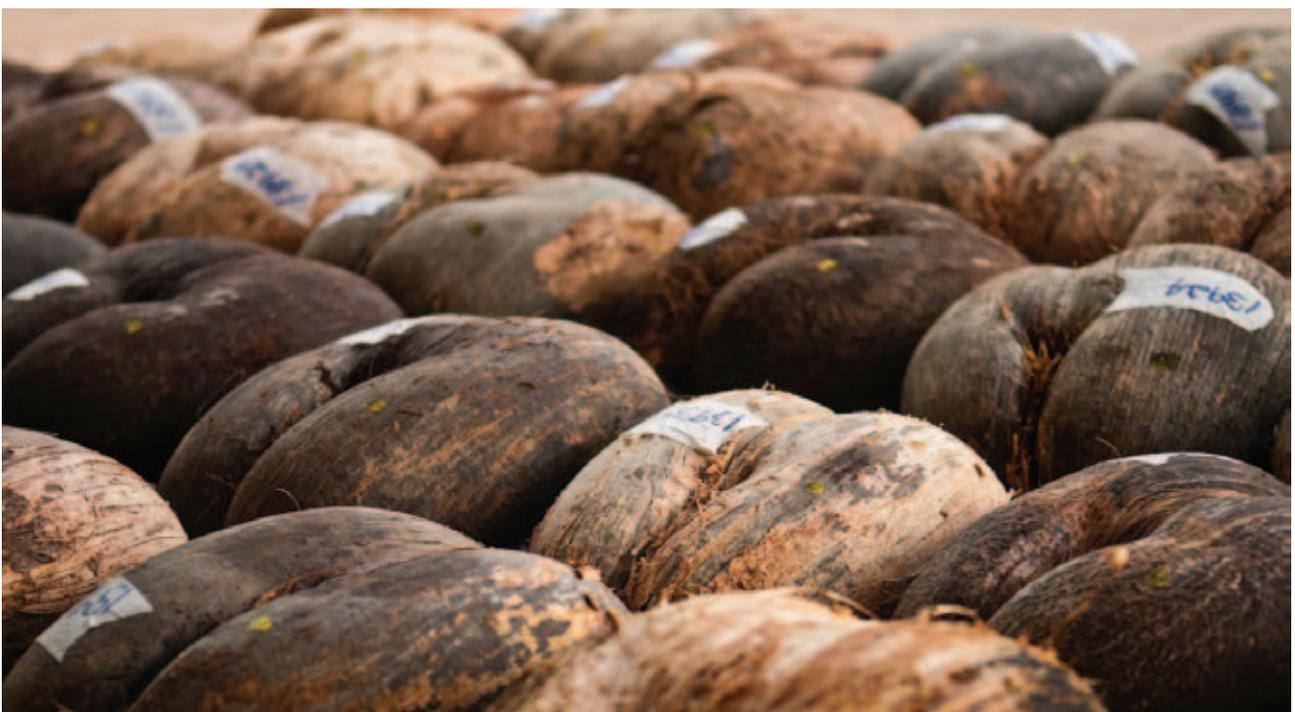
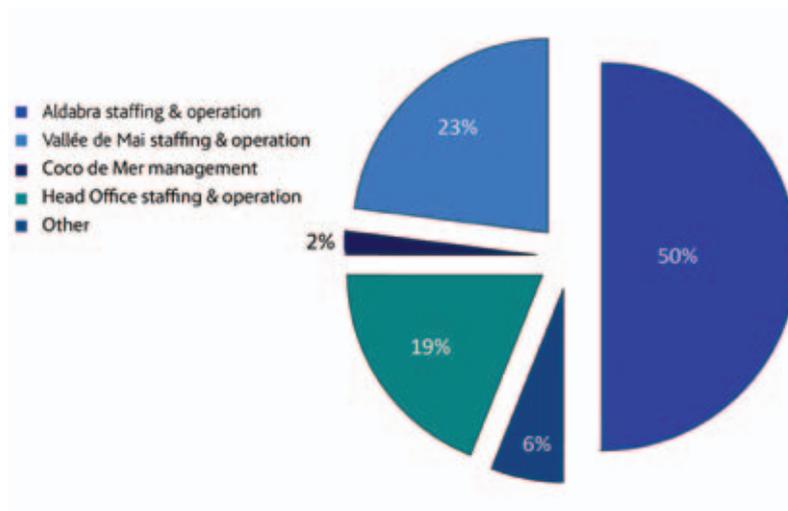
- SIF Science Coordinator Lindsay Chong-Seng attended a Madagascar Pond-heron workshop organised by BirdLife International in Nairobi in April to help compile existing knowledge on this Endangered species and produce a Management and Action Plan.
- Frauke Fleischer-Dogley attended a workshop in Madagascar in May 2008 run by the Indian Ocean Commission on the Management of Marine Protected Areas.
- Frauke Fleischer-Dogley went to Barcelona to participate in the IUCN World Conservation Congress on 5–14 October.

Where our money came from in 2008

FINANCIAL FACT FILE 2008



Where we spent our money in 2008



Harvested coco de mer seeds (A. & V. Brusini)

MORE ABOUT SIF AND HOW YOU CAN HELP

The Seychelles Islands Foundation (SIF) is a non-profit charitable organization which was established as a Public Trust in 1979 to manage and protect the Seychelles UNESCO World Heritage sites of Aldabra Atoll and the Vallée de Mai on Praslin.

To continue to run and protect these two sites, SIF relies on funding generated largely by visitor entry and impact fees to the Vallée de Mai and Aldabra, and supplemented by grants, donations and merchandise sales. Our work and progress will always be dependent on these sources and the generosity of our supporters.

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

- Visit the Vallée de Mai and experience the magic of this unique site for yourself.
- Purchase SIF products and souvenirs directly from the Vallée de Mai or the SIF Head Office in Mont Fleuri, Victoria.
- Donate to or fund-raise for SIF – all donations receive a 100% tax allowance
- Volunteer for SIF – we have limited volunteer opportunities at both sites for suitably qualified international volunteers to help for 4-6 month periods with ecotourism, conservation work and monitoring.

If you would like to contribute, would like more information or are interested in receiving further news about SIF please contact us by email: sif@seychelles.sc or check our website: www.sif.sc.

SIF supporters in 2008

As a non-profit organisation which can only operate through the support of voluntary donations and funding bodies, as well as revenue generated by ecotourism, we are proud to list the organisations and individuals who have contributed with donations and support in 2008. Every donor and supporter is important to us, and your continued contributions make our work possible. We thank all of you equally:

Organisations

Aldabra Foundation
British High Commission
British Ornithologists' Union
Environment Trust Fund, Seychelles
Indian Ocean Commission
Indian Ocean Explorer
Island Development Company
Mahé Shipping
Mangroves for the Future
Royal Society of London
Rufford Foundation
Silhouette Cruises
World Parrot Trust
UNESCO

Individuals

Raoul Favaretto (Praslin Vacance Club)
David Humphreys, UK
Daphne & David Slater, UK

Collaborating research institutions

Cambridge Coastal Research Unit
ETH, Zurich
University of East Anglia, UK

Special thanks to long-term staff and supporters, Aterville Cedras and Katy Beaver

Special thanks are due to two people who have contributed substantially to SIF operations and successes over many years. Mr Aterville Cedras retired from his position as warden of the Vallée de Mai in 2008 after 10 successful years of managing this site. Under his management, the Vallée de Mai has become the most popular visitor attraction in the country. He has been a strong and inspiring leader for the Vallée de Mai team, and his knowledge of the forest is unrivalled and much-used. We are extremely grateful for his 10 years of leadership at such an important site.

Katy Beaver, despite never having been directly employed by SIF, has supported and helped the organisation in so many other ways over such a long time that she has often seemed to be a permanent staff member to many of us! Katy first visited Aldabra 20 years ago in 1988 for the Focus on Aldabra book. She then published a book on the Vallée de Mai in 1992 and was a key member and secretary of the SIF Scientific Committee from 1995 to 2008. Katy has invested an immense amount of time and effort into SIF endeavours and has provided a crucial backbone for SIF. Her abilities and input throughout have been hugely appreciated and she has given, usually freely, much-needed and consistent support since 1993, often at times when it was most needed. Although she has now stepped down from the Scientific Committee, Katy's involvement continues into 2009 as she leads an SIF-MFF project on education. We are deeply grateful for all of her input, hard work and support.

SIF is indebted to Aterville and Katy for the important roles they have played in helping shape SIF into the organisation it is today.

SIF BOARD OF TRUSTEES

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Aldabra main channel (Foto Natura)

