



Annual Report

On the activities of the Mauritian Wildlife Foundation

Year 2022



Alliance for
Zero Extinction



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The Mauritian Wildlife Foundation

The Mauritian Wildlife Foundation (MWF) is a Registered Charity established in 1984. MWF works in close cooperation with the Government of Mauritius and the Rodrigues Regional Assembly, formalized in separate memorandums of understanding. The headquarters is located in Vacoas, Mauritius and the Rodrigues branch is based in Solitude. MWF is the largest Mauritian NGO to be exclusively concerned with the conservation of terrestrial endemic species and their habitats, and in Rodrigues has a specialization in habitat restoration and education. The principal objective of the organization is to save threatened native and endemic species from extinction.

Achievements

MWF's best known achievement is the saving of the Mauritius Kestrel. The MWF, has in recent years, brought the Pink Pigeon, the Echo Parakeet and the Mauritius Fody back from the brink of extinction. MWF's work in the area of captive-breeding and hands-on wild management of endemic animals is of internationally high repute. Our expertise is also being used in Rodrigues to address problems caused by degradation of habitat. Here we are propagating native plants in nurseries and planting them out to restore vegetation communities. The Foundation also works actively to restore offshore islands, by removing exotic vertebrates and plants and by restoring vegetation and vertebrate communities. The MWF is currently working on several islands including Ile aux Aigrettes, Round Island, Ile Cocos and Ile aux Sables. All of these are high profile projects of national and global biological significance. The MWF believes that the work it is doing benefits the Mauritian nation both for the present and future generations. Most of MWF's projects are of international importance in the conservation of biological diversity and are therefore placing Mauritius at the forefront of the Conservation world giving a high profile to any projects, which need funding. The MWF is raising the profile of conservation among tourists through the Eco-tourism activities conducted on Ile aux Aigrettes, Mauritius and Grande Montagne, Rodrigues. The MWF promotes local capacity building and provides employment through its activities. The Mauritian Wildlife Foundation wishes to remain a strong, vibrant and innovative organisation.

MWF's Missions

To save threatened Mauritian species through the restoration of entire ecosystems.

- To seek new information through field research, data management, captive studies and scientific collaboration for direct application to restoration methods and management.
- To share knowledge gained through restoration programmes with fellow Mauritian and international conservationists.
- To share the joys and benefits of native wilderness and wildlife with the Mauritian people.
- To secure the future of Mauritian species through income generation and sound management of human, fiscal and capital resources.

Organisational Structure

MWF is governed by a Council of 14 members, made up of prominent Mauritians interested in conservation, representatives from the Mauritian Government's National Parks & Conservation Service, the Durrell Wildlife Conservation Trust, North of England Zoological Society (Chester Zoo) and other international partners. MWF employs around 90 Mauritian and Rodriguan staff at all levels of responsibility, and up to 5 expatriate staff. Their work is supported by up to 25 Mauritian, Rodriguan and expatriate self-funded volunteers. MWF and its Council are also advised by a number of scientific associates from organisations that fund or support it, namely Durrell Wildlife Conservation Trust, Botanical Gardens Conservation International, Conservatoire Botanique National de Brest (France), Wildlife Vets International, North of England Zoological Society, the Institute of Zoology (UK) and various universities.

Significant Events

COVID-19 pandemic: The worldwide COVID-19 pandemic had a reduced impact on MWF's operations in 2022. In Mauritius there were restrictions on gatherings limiting the number to 50 up to 30th June 2022. We avoided large groups which restricted some training activities. The constraints for overseas staff had been lifted in 2021. Rodrigues having remained COVID-19 free in the population for two years, had an outbreak identified on the 26th of January 2022, which resulted in a closure of international borders and Mauritius / Rodrigues travel restrictions until March 2022. Commercial flights without compulsory quarantine resumed on the 4th of March 2022.

Tri-partite Memorandum of Understanding was signed between the Ministry of Agro-Industry and Food Security, Durrell Conservation Training and Mauritian Wildlife Foundation on 30th June 2022 to further training in conservation locally and internationally.

Death of Mr Colin Arthur Hare, OBE.: (1931-2022), Co-founder and first Chairman of the Mauritian Wildlife Foundation and one of the main architects of the Mauritian Wildlife Foundation. It is said that Gerald Durrell asked Colin Hare if he would found the Mauritian Wildlife Appeal Fund (to be renamed, Mauritian Wildlife Foundation in 1996) and become its Chairman. He worked closely with several locally based scientists (Carl Jones, Wendy Strahm, Richard Lewis), international organisations (e.g. Jersey Wildlife Preservation Trust (now Jersey Zoo, UK), International Council for Bird Preservation (now BirdLife International), Peregrine Fund (US), Royal Botanical Gardens (Kew, UK), Fauna and Flora International), prominent local businessmen and professionals, and the Government of Mauritius' Conservator of Forest. The organization was registered with the Registrar of Association, starting with a handful of key projects (e.g. Round Island, Mauritius Kestrel, Rare Plants). Mr Hare provided an office and secretarial support for the burgeoning Mauritian Wildlife Foundation, set up a board, helped to fundraise through his contacts, and connect with businesses and government officials, develop projects and recruit staff, amongst others. Mr Hare remained Chairman until 2003, by which time, MWF had become a solid local organization, with a global reach. The vision of the organization has changed little since its creation: 'Saving endangered wildlife from extinction'. MWF was recently regarded as one of the most successful conservation NGO's worldwide and referred as one of four case examples.

BirdLife International Partnership Award: was awarded to the Mauritian Wildlife Foundation at the BirdLife International World Congress held in Cambridge, UK from 13th - 15th September 2022. The award recognised the contributions of Prof. Carl Jones, Scientific Director and Dr Vikash Tatayah, Conservation Director played in MWF's achievements in the past 10 years, including: saving five bird species from extinction (Mauritius Kestrel, Pink Pigeon, Echo Parakeet, Rodrigues Fody and Rodrigues Warbler), and reversing the trend towards extinction of two other species (Mauritius Fody, Mauritius Olive White-eye); bold innovations in restoring species that have had an influence globally;

training over 2,000 conservationists from over 40 countries in field conservation over the past decades; nominating the Mauritius Kestrel as the National Bird of the Republic of Mauritius, which was officially recognised on 12th March 2022.

La Faune et La Flore de Rodrigues: The 2nd edition of this field guide was published in 2022 after an extensive revision adding 16 additional pages, bringing the grand total to 138 pages. The book covers 37 animals and 81 plants and has more than 200 illustrative pictures.

Ecotours: in Mauritius and Rodrigues both recovered in 2022 with the return of overseas visitors to both islands.

Pink Pigeon: is doing well reaching a population of 550 birds which is close to our established target of 600 birds.

Mauritius Fruit Bat: there was no cull in 2022 (none in 2021 also), a cause for celebration. MWF initiated the Human Bat Conflict Working Group, a multi stakeholder group with an independent chairperson, to continue to address the Human Wildlife Conflict between humans and the fruit bat.

BirdLife Global Council: Dr Vikash Tatayah, Conservation Director, has been elected to serve as member of the Africa Regional Council and the Global Council. An honour for him and for MWF.

BIRDS

Mauritius Kestrel



Background

The Mauritius Kestrel (*Falco punctatus*) is unique to Mauritius and is one of the nine endemic bird species still left on the island. The species was saved in-extremis with an increase from just four known birds in 1974, including a single breeding female, to a peak of about 600 individuals. It has become a world conservation icon as it is recognised as the most successful recovery programme in the world of an animal species and the programme remains MWF's proudest achievement.

However, because of the destruction and degradation of the Mauritian native forests, the kestrels are now found only on the eastern and western parts of the island where they continue to face the effects of habitat degradation, predators and competitors. The eastern population (Bambou Mountain Range) has been monitored constantly since the re-introduction of birds from 1988 to 1993 and remained relatively stable at approximately 50 breeding pairs. Monitoring ceased for the western populations ('Gorges' and Bel Ombre) in 2003 due to the success of the recovery project, however it had to be reinstated in 2008 as an island wide survey in 2007 found a drastic reduction in kestrel numbers from the estimated 600 to around 325 birds. The findings sadly confirmed the disappearance of introduced kestrels from the Moka Mountain Range.

The current monitoring has allowed the identification of the management actions required to reverse the downward trend in numbers and secure the population. Measures include placing more nest boxes in suitable habitats to increase the number of breeding pairs, studying the genetics of the populations to identify if certain bird's genes need to be introduced into the other subpopulation and hand-rear and release birds to boost population numbers, to reintroduce birds into new nesting areas and to establish a habit for nest box use for the kestrels in the western population. For reinforcement release, the field team harvests eggs and/or chicks to be hand-reared at the Gerald Durrell Endemic Wildlife Sanctuary (GDEWS) in Black River. They are then moved to nest boxes in the identified release sites for a period of adaptation, they are fed daily until they become independent and can feed themselves at around 100 days old.

The kestrel releases are being done for several reasons; to provide a boost to the declining subpopulation in the Black River Gorges National Park, to bring missing genetic diversity back from the eastern population, and to establish an artificial nest box network in the National Park. The majority of Mauritius Kestrel in this area breed in cliff cavities. These cavities are of varying quality (e.g., some

flood, some are shallow, some are at high risk from predators such as rats), and as a result Mauritius Kestrels tend to produce more eggs in nest boxes.

Releases have been done in Bel Ombre (one of the western populations) in the southwest of the Black River Gorges National Park from 2016 to 2018; Five birds were released in 2016, 21 were released in 2017 and 21 in 2018.

In the 2019/20 breeding season, 14 kestrels were released in to the 'Gorges' (one of the western populations) in the North of the National Park. No releases were done in 2020/21 due to the COVID-19 pandemic. This gave the eastern population a break after four continuous years of harvesting. Early clutches had been harvested in the hope that they would be replaced by second clutches. Unfortunately, even though second clutches were being produced, most of them were not successful.

In the 2021/22 breeding season, the hand-rearing and release of Kestrels continued in the 'Gorges' in the North of the National Park, 16 birds were released and this breeding season (2022/23), six hand-reared kestrels were released.

The latest scientific findings illustrate that there is no room for complacency, and we still need to look after the Mauritius Kestrels.

The Mauritius Kestrel was declared 'the National Bird of Mauritius' on the 30th anniversary of the accession of Mauritius to the status of Republic on 12th March 2022.

Main Actions

- Population monitoring in the western and eastern populations was carried out as usual with an estimated population of around 325-350 birds.
- The third year of releases was done in the 'Gorges' subpopulation this breeding season (2022/23). 18 eggs were harvested from 9 first clutches in the Bambou Mountain Range, and five eggs were harvested from two cliff cavities (breeding attempts at these site usually fail) in the west coast, in the Gorges. A different approach was taken for the harvest of eggs from the eastern population last season (2021/22), and this approach was used again this season (2022/23). All eggs in the clutch were candled, if there were multiple viable fertile eggs in the clutch, then one or two eggs were collected, and one or two were left in the nest. This was done so that the breeding pair could produce fledglings that would contribute to the eastern subpopulation, while the eggs collected contributed to the release to the Black River Gorges National Park. The eggs that were removed from the nest were replaced with "dummy eggs" (fake eggs) so that the breeding female was not disturbed. For the clutches collected from the 'Gorges', all eggs were harvested since these clutches would almost always fail or disappear in the wild. In total, from 23 eggs harvested, only six chicks survived hand-rearing at GDEWS to be released in the wild. Hand-rearing success was unusually low in 2022/23 due to multiple factors. In past seasons good hand-rearing success has been achieved, the factors that impacted the hand-rearing this season are being studied carefully so that the necessary adjustment can be made for future hand-rearing.
- One of the 2019/20 release nest boxes was used for the first time in the 2021/22 breeding season and was used again this season 2022/23. The male at the nest box was identified as a bird released in the 2019/20 breeding season, who had paired with an un-ringed female (i.e., a bird from the 'Gorges' subpopulation). Unfortunately, this pair failed again this breeding season (2022/23), this was still a particularly encouraging development. This first breeding attempt found in a nest box in the region will hopefully be the first of many.

Pink Pigeon



Background

The Pink Pigeon (*Nesoenas mayeri*) is one of the world's rarest pigeons. Only nine wild birds were known at its lowest point in 1990. In the last 25-30 years, an integrated management approach of captive breeding, releases, habitat restoration and predator control has seen the population recover to over 500 wild birds. Whilst the conservation work to date has saved the species from imminent extinction, MWF cannot relax in its efforts and reduce the level of support. The original causes of the species' rarity, mainly restricted and degrading native habitat and introduced predators, still prevail and unless we continue to manage the effects of these limiting factors, the Pink Pigeon may face the prospect of extinction once again. There is one subpopulation of Pink Pigeons established on the offshore island of Ile aux Aigrettes and six more in the Black River Gorges National Park. Two of these sites, Pétrin and the Lower Black River Gorges, are open to the public and the birds can easily be seen. In 2017, 30 Pink Pigeons were released in Ferney Valley. In 2018, 50 Pink Pigeons were released in Ebony Forest. These releases have increased the area occupied by Pink Pigeons and should help increase the population size to over 600 birds, a figure believed to be the minimum viable population size for an avian species.

To provide birds for the additional subpopulations and to provide genetic diversity to the current populations, a captive population of Pink Pigeons has been set up at the Gerald Durrell Wildlife Endemic Sanctuary. The offspring of these birds will be released into the wild.

A study supported by our University partners has identified that birds from European & USA zoos have genes that are missing or under-represented in the wild birds in Mauritius. These genes, reintroduced to the birds in Mauritius, should strengthen resilience, e.g. in fighting disease. Birds will be imported and be bred to provide fledglings to be released into all the subpopulations to increase the genetic diversity of the current population. In September 2019, three male Pink Pigeons were successfully repatriated to Mauritius from Jersey Zoo (Durrell).

The genetic management of the Pink Pigeon is an indication of success and maturity of the project, and very few conservation initiatives worldwide are at this stage of management.

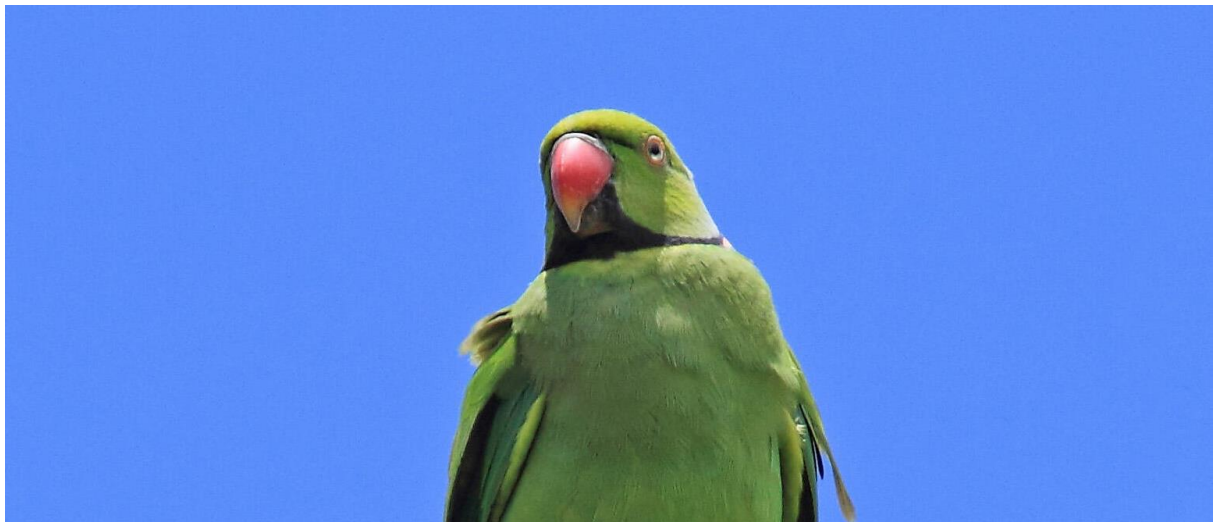
A number of birds were killed or injured due to collision with vehicles in the Petrin-Grand Bassin region. We are working with the relevant authorities to try to resolve this problem.

The conservation work done to date has been very successful, leading to the Pink Pigeon being downlisted from Endangered to Vulnerable in November 2018.

Main Actions

- Populations were managed by the Mauritian Wildlife Foundation at eight sites with an estimated possible population of some 576 birds by December 2022.
- 76 Pink Pigeons were ringed in 2022.
- The captive Pink Pigeons were paired for captive breeding this year after a pause during the COVID-19 pandemic. Durrell sent a staff to oversee the action and train the Mauritian staff. The output from pairings was low and one bird survived to fledge. Female Pink Pigeons have a short breeding life and this may have been a cause of many less eggs so it is planned to breed from younger females in 2023.
- Hand-rearing Pink Pigeons was done from April to September 2022, so that hand-rearing efforts could be concentrated on the Mauritius Kestrel from October to December.

Echo Parakeet



Background

The Echo Parakeet (*Alexandrinus (Psittacula) eques*) is the last endemic parrot of the Mascarenes and was close to extinction as the wild population numbers were estimated at around 20 birds in the mid-1970s. The Echo Parakeet is closely associated with good quality native forest, and the decline of the bird has been due to habitat loss and degradation, which cause a shortage of food and tree cavities for nesting. Predators and competitor species and disease severely impact the survival of Echo Parakeets.

The population today is over 700 birds thanks to a conservation programme that has included rescue of eggs and chicks in the wild, captive breeding and rearing, releases into the wild, pest and disease control, supplementary feeding nest site provision and habitat restoration. The Echo Parakeet is arguably the most successful parrot restoration programme and is a model for the rescue of other parrots worldwide. The immediate challenge is overcoming Psittacene Beak and Feather Disease

(Pbfd), a deadly viral disease, whilst long term, it is genetic management of the population to promote genetic diversity and large-scale habitat restoration that will provide for natural food and nest sites. Despite the disease outbreak in 2005, the population continued to grow, which indicates that the current management is adequate.

However, the total population was found in the Black River Gorges National Park, and in order to further secure the Echo Parakeet from a localised event which could severely impact on the population, a suitable area with good quality native forest was identified in the Bambou Mountain Range. Translocations took place from 2015 to 2017 with 73 birds released. In 2018 and 2019 translocations to a new area of suitable forest in the southwest, Ebony Forest in Chamarel, were carried out by MWF with 50 birds released. In 2019 Ebony Forest staff took charge of all conservation monitoring and management within Ebony Forest. In the 2021/22 breeding season, 10 Echo Parakeet chicks were translocated and released in Ebony Forest. In 2022/23, 21 Echo Parakeet chicks from nest boxes in the Gorges were translocated, one chick died in transit, and one chick died in the release aviary. Overall, 19 Echo Parakeets were released by Ebony Forest in 2022/23.

Monitoring of the Echo Parakeet population is carried out to understand population dynamics and the provision of supplementary food will support general bird fitness and breeding success. Our university partners have undertaken many studies which look at Pbfd, supplementary feeding, genetics, and population dynamics, all of which will inform conservation actions in the future.

The current PhD studies are being carried out by two students from DICE (University of Kent), Rebecca Louch and Ranginee Sankhom (aka Pam). Rebecca's PhD project (funded by the UK's NERC Research Council) and begun in 2020 will examine the 'Effects of supplementary feeding on reproductive success of Echo Parakeets'; Pam's PhD project (funded by a PhD scholarship from the Royal Thai Government) will examine 'Conservation genomics and disease of Echo Parakeets'.

Main Actions

- Monitoring and supporting the population in the Black River Gorges National Park was ongoing with an estimated population of over 700 birds.
- Biological samples were collected to support the two ongoing PhD studies.
- The Bambou Mountain Range population is not monitored but observations of birds are noted to indicate presence. Echo Parakeets are seen regularly at the 'Ferney gardens' near the visitors' centre and also in Domaine de l'Etoile and in Vallée de l'Est.
- The feasibility study for the reintroduction of the Echo Parakeet to La Réunion was completed in 2022.

Mauritius Olive White Eye



Background

The Mauritius Olive White-eye (*Zosterops chloronothos*) is thought to be the rarest and most threatened of the endemic Mauritian birds. The number of Olive White-eyes has fallen drastically since the early 1970s, coinciding with the last large-scale forest clearance on Mauritius. In 2005 conservation action was considered essential to decrease the risk of extinction of this attractive small bird whose habitat had dwindled to a small known area in the Black River Gorges National Park. The aim is to save the Olive White-eye through protecting them where they occur on the mainland, maintaining a population of birds on the predator free island of Ile aux Aigrettes and releasing them in to areas of suitable habitat on the mainland where key threats have been addressed. In Combo (Black River Gorges National Park) we identify nests and monitor nesting success to increase our knowledge of threats to the species.

From 2005 to 2009 eggs and chicks were rescued from failing wild nests, and brought to the GDEWS to incubate the eggs, hand rear chicks and then release the fledglings onto Ile aux Aigrettes. The population on the island is now 60-70 birds and may be approaching carrying capacity. A team of biologists monitor the progress of the birds on the island to understand the species biology and habitat requirements. It is now possible for the public to have a glimpse of the Olive White-eye, one of the most threatened birds in the world, on a visit to Ile aux Aigrettes.

Research has identified that rats are a major limiting factor for the Olive White-eye populations on the mainland. Small-scale rat management has proven to be effective at reducing this threat, but there is a need for large-scale rat management in the form of a mainland island to ensure Olive White-eye population long-term persistence. The 5.6 ha 'mainland island' in Brise Fer was established in November 2018 and expanded to 9.75 ha in February 2021. If rat abundance is successfully controlled in this area of high-quality native forest this will provide a future reintroduction release site that will allow us to create more Olive White-eye subpopulations, and so further protect this Olive White-eye from the risk of extinction. In the future, we foresee that more 'mainland islands' will be created in areas of suitable forest within their former range on the mainland such as Combo and Bel Ombre, but also potentially Flat Island.

Main Actions

- The population on Ile aux Aigrettes was monitored intensively to identify the maximum number of individuals and detect breeding behaviour and activity with an estimated population of around 60 birds.
- The population on Ile aux Aigrettes is supported by supplemental feeding which is very labour intensive. In the previous breeding season (2021/22) food provision was reduced to once every other day for all 22 feeding stations. This feeding regime continued this season (2022/23).
- The 9.75 ha 'mainland island' in Brise Fer continued to show lower rat abundance than a control area of the same size and is an option in the future for a translocation of the Olive White-eye.
- Discussions were initiated to work on a management plan for the species. A workshop involving the Mauritian Wildlife Foundation, National Parks and Conservation Service and Ebony Forest is planned for April 2023.

Mauritius Fody



Background

The Mauritius Fody (*Foudia rubra*) is a small charismatic weaverbird endemic to Mauritius. The number of fodies has fallen drastically since the early 1970s, coinciding with the last large-scale forest clearance on Mauritius. In 2002 conservation action was considered essential to decrease the risk of extinction of this attractive small bird whose habitat had dwindled to a small known area in the Black River Gorges National Park.

We aim to save the Mauritius Fody through protecting them where they occur on the mainland, maintaining a population of birds on the predator free island of Ile aux Aigrettes and releasing them in to areas of suitable habitat on the mainland where key threats have been addressed. Our biologists were based in Pigeon Wood (Black River Gorges National Park) to identify nests and protect them from predators, as well as monitor nesting success to increase our knowledge of threats to the species. Having identified predators as the main threat to the species, concrete action was undertaken from 2002.

From 2002 to 2006 MWF rescued eggs and chicks from failing wild nests to incubate eggs, hand raise chicks and release fledglings onto Ile aux Aigrettes. The population on Ile aux Aigrettes reached a high of over 400 around 2018, at which time it was thought carrying capacity had been met, however, the population is now around 300. This could be due to several factors which are being examined, but Asian High Crows are a significant threat.

A team of biologists monitor the progress of the birds on the island to understand the species biology and habitat requirements. It is now highly likely for the public to have a glimpse of the Mauritius Fody on a visit to Ile aux Aigrettes.

Main Actions

- The population on Ile aux Aigrettes is monitored and supported by supplemental feeding with an estimated population of 300.
- The number of Asian House Crows seen on the island has been increasing over the last few years. The crows are believed to be having a negative impact on the Mauritius Fody population. Several predated nests have been found. These nests are believed to have been destroyed by House Crows as they have been pulled apart.
- National Parks and Conservation Service poisoned crows on mainland Mauritius opposite Ile aux Aigrettes, which has helped to reduce the number of birds visiting the islet.
- The 9.75 ha mainland island in Brise Fer continued to show lower rat abundance than a control area of the same size and is an option in the future for a translocation of the Mauritius Fody.

Mauritius Cuckoo-Shrike



Background

The three-year island wide survey of Passerines carried out from September 2011 to March 2014 indicated the decline of the Mauritius Cuckoo-shrike (*Coracina typica*) both in distribution and total population size. Preliminary observations indicate the decline is caused by predation of eggs and chicks. Urgent action is required to address this decline. A study has identified that there is habitat in the Ferney Valley for the Mauritius Cuckoo-shrike, which is currently absent there. The Mauritius Cuckoo-shrike is a declining endemic passerine on Mauritius that was once found in the valley, but it was probably extirpated in the 1950's by organochloride pesticides no longer in use.

To re-introduce the cuckoo-shrikes, hand-reared birds were identified as the best method as it increases the probability of birds fledging. From 2014 a field team was based in and around the Brise Fer area in

the Black River Gorges National Park to locate nests and clutches of eggs and chicks for harvesting. The eggs and chicks were hand reared at the Gerald Durrell Endemic Wildlife Sanctuary (GDEWS) in Black River under the supervision of Chester Zoo (UK) staff, and then moved to the Ferney Valley for a period of adaptation in an aviary before being released into the forest.

In the 2015/16 season, two birds were released in Ferney Valley, nine birds in the 2016/17 season and in the 2017/18 season, five birds were released. In recent years, most observations in Ferney have been of a single male Mauritius Cuckoo-shrike within the fenced plot; it was seen on multiple occasions between October and December 2019, and in September 2020. In November 2021 a cuckoo-shrike was heard in the forest below 'Ferney Cliff' (a Mauritius Kestrel breeding site) in the forest at the top of the Ferney fenced plot. Cuckoo-shrike playbacks were played, and the male responded by territorial calling, and coming closer to the source of the playback. It was identified as the same individual seen in 2019 and 2020 and was aggressively responding to the playback, flying back and forth calling, and eventually coming within a few meters of the playback.

These releases in Ferney constitute the first time a cuckoo-shrike had been hand-reared and released and we encountered several difficulties in doing so successfully. The project was put on hold and methodologies reviewed and researched. The resumption of the project will depend on resources being available both within MWF and from our international partners.

Monitoring of the Mauritius Cuckoo-shrike in the Brise Fer area continued after the Ferney releases. There were no field staff assigned to monitoring in the 2020/21 breeding season; in the 2021/22 breeding season, one staff was recruited to the project. The main aim of the fieldwork was to find nests and to ring the maximum number of chicks, with a focus being on the mainland island and the control area so that it would be possible to determine whether intensive rat control had any beneficial effect on breeding productivity. Two nests were located, only one of which successfully reached chick stage. Two chicks hatched successfully in this nest, but when the nest was first accessed it was discovered that the chicks were already too old for ringing (i.e., there would be a possibility of force fledging the chicks). The second nest found is believed to have failed at egg stage. Overall, in the Brise Fer area, approximately seven fledglings are believed to have fledged last season.

Main Actions

- There were no field staff assigned to this project this breeding season (2022/23).
- Observations of the Mauritius Cuckoo-shrike in Brise Fer and Ferney are recorded (see also section on 'Audiomoths' below).

Mainland Island at Brise Fer



Background

Research has identified that rats are a major limiting factor for the critically endangered Mauritius Olive White-eye (*Zosterops chloronothos*). Small-scale rat management has proven to be effective at reducing this threat, but there is a need for large-scale rat management in the form of a 'mainland island' to ensure Olive White-eye population long-term persistence.

A 'Mainland Island' is an area on the mainland where predators are excluded in such a way that it benefits local native species. Brise Fer, located in the North of the Black River Gorges National Park, was chosen as the location for the first mainland island as it is an Important Bird Area, is closed to the public, is easily accessible and contains suitable habitat to support a reintroduction release of Olive White-eyes. The benefits of a mainland island for other species would also be significant as rats impact negatively on endangered birds, reptiles, plants and invertebrates.

The first step in the process of developing a mainland island was determining the most effective and efficient rat control method. Field experiments carried out in Brise Fer between August 2016 and August 2017 determined that Goodnature® A24 self-resetting traps (referred to as Goodnature traps), arranged in a 25 x 25 m grid formation over 0.56 ha, was the best method for controlling rats when compared to poisoning and snap traps.

A second experiment was initiated in August 2017 to determine whether the Goodnature traps could work as well over a larger area with bigger intervals between the traps (50 x 50 m grid over 2.25 ha). The second experiment ended in June 2018, and the results showed that the trap arrangement was not sufficient to keep rat abundance significantly lower than in a control grid where no rat reduction measures were taken.

The third experiment was established in November 2018. Goodnature traps were arranged in a 25 x 25 m grid formation (due to the findings of the second experiment) over an area of 5.6 ha in Brise Fer. Additional predator trapping measures were included in the form of 31 box traps (arranged in a 50 x 50 m grid formation) and five large metal box traps in order to control other invasive predator species (namely feral cats, *Felis catus*, and mongooses, *Urva (Herpestes) auropunctatus*).

The box traps, when used, are checked every morning after being set and recorded for any activity. The use of predator box traps was discontinued in October 2020, this was done in order to determine whether the Goodnature traps functioning alone were sufficient to control rat abundance. Predator box traps are labour intensive, so if the Goodnature traps are effective when functioning alone as the only rat control measure, the removal of predator box traps will significantly reduce labour, and also will reduce the operational cost of a large-scale mainland island.

To obtain a predator index and show its variation over time, 30 sand pits and 30 wax and chocolate chew cubes were placed randomly on the grid points in the mainland island grid every week for 24 hrs on fixed days.

A control area of the same size was also identified, 100 m away from the mainland island grid, consisting of 30 points of sandpits and 30 of chew cubes, as the predator index. In the control there was no trapping or Goodnature traps. The sand pits and chew blocks had a spacing of 25 m between them. Every week, the sand pits are set and chew cubes are placed on the grid points and checked after 24 hrs on fixed days. The use of sand pits was discontinued in July 2019 as predator tracks were often too difficult to discern and would be washed away by rain.

By December 2020 the mainland island had been in operation for 26 months; average rat index over that time was 13% in the mainland island compared to 63% in a control grid of the same size. Rat abundance in the mainland island fluctuated over time; this is thought to be linked to two factors, one is natural annual fluctuations in the Black Rat (*Rattus rattus*) population and the second is periods of time when gas canisters (that power the Goodnature traps) could not be changed for various reasons.

The operation of the 5.6 ha mainland island came to an end in January 2021. In February 2021, all Goodnature traps in the 5.6 ha mainland island were re-positioned as it was found that the spacing did not always respect the 25 x 25 m grid formation. In early March 2021, 70 additional newly purchased Goodnature traps were added to the mainland island to expand the grid. The 5.6 ha grid was expanded to the North and West, and now has a coverage of 9.75 ha. The 9.75 ha mainland island differs to the 5.6 ha mainland island in that it is truly orientated North to South and East to West.

The Goodnature traps are now checked every two weeks to see if the gas canister powering the trap needs to be changed and once a month to check that the trap is functioning correctly.

Main Actions

- Operation of the 9.75 ha mainland island in Brise Fer continued throughout 2022. Gas canisters for all Goodnature traps were checked every two weeks, and functioning checks were done once a month.
- Rat index was done once a week up to June 2022, as from July 2022 it was done once a month. Rat index increased in the mainland island to unusually high levels towards the end of 2021. The location of the chew cubes for the rat index were changed, and the frequency of placement was reduced from once a week to once a month as from July 2022. This change was made since there was concern that individual rats had become accustomed to the placement of multiple chew cubes, hence inflating the rat index. This change in placement seems to have been effective: average monthly rat index was 25% in the mainland island compared to 67% in a control area (no trapping or poisoning of rodents) from March 2021 to May 2022 when rat index was done weekly, compared to 1.3% in the mainland island and 35% in the control area from July to December 2022 when chew cube locations had been changed and placement was reduced to one a month.

- We have been in discussion with the National Parks and Conservation Service for the expansion of the grid at Brise Fer by deploying funding obtained for Goodnature traps by NPCS from EU and UNDP sources.

AudioMoths

Background

A grant from the African Bird Club funded the purchase of 15 AudioMoth® devices in 2021. The devices were acquired to deploy in the Ferney Valley with the aim of confirming presence / absence of bird species that we have released in the area; Echo Parakeet, Pink Pigeon, Mauritius Cuckoo-shrike and Mauritius Paradise Flycatchers.

The AudioMoth devices arrived in April 2021. The first step in was to learn how to use the devices and research the audio analysis software for the automatic recognition of bird calls to species level. Kaleidoscope Pro® (Wildlife Acoustics, Inc.) was found to be the most effective software.

On 4th October 2021 MWF were successful in an application to Wildlife Acoustics, receiving a year's subscription to Kaleidoscope Pro.

In 2021, a calls database was created by recording birds in the field at targeted sites where there abundance would be high, confirming which calls are for which species and then inputting this information into the software. Olive White-eye and Mauritius Fody calls were collected from Ile aux Aigrettes, and Pink Pigeon and Echo Parakeet from Brise Fer.

Once the database of bird calls was achieved, work began deploying the AudioMoth in Ferney to determine what birds were present. The first deployment of 15 AudioMoths was in the Ferney fenced plot from 12th to 20th August 2021. Placement of devices was centred around the Mauritius Cuckoo-shrike release site to determine whether there were any Mauritius Cuckoo-shrike present in the area. Four endemic birds were detected: Mauritius Bulbuls, Mauritius Grey White-eyes, Mauritius Kestrels and Pink Pigeons. No Mauritius Cuckoo-shrikes were detected.

Main Actions

- For the second deployment in Ferney (04/03/2022), the devices were placed on the eastern border of Ferney. The devices were placed here as a pair of Mauritius Paradise Flycatcher had been observed here earlier during the season, however, no Mauritius Paradise Flycatcher were detected in the audio recordings. Mauritius Kestrel calls were detected, not surprising since one device was placed near a breeding site.
- For the third deployment in Ferney (19/03/2022), devices were placed in the Ferney fenced plot, but further West than the first deployment, starting from the fence. The aim of this deployment was to again search for Mauritius Cuckoo-shrike. Unfortunately, we did not detect our species of interest during this deployment. One device stopped recording during the survey due to humidity/oxidation issues.
- The fourth deployment in Ferney was in August 2022 to target the beginning of the breeding season where activity and vocalisation should greatly increase. We deployed the AudioMoth devices using a different recording methodology. One Paradise Flycatcher was seen by field

staff in June 2022, just a little further south than the location of the second deployment (04/03/2022). The AudioMoths were centred around the area of this observation but with a different recording methodology to try to improve detection: six full days of recording from dawn to dusk. Unfortunately, no Mauritius Paradise Flycatcher was detected in the recordings. The following endemic species were detected on several devices: Echo Parakeet, Mauritius Kestrel and Mauritius Grey White-eye.

- To date, two devices are currently out of order and we have 13 devices left for future surveys.

Gerald Durrell Endemic Wildlife Sanctuary



Background

The Gerald Durrell Endemic Wildlife Sanctuary (GDEWS), also known as the Black River Aviaries, is a captive breeding centre set up for saving endangered endemic birds and bats. GDEWS is a small facility but yet has been critical for saving near extinct animals and supporting studies on captive animals that have improved science and conservation. The centre supports the fauna conservation programmes by providing facilities to captive breed, incubate and hand-rear animals to reintroduce to the wild to boost populations, providing training facilities for aspects of animal husbandry and to take care of sick animals. It also keeps captive populations of animals for research purposes to better understand their behaviour, diets and habits which in turn support efforts to maintain the wild populations and guide conservation actions. A number of animal husbandry protocols have been devised and improved through works at the centre. Additionally, GDEWS houses a collection of Critically Endangered endemic plants in a secure environment (e.g. palmiste blanc de l'île Ronde *Dictyosperma album* var *conjugatum*, bois puant *Foetidia mauritiana*, bois tambour *Tambourissa quadrifida*) where seeds can be collected for propagation for the MWF Rare Plants project and subsequent reintroduction to the forest.

In 2015 we started an intensive breeding programme for the Pink Pigeon where pairs of birds are kept in captivity and their offspring released into the wild to create new sub populations of birds as well as reinforcing current populations, for example, on Ile aux Aigrettes and in the Black River Gorges National Park. Three Pink Pigeons were repatriated from Jersey Zoo, Channel Islands, UK, and after quarantine at Bras D'Eau National Park, the birds were sent to GDEWS.

In 2016 the handrearing of the Mauritius Kestrel was resumed and continued for four seasons. Due to the COVID-19 pandemic and the impossibility of obtaining an experienced handrearer from abroad the handrearing was then put on hold for the season 2020/21 then has resumed since October 2021.

In 2019 hand-rearing of cuckoo-shrikes was put on hold having begun in 2014.

The Gerald Durrell Endemic Wildlife Sanctuary is managed collaboratively by the Mauritian Wildlife Foundation (MWF) and the National Parks and Conservation Service with specialist assistance from abroad (e.g. Chester Zoo, Durrell, Zoological Society of London, Wildlife Vets International, and contracted hand-rearers).

Main Actions

- New aviaries were still being built or upgraded to be able to hold more Pink Pigeons pairs and other birds.
- A number of new staff were recruited and had to be trained in animal keeping.
- Due to the growing number of rescued waterbirds (White-tailed Tropicbirds, Red-tailed Tropicbirds, Wedge-tailed Shearwaters, Common Noddies, Green Herons) and Mauritius Fruit Bats, animals were diverted to private and voluntary carers, with our continuous advice and assistance.
- Captive breeding and rearing of Pink Pigeons was conducted, as well as management of a colony of introduced Barbary Doves as foster parents for Pink Pigeon.
- We received technical assistance from Durrell for the Pink Pigeon captive breeding.
- 6 Mauritius Kestrels chicks, sourced from the Bambou Mountains (east Mauritius) and the West Coast population, were successfully handreared for release into the Black River Gorges National Park.

REPTILES

Monitoring and translocations

Background

The small islets around Mauritius support numerous unique species that were once abundant on the main island, but are now found nowhere else in the world. Several species, particularly reptiles, are now restricted to single island populations where they are at great risk of extinction from the threats that caused their loss elsewhere. Many other threatened Mauritian animals and plants are dependent upon the unique geckos and skinks for their survival, such that their preservation is crucial for sustaining island communities and local biodiversity.

Since 2006, MWF, NPCS and Durrell have been reintroducing threatened reptile species back to other islets with 2,609 reptiles from seven species released to one or more of eight different islets through translocation and captive headstarting. Furthermore, 128 individuals of five reptile species have been moved from six islets to establish captive assurance populations at Jersey Zoo or for research at Jersey Zoo and London Zoo. These actions are enhancing the conservation status and knowledge of the threatened reptile species.

To date the distribution and abundance of five threatened Mauritian reptile species have been substantially increased. A sixth species, the orange-tailed skink *Gongylomorphus cf fontenayi*, was translocated from its only known location on Flat Island to Gunner's Quoin and Gabriel Island, prior to its extinction caused by invasive species on Flat Island.

These actions have led to the down-listing of the Günther's gecko *Phelsuma guentheri* and keel-scaled boa *Casarea dussumieri* through the IUCN red-list of threatened species. Major threats (e.g. introduced predators, habitat loss / degradation) continue to be addressed to lessen the risks of extinction to the reptile species and reintroductions have contributed to the rebuilding of lost Mauritian ecosystems.

However, invasive species remain a serious threat. Since 2006, we have detected 41 animal invasion events on eleven islets by 17 non-native species, of which early detection and removal/eradication has been possible in 24 cases. Through 2022, work has been ongoing or initiated for the control and/or removal of seven problematic invasive species on four islets. Where removal of invasive species has been possible it has prevented irreversible damage to islet biodiversity.

To maintain this success MWF needs to continue the high level of research and monitoring on the islands to direct appropriate conservation management decisions; detect and adapt to emergent threats and to continue to build upon what has been started for the conservation of endangered island communities.

Günther's gecko



- The 2021/22 breeding season was not as successful as previous years for the re-introduced population on Ile aux Aigrettes. The number of eggs found (45 eggs at 15 nest sites) was lower than in previous seasons. The hatching success was 55.6%, compared to 69.0% and 71.1% in the previous two years.
- On Round Island, the 2021/22 breeding season yielded 69 eggs from 9 nest sites. The hatching success was 71.0%, compared to 79.0% in the previous year.
- These reductions in the number of eggs surveyed and hatch success are thought to be due to a combination of causes. Lower effort in searching, caused by staff shortages and new staff learning to detect eggs will have meant fewer eggs would have been surveyed. Small sample size may therefore not produce a reliable estimate of hatch success. Cyclones Batsirai and Emnati occurred at the peak incubation period, cyclones are known to cause egg failure. On Ile aux Aigrettes, predated eggs were found, and it is thought that introduced crows are the likely culprit. See the Round Island section for with regards to the lower number of eggs surveyed.
- Günther's geckos are notoriously difficult to survey, given that they are highly cryptic and active both day and night. Nevertheless, we attempt to keep track of their relative densities through independent repeated count surveys within set areas each year. There were 101 surveys of adult geckos on Ile aux Aigrettes through 2022, giving an encounter rate of 0.238 (95%CI: 0.164-0.312) adult geckos per person hour. On Round Island there were 42 surveys through 2022, giving an encounter rate of 0.409 (95%CI: 0.178-0.640) adult geckos per person hour. At face value, these results suggest the relative density of adult geckos on Ile aux Aigrettes is approximately 60% of what is found on Round Island. However, given the difference in detection between the two island habitats, different detection ability between surveyors and variation in the number of geckos observed per survey leading to broad confidence intervals it is difficult to detect whether a difference actually exists between the two island populations.

Telfair's skink



- Ile aux Aigrettes: There are currently too few Telfair's skinks *Leiolopisma telfairii* on the island to estimate their abundance and no surveys were conducted. Restoration of the population will not be possible until invasive predator issues are resolved (see Invasive Alien Species section).
- No wild hatchling Telfair's skinks were collected on Ile aux Aigrettes during 2022 and so none were headstarted.
- In November 2022, we undertook an expedition to Gunner's Quoin to survey the reintroduced and resident reptiles species, bird species and trap and search for invasive species. Through these surveys we obtain data to assess the health, condition and abundance of the reintroduced Telfair's skink population. However, we only had three staff to conduct the trip, where normally we have at least six individuals, as no staff from the National Parks and Conservation Service could join the trip. On the first night of the expedition one of the three team members fell ill and tested positive for Covid. This meant that the following morning the trip was aborted. It was not possible to return to the island in 2022 to carry out the surveys. Nevertheless, the skinks were incredibly abundant and doing well, suggesting there was little change to the 2021 estimate of 23,853 (95%CI 17,727-32,094) adult individuals.

Keel-scaled boa



- As part of the ongoing process of rebuilding the threatened reptile communities, keel-scaled boas were reintroduced to Gunner's Quoin between 2012 and 2014. As stated above, it was not possible to conduct our surveys in November 2022. However, a trip was undertaken in July to open pathways and search and trap for invasive species. During this trip nocturnal boa surveys were conducted. Over four nights there were 12 independent surveys within the three survey areas. Eighteen boas were detected, of which 16 were caught. Ten of the captures were of new snakes, which were microchipped for individual recognition in subsequent recaptures. All but two of the snakes detected were adults and all that were caught were in good body condition. Within the four nights of surveys there was only one recapture of an individual, which makes it impossible to obtain a reliable capture mark recapture estimate of abundance.
- While a capture mark recapture estimate of abundance is not yet possible, an encounter rate of adult boas can be estimated. The number of adult boas encountered per person hour was calculated at 0.579 (95%CI: 0.199-0.959). Because there were only 12 survey events the confidence intervals are very broad, but it is encouraging that the encounter rate is not to dissimilar from what was found on Round Island through 2022 at 0.779 (95%CI: 0.602-0.957) adult boas per person hour.

Southeast islet reptiles



- The southeast islets support three endemic species, the Bojer's skinks *Gongylomorphus bojerii*, Bouton's skinks *Cryptoblepharus boutonii* and lesser night geckos *Nactus coindemirensis*.
- Bojer's skinks were once widespread throughout Mauritius and the islets but became restricted to a few islets in the north and the tiny islet, Ilot Vacoas in the southeast. Maintaining unique genetic variation on Ilot Vacoas, this southeastern form was translocated to Ile aux Fouquets and Ile de la Passe.
- Bouton's skinks in Mauritius were previously considered as a pan-tropical native, but at the end of 2019, the IUCN's Skink Specialist Group reassigned the Mascarene populations as unique and endemic. With the small population in the South of Reunion not being detected for the past 20 years (and was restricted and small even then), the skinks are now only endemic to Mauritius and found on several islets and four small populations on the mainland coast, but once had a wider distribution. The lesser night gecko also once had a wide distribution, but is now restricted to Gunner's Quoin and Pigeon House Rock in the north and Ilot Vacoas in the southeast. Given that the southeast population was thought to retain unique genetic variation, individuals from Ilot Vacoas were translocated to Ile Marianne in 2011. In 2022, genetic work by Cardiff University Masters student Olivia Fitzpatrick showed that the southeast geckos are genetically distinct from those on Gunner's Quoin. In 2022, two reptile monitoring trips were carried out to each of the southeast islets to monitor the invertebrates, birds, reptiles and to detect and where possible remove new invasive species incursions. In 2021, it was found that there had been an overall decline in the abundance of lesser night geckos and to a lesser degree the Bojer's skinks compared to pre-Wakashio oil spill levels. In 2022, there were a total of 2,208 independent transect surveys day and night across the islets to monitor the reptiles in a way that different analytical methodologies could be used to determine changes in abundance. The density of lesser night geckos on Ile Marianne had not changed significantly, but there was a slight increase on Ilot Vacoas. Overall, there was a slight increase in the abundance of Bojer's skinks, but no change in the abundance of Bouton's skinks on Ile aux Fouquets, Ile de la Passe and Ilot Vacoas. Capture mark recapture data were also recorded for the Bojer's skinks and lesser night geckos on each islet visit. These data, which provide more robust estimates of abundance to detect change will be analysed by PhD student Katie Bickerton in 2023.

Lesser night gecko translocation

- After years of planning, the 120 lesser night geckos were translocated from Gunner's Quoin to Round Island by November 2022.
- The lesser night gecko was once one of the most abundant vertebrates in Mauritius with a widespread distribution. From the 1980s when it was first discovered, it had become restricted to small areas of Flat Island, Gunner's Quoin, Ilot Vacoas and Pigeon House Rock. In 2011, the Flat Island population became extinct, due to the invasion of shrews in 2009/10. In the same year as mentioned earlier, lesser night geckos were translocated from Ilot Vacoas to Ile Marianne, supported with the release of captive bred geckos originating from Ilot Vacoas at Jersey Zoo.
- Given the loss of the Flat Island population and the small size of the southeast populations, despite the successful establishment of geckos on Ile Marianne, further work was required to enhance the future survival of the Mascarene's smallest endemic gecko. The largest population is on Gunner's Quoin, which had recovered following the eradication of rats in 1995 from the edge of extinction to approximately 10,200 adults in 2021, still remains at risk from further predator invasion. Therefore, plans were initiated in 2018 to translocate geckos from Gunner's Quoin to Round Island. Whilst there is not physical or historical evidence that the gecko once lived on Round Island, it certainly once co-existed within the reptile community present on the island.
- To date all translocations to rebuild the reptile communities on the islets have followed a step-wise process of re-introducing species from prey to predator. However, translocating the species to Round Island would mean introducing a species at the bottom of the reptile food chain into a predator-packed system.
- Following interviews led by PhD student Katie Bickerton (University of Kent/Institute of Zoology) of international herpetologists involved in species translocations, key recommendations were made to enhance post release survival and establishment of the geckos. These recommendations included establishing release pens where artificial refugia could be added for geckos to find initial shelter, to reduce predation by preventing larger reptiles entering the pens and to initially prevent the translocated geckos from escaping the enclosures so that they anchor to the location and more likely to interact and reproduce.
- Through 2022, Katie selected a number of release sites and with the team selected four locations of suitable habitat on Round Island below the summit on the south westerly side of the island. In September, the team constructed four, approximately 10 x 10 m enclosures and made them tortoise and predator proof.
- Between the 27th October and 5th November, with the assistance of the National Parks and Conservation Service, geckos were captured every other night on Gunner's Quoin, where they were screened for good health and condition before being selected for translocation. The morning after each capture and selection session, cohorts of geckos were translocated with support of the Forestry Service from Gunner's Quoin with the help of the Police Helicopter Squadron and boat. Three individual translocations occurred, where each of the four enclosures on Round Island was stocked with 30 geckos of almost equal sex ratio.
- Following the translocation, Katie started to monitor the geckos in the enclosures and to ensure they remained free of predators. By the end of the year the enclosed geckos were in good condition, with many females laying eggs. Once juvenile geckos are found and are surviving within the enclosures, the predator proof barriers will be made leaky to let geckos to start moving out, whilst preventing larger predators in. However, the geckos may end up being released or escaping earlier than planned should Round Island be hit by a cyclone.

Tortoises



Background

Mauritian tortoises *Cylindraspis* spp. had an important role in the native ecosystem as browsers, grazers, and seed dispersers. Many native and endemic plants have evolved with, and adapted to, the presence of tortoises. Since the extinction of the Mauritian tortoises, many of the functional links were lost within the ecosystem. To remediate this, we are using a close relative of the Mauritian giant tortoises, the Aldabra tortoise *Aldabrachelys gigantea* from the Seychelles as a replacement to re-activate the lost plant-tortoise interactions on Ile aux Aigrettes and Round Island.

The aim of this project is to manage adult free-roaming tortoises on Ile aux Aigrettes and on Round Island. The tortoises on both islands are closely monitored and studies have been set up to assess their impact on the ecosystem.

Free-roaming tortoises

In 2022 we lost one tortoise on Ile aux Aigrettes. When it was found it was in an advanced state of decomposition so cause of death could not be established. Through 2022, there were 230 observations of the 26 free roaming tortoises on Ile aux Aigrettes. On Round Island there were 1,092 observations of 285 individual free roaming tortoises. Morphometric measurements have been taken for 19 and 180 free-roaming tortoises on Ile aux Aigrettes and Round Island, respectively. However, with a shortage of number of staff to lift the tortoises, the weights of tortoises were not obtained. Nevertheless, the tortoises in each population appeared in good health. Due to reduced staff capacity, not enough resightings of individual tortoises on Round Island were made in 2022 to obtain a reliable population estimate. However, no deaths were recorded throughout the year and 62 tortoises that had hatched on Round Island and grown to a size to be microchipped for individual recognition “entered” the population. The population size of identifiable tortoises on Round Island is therefore expected to be greater than 800 given that the population size in 2021 was estimated at 780 (95%CI: 762-797) individuals.

Tortoise health

All tortoises moved to any island undergo examination and testing for pathogens and parasites and are de-wormed prior to arriving and being held in quarantine away from other tortoises. The quarantine enclosure is then kept clean, where faeces are collected, bagged, sealed and removed from the island as a precaution. Fifteen young tortoises donated from the President’s State House underwent this process on Ile aux Aigrettes, and no issues were detected. However, intestinal parasites are naturally found in wild tortoises, but in captive conditions, such as in the head-starting facilities, the risk of transmission is elevated and can cause a high parasite burden and health problems. To ensure transmission is managed all enclosures are regularly cleaned, feeding trays and water wallows are also cleaned daily and faeces are removed. As a precaution all juvenile tortoises within the enclosures are dewormed annually. A sample of thirty juvenile tortoises were screened for parasitic worms, but nothing was detected. As the tortoise population on Round Island is wild with the origin of individuals from various locations in Mauritius, albeit most from Ile aux Aigrettes, they all underwent screening and quarantine. Nevertheless, tortoises are regularly checked for any viral symptoms and a sample of the tortoise population is screened annually for intestinal worms. In 2022, 35 free-roaming tortoises were screened, but no worms were detected. The most likely point of cross-transmission for disease on Round Island is at the artificial water wallows and dams for water harvesting. These sites are regularly checked and cleaned to reduce the transmission and build-up of naturally occurring intestinal parasites.

Tortoise impact

To assess the impact of tortoises on the vegetation on the islets’ areas, where tortoises have been excluded has been compared to areas where tortoises have access. This work has, for the time being, given us enough information on their impact and will be monitored in the future through snapshot surveys every decade. The 20 enclosure and control plots were surveyed in 2022 on Ile aux Aigrettes, but the last surveys will be in May 2023. In areas of high tortoise activity on Round Island we have seen that they have two key impacts that affect restoration. The first is in areas where forest restoration has advanced enough to form a canopy and where it is near to a water wallow, tortoises have over-exploited this habitat for shade and have physically reduced sapling survival due to disturbing the shallow soils. One such area has been enclosed to prevent tortoises from entering, which has allowed a high survival of rare endemic saplings. Once these saplings have grown substantially, tortoises are less likely to impact upon them and will be allowed back in. By then additional areas of restored habitat will have formed for the tortoises to exploit, thus lessening their high-density use of such habitats. The monitoring on Ile aux Aigrettes shows that the negative impacts of tortoises on sapling survival is lessened once the forest is mature. This shows us that we need to carefully manage tortoise activity in the forest restoration process on Round Island, by controlling access in some areas in relation to water wallow

placement. The second key impact is the control of invasive grasses by tortoise herbivory. We plan to exploit this impact of herbivory to start reintroducing native and endemic herbaceous species, that are thought to have once been part of a tortoise grazed climax community, many of which are Critically Endangered. This approach will again need to be carefully managed due to the physical disturbance of large numbers of giant tortoises. Initially we will enclose small areas of heavily grazed habitat to stop tortoises entering, where we will plant the natural herbaceous species, manually control the invasive grasses, and let the herbaceous species build up a seed bank before letting the tortoises back in to control the invasive weed. This is a long-term project of several years that will start in 2023.

A book chapter summarizing the use of tortoise translocations to rewild Mauritian islands was published in 2022 Jones et al. (2022) *Slow and Steady Wins the Race: Using Non-native Tortoises to Rewild Islands off Mauritius*. In M. Gaywood, J. Ewen, P. Hollingsworth, & A. Moehrenschrager (Eds.), *Conservation Translocations (Ecology, Biodiversity and Conservation)*, pp. 469-475. Cambridge: Cambridge University Press. doi:10.1017/9781108638142.028.

MSc student Alex Fergusson from Nottingham Trent University completed her research on the impact of personality on Aldabra giant tortoise dispersal and their potential for dispersing native and non-native seeds. Personality was found to be positively associated with the distance tortoises moved. There was no relationship detected between the diversity of seeds and dispersal behaviour. The results however have implications for translocation, where individual tortoises could be selected by their behavioural traits for different desired outcomes of dispersal and impact.

ISLANDS

Round Island



Background

Round Island, 219 ha, is undeniably Mauritius' most important island for conservation with unique or significantly large remnant populations of endemic plants, reptiles and native seabirds. The island was spared from predators, such as cats and rats that have caused irreversible damage elsewhere, but goats and rabbits were introduced in the early 19th century, which caused severe loss of soil and vegetation. Poaching of seabirds was a common activity on the island.

By 1986, the herbivores were eradicated, and closer management put an end to seabird poaching by 1997. A field station was built in 2002, which has allowed MWF and its partners to achieve a greater impact to protect and restore the island, control or eradicate invasive plants and replant many areas on the island.

Restoration activities on the island has supported the recovery of the unique reptile community, where the overall abundance has increased by more than 2,000%, since the 1970s. The recovery of reptiles has permitted their reintroduction to other islands from 2006 (see reptile section). A permanent staffing of the island and cessation of poaching have permitted seabirds to recover, with now the largest populations of red-tailed and white-tailed tropicbirds, and wedge-tailed shearwaters in the Southwest Indian Ocean. Research has led to a greater understanding of the seabird community including resolving the identity of the Round Island Petrel *Pterodroma arminjoniana*.

The restoration of Round Island has been initiated, but we need to continue to restore the island, conserving its unique plants and animals, which will take decades. This will include saving from extinction two endemic plants that are in precipitous decline (*Aerva congesta* and *Phyllanthus revaughanii*), tracking of seabirds to understand where they travel to (thus identifying Marine Important Bird Areas and assessing the impact of global climate change), monitoring the response of threatened

reptiles to restoration activities, curbing soil erosion and planting to restore functional communities that benefit the resident endemic animals.

Round Island has been an important training and research ground for local and international restoration practitioners and scientists. Being one of very few islands in the world to have never been invaded by rats or non-native reptiles, combined with ongoing extensive restoration work and pioneering research on highly threatened and unique animals and plants, the global significance of Round Island is increasing as a leading site for conservation and scientific excellence.

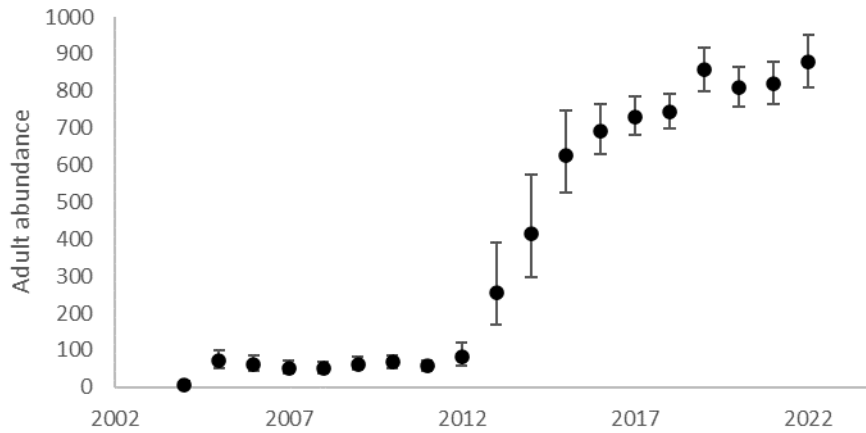
The programme is run jointly by the Durrell, MWF and the Ministry of Agro-Industry with support from NPCS and Forestry Service.

Red-tailed Tropicbird



- Monthly surveys of the Red-tailed Tropicbird colony in the south of the island are normally conducted, but only ten of the twelve surveys were achieved in 2022, due to staff shortages.
- Through the surveys, 911 birds (597 adults and 314 chicks) were encountered, which consisted of 385 individual adults of which 94 were newly ringed and an additional 43 fledging chicks were ringed.
- In 2015, we changed the survey area of Red-tailed Tropicbird to make it possible to survey within one morning. The data from 2004 have therefore been truncated to the new survey area and for the first time it has been possible to model the seabird's population change and survival within the approximately 1 ha area. The abundance of adults within the survey area has increased substantially since 2012 and has now likely to have reached its carrying capacity as seen in the graph below. The abundance of adult Red-tailed Tropicbirds within the survey area was estimated at 878 (95%CI: 810-952) with an annual apparent survival probability of 84.9%.

Red-tailed Tropicbird population growth in one hectare of Round Island



Round Island Petrel



- Through the surveys that were completed, 182 individual adults were detected of which 6 were newly ringed and 47 chicks were ringed and fledged.
- 292 individual nest sites were used, with 158 recorded with an egg or a chick.
- Twenty-nine blood samples were obtained for genetic research conducted with the Institute of Zoology. These will be the last blood samples taken for the time being.
- The annual apparent survival estimate for adults had not changed from the previous year's estimate at 96.5% (95%CL 96.3-96.8).

- The abundance of adult petrels using the island in 2022 was estimated at 1,981 (95%CL 1,870-2,099) individuals, compared to the model adjusted 2021 estimate of 2,052 (95%CL 1,941-2,171) individuals. Although the 2022 estimate is slightly lower than in 2021, it is not significantly different.
- Research on existing data collected as part of the long-term monitoring programme continues to be carried out to explore the factors influencing individual variation in non-breeding season migration movements of Round Island petrels and the implications for the viability of the petrel population. In December, University of East Anglia PhD student, Kirsty Franklin, submitted her PhD thesis. Kirsty also published a peer-review manuscript in the journal *Movement Ecology* investigating the variation in migration strategies of the Round Island Petrel (Franklin et al. (2022) Individual consistency in migration strategies of a tropical seabird, the Round Island petrel. *Movement Ecology*. 10:13. <https://doi.org/10.1186/s40462-022-00311-y>).
- Dr Malcolm Nicoll, who leads the petrel research through the Institute of Zoology, also published a paper in the journal *Ibis*, demonstrating that the attachment of geolocators to understand the movement ecology of the petrels, has no detectable impact upon the survival of the birds (Nicoll, et al. (2022) No detectable effect of geocator deployment on the short- or long-term apparent survival of a tropical seabird. *Ibis*. 164, 1201-1212. <http://dx.doi.org/10.1111/ibi.13094>).

Seabird Community



- At the end of 2021, research was initiated to investigate the connectivity between seabird populations within the Western Indian Ocean. This project will assess the degree of connectivity between island colonies for five very different seabird species (greater frigatebird, red-footed booby, sooty tern, tropical and wedge-tailed shearwater) by establishing the rate of transfer of genetic material between colonies (i.e., gene flow). This will identify discrete 'conservation or management units' made up of one or more (connected) colonies. Additionally, breeding red-footed boobies and wedge-tailed shearwaters will be tracked to identify their foraging hotspots and the underlying environmental drivers to quantify how attractive a colony's surrounding marine environment is for dispersing seabirds. It is hoped that the outcomes of this research will guide the scale at which seabird conservation policy and actions should be set in the Western Indian Ocean. Given Dr Malcom Nicoll's research on the Round Island petrel, he will be leading the research within Mauritius. With Round Island supporting the largest breeding colony of Wedge-tailed Shearwaters in the Southwest Indian Ocean, this is one of the colonies that will be surveyed, including a wedge-tailed shearwater colony in Rodrigues and if access is possible Sooty Terns on

Serpent Island. Malcolm visited Round Island in November to select the wedge-tailed shearwaters in part of the colony that will be monitored from January 2023.

- Over the past two decades, research on the seabirds of Round Island has shown that they have distinctive foraging and migration routes. Seabirds using particular migration routes and foraging areas are likely to be affected by climate change altering regional storm intensity and oceanic productivity, thus impacting upon the survival of seabird species in different ways. Given the importance of seabirds in the marine to terrestrial transfer of nutrients that drive island ecosystems, an island with a higher diversity of seabird species, will have a greater distribution of migration and foraging patterns and thus more resilience to climate change in ensuring the nutrient transfer continues. To enhance the number of breeding seabirds on Round Island, it was decided to attract the Masked Booby to Round Island. The Masked Booby, is the largest of the Mauritian seabirds and only nests in two locations within the Republic of Mauritius, with approximately 200 pairs on North Island in the Saint Brandon Archipelago (450 km NE of Round Island) and 50 pairs on Serpent Island (2.5 km N of Round Island). The Masked Booby was known to have had a much larger nesting range within Mauritius historically, but suffered from human and invasive species disturbances. This large seabird species was suspected as being present on Round Island prior to the introduction of herbivores and seabird poaching. In an attempt to bring the Masked Booby to Round Island, decoys were specifically constructed and placed in suitable habitat facing Serpent Island, in addition to a solar powered speaker system that plays the calls of nesting boobies. Camera traps have been placed throughout the decoy colony to detect any interest from the Serpent Island colony that fly by on a daily basis. Given similar systems of attracting seabirds to new nesting grounds elsewhere it may take years to attract the boobies.

Keel-scaled Boa



- A total of 119 boas (98 adults and 21 juveniles) were found during the quadrat surveys as part of the long-term study to monitor the health, survival and relative abundance of the snake. Usually, 72 surveys are completed through the year with each one hectare quadrat (Coastline, Mixed weed, Palm rich, Rockslab, Summit and Wasteland) being surveyed each month. However, due to staff shortages only 43 surveys were completed.
- There were 0.779 (95%CI: 0.594-0.178) adult boa encounters per person hour in 2022, which is a significant increase compared to 0.470 (95%CI: 0.363-0.577) encounters in the previous year.
- 46 newly detected boas were microchipped in 2022.

Günther's Gecko

- A total of 65 geckos (56 adults and 9 juveniles) were found during the monthly quadrat surveys as part of the long-term study to monitor their relative abundance. This is fewer than normally detected and likely due to new staff not yet being able to repeatedly detect this highly cryptic reptile.
- There were 0.409 (95%CI: 0.178-0.640) adult gecko encounters per person hour in 2022, compared to 0.361 (95%CL 0.260-0.462) encounters in the previous year. While the encounter rate is higher than in 2021, it is not significantly different.
- On Round Island, the 2021/22 breeding season yielded 69 eggs from 9 nest sites. The hatching success was 71.0%, compared to 79.0% in the previous year. As detailed in the Günther's gecko section for Ile aux Aigrettes, fewer eggs were surveyed than normal, producing a lower than expected hatch success. Lower search effort, caused by staff shortages will have meant fewer eggs would have been surveyed. Historically most egg surveys on Round Island were conducted within nests under rock ledges, but to obtain a more realistic measure of hatch success other nesting substrates were included in 2022. One of the key nesting sites includes Latan palms, where eggs laid on palm fronds are more likely to perish in string winds. Cyclones Batsirai and Emnati occurred at the peak incubation period and therefore likely to have led to the lower hatch success than in 2021.

Durrell's night gecko



- A total of 166 Durrell's night geckos *Nactus durrellorum* (148 adults and 18 juveniles) were found during the monthly quadrat surveys, as part of the long-term study to monitor their relative abundance.
- There were 1.365 (95%CI: 1.079-1.650) adult gecko encounters per person hour in 2022, which is similar to the 2021 encounter rate of 1.351 (95%CI: 0.987-1.714), but still lower than expected compared to the 2020 encounter rate of 1.876 (95%CI: 1.455-2.297). The lower encounter rate is likely due to the lower effort caused by staff shortages and new staff not yet being able to reliably detect the extremely cryptic geckos.

Invertebrates

- Cardiff University PhD student, Max Tercel, who has been researching the impact of invasive ants, notably the big-headed ant *Pheidole megacephala*, upon Round Island's invertebrate community submitted his thesis in 2022.
- Much of the conservation efforts for island restoration have focused upon rebuilding the threatened plant, reptile and seabird communities while preventing further introductions of problematic invasive species. The invertebrates, however, have been largely overlooked and yet are a major driver in ecosystem functionality, as predators, prey, pollinators and detritivores. The islands, particularly Round Island, maintain many endemic invertebrates, the majority of which are threatened with extinction and have yet to be formally described. Max has contributed to the identification of some of the invertebrates on Round Island, but collectively we have only identified 83 to the level of species, where we know there are at least 400 species on the island. Each islet around Mauritius has a different ecological history with varying levels of human impact and loss of habitat. In 2023, we will be sampling and collecting invertebrates with the help of Max to understand what is present and what is missing for key islets, such as Round Island. In 2022, Durrell established an agreement with the London NHM for their taxonomic specialists to identify the invertebrates that we will collect from key Mauritian islets. This work will be the foundation for further research, such as obtaining genetic markers for each invertebrate species that will link to the Round Island food web project with Cardiff University, but also to identify gaps in the invertebrate community to direct future reintroductions of functional species, such as specific pollinators to assist in the restoration of habitat.

Plant restoration work

- The COVID-19 lockdowns in 2020 and 2021 caused major disruption to the plant restoration work, which has had a knock-on affect through 2022.
- 110,713 seeds of 12 species were collected from Round Island and the mainland in 2022.
- 16,308 seeds from 13 species were sown in 2022.
- 625 seedlings, which germinated in the nursery, were potted in 2022.
- 315 plants were planted this year, which is an improvement from the previous few years during the COVID-19 pandemic. These were planted in the mixed weed, palm rich and summit habitats. The focus of this year's planting was to build up the species communities on the summit at last year's *Aloe tormentorii* planting site using *Chrysopogon argutus* and *Gagnebina pterocarpa*. As well as to continue to restore the palm rich habitat surrounding the last hurricane palm *Dictyosperma album* var. *conjugatum*, with grasses *Chrysopogon argutus*, more hurricane palm, bottle palm *Hyophorbe lagenicaulis*, screwpine *Pandanus vandermeeschii*, and bois benjoin *Terminalia bentzoë* as part of a project funded by Fondation Franklinia. In the mixed weed habitat, the focus was on the understory community with a trial planting of wart fern *Phymatodes scolopendria* and further hardwood planting (*Diospyros egrettarum* and *Eugenia lucida*).
- Additionally, a trial of transplanting of *Sesuvium ayresii* to an area of the southern coastline that has no pioneer species was done and the transplant has managed to survive the dry season, even producing new shoots. With this success, we will look to do further transplants in the future.
- The last wild hurricane palm continued to not produce fruit this past year. Hand-pollination of suspected pure-individuals on Ile aux Aigrettes with Round Island pollen resulted in the production of 110 seeds that were sent to Round Island for propagation at the beginning of 2022. Due to the devastating dry season, only a few inflorescences managed to produce viable pollen on the wild individual. Therefore, hand-pollination of the wild Round Island hurricane palm did not occur and the pollen was sent to Ile aux Aigrettes for hand-pollination of those individuals. Genetic samples have yet to be analysed to confirm the lineage of these individuals (hope to receive results by mid-

2023), it is believed that they are pure-bred individuals. However, the genome of the palm is currently in line to be sequenced through Oxford Nanopore and support from the London Natural History Museum and University of Nottingham. The project on Round Island and Ile aux Aigrettes to save the hurricane palm from extinction and restore the palm community, was visited by Jean-Christophe Vié from Fondation Franklinia.

- A number of rare herbaceous species continue to survive on Round Island. While *Aerva congesta* no longer occurs in the wild on Round Island and the only mainland population found at Gris Gris, there are several in the plant nursery on Round Island waiting to be planted in the field. While the nursery plants rebounded this year, the dry season was still particularly hard on the plants, with the highest number in the nursery at 294 but decreasing to 77 by the end of 2022. *Phyllanthus revaughanii* continues to be limited to one rock crevice on the southwest ridge and one patch on the wasteland, on Round Island, while *Phyllanthus mauritianus* is found in patches on the summit and near the field station. In the plant nursery, *P. mauritianus* is doing well by colonizing in plant pots on its own without much intervention from staff, such that there were 540 individuals by the end of 2022. For *P. revaughanii* however, they did not germinate well and then they struggled through the dry season, thus, the highest number in the nursery was 36 individuals before ending 2022 with 13 individuals. With the onset of rainy season and continued effort for propagation, this number should increase again.
- Other rare grass and herbaceous species on Round Island were collected from the field and brought into the plant nursery as a safeguard population and for further propagation in the future. Propagating further individuals from this base has proved to be a slow process and trialing new methods is needed in the future. By the end of 2022, there were three trays of *Brachiaria serpens*, 16 pots of *Chloris filliformis*, four trays of *Dichondra repens*, four trays of *Sporobolus virginicus*, and seven pots of what appears to be a unique Round Island variant of *Stenotaphrum micranthum*.
- By the end of 2022, Durrell were able to receive funding through the Mohamed bin Zayed Species Conservation Fund to start an experimental project to help increase wild populations of these rare herbaceous species on Round Island. Planning and planting for this project will start in 2023. We aim to enclose 10x10 m areas to initially restrict tortoise access and disturbance. The enclosures will be made to replicate nursery conditions, where the threatened herbaceous species will be planted, nurtured and hopefully start reproducing to permit the creation of a seed bank in the ground. Weeds will be manually controlled and the threatened plants closely monitored. Once the herbaceous community within the enclosures appears to be establishing, the nursery conditions will start to be reduced and the tortoises will again be allowed access to start grazing and controlling the weeds.
- As mentioned above, planting of *P. scolopendria* within a fenced area of restored mixed weed forest continued in 2022, with 102 individuals planted in March. These individuals were affected by the prolonged dry season, with 84 surviving by the end of the year. The individuals planted in 2021, managed to grow back fronds developing spores.
- Several trips were made to Le Morne to collect *Erythroxylum sideroxyloides* seeds, although none of the plants visited bore any fruit. However, seven individuals propagated in the Round Island nursery from earlier seed collection were still surviving at the end of 2022. More trips to Le Morne for seeds are planned for the beginning of 2023.
- By the end of the year, the flora staff and wardens had dramatically increased the nursery stock after the losses during COVID-19 lockdowns, with 1,541 seedlings of 25 species.

Weed management

- The COVID-19 2020 and 2021 lockdowns occurred at crucial periods for the ongoing management of weed species, particularly *Chromolaena odorata* and *Heteropogon contortus*, which were left unchecked to flower and disperse seed during their peak reproductive period. Whilst we are unlikely to know the impact of having missed this core season of control, it may set us back considerably after two decades of intensive management to control the threat these species pose.
- In 2022, 127 adult and sapling *C. odorata* plants were removed (in addition to 3 seedlings) of which 30 had either produced flower or had fruited, which is overall more than what was removed in 2021, but substantially less than in 2020.
- It is clear that almost two decades of *H. contortus* management is unlikely to lead to its eradication, as it still vigorously persists in two locations on the island. Plans for the use of pre-emergent herbicides to target this exotic grass and remove it for good have yet to be approved by Government. In 2022, only one adult plant was found and removed, but it had set seed. Compared to 2021 this is substantially less where 23 plants were found and removed of which 19 had set seed during the lockdown period.
- 79 tobacco *Nicotiana tabacum* plants were removed from the island and no tomato *Lycopersicon esculentum* plants were found.

Infrastructure and Transport

- Infrastructure work on Round Island for 2022 consisted of completing the construction of the Office and quarantine room and the new field station. At the start of the year, we focused on completing the Office and quarantine room. Once the construction was completed, the building was fitted with storage space, temporary bedding and kitchen appliances, the team moved all items from the old field station so the Office and quarantine room could be used as a temporary field station. The old field station was then dismantled, and the footings, foundation and floor of the new and larger field station was constructed.
- Solar company, SFER, installed the new solar panels on the roof of the Office and quarantine room and conducted a routine check on the existing solar panels. The new solar panels will be fitted on a separate system in 2023. Once the new field station is constructed the current solar system will be linked back up to the field station. Therefore, from mid-2023, we will have two independent solar systems, one for the office and quarantine room and one for the field station.
- Given that our infrastructure on the island is all constructed from wood in one location, we have needed to mitigate the risk of fire. Therefore, two additional 9,000 litre water tanks were taken to Round Island with the assistance of the Police Helicopter Squadron that have also been assisting in the transfer of all the infrastructural materials.
- In 2022, we continued to upgrade the main plant nursery. To reduce the impact of mealybugs which cause mortality of plants in the nursery, the nursery bench tops were made crawling-insect proof, by creating elevated frames sat within water troughs on which the benches now sit. These benches are primarily to stop invasive ants that farm the mealy bugs and increase their abundance. The impact of invertebrate pests continues to be monitored and the effectiveness of the elevated benches should be realized in 2023.
- Plans have also been made for the renovation of the small nursery, which is starting to fall apart. The renovation will hopefully be completed in 2023. Additional purpose-built hardening benches are also required, as through 2022 there was a limitation of space to carefully expose nursery propagated plants to outdoor conditions prior to planting.
- The seed bank facility, funded by the Conservatoire Botanique National de Brest, the Durrell Wildlife Conservation Trust and the Mauritian Wildlife Foundation became operational in 2022. This will aid both the plant restoration work for Round Island, Ile aux Aigrettes and mainland restoration sites.

- In 2022, the team were visited by Corey Lockman and Tom Coetzee from Wildlife Protection Solutions. Corey and Tom went to Round Island and Ile aux Aigrettes, to oversee security camera placement and understand our technical needs to offer advice and support.
- Since the construction of the field station and permanent staffing of Round Island from 2002, daily weather data (rainfall, wind speed, temperature) have been recorded. Weather data are essential to understanding trends in the survival of plants, reptiles and seabirds that are monitored monthly, but are also incredibly important for a number of research projects. However, the collection of these data was somewhat crude and required staff to be present at a particular location and time each day to manually record the data. Therefore, there was a need to enhance data precision and free up staff time. After much research on weather stations that would be rugged enough to withstand the harsh conditions of Round Island, an automated weather station was purchased and installed in 2022 to record solar radiation, temperature, relative humidity, wind direction, speed and gust speed, rainfall and dew point data every two hours.

Ile aux Aigrettes



Background

Ile aux Aigrettes is a 26-hectare low coralline island, and has been declared a Nature Reserve since 1965 due to its remnant Mauritian dry coastal forest. Ecological restoration started in 1985 with the aim of reinstating the coastal vegetation community and to replace the missing components of the flora and fauna. Through weeding of introduced species and planting of native species, including rare and critically endangered plants that have been propagated and reintroduced on the island, we are restoring the ecosystem. Around 30,000-40,000 plants per season/year were planted from 1998 to 2003, although the forest is now regenerating well naturally, specialised planting still continues to enhance the species diversity, to provide food for the native species reintroduced on the island and to provide habitat for seabirds and reptiles. The island is also used to conserve suitable lowland species that are critically endangered in the wild. Maintenance weeding continues through employment of a team of labourers living in the vicinity. As a part of a sustainable conservation programme, the island is open to visitors through our ecotourism and environmental education programmes. Students, tourists and the general public learn about the habitat restoration project, in order to raise their awareness of the conservation of the threatened Mauritian flora and fauna.

Projects on the island

- Pink Pigeon
- Mauritius Fody
- Mauritius Olive White-eye
- Günther's Gecko
- Telfair's skink
- Aldabra Tortoise
- Rare Plants
- Habitat Restoration
- Education: Learning with Nature
- Ecotourism
- Attracting Seabirds

Details of the above project actions are included in the specific project sections in this report.

Ile Cocos & Ile aux Sables, Rodrigues

Ile aux Cocos and Ile aux Sables, two sandbar islets to the West of Rodrigues, of 15 and 8 Ha respectively, are renowned for their breeding seabirds - water birds as well as migratory birds and occasional prospecting seabirds. Further background to this project and details of actions carried out are included in the Rodrigues section of this report.

St Brandon



Background

Rich in native coastal flora and fauna, St Brandon's beaches are a favourite place for sea turtles (Hawksbill Turtle *Eretmochelys imbricata* and Green Turtle *Chelonia mydas*) to lay their eggs. Coconut trees can be found on a few of the St Brandon islands as well as native trees, shrubs and grasses. The coral and outer reefs are still in good condition. This archipelago has a huge range of marine biodiversity with important global populations of seabird on the islets, and the shores are visited by migratory birds. Unfortunately, invasive alien plants and animals have reached the islets and are affecting the vegetation and breeding of seabirds. The islets are also affected by ongoing human activities.

MWF's project is the first step towards encouraging all stakeholders involved in St Brandon to strive for the conservation of the archipelago. It is recognised that any actions carried out would not be effective unless Government of Mauritius and other relevant departments, the Outer Islands Development Corporation (OIDC) and Raphael Fishing Ltd support the actions.

A St Brandon Institutional Mapping and Action Plan was developed in 2019 through discussions with the various stakeholders, finalised in 2020 and is available on the MWF website. We circulate the document whenever requested and we ensure that St Brandon is considered in policy dialogues (eg National Oil Spill Contingency Plan under review) and reporting (African-Eurasian Migratory Waterbird Agreement).

Data from St Brandon seabirds (amongst others) contributed to a worldwide risk assessment of seabird ingestion of plastics. A publication was submitted with c.100 authors: 'Global assessment of plastic encounter risk for marine birds'.

Invasive Alien Species control and bio-security on Islands

Background

Invasive alien species represent the greatest threat to island biodiversity. Whilst some invasive species, such as mice, rats and cats can be eradicated, although often at huge expense, effective methods for the control or eradication of many species, such as insectivorous mammals, birds, reptiles, invertebrates and plants have yet to be developed or the capacity within Mauritius to deal with these species is low or absent. The long-term survival of plants and animals native to Mauritian islands depends on the implementation of strict quarantine and biosecurity measures and where possible rapid responses to remove invasive species once they are detected.

Ile aux Aigrettes

Bio-security checks: Monthly checks were conducted using sooted tiles to detect footprints and cocoa wax chew cubes to detect chew marks of rodents or other potential problematic species that may have arrived on the island. Additionally, pit-fall traps and cage traps are utilized in the detection of new species incursions to the island. No new incursions were detected.

Tenrec trapping: Through 2022, 22 tenrecs *Tenrec ecaudatus* were removed from the island, through 2,586 trap nights. A tenrec hunter and his trained dogs have been identified to help us detect and find tenrecs in their peak period of activity in 2023.

Crows: Crows *Corvus splendens* continue to populate Ile aux Aigrettes. A ladder trap was placed on the island with two live decoy crows cared for by island staff. The ladder trap failed to capture crows that were using the island, possibly due to too much human disturbance near the ladder trap from other islet restoration activities. The decoy crows were removed from the island and rehomed for captive care on the mainland and the ladder trap was closed. In September, with support from the National Parks and Conservation Service, bait was placed specifically for crows on the mainland opposite Ile aux Aigrettes where crows fly to and from the island. Approximately 17 crows that were using the island were killed. The poisoning was targeted to prevent any native birds being exposed.

Southeast and northern islets

Bio-security checks: Trapping using Sherman live traps was conducted during two weeklong trips to each islet through 2022. Additionally, diurnal and nocturnal searches for invasive species were undertaken whilst surveying the invertebrate, bird and reptile surveys.

Due to uncontrolled access of Ile de la Passe, people bring numerous items to camp and light fires, which is ultimately a huge biosecurity risk. In 2022, two new problematic invasive species were detected on Ile de la Passe, the stump-toed gecko *Gehyra mutilata* and the tropical fire ant *Solenopsis geminata*. A specific trip was undertaken to remove both species before they fully establish, although it may require more trips through 2023 if these species are to be completely removed. Additionally multiple non-Mauritian plants such as coco palms, badamier and filao were found planted or in potting bags on Ile de la Passe and Ile aux Fouquets, which were removed.

Gunner's Quoin

Bio-security checks: Trapping using Sherman live traps was conducted nightly during two week long trips to the island to reopen survey lines and pathways. Additionally, diurnal and nocturnal searches were undertaken each day to detect any new invasive species incursions.

Evidence was found of people trespassing on the island. Crows were observed for the first time on the island, using it as a stop off point before flying towards Flat and Gabriel Islands. For the first time Mynah birds *Acridotheres tristis* were found on the island, with six individuals observed. It is imperative that Mynah birds are prevented from establishing on the island as they represent a threat to the island's unique biodiversity.

In January 2022, just after New Year reports were received of a dog on the island. As previously seen on other islands the presence of a dog is a major threat to terrestrial reptiles and ground nesting seabirds. Following a rapid response, islands and NPCS staff managed to trap the dog, which was dehydrated. The dog was taken to Clinique Veterinaire du Nord where it was cared for and reclaimed by its owners. The dog had run away due to fire works on New Year, but how it ended up on Gunner's Quoin remains a mystery.

Round Island

Biosecurity: For each trip to Round Island, all items that will be sent are subject to biosecurity checks, prior to leaving the mainland and then again, once the items arrive on Round Island. All infrastructural materials for the renovation work were subject to biosecurity procedures, being fumigated within a sealed container for a week, prior to being sent to Round Island and again on arrival with thorough checks, the use of insecticide spray where needed and the vacuuming of all items. Through these checks, 317 organic items (plant seeds/material, invertebrates, dirt and other organic material) were detected and removed on Round Island.

Plant nursery pests: Pests (herbivorous invertebrates, sap suckers and ants, bacteria and fungus) infected an average of 22% (range: 0 to 100 % of different plant species) of nursery plants throughout 2022. Construction of the ant proof benches in 2022 (see above) will hopefully lead to a decline in certain pest problems within the nursery. See the Round Island section above for invasive plants already on Round Island.

Invertebrates: In 2021, the Wardens discovered the rusty plum aphid *Hysteroneura setariae* on several plants. Despite checks, the aphids were no longer detected on the island, but may still be present, albeit at low numbers. The species had not previously been detected in Mauritius or neighbouring islands, but was on a quarantine black list for the country, as it poses a significant threat to the sugarcane industry. Following the discovery of the aphid in the nursery it was then found to be widespread across Round Island and mostly in the grasses. The Government conducted surveys on the mainland and detected its presence. Although worrying that this aphid is on Round Island, it demonstrates the effectiveness of invasive species checks on the island.

Red-whiskered Bulbul: The invasive bulbul *Pycnonotus jocosus* has been detected on Round Island in the past, but has never fully established, possibly due to predation by the keel-scaled boa. However, the bulbuls have been present on Round Island since August 2019, with a few birds being detected through 2022. The increase in vegetation on the island may now give the birds greater protection from boa predation. The birds represent a risk to the small diurnal reptiles that they predate upon but will also be consuming invertebrates and may act as seed dispersers for exotic plants. The removal of the bulbuls will require shooting, but as of yet it has not been possible to complete.

VALLEE DE FERNEY



Background

Following the Strategic Grant obtained by the Mauritian Wildlife Foundation (MWF) from the UNDP GEF Small Grants Programme for the project «Optimising the Ferney Valley into a Mauritian biodiversity conservation and awareness hotspot», which has now been completed, MWF continues to work closely with the Vallée de Ferney Conservation Trust to monitor and manage the biodiversity and to advise on Flora restoration and ecotourism.

Under the UNDP Strategic Grant four endemic bird species were re-introduced to the Vallee de Ferney. The Pink Pigeon needs a certain level of management which is provided from the Ferney Field Station. Supplementary feeding is provided to the Pink Pigeon and the area around the field station protected with predator control. Unlike the Echo Parakeets in the Black River National Park, those released at Ferney are not using nest boxes. All species of birds are monitored.

Forest restoration of the Conservation Zone has made great advances in recent years and this needs to be maintained along with the plant nursery which supports the work. Advice, training and support for the Flora work is available when required and includes the plant nursery, forest restoration (weeding and planting) and rare plant monitoring.

The objective of the Eco-tours is that the guides are well informed and deliver a professional standard of tours to visitors. The Mauritian Wildlife Foundation supports this objective in two ways, by reviewing the delivery of tours including coaching and via capacity building.

The Vallee de Ferney is a significant site for the Mauritius Kestrel which was reintroduced by MWF to the Bambou Mountain Range from 1988 to 1993 and monitored constantly since then.

Fauna

Pink Pigeons

- Translocation and release of 30 Pink Pigeons to Ferney in 2017.
- Pink Pigeons are breeding well at Ferney, 51 birds were ringed since releases with 16 in 2022.
- The population of birds has increased to 68 by the end of 2022.

Echo Parakeet

- Echo Parakeets were released at Ferney for three consecutive years from 2015 to 2017, with 73 birds released in total. 16 birds returned to their site of origin; 3 birds are presumed dead: 1 fledgling was ringed.
- Echo Parakeets are seen regularly at the 'Ferney gardens' near the visitors' centre and also in Domaine de l'Etoile and in Vallée de l'Est.
- The birds are not closely monitored but observations are recorded. In 2021 we have begun to use 'Audiomoths' to help identify areas where the birds are present and continued in 2022 (see Audiomoths).

Mauritius Cuckoo-shrike

- 16 birds were released up to March 2018.
- The species is cryptic so observations are rare, the use of AudioMoths may help us identify where these birds are present.
- One adult male has been seen in 2020 and 2021 within the 'Conservation Management Area' (fenced plot) with no observations in 2022 nor was the bird detected via the Audiomoths.

Mauritius Paradise Flycatcher

- A total of 48 birds were hand released in the valley.
- Trials were carried out with different ages and combinations of birds: Juveniles worked best.
- Observations have been very rare.
- A pair of birds were seen in 2021, they were un-ringed which means they may be the result of a successful breeding attempt of the released birds.
- A lone Paradise Flycatcher was seen on 17/06/2022, and the legs were not seen so couldn't confirm whether it was ringed. This is the first observation of a Flycatcher in Ferney since August 2021.
- AudioMoth devices were deployed in Ferney on 05/08/2022. A pair of flycatchers was seen that day, but it could not be confirmed whether they were ringed.
- Audiomoths detected a pair calling on 12/08/2022 and a ringed male flycatcher, translocated from Combo in 2016. It was seen calling and behaving territorially.

Mauritius Kestrel

- Conservation in the Ferney Valley began in 1987 when Mauritius Kestrels were reintroduced to the valley, by the Mauritian Wildlife Foundation.
- The eastern population has been monitored constantly since the re-introduction of birds from 1988 to 1993 and has been healthy and stable for the past decade.

- Today there are 25 nest boxes within the Ferney Valley.
- In the breeding season 2022/23 monitoring was carried out. 15 pairs used the nest boxes in the valley and fledged 15 chicks.
- The site was also used to provide 18 eggs for handrearing and released on the West Coast. While harvesting, at least one fertile egg was left in the nest for the parents to rear to aim to minimise the impact on the number of chicks that fledge into the population noting that the parent birds often raise just one to two chicks due to natural food shortage.

Flora

Weeding, Planting, Propagation of Plants

- Advice is given where required covering plant identification, plant nursery practices, propagation, weeding and planting.
- Training is given to Ferney staff when required.
- In 2022, we monitored the phenology of *Eugenia bojeri* and *Pandanus iceryi* in the valley.

Other

Ecotourism

- Training of new Guides and refresher training sessions are delivered on request.

Threats

- In 2021, there were reports that the South Eastern Highway project was under reconsideration, following the abandonment of this plan in 2005. There appeared to be no development in 2022. MWF will remain vigilant with regards to this project

FLORA IN MAURITIUS



Background

Mauritius is home to c.700 native species of flowering plants. 311 (46%) are endemic to the island, and 61 (c. 9%) have disappeared already. Since humans settled on Mauritius, big expanses of native forest were cleared for wood exploitation, agriculture and infrastructure. Now less than 1.3% of the land mass is under relatively good native forest cover (i.e. with more than 50% native and endemic plant species). The remaining forest is highly threatened by invasive alien species, especially plant species such as Strawberry ('Chinese') guava and ravenale. Restoring the remaining forest is crucial to safeguard the endemic plants but also endemic animals such as bats, reptiles and birds, that have evolved together to form this unique ecosystem. Since the 1980's MWF is restoring the native forest in three reserves: two nature reserves, Ile aux Aigrettes and Round Island and one private reserve Mondrain. Restoration of forest is a long-term process which requires dedication and sustained resources. It involves the removal of invasive alien plant species and planting of native plants. On Ile aux Aigrettes, the forest restoration is supporting the whole ecosystem restoration work whereby exotic mammalian predators were eradicated and endemic animals and ecological analogues were re-introduced, reviving lost ecosystem functions. On Round Island removing goats and rabbits and replanting has increased the native forest cover and ultimately increased the population of the endemic reptile species, some of which were on the brink of extinction.

Over 90% of the 311 endemic plant species are threatened with extinction with around 100 species with less than 100 individuals remaining in the wild. Whilst restoring forest is beneficial for threatened species, those on the brink of extinction requires specific intervention to increase their wild as well as their *ex-situ* population.

These actions involve plant search and monitoring; collection of seeds and cuttings, propagation; re-introduction in the wild and in the field gene banks; *in-situ* micro-management and storing seeds in local and international seed banks for long term storage. The latter safeguards the remaining genetic diversity of the species and will provide propagation material in later years. MWF runs plant nurseries at Pigeon Wood (Black River Gorges National Park), Ile aux Aigrettes and Round Island. Through the rare plant work, MWF has rediscovered plant species that were thought extinct and found new populations of rare plants.

The National Land Development Strategy (NLDS) draft report (p 140/141 of the circulated draft), see extract below, showed that about 1000 Ha of forest was being lost annually in Mauritius.

Around 47,000 ha of land are under forest cover of which 25,000 ha are privately owned forest lands and 22,100 are state-owned; however only 6,550 ha of these private lands are protected by law as Mountain or River Reserves. Including Black River Gorges National Park (*Our note: C, 6700/6800 Ha*) and Pas Geometriques just over 8,000ha of state forest lands are protected as Nature or Islet Reserves.

In 2003 there were 56,600ha of forests (state and private), prior to which time (*Our note: period not stated*), some 10,000 hectares of forest lands had been cleared mostly for infrastructural developments, including built-up areas, roads, agriculture, reservoirs and dams. By 2014 the total extent of forest cover in Mauritius had fallen again, by another 10,000ha to 47,103 ha, representing about 25% of the total.

In 2022, we discussed with several researchers the possibility of documenting forest destruction on Mauritius, so as to alert the authorities and the public about this worrying trend.

MWF co-chairs the IUCN (International Union for the Conservation of Nature) Mascarene Islands Plant Specialist Group, with overview on Mauritius and Rodrigues from 2021-2024. The group brings specialists together and is working on completing the red-list of Mauritian plants.

Rare Plants Project



Ile aux Aigrettes

The Ile aux Aigrettes flora team focused on several rare highly threatened plants species in 2022 namely: *Aerva congesta*, *Phyllanthus revaughnii*, *Ochrosia borbonica*, *Dictyosperma album* var. *conjugatum*, *Barleria observatrix*, *Pandanus vandermeeschii*, *Ruizia boutoniana*, *Sideroxylon boutonianum* and *Zanthoxylum heterophyllum*. The first three species are under the Zero extinction CEPF project in partnership with Conservatoire Botanique National de Brest (France) and the last one under the Botanical Garden Conservation International (BGCI) project funded by Franklinia Foundation.

Plant surveys and monitoring: All the focal species mentioned above are found on Ile aux Aigrettes as original or re-introduced populations and are monitored on a monthly basis, propagated and taken care of in the Ile aux Aigrettes nursery. A monthly phenology survey is also undertaken to check the health and status of the plants. The team also undertook micromanagement activity around some of the plants when required. Rare plants planted this year and last year were also regularly monitored and aftercare, such as watering, mulching and weeding was provided when needed.

Several trips were undertaken to external sites throughout the year to monitor *Zanthoxylum heterophyllum* at Trou d'Eau Douce, *Ruizia boutoniana* on Le Morne, *Barleria observatrix* in Mondrain and Corps de Garde and various plants at Le Pouce (*Pandanus pseudomontanus*). During each trip a phenology survey was conducted; GPS coordinates were recorded for new individuals found; the threats were assessed, and propagation materials were collected occasionally. To note, *Phyllanthus revaughnii*, *Aerva congesta* and *Dictyosperma album* var. *conjugatum* have wild population on Round Island and are monitored monthly by the Round Island team.

Plant surveys were also conducted at Ferney Valley to monitor rare plant species such as *Eugenia bojeri* and *Pandanus iceryi*. Additionally, other sites like Yemen, Montagu and Tourelle du Tamarin were also surveyed for rare plants as *Badula crassa* and *Zanthoxylum heterophyllum*.

Collection of plant materials and propagation: The following seeds were collected for propagation, and some were stored in the Ile aux Aigrettes nursery: 149 *Phyllanthus revaughnii*, 3276 *Zanthoxylum heterophyllum*, 905 *Dictyosperma album* var. *conjugatum*, and 615 *Pandanus vandersmeeschii*. 9 cuttings of *Zanthoxylum heterophyllum*, 39 cuttings of *Barleria observatrix* and 90 cutting of *Premna serratifolia* were struck. 1400+ seeds of *Aerva congesta*, 274 seeds of *Dictyosperma album* var. *conjugatum*, 70 seeds of *Ruizia boutoniana* and 734 seeds of *Zanthoxylum heterophyllum* were sown. 109 seedlings of *Zanthoxylum heterophyllum*, 48 seedlings of *Pandanus vandermeeschii*, 1 seedling of *Aerva congesta* and were first potted.

In-situ living collection: 30 *Aerva congesta* and 3 *Phyllanthus revaughnii* were present as a living collection in the nursery by December 2022. We are aiming to increase the number of individuals for these two species to a minimum of 50 each to keep in the nursery as living collection and the surplus obtained will be planted in coming years.

Planting: 1 *Zanthoxylum heterophyllum* were planted on Ile aux Aigrettes in 2022. Additionally, 10 *Barleria observatrix*, 4 *Ruizia boutoniana* and 5 *Foetidia mauritiana* were planted during the rainy season in different areas of Ile aux Aigrettes in 2022.

Artificial pollination: 18 individuals of *Dictyosperma album* var. *conjugatum* are present on Ile aux Aigrettes, which were monitored monthly by the Flora team. Four of them were found to be flowering. The Flora team and Round Island team undertook several attempts between November and December to hand pollinate these four mature plants with pollen collected from the one remaining wild individual found on Round Island. Out of the four trees, two produced fruits.

Pigeon Wood Nursery and Field Gene Bank



The Pigeon Wood Nursery has been functional since 2021 and minor maintenance work has been undertaken in 2022. The Field Gene Bank is surveyed regularly, and a survivorship monitoring was conducted. Rare plants such as *Gouania tiliifolia*, *Psiadia cataractae*, *Tectiphiala ferox*, *Polyscias gracilis*, *Tetrataxis salicifolia* amongst others have been observed flowering and fruiting during the year.

Circular weeding around the individual plants and general weeding in the Field Gene Bank was conducted regularly.

Propagation of plants in the Pigeon Wood nursery has been carried out in 2022. 271 cuttings of 18 species, 1250+ seeds of 16 species and 23 seedling of 4 species were propagated in the Pigeon wood Nursery in 2022 and included some critically endangered species: 45 cuttings of *Polyscias gracilis* and 98 seeds; 7 cuttings of *Xylopiia amplexicaulis*; 11 cuttings and 52 seeds of *Albizia vaughanii*; 16 cuttings and 3 seeds of *Syzygium pyneei*; 400+ seeds and 16 cuttings of *Tetrataxis salicifolia*; 12 seeds of *Gaertnera longifolia*; 25 cuttings of *Senecio lamarkianus*; 1 cutting of *Chassalia boryana*; 58 cuttings of *Barleria observatrix*; 668 seeds and 15 cuttings of *Ruizia boutoniana*; 204 seeds and 4 cuttings of *Hibiscus genevii* and 6 cuttings of *Psiadia lithospermifolia*. The first six species are part of the Zero Extinction project with the Conservatoire Botanique National de Brest (France) and Critical Ecosystems Partnership Fund.

The team did several trips to different sites to survey and monitor threatened plants, collect phenology data, and collect propagation materials when available. The sites include Mondrain Reserve, Le Morne Nature Reserve, Tamarind Falls, Le Pouce Nature Reserve, Perrier Nature Reserve, Gouly Pere and Les Mares Nature Reserve, Mont Vert, several of which with the Forestry Service.

Habitat Restoration

Ile aux Aigrettes

The Western Indian Ocean Strategic Action Programme (WIOSAP) project on Ile aux Aigrettes began in December 2019 for a period of 17 months to April 2021 and has been extended a number of times to December 2022, due to the COVID-19 pandemic which has affected WIOSAP projects in Mauritius and worldwide. The project aims to restore the native terrestrial habitat and seabird community of Ile aux Aigrettes. The main project activities include weeding of 14 ha of the island; planting; creation of a seabird area; deployment of seabird attractants which include seabird decoys and playbacks of seabird calls; review and improve biosecurity on Ile aux Aigrettes and provide training to staff. In 2022 funding was obtained from MOL Mauritius International Fund to continue this work.

Weeding: A team of 13 labourers conducted weeding on Ile aux Aigrettes this year for 4.5 hours per day during weekdays when the island was open. The labourers were supervised and trained by a Supervisor. The technique used for weeding included manual weeding and mechanical weeding using a tree popper to remove bigger trees and their roots. 13.14 ha has been completely weeded once, including 1 ha which have been weeded partly (only small weeds were present) and 4.9 ha has been re-weeded since the start of the project. In effect, over 14 ha has been weeded.

Plant propagation: Plants were propagated and grown in the Ile aux Aigrettes nursery following the Ile aux Aigrettes propagation plan. 4910 seeds from 25 species were sown and 139 vegetative propagations from 6 species were carried out. A total of 961 plants from 33 species were first potted in 2022. The plant propagation was conducted by MWF horticulturist with the support of other members of the Flora team.

Planting: A total of 486 plants from 21 species were planted in 2022 in various areas across the island, to enhance the abundance of specific plant species and speed up restoration in some of the freshly weeded barren areas. Planting started in and was completed in May. Planting was led by the Ile aux Aigrettes Horticulturist and conducted with the assistance of Ile aux Aigrettes labourers and the Flora team. Some of the sites had to be re-weeded prior to planting as a profusion of small acacia (*Leucaena leucocephala*, which is highly invasive) germinated after the big rains. The GPS coordinate of the

location of each plant was recorded to map the distribution and help with aftercare and plant survivorship monitoring surveys. The plants were mulched using dried leaves. Watering and circular weeding was conducted when required throughout the year.

Seabird restoration: The seabird translocation project ran over a period of 6 years from 2009 with 620 seabird chicks of 6 species translocated from the northern islets to Ile aux Aigrettes, where they were reared until they fledged. The last translocation was done in 2017 and since then we have been waiting to see if these birds returned to the island. Although birds are seen flying over, none have adopted the island as a breeding ground. We have now moved towards establishing a seabird attractant system on Ile aux Aigrettes to increase the probability of seabirds returning. Re-establishing colonies of ground-nesting seabirds is considered an important contributor to ecological restoration efforts on Ile aux Aigrettes. Breeding seabird colonies enrich soil with marine-derived nutrients (via guano, regurgitations, ailed eggs and corpses), provide habitat (burrows) for reptiles and invertebrates, further benefit reptiles and birds through indirectly enhancing plant productivity and facilitating high densities of invertebrate prey.

Seabird area creation: 1 ha of habitat suitable for returning seabirds has been identified, mapped, and weeded. Planting of seabird friendly plant species occurred in 2022. A total of 302 *Chrysopogon argutus* and 7 *Aloe tormentorii* were planted in the seabird area for the year 2022

Seabird attractants: 52 decoys were deployed, and the seabird call playback system was activated in August 2021. Monitoring was carried out until February 2022 when the assigned staff resigned. Recruitment has been ongoing for a suitable replacement.

Ile aux Aigrettes Bio-security plan: Following the update of the bio-security protocol for Ile aux Aigrettes, it was circulated to key staff and a presentation and training session was organised with MWF Eco-tour department and MWF Education department staff in September 2022 with a total of 8 staff attending.

Mondrain Reserve



Funding was secured from BIOPAMA in December 2020 for 'Developing a management plan for Mondrain Reserve (Mauritius) and improving accessibility for greater PA management effectiveness and visibility'. Through the project we were able to purchase a new 4x4 vehicle which facilitated access to Mondrain to conduct rare plant species recovery work, plant surveys and localized weeding. A management plan was prepared using a participatory approach.

Flora surveys: The monitoring and exploration of the Mondrain forest was the uttermost priority of the Flora team to survey of rare plants in the reserve and get an update on their status. In total 32 rare plant survey trips were organised in 2022. Highly threatened species such as *Syzygium pyneei*, *Chassalia boryana*, *Polyscias gracilis* and *Senecio lamarckianus* were monitored on a weekly basis. Monthly phenology surveys were also conducted to collect information about the flowering and fruiting season of the threatened species, which informs us when fruits are ready to be collected for propagation. The team located 22 *Polyscias gracilis* by the end of 2022.

Micromanagement of threatened plant species and weeding: The team did micromanagement work (weeding and trimming of other trees which were hindering growth) around some of the threatened plants found in Mondrain. Weeding was also conducted along the main track to remove invasive alien plants.

Propagation of highly threatened plant species: Plant materials from 18 species were collected from Mondrain reserve. 295+ seeds of 4 species (including seeds of 3 Critically Endangered species) and 2209 cuttings of 8 Critically Endangered species were collected from Mondrain for propagation in MWF nurseries. This included highly threatened species such as *Polyscias gracilis*, *Distephanus populifolius*, *Barleria observatrix*, *Ruizia boutoniana* and *Syzygium pyneei*. Two species have already germinated namely, *Ruizia (Trochetia) boutoniana* and *Syzygium pyneei*. Some of the seeds collected were also kept in storage for future use and as a conservation measure.

Management plan: Following the stakeholder site visits and consultation workshop in December 2020, the management plan was written, and a draft was circulated internally for reviews. Once an internal

draft was finalised the management plan together with a new Management Effectiveness Tracking Tool (METT) analysis for Mondrain was sent to the stakeholders for review. The management plan was subsequently updated following the stakeholders' inputs and comments and a final draft was produced by December 2021, which was further reviewed internally. The Mondrain management plan includes a long-term vision and strategic plan to achieve that vision, which are crucial in the long-term protection of this unique type of forest and ensuring the reserve is accessible to people for conservation education. The management plan also contains a comprehensive five-year action plan, which will help to systematically plan and monitor the deliverables and ensure the achievement of the set objectives. The final version of the management plan was circulated in February 2022. The flora team has planned their work around the various objectives of the management plan.

Extension of the reserve: Various discussion, meetings and site visits with the Medine Group occurred in 2022 regarding the extension of the Mondrain reserve.

Other

MWF Flora Strategy: A Flora Strategic Plan for MWF was developed in 2021 using the Open Standards facilitated by Durrell Wildlife Conservation Trust. A scope and vision were put together, conservation targets identified, a target viability assessment and a threat assessment were conducted and completed, a conceptual model produced, the strategies were formulated and a result chain for each strategy was developed with the objectives and indicators. The Flora strategy final draft was sent for final review in December 2022.

Capacity building: Three staff followed and completed a seed banking training which was led by the Conservatoire Botanique National de Brest (France). The staff and interns were trained throughout the year by the Flora Manager, Martine Goder on plant identification, collection of plant material, propagation techniques/protocols, nursery management, GIS, control of invertebrate pest, and data collection/management.

Integrated Environment Monitoring Plan (IEMP) monitoring: During 2021 a new vegetation monitoring protocol was put together and tested to assess the impact of the Wakashio oil spill on the coastal vegetation on Ile aux Aigrettes. The vegetation monitoring that was put in place in 2021 was repeated in September 2022. 24 sites were monitored, which includes 12 areas where plants were directly affected by the oil and 12 control points. Data on plant location, vigour, growth, and phenology were collected as part of this monitoring survey.

Plant and seed donations: A total of 197 plants of 34 species and seeds of 9 species were donated in 2022: All donations were related to either endemic gardens, education projects, funders or for a flora project.

Courses: Discussions were held with BGCI on a plant propagation course and a training in drone use for flora surveys, with the assistance of international expert trainers, to be held in 2023.

RODRIGUES

Forest clearance, introduction of invasive plant and animal species, predators (e.g., rats, cats and dogs), over exploitation of the island's nature resources, unsustainable agricultural and farming practices and soil erosion have led to the demise of much of Rodrigues rich biodiversity. Well over 20 bird species and a host of plants are, as a result, extinct.

Grande Montagne Nature Reserve



Background

The Mauritian Wildlife Foundation (MWF) has been working in the Grande Montagne Nature Reserve (GMNR) since the 1980s and in a programmatic manner since 1995 and the visitor is now able to enjoy areas of maturing forest while witnessing other more recently restored areas or view restoration underway. Around 95% of the 25.5 ha fenced area at Grande Montagne has undergone initial restoration to date and the aim of MWF is to complete the initial restoration of this reserve within the next 3 years with the current 5-year EU financed project. Over 208,733 plants have been planted in the reserve by MWF so far and 41 plant species endemic and native to Rodrigues are successfully conserved on Grande Montagne. In-kind manpower was not made available from the Rodrigues Regional Assembly (RRA) via the Seasonal Octopus Fishery Closure Alternative Livelihood Scheme or via the Tourism Alternative Livelihood Scheme in 2022.

The forest is a core habitat to the surviving endemic animals and insects of Rodrigues. From about only 30 birds, the island-wide population of the Rodrigues Fody has reached an estimated 20,000 individuals in 2016, whilst that of the Rodrigues Warbler increased to an estimated 25,000 individuals over the same period, in part due to the habitat restoration on Grande Montagne, where both species can be seen thriving. The GMNR project involves the local community, providing employment to restoration labourers from the nearby villages and organising 'restoration working days' with grassroots associations to sensitise and empower the local people in habitat restoration. The reserve is a key education site in the Rodrigues Environmental Education Programme where students visit and are taught about the reserve and its importance and more generally about conservation of biodiversity in Rodrigues. The reserve is also open to the public for paid guided visits.

In 2018, 5 sub-adult Aldabra Giant Tortoises were introduced into the Reserve, and in 2020 another 5 smaller individuals. Up to 31st December 2021, all 10 were doing well. In February 2022, 3 young tortoises from the 2nd batch were attacked by dogs and unfortunately died from their injuries despite treatment by the RRA Vet. Secure gates were deployed at the entrance and exit of the tortoise enclosure in June 2022 to prevent any dogs from entering the enclosure. On 3rd August 2022, 3 replacement sub-adult tortoises were sourced from the François Leguat Reserve in Rodrigues.

Two small temporary in-situ plant nurseries set up in 2021 in the GMNR with a capacity of up to 15,000 seedlings of 22 native species continued to be operated through 2022. These are run by 2 lady Restoration Labourers and managed by the Nature Reserve Officer, with regular monitoring visits by the Nursery Officer. This initiative continues to be successful, with all seedlings showing excellent signs of rapid growth and even very rare plants such as the Stinkwood (*Foetidia rodriguesiana*) germinating there in large numbers. This nursery produced 1,070 plants in 2022, that were either planted in the GMNR or donated to the community via the Rodrigues Environmental Education Programme. When the planting season resumes in early 2023, the presence of these seedlings within the reserve means resources such as transportation, staff time and energy will be saved.

As part of the MCB Forward Foundation project, on the 28th of November 2022, 17 big exotic trees including 5 eucalyptus (*Eucalyptus robusta*), 10 lagrain l'église (*Adenanthera spp.*) and 2 mango (*Mangifera indica*) were felled along the roadside, between the Grande Montagne Police Station and the Dominique Farla Information Centre. The action required the collaboration of 25 MWF staff and labourers with 3 chainsaws, 6 Forestry Service Officers including 3 woodcutters with their chainsaws, 6 Rodclean staff and their refuse lorry to clean and cart off the chopped up trees, 5 Mauritius Telecom officers lowering communication lines, 4 Central Electricity Board officers lowering power lines, 3 Environmental Police and 2 traffic Branch Police Officers controlling the road circulation, 2 officers of Public Infrastructure with an articulated arm lorry to assist the Forestry Service trimming trees before felling them, and 2 Police officers of the Rodrigues Disaster Risk Reduction and Management Committee (RDRRMC) to manage the action. The aims were threefold: replace exotic trees with natives, reduce water consumption and hence conserve water resources, remove the risk of trees breaking power and communication lines and blocking the main road during cyclones.

Main Actions

- Initial restoration in 1.5 hectares of European Union and Chester Zoo plots in the GMNR.
- Control of Invasive Alien Species in 10.5 hectares within the GMNR, including in the MCB Forward Foundation plot
- 15,298 endemic and native plants of 28 species were planted in the above-mentioned plots
- Deployment of legal signage at the front and rear of the Nature Reserve

Anse Quitar Nature Reserve



Background

The Anse Quitar Nature Reserve (AQNR) contains Critically Endangered plants within some of these last remnants of lowland calcarenitic forest on Rodrigues, although even these are highly degraded. Small-scale restoration began in Anse Quitar in the mid-1980s, and the Mauritian Wildlife Foundation began a larger scale restoration project in 2010 with a focus on employing conservation labourers from the local community.

So far, 33.3% of the 35-ha fenced reserve have undergone initial restoration, with MWF planting 131,340 native Rodriguan plants. By restoring this area, extremely rare plants such as bois pasner (*Zanthoxylum paniculatum*) are safeguarded and endemic and native habitat is recreated for the endangered Rodrigues Fruit Bat (*Pteropus rodricensis*), Rodrigues Warbler, Rodrigues Fody and various other cryptic species.

The main challenge posed is that the Anse Quitar River and banks are heavily invaded by the highly invasive alien plant la coqueluche (*Millettia (Pongamia) pinnatta*). Through 2021 and 2022, thanks to funding from the European Union and UNDP GEF Small Grants Programme, a strategic approach has been adopted and is being implemented to control this species, via the elimination of all fruit-producing mother plants, the collection and destruction of fallen fruit and the systematic uprooting of all juveniles.

The restoration work is being carried out by a team of labourers residing in the surrounding villages with a focus on supporting poverty alleviation through training and employment so they may acquire a marketable skill. Restoration working days are organised with grassroots associations to sensitise and empower local people in habitat restoration and conservation.

The reserve is included in the Rodrigues Environmental Education Programme, where students visit and are taught about the reserve and its importance.

Main Actions

- 13,180 endemic and native plants of 22 species were planted in the EU/GEF plot and along the river in Anse Quito Reserve
- Within the Rare Plant project supported by Botanical Gardens Conservation International, focussing on micro-management of critically endangered flora, both bois pasner (*Zanthoxylum paniculatum*) trees in the reserve benefitted from the addition of retaining walls built around them and filled with soil and compost, and the planting of native nitrogen-fixing plants (*Sophora tomentosa*) in their vicinity to boost their chances of producing flowers, fruit and viable seeds. The more exposed tree benefitted from the deployment of metal supports in 2022.
- 2022 saw a continuation of the 5-year EU and 2-year UNDP-GEF-SGP conservation project partly aimed at eradicating *Millettia (Pongamia) pinnatta*. To this end, significant efforts were made to 1) uproot rather than chop regrowths, 2) Cut down and treat with short-lived systemic herbicides all fruit-producing trees (including upstream of the AQNR), 3) collect and destroy all seeds to halt new growth.
- Deployment of legal signage at the entrance of the Nature Reserve closes to the François Leguat Reserve.

Ile aux Cocos and Ile aux Sables, Rodrigues



Background

Ile aux Cocos and Ile aux Sables, two sandbar islets to the West of Rodrigues, of 15 and 8 Ha respectively, are renowned for their breeding seabirds, water birds as well as migratory birds and occasional prospecting seabirds. The islets are also the last place on Rodrigues where there is natural vegetation succession (from coastal strand to shrub to tree), and despite their small size hold several ecotypes (strand, grasses, marshes, forest). Ile aux Sables also supports the only known breeding population of the Roseate Tern (*Sterna dougalli*) and population of bois mapou (*Pisonia grandis*) in the Mascarenes.

By virtue of the biodiversity hosted by these islets, they are classified as an 'Important Bird Area for Africa' by Birdlife International. The Mauritian Wildlife Foundation has had a long history of involvement

with these islets and has continuously advised the RRA in formal and informal capacities on their management, giving advice on planting, weed control and on the management of the bird populations. Despite their native biodiversity, the islets have been severely modified by man and the vegetation communities have been replaced to a great extent by casuarinas and coconut plantations, damaged by invasive exotic plants and animals, coastal erosion, and by inadequately managed human visitation.

Five information boards, replacing previous ones, were deployed by MWF on the visitor's centre veranda walls in 2019 covering the nesting and non-nesting seabirds as well as the restoration work done there, these information boards remained in excellent condition through 2022.

Main Actions

- Seabird censuses were carried out four times in 2022 by the MWF team. Bird populations appear stable.
- Genetic samples were collected from Sooty Terns in November and December 2022 by Dr Malcolm Nicoll from the Institute of Zoology (IOZ, Zoological Society of London) and Mr Ashwin Dooky, Acting Scientific Officer of the National Parks and Conservation Service.

Grenade Community Forest



Background

In 2013, a strategic project was developed by Shoals Rodrigues in collaboration with the Mauritian Wildlife Foundation, with the guidance of the Rodrigues Regional Assembly and funded by the GEF Small Grants Program. The aim of the project was to develop a sustainable alternative livelihood for 12 fishers in the Grenade area to reduce pressure on dwindling marine resources. One component of the project allocated to MWF Rodrigues to implement was the setting up of a 1 ha community forest. The flora planted at this site are all species with known medicinal or artisanal uses that can be harvested and sold for revenue, reducing the need to fish. Since these plants would need a considerable amount of time to reach maturity for exploitation, two small vegetable and fruit gardens were also setup to produce revenue in the short term. A tool shed, water reservoir and rainwater harvesting system were also built as part of the project.

Unfortunately, since rainfall is extremely low in this area, the vegetable garden did not prove to be successful. Therefore, to obtain a steady source of water, MWF tried to set up a cooperative for the fishers so they could apply for a water connection, however this failed. MWF also tried to obtain an agricultural land lease, but this also did not prove successful. MWF then tried applying for an agricultural permit for the land to assure a water connection, unfortunately no progress was made on this front in 2022.

Each year, 6 octopus fishers of the original 12 return during the seasonal octopus fishery closures to maintain the site, cutting pikan loulou (*Acacia nilotica*) regrowths and replanting in the wet season to replace mortalities in the native plant population. In 2022, unfortunately no Octopus fishers were granted to MWF, so all maintenance work was done in-house. Ten years later, the forest is growing slowly, due to the dry climate at the site.

Main Actions

- Cutting down of the last 2 large pikan loulou (*Acacia nilotica*) trees
- Maintenance weeding of the pikan loulou and raketete (*Opuntia stricta*) in the entire 1 ha plot
- Several poles supporting the perimeter fence were repaired or replaced
- Clearing of the access path clogged up by pikan loulou
- To date, the land is still vested with the Commission for Forestry, without a freshwater connection, despite all attempts so far to obtain one with various Commissions of the RRA.

Solitude Nursery



Background

The Solitude Endemic Plant Nursery was set up in 1996/7 with World Bank funding. The nursery has undergone several enlargement and major upgrades since then. Over the years MWF Rodrigues staff have propagated 57 native and endemic species of plants by seed, seedlings, cuttings and aerial layering for all Mauritian Wildlife Foundation's restoration projects. The nursery also propagates plants for other purposes such as donations towards endemic gardens in schools, villages and other organisations. In-kind manpower has been made available from the RRA via the Seasonal Octopus Fishery Closure Alternative Livelihood Scheme and the Tourism Alternative Livelihood Scheme in since 2012, however in 2022, no assistance was afforded.

Main Actions

- 36,486 endemic and native propagated plants of 46 species were in stock in the nursery as at 31st December 2022.
- 32,943 endemic and native plants were transferred from the nursery for conservation purposes in 2022.
- Significant upgrading work continued in the nursery with the financial support of the EU and the resurfacing to block weed growth and remove the need for plastic sheeting, was completed. A water drainage system was also constructed and is due to be completed in 2023.
- 10 bare-rooted young *Zanthoxylum heterophyllum* plants were transferred from Mauritius to Rodrigues and several successful cuttings of the 2 *Zanthoxylum paniculatum* trees in the AQNR were grafted on them, bringing the total number of *Zanthoxylum paniculatum* individuals up to 8 (4x ZANPAN001, 3x ZANPAN002 and 1x ZANPAN003) from 4 in 2021, thus doubling the world population.

Rare Plants



Background

The Indian Ocean Islands is a hotspot area for threatened endemic plant species. The Conservatoire Botanique National de Brest, France (CBNB) and Botanical Gardens Conservation International (BGCI) have been working for several years with MWF to save and propagate rare plants, build ex-situ collections as well build capacity in Mauritius and in Rodrigues to protect these species.

CBNB and BGCI will continue work with the Mauritian Wildlife Foundation over the coming years to secure living collections and/or the reintroduction to the wild of some 15 plant species from Rodrigues assessed as Critically Endangered.

Project activities will include working with the existing network of international botanic garden experts to establish propagation programmes for species where efforts have previously been unsuccessful, developing a seed bank and protecting threatened founder plants in the wild.

In addition, reintroduction programmes have been initiated for species such as *Zanthoxylum paniculatum* at Anse Quitor that would be more secure if established at additional sites.

CBNB and BGCI and other partners in the network will accompany in-country project teams to build capacity during survey and collecting trips, and experts from the Ecological Restoration Alliance of Botanic Gardens will be identified to support propagation and reintroduction efforts.

In addition, planning will be advanced for a native species botanic garden on Rodrigues. These activities will help build capacity for species conservation and recovery programmes in Mauritius and Rodrigues, ensuring actions can be scaled up in future.

Main Actions

- Renewal of the agreement with BGCI for a further 3 years aiming to work on 8 IUCN critically endangered tree species: *Antirhea bifurcata*, *Badula balfouriana*, *Dombeya rodriguesiana*, *Eugenia rodriguesensis*, *Foetidia rodriguesiana*, *Hibiscus liliiflorus*, *Pyrostria revoluta* and *Zanthoxylum paniculatum*.
- Phenological visits were carried out on the 8 focal species affording a better understanding on their flowering, fruiting and budding habits to better protect them.
- Propagation trials were also done on as many of the above species as possible, depending on the availability of propagation material.
- Amazing germination of the Stinkwood (*Foetidia rodriguesiana*) seeds in the Grande Montagne Nature Reserve in-situ nursery, using a soil mix including Aldabra Giant Tortoise dung for the first time.
- All founder plants of the above 8 species were visited, marked with aluminium tags were tagged were missing, had ecological information pertaining to them collected, main threats noted, and GPS locations recorded.
- The last two adult bois pasner (*Zanthoxylum paniculatum*) plants had additional retaining walls built around them and filled with a soil compost mix to boost their chances of producing viable fruit, had young nitrogen fixing *Sophora tomentosa* trees planted around them and finally, had steel support bars manufactured and deployed to support several weakened branches.
- The founder protection action continued through 2022, with 8 plants from 5 of the focal species benefitting from retaining walls (x2 *Zanthoxylum paniculatum*, x1 *Antirhea bifurcata*), protective fences (x1 *Badula balfouriana*, x3 *Eugenia rodriguesensis*, x1 *Hibiscus liliiflorus*), and support poles (x1 *Zanthoxylum paniculatum*).

Rodrigues Environmental Education Programme



Background

The Rodrigues Environmental Education Project (REEP) has been operational since 1998 and after 2 successful decades won the Philadelphia Zoo Global Conservation award in 2018. From its inception REEP has been involved with the community, aiming to change people's attitudes towards the environment. This is achieved through awareness-raising and informal environmental education initiatives involving talks in schools and to the media, visits to restoration areas and environmental education campaigns including outreach to community groups for them to experience 'hands-on' the habitat restoration process. Volunteer's day is celebrated with activities and hand-outs of educational materials for those who have volunteered for MWF during the year. REEP also focuses on sensitising school children about environmental issues that affect Rodrigues and encourages them to take pride in their natural heritage. Work began in collaboration with Chester Zoo on developing an effective and unbiased way of evaluating the education visit to Grande Montagne via a questionnaire aimed at school children of various ages with the assistance of Government and Roman Catholic Aided (RCA) schools.

Main Actions

- 4,465 plants were donated to primary schools, colleges, villages and other organisations.
- 571 students and 98 teachers participated in educational visits of the Grande Montagne Nature Reserve and Anse Quito Nature Reserve.
- 98 school children were present during educational talks.
- 128 villagers were present during educational talks in the village community.
- 239 volunteers helped towards terrestrial conservation in Rodrigues contributing some 499 workdays.
- 20 interviews were broadcast on TV and Radio, 10 on TV only and 4 on Radio only providing media coverage for conservation actions carried out by MWF.
- 7 monthly blogs were published online for MWF's (and Philadelphia Zoo's) social media.
- 5 articles were published on Newspapers and newsletters.
- MWF continued to work with Reef Conservation Mauritius in parallel with Shoals Rodrigues on the Indian Ocean Eco Schools programme, unfortunately due to the COVID-19 pandemic, no meeting meetings were possible with Ecoschool committee members from schools to monitor their project status.

- After missing 2021 due to the COVID-19 pandemic, International Volunteer Day could once more be celebrated with one of the largest groupings ever, with 165 volunteers present participating in a guided walk from the GMNR to St François for fun activities, gift and certificate handing over and a lunch.

Eco-Tours Grande Montagne



Background

The Grande Montagne Nature Reserve has always been open to the public for visits. In 2013 the Rodrigues Regional Assembly approved plans for the MWF to conduct paid guided ecotourism activities in this Nature Reserve, which began in February 2016. A dedicated Ecotour Ranger was recruited to deliver tours in 2016, an Ecotour Officer position created in 2018, and an additional Ecotour Ranger / Assistant recruited in 2022. This activity has gone from strength to strength with a rapid increase in the number of visitors, revenue and sales of MWF merchandise.

Main Actions

- The COVID-19 pandemic broke out in Rodrigues on the 26th January 2022 and resulted in a closure of international borders and Mauritius and Rodrigues travel restrictions until March 2022. Commercial flights without compulsory quarantine resumed on 4th March 2022.
- In 2022, 1,867 paying customers visited the reserve, representing a significant increase in the number of visitors even compared to the last normal year in 2019.
- In 2022, 995 complementary tours were given, of which, 826 were given to Rodriguan students and teachers free of charge via REEP. The remainder were given to tour operators, members of the press, RRA officers, visiting scientists, collaborators and funders.
- The RRA allocated a small section of the carparking space in front of the visitors centre for use as a bus stop.
- A new flight of steps leading to the GMNR was built by the RRA Public infrastructure Commission.
- MWF repaired and upgraded the exit gate, repainted the steps' handrails and replaced worn steps leading up into the reserve.

Rodrigues Fruit Bat



Background

The Rodrigues Fruit Bat has been studied since 1974 when it was considered one of the rarest of all vertebrates, with a population of less than 100 animals, and the rarest bat in the world. Since then, the population has steadily increased due to active reforestation by the RRA Forestry Service and MWF, native habitat protection, a decline in hunting pressure and the lack of strong cyclones directly hitting the island.

The population reached ~5,000 individuals in 2002, then cyclone Kalunde hit the island in March 2003 causing a reduction in the population possibly as high as 50%. This was caused by post-cyclone food shortages that resulted in elevated juvenile mortality. Simultaneous counts of bats leaving from different roosts, from 2007 to 2016, show that the population has recovered, and continued to grow to an estimated ~20,000 individuals. In 2016, explorations were made in search of new roosts where bat presence had been reported. This record high resulted in its downlisting on the IUCN Red List of endangered species to Endangered in 2017. The identification and monitoring of new temporary or permanent roost sites found and the search for new bat roosts continued as this helps us understand the dispersal response to population increase. In 2018 the Rodrigues Fruit Bat population hit another all-time high of ~24,000 individuals. At the same time, it was noted that there was some dissatisfaction amongst the Rodriguan population for the damage caused by the bat feeding on backyard fruiting trees.

Following two strong cyclones Gelena and Joaninha in early 2019, mortality and strange feeding behaviour (bats feeding on the ground and eating fruit they usually didn't) was reported across the island, likely a result of the shortage of food. Abnormally low counts (5,423 bats) were recorded in November 2019.

A tropical depression and the COVID-19 lock-down in early 2020 affected the island-wide bat counts and following various consultations, it was agreed only one island-wide bat count would be carried out each year, in November, when the counts have produced the best figures.

In November 2020, the number of bats counted was back up to 18,430 (Total Pop Est: ~20,000) suggesting the population decline was not as severe as previously thought and that they had likely scattered to unmonitored roosts following the two 2019 cyclones.

A Management Support Officer, recruited in April 2020 began the task of inputting the backlog of bat count data and to date most paper data have been entered. Discussion continued with Chester Zoo (UK) through 2021 to begin the analysis of this dataset in collaboration with Chester University. A Scientific Officer was recruited in October 2021 with the aim that she will in time participate in and manage all scientific research including the bat data analysis.

In 2022, a data sharing agreement was signed between MWF and Chester Zoo/Chester University such that the data already entered could be analysed, first summarily by an M.Sc. student. The completed thesis is expected in 2023. The search for a Master in Research student is ongoing to continue this research in greater detail.

This population clearly needs to be monitored to assess the impact of cyclones and future population trends. Since the Rodrigues Fruit Bat breeds once a year and usually produce a single offspring (occasionally twins), population counts repeated annually are effective in plotting long term population trends. Regular surveying can also allow a better understanding of the factors affecting bat movement on the island.

Fortnightly counts are maintained at the Cascade Pigeon roost, with surveyors based at the Malabar crossroad. MWF staff are joined by a wide range of volunteers for the simultaneous island wide counts. These counts are useful to introduce Rodriguans to MWF and these volunteers often become involved with other aspects of conservation projects in Rodrigues and the island wide bat count. The bat work has helped to inspire respect for MWF's work in Rodrigues. MWF aims to build upon the awareness and educational potential of bat counts to the fullest.

Main Actions

- One single simultaneous evening dispersal island-wide count was carried out in November 2022 over 3 days at 15 permanent roost sites and in situ estimations done at 13 sites.
- The November 2022 resulted in 15,327 bats being counted and an estimated 20,000 to be present in Rodrigues. The slight increase in number counted between 2021 (14,113) and 2022, is the result of no strong cyclones or serious droughts. The difference between bats actually counted and the estimated population is based on the judgement that bats are using roosts which have not been detected thus not counted.
- 24 fortnightly counts of the Cascade Pigeon Roost were done in 2022.
- The 2022 island wide bat count was filmed by Chester Zoo to create education material and was attended by Regional Field Programme Manager - Madagascar & Mascarenes, Dr Claire Raisin.

Rodrigues other Activities



- **La Faune et La Flore de Rodrigues:** The 2nd edition of this field guide, authored by MWF Ecotour Officer, Stephen Kirsakye and funded by SBM Foundation was launched on 16th November 2022

at the Dominique Farla Information Centre in Grande Montagne, in the presence of the RRA Chief Commissioner, Mr Johnson Roussety GOSK, the Chairman of the SBM Foundation, Mr Basdeo Rajee and other staff, various MWF stakeholders and the MWF team. This second edition published in French comprises 16 additional pages, bringing the grand total to 138 pages: the book covers 37 animals and 81 plants and has more than 200 illustrative pictures. Of the 2,000 copies printed at least 100 will be donated to all schools, NGOs and organisations with which the MWF collaborates in Rodrigues, made available in all public bookshops in Rodrigues and at MWF offices in Rodrigues and Mauritius.

- **Long-term Seed banking training by the Conservatoire Botanique National de Brest (France):** Between 6th and 8th June 2022, Head of *Ex-situ* Conservation, Mrs Catherine Gautier and Scientific Director of International Actions, Dr Stephane Buord of the Conservatoire Botanique National de Brest delivered theoretical and practical training on long-term seed banking to 4 MWF Rodrigues staff and 3 Forestry Service Officers at the Solitude Offices and Nursery.
- **Green Iguana in Rodrigues:** Following the first sighting of a Green Iguana (*Iguana iguana*) on 3rd December 2019 and reports that 8 individuals had been released in the wild at Terre Rouge, MWF Rodrigues staff have continued to respond to sightings across the island and to date have collected a total of 6 individuals, which have been handed over to the RRA for euthanasia. TV and radio coverage has been done on the subject to encourage Rodriguans to report all sightings for collection. Another 2 iguanas were collected by MWF staff in 2022 in the Terre Rouge area and handed to the RRA veterinary Service for euthanasia. The longest animal (OF THE TWO? OR 6?) measured 1.1 m in length.
- **Mourouk Ebony Reserve:** The 5-year GEF6 UNDP Mainstreaming Invasive Alien Species Project begun in 2021, with several consultation and planning sessions. This had been preceded representations from MWF that the Ebony Forest in Mourouk needed protection. In 2022 a number of other consultation workshops, meetings and fieldtrips were organized by UNDP project officer and National Parks and Conservation Service staff in Rodrigues and Mauritius. The 18-ha area home to some 250 Rodrigues Ebony (*Diospyros diversifolia*) and other endangered trees present in the area was fenced off under the project and a team of 10 labourers recruited to begin out restoration actions under the supervision of the Rodrigues Forestry Service. This area, together with other zones in the Mourouk Valley, including the Botanical Garden and Genebank, as well as the Cascade Pigeon Valley, Cascade Victoire Valley, Accacia Valley (Golden Bat Sanctuary) and Ile Gombrani are all earmarked to become new Nature Reserves increasing the current Nature Reserve cover from approximately 50 to over 500 hectares. Plans are also in place to increase the size of both mainland reserves to include the fenced buffer zones.
- **Rodrigues Airport Development:** In December 2019, the Agence Française de Développement officially agreed to co-finance the expansion of the Rodrigues Airport on the mainland and as a result, an Environmental and Social Impact Assessment was carried out. The report identified that 1) the entire village of Ste Marie would need to be relocated, 2) 1x Rodrigues Ebony (*Diospyros diversifolia*), 2x bois puant (*Foetidia rodriguesiana*), 1x bois benzoin (*Terminalia bentzoe* ssp. *rodriguesensis*) and 2x bois blanc (*Polyscias rodriguesiana*) founder trees together with some 100 other endangered native trees in the direct path of the project would need to be conserved, 3) the Anse Quitor Nature Reserve would possibly be encroached upon, or at the least affected by dust during the construction phase, also requiring protection. An MoU was signed by MWF with the RRA in July 2021, to draft an action and strategy plan, as well as lead the protection and preservation of all these plants via a 3-tiered approach: 1) Propagating the focal species from seeds and seedlings, 2) Cloning the same species via cuttings and aerial layerings, and 3) transplanting these trees to the reserve with the expertise of the Naples Botanical Gardens, Florida. It was established in December 2021 that the reserve would not be encroached upon by the

proposed airport development project. Actions under Tiers 1 and 2 began in 2021 under the supervision of the Project Support Officer. Through 2022, work continued on all 3 tiers, with root and canopy cuts on 4 of the 5 trees. Seeds, seedlings or aerial layerings were collected from all 5 trees, except the Ebony. In August 2022, it was announced that the project will be exempt from an EIA licence. The AFD decided to withdraw support from the project and interest was expressed by the World Bank to fund the airport extension, with 2 expert visits carried out in late 2022.

EDUCATION IN MAURITIUS



The Mauritian Wildlife Foundation (MWF) recognises that the long-term survival of Mauritius' endangered biodiversity depends on the continuous education of Mauritian and Rodriguan children and raising the level of awareness among the public at large to overcome human indifference towards conservation. MWF believes that this depends on providing opportunities for everyone to appreciate strategic areas, local species, and foster education to highlight the ecological, aesthetic, cultural, spiritual, recreational and economic importance of protecting our endemic animal and plant species. MWF is conscious of the challenges involved in changing attitudes to the environment. One of the MWF's missions is: 'To share the joys and benefits of native wilderness and wildlife with the Mauritian people'. To achieve this mission, various educational initiatives are undertaken by MWF.

The Education Programme is composed of projects brought together within the MWF Education Strategy. The current projects encompass four out of the five identified goals: Islets Education, Connecting with Nature, Invasive Species and the Human-Wildlife Conflict with the Mauritius Fruit Bat. We are advised and supported by the North of England Zoological Society (Chester Zoo).

Main actions are summarized in this Annual Report but details are available in the Education Annual Report 2022, available on request.

Main actions

The following are general education actions which will address more than one of the goals.

- We participate in exhibitions when the opportunity arises, depending on the circumstances, staff are present or we lend our panels. In 2022 there were 5 events comprising of 12 exhibition days.
- Presentations with journalists and photographers were carried out in May 2022 in collaboration with the Media Trust. Five presentations and two educational visits were put together to enhance the knowledge of journalists about several conservation projects (MWF's conservation works, Mauritian Reptiles conservation, Mauritius Kestrel, Endemic plants and Seabirds). This initiative is

an extension of the webinars organised in 2021 to increase the knowledge of journalists and promote coverage of wildlife in Mauritius. Twelve journalists/photographers from several media (written, radio, and web) attended and each participant received a Native Plants and Animals of Mauritius booklet. The educational visits were done on 24th May at La Vallée de Ferney and on the 25th of May at Ile aux Aigrettes.

- Media requests were responded to with two interviews on video given, 37 posts were published on MWF's Facebook group *Anou Protez Nou bann zil* and 6 press articles published following the training with journalists.
- Collaboration with Action for Environmental Protection (AEP) where two presentations were carried out at two workshops organised by the NGO Association for Environmental Protection with the Headteachers/Rectors and Green champions of four primary and secondary schools. Six persons were in attendance for each session.
- Two corporate talks were delivered online during the year with 47 participants
- Two talks were given to Community Groups reaching 77 children and 12 tutors. Each child was given a Connecting with Nature sticker.
- Education materials consisting of Stickers, mugs, tote bags, Mystic Mauritius DVD, pen drive, plant, plant labels, Native plants and animals of Mauritius and Discovering Dodos were purchased and used as tokens to distribute to our stakeholders to support the programme.

Islets Education Project



‘Anou protez nu bann zil’

Background

The project began in the southeast in May 2017, funded by the European Union (EU) via the Indian Ocean Commission (IOC), until October 2018 and aimed to educate leisure boat skippers and staff, fishermen, private boat owners and coastguards in the region on the protection of the native wildlife on the southeast islets. The objective is to have a reduction in human-mediated threats such as littering, open fires, trampling and new exotic species introduction hence helping to conserve the endemic/native animals and their habitat. The islets involved are Ile aux Aigrettes, Ile aux Fouquets, Ile de la Passe, Ile Marianne, and Ilot Vacoas which are home to endemic species of reptiles, birds and plants as well as seabirds.

New funding was secured from the Mauritius Commercial Bank in July 2019 and again in December 2022 to continue the project in the southeast and start and consolidate a similar project in the north where we have six islands of conservation importance namely Round Island, Gunner’s Quoin, Serpent Island, Flat Island, Ilot Gabriel and Pigeon House Rock.

The main project activities include participative training workshops; educational visits to islets, monitoring of the project impact on the islets and production and distribution of educational and promotional materials and questionnaires to assess change in knowledge and attitude. The leisure boat skippers/assistant skippers who follow the training programme to completion receive an ‘Eco-Aware Skipper’ certificate and an ‘Eco-Aware’ sticker for their boat, which add more value to their work and a waterproof factsheet about the islets which include a list of do’s and don’ts to protect this unique natural heritage.

Main actions

Southeast Islets

- Workshops:
 - Two with National Coast Guard (NCG) officers from the area
 - Four for 51 skippers
 - Two with 25 fishermen
 - One refresher with 6 skippers
- Educational Tours Ile aux Aigrettes:
 - Five with 43 NCG officers
 - Three were conducted with a group of 47 trainee skippers of *Plateforme du Sud*, a group created to support young people in the southeast region following the shipwreck of MV Wakashio in 2020
 - One with 15 fishermen
- Educational Tours Southeast islets:
 - Five with 55 NCG officers
 - One with 7 skippers
 - Two with 14 fishermen
- One educational visit of Ile aux Aigrettes and Southeast islets with 5 skippers
- Two stakeholders' meetings were held with 9 and 12 attendees from the following institutions: Forestry Service, National Parks and Conservation Service, Grand-Port District Council, National Coast Guard, Tourism Authority, Beach Authority, National Heritage Fund, the Fisheries Protection Service, Mauritius Sports Council and 2 boat companies based at Pointe Jérôme.
- Eight monitoring trips Southeast islets, the remaining 4 were cancelled due to bad weather
- Ten islets talks at schools with 474 participants
- Distribution of educational materials to 32 skippers, 10 fishermen and women, 11 skippers, 23 National Coast Guard officers of Mahebourg and 10 from Belle Mare, Deux Frères, Poste Lafayette, Ile aux Cerfs and Trou d'Eau Douce.

Northern islets

- Workshops:
 - One with 9 NCG officers based in the North.
 - One with 3 skippers. The low-level participation was potentially due to the workshop being organised outside working hours, therefore with no obligation for the skippers of the company to attend.
 - Five with 131 fishermen
 - One refresher course with 9 skippers
- Educational tours Northern Islets:
 - Five were conducted with 29 NCG officers.
- Educational visit Northern Islets:
 - One visit was carried out with 3 skippers after the monitoring trip carried out on Flat Island,
- Certificate ceremony: 6 skippers received their certificate of participation.
- One stakeholders' meeting was held with 12 strategic partners: Reef Conservation, Tourism Authority, Forestry Service, National Heritage Fund, District Council of Rivière du Rempart, *Croisières Australes*, Beach Authority, Le Transport and NCG Grand Baie.
- One monitoring trip for fire and litter was conducted on Flat Island.
- Distribution of 53 Educational packs to NCG North from stations of Trou aux Biches, Grand Baie, Grand Gaube and Poudre d'Or.
- Distribution of caps to 55 Fishermen from Fisheries Stations of Grand Gaube and Poudre d'Or for fishermen who have completed their training.

General

- Educational materials for Islets Education were designed or updated during the year to support our Islets education programme and produced:
 - Southeast and Northern islets signboards
 - Southeast islets poster and flyer
 - Northern islets poster and flyer
 - Eco-aware stickers, factsheet, caps, t-shirts and polo shirts
- At the national level an interactive presentation was done with 60 skippers who are doing their training with the Tourism Authority. These skippers come from different parts of Mauritius and the activity was held at a new office of the Tourism Authority in Coromandel on 11th October 2022.

Connecting with nature project



Background

Following the Education Strategy workshop facilitated by Chester Zoo (UK) and held in September 2019 a number of goals for the education project were established. One of these goals was 'Increase the connection between Mauritian people and nature'. This goal was integrated into the Education actions since July 2020 and different identified actions have been implemented since then. Funding for some actions under this goal has been secured from the Mauritius Commercial Bank (MCB).

Main actions

Learning with Nature on Ile aux Aigrettes

As from 2009, the MWF developed 'Learning with Nature', a structured educational programme on Ile aux Aigrettes which supports the national school curriculum and is supported by the Ministry Education and Human Resources, Tertiary Education and Scientific Research. MWF's 'Learning with Nature' programme strives to promote greater environmental awareness and support for conservation nationwide by helping to create the next environmentally conscious citizens. Students have the opportunity to visit the islet, discover a nature reserve, and appreciate its biodiversity, witness actions undertaken to save species from decline in their restored natural habitat, obtain support towards their school curriculum, and return armed with knowledge and educational materials.

- The programme was severely hit by the COVID-19 pandemic in 2020, 2021 and at the beginning of 2022. Students lost months of teaching and visits of Ile aux Aigrettes under this programme were also impacted.
- 811 students and teachers from 17 institutions followed the Learning with Nature trail in 2022 (versus 2021: 241, 2020: 366 and 2019: 2882 educational visitors). In addition, 289 children and adults from 5 different NGOs visited the Nature Reserve during that period.

Connecting with Nature presentations and activities with schools

The Connecting with Nature programme with schools under the MCB funding consists of an interactive face-to-face presentation, a donation of booklets (Discovering Dodos for primary pupils and Native plants and animals of Mauritius for secondary students), the planting of endemic species with accompanying plant labels for the school endemic garden, and a distribution of stickers to primary children.

After the disruptions caused by the pandemic in 2020 and 2021, activities in schools were able to resume more consistently in 2022. A total of 22 institutions were reached and activities we did there included our regular Connecting with Nature programme as well as interventions we did on request. Access to government schools was still limited in 2022, hence we mostly exchanged with private schools.

- The first activities with school children were follow-up activities of online presentations that we had conducted with two Loreto Colleges in 2021. A planting activity and donation of books were done at two schools with a total of 22 participants.
- From March to mid-June, we were involved with several third-party requests:
 - 80 pupils a school which uses an alternative approach to education.
 - 55 students of a private school.
 - In collaboration with the NGO “*Dis-moi*”, a presentation was carried out with 29 students.
 - From April to June 2022, 5 school presentations were done to support Reef Conservation’s #OnewithNature project involving selected Eco-schools reaching 205 students.
- Under the regular Connecting with Nature programme as from July 2022, 771 students and teachers were reached in 9 schools.
- A session was held with 12 special needs children who have difficulty with mainstream learning. We worked with the teachers to accommodate our programme to the abilities of the children involved.
- To mark Global Action Day, a mini workshop was conducted to support 16 participants of the Duke of Edinburgh Award. A Native plants and animals book was given to each student and the school was given 10 endemic plants to assist their efforts in creating an endemic garden.
- A recorded version of the PowerPoint presentation Connecting with Nature was shared with 5 teachers and their pupils for feedback. This method was used to find alternative ways to educate students during the COVID-19 pandemic as restrictions such as online schooling or limited access to school were prevailing during 2020, 2021 and the beginning of 2022.

Teachers and Heads of school workshops

To explore the most effective and practical ways of working with students, the Education programme contained a series of consultative workshops with teachers and Heads of schools. These interactions have been most beneficial to understand ways of reaching the student audience and the constraints of schools but also to make good contacts with schools who have enthusiastic teachers. All workshops took place at Nativ Lodge and Spa and were followed by an educational tour of l’Ile aux Aigrettes. A teacher’s resource pack was offered to each participant.

- Four workshops were organised reaching 50 teachers and Heads of schools

- A Refresher course with Heads of school and teachers that had participated in online activities in 2021 with 6 teachers from 4 schools.

Presentations with Religious groups and activities with Religious leaders

Other sections of the Mauritian public were identified to support and promote the objective of 'Increase the connection between Mauritian people and nature'.

- 6 presentations, 1 workshop and 1 refresher course were set up for Religious groups and Religious leaders reaching 282 persons.
- For some presentation sessions a symbolic planting of an endemic species at their premises was carried out or a book donation given where there were children involved.
- The workshop was organised with leaders representing 9 organisations and was followed by an educational tour of Ile aux Aigrettes.
- The refresher course was a follow-up to the first workshop organised with Religious leaders in October 2021, organised in collaboration with the Council of Religions. 5 persons representing the Muslim, Tamil, Telegu and Bahá'í communities attended the session followed by an educational tour of Ile aux Aigrettes. The participants that were present last year received a Connecting with Nature tote bag and mug, a pen drive, and a poster that sensitises about invasive species.

Evaluation and analysis of recommendations

A questionnaire was set up to assess teachers who will be participating in our workshops in 2023. This document will help in evaluating the effectiveness of our work with teachers. The finalisation of the document was made with the assistance of Mr Greg Counsel, Conservation Scientist at Chester Zoo (UK).

Invasive species education project

Background

'Reduce the release of invasive species and reduce the introduction of new exotic species in the country' is a goal in MWF's Education Strategic Plan. This goal was integrated into the Education Programme actions in July 2020 and some of the actions identified were implemented. Invasive alien plant and animal species are one of the greatest threats to our native flora and fauna and educating the public about this threat, its impact and actions that can be done to address this issue are crucial in the ongoing battle with invasive species.

Main actions

- Posters: In 2021, posters and flyers were produced for people visiting pet shops to highlight some specificities of our endemic wildlife and sensitise the general public about the impact of releasing pets in nature. In 2022, a poster was designed for schools and local communities to encourage responsible pet ownership.
- Two workshops were organised with veterinarians and animal welfare organisations to enhance the knowledge of participants on endemic plants and animals of Mauritius and to encourage responsible pet ownership through their activities.
- A workshop for pet shop owners was organised but despite interest shown upon invitation and some confirmations received, no invitees attended. The exact reason behind this non-event is unknown but we identify that potentially they may feel threatened by MWF's actions.

- Digital billboard exposure was obtained free of charge for 10 days between 30 June – 10 July 2022 at the entrance and exit of Port Louis. The theme was invasive vs endemic and featured a Bottle palm versus Ravenala, Ornate Day-gecko versus Madagascar Giant Daygecko and Pink Pigeon versus Feral Pigeons.
- A Social media campaign based on the content displayed on the billboards was run on MWF's Facebook page, whereby the three artworks were posted with some text explaining the difference between the endemic and exotic species featured in July and August.
- Five additional photo panels were put together featuring 10 additional species, 5 endemic species versus 5 exotic species: Telfair's Skink versus Agamid Lizard; Round Island Boa versus Indian Wolf-snake; Mauritian Fody versus Madagascar Fody, Mauritius Bulbul versus Indian Mynah bird and Echo Parakeet vs Indian Ring-necked Parakeet. These panels were first used for a Family Fun Day at Le Caudan in July.
- Visits to 5 shops selling pet and/or pet supplies were carried out to prospect the potential of setting up a workshop with pet shop owners in 2023.

Human-Wildlife Conflict: Mauritius Fruit Bat

Background

Bats are the only mammals native to the Mascarene Islands. Three species of fruit bat were once widespread over Mauritius, but two went extinct and the population of the surviving species (*Pteropus niger*) decreased considerably due to habitat loss, cyclones and illegal hunting. This bat went extinct on Reunion Island, where it was last recorded in 1790. However it is known that Reunion Island has been recolonized by a handful of individuals over the last decade (now numbering more than a hundred bats) whilst a second species (*Pteropus rodricensis*) has survived on Rodrigues. Due to lack of major cyclones, the population of the *Pteropus niger* (also known as the Mauritius Fruit Bat or Mauritius Flying Fox) has increased over a 20-year period, shifting its IUCN status from Endangered to Vulnerable in 2014. The most recent bat surveys done by the National Parks and Conservation Service in 2022 suggested that the population size of the Mauritius Fruit Bat was over 100,000 individuals.

As the population of the Mauritius Fruit Bat increased, the impact on the commercial fruit orchards and backyard fruit trees, with bats eating the litchi fruits, grew, and the pressure from the public to cull the bats gained momentum. In 2009, a positive step was taken when the Government carried out a sensitization campaign for the protection of farmed fruit and promoted the use of nets to protect fruit from bats and birds, along with a grant scheme to purchase the nets, which was extended into 2022. However, the species faced a serious threat to its existence with a major cull in 2015. The Mauritian Government announced it had culled 30,938 bats in 2015 and 7,380 in 2016 in order to protect the interests of fruit farmers. Further culls have been carried out in 2018, 2019 and 2020 but the official number of bats culled for these years has not been released. However, we estimate that some 55,000 to 60,000 have been killed during these sanctioned culls. The Mauritian Wildlife Foundation, along with the International Union for the Conservation of Nature (IUCN) and Bat Conservation International (BCI) provided scientific and management advice to the Government to show them that the culling could have catastrophic effects on the bat population in Mauritius especially if there was a severe cyclone. Additionally, the evidence from other parts of the world, indicated that culling did not resolve the problem of bats eating commercial or backyard fruit. This was actually queried during one of the years a major cull was implemented and did not result in increase in fruit production.

The Mauritius Fruit Bat was uplisted to Endangered in 2018, the direct result of the official culling conducted in 2015 and 2016, and the parallel illegal killing of fruitbats.

In order to address the Human Wildlife Conflict, MWF obtained advice from an expert in the subject and undertook various actions including a series of workshops. Following on from the 'Netting Workshop'

in August 2017 and 'Research Workshop' in May 2018, two workshops were conducted, the 'Backyard Workshop' and 'Media Workshop' on 23 and 24 October 2019. MWF regularly refers to the workshop reports and discussions in official meetings, in the media, on the MWF Facebook page, and in conversations with pro and anti-cull proponents.

From the work carried out to address the Human Wildlife Conflict, the advice for the next action needed was to form a multi stakeholder group. MWF initiated this in 2022 (see below).

MWF continues to work on fostering dialogue and collaboration with all stakeholders in view of a resolution of the Human Wildlife Conflict.

Main Actions

- Discussions and exchanges with IUCN Bat Specialist Group, Bat Conservation International, and several other international organisations, as well as the Government of Mauritius, local groups and people to share information and lobby against a cull.
- MWF was invited to a 'Special Technical Committee' in 2022. The committee was set up under the Native Terrestrial Biodiversity and National Parks Act 2016, which discusses culling of species. MWF has always been against bat culling, most often finding itself in a solitary position. MWF is fiercely opposed to culls and has provided its views to the Minister of Agro-Industry, press and on its Facebook page. However, in 2021 and 2022, we were most pleased that the committee did not recommend a cull and that members were open to consider alternative solutions. The Minister of Agro-Industry and Food Security agreed to follow the recommendation of the committee. Mr Noel Bergin, Researcher, Aarhus University, Denmark, carried out research on the Human Wildlife Conflict on the Mauritius Fruit Bat (specifically on hindrances to use of nets) as part of his MSc studies, interviewing the public via questionnaires. The study was completed in 2022, and is contributing to the understanding of the conflict and the solutions. Recommendations include:
 - The government and stakeholders to educate backyard growers about best practice in fruit tree management (pruning and netting). This should be done through, demonstration orchards, free horticultural training sessions and targeted educational material and events.
 - Run campaign (utilizing both mainstream and digital media), to inform backyard growers of where to find information and support with tree management and to encourage adoption of best practice tree management methods.
 - Run campaign (utilizing both mainstream and digital media), educating the wider population as to the ecological value of the fruit bat and economic and environmental costs to the whole of Mauritius, if they become extinct.
 - Continue the government subsidy scheme; widening the application window and producing targeted information, which should be advertised in locations and media outlets most frequently accessed by the backyard fruit growers.
 - Create additional finance scheme, to financially support backyard fruit growers in carrying out pruning and netting (either themselves or using contractors). This needs to include compensation for loss of fruit production when trees are pruned.
 - Create tree management task force, supporting communities in protecting their trees.
 - Stop the current management technique of culling fruit bats in large numbers. Proven alternative methods of tree protection to be encouraged and applied.
- A multi stakeholder Human-Bat Conflict Working Group (HBCWG) was set up with 14 founder members comprising of the major stakeholders; Food and Agricultural Research and Extension Institute, National Parks and Conservation Service, Forestry Service, University of Mauritius, Mauritian Wildlife Foundation, Mauritius Chamber of Agriculture, APEXHOM, Small Planters Association, Velo Vert, foreign experts from Chester Zoo, UK, and Central European University, Hungary, and representatives from local orchard and backyard growers. The group is chaired by an independent retired horticulturist with in-depth knowledge of the fruit sector and respected by all. Since its inception in January 2022, the group has met physically or remotely on 7 occasions,

has formed two sub-committees (Technical mitigation meeting twice and Communications meeting once). The group have looked at current research, fruit protection (including netting, tree management) and communications subjects to the wider audience. Above all, the working group is a platform for mutual understanding, transparency, information sharing, forward planning, long term visioning, all geared to attempt to resolve or reduce the human-wildlife conflict.

- MWF addressed a letter to the Minister, Senior Chief Executive and Chair of the Special Technical Committee, of the Ministry of Agro-Industry and Food Security to update on the studies that have been undertaken during the year (and results where applicable), and the work of the Human Wildlife Conflict Working Group, so that decisions on netting and fruit management and culling could take these into consideration.
- General ongoing actions are carried out under the MWF bat education programme:
 - Communication in the media & social media
 - Promoting of tree netting:
 - produce and distribute a Brochure, put it on MWF's website,
 - produce a QR Code poster to share on social media and distribute posters to retailers of nets
 - Produce promotional items including a T shirt, tote bag and Bat plush toy
 - The 10-minute film "Mauritius Fruit Bats under threat" is used in presentations and accessible from the MWF website

Presentations given to schools & community groups, universities, public talks etc

FRIENDS OF MAURITIAN WILDLIFE



Background

To increase the public involvement in MWFs work and create a supporter base in Mauritius, we have had a project 'on the drawing board' for a number of years: to create a Club of Friends. We first aimed to enrol volunteers to run the Club reporting to one MWF staff but this proved impractical. Sponsorship from Emtel was secured in 2021, and this has enabled the employment of a Club Coordinator to provide continuity and focus to the project. Friends was launched on 03 March 2022 on World Wildlife Day after a couple of delays due to COVID-19 restrictions.

The club had 139 members as at 31 December 2022, of which 116 were employees from Emtel and Currimjee Group of companies while the remaining 23 were individual members. Different activities such as conferences, presentations, weeding, potting, seed collection and cleaning activities were organised in the course of 2022. We will aim to increase and diversify membership in 2023.

Main Actions

- Project official launch on 03 March 2022, with the guest of honour, Hon. Mr Maneesh Gobin, Minister of Agro-Industry and Food Security.
- Running job advert and interviews to replace the Club Coordinator who resigned.
- Organising activities:
 - To support conservation such as seed collection, weeding, plant potting.
 - To create awareness; conferences and talks.
 - To contribute to a general healthy environment, clean ups
- Developing materials to promote Friends in Emtel shops and kiosks.
- Recruiting new members.

OTHER

Governing Body

There is often a confusion on terminology for the governing body of the Mauritian Wildlife Foundation. It is most often called '**The Council**', but in law named the '**Managing Committee**'. The members are equivalent to '**Trustees**' or a '**Board of Directors**'.

President: Mr Tim Taylor

Vice President: Mrs Deborah De Chazal

Treasurer: Mr Nirmal Heeralall

Assistant Treasurer: Dr Vikash Tatayah

Secretary: Ms Feerdaus Bundhun

Assistant Secretary: Mr Philippe La Hausse de La Louviere

Member:

- Prof Carl Jones MBE
- Dr Eshan Dulloo
- Mr Jamie Copsey
- Dr Ken Norris
- Dr Andrew Greenwood

Government: Director of National Parks and Conservation Service

Durrell: Dr Chris Ransom

Chester Zoo: Dr Claire Raisin

Members of MWF

We were sad to hear of the death of **Maitre Georges Andre Robert** earlier in the year. He joined the council in 2002 and accepted the role of Secretary up to the year 2008 when he resigned from the council. He remained a member of MWF until his death.

Staffing

Management Team

Executive Director: Mrs Deborah de Chazal

Conservation Director: Dr Vikash Tatayah

Scientific Director: Prof. Carl Jones

Managers:

- Dr Nik Cole, Island Restoration
- Mr Jean Hugues Gardenne, Fundraising and Communications
- Mrs Martine Gebert, Accounts
- Ms Martine Goder, Flora & Education
- Mr Sion Henshaw, Fauna
- Mr Reshad Jhangeer-Khan, Rodrigues
- Mr Danny Thisbe, Ecotours

Movements of Staff

We had the following significant staff movements in 2022:

- **Ms Estelle Bastien**, Friends Coordinator, resigned in June 2022
- **Mr Lensley Etiennette** joined MWF in November 2022, after the brief employment of another person for the post, as Coordinator for 'Friends of Mauritian Wildlife'.
- **Ms Vanousha Pillay** transferred from working in the field to Head Office in June 2022 and holds the post of Project Officer.
- **Ms Vanessa Coralie** was promoted to Education Coordinator in August 2022.
- **Ms Martine Goder**, Flora and Education Manager resigned in October to leave on 31st December 2022 to take up the post of Head of Durrell Conservation Training (Mauritius). Her responsibilities have been delegated to the Coordinators of the projects.
- **Ms Nella Pascin**, Management Support Officer, Rodrigues was moving to Mauritius for family reasons in December 2022 so has been transferred to Head Office and will take up the post of Accounts Officer in 2023.
- **Ms Taila Roussety**, has taken up the post of Management Support Officer, Rodrigues in November 2022.
- **Mrs Aurelie Henshaw**, resigned from Durrell Conservation Training (Mauritius), (previously a MWF Echo Parakeet Coordinator), and accepted the post of 'Head of Training' to begin with MWF in January 2023
- **Ms Noveena Wong** accepted the post of General Manager to begin with MWF in March 2023.

Training

- The flora team attended a training on how to use the Microsoft 365 tools on 11th January 2022 at MWF Head Office.
- An online webinar organised by MWF was held on Thursday 13th January 2022 on the subject of the Human-Bat Conflict and as a prelude to the setting up of the Human-Bat Conflict Working Group. The session presented the current research being carried out on the Mauritius Fruit Bat. Interesting discussions followed each presentation.:

- Mr Vashist Seegobin (University of Mauritius, MPhil/PhD)
Foraging and roosting patterns of a repeatedly mass-culled island flying fox offers avenues to mitigate human-wildlife conflict
- Ms Geetika Bandha (University of Mauritius, MPhil/PhD)
Human-wildlife conflict around the Mauritian flying fox: Bringing evidence to benefit fruit growers and threatened biodiversity
- Mr Noel Bergin (University of Aarhus (Denmark), MSc.)
Broad insights into barriers preventing uptake by of proven tree management techniques, by backyard fruit growers.
- Mrs Nandini Ramma (Food and Agricultural Research and Extension Institute, Mauritius)
Fruit production, litchi export, losses due to bat and the fruit protection scheme
- Dr Vikash Tatayah (Conservation Director, Mauritian Wildlife Foundation)
Human-Bat Conflict, where are we now?
- Pascal Sk Mucktoom completed his course on Botany with the Royal Botanical Garden of Edinburgh on 21st January 2022.
- On line training sessions run by Chester Zoo (UK) were attended by Education staff in Mauritius and Rodrigues:
 - 8th February - Social Science Training, Introduction to Social Science
 - 15th February - Social Science Training, Survey design
 - 22nd February - Social Science Training, Dealing with your data.
 - 14th April - Facilitation skills
 - 19th May - Interpreting writing and design
 - 14th June – Safeguarding
 - 26th July - Tailoring to different audiences.
 - 15th December – Storytelling
- The Flora Manager, Martine Goder organized a sowing training activity with the flora team and Cacey Cotrill (Islands Restoration team) on Ile aux Aigrettes on 21st March.
- A Wilderness Advanced First Aid course organised by Durrell Conservation Training (DCT) and run by Vertical World was held at Ferney in April 2022. The course was an intensive introduction to the application of First Aid in a Wilderness setting, with a special focus on the challenges faced on Round Island and with a maximum of 6 participants. Priority was given to staff who work on Round Island and islets.
- An online presentation was given on 13th April by Dr Bhamini Kamudu-Appalsawmy about her research findings of the case of Ile aux Aigrettes on 'Investigating Situational Interest and Learning of Biodiversity: A case study of students' experience of a visit to a nature reserve'.
- Seedbanking training, both theoretical and practical, was delivered by the Head of *Ex-situ* Conservation, Mrs Catherine Gautier, and Scientific Director of International Actions of the Conservatoire Botanique National de Brest (France) to Flora staff in Mauritius (2nd and 3rd June) and Rodrigues (6th and 8th June).
- 'Introduction to Safeguarding' was delivered online by Chester Zoo (UK) on Tuesday 14th June at 2022 at 12 and was attended by the Executive Director, Mrs Deborah de Chazal.
- Project management using the Conservation Standards run by Durrell Conservation Training from 20-25 June 2022.
- Basic First Aid training courses were run in house, by the Red Cross, with 4 sessions held between August and October to cover 44 staff focusing on field & ecotour staff but with a selection of other staff to cover first aid help in other sites such as Head Office.
- An induction session 'Introduction to MWF' was held for 15 staff on 28th August 2022.
- A Climbing Safety 5-day course run by Vertical World was held for 5 staff from the Mauritius Kestrel and Echo Parakeet teams in September 2022.
- Fire Safety Training sessions were continued in 2022 and held on 2nd September and 14th October where 41 staff attended.

- 'Introduction to Volunteer Engagement', an online webinar, was run by Chester Zoo (UK) on 2nd November 2022 and was attended by the Executive Director and the Head of Training.
- Microsoft 365 having been introduced to MWF using a more cloud-based approach to storage of data, training has been ongoing for groups of staff and also one on one sessions.
- The DESMAN 3-month course, run by Durrell in Jersey, Channel Islands offered one free place to MWF for the February to April 2023 session: 1 Island Restoration Staff, Mr Ryan Law Yu Kam was selected, and he accepted the place.
- In June training was delivered in plant nursery work to Durrell interns and different techniques of propagation.
- Talk and Teas were organised as follows:
 - 14th November 2022: Dr. Malcolm Nicoll, Senior Research Fellow, Institute of Zoology (ZSL), UK spoke about:
 - Survival rates of juvenile Mauritius Kestrel, the role of density, rainfall & sex
 - The effect of geolocator deployment on the short and long-term survival of the Round Island Petrel
 - Birds without borders - Connectivity of Western Indian Ocean seabirds
 - 21st November 2022: Prof. Jim Groombridge, Durrell Institute of Conservation and Ecology, University of Kent (UK)
 - Effects of inbreeding on productivity in the Echo Parakeets
 - 21st November 2022: Professor Cock Van Oosterhout, University of East Anglia (UK)
 - Genomics Informed Conservation
 - 5th December 2022: Mrs Theresa Robinson, PhD student, University of Reading (UK)
 - Assessing the past and future impacts of conservation management on the population biology of the endangered Mauritius Fody
 - 5th December 2022: Professor Ken Norris, Head of Life Sciences, Natural History Museum, London (UK)
 - The value and use of the long-term bird data

Visitors

MWF receives visits from our overseas partners and collaborators regularly during the year but with the Covid19 pandemic these were severely curtailed and remote meetings were held to discuss project matters and maintain contact. In 2022 visits went back to 'normal' with November tending to be the most popular month.

- **Mr Noel Bergin**, Researcher, Aarhus University, Denmark, carried out research on the Human Wildlife Conflict Mauritius Fruit Bat (specifically on hindrances to use of nets) as part of his MSc studies, interviewing the public via questionnaires. He arrived in Mauritius on the 2nd October 2021 and returned in late January 2022.
- **Dr Matt Brash**, from Wildlife Vets International and his wife, Dr Claire Brash, also a veterinary surgeon, were put in contact with MWF by Dr Andrew Greenwood, member of MWF council, when they were on holiday in Mauritius in January 2022. MWF organised visits to Camp, GDEWS and Ile aux Aigrettes. Matt was very helpful with his advice on a wide range of the MWF fauna projects.
- **Mr Darren Peters**, from Goodnature, New Zealand and wife, visited Mauritius to see the various sites/organisations using A24 GoodNature traps.
- **Dr Ben Warren**, from Museum d'Histoire Naturelle de Paris (France) arrived in Mauritius in March with PhD and Post-Doc students working on a genomic study of Mauritius Fodies, Pink Pigeons, Madagascar Turtle-Dove etc.
- **Prof. Carl Jones**, MWF's Scientific Director, paid two visits to Mauritius in 2022 from 8th to 29th April and mid-November to early December. While in Mauritius he assessed the current conservation actions and advised where necessary. In April he travelled to Rodrigues for a 3 day visit.
- **Dr Stephane Buord**, Directeur scientifique des actions internationale and **Mrs Catherine Gautier**, Head of *Ex-situ* Conservation from Conservatoire Botanique National de Brest (France) were in Mauritius in May 2022 and visited Rodrigues in June 2022. Their objective was to visit all the stakeholders under the CEPF funded project 'Zero extinction', assess progress and discuss actions going forward as well as support needed from CBN. The project covers both Mauritius and Rodrigues. Dr Buord held a conference for the Friends of Mauritian Wildlife on the 31st May 2022 entitled "Plantes rares endémiques : après la résurrection de la *Cylindrocline lorencei*...", supported by Teesha Baboorun, Flora Coordinator and Reshad Jhangeer-Khan, Rodrigues Manager with presentations about their conservation work on plants endemic to Mauritius and Rodrigues. Seedbank Training was delivered for both Mauritius and Rodrigues.
- **Dr Jean-Christophe Vié**, Director General of Franklania Foundation, supporting a few projects in Mauritius (including the Mauritian Wildlife Foundation), visited Mauritius (including Round Island) and Rodrigues to see progress on tree conservation projects first hand.
- **Ms Harriet Whitford**, Deputy Head of Birds, Jersey Zoo (English Channel Islands) was in Mauritius for one month, arriving on 3rd July 2022, to train MWF staff for the captive breeding of the Pink Pigeon.
- **Dr Sylvain Hugel**, Scientific Researcher, Centre National de Recherche Scientifique (France), World expert on crickets, visited Rodrigues and Mauritius for continuous survey and research in July and August 2022. He surveyed areas to confirm survival of the Ile aux Aigrettes cricket following the Wakashio oil spill.
- **Mr Tokhi Inoue**, Researcher from BirdLife International Tokyo, arrived in Mauritius on the 25th September and left on 15th October 2022. His interest was in Shorebirds and following up a

previous study by a colleague. He trained MWF staff and representatives of civil society in surveying birds.

- **Dr Malcolm Nicoll**, Senior Research Fellow, Institute of Zoology (ZSL), UK arrived on 13th November and left on 4th December 2022. He visited Round Island for his work on the Round Island Petrel and other seabirds then travelled to Rodrigues to take blood samples of birds for a study on the seabirds of the Indian Ocean.
- **Dr Claire Raisin**, Field Programmes Coordinator - Madagascar & Mascarenes, Chester Zoo (UK) arrived in Mauritius on 17th November and left on 27th November 2022. During this time she went to Rodrigues to participate in the annual island wide bat count and organised to film it. She is a regular visitor, visits the projects and discusses the support that Chester Zoo (UK) gives MWF.
- **Prof. Jim Groombridge**, Durrell Institute of Conservation and Ecology, University of Kent (UK) was in Mauritius with a film crew in November 2022 for 10 days focusing on the research the University had carried out on the Echo Parakeet project but also filming the other conservation work of MWF.
- **Mr Romain Lacoste**, Chef du service Territorial de la Vésubie, Parc national du Mercantour. paid MWF a courtesy visit in November 2022.
- **Prof. Cock Van Oosterhout**, University of East Anglia (UK) & **Samuel Speak**, PhD student were in Mauritius from 20th November to 10th December 2022 to give lectures at the University of Mauritius and discuss with MWF the work on the genetics of the Pink Pigeon.
- **Sawako Hourai**, Japan, Researcher on Mongooses, was in Mauritius from 29th November to 2nd December 2022. She had come to collect samples for her study.
- **Prof. Ken Norris**, Head of Life Sciences, Natural History Museum, London (UK) & **Theresa Robinson**, Reading University, PhD student arrived on the 30th November and left on the 9th December 2022. Prof. Norris as a member of Council had a number of meetings concerning various aspects of the Scientific programme and processes and visited the projects. Theresa focused on the Mauritius Fody, the subject of her PhD.
- **Mario Jiminez**, Macaw Recovery Network, Costa Rica/South America, DESMAN attendee, arrived in Mauritius on 8th December for a professional exchange visit for one month focusing on the Echo Parakeet work.

MWF also receives local visitors to our projects on a regular basis. A selection of visitors is listed below.

Ile aux Aigrettes

- The Ile aux Aigrettes flora team hosted a VIP visit where Ms Kelsey Wilson and Mr Vincent Wong Chung Toi from Canada, who were shown how to pot seedlings on 6th January 2022
- The British High commissioner, Mrs Charlotte Pierre and officials from the British Embassy accompanied by Dr Vikash Tatayah and Mr Jean Hugues Gardenne visited the Ile aux Aigrettes plant nursery and planted a *Latania loddigesii*. Other officials planted a *Zanthoxylum heterophyllum* and a *Sideroxylon boutonianum* in March 2022
- 20 Students from Luschescapes School of Dubai were trained at doing the 1st potting of 55 *Gagnebina pterocarpa* seedlings on 14th March 2022.
- Managers of Summer times did the potting of *Diospyros egrettarum* and *Eugenia lucida* on 16th March 2022.
- Ile aux Aigrettes team received the visit of Dr Vincent Florens with a group of students from the University of Mauritius. The threats of invasive species to biodiversity among others were discussed on the 5th July 2022.
- A potting activity was organized with 25 staff from Espace Maison. 22 *Diospyros egrettarum* and 21 *Eugenia lucida* were first potted on 9th July 2022.

- Dr Vincent Florens (University of Mauritius) with his guests from Stanford University (US) visited the Ile aux Aigrettes plant nursery where the work done was explained and the WIOSAP project was presented on 23rd July 2022.
- 4 students from Le Bocage International School of Moka had a full day activity at the plant nursery. They were accompanied by 1 parent during the whole day. They were shown how to collect cuttings. Air layering was also made on the *Sideroxylon boutonianum* on 26th July 2022.
- Mr and Mrs Montocchio came to Ile aux Aigrettes to take professional photographs of the endemic plants under the Mauritius Commercial Bank partnership.
- The Flora team welcomed officers from the Forestry Service and Dr Vikash Tatayah to the plant nursery on 29th September 2022.

Mondrain

- Dr Vikash Tatayah and the communication team undertook a visit to Mondrain to do a short Video on Mondrain reserve on 25th February 2022.
- Mr Arnaud Berthelot, General Manager of the La Vallée de Ferney Conservation Trust and 10 staff members visited Mondrain reserve on 27th July 2022.
- Medine land surveyor team visit to Mondrain from 16th- 20th September 2022 and on 25th October 2022 to investigate the extension of the Mondrain reserve.
- 40 staff members of Price Waterhouse Cooper came to Mondrain for a weeding activity. Three invasive species were selected for removal along the main track: *Ligustrum robustum var. walkeri*, *Schinus terebinthifolius*, and *Wikstroemia indica* on 18th November 2022.
- MWF Flora team hosted the visit of 40 members from the Royal Society of Arts and Sciences (Mauritius) in Mondrain Reserve on 26th November 2022.
- Elise Amy, Conservation Officer at the Mascarin National Botanical Conservatory visited the Mondrain reserve with her husband on 8th December 2022.

Other

- National Social Inclusion Foundation visited Camp on 20th May 2022 accompanied by a number of MWF staff and some from NPCCS.

Communication

Social Media

MWF is present on

Facebook (19,914 followers)

<https://www.facebook.com/MauritianWildlife>

LinkedIn (741 subscribers):

<https://www.linkedin.com/company/the-mauritian-wildlife-foundation/>

Instagram (3,118 followers)

<https://www.instagram.com/mauritianwildlife/>

Our publications

Echo News is MWF's newsletter. In 2022, the following were published:

No11 <https://sway.office.com/2S1iUd2Yq9TNSKZ8?ref=email>

No12 <https://sway.office.com/haWXpWZ2CZburbEQ?ref=Link&loc=play>

No13 <https://sway.office.com/UaiEPAmSx89HYqWO?ref=Link>

No14: <https://sway.office.com/OlgFsuVTy3HFkg5W?ref=Link>

Media

Regular requests are made from the local media for MWF to comment on current affairs regarding conservation and for visits to projects. Media reports related to Mauritian Wildlife Foundation actions are filed in our library and made available on request. The tables below list most of the coverage MWF obtained in 2022.

TV and Radio

Mauritius

Date	Media	Topic
21/01/22	JT MBC	The seabird attractant work https://mbcradio.tv/article/le-journal-t%C3%A9vis%C3%A9-%E2%80%93-janvier-22-2022
27/11/22	JT MBC	MOU signature between Chester Zoo and Government of Mauritius
21/12/22	JT MBC	IAA sur France2

Rodrigues

Date	Media	Topic
09/02/22	TV news-MBC	Badula founder protection
22/02/22	MBC national	Badula balfouriana founder protection
09/03/22	TV news-MBC	Rotaract/MWF planting in GM
11/03/22	TV news-MBC	Awareness campaign on IAS Phesulma geckos
18/03/22	TV programme-MBC	13-Minit Natir Rodrig: IAS Phesulma geckos
13/04/22	TV news-MBC	Ongoing BGCI project at Mt Cherie
22/04/22	TV news-MBC	Earth Day
26/04/22	Radio programme-MBC	The issue of stray animals in Rodrigues
11/05/22	TV and Radio news-MBC	Endangered Species Day
19/05/22	TV programme-MBC	13-Minit Natir Rodrig: Invasive Exotic Species
19/05/22	TV and Radio news-MBC	Restoration activities in the Grande Montagne Nature Reserve
20/05/22	Radio news-MBC	International Biodiversity Day
21/05/22	TV and Radio news-MBC	International Biodiversity Day - Distribution of rare plants to the community
22/05/22	Journal Rodrigues	International Day for Biological Diversity
25/05/22	TV and Radio news-MBC	BGCI protection of rare plant at Mt Cheri
05/06/22	Radio programme-MBC	World Environment Day
28/06/22	TV and Radio news-MBC	MWF Activities
28/06/22	TV and Radio news-MBC	REEP activities
07/07/22	JT	Hibiscus liliiflorus
07/07/22	TV and Radio news-MBC	Safeguarding plants for the extension of the airport
09/07/22	TV and Radio news-MBC	BGCI protection of rare plant at Batatran.
11/07/22	Journal Rodrigues	Brest-Seed banking
16/07/22	Journal Rodrigues	Sauvegarder des plantes rares
29/07/22	Journal Rodrigues	Dr Sylvain Hugel's latest visit to Rodrigues
02/08/22	TV and Radio news-MBC	Foundation Course in Tourism- Participant
06/08/22	Journal Rodrigues	Restoration activities in the AQNR
23/08/22	MBC	13-Minit Natir Rodrig: Terminalia Bentzoe ssp Rodriguesensis
25/08/22	Journal Rodrigues	Restoration Anse Quitor-UNDP-GEF-SmallGrantProgram
13/09/22	TV programme-MBC	13-Minit Natir Rodrig: Antirhea bifurcata

16/09/22	TV and Radio news-MBC	World Clean up Day & Festival de la Randonnée 2022
16/09/22	TV and Radio news-MBC	Nursery activities with Centre Agricole Frere Remi
21/09/22	TV and Radio news-MBC	World Peace Day-Symbolic planting
04/10/22	Radio news-MBC	Animal Day 2022
14/10/22	TV and Radio news-MBC	Tourism Foundation Course Training
16/11/22	Zournal Rodrigues	MWF Rodrigues Launching for La Faune et la Flore de Rodrigues, 2nd edition
25/11/22	Zournal Rodrigues	Restoration activities in the Grande Montagne Nature Reserve.
07/12/22	TV and Radio news-MBC	Genetic connectivity Project on two seabirds in Rodrigues

Newspapers

Mauritius

Date	Media	Topic	Page
15/01/22	L'express	Ferney-Une autoroute a nouveau aux portes de la foret	
05/02/22	Lexpress	19 Feb 1989-Evenement au Domaine de Chassee-Les Crecerelles sont de retour	Page 17
15/02/22	Defi Zen	Rapace endémique-La crécerelle de Maurice devient oiseau national	Page 22
26/03/22	News on Sunday	International Forest Day	Page 42
02/05/22	Le Mauricien	Conference on the Mauritian Kestrel	Page 20
22-28/05/22	5-Plus	Valle de Ferney-Le dernier rempart du Kestrel	Pg 22-23
19-25/06/22	5-Plus	IAA un paradis ecologique	Page18
28/08/22	Lexpress	The lessons and impact of MV Wakashio two years on	Page 10
03/09/22	Defi Vert	Marée noire suivant l'échouement du MV Wakashio	Page 21

Rodrigues

Date	Media	Topic	Page
08/02/22	Scope	Bats and cyclones	
08/04/22	Le Mauricien	Rare plant conservation in Rodrigues	
16/11/22	Newspaper-Kozé rodriguais	Launching of the second edition La Faune et La Flore de Rodrigues	

Magazines

Date	Media	Topic	Page
07/22	Durrell	Wildlife Magazine	
11/22	Issuu.com	Ubuntu Magazine https://issuu.com/ubuntu_magazine/docs/ubuntu_magazine_edition_3_autumn_2022_issuu	90 - 103

Newsletter

Mauritius

Date	Media	Topic	Page
07/22	Chesterzoo	The Roost-Bat Newsletter-3rd edition	

Rodrigues

Date	Media	Topic	Page
27/07/22	Newsletter-EAZA bat	Rodrigues Fruit Bat	
16/12/22	Newsletter-MWF Echo News 14	Launching of the second edition La Faune et La Flore de Rodrigues	

TV Crews

Date	Media	Topic
22 February 2022	The environmental pole of the NGO <i>Dis-moi</i>	Aspects relating to the fauna and flora of Mauritius were covered and ideas about how young people could contribute to this biodiversity were discussed.
23 February 2022	Odysseo Oceanarium	To introduce MWF and hints were given about how people can contribute to its mission.
September/October 2022	Jean Boulle Group	Rescue 3 reptiles to jersey zoo after Wakashio spill
	Global 40	Following itineraries of Round the World sailing race . https://www.globe40.com/en/portfolio/mauritius-island-videos/ (12-16 mins)
October 2022	Production 360, Belgium	Le Jardin Extraordinaire https://auvio.rtf.be/media/le-jardin-extraordinaire-3008969

Online source

Mauritius

Date	Media	Topic	Page/ URL
17/01/22	scope mag	Dan bwa avek Vikash Tatayah	https://www.lemauricien.com/scope/scope-1718-mardi-17-janvier-2022/469086/
03/03/22	Currimjee Group	Launch of Friends of Mauritian Wildlife	Launch of Friends of Mauritian Wildlife – Currimjee Group
04/03/22	ION news	Emtel et Mauritian Wildlife Foundation présentent Friends of Mauritian Wildlife	https://ionnews.mu/emtel-et-mauritian-wildlife-foundation-presentent-friends-of-mauritian-wildlife/
09/03/22	Business News	Friends of Mauritian Wildlife voit le jour	Friends of Mauritian Wildlife voit le jour (business-magazine.mu)
09/03/2022	Le Mauricien	Friends of Mauritian Wildlife : appel au soutien de la population	Friends of Mauritian Wildlife : appel au soutien de la population Le Mauricien
21/03/22	Treehugger	Tiny Island Nation Saves Small Falcon From Extinction	https://www.treehugger.com/tiny-island-nation-saves-falcon-extinction-5222256
31/03/22	Forbes	The Future Is Feathered: An Interview With BirdLife International CEO Patricia Zurita	The Future Is Feathered: An Interview With BirdLife International CEO Patricia Zurita (forbes.com)
08/04/22	Le Mauricien	Zero extinction project : De l'espoir pour les plantes rares	Zero extinction project : De l'espoir pour les plantes rares Le Mauricien
24/03/22	Le journal des archipels	Launch of the Friends of Mauritian Wildlife Foundation Club	Launch of the Friends of the Mauritian Wildlife Foundation Club – Economie Circulaire et Environnement dans L'océan Indien (lejournaldesarchipels.com)
30/05/22	Defi vert	Mauritius Kestrel-familiarisons-nous avec notre zwazo nasional	https://defivert.defimedia.info/mauritius-kestrel-familiarisons-nous-avec-notre-zwazo-nasional/
30/05/22	Scope	Valle de Ferney-sanctuaire de sud-est	youtube: https://youtu.be/vZFUtXzA96c
31/05/22	Scope-Page 24	Valle de Ferney-sanctuaire de sud-est	https://www.lemauricien.com/scope/scope-1737-mardi-31-mai-2022/493273/
01/06/22	Lexpress-Jr	Le kestrel: nou zwazo nasional!	https://www.lexpress.mu/article/409414/kestrel-nou-zwazo-nasional
01/06/22	Lexpress.mu	Balade Vallée-de-Ferney:	https://www.lexpress.mu/photos/409424/balade-vallee-ferney-quand-presse-va-rencontre-nature

		quand la presse va à la rencontre de la nature	
06/06/22	Lexpress.mu	L'île-aux-Aigrettes: l'arche des espèces protégées	https://www.lexpress.mu/photos/409641/lile-aux-aigrettes-larche-especes-protegees
22-28/06/22	Scope#1740-Page45	seabird attraction programme	https://www.lemauricien.com/scope/scope-1740-mardi-21-juin-2022/497578/
25/10/22	L'express	70 % de la faune sauvage ont disparu: Maurice pas épargné	70 % de la faune sauvage ont disparu: Maurice pas épargné lexpress.mu
05/12/22	You-tube	Biodiversité - l'Île aux Aigrettes, le sanctuaire de l'Île Maurice	https://www.youtube.com/watch?v=kq2PM610SCI

Rodrigues

Date	Media	Topic
16/02/22	Social Media-Facebook	Badula founder protection
18/03/22	Social Media-Facebook	Amazing success germinating seeds of the Critically Endangered tree bois puant
23/03/22	Internet Webpage	Seed banking by MWF in Rodrigues
08/04/22	Social Media-Facebook	Un éminent Entomologiste français en mission à Rodrigues
25/04/22	Social Media-Facebook	Creation of a small in-situ nursery in the AQNR
22/05/22	Social Media-Facebook	International Day for Biological Diversity-Community participation in conservation
20/07/22	Conservation Evidence/University of Cambridge (UK)	The Evidence Effect: How a conservation revolution is protecting biodiversity https://www.youtube.com/watch?v=jdrv15QoUUc
28/10/22	Social Media-Facebook	Relocation of Endemic plants
02/11/22	Social Media-Facebook	Rodrigues Plaine Corail Airport-Relocation of five endemic trees.
04/11/22	Vlog from Mr and Mrs Coralie Makoon	Grande Montagne Nature Reserve
17/11/22	Social Media-Facebook	Launching of the second edition La Faune et La Flore de Rodrigues

Local Committees, Consultations and Workshops

National Committees

MWF continued to actively participate in various national committees: National Ramsar Committee, National Invasive Alien Species Committee and Wakashio-related eg Integrated Environment Monitoring Plan meetings, and in policy dialogues.

MWF is represented on the National Eco-School committee.

Consultations and Meetings

MWF was closely involved in nearly all meetings, dialogues, plans etc. related to the Wakashio oil spill. The COVID-19 pandemic stalled several national consultations since physical gatherings were banned or severely restricted. Nevertheless, MWF participated in several key national meetings around the National Oil Spill Contingency Plan review, Projet de dialogue publique sur la biodiversité, Implementation status for previous National Invasive Alien Species Strategy and Action Plan 2010-2019, Nationally Determined Contribution, 10 year Master Plan for the Environment, Common Country Assessment led by UNITAR and UNDESA on a UN/Government of Mauritius joint initiatives towards green recovery and long-term SDG planning.

We also contributed to regional and international policies such as the Birdlife Africa Marine Strategy.

Other consultation meetings were:

- With BirdLife to discuss about declaring a Mauritian IBA to protect cave bats, on 15th May 2022
- For the Tamarin Falls Floating PV Farm project on 15th June 2022
- Mauritius Standards Bureau sub-committee on biodiversity (online meeting) 16th June 2022
- Business Mauritius. Réunion de la Commission développement durable et inclusive. 17th June 2022.
- Participation in a survey and interview for a PhD study by Dr Vikash Tatayah, Conservation Director on 'Rights in Conservation' with a student of the University of York (UK) on 4th August 2022.
- Discussions with Koji Miwa and Shogo Haga from Japanese International Cooperation Agency (JICA) for a potential collaborative project in ecotourism and ecosystems services in the southeast of Mauritius (in the aftermath of the Wakashio oil spill). Dr Vikash Tatayah, Conservation Director and Mr Jean Hugues Gardenne, Fundraising and Communications Manager . October 2022.
- African Bird Club meeting with country representatives attended by Dr Vikash Tatayah, Conservation Director. 4th November 2022.
- Meeting with Mrs Faustine Zoveda, planted forests and restoration officer, Forestry Division from Food and Agriculture Organisation of the United Nations (FAO) and Conservator of Forests/National Correspondent for FAO Mauritius , Mr P Khurun, to explore further collaboration opportunities for restoration and sustainable production from forests and trees in Mauritius. 28th November 2022.
- Discussions with BirdLife South Africa for the holding of a 'Business and Biodiversity' and Forum in Mauritius in 2023 were begun in December 2022.

Conferences and Workshops

These can be overseas or local. MWF receives a lot of invitations but will select to attend on various criteria which include whether it is fully funded (overseas), the relevance to MWF's work or to influence national policy.

Some MWF was involved in were:

- Consultative Workshop on the United Nations / Government Joint Initiatives Towards Green Recovery and Long-Term SDG Planning -10 February 2022
- Regional SADC Workshop with respect to sharing of lessons from the MV Wakashio oil spill Ministry of Environment, Solid Waste Management & Climate Change. Coordination Meeting, scheduled for 15 February 2022 with a lot of preparation work but then cancelled.
- Inception Workshop for the review and update of National Invasive Alien Species Strategy- 17 February 2022
- Access and benefit sharing of crop wild relatives (CWR) in the southern and eastern Africa. Alliance of Bioversity and CIAT, in collaboration with the SADC Plant Genetic Resources Centre in the context of the Darwin funded project, "Bridging agriculture and environment: southern African Crop Wild Relative Regional network". 21 and 22 February.
- Technical Workshop "Launching of the Mauritius GCF Readiness & Preparatory Support programme
- Update of the ecosystem profile for the Madagascar and the Indian Ocean Islands Biodiversity Hotspot. – 3rd & 4th March 2022
- Relaunch Workshop on 'Mainstreaming Biodiversity in the Management of Coastal Zone in the Republic of Mauritius – 8 March 2022
- University of Mauritius Doctoral Colloquium where Dr Vikash Tatatah was one of three discussants assessing PhD student presentations. Three of the four studies in his sessions was related to Mauritius Fruit Bat: - 9th March 2022
- Re-introduction of Echo Parakeets to La Reunion – Societe Etudes Ornithologiques de la Reunion –several workshops – Seminar with Reunion 10th March 2022
- Introduction to the EU Varuna project – Mission d'Expertise France a Maurice. 15th March 2022.
- Capacity Building Workshop on Preparing Bankable Projects to Access Climate Finance – 17th March 2022
- Predator control workshop run by Ebony Forest – 17th March 2022
- Launching workshop of the AF/UNDP funded coral reef Restoration Project in Rodrigues- 17th March 2022.
- Synergy between palaeoscience and stakeholders in Madagascar and its surrounding islands. [DiverseK working](#) group of [PAGES](#) (Past Global Changes)-23rd March 2022.
- Critical Ecosystem Partnership Fund. Restitution and validation of the results of the stakeholder consultations for the update of the Ecosystem Profile for Madagascar and the Indian Ocean Islands – 23rd March 2022.
- The Aldabra Research Station 50th Anniversary Celebration Symposium at the Royal Society, London, UK, Dr Nik Cole presented 'Ecosystem recovery after invasive mammal eradications' - April 2022.
- A meeting on Carbon Sequestration led by Dr Vincent Florens on the 19th April 2022.
- Control of Invasive Plants in Protected Areas, Webinar by the Israel Nature & Parks Authority the U.S. National Park Service and South African National Parks MWF Rodrigues Manager, Scientific Officer and Project Support Officer- 19th April 2022.
- Tropical Forest Restoration. Ebony Forest/Critical Ecosystems Fund. 21st April 2022.
- A conference organised by Ebony Forest on Environmental Education- 22nd April 2022.
- Conservation genomics of threatened birds remote presentations by the University of East Anglia, UK. 28th April 2022.
- Readiness Evaluation Tool for Oil Spill (RETOS) for the revised National Oil Spill Contingency Plan. The Nairobi Convention Secretariat under the Sapphire project and Ministry of Environment, Solid Waste Management and Climate Change. 5th and 6th May 2022.
- Consultation of CSOs on the Updated Integrated Safeguards System of the African Development Bank. 5th May 2022 (remote).
- Mourouk Management Plan drafting workshop, by the UNDP for the Mainstreaming IAS

Project- MWF Rodrigues Manager & Project Support Officer- 16th May 2022.

- Le soleil dans L'Océan Indien, workshop by Alliance Française, Rodrigues- MWF Rodrigues Ecotour Officer- 17th May 2022.
- Focus group meeting with tourism stakeholders to gather data on the increased threats of Invasive Alien Species, both terrestrial and marine, to the tourism sector. Mainstreaming Invasive Alien Species (IAS) Prevention, Control and Management Project. UNDP CO Mauritius/ Republic of Mauritius. 19th May 2022.
- Consultative stakeholder's meeting on St. Brandon. Mainstreaming Invasive Alien Species (IAS) Prevention, Control and Management Project. UNDP CO Mauritius/ Republic of Mauritius. 19th May 2022.
- Africa Symposium-Restoration Tools for the African Landscape MWF Rodrigues Manager- 27th May 2022.
- Final portfolio evaluation workshop. Regional Implementation Team (Tany Meva) / Critical Ecosystems Partnership Fund. Andasibe, Madagascar. Dr Vikash Tatayah attended remotely. - 15th-18th June 2022.
- Consultative Workshop to build resilience and competitiveness towards a sustainable tourism sector and develop a Long-Term Sustainable Tourism Roadmap for Mauritius. UNEP and the United Nations Resident Coordinators' Office, Ministry of Tourism. 21st June 2022.
- The Conservation Director and the Flora Manager attended a two-day workshop for validation of the NIASSAP document. The document was reviewed, and comments submitted in the workshop in July 2022.
- The Flora Manager represented MWF for the CEPF Ecosystem Profiling validation workshop in Madagascar from 29th June to 1st July 2022.
- Sixth WIOSAP Project Steering Committee (PSC) Meeting at Nosy Be, Madagascar, 5th-8th July 2022 was attended by the Conservation Director.
- Capacity Building On the Carrying Capacity Study Of The Lagoon Around Mauritius And SEMPA (Rodrigues), Proposed Management Framework And Sea Of Black River and Rodrigues Monitoring. Ministry of Blue Economy, Marine Resources, Fisheries and Shipping / UNDP- 6th July 2022.
- How to use Conservation Evidence to support biodiversity activities. Event by University of Cambridge. Dr Vikash Tatayah, Conservation Director, was one of two intervenors. 20th July 2022.
- IUCN Green-Listing Webinar MWF Rodrigues Manager- 22nd July 2022.
- Consultation Workshop to review the first draft of the National Invasive Species Strategy and Action Plan 2023 – 2030. Mainstreaming Invasive Alien Species (IAS) Prevention, Control and Management Project. UNDP/Republic of Mauritius. 26th and 27th July 2022.
- Meeting of conservation and environmental NGOs with the new Chargee d'Affaires of the US Embassy, Mr Satrajit Sardar attended by Dr Vikash Tatayah, Conservation Director <https://www.facebook.com/photo/?fbid=435182038644477&set=pcb.435182071977807> on 14th August 2022.
- RRA Policy Dialogue on Climate Change for COP 27 MWF Rodrigues Scientific Officer- 25th August 2022.
- The Durrell Annual Meeting in Jersey, Channel Islands, was attended by Durrell staff working in Mauritius - September 2022.
- Consultation Meeting on Standards of 12,000 Residential Units Project New Social Living Development Ltd. 05th September 2022
- Birdlife 100 year World Congress, Cambridge, UK. 11th-16th September 2022 was attended by the Conservation Director.
- Transition Ceremony and Workshop. Partnership for Action on Green Economy (PAGE). 21st and 22nd September 2022.
- Gestion des Chats en Milieu Insulaire, Webinar by Projet RECI attended by MWF Conservation

- Director, Project Officer and Rodrigues Manager- 22nd September 2022.
- Coastal Ecosystem Management Committee (CEMC). Development Integrated Coastal Ecosystem Management System, 10th October 2022.
 - MWF Education Assistant attended a workshop at Albion Fisheries about 'The consequences of MV Wakashio. Rehabilitation of our Southeast lagoon. The help of Japanese consultants to the community in terms of education and awareness'- 10th October 2022.
 - The Education Coordinator and Community Educator attended the conference on Climate change held at the Rajiv Gandhi Science Centre Belle Village and participated in the break-out session about the impact of Climate change on Natural Resources- 12th October 2022.
 - Inception Workshop - midterm review of the Mainstreaming Invasive Alien Species project. UNDP / Republic of Mauritius. 13th October 2022.
 - BirdLife International Tokyo (Japan), in collaboration with the Mauritian Wildlife Foundation, ran a one day session, 'Introduction to Shorebird Monitoring' on 14th October 2022
 - 12th WIOMSA symposium. South Africa on 9th-15th October 2022 was attended by the Flora Manager.
 - Regional Technical Meeting for the Adaptation Fund 'Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future' project MWF Rodrigues Manager- 8th- 10th November 2022.
 - Consultative workshop to develop a proposal and mobilise resources for future work on sustainable tourism in Mauritius. UN Resident Coordinators' Office and UN Environment Programme (UNEP). 16th November 2022.
 - Pan African Ornithological Congress, Victoria Falls, Zimbabwe, 21st-25th November 2022 was attended by the Conservation Director, Dr Vikash Tatayah.
 - Restitution Workshop - Mid Term Review - Mainstreaming Invasive Alien Species (IAS) Prevention, Control and Management Project. UNDP/ Republic of Mauritius. 23rd November 2022.
 - Validation Workshop - Project Implementation Plan for the Fourth National Communication for the Republic of Mauritius. Ministry of Environment, Solid Waste Management and Climate Change. Validation Workshop/ Global Environment Facility through the United Nations Environment Programme (UNEP). 24th November 2022.
 - Inception Workshop with NCC - Mainstreaming Invasive Alien Species (IAS) Prevention, Control and Management Project. Develop a multi-tier costed implementation strategy for effective control of Invasive Alien Species'. 28th November 2022.
 - Le Comptoir des Plantes aromatiques, à Parfum et Médicinales (PAPAM) de Qualitropic Workshop, Rodrigues MWF Rodrigues Nature Reserve Officer- 1st & 2nd December 2022.
 - GEF 8 consultative workshop on GEF Star Allocations. Global Environment Facility. 5th- 6th December 2022.
 - Colloque de clôture du projet de coopération pour la préservation du Jardin des Pamplemousses. La Chambre de Métiers et de l'Artisanat de La Réunion, CIRBAT (Centre d'Innovation et de Recherche du Bâti Tropical) de La Réunion et le Ministère de l'Agro-industrie et de la sécurité alimentaire de Maurice. Lutte contre les infestations de termites et autres espèces nuisibles au Jardin botanique des Pamplemousses. 14th December 2022.
 - Webinar on Chinese Crested Tern in the Yellow Sea and Seabird Conservation in China. 17 December 2022.

Other Events and meetings

MWF will also get invited to several other events or meetings, some we attended were:

- Launching of Youth Forum at Cote d'Or Stadium was attended by Dr Vikash Tatayah, Conservation Director on 12th August 2022.

- Durrell alumni meeting with ex-students of the International Training Centre (Jersey Zoo, English Channel Islands) attended by Dr Vikash Tatayah, Conservation Director. October 2022
- First year celebration of Biosphere Reserve at Bel Ombre Beach and creation of an endemic garden attended by Dr Vikash Tatayah, Conservation Director. 3rd November 2022.
- One Take Off One Tree signature ceremony between Air Mauritius and Mauritian Wildlife Foundation on 16th December 2022.
- Planting ceremony at Petrin by Minsiter of Agro-Industry and Food Security, Hon. Mr Maneesh Gobin and EU Ambassador, Mr Vincent Degert, in the context of the EU Ridge to Reef project implemented by the National Parks and Conservation Service. 19th December 2022.

Presentations

MWF is invited to give presentations and also will organize them for training or education and awareness purposes. Some MWF was involved in were:

- Conservation in the land of the Dodo. MSc course. Central European University, Hungary. 2nd February 2022.
- Mauritius Kestrel – National Bird for the British Council. 8th March 2022.
- La perruche verte des Mascareignes (La grosse c ateau verte). Societe Ornithologique de la Reunion. 9th March 2022.
- The Echo Parakeet for La Reunion. Societe Ornithologique de la Reunion. 9th March 2022.
- The National Bird of Mauritius, the Mauritius Kestrel. Talk by Prof. Carl Jones to Standard Bank. 25th March 2022.
- A refresher training was conducted by Dr Vikash Tatayah with four guides of La Vall e de Ferney on 28th March 2022
- Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future, in Rodrigues. Launching workshop of the AF/UNDP funded coral reef Restoration Project, at La D tente, Rodrigues MWF Rodrigues Manager- 17th April 2022.
- Mauritius Kestrel – National Bird to Friends of MWF on 25th April 2022.
- *Status on Ecosystem restoration on St Brandon* presentation - Consultative stakeholder's meeting on St. Brandon- 19th May 2022
- *Rebuilding reptile communities* – presentation and discussion with journalists- 20th May 2022
- *Distance: Estimating abundance and density* - presentation and training of staff- 23rd May 2022
- Five training sessions and 2 educational visits were organised in collaboration with Media Trust by the Education team for journalists and photographs on:
 - MWF's conservation works by Mr Jean Hugues Gardenne, Fundraising and Communications Manager 17th May 2022
 - Mauritian Reptiles and islets conservation by Dr Nik Cole, Islands Restoration Manager- 20th May 2022
 - Mauritius Kestrel, by Mr Sion Henshaw, Fauna Manager, and Mr Josua Hollandais, Assistant Coordinator Mauritius Kestrel Project- 24th May 2022
 - Educational visit of La Vall e de Ferney- 24th May 2022
 - Endemic plants and Seabirds by Mrs Martine Goder, Education and Flora Programme Manager- 25th May 2022
 - Educational visit of Ile aux Aigrettes- 24th May 2022
- The work being done by the MWF flora team under the Conservatoire Botanique de Brest project- 31st May 2022.
- Rare plant Conservation in Rodrigues with CBNB, Friends of Wildlife at the Institut Franais de Maurice MWF Rodrigues Manager- 31st May 2022.
- Wakashio oil spill – how environment reacts? Rotary Club Quatre Bornes. 31st May 2022.
- MWF au chevet de la biodiversite de la Republique de Maurice. Interview of Dr Vikash Tatayah on Green Rainbow Foundation's Web TV. 20th June 2022.
- Restoration of Nature Reserves in Rodrigues, Ebony Forest Webinar MWF Rodrigues Manager- 24th June 2022.
- BBC West Midlands Birmingham interview of Dr Vikash Tatayah in the context of the Commonwealth Games. 27th June 2022.
- A WIOSAP presentation was prepared to summarise progress on the project and was presented remotely by the Conservation Director, during a workshop Madagascar in July 2022.
- Restoring the integrated terrestrial native habitat and seabird community of Ile aux Aigrettes. Sixth WIOSAP PSC. Nosy Be, Madagascar- 6th July 2022.
- Conservation in the land of the Dodo. MSc ornithology course. AP Leventis Ornithology Research Institute (APLORI), Nigeria. 14th July 2022.
- *01 An introduction to GIS; 02 Introduction to QGIS; 03 Making Maps for Print; 04 Spatial Analysis and CRS* - presentations and training of staff- 18th July 2022

- *05 Overlay and Proximity; 06 Getting Data into GIS* - presentations and training of staff- 19th July 2022.
- Lessons learnt and progress in oil spill management in Mauritius: The MWF's perspective. Media Trust. 24th August 2022.
- Native animal rescues. Friends of Mauritian Wildlife Foundation. 31st August 2022.
- Seabird Monitoring and conservation in the Republic of Mauritius. BirdLife International Tokyo (Japan), in collaboration with the Mauritian Wildlife Foundation, 'Introduction to Shorebird Monitoring' 14th October 2022.
- Update on Reef Restoration Actions carried out in Rodrigues, during the Regional Technical Meeting for the Adaptation Fund 'Restoring Marine Ecosystem Services by Rehabilitating Coral Reefs to Meet a Changing Climate Future' project MWF Rodrigues Manager-8th November 2022.
- *CMR A basic introduction: Closed Capture to Open CJS models* - presentations and training of staff- 14th November 2022.
- *CMR A basic introduction: POPAN models* - presentation and training of staff- 15th November 2022.
- Launch of the 2nd edition of *La Faune et la Flore de Rodrigues* by MWF Rodrigues at the Dominique Farla Information Centre, Rodrigues-MWF Rodrigues Ecotour Officer- 16th November 2022.
- *Species Red Lists; Vortex Population Viability Analyses; Biological sampling; Invasive species control and eradication on small islands* - presentations and training of staff- 16th November 2022.
- *Rebuilding reptile communities* - presentation and training of staff- 17th November 2022.
- Mauritius Kestrel – from near-extinction to National Bird! Pan-African Ornithological Congress. Zimbabwe. 19th November 2022.
- Mauritius Kestrel – from near-extinction to National Bird! Ecole du Centre's Mauritian flora and fauna conference 8th December 2022.

Research and Publications

Research

There are a number of research initiatives being conducted by MWF, many in collaboration with overseas partners and other initiatives are under development. They are listed below.

- Rodrigues Fruit Bat (*Pteropus rodricensis*) long-term data analysis with Chester Zoo (Dr Claire Rasin) and University of Chester Department of Biological Sciences Senior Lecturer in Conservation Biology (Dr Achaz von Hardenberg) and M.Sc. student Ms Holly Slatter.
- Observation of 2 Rodrigues endemic snails (*Tropidophora articulata* and *Dancea rodriguezensis*) in enclosures in the Grande Montagne Nature Reserve with Bioculture Joint Managing Director, Owen Griffiths and François Leguat Reserve
- Ongoing long-term research of crickets and grasshoppers in the GMNR and across Rodrigues. by Dr Sylvain Hugel, CNRS, France
- Ongoing research on the connectivity and phylogeny of the Hibiscus genus in the Indian Ocean by Dr Christine E. Edwards & Brock Mashburn, Missouri Botanical Gardens, USA
- Seabirds Without Borders. Dr Malcolm Nicoll (Institute of Zoology, Zoological Society of London), Prof Matthieu Le Corre (University of Reunion) and collaborators in Mauritius including National Parks & Conservation Service (Government of Mauritius) and the Mauritian Wildlife Foundation.
- Reconstructing the volcanic history of Rodrigues Island from the first emerged lavas to the most recent eruption; comparison of the chemistry of Rodrigues' lavas with those of Réunion and Mauritius to determine the relative influence of the hotspot and the ridge on the volcanic activity, and quantification of fluvial erosion related to extreme precipitation events by Associate Professor Vincent Famin (University of La Réunion) and Dr Loraine Gourbet, both from the Laboratoire Géosciences Réunion, France.
- Investigation and cataloguing of Rodrigues microfauna (Nematodes) Dr Mattias Herrmann of the Max Plank Institute for Biology in Germany.

Research Ongoing or Completed in 2022

The following research initiatives are conducted as joint research projects with Durrell related to the Island Restoration Programme, in collaboration with academic partners.

Ongoing:

- Optimising genetic markers of endemic reptiles to investigate the impact of the Wakashio oil spill on threatened reptile populations in the southeast islets – Cardiff University
- Genetic research on the translocation success of the keel-scaled boa – Cardiff University
- Conservation genetic research on the orange-tailed skink – Cardiff University
- A proposal for PhD research was submitted with Cardiff University to obtain funding and a student to investigate the diets of the unique reptiles that dominate Round Island's ecosystem
- Genome sequencing of the Critically Endangered hurricane palm – London Natural History Museum, Oxford Nanopore and the University of Nottingham
- Investigating the genetic structure of the Critically Endangered hurricane palm to direct conservation management – Cardiff University
- Genome sequencing of the Critically Endangered Bojer's skink – London Natural History Museum, Oxford Nanopore and the University of Nottingham
- Seabirds without borders or isolated islands? Connectivity of western Indian Ocean seabirds (CONNECTS) - Institute of Zoology, Zoological Society of London and University of La Reunion

- Evidence based decision making for reintroduction success: translocating threatened prey reptiles into an endemic predator-packed system in Mauritius - Katie Bickerton, PhD research project - University of Kent and Institute of Zoology, Zoological Society of London
- Investigating the genetic diversity and population structure of the lesser night gecko (*Nactus coindemirensis*) - Olivia Fitzpatrick, MRes Research Project - University of Cardiff – ongoing

Completed during the year:

- Drivers of ocean movement patterns in Round Island petrels (*Pterodroma* spp.) - Kirsty Franklin, PhD Research Project - University of East Anglia, Institute of Zoology, Zoological Society of London, British Antarctic Survey
- Alien ants: invaders of a tropical island food web in the Indian Ocean – Maximillian Tercel, PhD research project - Cardiff University
- The Use of Analogues for Ecological Replacement - Alexandra Ferguson, MRes research project - Nottingham Trent University

Publications

The following publications were issued in 2022 which had a connection with MWF's work or a MWF author. All publications on Mauritian species are filed in our library and made available to staff and researchers.

- Roesch, M.A., Dymond, B., & Cole, N.C. (2022) Feeding observations of the Keel-scaled Boa, *Casarea dussumieri* (Serpentes: Bolyeriidae), on Round Island, Mauritius, showing the use of its intramaxillary joint. *Herpetology Notes*. 15, 519-522.
- Roesch, M.A., Mootocurpen, R., & Cole, N.C. (2022) Size precision, difference and record of Günther's Gecko, *Phelsuma guentheri* (Squamata: Gekkonidae), in Mauritius. *Herpetology Notes*. 15, 513-517.
- Kirsakye, D.S. (2022) *La Faune et la Flore de Rodrigues*, 2nd edition. Mauritian Wildlife Foundation, Mauritius. 134pp
- Garde, B., Wilson, R. P., Fell, A., Cole, N., Tatayah, V., Holton, M. D., Rose, K. A., Metcalfe, R. S., Robotka, H., Wikelski, M., Tremblay, F., Whelan, S., Elliott, K. H. & Shepard, E. L. (2022) Ecological inference using data from accelerometers needs careful protocols. *Methods in Ecology and Evolution*, 13, 813– 825. <https://doi.org/10.1111/2041-210X.13804>
- Jones, C., Tatayah, V., Moorhouse-Gann, R., Griffiths, C., Zuël, N., & Cole, N. (2022) Slow and Steady Wins the Race: Using Non-native Tortoises to Rewild Islands off Mauritius. In M. Gaywood, J. Ewen, P. Hollingsworth, & A. Moehrenschrager (Eds.), *Conservation Translocations (Ecology, Biodiversity and Conservation)*, pp. 469-475). Cambridge: Cambridge University Press. <http://doi:10.1017/9781108638142.028>
- Shopland S, Barbon A R, Greenwood A, Tatayah V and Barrows M. 2022. Translocation of European captive pink pigeons (*Nesoenas mayeri*) to Mauritius: disease risk assessment for production of a pre-export quarantine protocol. *Journal of Zoo and Aquarium Research*. 10(4) 2022. <https://doi.org/10.19227/jzar.v10i4.551>
- Teixeira H, Le Corre M, Jaeger A, Choeur A, Saunier M, Couzi FX, Tatayah V, Shah N J, Nicoll M A C, Avargues N, Humeau L (2022) Isolation and characterization of 50 microsatellite loci for two shearwater species, *Ardenna pacifica* and *Puffinus bailloni*. *Molecular Biology Reports*. DOI: 10.1007/s11033-022-07983-0
- Moorhouse-Gann R, Vaughan I, Cole N, Goder M, Tatayah V, Jones C, Mike D, Young R, Bruford M W, Rivers M, Hipperson H, Russo I M, Stanton D, Symondson W (2022). Impacts of Herbivory by Ecological Replacements on an Island Ecosystem. *Journal of Applied Ecology*. 59. DOI: 10.1111/1365-2664.14096
- Krishnan K, Garde B, Cole N, Cole E-L, Darby J, Elliot K H, Fell A, Gómez-Laich A, de Grissac S, Lempidakis E, Prudor A, Quetting M, Quintana F, Robotka H, Roulin A, Ryan P G,

Schalcher K, Schoombie S, Tatayah V, Tremblay F, Weimerskirch H, Whelan S, Wikelski M, Yoda K, Hedenström A, Shepard E L C (2022) The role of wingbeat frequency and amplitude in flight power. *Journal of the Royal Society Interface*.

<https://www.biorxiv.org/content/10.1101/2022.06.28.497935v1.full>

- Nicoll M, Cole N, Horswill C, Jones C, Ratcliffe N, Ruhomaun K, Tatayah V, and Norris K. (2022). No detectable effect of geolocator deployment on the short- or long-term survival of a tropical seabird. *Ibis*. 164. <http://dx.doi.org/10.1111/ibi.13094>
- Tatayah, V. (2022). *Falco punctatus* (Green Status assessment). *The IUCN Red List of Threatened Species 2022*: e.T22696373A2269637320221.
- Jackson H, Groombridge J, Ryan C, Willman F, Tollington S, Dawson D, Ward L, Jones C, Tatayah V, Zuel N, Young R, Concannon L, Swinnerton K, Albeshr M, Bell D, Tyler K, Percival-Alwyn L, Clark M, Ruhomaun K, Bachraz V, Bruford M, & Van Oosterhout C. (2022). Ex-situ captive collections as a source for genetic rescue of an iconic endangered island bird species. *Molecular Ecology*.
- Franklin K A, Norris K, Gill J A, Ratcliffe N, Bonnet-Lebrun A-S, Butler S, Cole N C, Jones C G, Lisovski S, Ruhomaun K, Tatayah V and Nicoll M A C (2022). Individual consistency in the non-breeding distributions and migratory timings of a tropical seabird, the Round Island petrel. *Movement Ecology*. 10. 13 (2022). <https://doi.org/10.1186/s40462-022-00311-y>
- Tatayah V, Goder M, de Chazal D (2022). Conservation Management Plan for Mondrain Reserve. Mauritian Wildlife Foundation.
- Baptiste G, Wilson R, Fell A, Cole N, Tatayah V, Holton M, Rose K, Metcalfe R, Robotka H, Wikelski M, Tremblay F, Whelan S, Elliott K, Shepard E (2022) Ecological inference using data from accelerometers needs careful protocols. *Methods in Ecology and Evolution*. 2022;13: 813–825. <http://dx.doi.org/10.1111/2041-210X.13804>
- Shopland S, Barbon A R, Greenwood A, Tatayah V and Barrows M (2022) Translocation of European captive pink pigeons (*Nesoenas mayeri*) to Mauritius: disease risk assessment for production of a pre-export quarantine protocol. *Journal of Zoo and Aquarium Research*. <http://dx.doi.org/10.19227/jzar.v10i4.551>
- Jackson H, Percival-Alwyn L, Ryan C, Albeshr M F, Venturi L, Morales H E, Mathers T C, Cocker J, Speak S A, Accinelli G G, Baker T, Heavens D, Willman F, Dawson D, Ward L, Tatayah V, Zuël N, Young R, Concannon L, Whitford H, Clavijo B, Bunbury N, Tyler K M, Ruhomaun K, Grace M K, Bruford M W, Jones C G, Tollington S, Bell D, Groombridge J J, Clark M, van Oosterhout C. (2022). Genomic erosion in a demographically recovered bird species during conservation rescue. *Conservation Biology*, 1–13. <https://doi.org/10.1111/cobi.13918>.

COVID-19 Pandemic

In January 2022, the very infectious nature of the Omicron variant was reflected in continuing high numbers of persons recorded as positive. The Government restrictions that were due to end on the 15th January 2022, were extended to 31st March 2022.

Rodrigues, having stayed free of Covid in the public, had its first case detected on 27th January and the numbers rapidly grew. It was believed the variant was Omicron as 98% of those testing positive had no symptoms at all and 2% had flu-like symptoms. This enabled the authorities to cope with the outbreak as the demand for hospitalization was low. Rodrigues also had a vaccination programme in place since 2021. A curfew order put in place on 29th January 2022 was lifted on 23rd February 2022. A quarantine requirement was in force for anyone who wished to travel to Rodrigues but this was removed in mid March for fully vaccinated travellers.

Government regulations regarding infections and contact with infectious persons were relaxed in mid February where a person without symptoms but having a COVID-19 positive person in the household was allowed to go to work.

The restrictions due to expire on 31st March 2022 were re-issued without any material change except allowing places of worship to hold gatherings of up to 50 persons suitably distanced and wearing masks (previously the maximum was 10 persons and many Catholic churches held services in the open air where they could legally have 50 persons).

On 28th June 2022 the government announced that most restrictions would be lifted from 1st July 2022. Mask wearing would only be needed in some establishments such as hospitals. The limit on gatherings was removed as was the 'no picnicking' on beaches.

The vaccination programme continued throughout the year and has been successful in providing two doses to most adults in Mauritius who wish to be vaccinated. Booster doses are also available.

Wakashio Shipwreck and Oil Spill

The shipwreck, oil spill and emergency actions: 2020

On 25th July 2020, MV *Wakashio*, a Panama flagged tanker carrying over 4000 tons of heavy oil, lubricants and diesel ran aground only 2 km away from Ile aux Aigrettes. Oil started leaking out of the tanker on 6th August. Around 1000 T of various petroleum products spilled into the ocean, affecting Ile aux Aigrettes, the fragile marine ecosystem and the turquoise blue lagoon. Within days the oil patch moved further north and reached the four islets fringing the Mahebourg bay, Ile de la Passe, Ilot Vacoas, Ile au Phare (aux Fouquets) and Ile Marianne, key habitats for endemic reptiles such as the Bojer's Skink and the Lesser Night-gecko which have gone extinct from mainland Mauritius, or barely present (Bouton's Skink on extreme rock outcrops).

The full consequences to the Mauritian Wildlife Foundation and actions taken are reported in detail in the MWF Annual Report 2020.

Two years on: 2022

The wreck remained on the reef in 2021 although the ship broke in half and the half which was freed was towed away and sunk out to sea. It took the authorities until February 2022 to completely remove all visible signs of the wreck. MWF prepared a contingency plan in the event there was an oil spill as there was oil remaining in the wreck although it was not known exactly how much. Buoys were positioned around the wreck in strategic places to catch the oil if it did leak and Polyeco, and National Coast Guard, as well as the Ministry of Environment, were prepared to act in the event of an oil spill (eg containment and clean-up). Polyeco were set up on the Pointe Jerome jetty.

The National Integrated Environmental Monitoring Plan is being implemented, with MWF heavily involved in terrestrial biodiversity monitoring. We have reported at agreed regular intervals on the status of animals and plants on Ile aux Aigrettes and the South East Islets since January 2021. Generally speaking, the effects of the oil spill have yet to be confirmed. One of the concerns was the Ile aux Aigrettes cricket, recently described as *Makalapobius aigrettensis*, after the island. The cricket was not seen for months after the oil spill, and then seen in small numbers and irregularly, but following the visit in 2022 of the expert on the species, Dr Sylvain Hugel, who conducted density estimates it appears the cricket is in reasonable numbers once again. Regrettably, density measurements were not taken prior to the oil spill that would have allowed a pre ('baseline') and post spill comparison.

MWF is also contributing to the revision of the National Oil Spill Contingency Plan.