



aldabra atoll

More Dugong sightings at Aldabra



Dugong sighted this month © R Filippin

The exciting news from Aldabra this month was two sightings of a dugong (*Dugong dugon*) in the lagoon in the vicinity of Ile Esprit, the first sightings in this year's south-east monsoon season. Whilst on their way to the research station on Picard the team spotted a large dugong surfacing to breathe. Initially they thought the dark shape might be a coral head because the rough sea reduced visibility, but then they saw it moving and realised it must be a dugong! The large adult dugong was calmly cruising towards the dunes area of Grande Terre, coming up every 15 - 20 minutes to breathe. The dugong seemed to be very relaxed and did not seem to mind the boat as it continued swimming along in the waves at a leisurely pace. All of the team had a fantastic view and at one point were only metres from this awesome marine mammal, allowing them to admire how glossy its skin was. The team were very excited to see a dugong up close, especially Ranger Dainise Quatre as it was the first time she had seen this animal. A few hours later a dugong of a similar size was recorded in the same area by other staff, which is presumed to be the same animal.

The team felt very lucky to see this individual at this time of year as it is generally more difficult to spot marine animals in the south-east monsoon due to the rough sea conditions and subsequent poor water visibility. Most dugong sightings at Aldabra occur in the calmer north-west monsoon season, between October and April.

Historical records of dugong sightings at Aldabra have mostly been of single individuals or pairs. On one occasion a group of four animals was spotted together. From 2006 to 2014 a total of 14 dugong sightings have been recorded from boats and one sighting from the shoreline of Picard. In addition in late February 2013, with the kind assistance of the M.Y. Danah Explorer, aerial surveys identified 11-14 individuals in a partial lagoon survey of Aldabra. This fantastic opportunity confirmed that Aldabra's dugong population is larger than previously expected. It is hoped in the coming north-west monsoon season further information on Aldabra's dugong population can be gathered.

SIF is participating in a regional WIOMSA project which will hopefully involve the attachment of three acoustic tags which we anticipate will help to understand the movements of these dugongs – are they residential in the lagoon of Aldabra or migratory and if so where are they going? More details on this project in later newsletters.



European Union Invasive Species Project

SIF's European Union-funded project "Mainstreaming the management of invasive alien species to preserve the ecological integrity and enhance the resilience of Seychelles World Heritage Sites" is approaching the end of its 4-year time-frame. The various invasive species activities still running under this project are now either starting to wind down or intensifying to meet the objectives before the end of the project. Ongoing activities include work on four different islands; control and research of invasive plants, invertebrates, birds and mammals; education and outreach; training; and institutionalising invasive species management into the operation of Seychelles two UNESCO sites. In this newsletter we focus on the approaching final phase of ring-necked parakeet eradication on Mahé and make an appeal to the Seychellois public for information, the rat and cat work which is nearing completion on Aldabra, and we take a look at the staff training under the project and how this has helped SIF and Seychelles achieve invasive species goals.

Do you see Ring-necked Parakeets (kato ver) regularly? If so, then SIF needs you!



SIF is appealing for information from the public on the location of the remaining Ring-necked Parakeets (kato ver) on Mahé AND Praslin. Unfortunately the Ring-necked Parakeet is confirmed to occur on Praslin as of last week. **If you regularly see one or more of these birds in the same location, we would welcome your call. Please contact us on 2523623.**

The eradication of the Ring-necked Parakeet from Mahé has been making excellent progress following the recruitment of two professional avian hunters, Nick Page and Jesse Friedlander from New Zealand, and some changes to the project strategy. The continued partnership and support of the Seychelles Police and Seychelles Peoples Defence Force has continued to be a strong and successful combination, with excellent results so far.

Under the leadership of Terence Mahoune, a new strategy has been implemented to maximise available resources. The eradication staff are now split into two separate teams, one for



New paper showcases Coco de Mer management successfully links science and conservation



SIF staff undertaking research on Coco de Mer to inform conservation decisions © SIF

There is a recognised gap between scientific research and conservation policy and action, with the recommendations of published conservation research papers often not being implemented. There are many reasons for this gap; practitioners may not be aware of the relevant scientific publications in their field, publications are often inaccessible to non-academics, they may be written in technical jargon, or simply make impractical recommendations which have not taken into account conservation needs on the ground.

An SIF-authored paper has recently been published online in the *Journal of Applied Ecology*. The paper uses the example of Coco de Mer management to demonstrate the successful linking of scientific research and conservation in a small island context. The paper describes how scientific research on the Coco de Mer was set up according to needs of management authorities and was subsequently used to improve conservation management and influence policy.

Finally, the authors ask researchers to consider their responsibilities after publishing papers and show how follow-up after publication can make a genuine difference to conservation management if the appropriate steps are taken. The paper is non-technical and we recommend you have a read of it if you're interested in Coco de Mer management and how science can be used to inform conservation.

The full citation is: Kaiser-Bunbury CN, Fleischer-Dogley F, Dogley D and Bunbury N. (in press) Scientists' responsibilities towards evidence-based conservation in a Small Island Developing State. *Journal of Applied Ecology*.

The paper is available at: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12346/abstract> or please email info@sif.sc for a copy.

New publication on Black Parrot feeding ecology confirms preference for endemic plants



Aldabra outer reef map completed



Coral reefs of Aldabra © Fotonatura

SIF has recently completed a map of Aldabra's outer reef habitats! The reef mapping forms part of the GEF-funded project, and aimed to map the various habitat types around the seaward reef. The map will be used to assist with the overall project goal of increasing the Marine Protected Area around Aldabra. The field work for the map was undertaken in 2012-2013 (see SIF Annual Report 2012) with the assistance of Dr Rebecca Klaus and Dr John Turner from the School of Ocean Sciences, Bangor University, UK.

SIF used satellite imagery and image classification software, coupled with ground-truthing data to construct a habitat classification system. A classified habitat map was derived by combining the satellite imagery data and matching it to that collected in the field.

The resulting habitat map is available in different resolutions, both spatially, and in terms of the number of habitat classes represented in the map, which correspond to the purpose of the habitat map.



Snapshot of the habitat map produced © SIF

The map in its most basic form depicts the physical extent of the Aldabra reef, which is important when evaluating the size and shape of the Protected Area boundary. The habitat map shows the surface area of various habitat types that are important for site management, e.g. extent of coral reefs, which enables subsequent surveys to assess changes in these areas. At a finer scale the maps depict the interplay between seagrass-dominated communities, and algal dominated communities, which change on a seasonal, and long-term basis. At an even finer scale the areas richest in rare features, e.g. soft corals, are shown, which are important for site management, such as planning areas for recreational diving or areas to set aside for monitoring.

The habitat map will also be fed into larger initiatives, in Marine Protected Area planning on a national scale. The protection of one of Seychelles' most precious marine areas is validated by this map, and secured for the future with the increased knowledge of the marine habitats that make Aldabra so special.

Aldabra staff collect marine debris to mark Clean Up the World Day



observations and one for shooting. With each team having independent transport. The main role of the observation team is to provide the shooting team with continually updated information concerning regular parakeet sightings, and their movements and behaviour across Mahé in preparation for potential shooting sessions. The new arrangement is efficient and has increased the weekly average of targeted parakeets.



Some of the members of the new Ring-necked Parakeet eradication team © SIF

The parakeet population has inevitably increased over time as these birds are prolific breeders. With the updated estimate of the total population we now know that, at the beginning of 2014 only 15% of the parakeet population had been targeted. As it stands at the end of September 2014 more than 75% of the population has been eliminated, with the grand total of parakeets culled now exceeding 350 birds. The team has made excellent progress but the most difficult part of the eradication – targeting the final, educated and elusive birds - is still ahead and could take many more months. The project has recently received substantial and hugely appreciated financial support from the Environment Trust Fund Seychelles and the Global Environment Facility, which should enable the completion of this eradication.

A wide network of public contacts and supporters is continually providing essential information on parakeet observations, feeding areas, counts, as well as provision of access to private land and very generous hospitality. However, with the diminishing number of parakeets the team always needs more information and areas to target the remaining birds.

We are therefore appealing to the public to report any regular visits of Ring-necked Parakeets to gardens or agricultural areas. We are particularly interested in and will need to prioritise parakeets in groups of three or more in the early morning, mid-morning and afternoon, parakeets going into holes in trees, feeding areas, gathering areas and other general predictable movements of many birds.

We highly recommended not approaching or trying to capture these birds – efforts to help are not always be successful. Please let us assess the situation and we will take the appropriate action. We appreciate any information you can provide, and we ask that you contact SIF or the RNP team with any RNP information. **Contact the team on 2523623 or the Greenline on 2722111.**

Progress in introduced mammal work on Aldabra



One of the rats, newly released from a trap © M van Dinther

Invasive Species Technical Officer Martijn van Dinther and assistant Marvin Roseline spent two weeks in the Cinq Cases area of east Grand Terre this month, to investigate rat and cat populations in this remote part of Aldabra. They conducted two mark-recapture rat trapping grids simultaneously over 10 nights. Each grid has 25 cage traps in a 100 x 100 m area, about 25 minutes' walk from the field hut. Traps were baited every evening and, in the morning, captured rats were lightly sedated and fitted with a numbered metal 'fingerling' tag in their right ear so they could be recognized on re-capture over the following days. Analyses of the data shows that the density of rats on east Grande Terre seem to be considerably less than the densities on Picard. Furthermore, adults of both sexes are much smaller than rats caught on Picard. This information will



Seychelles Black Parrot feeding on the fruits of the endemic palm Lattanyen Milpat © H Richards

What is the favourite food species of Seychelles Black Parrots? Those of you thinking that introduced fruit trees like mangos or papaya must be the top choice would be wrong! A new paper published online by *Ostrich: Journal of African Ornithology* examines the feeding ecology of these endemic parrots. An understanding of feeding requirements is vital for species conservation, particularly for rare endemics like these parrots which are restricted to very small areas. How else can we understand how to manage habitat to ensure species survival?

The paper summarises the findings of 4 years of feeding observations of Black Parrots by SIF staff on Praslin, the only island on which this parrot is resident. The authors compared two alternative methods of recording feeding data; incidental observations and feeding transects, to assess methods as well as the parrots' feeding preferences.

The parrots were found to feed on 46 different plant species within this study, bringing the total number of known Seychelles Black Parrot food plants to 53 species. They favour endemic and native species, mainly eating fruit pulp, buds and seeds, but leaves, bark and scale insects are also occasionally consumed. Incidental observations (recorded opportunistically whenever staff saw parrots feeding) resulted in many more recorded feeding encounters than did transects, but the transect results are more reflective of actual feeding patterns. Both methods therefore have their benefits and drawbacks: the transect method produces less but more representative data, while the incidental method is highly biased but useful for collecting data quickly, and identifying rare feeding events. The authors conclude that the methods are complementary and each can be useful depending on the information needed and the questions asked.

Following this research, we now know that, although the Black Parrots are regularly seen eating introduced fruit, such as papaya and starfruit, these sightings are simply more visible to most people since they occur in gardens and farmland, leading to the mistaken impression that these fruit trees are preferred. In fact, the parrots favour the fruit, flowers and seeds of endemic trees, particularly endemic palm trees. This study confirms that this endemic parrot species is heavily dependent on the native palm forest, not only by nesting in Coco de Mer trunks but by feeding on the other palm species. With this improved understanding of the feeding requirements of the Seychelles Black Parrot conservation managers will be in a position to make more informed conservation decisions.

The full citation for the paper is: Reuleaux A, Richards H, Payet T, Villard P, Waltart M & Bunbury N. (in press) Insights into the feeding ecology of the Seychelles Black Parrot *Coracopsis barklyi* using two monitoring approaches. *Ostrich*.

The abstract of the paper (the paper is not open access) is available at: <http://www.tandfonline.com/doi/abs/10.2989/00306525.2014.931311>

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Clean up the World Day at the Vallée de Mai



Designated Minister Vincent Meriton plants an endemic palm in the stewardship plot © T Payet



The team with the rubbish collected during the beach clean © SIF

The Aldabra community undertook a beach clean-up this month in celebration of the global event 'Clean Up the World Day'. The team collected marine debris washed up on Settlement Beach and cleared any obstructions that could hinder nesting female turtles or turtle hatchlings on the beach platform. Whilst the wind is from a south-easterly direction Settlement Beach is not subjected to the same quantity of rubbish that is washed up during the north-west monsoon. However, a six gunny bags of principally plastic waste with some glass, metal and old fishing gear was collected and removed. In comparison the south coast of Aldabra receives an astonishing volume of marine debris during this season, which, considering Aldabra's remote location, demonstrates the amount of rubbish accumulating in the oceans.



Marine debris on the beaches of Aldabra © Sam Balderson

The items found on the beaches of Aldabra large amounts of debris including flip-flops, plastic bottles, lighters, toothbrushes and glass bottles. In addition to this there are often large items such as fishing buoys, ropes, gas bottles, fuel jerry cans, wooden planks and plastic barrels. Animals that live on, in or near the sea can consume marine debris by mistake as it can look similar to their natural food. This debris can cause internal damage when ingested or block their digestive tract, resulting in death. Tiny pieces of plastic can also enter the marine food web as they are consumed by organisms that normally eat zooplankton (microscopic marine animals). On Aldabra these damaging effects can be seen firsthand with Giant Tortoises observed eating plastic marine debris on the coastal fringe and Green Turtles found trapped or dead as a result of larger items such as ropes, nets or driftwood. A much larger scale externally funded project would be needed to tackle the marine debris on the south coast of Aldabra due to its difficult terrain, remote location and huge volume of waste.



Giant Tortoises graze in amongst the marine debris on the coastal fringe © Sam Balderson

The massive build of plastic waste on an atoll as remote and minimally disturbed as Aldabra demonstrates how critical it is for people to minimise their impact on oceans and coastal areas. Please encourage people around you to ensure they dispose of all waste appropriately so that it does not enter waterways or drains and end up in the sea. Plastics are a serious problem as a result of their ever-increasing use and many are non-biodegradable so accumulate in the environment. Minimising use of plastic non-reusable products is the best way to reduce their impact on the environment.

help to come to planning a rat eradication on Aldabra.



A cat caught on the camera trap on Grande Terre © SIF

The second aim of this visit was to collect the camera traps that had been placed in the Cinq Cases area in July this year. Sixteen trail cameras were placed in a four-by-four grid 700 m apart. These cameras were set to trigger when cats moved in front of the lens. The cameras were set to only take pictures from dusk to dawn, when cats are generally more active, to maximise the battery life. The cameras were retrieved after being active for approximately 6 weeks.

An initial review of the results has revealed that 13 of the cameras took pictures of a cat on one or several occasions. One camera took no pictures (possible malfunction) and two cameras took 9000+ pictures each (with no cats recorded) in the first two days before their batteries died. The next step is to carefully go through these pictures, try to identify individual cats and use the results to estimate cat density in this area, in a process similar to that of the rat trapping. The image above shows that this will be a tricky task. The pictures are all black and white and many are blurred, making individual identification difficult, which is vital for a meaningful density calculation. Further in-depth analysis of these pictures is planned for the coming months.

How the EU project is increasing invasive species technical capacity in Seychelles



Jessica Moumou has progressed to project team leader © SIF

Being a country with a small population and constraints in technical capacity, it has been vital to SIF since before the EU project started that invasive species skills and knowledge are as much as possible transferred to local staff to ensure some expertise remains in Seychelles and enable us to continue and build upon the project's objectives after its completion. Training was deemed so critical that it was built into the project under a specific main objective ("Build local capacity amongst partners, associates and stakeholders in IAS management at the ecosystem level and in accordance with their needs"). Training, and capacity building in invasive species methods has therefore been a key component of the project, essential to every aspect of it and its success. The aim was to build a pool of local expertise trained in different IAS control techniques and enhance institutional capacity to identify and address IAS threats.

Throughout all of the project's main activities, local staff have received on-the-job training, learned specific skills and been exposed to new ways of thinking and working in conservation. Individual and group training programmes have equipped local staff with important practical skills, knowledge and experience that can be used elsewhere in Seychelles as well as further afield. The training has included a diverse range of skills from field techniques in invasive plant identification and removal methods, climbing, shooting, monitoring and surveys, trapping, handling, and humane culling, to office skills such as data management, reporting and presenting, and implementing biosecurity measures.

To commemorate the global event of Clean up the World Day on 19th - 21st September SIF held an event on 20th September to 'clean' the recently launched stewardship plot of invasive plant species, expanding the focus of this global environmental day to incorporate invasive species into the clean-up theme.

25 children from the Friends of the Vallée de Mai club and 10 children from the Scout Association of Praslin joined together with the Vallée de Mai staff for this activity at the Vallée de Mai. One group of children concentrated on the removal of invasive plants at the stewardship plot, such as vya tang and lerb lanmar, and then planting endemic palm seedlings and seeds such as lattanyen lat and palmiste in their place. In total around 150 endemic seedlings were planted. Building on the efforts of the launch of the stewardship plot in May this year (see May newsletter), and until the endemic plants establish, the invasive plants in the area require continual control. In addition not all of the seedlings planted at the launch event survived so more need to be planted to replace these. A second group collected rubbish along the roadside from the Vallée de Mai to Nouvelle Decouverte in Grande Anse. A total of 56 kg of non-biodegradable waste was collected! The Designated Minister for Social Affairs, Community Development and Sport, Minister Vincent Meriton, was also present at the event to show his support for this initiative. He joined the school children and planted an endemic palm in the stewardship plot.



Vallée de Mai staff at the motorcade raising awareness of invasive species © SIF

Vallée de Mai staff also participated in another community event that was held for Clean up the World day on Praslin. In the afternoon of 20th September several local organisations joined together to form a motorcade that toured the communities of Praslin. Some of the organisations concentrated on sensitizing the public on waste issues, whilst the Vallée de Mai staff used the opportunity to raise awareness on the impact of invasive plant species to the native biodiversity of Seychelles.

World Tourism Day celebrated



Visitors receiving their World Tourism Day badges © SIF

World Tourism day was celebrated at the Vallée de Mai on the 26th September with a variety of fun activities for the visitors that day. World Tourism Day is celebrated annually to highlight the social, cultural, political and economic value of tourism. This year World Tourism Day was held under the theme 'Tourism and local livelihoods', focusing on the ability of tourism to empower people and provide them with skills to achieve change in their local community.



The project has trained more than 35 local staff to a relatively high level (able to carry out IAS activities without supervision) particularly in invasive plant and invasive bird management. Specific skill training has been carried out in mist-netting, bird handling, measuring, sampling and culling (30+ staff), firearms safety and handling of air rifles (3 staff), tree-climbing (3 staff), mammal trapping (4 staff), and plant identification and invasive plant control (5+ staff). Many of these staff have worked on multiple IAS activities, after their interest was triggered by initial work, resulting in a well-rounded and flexible team able to adapt to different situations. Training of many staff on Assumption has, for example, been hugely beneficial for the Madagascar Fody eradication on Aldabra, and, when intensifying the Ring-necked Parakeet eradication on Mahé there has been less need to rely on costly consultants and external recruits. Most gratifyingly, four of the staff have progressed to lead specific project activities, with the three invasive bird eradications and the goat eradication all having been led by a local staff member for most of their duration. Terence Mahoune, Jessica Moumou, Julio Agricole and Edme Melton-Durup all deserve recognition for this.

Staff from the project partners, Environment Department, Seychelles National Parks Authority (SNPA), Seychelles Police, Island Conservation Society, and Seychelles People's Defence Force (SPDF) have also benefitted from additional training under the project. One SNPA staff member had a 6-month secondment to Aldabra to work on the invasive species activities and SPDF escorts have been accompanying the team and honing their shooting skills under the expert eye of professional avian hunters for many months.

It is inevitable that some skills will still require additional help (e.g. shooting of small birds with high-powered firearms, advanced statistical analysis and research skills). But the project training has been invaluable and we are already seeing indications that through this, SIF is in a much better position not only to identify and respond to invasive species problems, but, with increased awareness, to do more to prevent or limit the problems arising in the first place.

SIF on Twitter!



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

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



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

Vallée de Mai staff and visitors doing some of the traditional Seychelles dances © SIF

To mark the day the Vallée de Mai staff organised a variety of fun and interactive activities for their visitors. The first 10 visitors of the day were welcomed with a frangipani flower necklace and all other visitors to the Vallée de Mai received a 'Happy World Tourism Day' badge. Other activities were also available such as the ever-popular 'Guess the weight of the Coco de Mer nut' game, and a quiz. Several free guided tours of the forest were also conducted. The Vallée de Mai staff even put on a small fashion show in Creole dress to display some traditional uses of the Coco de Mer nut. Throughout the day they also taught traditional dances of Seychelles to the visitors and gave musical performances. A fun day and educational day was had by all!

World Tree planting day



The children with the kapisen seedlings they had planted © SIF

To commemorate World Tree Planting day a group of 10 Friends of the Vallée de Mai club members from the schools on Praslin participated in a tree planting activity. This activity was done in partnership with the Terrestrial Restoration Action Society of Seychelles (TRASS). A total of 72 kapisen seedlings were planted into temporary containers. The seedlings will then be planted later this year in December when the dry season has ended and the TRASS rehabilitation programme starts. TRASS is trying to restore many of the mountainous areas on Praslin that have been affected by fire. These seedlings will be planted at an area called "La Hauteur" on Praslin. A great effort by all of the kids, thank you!

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