



# AZAFADY

people community environment

## Azafady Conservation Programme Annual Biodiversity Report (December. 2015)

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Since 2010 the Azafady Conservation Programme (ACP) has worked tirelessly within the highly fragmented and threatened littoral forests to collect the vital ecological data required to understand, document and conserve the vast biodiversity found there. It is our hope that by working alongside the community of Ste Luce, our research will be a voice for the endangered wildlife living in this area of outstanding natural beauty, helping to promote a prosperous and environmentally sustainable ecosystem. This report will summarise the progress of our individual research projects and give a flavour of what to expect from some of our upcoming announcements, work and publications.



### **Lemur Research:**

The study of lemurs has always been an integral part of the ACP. Our five year project into the number of remaining lemurs occupying the littoral forest fragments, around Sainte Luce was completed in November. With the data collected we can predict how long each Lemur population can persist. We have continued to create a seasonal image of the dietary requirements of collared lemurs alongside a three-year behavioural study. With this data set we are now in a position to propose effective conservation strategies and ensure that the remaining populations of wild collared lemurs in the area continue to persist. During 2015 we recorded canopy heights, and forest density along each transect. This allowed us to identify particularly important sites for each lemur species that would need to be conserved. It's hoped that the upcoming results of the ACP flagship Lemur project can influence the mining debate over the location and when QMM can conduct their work. 2015 continued with our feeding ecology of the red-collared brown lemur. The evidence collected will strengthen our case for future reintroduction of the collared lemur into forest fragments that no longer support this species. In the first half of 2015, research was carried out on the Southern Woolly lemur sleeping habits and effects of human disturbance. During the year we collected DNA samples of three nocturnal Mouse Lemurs to determine which species inhabits the forests of Sainte Luce. Analysis of the DNA is currently underway. Identifying a regional endemic in the forests of Sainte Luce would strengthen the case for the conservation of a greater area of forest. Our final research project on the lesser fat-tailed Dwarf Lemur, has been researching whether the availability of sleeping and dormancy sites will be a limiting factor to the abundance of this species in the future. Three nest boxes were set up, but to date no Fat-tails have occupied them.

## Herpetological Surveying

ACP has collected herpetological data since 2010 with the focus of obtaining a reliable and complete species inventory of reptiles and amphibians in Sainte Luce, to be used for future studies as a baseline for conservation and monitoring work. Following the successful application for a research permit allowing the collection of genetic material of species in the Sainte Luce area from the Malagasy government, ACP was able to move forward with work focused on the conclusive verification of the Reptile and Amphibian species present in Sainte Luce. Research by the Rio Tinto mining company subsidiary, QMM, in 2008, indicated exceptional levels of herpetological species richness. However during the course of ACPs research, after year round surveying, a number of discrepancies were identified between our work and the work of QMM. Using a range of techniques including visual encounter surveys (VES), pitfall trapping, community involvement and genetic tools, we now possess an extensive species inventory for each of our study fragments. 225 samples, each accompanied by a complete photographic record, set of morphometric data, GPS and habitat descriptions, were collected in total, and are currently undergoing analysis at the Centre for Integrative Biology (CIBIO). Once we have received the results from our collaborators at CIBIO we aim to publish a conclusive species inventory for the area, which will stand as a snapshot of the herpetological community of Sainte Luce in perpetuity. Results may also uncover some species that are as yet undetected in these isolated and remote forest patches. *Matoatoa* aff. *Spannringi* or 'ghost gecko', is an enigmatic and previously very poorly understood species. Only 1-2 observations of this Gecko around Sainte Luce were reported in the previous 5 years. Following community interviews, we managed to locate and examine a further 9 individuals, 5 of which were subject to genetic sampling. Project Phelsuma has grown from the initial behavior study to include wider assessments of population and habitat. Investigating distribution was the focus of the Phelsuma work in 2015. As previously thought, the most significant populations of *P.antonosy* were hosted in S6 / S7. Range of *P.antonosy* is limited by the presence of *Pandanus longistylus*, a plant this species depends upon. By using data from habitat plots and our more general herpetological surveys we have been able to determine the total area of suitable habitat within each fragment. Estimated to number 5,000-10,000 individuals, this species is now restricted to a few small areas in Sainte Luce and only a handful of other sites in the region. It is accepted that the populations of *P.antonosy* in Sainte Luce are of major conservation importance. Now with insights into distribution, habitat requirements and behavior, future conservation efforts will be better equipped to support wild populations and maintain prospects for potential captive breeding programs.





## Small Mammals

Between the months of April and October of 2015 we surveyed the small mammal communities of Sainte Luce for the first time. A combination of daily pitfall and Sherman trapping allowed us the unique opportunity to observe this secretive fauna. The project was part of a larger initiative to study the entire vertebrate fauna of the Sainte Luce area, and we uncovered some unexpected findings. Previously, members of the local community who regularly hunt tenrec for meat, and also our local guides, believed that only two species of tenrec existed in the forests of Sainte Luce. The first two mammals we observed came as a surprise with a new tenrec species, the Hova Mole Tenrec (*Oryzorictes hova*) and the invasive Asian Musk Shrew (*Suncus murinus*). In total we found the communities of Sainte Luce to include 3 species of tenrec (*Tenrec ecaudatus*, *Setifer setosus* and *Oryzorictes hova*), 2 species of rodent (*Elirurus webbi* and *Rattus rattus*) and a solitary species of invasive insectivore (*Suncus murinus*). Finally, in the last few weeks of the project, we also captured a single primate species – the Mouse Lemur whose identity is currently under investigation.

## Birds

A previous study conducted in 2008 found that 73 species use the forest and surrounding areas in Sainte Luce. However over a period of 12 months we were recorded 68 species of bird with a further 4 species observed but needing further confirmation. Interestingly our inventory varies significantly from the older species list, with potentially 6 new records for the area. This could put the total number of bird species using the forests and other habitats to as many as 83. From our studies it does seem that bird diversity is greatest in forests that have experienced lower levels of disturbance and are more isolated. This suggests that the bird community could act as an indicator of forest degradation and the effects of human disturbance. However further studies need to be conducted to confirm this, as we have not spent an equal amount of time in each fragment.

## Butterflies

The assemblage of butterflies in Sainte Luce have been desperately under recorded, and represent a significant gap in known species diversity of remaining eastern littoral forest fragments. A partnership with Cambridge University has been initiated and we are now assembling a species inventory, using equipment generously donated by IDEAWild, with over 50 species being identified so far. The littoral forests show a restricted abundance of butterfly individuals similar to the pattern seen in the local avifauna. Already we have



uncovered a series of interesting ecological findings including a 600km range extension, an unknown *Nymphalidae* caterpillar, and a likely new species of *Arctiidae* moth.



## Fruit Bats

The Madagascan Flying Fox (*Pteropus rufus*) has become a major priority of Azafady to protect and conserve. They play a significant role in pollination and seed dispersal, in the Sainte Luce area. 2015 saw ACP visit a total of 11 bat colonies in the Anosy region, yet the expedition revealed that only two of the regions roost sites had any form of protection. There is a small and highly threatened roost situated in forest fragment S6, a forest currently being logged and under the shadow of mining operations. Azafady recently secured funding for a conservation project, Project Rufus, with a priority to protect the local roost by establishing a no take zone around the roost site. The project will also propose a change in the local *dina* (community law) to prohibit the hunting of bats for bush meat. ACP intends to begin taking the first steps towards implementing our proposal in 2016.

## Environmental Education and Conservation Club

Over the past year we have successfully expanded our community environmental education programme, Club Atsatsaky, to include the hamlet of Manafiafy. We have continued to run English language classes for both beginners and advanced students each Saturday in Ambandrika and alternate our Conservation Club (Club Atsatsaky) between both schools on Wednesday afternoons and Saturdays mornings respectively. The popularity of our sessions in both communities has been extraordinary and continues to draw large attendances. Club Atsatsaky has focused on topics specifically relevant to the community, and has included lessons on natural resources, environmental responsibility, weather, nutrition, pollination and reforestation. Each lesson was planned and delivered by Azafady staff and volunteers and was designed for maximal student interaction and participation. Our annual celebration for World Environment Day 2015 was the highlight of the year and was enjoyed by the entire community. Held in June, the event centred on conserving and protecting the local Flying Fox roost (*Pteropus rufus*), and was attended by several thousand local community members. The day began with school groups from all three hamlets, including students from Club Atsatsaky planting 2,000 trees to celebrate the Malagasy Year of Reforestation. This triggered a large parade and music that led everybody down to the main event site, where educational stalls, games and activities were held. The event drew the attention of regional media and delegates and dignitaries from all over the Anosy region, including representatives from the Ministry of Environment, WWF, QMM, the Mayor of Mahatalaky and the Chef Fokontany (Sainte Luce).



## Thank you everyone for another successful and wonderful year!

Although the work of ACP has been varied over the past five years, and we have embarked on the study of many seemingly disparate taxonomic groups, it is important to remember that all of our work is focused on a single, achievable goal: to protect the forests and wildlife communities of Sainte Luce, whilst supporting the human populace to develop in an environmentally sustainable manner. Over the coming year we hope to continue with the successes of 2015 and break new ground with exciting new practical conservation initiatives, research projects and publications. Thank you all for your dedication, support and hard work throughout 2015, and we hope that you can join us again in the incredible forests of Sainte Luce soon!

