
ALPHONSE
FOUNDATION
Help us in our continued preservation of the Alphonse Group of Atolls

Mission

Alphonse Foundation is a Seychelles Registered Association bringing together ICS, IDC, AIL and the Seychelles Ministry of Environment to work together for the conservation, rehabilitation and enhancement of Alphonse and St François Atolls ecosystems in harmony with sustainable, low impact human development and eco-tourism.

ISLAND CONSERVATION SOCIETY (ICS) is a Seychelles registered NGO which was established in April 2001, with the objective to promote the conservation and restoration of island ecosystems, sustainable development of islands, and awareness of their vulnerability and vital importance to the planet's biodiversity. ICS is a member of the International Union for Conservation of Nature (IUCN).

ISLANDS DEVELOPMENT COMPANY (IDC) is a parastatal company that was registered in April 1980 and has been entrusted with the management and development of the outer islands owned by the Government of the Seychelles. IDC is committed to working towards ensuring that development activities are done in a sustainable manner and to continuously support environmental conservation and protection of species and ecosystems of the outer islands of the Seychelles.

ALPHONSE ISLAND LODGE (AIL) is operated by Blue Safari Seychelles and is the only resort in the group, offering sensitive, experiential, low-impact ecotourism. Since taking over the lease in 2013, AIL has steadily increased guest numbers whilst mitigating any environmental impact. Every AIL guest pays a conservation levy for visiting the island and AIL has contributed significant funds to the Foundation to facilitate various projects, including in-kind and additional guest donations. AIL works closely with the on-island resident ICS team, contributing logistical help and expertise and taking ecological advice on operational best-practice of the resort.

Conservation is something held very close to the hearts of everyone on Alphonse.

We are committed to protecting the unique fauna and flora of the atolls with on-going research, rehabilitation and monitoring programmes. The key long-term projects focus on: The dedication to conservation of the natural heritage of Alphonse has always been central to the mission to create an exclusive island that is intimately connected to the natural environment. All guest activities conducted by Blue Safari are immersive, educational experiences that highlight the unique marine and coastal ecology and follow strict codes of conduct developed with ICS. Guests are encouraged to help with conservation data collection and evening presentations are offered by ICS and AIL ecologists on a range of environmental topics.

The foundation provides a sustainable way of funding long-term conservation projects, utilising an effective eco-tourism model to cover conservation project costs whilst building an endowment fund to ensure the continuation of conservation in perpetuity.

Alphouse Island

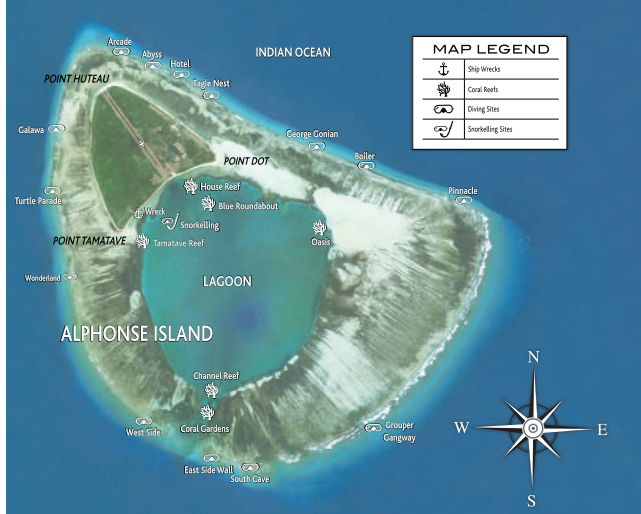
Bijoutier Island

St François Island

Blue Safari
SEYCHELLES

ISLANDS DEVELOPMENT COMPANY LTD
ZIL ELWANNYEN SESEL

ISLAND CONSERVATION SOCIETY



The Alphonse Group of Islands

Situated only 7˚ south of the equator and 400km (250 miles) south-west of Mahé in the Seychelles, the Alphonse Group of Islands hold outstanding biological treasures that must be preserved. The magnificent island threesome of Alphonse, St François and Bijoutier lie in the very heart of the Indian Ocean as part of the Seychelles outer islands.

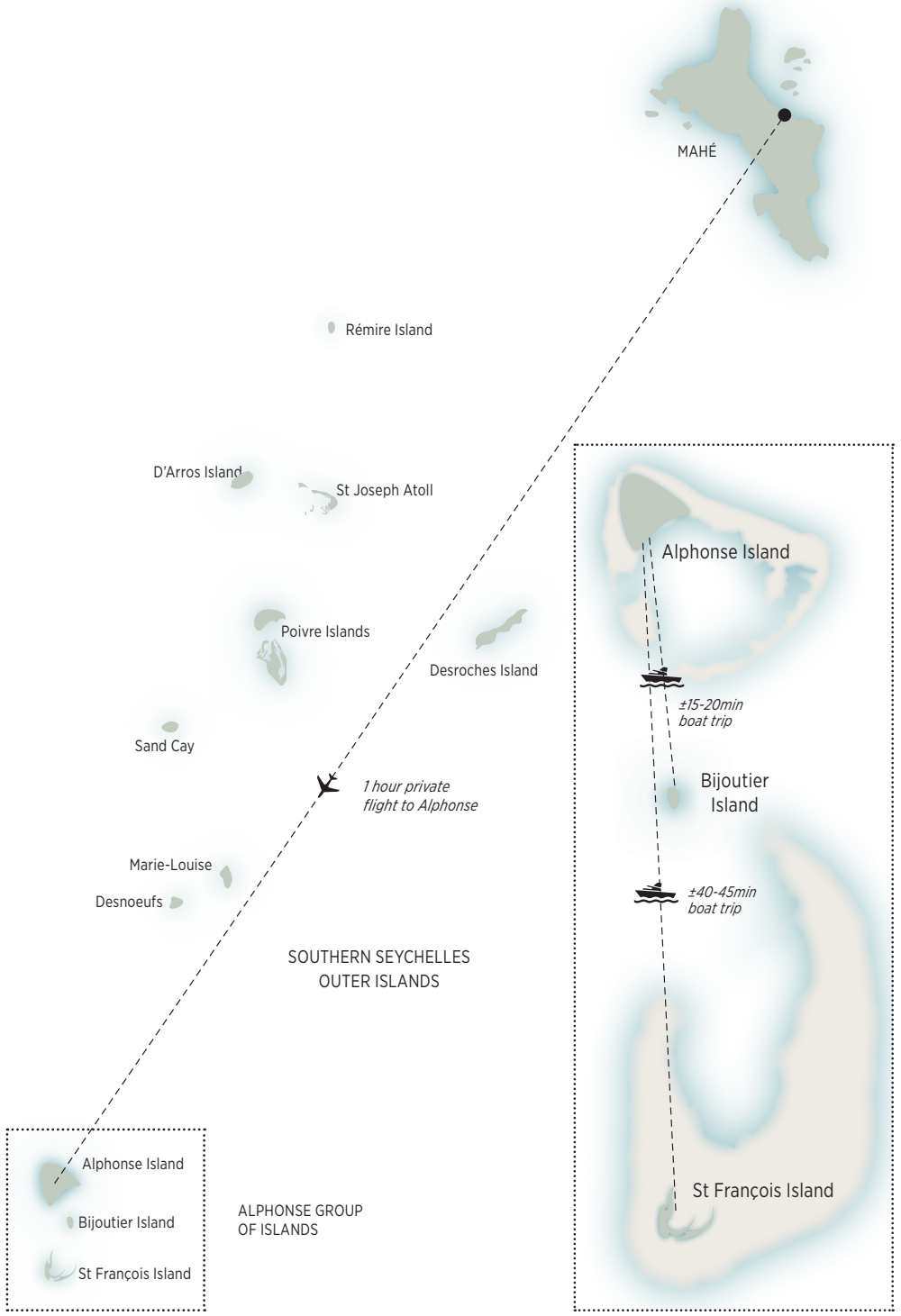
Alphonse Atoll is adjacent to, but separated from St François Atoll by a channel called Canal de Mort, which drops down to 110m at its deepest point.

Alphonse Atoll has one island, Alphonse Island, which is a triangular-shaped sand cay situated on the northern rim of the atoll. The St François Atoll, situated c.2km to the south of Alphonse Atoll, has three islands; St François Island, Bijoutier and One Palm. The atolls are considered a part of the Amirantes group, but are separated from the Amirantes bank by a trench, 87km wide and 3000m deep.

History

Alphonse was first officially documented on 27th June 1730 by the crew of French vessel Le Lys, and was named in honour of the captain, Chevalier Alphonse de Pontevez. It remained untouched until it was first sold to private landowners the Huteau brothers in 1823. From the sale of the island in 1862 to the Dauban family until the handover of the island in 1981 to IDC, Alphonse was a highly productive coconut plantation largely due to the guano-rich soil.

Unfortunately, the plantation almost entirely altered the terrestrial ecology of the island, however with the commencement of eco-tourism in 2001 and the permanent presence of ICS since 2007, huge efforts have been made to restore and rehabilitate the native fauna and flora and many bird species have returned and even began to breed again on the islands.



LONG-TERM MONITORING & CONSERVATION PROJECTS

Sea Turtles

Four species of sea turtles frequent waters of the Seychelles and two species, namely Green and Hawksbill turtle, use our islands as their breeding grounds.

ICS conducts monitoring activities to assess status and trends of turtle nesting populations and foraging aggregations, and to identify critical nesting and foraging areas, in order to better understand the biology of turtles. The research so far has been used as key rationale for including Alphonse Group within the Seychelles protected Area Network and has shown a steady increase in nesting females since 2007.

Both species of turtle have been protected in the Seychelles since 1994.

Hawksbill Turtle

French Name: Tortue Imbriquée
Creole Name: Kare
Scientific Name: Eretmochelys imbricata
IUCN Red List Status: **Critically Endangered**

- Alphonse Group: Estimated population is 76 nesting females.
- Populations were severely depleted due to the harvesting of their shells, which were used to make curio and jewellery products throughout the 20th century.

Green Turtle

French Name: Tortue Verte
Creole Name: Torti / Tortidmer
Scientific Name: Chelonia mydas
IUCN Red List Status: **Endangered**

- Alphonse Group: Estimated population is 127 nesting females.
- This species was largely exploited in the past for its meat which is considered a local delicacy, despite legal protection unfortunately some poaching continues.

WHERE DO POST-NESTING SEA TURTLES GO?

Research was initiated in 2017 in order to discover the migrations of post-reproductive adult sea turtles of the Alphonse Group. Turtles are known to be highly migratory with breeding areas often separated from foraging grounds by 100s or 1000s of kilometres. Over 3 years, a total of ten satellite devices have been deployed on ten post-nesting adult turtles in order to determine the location of the foraging habitat and migratory corridors of the turtles that breed in the Alphonse group. To date, two Green Turtles travelled to Boudeuse, four appeared off the east coast of Africa; and one remained at the south of St François. While two Hawksbills travelled northwards to the Seychelles bank and the other headed to Ile Platte. The project was implemented by ICS in collaboration with the Alphonse Foundation and Luth Association.

Catch and Release Recreational Fisheries

COLLABORATIVE MONITORING

Recreation angling is a globally popular leisure activity. This activity can not only bring economic prosperity to remote locations, but it can also help enhance conservation efforts for marine ecosystems. This is especially the case for catch-and-release (C&R) angling, with the caveat that fish need to be caught and handled in a manner that minimizes the effects on their biology and ecology through active stewardship and adoption of best-practice.

A Code of Conduct for Recreational Fisheries ('best practices') has been created and permanently applied to the recreational fishing activities conducted in the Alphonse Group. Since 2017, the Alphonse Fishing Company in collaboration with ICS has been collecting catch data on the five most charismatic species targeted by fly anglers: Giant Trevally, Indo-Pacific Permit, Milkfish, Yellow-Margin Triggerfish, and Moustache Triggerfish. This project is ongoing and contributes to our understanding of where catch rates are highest, and whether catch rates change seasonally and in response to locational angling pressure.

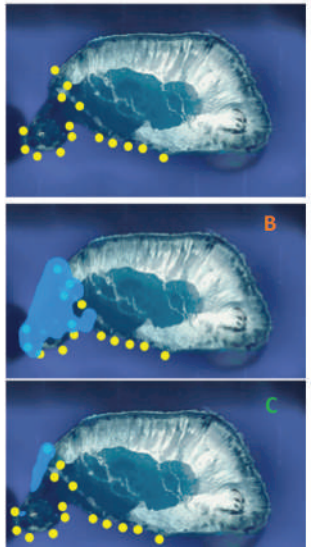
Please follow the below link to our scientific paper which outlines the importance of cross-sectoral collaboration in the conservation of recreationally important species: 'Cooperative monitoring program for catch-and-release recreational fishery in the Alphonse Island Group, Seychelles: from data deficiencies to the foundations for science and management'

https://www.sciencedirect.com/science/article/abs/pii/S0964569121001654

Giant Trevally Spatial Usage: an example of what we can learn from passive acoustic telemetery

Fish ID: #42 'The Scotsman'
Date Tagged: January 31, 2019
Acoustic Tag ID: A69-9001-8869
Fork Length of Fish: 97 cm
Catch Location: West off Fallujah, St Francois

Yellow Spots: Receivers that have detected this fish
B: The overall range of this fish
C: Where the fish spends the majority of time (+/- 50%)



MONITORING THE SPATIAL ECOLOGY OF THE GIANT TREVALLY (CARANX IGNOBILIS)

Giant Trevally (GTs) are enigmatic predatory fish and a main species of interest for visiting anglers; die to increased catch rates since 2011 questions are emerging concerning their sensitivity to fishing pressure and habitat usage of the atolls. Diverse partners including tourism operators, visiting anglers, fishing guides, conservation managers, and academic researchers have initiated this research project with the cooperative aim to investigate the ecology of this species whilst ensuring sustainability into the future.

To accomplish this, we have deployed and are maintaining an array of 68 receivers or 'listening stations' in the waters of the Alphonse Group and implanted 75 GTs with acoustic transmitters. Some of these tags provide additional information on the depth and swimming speed of the fish, shedding light on their behavioural response to natural and human disturbances. We download the data manually from this array once per year via scuba, so far we have collected over 400,000 GT detections and we continue to track their movements.

The research being conducted on GTs is also serving a template for addressing similar questions for other target species in the Alphonse Group, including Milkfish and Bonefish. These efforts will also be expanding to Astove and Cosmoledo so that Codes of Conduct can best match the recreational fisheries of these other exciting destinations.

RECREATIONAL FISHERIES CONTINUED...

GT PROJECT CONTINUED ...

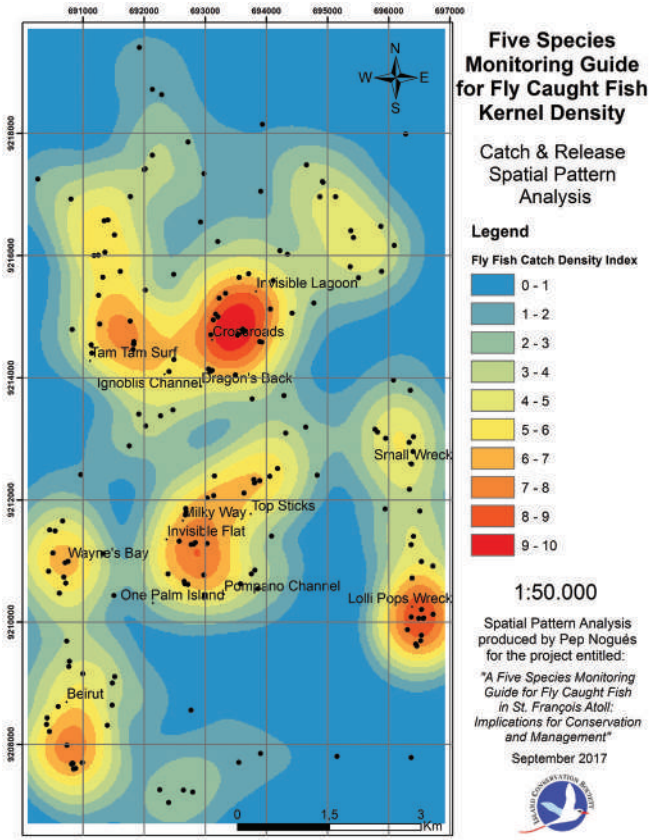
Preliminary findings show that less than 20% of tagged individuals move among atolls in the Alphonse Island Group. While many Giant Trevally rarely leave their respective atolls, the majority of individuals use both reef and lagoon habitats. Overall, home ranges of Giant Trevally are approximately 5 km2. However, each individual displays affinity to specific areas, either within the lagoon or along the reef. Data from the latest download is currently being analyzed and will be used to study how Giant Trevally movements change when select fishing areas are closed, and due to the pandemic when angling pressure was little to none.

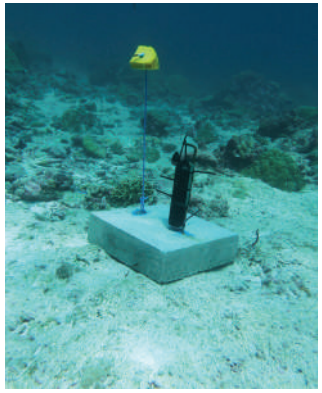
POST-RELEASE BEHAVIOURAL STUDIES

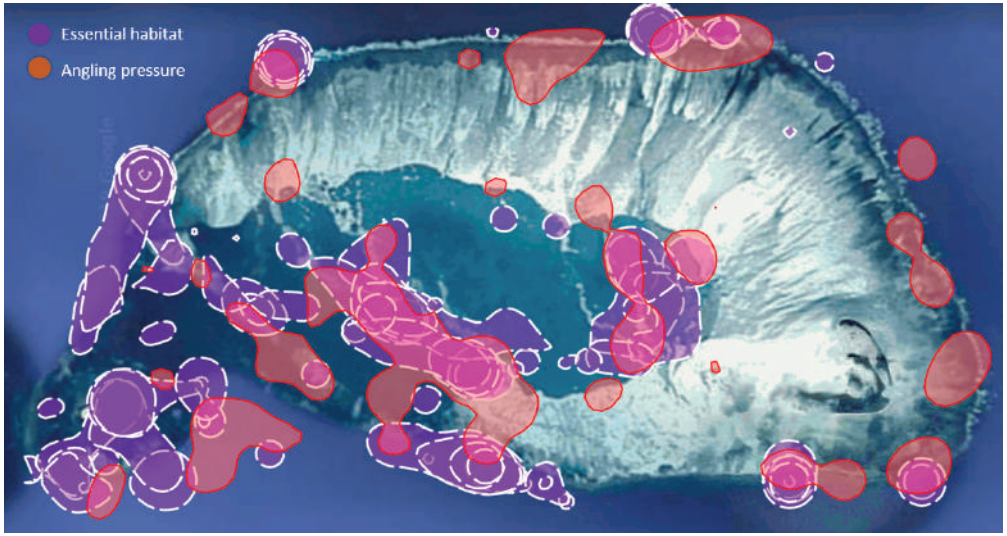
We have also conducted an assessment of their short term activity patterns following catch and release angling; over 40 trials have been conducted using accelerometers attached to the caudal peduncle of GTs. Different fish have varying levels of air exposure and handling techniques before release, accelerometer logging and retrieval. Data analysis shows that Giant Trevallies are incredibly resilient fish with no significant impairment to physiological health and behavior with air exposure up to 30 sec, however with increasing air exposure their behavior in the first 10mins after release was slower than the second 10mins.

The most significant impact on GT post-release behavior and fitness was hook site with the only (non-confirmed) mortality in the study being attributed to a fish hooked in a critical location. The results of this study will help to hone the recreational fisheries Code of Conduct as it demonstrates handling and hook setting are crucial to ensuring a GT caught in a catch and release incident survives to fight again.

Read about our study here: Read about our study here: https://doi.org/10.1016/j.fishres.2022.106337







More Catch and Release Fishery Management Projects

MILKFISH SPATIAL ECOLOGY

Milkfish are another enigmatic fish species targeted in the catch-and-release fishery in the Seychelles. Despite being predominantly herbivores, feeding on plankton, algae and benthic detritus; Milkfish are known for the relentless fight when on the end of a fishing line. Although they are also used for aquaculture in parts of their range, they are a pelagic species and large gaps in knowledge related to their spatial ecology in the wild. To investigate this further combined with the fact Milkfish are such an iconic species to the Alphonse fishery the life cycle of the existing acoustic array will be extended and we are proposing to implant acoustic transmitters into 16 Milkfish so that we can monitor their residency times, habitat usage and movement patterns for up to two years.

MILKFISH PHYSIOLOGICAL RESPONSE TO ANGLING

One of the great angling mysteries surrounding Milkfish is their ability to maintain a strong fight for a prolonged period once hooked. An as-yet unproven theory is that they do not build up muscular lactic acid in the same way as other gamefish. This will be scientifically investigated using non-lethal blood samples to measure blood-lactate levels as an indicator of stress in the fish. Stress response will be compared against fight intensity, body size and other relevant parameters. Collectively this research will provide novel information on Milkfish whilst fine-tuning angling techniques to ensure sustainability and minimal impact to the fishery.

AFFECT OF ANGLING PRESSURE ON BONEFISH

Bonefish are abundant throughout the remote islands of the Seychelles, and are the mainstay for recreational fisheries that support economic growth and conservation. Nevertheless, the Bonefish population has gone through declines and recovery in the Alphonse Group and reports from elsewhere suggests they are sensitive to pollution and disturbance of their essential habitats. In addition, even though catch-and-release (C&R) is generally practiced in recreational fisheries targeting bonefish, evidence from other locations show that bonefish can be negatively affected depending on how they are captured and handled.

The Alphonse Group presents an excellent opportunity to quantify habitat-dependent post-release mortality of bonefish. We intend to use a rapid assessment approach to quantify how bonefish respond to capture and handling, as well as their behaviour and risk of predation following release. Results will further refine the Code of Conduct set in place to conserve our bonefish population.

Potential Recreational Fisheries Projects for Astove and Cosmoledo

DISTRIBUTION AND CAPTURE HISTORY OF GIANT TREVALLY FOR ASTOVE AND COSMOLEDO ATOLLS

Given the expansion to recreational angling effort for Giant Trevally to Astove and Cosmoledo Atolls, as well as an interest in managing that fishery accordingly, we suggest that PIT tagging and spatial capture patterns of fish begin.

This work would parallel what is occurring in the Alphonse Group, with the synchronous use of PIT tagging to tag individual fish and GPS watches to track where fish are being marked and potentially recaptured. This work would also act as an important precursor to expanding acoustic telemetry research to Astove and Cosmoledo Atolls.

LONG-TERM MONITORING & CONSERVATION PROJECTS

MISSION STATEMENT

Expand our understanding of the biology of this species and use this detailed information to design and build effective Marine Protected Areas to conserve them.

SEYCHELLES MANTA RAY PROJECT

Reef Manta Ray (Manta alfredi) populations have suffered drastic declines over the past 75 years as a result of by-catch and targeted fishing practices to supply the demand for their gills in traditional Chinese medicine. As Manta Rays exhibit extremely slow life history characteristics, the impact of these unsustainable pressures on the population has put the species at risk of extinction. Thankfully Mantas are not targeted in the Seychelles and rare in the inner islands; resident populations in the outer islands present a unique opportunity to understand more about this enigmatic megafauna species. A collaboration was initiated in 2016 between ICS, the Manta Trust and Blue Safari to monitor the population dynamics of reef manta rays around the Alphonse Group.

PHOTO IDENTIFICATION

Photographs of the ventral surface of manta rays allow for individuals to be accurately identified across multiple time scales, as the unique pigmentation and shading patterns that are displayed in this area of the animal are present from birth.

This established method allows a citizen science approach to data collection to be used, ensuring staff and guests are involved in interacting with the Mantas around Alphonse, increasing awareness of their conservation issues.

ACOUSTIC TELEMETRY

Since 2016, 121 individual Manta Rays have been photo-identified by staff and guests in the waters of the Alphonse Group. In addition to the photo, staff also collect additional information about the sighting including data, time, tidal height, size and sex of the Manta. The project so far has started to highlight some interesting observations such as certain individuals utilising the atolls at specific times of the year and Mantas utilising parts of the atolls at different times. It has become clear that a more comprehensive insight into the movement dynamics of the Mantas within the Alphonse Group is needed in order to fully understand the population and therefor protect it.

The layout of the existing acoustic telemetry network around the Alphonse Group is well suited to the study of reef manta rays, and therefore presents an opportunity to study their spatial ecology. The ability to track the fine scale movements of reef mantas will build upon our existing knowledge, answering questions pertaining to their residency times and how they use the unique geographical features of the atolls.

ADOPT A MANTA

When a new Manta Ray is identified around the Alphonse Group there is an exciting opportunity to adopt it to raise funds for the project. Adoption includes:

- Naming the Manta
- An adoption pack and certificate from the Manta Trust
- Updates about your Manta

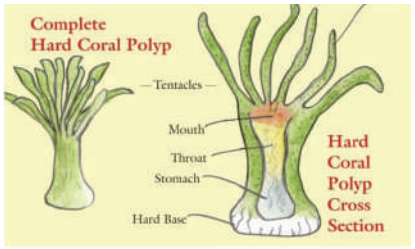
If you would like to adopt one of the Manta Rays please email: eleanor@bluesafari.com. We are currently fundraising for the acoustic telemetry project and would very much appreciate any contribution to enhancing our knowledge and ability to protect

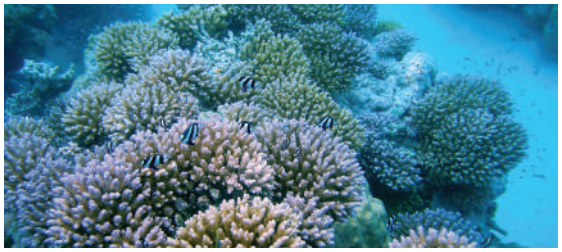
LONG-TERM MONITORING & CONSERVATION PROJECTS

Coral Reefs

Coral reefs are described as the rainforests of the ocean, providing habitat to 25% of all marine life, yet these critically important ecosystems desperately need help as despite their disproportionate amount of biodiversity they are under increasing existential threat from human pressures.

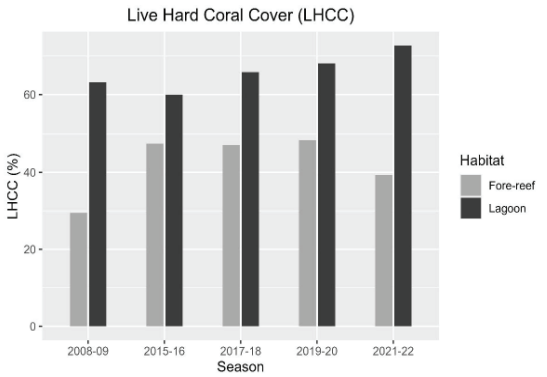
Corals are keystone organisms, providing the structure and foundations of the whole ecosystem. They are found in the shallow waters all around the atolls of the Alphonse Group down to 35m. They need to be so shallow because there are thousands of microalgae (zooxanthellae) living in symbiosis with the corals in their transparent tissues, these algae need the abundant sunlight found in the warm waters of the tropics for photosynthesis. This relationship provides the corals with 90%+ of their energy demand, yet is very sensitive to climate change. When the corals are stressed the algae is expelled and the coral 'bleaches', which is affecting reefs worldwide. If the rates of temperature change and coral loss continues there is a high chance of total ecosystem collapse before the end of the century.



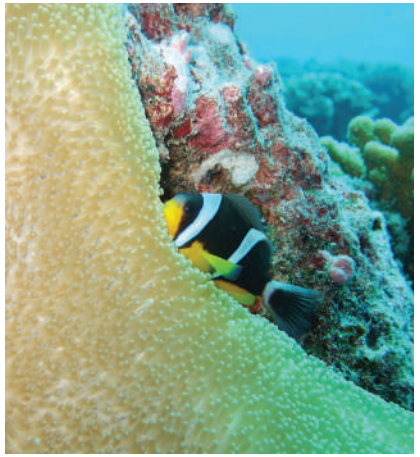


ICS conducts annual surveys to assess the abundance, diversity and health of coral reefs, and help identify and address key threats in order to protect sites around the surrounding islands.

Sea Surface Temperature (STT) loggers have also been deployed around Alphonse and St. François Atolls to closely monitor changes in sea water temperature over time.



Coral Reef Chart



The data is gathered and used in conjunction with coral and fish monitoring programmes that help us to monitor our dynamic underwater world. The intense El Niño experienced in 2016 caused coral die-off along an important part of the Alphonse reefs. Bleached corals were observed at unexpected depths of over 35 meters in certain areas. Loss of corals was mostly due to prolonged heat stress with temperatures exceeding 29°C for over 22 weeks. The ICS coral reef and SST monitoring will forecast the strengthening of El Niño, detect the more resilient coral species and oversee the status and loss of biodiversity. Well-protected reefs today typically have much healthier coral populations and are more resilient.

Conventional conservation measures like minimizing pollution, limiting fishing pressure and establishing marine protected areas are indispensable strategies to protect marine ecosystems to which the Alphonse Foundation is committed to improving on year-on-year. And it is through the collection of such ecological data that allows ICS to advise the Foundation on best management practices.

Aldabra Giant Tortoise

Giant tortoises naturally are only found in the Seychelles and the Galapagos Islands.

The Aldabra giant tortoise is an iconic species for Seychelles, reaching curved carapace lengths of over 150 centimetres and weights of over 250 kilograms in adult males. These gentle giants have been known to live at least 160 years in the Seychelles. The Aldabra tortoise is the longest living animal on Earth.

In the 19th Century Charles Darwin recommended protection of the tortoises of Aldabra Atoll, this being one of the first species in history to be offered special protection for its survival.

Fun Facts

In April 2016, six female and three male giant tortoises were transferred from Mahé to Alphonse Island on a four day journey on board the IDC barge, Enterprise II.These tortoises were taken to Mahé off Aldabra 40 years ago and were kept in captivity for the duration of their time on Mahé.

French Name:
Tortue Géante d'Aldabra

Creole Name:
Torti Zean / Tortidter

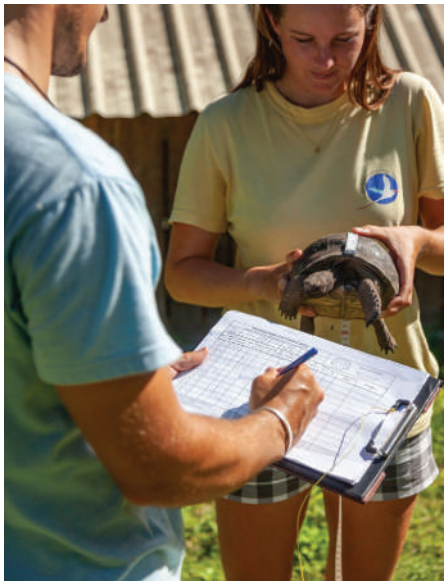
Scientific Name:
Aldabrachelys gigantea

IUCN Red List Status:
Vulnerable

When humans first discovered Alphonse Island there were no giant tortoises recorded. An Unknown number was introduced prior to 1954 and 15 animals of unknown origin were present on Alphonse during 1954–1959.

By 2010 only 25 Tortoises were remain on Alphonse. In 2016, nine adults and 15 juveniles were introduced to the island by ICS. Today, 83 tortoises roam freely on the island and contribute to improving the genetic diversity of the Alphonse tortoise population.

All the tortoises on Alphonse Island have been specially microchipped to allow ICS to effectively monitor the population size and study the movement patterns, behaviour, growth and survival of individuals.



Seabirds & Waders

Early accounts such as that of Captain Fairfax Moresby who, after visiting Alphonse in 1821, wrote that Alphonse along with other outer islands hosted millions of seabirds that build nests on the Bwamapou and other dwarf trees which cover the surface of the islands.

TODAY, ONLY FIVE SPECIES OF SEABIRDS BREED IN THE ALPHONSE GROUP. THESE ARE:

- Wedge-tailed Shearwater (Puffinus pacificus)
- Fairy Tern (Gygis alba)
- Brown Noddy (Anous stolidus)
- Black-naped Tern (Sterna sumatrana)
- White-tailed Tropicbird (Phaethon lepturus)

COMMON SPECIES ROOSTING SEASONALLY IN THE ALPHONSE GROUP:

- Red-footed Booby (Sula sula)
- Greater Frigatebird (Fregata minor)
- Lesser Frigatebird (Fregata ariel)
- Lesser Noddy (Anous tenuirostris)
- Greater Crested Tern (Sterna bergii)
- Saunders's Tern (Sternula saundersi)

THE ALPHONSE GROUP IS AN IMPORTANT BIRD AREA (IBA) FOR THESE SPECIES:

- Crab Plover (Dromas ardeola)
- Ruddy Turnstone (Arenaria interpres)
- Black-naped Tern (Sterna sumatrana)
- Saunders' Tern (Sterna saundersi)

WHERE DO RED-FOOTED BOOBIES GO TO BREED?

Research began in 2017 to track the movements and activity patterns of Red-footed Boobies that roost in spectacular numbers on St François Island. The discovery in 2016 highlighted that the population of the Malagasy region might have been underestimated. There are records of activity patterns in the region, where immature birds tend to widely disperse outside of the breeding season and frequent some non-breeding islands which is the case of the Alphonse Group. The project aims to use satellite tracking devices to determine these birds go when they are not found in the Alphonse Group. This will enable the appropriate conservation measures to be taken to help safeguard their roosting habitat.

NESTING SEABIRD MONITORING AND MANAGEMENT

The remote islands of the Seychelles host significant nesting and foraging grounds for different species of seabird, many of which exclusively use remote oceanic islands to breed due to the lack of natural predators. Due to anthropogenic disturbance over the years unfortunately many of these nesting populations have gone, however, in the Alphonse Group ICS is seeking to protect those that remain and restore nesting habitat to encourage more species to nest.

Wedge-tailed Shearwater

These deep diving seabirds nest in burrows dug in open vegetation close to the beach crest; the nesting colonies are maternally philopatric which means birds return to where the mother hatched in order to breed and they mate for life so the same pairs return every year. The pairs return to the islands in September time to prepare their burrows and the chicks fledge in March/April.

Despite wedge-tail Shearwaters nesting on all three islands, the main colonies on Bijoutier and Alphonse are facing significant threats - on Bijoutier the accelerating coastal erosion is washing their nesting habitat into the sea and on Alphonse their ground nesting strategy leaves the eggs and chicks extremely vulnerable to invasive predators such as rats and cats.

ACTIVE MANAGEMENT

The population at Point Tamatave on Alphonse had reduced so much that in 2017 there was zero nesting success so in line with the Seabird Management Planning Guidelines for the Outer Islands, low-cost, high-effective habitat restoration and pest control measures were taken around the colony. These measures are on-going and requires active maintenance but the results have been a huge success, the nesting success on Alphonse has increased year on year and the colony has spatially expanded and Shearwaters have even been reported in other areas of the island!

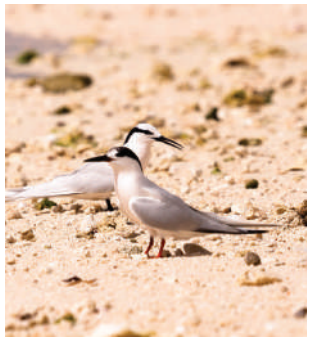
Figure 4: *Minimum number of Wedge-tailed Shearwater pairs (line, left axis) and fledglings (bar, right axis) over the past five years.*

Black-naped Tern

This colony on St. Francois of this small, surface-feeding bird is significant, as it makes up approximately 10% of the breeding population for Seychelles.

ICS conduct surveys to record the distribution, success, timing and quantity of breeding. These are carried out bi-weekly throughout the north-west monsoon season. but are reduced during the south-est due to unfavourable sea conditions preventing access. Three primary breeding sites have been identified and data reveal bi-annual breeding activity, with a peak in February-April and again in June- September.

Unfortunately we have un-covered a negative trend in breeding success. Performance is often linked to availability of food resources near-shore and pressure from predators (namely Grey Heron). However, the striking result for 20190-20 where we recorded 0 fledged chicks is largely attributed to the extra high tides which washed away breeding attempts - this phenomenon was caused by the strongest Indian Ocean dipole since 1982, the frequency and intensity of these large-scale weather events is increasing with climate change. In 2020-21 we observed 11 pairs and 2 fledged chicks and continued monitoring is taking place to investigate the temporal decrease in nesting success. As this is a beach crest nesting bird that lays directly onto impressions in the sand it is especially sensitive to disturbance and we communicate their vulnerability to all staff and visitors to St Franscois and its sandbanks.



Subsistence Fish Monitoring

Throughout most of the world, fisheries are in crisis. Roughly 90% of the world's fish stocks are fully or over-exploited, with more than a third fished at unsustainable levels. Overfishing not only threatens marine ecological integrity, but also puts economies at risk. Improving and adopting good fisheries management is critical to sustain global fish populations and fisheries.

Fishing activities around the Alphonse Group are only conducted by Blue Safari and IDC staff and target fast-growing, high-fecundity pelagic species or deepwater species (>60m) so as not to impact the highly sensitive coral reefs around the atolls. Fishing activities around the Alphonse Group are closely monitored by ICS to ensure the sustainability of of fish stocks.

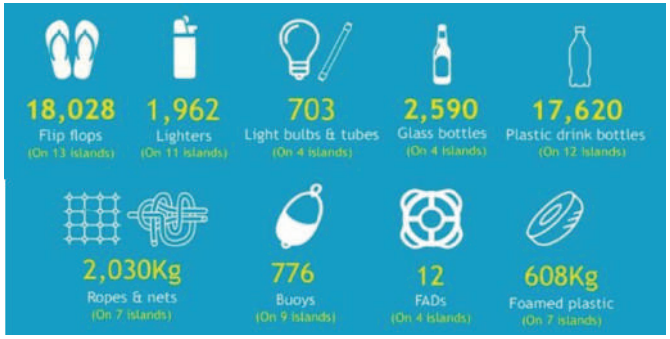
Beach Cleans

Marine wildlife is under threat from the waste in our oceans, with hundreds of species accidentally eating non-biodegradable plastic materials or becoming entangled in marine debris. Weekly beach cleans are conducted around Alphonse, monthly beach cleans on Bijoutier and seasonal cleans on St Francois using guests and staff to minimise the impact of plastic pollution on our coastal environments.

ICS keeps a detailed record of what we find and remove off the beaches. Over 2 tons of marine debris is removed annually from beaches in the Alphonse Group. Since 2011, a whopping 12,277 flip-flops, 19,753 plastic bottles, 5,112 glass bottles and over 3 tons of miscellaneous have been removed off our beaches. Alarmingly, the amount of debris removed keeps increasing annually. We hope visitors returning from Alphonse will be inspired to make more sustainable life choices to reduce this global crisis.

THE OCEAN PROJECT

In 2019 this non-profit organisation came to Alphonse and ICS assisted them in taking detailed surveys of marine debris across the atoll group, an intersting statistic found was 33% of waste came from commercial fishing. This was part of an outer island project collecting waste from many islands managed by IDC.



Native Vegetation Rehabilitation

The Portuguese discovered Alphonse Atoll, nearby Bijoutier and St François Atoll in the 16th Century, naming the group San Francisco. In 1730, the French gave the islands their current names. After 1770, settlers were sent to Alphonse to establish plantations of maize or cotton, so presumably the native vegetation was somewhat impacted even in those early days.

Alphonse was a particularly fertile island, due to deposits of guano left by huge colonies of seabirds in the past and between 1925 and 1955 over a million coconuts were harvested annually.

When IDC took over management of the island in 1983, the intention was to continue coconut production and develop crop and animal farming, tourism and timber production. But increasing labour and transport costs made agriculture unviable and only tourism was developed, after the construction of a runway at the end of 1999.

Today, abandoned coconut plantations cover much of Alphonse and St François Islands, with casuarina and scrubland dominating the remainder of the islands. Stands of broad-leaf tree species are evident and scattered over the island with a native coastal vegetation fringe along much of the coastline. St François embraces the only Mangrove forest of the Group, that serves many important functions, including water filtration, prevention of coastal erosion, coastal protection from storms, carbon storage, and biodiversity protection.

Native Species

THE MAIN NATIVE SPECIES ARE:

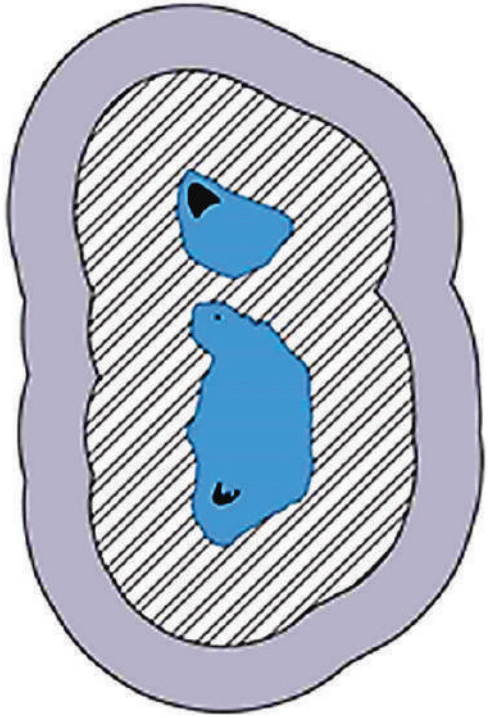
- Mangliye Rouz (Rizophora mucronata)
- Vouloutye (Scaevolataccada)
- Bwataba (Tournefourtia argentea)
- Bwakasan Bordmer (Guettarda speciosa)
- Takamaka (Calophyllum inophyllum)
- Bwablan (Hernandia nymphaeifolia)
- Bwatorti (Morinda citrifolia)
- Porse (Cordia subcordata)
- Bonnenkare Bordmer (Barringtonia asiatica)
- Bwamapou (Pisonia grandis)
- Bwasousouri (Ochrosia oppositifolia)
- Bodanmyen (Terminalia catappa)

ICS provides technical support to IDC for the implementation of the rehabilitation of native vegetation ecosystems, the reparation of degraded terrestrial ecosystems impacted by sustainable activities and the prevention and control of invasive alien species. All is responsible for its own landscaping, which adheres to set biosecurity protocols in terms of what species can and cannot be planted, in order to avoid introducing non-native and potentially invasive species of plants, animals or pathogens.

Fish Aggregating Devices

FAD WATCH PROGRAM – DETECTION & REMOVAL

What are FADs? A Fish Aggregating device (FAD) is an artificial object that fishermen put in the ocean to attract fish. They are commonly made up of a metal or plastic frame or a bamboo raft covered with shade material or netting and have fishing nets or ropes hanging down from the corners to a depth of 20 to 50 metres. They can be drifting or anchored and have been used by fishermen around the world for centuries. However, in the last decade due to increased use of tracking technologies the number of drifting FADs by fishermen has increased rapidly. The increase in number of deployments has seen an increased number of lost DFADs. These lost DFADs continue to drift with ocean currents and a large number eventually come into contact with reef, land and 'beach', becoming stuck in a wide range of habitats.



While FADs do have clear benefits for fishermen, there are a number of environmental concerns about their usage. Fishing around FADs has been shown to catch greater numbers of juvenile tropical tunas as well as increasing the amount of by-catch (non-target species such as turtles, sharks, rays and corals) when compared to non-FAD fishing. FADs are also a hazard for navigation, especially at night. In the Indian Ocean 10-14,000 FADs are deployed each year and worldwide FAD deployments are estimated at 50-100,000 per year.

In order to prevent and mitigate at the maximum level possible FAD beaching across the ICS managed islands, such as the Alphonse Group, ICS has signed a MoU with the Sustainable Indian Ocean Tuna Initiative (SIOTI), IDC and Seychelles Fishing Authority (SFA) to implement a FAD Watch program. Thisprogram aims to obtain real time information of FADs when drifting into sensitive ecosystem areas. Then, an automated alert system reports whenever a FAD arrives within 5 nautical miles (seen in grey on the map) and provide GPS co-ordinates, trajectory and estimated projected time of beaching. This allows ICS staff time to plan and intercept FADs before beaching occurs, damages reefs and/or impacts on key marine fauna.

Unfortunately, the system only works for FADs that have a sophisticated satellite buoy attached, and therefore many FADs continue to become entangled on the reefs causing significant damage to coral and other marine wildlife to drown. If a FAD washes up ashore it presents a significant challenge to nesting turtles. The wave action quite quickly breaks the FAD apart, the nets then become caught in the shoreline vegetation making them very difficult to remove from the beach. Once removed from the reef or beach ICS has the difficulty of disposal. The synthetic nets and ropes that are used in typical FAD construction are not easily disposed of, particularly on small islands such as Alphonse. The materials have to be stored until such a time as they can be removed by a supply vessel and sent to Mahé for recycling.

2023

CONSERVATION PROJECT PROPOSALS

Conservation projects undertaken by the Island Conservation Society around the Alphonse Group of Islands that need specific financial support of the Alphonse Foundation:

ALPHONSE UNDERWATER TRACKING OBSERVATORY (AUTO)

The acoustic telemetry project investigating the spatial ecology of Giant Trevallies was such a success it was decided that the network of acoustic receivers situated around the Alphonse Group should remain in perpetuity and be utilised for investigation into additional tagged species. Milkfish and Mantas were tagged in 2022 and the potential for future projects is high.

The receiver network, dubbed 'AUTO', needs continuous maintenance in order for the data collection to be effective and accurate, some of the outstanding annual costs include:

- 70 receiver batteries
- Shipping and transport costs
- Faulty receiver repairs
- Lost receiver replacements from extreme weather events
- Receiver block maintenance

Acoustic telemetry is a highly effective, scientific tool which helps understand the ecology and habitat usage of tagged species which influences conservation management decisions around the outer islands, but also is discovering new information about these animals which helps protect them worldwide.

If you would like to contribute to keep 'AUTO' going or even have an idea of your favourite species you would like to learn more about around Alphonse please get in touch – **eleanor@bluesafari.com**

Eradication of Pests

ERADICATION OF INTRODUCED SHIP RATS (*RATTUS RATTUS*): – THE FIRST STEP TO ALPHONSE ECOSYSTEM RECOVERY

Predation and competition from Ship Rats have a huge impact on Alphonse Island ecosystems and represent a key limiting factor for their recovery.

Ship rats are controlled by mostly setting Rat traps and poison-baited stations around sensitive areas on a regular basis. By reducing the size of this rat population we minimize its negative impacts on the environment, human health and the current economic activities.

This never-ending management operation has its benefits but its own limitations too. Recurrent rat control does not allow ICS to take conservation efforts to the next level and propose further re-introduction of endemic land-bird species such as the Seychelles Magpie-robin (*Copsychus seychellarum*), which once populated Alphonse Island, or introduce the Seychelles Fody (*Foudia seychellarum*) amongst other species threatened with extinction.

Rat eradication is our big challenge. It requires sufficient economic resources to complete the operation, the full commitment of stakeholders and rigour and professionalism when applying procedures to prevent reinvasion.

Eradication is the most cost-effective rapid response to ecosystem recovery. However, its success can only be achieved by obtaining a realistic budget and, by clearly defining the roles and responsibilities of each stakeholder.

The production of a complete Eradication Plan proposal including aspects of feasibility, logistics and implement-ation of the eradication techniques will be produced if financial support is obtained.

We won't have a future if we do not respect our environment

CONTRIBUTE

Please support our Conservation Projects...

Alphonse Foundation
Mauritius Commercial Bank
Caravelle House
Victoria – Mahé
Account Number : 225002
IBAN number : SC08MCBL0607000000000225002USD

By supporting our conservation efforts, you are keeping close

PHOTO CREDITS: Pep Nogués, Byron Anderson, Ariadna Fernández, Chris Narty, Sam Balderson

ALPHONSE FOUNDATION

ALPHONSE GROUP CONSERVATION CENTRE
LEAD BY: ICS Conservation Officer
EMAIL: alphonse@ics.sc
TEL: (+248) 422 9040

ALPHONSE FOUNDATION - Island Conservation Society
HEAD OFFICE: The Island Conservation Centre, Pointe Larue
P O Box 775, Victoria, Mahé, Seychelles
WEBSITE: www.islandconservationseychelles.com
TEL: (+248) 437 53 54

Blue Safari SEYCHELLES

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