



Editorial

On behalf of the Seychelles National Parks Authority, welcome to **Mediz** which provides information on work of the Authority, to protect both Marine and Terrestrial National Parks in Seychelles

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Curieuse Shark Tagging Project

The mangrove at Baie Laraie on Curieuse is one of the few places in Seychelles where mangroves are legally protected. Mangroves are unique habitats and are vulnerable to climate change and sea level rise. Sicklefin Lemon Sharks (*Negaprion acutidens*) are classified as near threatened on the IUCN list, and there is currently little data available about their population and behaviour within these habitats. Seychelles National Parks Authority (SNPA) and Global Vision International (GVI) have started a new project to tag juvenile Sicklefin Lemon shark which uses the old turtle pond and the mangrove as nursery grounds. The area, which is shallow, sheltered and home to a variety of other organisms, provide plenty of food on which this fish can feed, until it is big enough to venture out into the ocean. Tagging and monitoring of these sharks will provide information on the usage of the mangrove, its importance as a nursery and feeding ground for this species. The project will complement the mangrove monitoring and rehabilitation program on Curieuse, which aims at reducing the loss of mangrove.

The project which was made possible through funding and support from the British High Commission, will allow the two organizations to study the population dynamics of the shark. It is to be noted that even if the Sicklefin Lemon sharks have been living in the area for many years, the project is the first attempt to scientifically study their population. During the

tagging process, the sharks are caught and marked with a visible spaghetti tag at the base of the dorsal fin. A PIT tag is also inserted for reference. Record is kept of the weight, length, photo ID and sex of the shark. By early December 2014 a total of 88 sharks had been tagged and the project is ongoing.



Measuring and tagging of a pup

Seychelles National Parks Authority/ CIRAD 10,000 trees Project

A two year project that was implemented through collaborations between the Seychelles National Parks Authority (SNPA) and CIRAD in Reunion (France), as well as other local partners such as schools, Global Vision International (GVI), Youth groups and community members; has recently completed. The project aimed at planting 10,000 trees to help reduce the impacts of climate change, by

reducing the amount of carbon dioxide in the air. The project also helped conserve the floral diversity on Curieuse Island since all the plants planted are endemics.

During the last phase of the Project, the Minister for Environment, Climate change and Energy, Mr. Didier Dogley and CIRAD representative Mr. Gilles Mandret visited Curieuse where more than the targeted 10,000 endemic and indigenous plants had been planted. Minister Dogley, the Chief Executive Officer of SNPA Mr. Denis Matatiken and Mr. Mandret, each planted a “bois banane”- a rare endemic as part of their contribution towards the project.



Minister Didier Dogley and CIRAD representative, Mr. Gilles Mandret each planting a “Bois Banane”

Mapping the distribution of Sooglossid frogs



The Thomasset's frog- *Sooglossus thomasseti* is the largest of the Sooglossid frogs and is mostly nocturnal

Most of the work previously conducted on the Sooglossid frogs has focused on taxonomic and phylogenetic studies, with very few field studies investigating the distribution patterns, ecology and conservation requirements of this IUCN Red-listed frog family, endemic to the Seychelles granitic islands (*Edgar 2003, Doak 2007, Nussbaum and Wu 2007, and Gerlach 2011*). There has been no systemic monitoring of *Sooglossid* on Mahé and limited work has been conducted on Silhouette Island by Nature Protection Trust Seychelles, a local NGO. Our lack of knowledge is clearly hampering conservation planning efforts and merely having *Sooglossid* frogs present in protected areas, may not be enough to ensure the long-term survival of these unique species.

In this new initiative, led by a group of local and international conservation practitioners and researchers from various institutions; SNPA, Department of Environment, Seychelles Islands Foundation and Island Conservation Society (Seychelles) and DICE, Zoological Society London and

NHM (UK), the plan is to further understand the conservation needs of the Seychelles' EDGE

(Evolutionary Distinct and Globally Endangered) frog species, which will later be translated into conservation action.

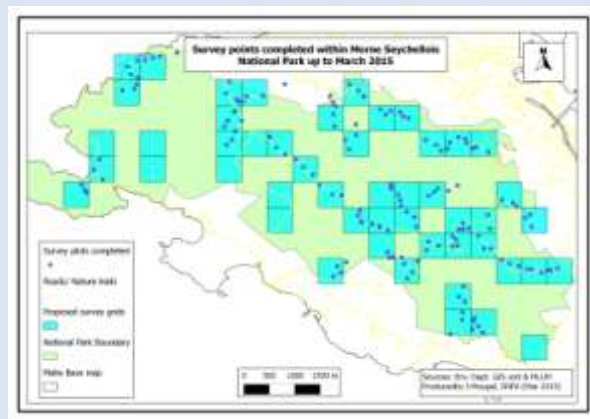
The aims of the project are:

- *To enhance our knowledge on the four known Sooglossid frogs' ecology, focusing on their distribution patterns and habitat requirements.*
- *To explore the current and potential threats posed by introduced species, diseases, climate change, and land use within protected areas.*
- *To develop a comprehensive conservation action plan that will mobilise more funding and action on the ground, across all protected areas.*

This project is being financed under a Darwin Initiative grant and carried out by all of the above named institutions. Within the framework of the project, the intention is to conduct extensive field surveys on the islands of Mahé, Silhouette and possibly Praslin, inside and outside of protected areas, and set up a long term monitoring programme within the Morne Seychellois National Park and other protected areas. Sample points' coordinates and other data on ecological variables will be collected, to assess the habitat preference of the 4 known *Sooglossid* frogs. The sample points' coordinates will be uploaded into QGIS and a series of presence/absence distribution maps for each frog species will be produced. The ecological/habitat data will be used to predict the extent of occurrence of each frog species on each island using GIS (habitat suitability modelling). Other analyses will be carried out to determine main predictors of each frog species presence/absence using Generalised linear mixed model (GLMMs).

The mapping activity started in August 2014 and so far has covered almost 80% of the proposed survey area/grid cells within the Morne Seychellois National Park (see map). All field work was conducted during day time and

there has been some success in detecting the presence of Gardiner's frog (*Sechellophryne gardineri*) and Seychelles frog (*Sooglossus sechellensis*) in most of the sample points (a circular plot with a 10m radius) visited. Field work was also conducted on Silhouette Island, mainly to search and identify potential habitats for the fourth frog species- Palm frog (*Sechellophryne pipilodryas*).



Projet REEFSAT

Le projet REEFSAT est un projet FEDER financé par l'Union Européenne (Programme Opérationnel Coopération Territoriale) et le Conseil Régional de La Réunion, porté par l'UMR ESPACE-DEV (Institut de Recherche pour le Développement, Université de La Réunion). Ce projet s'intègre dans la composante « Observatoire » du projet ISLANDS qui vise à la mise en place d'un Observatoire Régional des Récifs Coralliens de la Zone Sud-Ouest de l'Océan Indien. Au sein de cette composante, REEFSAT contribue à développer des indicateurs de suivi spatio-temporel des impacts des changements climatiques et anthropiques sur les littoraux coralliens et leur bassin versant sur les sites pilotes sélectionnés dans le cadre du projet ISLANDS. Cette sélection a été réalisée en partenariat avec les représentants nationaux GIZC - Gestion Intégrée des Zones Côtières - des îles participant au projet ISLANDS. Ces sites se répartissent sur diverses îles de l'Océan Indien à savoir Les Comores, Madagascar, Maurice, Les Seychelles et Zanzibar, auxquels s'ajoute La Réunion.

Le but du projet REEFSAT est de fournir une information géographique actualisée et harmonisée sur les changements des littoraux coralliens, y compris les bassins versants associés. Pour détecter ces changements environnementaux (urbanisation, déforestation, modification du trait de côte, etc.) le projet utilise l'imagerie satellitaire, qui de par sa répétitivité se révèle être un outil pertinent pour l'analyse multi-échelle des écosystèmes coralliens et des territoires littoraux. La station de réception d'image satellitaire SEAS-OI, basée à Saint-Pierre de La Réunion, permet d'acquérir une partie des images optique SPOT nécessaire à l'étude. Le traitement de ces images (ortho-rectification et analyse d'image) vise à en dériver des couches d'informations géographiques et des cartes qui seront fournis aux décideurs et aux gestionnaires des espaces concernés.

Aux Seychelles, les sites d'étude retenus sont les parcs marins de Baie Ternay et Port Launay et la réserve de coquillage d'Anse aux Pins à Mahé ainsi que la réserve de coquillage d'Anse Boudin à Praslin. Une mission de terrain de l'équipe du projet REEFSAT a été réalisée sur ces sites en partenariat avec le *Seychelles National Parks Authority* au cours des mois de mars et avril 2015. Des relevés de l'occupation du sol (forêt, mangrove, surfaces en eau, etc.) ont été acquis par GPS et serviront au traitement des images satellites. Ainsi, des données ont pu être acquises le long des côtes de Baie Ternay, Port Launay ne partie du Cap Matoopa, de Bel Ombre à Port Launay en passant par Mare aux Cochons ainsi que de Bel Ombre à Baie Ternay en passant par Anse Major. Dans le Sud-Est de Mahé les données ont pu être

récoltées sur la totalité d'Anse aux Pins. Enfin à Praslin les données récoltées se situent principalement sur Anse Possession, Anse Takamaka et Anse Boudin.



Prise de point GPS à Port Launay

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Crown of Thorns Starfish removal campaign

Since early 2014, Seychelles have been on high alert due to an outbreak of Crown of Thorns starfish (COTS), a venomous coral predator, that have been devouring the coral reefs of Seychelles. The infestation was first noticed on dive sites around the Beau Vallon area. Dr Udo Engelhardt, a reef expert from Australia visited Seychelles twice, once under an ETF funded project, to consult and advise on the best methods to use to limit the spread of the destructive starfish. During a series of training workshops held by Dr Engelhardt in April and December 2014, staffs from various organisations, including SNPA and Global Vision International (GVI), were trained to identify and remove this harmful predator. To date both organisations have been involved in a series of COTS removal initiatives in collaboration with various dive centres.



Collecting COTS into

A COTS eradication dive was conducted mid-March in the Baie Ternay Marine National Park, which saw the involvement of 8 divers from both organisations. A total of 139 COTS were removed, 97 from one reef and 39 from another. In late March, research staffs from SNPA visited coral garden, within the Curieuse MPA, after receiving reports of COTS presence there. However, even if it was evident that the COTS had been around, as they had left white scars from feeding on the corals, none were found. The largest number of COTS removed at any one site so far was in May by GVI and SNPA, with a total of 294 from Auberge reef. The removal campaign continues.

Reef assessment at Anse- Kerlan Praslin

Seychelles like many Small Island Developing States (SIDS) is vulnerable to the impacts of climate change. This is mainly due to our high dependence on the marine environment for our main economic activities; tourism and fisheries. The UNEP-DEVCO strategic co-corporation Agreement (SCA) project on coastal Ecosystem Based Adaptation (EBA) aims at strengthening the climate change resilience and adaptive capacity of SIDS.

As part of the project, staffs from the Research and Monitoring section within SNPA and a GIS officer from the Department of Environment visited Praslin to assess the status of the reef at Anse Kerlan.

A variety of survey techniques were used to establish the diversity of macro invertebrates and reef fish; abundance of coral recruits, percentage of coral cover and substrate composition of the sites. The area was also mapped to show both the biotic and abiotic composition of the reef.



The state of the reef at site 1

Educating the future custodians of our Marine National Parks

Ste Anne is the oldest Marine Park managed by the Seychelles National Parks Authority (SNPA). Situated just 5 minutes by boat from the Marine Charter in Victoria, it is a popular destination for both locals and tourists. Being the oldest marine park in the country it has contributed immensely to marine conservation over the years. To understand the importance of marine protected areas, a group of 29 students and their teachers from the Maritime Training Centre (MTC) visited the Ste Anne Marine Park. The visit was a collaboration between SNPA, Green Island Foundation (GIF), Maritime Training Centre, Mason's Travel and Ste Anne Resort. Whilst GIF concentrated on raising awareness on sharks, SNPA was focusing on the roles of marine protected areas in conservation.

The group of eager students boarded the MTC boat- Virgo, which took them to the Mason's travel's underwater viewer- Subsea, for a 20 minute excursion. After observing the reef ecosystem, the students disembarked on Ste Anne Island, where they were greeted by a senior member of management of the Resort,

followed by lunch. In the early afternoon, staffs from SNPA gave a brief history of the Marine Park, conservation work undertaken by SNPA and the importance of protected areas. This was followed by GIF sensitizing the students about the roles of sharks as an apex predator. The team from MTC had a lot to share as well and this was achieved through an interactive and interesting discussion, with everyone agreeing on the importance of conserving sharks. On the way back 3 Sicklefins were spotted near shore. For the students the visit reaffirmed their commitment towards marine conservation, a commitment which will surely enhance learning at the Training institution.



Observing sharks swimming near the shore



MTC students being briefed by SNPA staff



A view of the sea grass ecosystem from the boardwalk

Maintenance work at Mare Aux Cochons

The wetland at Mare Aux Cochons is a high altitude fresh water wetland, and is a designated Ramsar site. Over the years thousands of tourists and locals have made the trip to Mare aux Cochons, starting either at Port Launay or Le Niolle, so as to visit the fresh water ecosystem. Towards the end of March, the Forestry section and National Parks unit (the unit responsible for the maintenance of the trail networks) at SNPA were at Mare Aux Cochons to carry out intensive maintenance work around the wetland. The main tasks included the removal of the *pandanus sp.* leaves from the marsh and reparation of the boardwalks. The staffs also came across the *Sooglossid* frog (see article “*Mapping the Distribution of Sooglossid frogs*”). They also observed some fresh water fish, including the golden panchax (*Pachypanchax playfairii*) which is endemic to the Seychelles.



Removal of *Pandannus* leaves from the marsh

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