Alphonse Group

Protected Areas Management Plan
2018-2022

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Cover image of St Francois Atoll at low tide with Alphonse Atoll beyond, courtesy of Blue Safari

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LIST OF ABBREVIATIONS

AFC Alphonse Fishing Company
AHOA Alphonse Home Owners Association
AIL Alphonse Island Lodge
AMSSI Association of Members of Seychelles Sea cucumber Industry
BS Blue Safari
DOE Department of Environment
FBOA Fishing Boat Owners' Associations
GEF Global Environment Facility
GIS Geographic Information System
GoS Government of Seychelles
GPS Global Positioning System
IBA Important Bird & Biodiversity Area
IMO International Maritime Organization
ICS Island Conservation Society
IDC Islands Development Company
IUCN International Union for the Conservation of Nature
IUU Illegal, Unregulated & Unreported fishing
KPI Key Performance Indicator
MA Managing Authority for protected areas
MCSD Monitoring, Control & Surveillance Division
MCSS Marine Conservation Society Seychelles
MEECC Ministry of Environment, Energy and Climate Change
METT Management Effectiveness Tracking Tool
MHILT Ministry of Habitat, Infrastructure & Land Transport
MPA Marine Protected Area
NGO Non-Governmental Organisation
NP National Park
NRC Nature Reserve & Conservancy Act 2018
PA Protected Area
PCA Plant Conservation Action
PFBOA Praslin Fishing Boat Owners' Association
SBRC Seychelles Bird Records Committee
SBS Seychelles Bureau of Standards
SeyCCAT Seychelles Conservation & Climate Adaptation Trust
SFA Seychelles Fishing Authority
SFC Sport Fishing Company
SIF Seychelles Islands Foundation
SMSA Seychelles Maritime Safety Administration
SMSP Seychelles Marine Spatial Planning
SNR Strict Nature Reserve
SPAGS Spawning Aggregation Site
SPDF Seychelles People's Defence Force
SSFC Seychelles Sports Fishing Club
STB Seychelles Tourism Board
SUZ Sustainable Use Zone
SWIOFish South West Indian Ocean Fisheries Governance and Shared Growth Project
TO Tourist Operator
UNDP United Nations Development Programme
UniSey University of Seychelles
WCPA World Commission on Protected Areas

EXECUTIVE SUMMARY

Plan development

This plan builds on the 2009 Alphonse Conservation Management Plan and follows stakeholder consultations in Seychelles November-December 2017 and June 2018. It has been developed as part of the GOS/UNDP/GEF Project *Expansion and Strengthening of the Protected Areas Subsystem of the Outer Islands of Seychelles and its integration into the broader land and seascape.*

Vision & strategic goals

Alphonse will provide an environmental success story of mutually supportive nature conservation and ecotourism alongside the managed, sustainable use of natural resources.

1. To maintain and enhance the indigenous biodiversity of the terrestrial and marine habitats of Alphonse and St. Francois atolls through designated Protected Areas status and an integration of conservation, ecotourism and the managed, sustainable use of resources.

2. To encourage scientific research where this will support management, increase knowledge of natural processes, and contribute to a greater understanding of global climate change, while not conflicting with goal 1.

The Alphonse group and its core values

Alphonse Island lies on the NW rim of Alphonse Atoll, with the larger St Francois Atoll less than 2 km to the south. St Francois Island lies on the southern rim of St Francois Atoll, which has the tiny island of Bijoutier at its NW tip. These islands are formed of coarse coralline sand thrown up by wave action from reef platforms and compressed into porous sandstone standing 2-3m above MHWM. The Alphonse group is isolated from the Amirantes Islands (in which it is sometimes included) 65 km to the north and the Farquhar group 300 km to the SW. The main island of Seychelles, Mahé, lies c400 km to the north.

These islands are thought to have last emerged from the sea just 5,000 years ago, and this recent origin is a factor in their low habitat and species diversity. Both atolls are visually spectacular, although the biological value of Alphonse Island itself is relatively low due to extensive coconut forest and the presence of cats and Ship Rats. In the absence of rats St Francois supports internationally important numbers of seabirds and shorebirds and the marine environments of both atolls have a rich biodiversity. Significant populations of Green and Hawksbill Turtles use the beaches as nest-sites and the lagoons for food: the reef and lagoon at St. Francois may be one of the most important foraging areas for both immature and larger turtles in the western Indian Ocean. Mangrove forest, seagrass beds and coral reefs and flats are extensive, particularly at St Francois.

Ecotourism provides the core economic value, centred on the international renown of the saltwater fly-fishery at St Francois lagoon. Alphonse Island Lodge is the tourism operator. The proportion of non-fishing visitors has increased over recent years.

Commercial fishing on and around the outer reef is carried out by vessels, mainly from Mahé and Praslin, licensed by Seychelles Fishing Authority,

Past management

Alphonse was historically managed for agriculture and coconut plantation, alongside the traditional island produce of fish, turtles and pearl shell. Seabird colonies were exploited to extinction and strip mining and export of their guano for potash became the main industry in the early 20th century, resulting in further impacts on vegetation. At some point Ship Rats colonised and cats were brought to Alphonse.

The Islands Development Company took over management in 1983, at which time up to 50 workers lived on St Francois managing the coconut plantation there. Tourism steadily became the major source of income for the coralline islands. An airstrip was constructed and the first hotel was built in the late 1990s.

Legal status

The Alphonse group belongs to the Government of Seychelles and is leased to IDC, which in turn leases areas to tourist operators and is responsible for management of the atoll. The group's wildlife is protected under the general provisions of Seychelles environmental legislation, but there are currently no specially protected areas.

It is proposed that the terrestrial areas of St Francois atoll be gazetted as a Strict Nature Reserve under the new Nature Reserves and Conservancy Bill 2018 when this is enacted, and that the entire marine environment within a rectangle of 21.9 x 9.5 km enclosing both atolls, 1 km from the reef at its closest, inner margin MHWM, be gazetted as a Sustainable Use Zone.

Zoning & draft regulations

Zoning maps depict management areas within the PAs and draft regulations for consultation are included as an annex.

Ecological, scientific, aesthetic, cultural & economic targets

Species: Marine mammals, marine turtles, seabirds, shorebirds, other terrestrial fauna, fish, marine invertebrates including corals
Habitats: Marine water, mangrove forest, coral reefs & reef flats, seagrass beds, beaches, freshwater pool, terrestrial vegetation
Scientific, cultural & aesthetic: Research, Island workers, subsistence fishing, remoteness
Economic: Ecotourism, sport-fishing, commercial fishing, mariculture

Threats

Direct threats over the 5 year period of the Management Plan have been identified as:

Governance
Biosecurity
Tourism impacts
Commercial & subsistence fishing, mariculture
Illegal fishing & poaching
Pollution including oil spill
Marine debris including Fish Aggregation Devices
Climate change

Priority areas

A set of priority areas was developed, each intended to counter one or more of the threats:

1. Define governance arrangements for the Protected Areas
2. Support biosecurity measures
3. Encourage ecotourism and regulate activities
4. Ensure sustainable commercial & subsistence fisheries & mariculture operations
5. Support research, monitoring & conservation programmes
6. Maintain aesthetic & cultural qualities

Management programmes

Programmes were developed under each priority area, then broken down into objectives and activities. Management programmes and main objectives are:

1. Governance
1.1 Defined areas of Alphonse legally gazetted as Strict Nature Reserve and Sustainable Use Zones (as above).
1.2 Management regulations for Alphonse PAs issued by Minister for the Environment as per provisions of the Nature Reserve & Conservancy Act 2018.
1.3 Rapid response to oil spill
1.4 Enforcement structure
1.5 Optimal staffing for PA management

2. Biosecurity
2.1 No new Invasive Alien species in Protected Areas.

3. Ecotourism
3.1 No significant negative impacts on PA fish populations and habitats due to sport-fishing activities
3.2 No significant negative impacts on ecology of PAs due to ecotourist activities
3.3 Increase in visitor numbers and conservation revenue without adversely affecting the PAs

4. Commercial fishing, subsistence fishing, mariculture
4.1 Sustainable commercial fishery
4.2 Sustainable subsistence fishery
4.3 Controlled and non-disruptive removal of groupers from Spawning aggregations for Inner Island fish-farming

5. Research, monitoring & conservation
5.1 PAs used for research which will increase understanding of key species, habitats and processes and of climate change, and support PA management
5.2 Ecologically and ethically sustainable research only
5.3 Natural & anthropogenic changes in key habitats monitored and trends interpreted
5.4 Numbers and reproductive success of key animal and plant species monitored and trends interpreted
5.6 Maintain clean environment

6. Aesthetic & cultural
6.1 Island staff enjoy PAs with minimal negative impacts
6.3 No decline in features of PAs contributing to impression of remoteness

Implementation Plan

An Implementation Plan outlines scheduling, responsibilities and costs of implementing the Management Plan.

Institutional arrangements

The Alphonse group is governed by the Islands Development Company (IDC), whose agreement is required for all activities there.

Island Conservation Society is responsible for conservation programmes and will be the Managing Authority for the PAs under the terms of the Nature Reserve & Conservancy Act 2018. The Managing Authority, in consultation with the Minister responsible for Environment, will have the power to train and appoint officers for enforcement of PA regulations with the power to arrest. The recommended structure is for these to be island security staff or SPDF personnel under the authority of the IDC Island Manager (a Justice

of the Peace with the power to arrest) with expertise provided by ICS and support from the tourist operator.

The Alphonse Foundation through a Four Party agreement with partners IDC, ICS and investors, is responsible for approving ICS programmes and budget, providing funds and assessing performance.

Financing Plan

Outlines projected annual revenue and expenses over the 5 year term of the MP. Projects requiring additional funding are identified.

Concerns

During the extensive consultation process strong concerns were expressed over the Protected Areas proposals, notably:

Government must show and maintain a real commitment to the process and management of the PAs must be properly resourced.

The process should not lead to the exclusion of independent operators and visitors to the islands.

The plan's aims should be realistic.

Conclusion

At predicted levels routine management of the Protected Areas will involve an annual deficit of several hundred thousand rupees, totalling around 1.5 million over the 5 year period. No significant infrastructure development for PA management is anticipated. Funding is required to increase ICS staff to optimal levels for PA management and for specific projects to support the plan's aims, most notably the establishment of a management plan for the commercial fishery, totalling over 3 million rupees for the 5 year period. It is the responsibility of Alphonse Foundation partners to provide the funding, without which ICS will not be able to implement the management plan.

The Outer Islands Project will fund a business plan for the PAs, focusing on the financing gaps identified above.

1. INTRODUCTION

This document updates the Alphonse Conservation Management Plan (2009) and has been developed as part of the GOS/UNDP/GEF Project *Expansion and Strengthening of the Protected Areas Subsystem of the Outer Islands of Seychelles and its integration into the broader land and seascape*. The project seeks to promote the conservation and sustainable use of terrestrial and marine biodiversity in Seychelles' Outer Islands, focusing on Alphonse, Desroches, Poivre and Farquhar. Utilising available biological information, Land Use Plans and the Marine Spatial Planning initiative, land and marine zones are to be defined and nominated as Protected Areas. Broad-scale ecosystem planning and sustainable land and marine management activities will combine to conserve ecosystem functions. Thus, whereas the 2009 Plan treated the whole of the Alphonse group, this document will focus on those parts of the group to be proposed as Protected Areas in line with the 2013 Seychelles Protected Areas Policy, formal designation to be decided under the Nature Reserve & Conservancy Act when this enters legislation. Outputs and activities to achieve these aims form the key part of this five year plan, which incorporates IUCN management planning guidelines and recent Seychelles management planning recommendations.

Michael Betts

1.1 The planning process

This management plan was prepared between October 2017 and May 2018, alongside similar documents for Desroches, Farquhar and Poivre, under the guidance of the GOS-UNDP-GEF Programme Co-ordination Unit, as part of the Project *Expansion and Strengthening of the Protected Areas Subsystem of the Outer Islands of Seychelles and its integration into the broader land and seascape*. Information was collected through consultation with stakeholders partly through email but mainly through direct discussion in Seychelles during November-December 2017. A site visit was not possible, although MB lived and worked at Alphonse for a period in 2007 and wrote the initial 2009 management plan. Drafts were circulated for comment within PCU and ICS and revisions made. The revised draft was then presented to stakeholders at a series of meetings in Victoria in June 2018, further revisions made, and the final draft submitted in July 2018.

1.2 Structure of the Management Plan

The Management Plan follows a logical sequence of first identifying the values of the proposed Protected Areas, then identifying threats and other contributing factors that may compromise those values, then identifying both actions to deal with threats and opportunities to enhance the values of the site. The actions are consolidated into management programmes that break down the specific activities that need to be applied to arrive at the state described in the Vision for the protected area. Finally, the institutional structure required to implement these management programmes and how to finance the management programmes are identified. The financing strategy is described as a business plan, since the new PAs may not be supported by Government and have to be run on a business footing, with funding contributions placed in an Island Trust Fund for recurring costs, and means identified for financing additional conservation and management actions. The Fond Ferdinand Framework Management Plan (Grieser Johns & Morel 2017) provided a structural reference. Terms used:

1.3 Plan duration and review

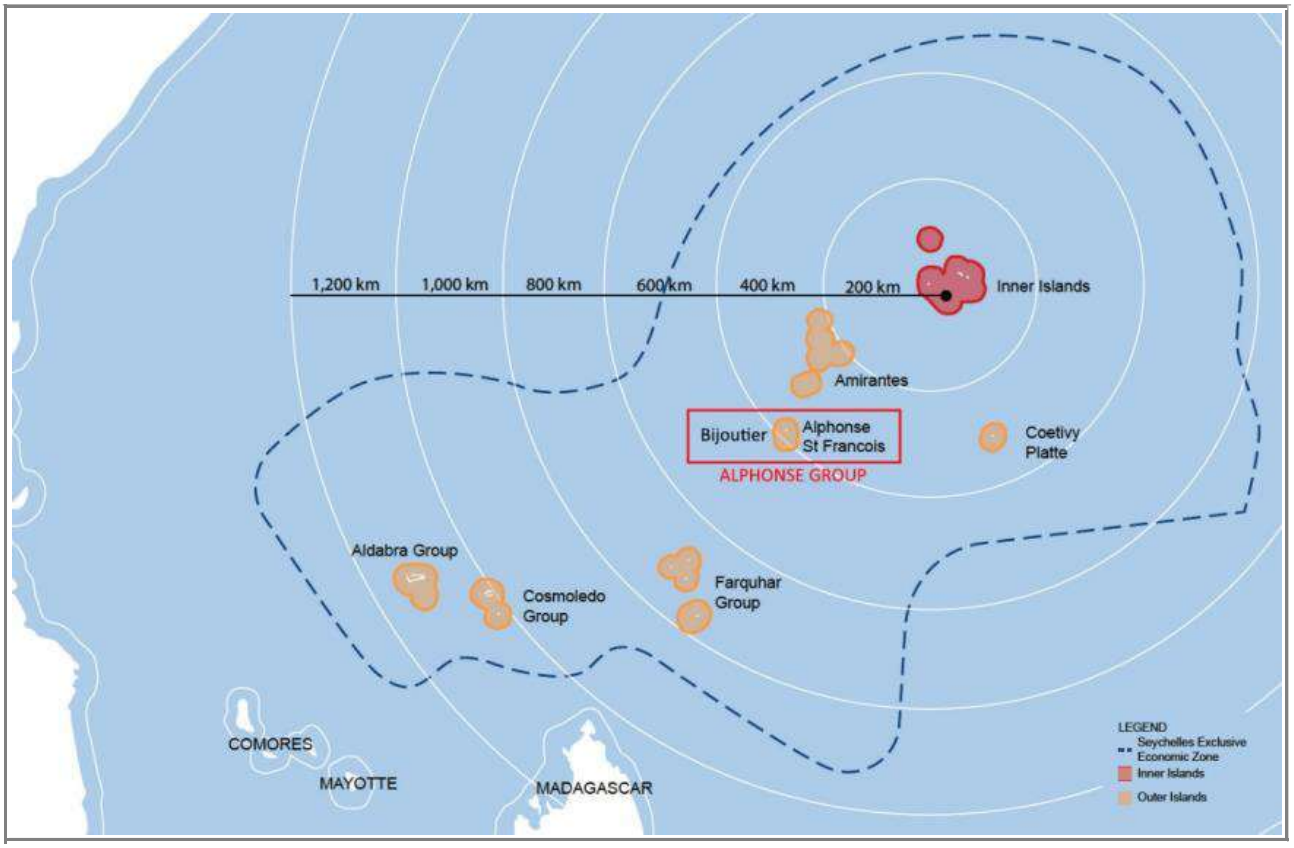
This revised Management Plan identifies activities to be undertaken over a five-year period, 2018-2022. It is intended to accompany the Nomination File for gazetting of the new Protected Areas, which will have the same duration of five years 2018-2022.

There should be an annual progress review of the management programmes coinciding with budgeting for the following year. The annual review will identify issues affecting implementation, resources, and the condition of ecological and social features against performance measures and targets, providing for adaptive management. Annual work and monitoring plans will be prepared by Island Conservation Society and budgeted as noted above.

This 5-year management plan will be reviewed at the halfway point and re-written after 5 years. Status of the key ecological features of the protected areas and overall management performance will be assessed through a report which measures compliance against the key ecological and social management targets and measures progress towards implementation of the key management strategies. The IUCN-WCPA recommended Management Effectiveness Tracking Tool (METT) adopts a simple, scorecard approach.

1.4 Location

Alphonse Island, at 7° S 52° 44' E, lies on the NW rim of Alphonse Atoll, which is separated from the larger, neighbouring St Francois Atoll to the south by the Canal du Mort. St Francois Island lies on the southern rim of the larger St Francois Atoll, which has the tiny island of Bijoutier at its NW tip. The Alphonse group is isolated from the Amirantes Islands (in which it is sometimes included) 65 km to the north and the Farquhar group 300 km to the SW. The main island of Seychelles, Mahé, lies c400 km to the north.



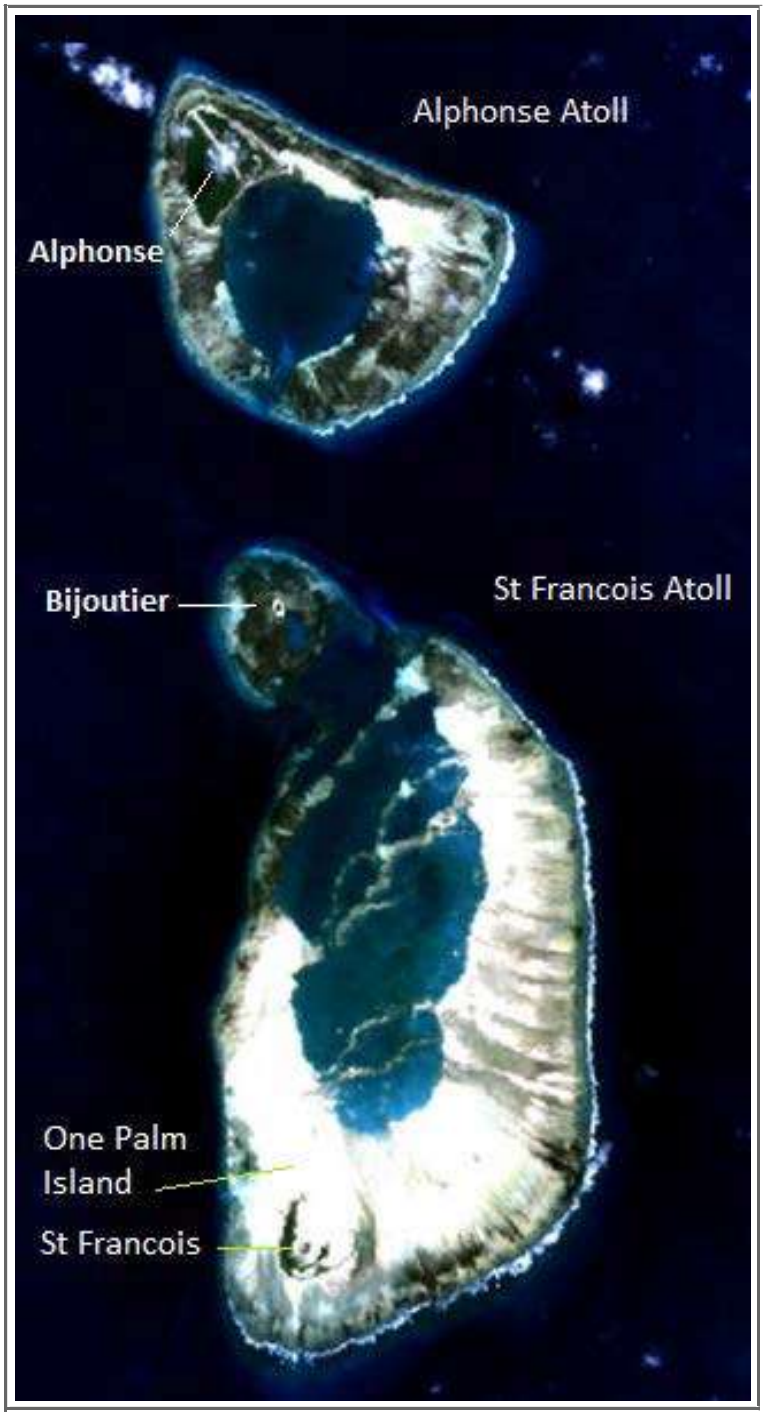
1.5 History & past management

Alphonse was named in honour of French frigate commander Chevalier Alphonse de Pontevez in the 16th century, and after 1770 first French then British settlement introduced plantations. Slave trading was illegal in British territories, but slaves were smuggled into Seychelles from Africa via remote islands such as Alphonse, and Captain Moresby of the *Menai*, patrolling for slavers, noted that Alphonse, like the other Amirantes Islands he had seen, held 'millions of birds', notably frigates, boobies and terns. Although this indicates numerous trees or large shrubs, there is no real record of the original vegetation.

Throughout the 19th century Alphonse produced coconut oil, fish, turtle meat, turtle shell and pearl shell, then copra, the sun or heat-dried coconut kernel, largely replaced oil after 1904. The seabird colonies had been exterminated, leaving deep guano deposits which were mined and exported as a source of potash in

the early 20th century. Remnants of these deposits made Alphonse particularly fertile, and between 1925 and 1955 over a million coconuts were harvested annually. Maize, pumpkin, banana, haricot beans, sweet

Alphonse & St Francois atolls



potato, pineapple, tobacco and chicken were also produced during this period, when the island was managed by the Gendron family and held up to 90 inhabitants. Medicinal and ornamental plants had been introduced and beehives were present. At some point Ship Rats colonised and cats were brought to Alphonse.

From 1977 many of the Outer Islands were taken under government control, and attempts made to improve working conditions. The Alphonse group has been managed by IDC since 1983 with the intention initially of maintaining and improving coconut and fish production. St. Francois was also settled at this time with up to 50 plantation workers, the harvested nuts being shipped off to Alphonse fortnightly on spring tides.

Tourism has long since taken over as the major source of income for the coralline islands. An airstrip was constructed and the first hotel built in the late 1990s. Pelagic fishing in deeper offshore waters and fly-fishing in St. Francois lagoon have been the major attractions and a daily presence during the fishing season October-May provides an effective deterrent to turtle poachers.

In 2009 the capture by Somali pirates of *Indian Ocean Explorer*, a familiar sight around the Outer Islands during the NW monsoon with parties of divers, fishermen, naturalists, photographers and researchers, heralded a five year period of restrictions. Intensive co-ordinated patrolling involving US, EU, UAE and India support for Seychelles national resources eventually brought an end to piracy, and visitors returned increasingly from 2014, although there is still a requirement for tourist boats to carry security staff when travelling to the southern atolls.

With ecotourism and conservation now a focus of government policy, an Alphonse Conservation Endowment Fund was established and the new aim became conservation of St. Francois and Bijoutier and the return of Alphonse to a more natural state through a programme of forest rehabilitation and pest eradication, to be followed in time by the introduction or re-introduction of native bird and animal species. The establishment and staffing of Alphonse Conservation Centre by Island Conservation Society in 2007 was a first step, followed by the Alphonse Management Plan in 2009 and subsequent years of structured biological research and monitoring.

A more detailed account is given in the 2009 Management Plan.

1.6 Core values

Descriptions of physical parameters, habitats, fauna and flora, with references, are contained in the 2009 Alphonse Management Plan, updated in subsequent Island Conservation Society Alphonse Annual Reports.

Habitat values:

Although visually appealing, especially from the air, Alphonse Island itself is dominated by abandoned coconut plantation of low conservation value; Ship Rats are numerous and cats and chickens are present.

Terrestrial vegetation at Bijoutier and St. Francois is characteristic of the Outer Islands, dominated by introduced coconut palms and Casuarinas with some native broadleaves and a coastal screen of salt-tolerant species such as *Scaevola taccada, Pemphis acidula, Suriana maritima, Tournefortia argentea* and *Guettarda speciosa*.

St Francois and Alphonse have large, reef-rimmed lagoons containing extensive areas of coral reef flats and seagrass beds, and the former holds substantial fringing mangrove forest and sand/mudflats. A significant fresh/brackish water pool (rare on coralline islands) has recently been located at St Francois.
Study of corals has shown variations in resilience and recovery following the 1998 and 2016 bleaching events and sea surface temperature loggers contribute to a national network. The outlying location of the group makes it a valuable indicator of changes in the marine environment.

Biodiversity values:

Both lagoons support high levels of invertebrates, fish and turtles; sea cucumbers are particularly numerous at St. Francois, and Giant Clams abundant in Alphonse lagoon. All three islands have healthy nesting populations of Green and Hawksbill Turtles, and the reef at St. Francois may be one of the most

important foraging areas for both immature and adult turtles (especially Green Turtles) in the western Indian Ocean.

Green Turtle at cleaning station Alphonse Atoll Pep Nogués

Abundance of five seabird and shorebird species qualify St Francois as an Important Bird & Biodiversity Area (status yet to be confirmed), an international designation administered by Birdlife International[1]: regionally scarce Black-naped Terns breed on the south coast of St Francois and on the small nearby sandbar of One Palm Island, and assemblies of Crab Plover, Saunders' Tern and Great-crested Tern are concentrated in the lagoon at high tide; up to 250,000 Red-footed Boobies roost in Casuarinas during the non-breeding season, peaking in July. In addition to these five species, large numbers of other wintering shorebirds feed and roost at St Francois and small colonies of Wedge-tailed Shearwaters are present on both St Francois and Bijoutier.

A single gecko species is present at both St Francois and Bijoutier (*Phelsuma astriata*) and Robber Crabs are seen occasionally, but invertebrate groups require further study. Crucially, there are no rats on St Francois or Bijoutier.

Coral reef fish families are well-represented in both lagoons and on the outer reef slopes. Groupers, snappers and emperors are particularly abundant and have traditionally formed the bulk of the subsistence fish catch. Vagabond Butterfly-fish *Chaetodon vagabundus* (Alphonse) and Black Pyramid Butterfly-fish *Hemitaurichthys zoster* (St Francois) are scarce in Seychelles. Spawning aggregation sites of the grouper Vyey Masata *Epinephelus polyphekadion* have been situated off Bijoutier and St Francois and of the Giant Triggerfish *Balistoides viridesescens* at Alphonse main channel, but these require modern confirmation. Offshore waters quickly reach depths of over 1,000 metres and support pelagic species such as tuna and Sailfish; larger sharks and Manta Rays are still present in moderate numbers. Up to 100

1 **Seabird Management Plan for Alphonse.** GOS/UNDP/GEF Outer Islands Project. James Millett, Rachel Bristol & Chris Feare 2017.

Spinner Dolphins are the most regularly recorded marine mammal, and Humpback Whales occasionally spend periods off the reef.

Scientific, cultural & aesthetic values:

There have been several scientific studies at Alphonse, particularly of marine ecology. Cambridge Coastal Research Unit's study of post-bleaching reef dynamics at Alphonse is one of the most detailed in the western Indian Ocean[2]. Establishment of Protected Areas will provide opportunities for targeted research to improve knowledge of species, habitats and processes and contribute towards understanding of global climate change.

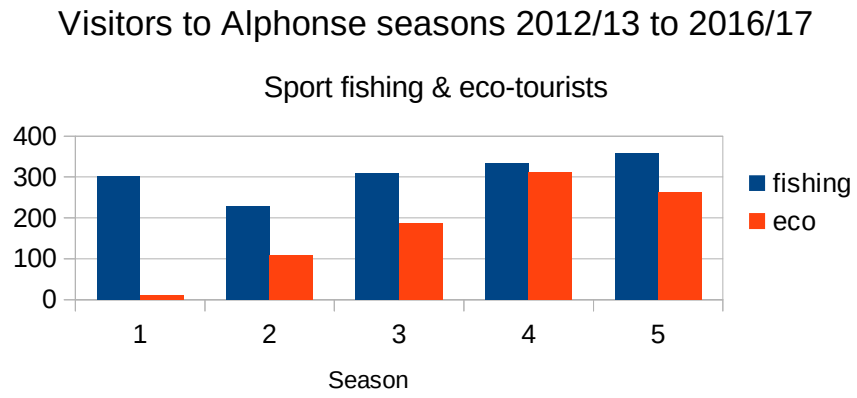
The satisfaction with island life of the workforce is important in itself and significant to successful management of protected areas.

Subsistence fishing is a traditional weekly event enjoyed by IDC workers which contributes to a healthy and affordable lifestyle.

The two atolls are striking in appearance, particularly from the air, and at ground-level St Francois in particular gives a powerful impression of remoteness - absence of evidence of Man is intrinsic to this. Although St Francois was settled in the past, no significant structures remain there or on Bijoutier, and development is prohibited in the Land Use Plan. Reference is made to the history of Alphonse, including oral record, in *Outer Islands of Seychelles*[3].

Economic values:

The majority of visitors are attracted by the world-class saltwater fly-fishing (357 of 620 visitors (58%) in 2016-17), although non-fishing tourism has been steadily increasing. Other popular activities are diving, snorkelling, nature walks and wildlife-watching (turtles, marine mammals, reef fish, seabirds and (on Alphonse) Giant Tortoise are strong attractions) and enjoyment of the relaxed, tropical island ambience. An endowment fund and conservation levy support the work of Island Conservation Society and guests are encouraged to feel part of the long-term process of conservation and habitat rehabilitation. Angling visitors provided 60% of the 2016/7 income of $2,753,131.



(Information supplied by Alphonse Island Lodge)

2 Hagan A.B. & Spencer T. *Reef Resilience and Change 1998-2007, Alphonse Atoll, Seychelles.* Project summary, Cambridge Coastal Research Unit.

3 Skerrett, Pool & Skerrett 2010

The fly-fishing season runs from mid-September (soon to be August) to mid-May, number of guests generally around 25, increasing to 50-60 at Christmas and Easter. Small-scale domestic tourism takes place through use of an IDC guest-house, and cruise-ships (8 of varying size in 2016), charter vessels (10-15 visits per year, 8-14 pax) and private yachts visit by arrangement with IDC. Development is confined to Alphonse island. The tourist operator (TO) is Alphonse Island Lodge. Up to 200 visitors and staff may be present during the NW monsoon October-May, fewer during the SE monsoon. Separate gardens are maintained by IDC and TO for supply of staff and guests, and fish is caught locally. There is no livestock.

Commercial demersal fishing vessels, mainly from Mahé and Praslin and licensed by SFA, fish for groupers, snappers and emperors on the reefs of the two atolls, although these are not top-quality species economically and most is sold to processing plants. A catch of three tons is required to make a trip profitable (FBOA pers comm). Sea-cucumber fishing also takes place under licence, again involving vessels from Mahé and Praslin. Under new SFA regulations only White, Flower & Prickly Red Teatfish can be caught, allowing overfished species to recover.

Blue Safari

1.7 Management and legal status

Management:

The Alphonse group of islands is managed by the Islands Development Company (IDC) on behalf of the Government of Seychelles. IDC's mission statement is:

To ensure that the Outer Islands actively contribute in the socio-economic development of the Seychelles while adhering to the highest environmental standards.

Since 2013 Alphonse Island Lodge has operated the residential tourism operation on lease from IDC, partnering recently with Blue Safari; Alphonse Fishing Company manages watersports including the sport-fishing programme.

Island Conservation Society is responsible for nature conservation and research and monitoring programmes through its Conservation Centre on Alphonse, with support from IDC and investors through the Alphonse Foundation.

Permission from IDC is required for vessels to visit, and a landing fee is payable to IDC.

Governance:

The atoll is governed by IDC. A Four Party Agreement between IDC, the Alphonse Foundation, ICS and investors provides the basis for co-operation and assistance for nature conservation within the Alphonse group and its marine environment, and defines responsibilities. The Foundation's Board of Trustees comprises up to 10 members, including two nominated by ICS, two by the Tourist Operator, one by IDC, one by the Ministry for the Environment, Energy & Climate Change (MEECC) and one by island residents. The Foundation's mission statement is:

'The Foundation aims to promote the conservation, rehabilitation and enhancement of Alphonse and St Francois Atolls to being among the finest restored tropical atoll ecosystems in the world in harmony with sustainable low impact human development and ecotourism.'

The Board established a permanent Endowment Fund to support this statement. The Foundation's role is to approve ICS research and conservation programmes and budgets, provide funding and assess performance.

Protected Areas Managing Authority

The Managing Authority will be Island Conservation Society. MEECC has overall responsibility for Seychelles PAs and environmental legislation.

Legal status:

The whole of the Alphonse group is owned by the Government of Seychelles, and leased to IDC, who in turn sub-let sections of Alphonse Island to tourist operators. The group's wildlife is protected under the general provisions of Seychelles environmental legislation, but there are currently no specially protected areas.

The Seychelles Strategic Land Use and Development Plan (SSLUPD) seeks to promote very small scale, luxury tourism where it is sustainable to do so. The 2017 Land Use Plan provides a basis for the development of Protected Areas. St Francois and Bijoutier islands are coded F10, Forest Land, no development to take place:

Proposed protected areas legal status:

a) St Francois with One Palm Island & Bijoutier

It is proposed that all terrestrial areas should be gazetted as a Seychelles Protected Area i) Strict Nature Reserve (IUCN I) under the new Nature Reserves and Conservancy Act 2018 when enacted, in order to conserve the international significance of their biodiversity.

i) Strict Nature Reserve (IUCN I) (Seychelles Protected Areas Policy 2013)
This category is a modification of the existing category in the National Parks and Nature Conservancy Act (1969). It can be defined as:
An area set aside for the strict protection of biodiversity and/or geological or landform features, where human visitation, use and impacts are strictly controlled and limited to ensure the protection of the area. All other interests and activities are subordinated to this end. Such reserve may serve for scientific research and long-term monitoring.
Primary Objective:
To conserve nationally, regionally or globally outstanding ecosystems, species (occurrences or aggregations) and/or geodiversity features: these attributes will have been formed mostly or entirely by non-human forces and will be degraded or destroyed when subjected to all but very light human impact.

b) Marine environment of Alphonse & St Francois Atolls

It is proposed that the entire marine environment within a 21.9 x 9.5 km rectangle enclosing both Alphonse and St Francois atolls should be gazetted as PA category v) Sustainable Use (IUCN VI) under the new Nature Reserves and Conservancy Act 2018 when enacted, in order to conserve the international significance of biodiversity and habitats. This is in line with Marine Spatial Planning design.

v) Sustainable Use Area (IUCN VI)
Some of these areas will benefit from formal designation within the PA system rather than remaining partially protected or designated within a Land Use Plan alone.
It can be defined as:
An area that contains modified and/or unmodified natural systems, managed to ensure long term protection and maintenance of ecosystems and services, while providing at the same time a sustainable flow of natural products and services compatible with nature conservation.

Primary Objective:
To protect and use natural ecosystems and resources sustainably, where conservation and sustainable use can be mutually beneficial.
(Seychelles Protected Areas Policy 2013)

2. VISION, SCOPE, VALUES AND THREATS

2.1 Vision

Alphonse will provide an environmental success story of mutually supportive nature conservation and ecotourism alongside the managed, sustainable use of natural resources.

2.2 Strategic goals

1. To maintain and enhance the indigenous biodiversity of the terrestrial and marine habitats of Alphonse and St. Francois atolls through designated Protected Areas status and an integration of conservation, ecotourism and the managed, sustainable use of resources.

2. To encourage scientific research where this will support management, increase knowledge of natural processes, and contribute to a greater understanding of global climate change, while not conflicting with goal 1.

2.3 Geographical scope and zoning

	Description	Area	PA Policy category	IUCN
Terrestrial				
St Francois	Whole island with One Palm Island to MHWM	35 ha	Strict Nature Reserve	I
Bijoutier	Whole island to MHWM	4 ha	Strict Nature Reserve	I
Marine				
Alphonse & St Francois Atolls	All marine areas within a 21.9 x 9.5 km rectangle enclosing both atolls, 1km from reef at closest points, inner margin MHWM	20,606 ha*	Sustainable Use	VI
*21.9 km x 9.5 km = 20,805 ha less land area 199 ha = 20,606 ha				


52°42'0"E
52°44'0"E
52°46'0"E
7°0'0"S
7°2'0"S
7°4'0"S
7°6'0"S
7°8'0"S
7°10'0"S
Alphonse
Bijoutier
St.François
Alphonse Group Terrestrial and Marine Protected Area
Project entitled:
"Expansion and Strengthening of the Protected Area Subsystem of the Outer Islands of Seychelles and its Integration into the broader land & seascape"
Legend
Minimum 1 Kilometre from reef flat
Marine Protected Area
(Sustainable Use Zone)
Strict Nature Reserve
St. François & Bijoutier Strict Nature Reserves
IUCN Category I: Strict Nature Reserve/Wilderness Area
N
W
E
S
1:90.000
0 1 2 4
Kilometers
Projection: Transverse Mercator
Coordinate System: WGS 1984 UTM Zone 39S
UNDP
50 YEARS
gef
Map produced by Pep Nogués
for the production of the Alphonse Group
Protected Area Management Plan
April 2018

MPA boundary

Although a boundary following the contour of the outer reef may be easier to judge from the shore (assuming the reef is visible), a block MPA is more readily entered on navigation charts and should be more helpful for surveillance and enforcement. This is in line with SMSP design and is preferred by Coastguard and the Regional Centre for Operations Co-ordination.

Giant Sweetlips *Plectorhinchus albovittatus*, Alphonse Atoll Pep Nogués

Options for boundary marking

1. GIS mapping of the Alphonse MPA boundary will be conducted by MHILT, to be carried by vessels using the area. Surveillance and enforcement capability through the use of VMS, GPS & GPS-equipped cameras, radar and satellite data will be strengthened following acceptance and publication by the International Maritime Organization.

2. GIS mapping plus anchored marker buoys, each visible from its neighbours, would enable photography to be used to demonstrate whether a vessel is inside the MPA. However even a shallow water installation at less than 30m depth costs USD400-1500 per unit; beyond 50m specialist expertise is required and steep drop-offs into deep water present difficulties for anchoring the 3-5 ton concrete blocks required[4]. Around 300 buoys would be needed if set 200m apart, maintenance would need to be at least annual and missing buoys replaced.

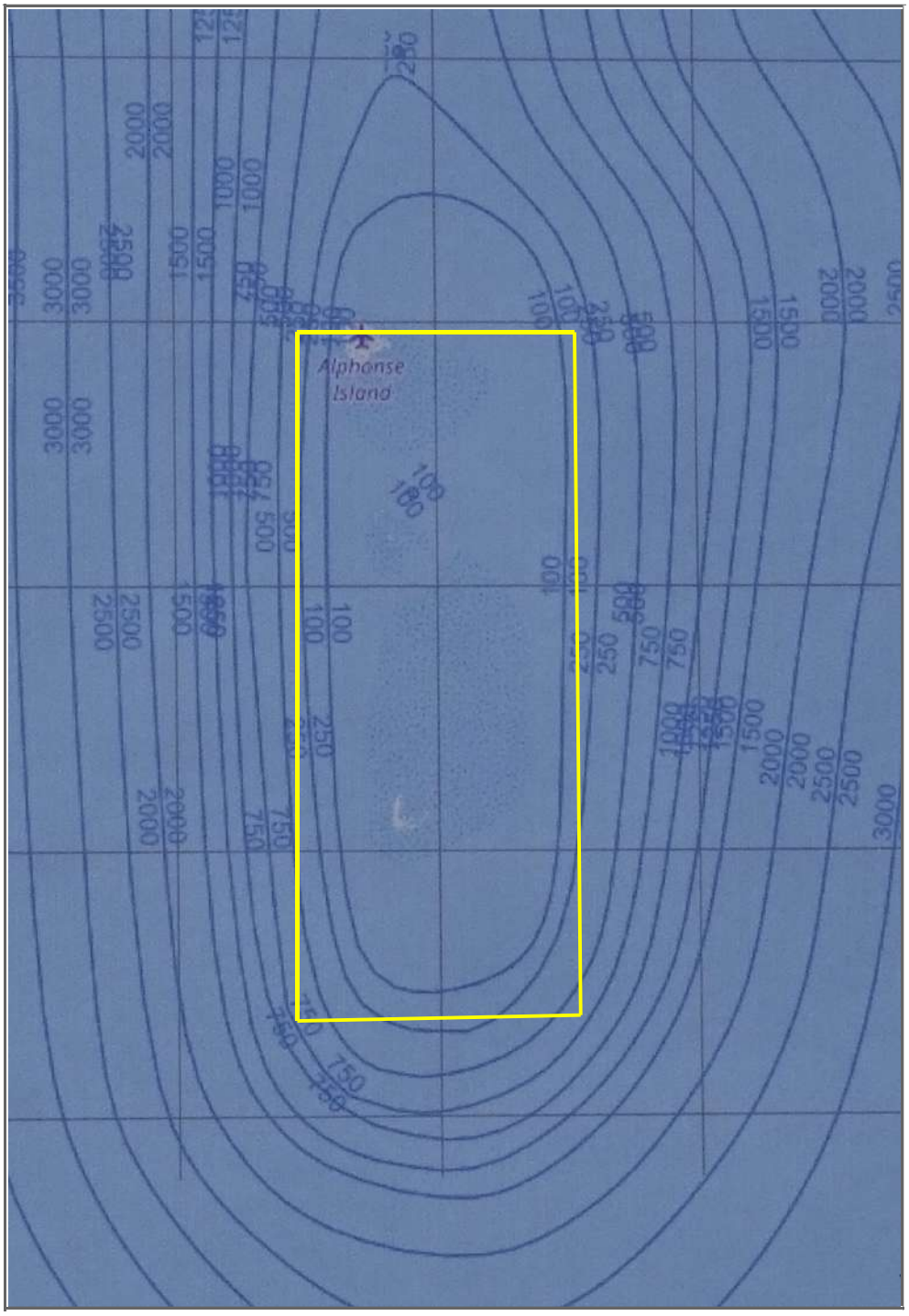
3. A shallow water 'core area' enclosing the reef and demarcated with buoys c200m apart, contained within the rectangular, GIS-mapped rectangle which would serve as a 'warning zone' as the core area is approached. Regulations would be enforced within the buoyed area. This would require over 200 buoys, locations determined by ICS and SMSA.

4 David Rowat, pers. comm.

4. Option 1. does not commit PA management to substantial and ongoing costs at a stage when financial viability of the PAs is uncertain, and is a system widely used for deep-water MPA boundaries. At the 5 year assessment of MP performance, incidents and outcomes would be reviewed and feasibility studies for options 2. and 3. conducted if required.

Alphonse Marine Protected Area bathymetry

Source: OpenSeaMap



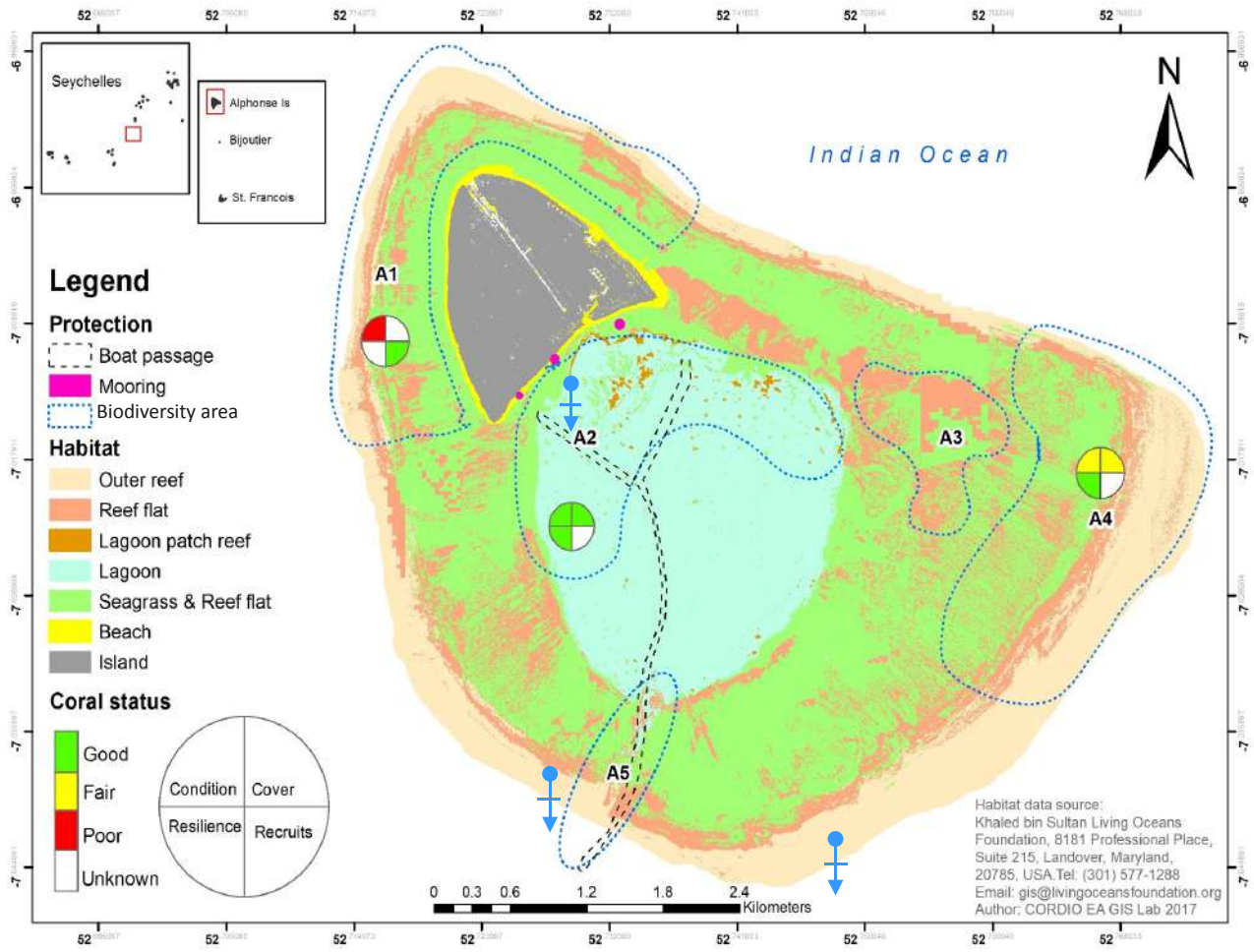
Sustainable Use Zone Biodiversity Sites

Certain areas within the SUZ require additional protection due to valuable coral cover, seagrass beds and Spawning Aggregation Sites. Core Protection or No Take restrictions are impracticable due to the needs of other MPA users, notably the sport fishery and IDC. GPS mapping and consultation between island partners ICS, IDC & Tourist Operator (TO) will establish an understanding of boundaries and protocols for minimising pressures, and it will be the responsibility of ICS to monitor for compliance.

Alphonse MPA habitats & internal zoning

A1 High coral recruitment, **A2** High coral cover & fish populations, **A3** High coral coverage
A4 High coral recruitment, **A5** Spawning Aggregation Site (to be confirmed)
(adapted from Coral Reef Management Plan (annex)
Vessels should avoid anchoring along the eastern reef. 3 designated anchor sites are indicated.

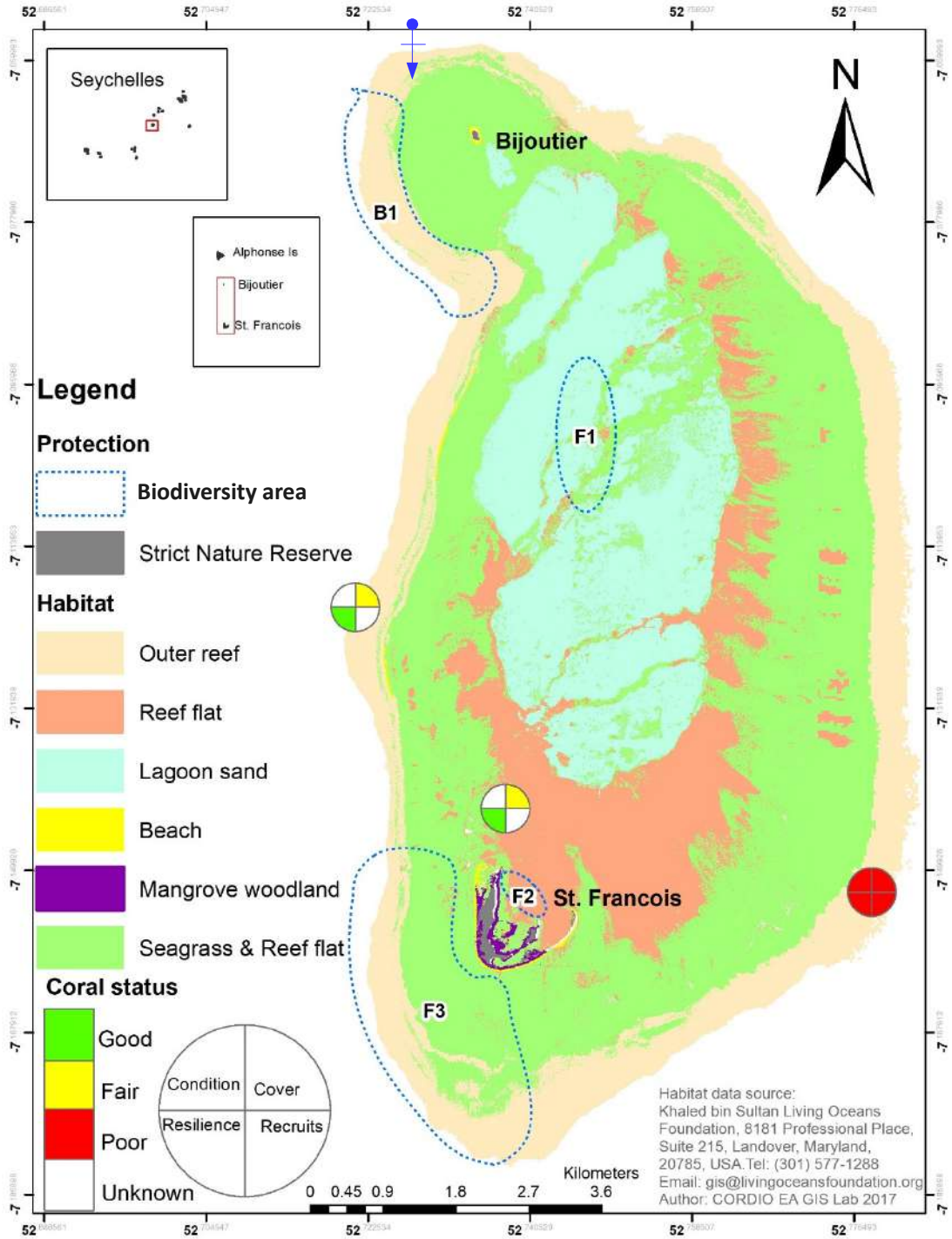
Anchorage



St Francois MPA habitats & internal zoning

F1 Corals, **F2** coral patch reefs & seagrass beds, **F3** high soft coral cover, **B1** Spawning Aggregation Site (to be confirmed), adapted from Coral Reef MP (annex). There is one designated anchor site.

Anchorage



Terrestrial Strict Nature Reserve biodiversity areas are depicted in annex 3.

2.4 Ecological, cultural, aesthetic & economic target values

Ecological	
Species	**Marine mammals, marine turtles, seabirds, shorebirds, other terrestrial fauna, fish, marine invertebrates including corals**
Habitats	**Marine water, mangrove forest, coral reefs & reef flats, seagrass beds, beaches, freshwater pool, terrestrial vegetation**
Scientific, cultural & aesthetic	
Research, island staff, subsistence fishing, remoteness	
Economic	
Ecotourism, sport fishing, commercial fishing, mariculture	

Ongoing assessment of management relies on features which can be measured, such as population size and breeding success, area of cover or number of native species. Key performance indicators (KPIs) refer to the more significant of these features.

Target values & impact monitoring parameters: Species

Target value	Desired condition & current status	Parameter	Methods	Current trends	Data collection
Marine mammals	Goal: No killing or mistreatment Status: Good	Annual number of sightings per species Annual number of recorded incidents of mistreatment	Visual & acoustic survey	Spinner Dolphin population stable Other species not known	ICS
Marine turtles	Goal: Nesting populations and foraging aggregations remain stable or increase. Status: Very good	Population size: no. of nesting females annually (KPI) Mean sample no. of immatures annually (KPI)	Implementation of Turtle Management Plan Systematic counts of immatures (develop drone count method)	Broadly stable, probable slow increase	ICS
Seabirds	Goal: Increase in size & diversity of breeding populations, no significant decline in roosting numbers Status: Poor (breeding) Very good (roosting)	Population size: annual number of breeding pairs (KPI), mean numbers of roosting individuals per species Diversity: number of breeding species annually (KPI)	Census & breeding success Implementation of Seabird Management Plan	Decline in shearwater breeding pairs Black-naped Terns stable Huge increase in roosting boobies	ICS, researchers
Shorebirds	Goal: Maintenance of roosting numbers & diversity Status: Good	Mean & max. number for each species per season (KPI) Number of species	High tide roost counts	Broadly stable	ICS
Terrestrial fauna	Goal: ID & correct knowledge gaps Status: data lacking	Baseline data	Research & survey	Not known	ICS, researchers
Fish	Goal: maintenance of numbers &	Biomass (KPI) Mean size	Baseline estimates based on research	Not known	ICS, SFA

	diversity Status: good but data lacking	Mean size per species (KPI) Number of species/families (KPI) Size of spawning aggregations Frequency of aggregations	linking with systematic monitoring of reef fish abundance & diversity Monitoring of SPAGS		
Marine inverts including corals	Goal: current extent of coral cover & populations of other groups maintained Status: good	Area of coral cover m^2 (KPI) Density & diversity of other invertebrate populations (KPI) No. of IAS (KPI)	Implement Coral Reef Management Plan Design monitoring methods for other groups	Coral recovery from 2016 bleaching variable Other groups data lacking	ICS

Target values & impact monitoring parameters: Habitats

Target value	Desired condition & current status	Parameters	Methods	Current trends	Data collection
Marine water	Goal: Maintain (St Francois) and improve (Alphonse) quality Status: generally good with localised low-level pollution	To be determined (KPI)	Baseline survey Develop monitoring protocols	More data required	ICS
Reefs & flats	Goal: no decline in current qualities Status: Good or very good, probably with low-level localised damage	Indirect: invertebrate densities, live coral cover, seagrass area, sport fishing returns	Monitoring Data-sharing	Coral recovery from 2016 bleaching variable More data required	ICS SFC
Seagrass beds	Goal: No loss in extent Status: presumed good or very good with localised damage	Area m^2 (KPI) Mapped distribution Number of species (KPI)	Implementation of Seagrass Management Plan	More data required	ICS
Mangrove forest	Goal: No loss of extent or health Status: Good	Area m^2 (KPI) Age structure	Monitoring Implementation of Mangrove Management Plan	More data required	ICS
Beaches	Goal: maintain clean beaches Status: Good	Area Marine debris by mean frequency (items per metre) Annual incidence of visible pollution Scoring for severity of incident Local/external attribution	Implementation of beach-profile monitoring protocols Maintain beach clean & FAD removal Respond to oiling incidents	Locally dynamic, assumed overall stable in area, presumed slow increase in debris	ICS
Freshwater pool	Goal: Ensure no impacts due to human activities Status: Good	Minimum area m^2 Associated biodiversity	Monitoring	More information required	ICS
Terrestrial vegetation	Goal: No loss of extent or diversity due to human activities inc introduction of IAS Status: Fair, eroded at Bijoutier	Area m^2 No. of native species Number of IAS (KPI)	GIS monitoring	Changing due to erosion, perhaps no net loss	ICS

Target values & impact monitoring parameters: Scientific, cultural, aesthetic and economic

Target value	Desired condition & current status	Parameters	Methods	Current trends	Data collection
Scientific					
Research	Goal: Increased understanding of PA ecology, processes & climate change Status: Good (marine), otherwise moderate	Number of articles & published papers	Identify knowledge gaps & promote study	Increase: impacts of fly-fishing, tracking of seabirds	ICS
Cultural & aesthetic					
Island staff	Goal: Maintain those PA aspects of value to the island life of workers & their appreciation of them Status: Good	Staff awareness of values of PA features Annual incidence of damage or disturbance	Interaction	Probably stable	ICS
Subsistence fishing	Goal: Sustainable fishery adequate for island needs Status: Fair	Monthly fish catch weight per consumer Reef fish abundance, diversity & size in areas fished	Monitoring Implementation of Subsistence Fishery protocols & analyses	Increased catch in recent years with more tourists & staff	ICS
Remoteness	Goal: Retain aesthetic features Status: Very good	Visual appeal	Observation	Stable, but new development planned	ICS IDC TO Visitors
Economic					
Ecotourism	Goal: Maintain PA aspects of value to tourists while minimising impacts Status: Good	Visitor numbers (KPI) Annual total incidence of damage or disturbance	Appropriate PA management Visitor feedback Monitoring of activities	Non-angling visitor numbers small decline after steady increase	ICS TO
Sport fishing	Goal: Sustainable & profitable fishery Status: Very good	Angling visitor numbers Catch records: fish per man-hour, mean length per species, no. species (KPI)	Reporting of visitor numbers Monitoring of catch Data-sharing	Steady increase in angling visitors	ICS
Commercial fishing	Goal: Sustainable fishery Status: Good	Catch data: weight per effort unit, mean fish size, no. of species (KPI) Abundance, diversity & size of reef fish & sea cucumber target species (KPI)	Data-sharing as part of Fishery Management Plan Reef fish & sea cucumber monitoring	Probably stable but more information required	SFA ICS FBOA PFBOA AMSSI
Mariculture	Goal: Controlled & non-disruptive removal of brood groupers for fin-fish farming elswhere Status: SPAGS status unclear	Observable impact on status of SPAGS: obvious disruption, reduction in size or frequency of spawning events	Monitoring of removals	No recent information on status of SPAGS	SFA ICS

2.5 Threats analysis

Threats & threats ranking

Threats affecting the values of the proposed Protected Areas:

- Governance
- Biosecurity
- Tourism impacts
- Commercial & subsistence fishing, mariculture
- Illegal fishing & poaching
- Pollution including oil spill
- Marine debris including FADs
- Climate change

Governance:

The creation of PAs will provide a focus for governance which has been lacking in attempts to protect the biodiversity of the Outer Islands. Collaboration and co-ordination between bodies on Alphonse itself through the Alphonse Foundation are considered good but defining responsibilities for regulated PAs will sharpen response to issues within them. Remoteness has provided a degree of natural protection, but this and shortage of resources have inevitably contributed to inconsistencies in co-ordination between relevant authorities on Mahé and the Outer Islands.

Main threats (e.g. overfishing, illegal fishing, turtle poaching, oil-spill) are often seaborne. The President of Seychelles has declared maritime security to be a priority and IDC has liaised with SFA, Coastguard and other relevant authorities in following up on incidents. Vessel Monitoring Systems (VMS) are required to be fitted to commercial fishing vessels, enabling tracking by SFA, although these systems can be switched off. Charter vessels in the Outer Islands may or may not carry VMS. The true size of the illegal fishing problem in the Outer Islands is currently unclear. Authorized SFA Fisheries officers have full power to enforce fisheries legislation within Seychelles waters, including the power to arrest, but although the single coastal patrol vessel can draw upon assistance from Seychelles Air Force, Coastguard and Marine Police, 204 industrial and over 1,400 domestic artisanal fishing vessel licences have been granted for 2018. Information-sharing with relevant stakeholders and organizations is one of the tools used by the Monitoring, Control & Surveillance Division (MCSD) to enforce compliance in the fishing industry. A National Information Sharing and Co-ordination Centre and Regional Centre for Operations Coordination were established on Mahé in 2017 to enhance maritime security and redress shortcomings in collaboration and co-ordination.

Current resources and manpower are not adequate for management of the new PAs. An atoll-based structure for enforcement of PA regulations and laws is required (Regulations & Enforcement annex).

Biosecurity:

Alien birds, reptiles, invertebrates and plants have had negative impacts on island ecosystems throughout Seychelles. Norway (Brown) Rats *Rattus norvegicus* are present on islands in Seychelles including Mahé, the main source of supplies and materials. Although Ship Rats are already on Alphonse, the accidental introduction of larger, burrow-dwelling Norway Rats would add a further pressure to island species, and it is vital that rats do not colonise Bijoutier or St. Francois to impact habitats and terrestrial fauna, particularly existing and potential breeding seabird species. Eradication of rats from Alphonse will be the most effective protective measure for SNR seabirds, but this should not be attempted until planned development, with the associated major biosecurity risk of import of materials, is completed[5]. Alphonse Foundation is investigating sources of funding for an Eradication Plan. Implementation will ideally be part of the next Management Plan.

5 A biosecurity facility should be considered for inspection of all materials arriving at Alphonse by air or sea

Invasive alien marine invertebrates have been identified in the Marine Park at Ste Anne, near Mahé, all thought to have arrived on the hulls or in the ballast of ocean-going vessels. Invasive species are now considered to be the biggest threat to global diversity after habitat destruction[6].

Tourism impacts:

Sport fishing: Island-based sport fishing (particularly fly-fishing, below) has been the mainstay of Alphonse's tourist operation for many years. The sport is nowadays catch & release. The Seychelles Sports Fishing Club (SSFC), based on Mahé, occasionally holds tournaments in the waters of the Outer Islands, including Alphonse. This is also almost entirely catch & release and the organization has a demersal and billfish tagging programme in partnership with SFA. Pollution of MPA waters and a degree of damage to target species are low-level threats, and on occasion fish are taken back to port.

Commercial sport fishing currently requires a permit, but this does not apply to fishing on foot or catch & release.

Fly-fishing: As the main form of sport fishing at Alphonse, the catch & release fly-fishing model is considered to have relatively low environmental impact in comparison with mainstream tourism, and is managed necessarily for sustainability by AFC. The fishery's continuing profile and popularity within the international sport-fishing community, and the fact that profitability has been maintained over more than a decade supports this view, and the presence of a stable commercial operation is integral to the welfare of the PAs. However, research into short and long-term impacts on the ecology is required. Fishing is by boat and on foot, which will inevitably produce levels of pollution, trampling of corals and damage to seagrass beds, as well as unquantified impacts on target fish species, particularly the increased susceptibility of exhausted fish to predation. Main target species are Bonefish, Giant Trevally, Milkfish, triggerfish species and Permit. Fishing is also done from beaches, which will cause some disturbance to sea and shorebirds and turtles.

The sport-fishing techniques of popping (the use of surface plug lures), spinning (casting a weighted, hooked lure and retrieving rapidly) and teasing (using a hookless lure to attract fish from distance and/or depth, lure withdrawn & fly with hook offered) are considered potentially harmful to the fly-fishery due to impacts on the behaviour of target species, notably Giant Trevally, making them harder to catch.

Other tourist activities: The season runs from mid-September (soon to be August) to mid-May, number of guests generally around 25, increasing to 50-60 at Christmas and Easter. 'Nature hikes' at St Francois currently take place roughly once weekly during the season, with 6-8 tourists, guided by ICS or TO personnel. Lunch on the flats, which may involve up to 25 people (including staff) is offered on a weekly basis, usually at St Francois unless tides are unfavourable, in which case it switches to Bijoutier. 'Ocean safaris' take guests to view dolphins and other cetaceans. Dives on the reef are accompanied by a guide from the Dive Centre. Disturbance to birds and turtles, collection of shells and corals, trampling of nest-sites and habitats including seedling mangroves and regenerating vegetation at vulnerable sites (Bijoutier) are obvious threats. Damage to corals is caused by inappropriate anchoring (e.g. directly over dive sites), particularly by visiting vessels.

Staff activities: Hotel support staff and other personnel living on Alphonse, including contracted workers during construction projects, look for activities to reduce boredom in their spare time and for variation in the routine of daily island life, which may include variation in diet and other pursuits likely to put pressure on the PAs.

6 Rocamora & Henriette 2015. *Invasive alien species in Seychelles: why and how to eliminate them. Identification and management of priority species.*

Commercial fishing, subsistence fishing, mariculture:

Commercial fishing: Probably the biggest challenge in establishing and managing the marine PAs. Commercial vessels from Mahé and Praslin, licensed by SFA, operate around the Alphonse group, especially around St Francois and Bijoutier, and include artisanal shark-fishing vessels and semi-industrial longliners, as well as demersal fishing vessels. This may increase as fishing becomes regulated on the Mahé Plateau. Long-liners, with lines around 20 km in length, are not permitted to fish demersally and do not normally come within 1 km of the atolls. Under current conditions, a demersal vessel from Mahé requires a catch of around 3 tons to make the trip economically viable (Fishing Boat Owners' Association). Species caught around the Outer Islands are not considered top quality and are mostly sold to factories for processing.

Elasmobranchs (sharks and rays) have key ecological roles and are a major tourist attraction but have been depleted in the Outer Islands and shark fishing bycatch can include turtles, marine mammals and seabirds. Anchored longline (drag), bottom set longline, or dropline are the main methods used. The Seychelles shark fishery has declined due to changes in legislation, a reduction in fin price and the refusal of some airlines to carry fins.

Alphonse Spawning Aggregation Sites (SPAGS) for three grouper species (*Epinephelus polyphekadion, E. fuscoguttatus* and *Plectropomus punctatus*) are vulnerable to exploitation.

A number of sea cucumber vessels are also licensed by SFA and operate around the Outer Islands October-June. The licence places restrictions on number of divers and duration of fishing effort (no such restrictions for demersal fishing). Fishing does take place within the proposed MPAs, the economically valuable species being found in deeper water off the outer reefs rather than in the lagoons. In 2018 the season will be restricted to October-May and quotas will be trialled by agreement between the industry and SFA.

Subsistence fishing: Fishing on the reef for subsistence species such as Vyey Plat, Vara Vara, Krwasan, Zob and Kaptenn Rouz has traditionally been carried out on a weekly basis by IDC staff with catch monitored and recorded by ICS staff. The bluewater sport fishing operation provides pelagic species such as Yellowfin Tuna and Kingfish. The total weight of fish caught in 2016 was 5,810.4kg, from 52 trips. Both totals have increased significantly since the previous year (3,166.3kg and 39 trips) due to an increase in numbers of guests and hotel staff. (Total number of people on the island may be a misleading guide to consumption per head when it includes a large number of vegetarian Indian labourers.)

While pelagic species are generally transient in the MPAs, reef fish communities could be adversely affected in localised areas.

All subsistence fish catch is recorded by ICS staff.

Mariculture: St Francois atoll was surveyed by Seychelles Fishing Authority (SFA) for mariculture opportunities in 2015, and was considered suitable for sea-cucumber farming, but there are no plans to take this forward. The only commercial activity which may involve the Alphonse group is the possibility of taking brood groupers from the Bijoutier Spawning Aggregation Site (SPAGS) for fin-fish farming in the Inner Islands. Not a significant threat during the lifetime of this Plan.

Illegal fishing & poaching:

Illegal, Unregulated & Unreported fishing (IUU) takes place, for both reef fish and sea cucumbers, largely by foreign vessels, and successful prosecutions and confiscations have taken place, but the true size of the problem is unclear. Most reports of illegal fishing come from the Seychelles commercial fleet.

The Outer Islands have long been subjected to poaching of seabirds, eggs, turtles and occasionally dolphins. Turtle meat was a traditional part of the island diet but legislation, IDC regulations, the rise of island-based tourism and changing generations has greatly reduced this. However fishing vessels, both

Seychellois and foreign, still take turtles to supplement diet and income. Most reports of illegal fishing come from the Seychelles fishing fleet.

Pollution including oil spill:

There will be a generally low level of ongoing marine pollution due to boat use and tourist infrastructure, with more severe episodes when systems malfunction e.g. leakage from sewage treatment plant into Alphonse lagoon during 2017. 90% of energy needs is to be provided through solar. Ballast discharge causes pollution and brings a risk of Invasive Alien Species.

Marine pollution arriving from outside the MPAs is presumably rarely recognized. Oil spillage is a major threat to habitats, species and tourism. Seychelles has a National Oil Spill Contingency Plan, maintained by the Coastguard, which has been updated and was tested in 2015. Clear protocols at the island level are required to bring this into play without delay.

Marine debris including FADs:

Beaches are regularly cleaned by ICS with support from TO & IDC. South-facing beaches especially are littered with marine debris. In 2016 1,210 kg of debris were removed from the beaches of Alphonse, St Francois & Bijoutier.

Drifting Fish Aggregation Devices (d-FADs) are free-floating platforms with GPS and (usually) acoustic fish-finders deployed in the thousands by Indian Ocean tuna fleets to attract small fish which then attract tuna. Many drift into the MPAs to become a shipping hazard and cause entanglement of turtles, dolphins, sharks and seabirds, and often become lodged on the reef. The 'FAD Watch Programme – Detections & Removals' is operated by a partnership of ICS, SFA, IDC and OPAGAC/AGAC (Spain) to provide warnings to island staff that an FAD arrival is imminent, although FADs typically weigh over 100 kg and trail ropes up to 50 metres long and removal is a time-consuming procedure.

Bleached coral Alphonse Atoll Pep Nogués

Climate change:

Global climate change is expected to impact on species and habitats as Seychelles becomes hotter and drier, sea levels rise, sea surface temperatures increase leading to coral mortality and there is a greater incidence and severity of El Niños and storm events[7]. Up to 90% of hard coral cover on the western reef at Alphonse suffered bleaching due to the 2016 El Niño warming event, with some colonies at over 35 metres depth badly affected. Bijoutier has shifted markedly from west to east in less than a decade, and severe and ongoing erosion has reduced active Wedge-tailed Shearwater burrows from 52 in 2013/4 to just 12 in 2016/7. Erosion is also a threat to tourist infrastructure on Alphonse Island.

Ocean acidification is a longer-term threat, particularly to marine invertebrates, with further ecological ramifications. Not a significant threat during the lifetime of this Plan.

Threats ranking (over next 5 years)

Target values	Threats							
	Governance	Biosecurity	Tourism impacts	Commercial, subsistence fishing & mariculture	Illegal fishing & poaching	Pollution including oil spill	Marine debris inc FADs	Climate change
SPECIES								
Seabirds	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH
Shorebirds	LOW	MEDIUM	MEDIUM	LOW	LOW	MEDIUM	MEDIUM	MEDIUM
Turtles	HIGH	MEDIUM	MEDIUM	MEDIUM	HIGH	HIGH	HIGH	MEDIUM
Fish	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM
Marine mammals	MEDIUM	LOW	MEDIUM	MEDIUM	MEDIUM	HIGH	HIGH	?
Terrestrial fauna	LOW	HIGH	LOW		MEDIUM	MEDIUM	LOW	HIGH
Marine inverts inc corals	MEDIUM	MEDIUM	MEDIUM	MEDIUM	MEDIUM	HIGH	HIGH	HIGH
HABITATS								
Marine water	LOW	LOW	MEDIUM	MEDIUM	LOW	HIGH	HIGH	LOW
Mangrove forest	LOW	MEDIUM	MEDIUM	LOW	LOW	HIGH	MEDIUM	LOW
Reefs & flats	MEDIUM	MEDIUM	MEDIUM	MEDIUM	LOW	HIGH	MEDIUM	MEDIUM
Seagrass beds	LOW	MEDIUM	MEDIUM	MEDIUM	LOW	HIGH	MEDIUM	MEDIUM
Beaches	MEDIUM	LOW	LOW	LOW	LOW	HIGH	HIGH	HIGH
Terrestrial vegetation	LOW	MEDIUM	MEDIUM			LOW	LOW	MEDIUM
Freshwater pool	LOW	MEDIUM	MEDIUM			MEDIUM	MEDIUM	MEDIUM
SCIENTIFIC, CULTURAL & AESTHETIC								
Research	HIGH	HIGH	MEDIUM	MEDIUM	MEDIUM	HIGH	MEDIUM	MEDIUM
Island staff	HIGH	LOW	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM
Subsistence fishing	MEDIUM	LOW	LOW		LOW	HIGH	MEDIUM	LOW

7 e.g. Seychelles National Climate Change Strategy. Seychelles National Climate Change Committee 2009
Climate change in the western Indian Ocean. Africa Biodiversity Collaborative Group 2012

Remoteness	HIGH		MEDIUM	MEDIUM	MEDIUM	HIGH	HIGH	
ECONOMIC								
Ecotourism	HIGH	MEDIUM		MEDIUM	MEDIUM	HIGH	MEDIUM	MEDIUM
Sport fishing	HIGH	MEDIUM	MEDIUM	MEDIUM	MEDIUM	HIGH	MEDIUM	LOW
Commercial fishing	HIGH	MEDIUM	MEDIUM		HIGH	HIGH	MEDIUM	LOW
Mariculture	HIGH	MEDIUM	LOW	MEDIUM	MEDIUM	HIGH	MEDIUM	LOW

Priority areas

These are broad categories of strategy to counter identified threats to the PAs. Each priority area will contain a number of specific conservation objectives and addresses one or more of the threats.

Priority Areas	Threats to be addressed through Priority Area strategy							
	Governance	Biosecurity	Tourism impacts	Commercial, subsistence fishing & mariculture	Illegal fishing & poaching	Pollution including oil spill	Marine debris inc FADs	Climate change
1. Governance	X	X	X	X	X	X	X	
2. Biosecurity		X	X	X		X		
3. Ecotourism		X	X			X	X	
4. Commercial & subsistence fishing, mariculture				X	X	X	X	
5. Research, monitoring & conservation		X	X	X	X	X	X	X
6. Aesthetic & cultural		X	X	X	X	X	X	

3. MANAGEMENT PROGRAMMES

This section of the Management Plan identifies the Management Programmes to be implemented to address the defined priority areas for intervention and will result in improved conservation performance.

Each of the priority areas is developed into a Management Programme which first defines objectives. Objectives are defined as key activity sets, outputs or milestones in the achievement of the strategy and are listed broadly in order of priority. Objectives are designed to be quantitative not qualitative and each is assessed in terms of benefits, feasibility and cost/inputs, which together give an idea of practicability.

Objectives are then broken down into a series of activities and their outputs, against which implementation of the plan will be monitored.

MANAGEMENT PROGRAMME 1. GOVERNANCE

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
1.Governance of PAs	1.1 St Francois, Bijoutier & One Palm Island are legally gazetted as a Strict Nature Reserve and Alphonse and St Francois marine waters within a 21.9 x 9.5 km rectangle enclosing both atolls as Sustainable Use Zone under the Nature Reserves and Conservancy Act 2018	HIGH	HIGH	LOW
	1.2 Management regulations for St Francois, Bijoutier & One Palm Island SNR and Alphonse and St Francois SUZ are issued by Minister MEECC as per provisions of the Nature Reserves and Conservancy Act 2018	HIGH	HIGH	LOW

	1.3 Rapid response to oil spill	HIGH	MEDIUM	LOW
	1.4 Effective operational surveillance & enforcement structure for Alphonse Protected Areas by 2020	HIGH	MEDIUM	MEDIUM
	1.5 Optimal ICS staffing for management of PAs by 2020	HIGH	MEDIUM	HIGH
	1.6 Annual budget finalized not later than 28th February	HIGH	HIGH	LOW

Colour coding is reversed for costs/inputs as low cost is positive

Objective	Activities	Outputs
1.1 St Francois, Bijoutier & One Palm Island are legally gazetted as a Strict Nature Reserve and Alphonse and St Francois marine waters within a 21.9 x 9.5 km rectangle enclosing both atolls as Sustainable Use Zone under the Nature Reserves and Conservancy Act 2018	1.1.1 Demarcate PA boundaries with GIS maps	GIS maps
	1.1.2 Prepare Nomination File under the Nature Reserves and Conservancy Act 2018 for gazetting of the Protected Areas, to include this Management Plan with appropriate annexes Responsibilities of Alphonse Foundation and MEECC (Dept of Environment) should be defined	Draft Nomination File
	1.1.3 Conduct legally required stakeholder consultation and validation of this Management Plan	Stakeholder consensus/agreement reached
	1.1.4 Submit Nomination File to Government and follow up with Public Announcement, Cabinet Memo and other documentation as required	St Francois, Bijoutier & One Palm Island and Alphonse and St Francois marine environments approved as new Protected Areas (Official Gazette)
1.2 Management regulations for St Francois, Bijoutier & One Palm Island Strict Nature Reserve and Alphonse and St Francois Sustainable Use Zone are issued by Minister MEECC as per provisions of the Nature Reserves and Conservancy Act 2018	1.2.1 Based on draft regulations for the GOS categories of 'Strict Nature Reserve' and 'Sustainable Use Zone' as per Nature Reserves and Conservancy Act 2018 draw up a list of required regulations	Draft regulations
	1.2.2 Undertake a consultation process with regards to the regulations, with particular regard to: Management of commercial fishing in the Sustainable Use Zone Cap on tourist use of Strict Nature Reserve Access to PAs for independent operators	Stakeholder consensus/agreement reached
	1.2.3 Submit the agreed regulations to the Minister MEECC for review and approval (Minister may also consult the National Advisory Committee established under the Nature Reserve and Conservancy Act)	Approved regulations
1.3 Rapid response to oil spill	1.3.1 Ensure readiness to implement National Oil Spill Contingency Plan	Damage to habitats, species & economy minimised
1.4 Effective operational surveillance & enforcement structure for Alphonse Protected Areas by 2020	1.4.1 Registration of MPA with International Maritime Organization	Strengthened basis for enforcement
	1.4.2 Agreement drafted between IDC, ICS, TO, SPDF, MEECC & AF defining duties, responsibilities & communications protocols for systematic surveillance, response & enforcement of PA regulations & national laws*	Surveillance and enforcement agreement (see Regulations & Enforcement annex)
	1.4.3 Training and authorization of enforcement officers, training as required for ICS & IDC staff	Enforcement staff trained and enabled to enforce PA regulations & national laws
	1.4.4 Managing Authority to provide staff with document detailing regulatory basis for enforcement interventions	PA staff able to provide credentials & authorization when required
1.5 Optimal ICS staffing for management of PAs by 2020	1.5.1 Add Asst CO and two Rangers to Alphonse staff and Outer Islands Officer, Communications Officer & Database/IT Co-ordinator to Head Office staff	MA resources adequate for PA management

1.6 Annual budget finalized not later than 28th February	1.6.1 Alphonse Foundation to set annual budget and exercise cost control	Funding to achieve PA targets
*****Recently radar coverage of 30-40 square nautical miles has been provided by installations at Astove, Farquhar, Assumption and Alphonse itself. Automatic ID systems and powerful mast-head cameras will allow location and often identification of vessels within the MPAs, down to the size of a 5 metre fibreglass boat fishing in the lagoon.		

Coastguard and SFA carry out 1-2 patrols annually in the Outer Islands. Marine Police have been taken to sites of illegal activities by the airforce. Specialist bodies such as SFA (fish), Dept. of Environment (turtles) and Drugs Enforcement are required to be present to ascertain whether, for example, fish on board were taken in Seychelles waters. ICS personnel, currently present on Desroches, Alphonse and Farquhar, could provide this expertise given appropriate training and authority under the incoming Protected Areas Act as support for newly designated PA Enforcement Officers, who would most effectively be drawn from SPDF.

The Coastguard has long-term plans for improving coverage of the Outer Islands, through upgrade in airstrips and facilities on Alphonse and Farquhar such that they can be based there rather than face the long, slow and expensive journey down from Mahé. Training in evidence handling and collection is a priority, and it is hoped their existing 'power to detain' is upgraded to power to arrest.

MANAGEMENT PROGRAMME 2: BIOSECURITY

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
2. Biosecurity	2.1 No new Invasive Alien species established in Protected Areas by 2022	HIGH	HIGH	MEDIUM

Objective	Activities	Outputs
2.1 No new Invasive Alien Species established in Protected Areas by 2022 (rats colonising St Francois or Bijoutier from Alphonse the greatest threat). Annual review.	2.1.1 Implement Pest Abatement Measures for the Outer Islands (annex), including stock of contingency packs	All measures implemented
	2.1.2 Implement Invasive Species management actions for Alphonse in Seabirds Management Plan (annex)	All measures implemented
	2.1.3 Monitor IAS in Protected Areas, annual review	Full record of IAS status
	2.1.4 Develop marine IAS biosecurity plan	Marine biosecurity plan
	2.1.5 Develop Alphonse rat Eradication Plan	Plan in place
	2.1.6 Assess feasibility of biosecurity facility at Alphonse for examination of materials brought in by sea or air	Feasibility, design & costing

MANAGEMENT PROGRAMME 3: ECOTOURISM

A prominent concern among stakeholders consulted was that the PA process should not lead to the exclusion of independent operators and visitors to the Outer Islands. The term 'exclusive access to the Outer Islands' has been used in marketing, but the islands are owned by the Government of Seychelles and managed by IDC on behalf of the nation, and the right of independent operators, tourists and fishermen to visit the Outer Islands, including the Protected Areas, as long as permissions are obtained and regulations observed, is recognized in the management plan.

There should be no additional charge for authorized visits to the PAs.

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
3. Ecotourism	3.1 No significant negative impacts on PA fish populations and habitats recorded by 2022 due to sport fishing activities, reviewed annually	HIGH	MEDIUM	MEDIUM
	3.2 No significant negative impacts on ecology of PAs recorded by 2022 due to ecotourist activities, reviewed annually	HIGH	MEDIUM	MEDIUM
	3.3 No decline in visitor numbers or conservation revenue by 2022	HIGH	MEDIUM	MEDIUM
	3.4 No decline detected by 2022 in quality of those aspects of the PAs of significance to tourism, reviewed annually	HIGH	HIGH	MEDIUM

Objective	Activities	Outputs
3.1 No significant negative impacts on PA fish populations and habitats recorded by 2022 due to sport fishing activities	3.1.1 Ensure sport fishery Code of Conduct is applied (Bluemel & Holden, annex), with rod limits & rotation of trampling pressure	Compliance with Code of Conduct
	3.1.2 Establish consensus & protocols on minimising pressures on biodiversity areas within SUZ	Protocols agreed & applied
	3.1.3 Design & implement research into impacts of fly-fishing on target species and habitats[8]	Data to facilitate oversight, conservation management & long-term sustainability of Catch & Release fly-fishing industry in Alphonse & other Outer Island MPAs
	3.1.4 Ensure no targeting or mistreatment of sharks	No recorded incidents
	3.1.5 Develop bag limit & equipment control protocols for catch & take sport fishery, consultation through SSFC	Controls agreed & applied
	3.1.6 Maintain ICS/SFC data-sharing agreement & analyse existing fishery data	Improved data-sharing Analysis of data for trends
	3.1.6 Establish data-sharing with SFCS/SFA tagging programme	Improved data sharing
3.2 No significant negative impacts on ecology of PAs recorded by 2022 due to ecotourist activities	3.2.1 Ensure that all ecotourism activities comply with this management plan & Codes of Conduct (Bluemel & Holden, annex) and have the approval of IDC & MA	Compliance
	3.2.2 Encourage use of green energy options, including solar & wind, in all future development & are retro-fitted where possible to existing infrastructure	Reduced pollution threat to PAs over 5 year Plan period
	3.2.3 Encourage clean & efficient operation of infrastructure (sewage treatment, desalinators, generators etc.)	Minimal pollution impacts from Alphonse Island infrastructure
	3.2.4 Ensure proposals for dredging, groynes, jetties & erosion defences are assessed for environmental impacts	Minimal ecological impacts
	3.2.5 Ensure that all tour operators, visitors and residents are aware of	All tour operators circulated All atoll users aware of regulations & enforcement

8 Alphonse Foundation proposal in prep. and funding may be available from the Seychelles Conservation and Climate Change Adaptation Trust (SeyCCAT)

	regulations within this Plan and of Protected Area legislation, have access to the ICS Visitor Guide to the Outer Islands & the Alphonse brochure and are aware of enforcement structure	
	3.2.6 Implement ICS 2017 Communications Strategy to inform and educate regarding programmes in the PAs and to engage with stakeholders	Higher profile for ICS work in Alphonse PAs
	3.2.7 Regulate visits to St Francois, Bijoutier & One Palm Island SNR	Controls agreed and applied
	3.2.8 Assess feasibility of viewing screen(s) at St Francois to reduce disturbance	Suitably sited screen(s) if required
	3.2.9 Regulate cruise ship visits to PAs (see Regulations annex)	Protocols agreed and applied
	3.2.10 Alphonse Dive Centre staff to guide visiting divers	Guides provided
	3.2.11 Designate sand/rubble anchor sites	Map & co-ordinates (and/or marker buoys) for resident & visiting vessels
	3.2.12 Ensure anchoring at designated sand/rubble sites only, and use tenders to approach dive sites	Minimal damage to corals and seagrass beds No anchoring on eastern reef
	3.2.13 Assess feasibility of permanent moorings with charge for use by visiting vessels	Sites, practicality, insurance implications & financial aspects assessed
	3.2.14 Apply Code of Conduct for whale & turtle watching	Minimal disturbance
	3.2.15 ICS to provide guides and training for TO guides for tourist visits to PAs	Adequate pool of trained guides
	3.2.16 ICS to provide presentations to and interact with visitors to encourage them to feel part of conservation effort & understand restrictions on access to PAs	Visitor satisfaction No decrease in per capita tourist contributions & donations
3.3 No decline in in visitor numbers or conservation revenue by 2022	3.3.1 Support TO promotion of Alphonse as an ecotourism & conservation success story	Conservation revenue stable or increasing
	3.3.2 Streamline permissions process for visiting operators, consider seasonal permit, revocable if mis-used	More straightforward access for charter operators
3.4 No decline detected in quality of those aspects of the PAs of significance to tourism by 2022	3.4.1 Ensure compliance with PA regulations	Compliance
	3.4.2 Visitor satisfaction survey	Visitor satisfaction

Emperor angelfish *Pomacanthus imperator* Alphonse lagoon Pierre-Andre Adam

MANAGEMENT PROGRAMME 4: COMMERCIAL FISHING, SUBSISTENCE FISHING AND MARICULTURE

Increasing fishing pressure on the reef is cited by ICS as a concern in the Alphonse Annual Report for 2016, when 6 vessels were logged.

Fishery-independent estimates of reef fish biomass in the outer islands generally indicate that fin-fish stocks are not overfished. The aim of management would therefore be not to rebuild stocks but to forestall declines that exceed ecologically acceptable levels. Consultation with Fishing Boat Owners, SFA, IDC, ICS and other stakeholders will be required to work out a management system which will involve licensing, input (e.g. amount of effort) or output (e.g. catch limits) controls and monitoring, reporting on fishing activities to be a condition of permit. The Fishing Boat Owners Associations of Mahé & Praslin have expressed willingness to provide support, both in negotiations and operation of the MPAs. This will be a lengthy process but, if successful, will be widely applicable in Outer Islands MPAs. Minimizing pressure on sensitive biodiversity areas (e.g. the best sections of coral reef) will be a factor considered in planning, and no form of fishing targeting elasmobranchs (sharks & rays) should be permitted in the MPA. Elasmobranchs caught accidentally during commercial, subsistence, sport or recreational fishing must be released alive whenever possible.

ICS has carried out surveys at Alphonse which may be adequate for an initial estimate of reef fin-fish biomass, although more comprehensive data (5-yearly survey) is required. Establishing harvest strategies and monitoring and assessment protocols for fish stocks would then be an essential next step. This would be a suitable project for the Third South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3), and funding may be available from the Seychelles Conservation and Climate Change Adaptation Trust (SeyCCAT) Blue Grants Fund. Fishing Boat Owners Associations of Mahe & Praslin and the La Digue fishing community have expressed willingness to be provide support, both in negotiations and operation of a fishery management plan. Meetings on Praslin as well as Mahé, advertised on the radio, would make it easier for fishermen to attend.

A possible interim measure before the plan is operational is for annual fishing effort in the MPA not to exceed the average annual effort over the previous 5 years, assessed through VMS data held by SFA.

Marine waters outside the proposed Alphonse group MPA are classified in the Seychelles Marine Spatial Planning initiative (SMSP) as Medium Biodiversity, Sustainable Use, with regulated fishing activities e.g. Industrial purse-seine fishing & industrial longlining are not permitted and semi-industrial fishing is conditional; bottom-trawling and spear-fishing are banned under the Fisheries Act. The SMSP provides scope for MPAs within this system such as Alphonse to develop site-specific regulations for fishery management, with integration where feasible.

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
4. Commercial & subsistence fishing, mariculture	4.1 Sustainable commercial fishery plan operating by 2020	HIGH	MEDIUM	HIGH
	4.2 Sustainable subsistence fishery plan operating by 2019	HIGH	HIGH	LOW
	4.3 If required, controlled & non-disruptive removal of groupers from Spawning Aggregation Sites, reviewed annually	HIGH	HIGH	LOW
	4.4 No significant negative impacts on MPA ecology recorded by 2022	HIGH	MEDIUM	MEDIUM

Objective	Activities	Outputs
4.1 Sustainable commercial fishery plan operating by 2020	4.1.1 Calculate reef fin-fish biomass	Starting point for fishery management plan
	4.1.2 Establish fin-fish harvest strategies, monitoring & assessment protocols through research & consultation with stakeholders	Sustainable management plan for commercial reef fishery
	4.1.3 As 4.1.1 for sea cucumbers, consultation SFA, AMSSI & other stakeholders	Sustainable management plan for sea cucumber
	4.1.4 No extraction of 3 grouper species (*Epinephelus polyphekadion, E. fuscoguttatus, Plectropomus punctatus*) within MPA November to February inclusive, with exception for possible removal of 6-8 fish for Inner Islands mariculture 4.3 below Implement ICS SPAGS protocols	Conservation of vulnerable grouper populations
	4.1.5 Prevent poaching & unauthorized fishing, including targeted fishing for elasmobranchs (sharks & rays)	No poaching or unauthorized fishing in MPAs
4.2 Sustainable subsistence fishery plan operating by 2019	4.2.1 Analysis of existing data & calculation of current fin-fish stocks in MPAs	Estimate of MPA reef fish stocks (as above)
	4.2.2 Consultation with IDC on reef fish catch limits, rotation of fishing pressure & minimising pressure on biodiversity areas	Consultation process[9] Agreed parameters
	4.2.3 ICS to continue monitoring of all subsistence fish catch, utilising monitoring & analysis protocols (annex)	Monitoring maintained
	4.2.4 Large, slow-growing species such as sharks, rays, Potato Grouper & Napoleon Wrasse to be released where possible. Provide tools for swim bladder correction before release	No avoidable killing of large, slow-growing species
	4.2.5 Catch for island consumption only	No fish exported
4.3 Controlled & non-disruptive removal of groupers from Spawning Aggregation Sites, annual review	4.3.1 Provide access to SPAGS for SFA to extract 6-8 groupers per season for Inner Islands fish farming	Access as required
	4.3.2 Monitoring of activities	ICS observer present
	4.3.3 Implement ICS SPAGS protocol(annex)	Implementation

9 Reference subsistence fishing plan in Aldabra Atoll Management Plan 2016

4.4 No significant negative impacts on MPA ecology recorded by 2022	4.4.1 Maintain monitoring of key groups (fish, sea cucumbers, corals)	Monitoring maintained
	4.4.2 Analyse data with reference to fishing activities	Long-term assessment of fishing impacts on MPA ecology
	4.4.3 Necessity for non-polluting operations to be emphasised in agreed fishing plans	Minimal pollution

MANAGEMENT PROGRAMME 5: RESEARCH, MONITORING & CONSERVATION

Research at the Alphonse group is conducted according to ICS programmes, after scrutiny by the ICS Science Committee, with the authorization of Seychelles Bureau of Standards (SBS), MEECC and the Board of the Alphonse Foundation. Research within the proposed Protected Areas will be authorized, supported and monitored in the same way. There has been significant marine research, and the presence since 2007 of Island Conservation Society staff has facilitated long-term projects such as Sea Surface Temperature and coral studies, and the long-established turtle research programme has been intensified. ICS is also able to provide support for visiting researchers.

Monitoring programmes are based on methodologies developed by ICS and others elsewhere in Seychelles, notably at Aride Island, which ICS has managed since 2004; standardised habitat and species monitoring protocols are outlined in the 2009 Alphonse Management Plan. These have been amended and expanded in the period since and are reviewed regularly by ICS Conservation Officers and Science Committee, with current methodologies and data held at ICS Head Office and on the island. Further protocols produced under the current GOS/UNDP/GEF Project *Expansion and Strengthening of the Protected Areas Subsystem of the Outer Islands of* Seychelles *and its integration into the broader land and seascape* are referenced as an annex. The Conservation Officer submits an annual summary report for circulation by ICS to relevant bodies.

Hotel staff and IDC assist with beach cleans, FAD removal and general observation.

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
5. Research, monitoring & conservation	5.1 PAs used for research which will increase understanding of key species, habitats and processes and of climate change, and support PA management, minimum one publishable project per year	HIGH	HIGH	MEDIUM
	5.2 Ecologically and ethically sustainable research only 2018-2022	HIGH	HIGH	LOW
	5.3 Annual report on natural & anthropogenic changes in key habitats by following February	HIGH	HIGH	HIGH
	5.4 Annual report on numbers, reproductive success and trends in key animal & plant species by following February	HIGH	HIGH	HIGH
	5.5 Integrated database by 2020	HIGH	HIGH	MEDIUM
	5.6 Support for assessment of management plan's effectiveness at mid & end points, 2020 & 2022	HIGH	LOW	LOW
	5.7 Clean environment, reviewed annually	HIGH	MEDIUM	MEDIUM
	5.8 Feasibility of Ranger hut on St Francois assessed 2018/2019	MEDIUM	MEDIUM	MEDIUM

Objective	Activities	Outputs
5.1 PAs used for research which will increase understanding of key species, habitats and processes and of climate change, and support PA	5.1.1 Identify key areas of research which will support PA management	Prioritised research programme
	5.1.2 Investigate partnerships and collaborations in line with requirements	Long and short-term research partnerships

management, minimum one publishable project per year	of 5.1.1	
	5.1.3 Identify and cost facilities likely to attract researchers for priority projects	Costed research facilities requirements breakdown
5.2 Ecologically and ethically sustainable research only 2018-2022	5.2.1 Ensure research projects are assessed by ICS science committee and authorized by SBS, MEECC and the Board of the Alphonse Foundation	All research projects within PAs fully assessed & authorized
	5.2.2 Monitor researcher activities and require regular and final reporting	All projects monitored
5.3 Annual report on natural & anthropogenic changes in key habitats by following February	5.3.1 Conduct monitoring according to the protocols developed (annex)	Systematic long-term data and analysis of PA processes
	5.3.2 Trend analyses to include interpretation for climate change	Long-term climate change monitoring
5.4 Annual report on numbers, reproductive success and trends in key animal & plant species by following February	5.4.1 Conduct monitoring according to the protocols developed (annex)	Systematic long-term data and analysis
	5.4.2 Trend analyses to include interpretation for climate change	Long-term climate change monitoring
5.5 Integrated database by 2020	5.5.1 Develop integrated data system & work towards national biodiversity database (Senterre & Wagner, annex)	National data-sharing & accessibility
5.6 Support for assessment of management plan's effectiveness 2020 & 2022	5.6.1 Review monitoring programme at Plan's halfway and end points for relevance to management objectives & adjust accordingly	Programme suited to support assessment of MP performance
5.7 Clean environment maintained to 2022	5.7.1 Maintain regular beach clean	Marine debris kept to a minimum
	5.7.2 Maintain & improve FAD Watch & removal programme	Impacts on habitats, species & shipping minimised
	5.7.3 Ensure boat use & other research, monitoring & conservation activities in MPA are non-damaging & non-polluting	Minimal damage & pollution[10]
5.8 Feasibility of small Ranger hut on St Francois assessed 2018/2019	5.8.1 Assess pros & cons, siting & design, & cost	Costed plan for hut if required

ICS reef fish survey, Alphonse Atoll Pep Nogués

10 Oil spill response is a Governance objective

MANAGEMENT PROGRAMME 6: CULTURAL & AESTHETIC

Priority area	Objectives	Benefits	Feasibility	Cost/inputs
6. Cultural & aesthetic	6.1 Island staff enjoy PAs with minimal negative impacts, reviewed annually	HIGH	MEDIUM	LOW
	6.2 No decline detected in those aspects of the PAs of significance to the island life of workers, reviewed annually	HIGH	HIGH	LOW
	6.3 No decline detected in aesthetic features of PAs contributing to impression of remoteness, reviewed annually	HIGH	HIGH	LOW
	6.4 Sustainable subsistence fishery adequate for island needs by 2019	HIGH	MEDIUM	LOW

Objective	Activities	Outputs
6.1 Island staff enjoy PAs with minimal negative impacts, annual review	6.1.1 Ensure that all island staff are aware of Alphonse PA regulations and of PA legislation	Staff awareness
	6.1.2 Ensure that staff infrastructure, equipment and activities are conducted or operated in a manner that is sustainable and non-damaging to the PAs	Minimal damage to PAs
	6.1.3 Encourage development of leisure-time interest options and occupations for island staff	Minimal damage to PAs
	6.1.4 ICS to liaise closely with IDC & TO to enforce regulations and deal with transgressions	Transgressions managed & reported
6.2 No decline detected by 2020 in those aspects of the PAs of significance to the island life of workers	6.2.1 Identify those PA values important to workers in reviews of MP performance 2020, 2022	Positive assessment of MP effectiveness
6.3 No decline detected in aesthetic features of PAs contributing to impression of remoteness by 2020	6.3.1 Ensure that any proposed new structures (ranger's hut, viewing screen) within PAs will not diminish aesthetic features	Minimal impact on aesthetic features
	6.3.2 Ensure that any proposed developments on Alphonse Island will not diminish aesthetic features of the PAs through visual or other impacts	
	6.3.3 Maintain beach and lagoon clean-ups	
6.4 Sustainable subsistence fishery adequate for island needs by 2019 (see 4.2 above)	6.4.1 Monitor catch relative to island consumption needs	Healthy & economical component of island diet with minimal impact on fishery

4. IMPLEMENTATION PLAN

An Implementation Plan outlining responsibilities and scheduling is provided as an annex.

5. INSTITUTIONAL FRAMEWORK

Alphonse Foundation

The Alphonse group is governed by IDC, whose approval is required for all activities. The Alphonse Foundation, established in 2007, has a Board comprising a minimum of four and a maximum of ten Trustees, including:

Two nominated by ICS
Two by tourism investors
One by IDC
One by MEECC
One by Alphonse Home Owners' Association

Co-ordination & collaboration

ICS makes proposals to the Board for conservation and research programmes with an annual budget. The Board decides on those programmes to be accepted and implemented and agrees a final budget. The work programme is carried out by ICS staff utilising authorized external expertise with monthly and annual reporting to the Board, which assesses performance. Partners provide funding and the Foundation administers the Endowment Fund.

IDC is responsible for government and general management of the Alphonse group on behalf of the Government of Seychelles.

Exchange of data, consultation and joint projects with organizations away from Alphonse, such as MEECC, SFA, SIF, Plant Conservation Action, Marine Conservation Society of Seychelles, the University of Seychelles and Seychelles Coastguard, as well as overseas individuals and institutions, is essential to successful management of the PAs in particular and the Alphonse group in general. The Managing Authority (ICS) will manage these relationships, with support from IDC. The varied aims of the main bodies at Alphonse itself will inevitably produce friction, and although most difficulties should be overcome at the time through mutual agreement a recognized pathway for conflict resolution would be:

1. Scheduled monthly meetings between representatives of each body involved at Alphonse
2. Matters which cannot be resolved to be passed to Alphonse Foundation Board
3. Rapid circulation of more serious matters to Board members when meeting is not imminent

Staffing

The ICS Conservation Centre on Alphonse Island is currently staffed by a Conservation Officer, one Conservation Ranger and one volunteer, serviced from ICS head office on Mahé through IDC supply boats and flights. A small boat and outboard are used to access St Francois and Bijoutier islands and the two marine PAs for monitoring, research, conservation and surveillance. Sport fishing guides assist in the course of their daily operations with observation and surveillance, and further support is provided by IDC staff. Optimal ICS staffing would also include an Assistant CO and two more Rangers. The greater workload and responsibilities for ICS as Managing Authority resulting from the creation of the PAs will require a suitably qualified Outer Islands Officer, a Communications Officer and a Database/IT Co-ordinator to be based at ICS Head Office on Mahé.

Position	Currently	Optimal for implementation of management plan	Notes
ICS Head Office			
Science & projects Officer	One	One	Pierre-Andre-Adam
Outer Islands Officer	New post	One	
Communications Officer	New post	One	
Database/IT Co-ordinator	New post	One	
Alphonse group			
Conservation Officer	One	One	Pep Nogués
Assistant Conservation Officer	Vacant	One	
Conservation Ranger	One	Three	Chris Narty All Rangers should either hold or be trained for a skipper's licence
Volunteer	One		Ariadne Fernandez

6. FINANCING PLAN

The financial plan is based on the following assumptions:

Existing revenue options

Sustainable funding is critical to management of the Alphonse Protected Areas. ICS and IDC have developed the model that is in place here and at Silhouette and Desroches. Under this model, revenue is generated from ecotourism and an endowment fund is established to secure future needs. Sources of existing income are:

1. A conservation levy per guest night
2. 50% of landing fees earned by IDC
3. Corporate Social Responsibility (CSR) tax contributions
4. Direct contributions from IDC
5. Direct donations from visitors and sponsorship schemes (e.g. adopt a tortoise, plant a tree)
6. Sale of souvenirs
7. Endowment fund interest income

Alphonse Foundation sets an annual budget on or before 28th February. Figures used are taken from the draft budget for 2018/9.

Operational costs

Optimal routine running costs have been calculated by ICS. Additional figures (staff costs, contribution to ICS Head Office) have been taken from the draft 2018/9 budget.

Business forecast

After climbing steadily from 2013, AIL total visitor numbers were 646 in 2015/6 and 620 in 2016/7. The number of non-angling visitors has continued to increase, and given rod limits for fly-fishing it is the non-angling sector which will provide any future expansion. AIL aims to operate at 50-60% capacity and expects tourist numbers to stay about the same over the next 5 years.

Incremental costs

An annual inflation figure of 4% has been applied to costs, based on recent values.

ICS Alphonse profit & loss forecast

Item	ICS Alphonse profit & loss 2018-2022 (SR)					
	2018	2019	2020	2021	2022	5 year total
Revenue						
Conservation levy	1,080,000	1,080,000	1,080,000	1,080,000	1,080,000	5,400,000
Landing fees	72,000	72,000	72,000	72,000	72,000	360,000
CSR tax contributions	405,000	405,000	405,000	405,000	405,000	2,025,000
Sale of souvenirs	48,000	48,000	48,000	48,000	48,000	240,000
Donations	120,000	120,000	120,000	120,000	120,000	600,000
Endowment interest	152,000	152,000	152,000	152,000	152,000	760,000
Gross revenue	1,877,000	1,877,000	1,877,000	1,877,000	1,877,000	9,385,000
Expenses						
Staff costs	555,000	555,000	555,000	555,000	555,000	2,775,000
Contribution to ICS Head Office	486,000	486,000	486,000	486,000	486,000	2,430,000
Electricity & water	120,000	124,800	129,792	134,983	140,383	649,958
Insurance	60,000	62,400	64,896	67,491	70,192	324,979
Fuel & transport	120,000	124,800	129,792	134,983	140,383	649,958
Food & accommodation for staff	120,000	124,800	129,792	134,983	140,383	649,958
Food & accommodation for visitors & researchers	30,000	31,200	32,448	33,746	35,096	162,490
Equipment	250,000	260,000	270,400	281,216	292,465	1,354,081
Maintenance & running costs	240,000	249,600	259,584	269,967	280,766	1,299,917
Maintenance of buildings	50,000	52,000	54,080	56,243	58,493	270,816
Contingency	100,000	100,000	100,000	100,000	100,000	500,000
Total expenses	2,131,000	2,170,600	2,211,784	2,254,615	2,299,159	11,067,158
Balance	-254,000	-293,600	-334,800	-377,600	-422,200	-1,682,200
Additional unfunded items from Implementation Plan						
Additional ICS staff, Alphonse & Head Office		SR330,000	624,000	624,000	624,000	2,202,000
Consultancies						1,081,000

Financing gap & funding possibilities

From 2019: Second Conservation Ranger & Asst. Conservation Officer
From 2020: Third Ranger
From 2020: Outer Islands Officer, Communications Officer, Database/IT Co-ordinator at ICS Head Office
Total costs: SR22,020,000

Contributions from other ICS island Foundations (Aride, Silhouette) may be an option, but for the purposes of the implementation plans costs of Head Office staff are divided between Alphonse, Desroches, Farquhar & Poivre Foundations. If Poivre Foundation revenue is delayed the remaining Foundations will be required to provide increased contributions.

Start times flexible depending on funding

The following unfunded consultancies are listed in the Implementation Plan. The first four will also be relevant to Desroches, Farquhar & Poivre PAs. Costs of 1, 3 & 4 are divided between the 4 Foundations. If Poivre Foundation revenue is delayed the remaining Foundations will be required to provide increased contributions.

1. 2019: Marine biosecurity plan, 10 days, SR10,800
2. 2018-2020: Impacts of sport fishing research, SR1,000,000[11]
3. 2018-19: Management Plan for commercial fin-fishery: establishment of harvest strategies, monitoring & assessment protocols for fin-fish stocks in MPAs, 15 days, SR16,200[12]
4. 2018-19: Management Plan for sea cucumber fishery, 10 days, SR10,800
5. 2019: Alphonse rat eradication plan, 10 days, SR43,200

Some possible sources of funding:

1. Government of Seychelles support budget direct grant to ICS
2. Environmental Trust Fund
3. Seychelles Conservation & Climate Adaptation Trust
4. GoS-UNDP-GEF Small Grants Programme
5. GoS-UNDP-GEF 6 Ride-to-Reef project
6. US Embassy Self-help fund
7. AusAid, Australian Direct Aid Program
8. Increase in conservation levies across all PAs
9. Increase in IDC contributions
10. One-off donations/sponsorship from organizations or private donors with a commitment to island nature conservation
11. Sources available through Seychelles Blue Economy
12. Contributions from Charter Operators
13. Cross-subsidy between islands (scope limited)

Capital expenditure

No significant infrastructure development is anticipated over the 5 years of the MP.

Conclusion

At predicted levels routine management of the Protected Areas will involve an annual deficit of several hundred thousand rupees totalling around 1.5 million over the 5 year period. Extra ICS staffing and consultancies will require additional independent grant or donor funding of over 3 million rupees if government support is not available. A Protected Area Policy commitment is to: *'Support new initiatives to find sustainable financing mechanisms for the protected areas system. This will include an examination of innovative revenue generation and incentives including public-private partnerships for biodiversity protection.'* Without adequate resources and funding, ICS will not be able to implement the management plan.

The Outer Islands Project will fund a business plan for Alphonse PAs, focusing on financing gaps identified above.

11 Likely to be funded through SeyCCAT

12 Likely to be funded through SeyCCAT

ANNEX 1. DRAFT REGULATIONS & ENFORCEMENT

NB. The Outer Islands Project will work towards gazetting of these regulations/allowable activities in co-ordination with the Marine Spatial Plan (Phase 2).

Legislation and policy

The Nature Reserve & Conservancy Act (2018) (NRC)
Developed from **The Protected Areas Policy (2013),** objectives are to provide for the protection and conservation of landscapes, seascapes, ecological diversity and the sustainable use of biological diversity by achieving an effective and multi-use protected area system that is representative, comprehensive and balanced, thereby maintaining the highest quality examples of ecosystems within the country by engaging all stakeholders. The new categories of Protected Area are those relevant to this document. When enacted, this will provide the principal legislative framework under which the Protected Areas will be managed.

Relevant governance and regulatory instruments within the framework are:

Fisheries Act 1986
Fisheries Regulations 1987
Promotes the development of a sustainable and responsible fisheries sector. It provides for restrictions on the harvesting of specific sensitive species and regulates marine habitat damage. The act also currently designates four Shell Reserves and three Fishery Reserves where licenses are required to undertake the various fishing activities allowed in such zones. All marine mammals are protected under the Fisheries Act.
Fisheries Act 2014
Wild Animals and Birds Protection Act (and associated regulations) 1966
Enables the protection of a number of keystone species in Seychelles, in particular all native bird species, turtles, whale sharks and Giant Tortoises. It also provides for the establishment and management of Nature Reserves for the purpose of protecting land and sea bird species.
Wild Animals (Turtles) Protection Regulations S/I 46/1994
National Parks and Nature Conservancy Act 1969
Maritime Zones Act
Maritime Zones (Marine Pollution) Regulations S/I 51/1981
Merchant Shipping (Oil Pollution) (Seychelles) Order 1975
Licences Act
Licences (Fisheries) Regulations S/I 24/1987
Environment Protection Act 1994
Provides for the protection, preservation and improvement of the environment and for the control of hazards to human beings, other living creatures, plants and property. The Environment Department administers the Act, and co-ordinates the activities of other agencies concerned with the protection of the environment.
Animal and Plant Biosecurity Act 2014
To prevent the entry of animal and plant pests into, and their establishment and spread in, Seychelles, to regulate and control the movement of animal and plant pests and diseases and of animals and plants and their products within Seychelles, to facilitate international trade and cooperation in respect of animal and plant pests and diseases.

The Seychelles Sustainable Development Strategy (SSDS 2012-2020) previously called the Environment Management Plan of Seychelles (EMPS) provides the overarching policy framework for sustainable development, notably biodiversity and forestry, fisheries and marine resources, the economics of sustainability, land use and coastal zones, tourism and aesthetics, as well as institutional and regulatory policy.

Outer Islands Development Plan (2006) prepared by the former Ministry of Foreign Affairs and Transport to provide guidelines to regulate all activities taking place on the Outer Islands and to ensure sustainable developments.

The Mariculture Masterplan (2014 Draft) produced by Seychelles Fishing Authority (SFA), provides a qualitative and quantitative analysis of aquaculture opportunities, specifically sea cucumber ranching and farming, fin-fish cage culture, pond farming of tiger prawns, and black pearl oyster farming.

International conventions

The Convention on Biological Diversity came into force in 1993. The three main objectives of the CBD are: the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the use of genetic resources. One of the key recommendations under the CBD was for the establishment of national systems of protected areas or areas where special measures are needed to protect biological diversity. Seychelles was an early signatory.

The International Coral Reef Initiative (ICRI) is a partnership among governments, international organizations, and non-government organizations. It strives to preserve coral reefs and related ecosystems by implementing relevant international conventions and agreements. ICRI emerged out of the recognition that the coral reefs and related ecosystems found in tropical and sub-tropical regions are facing serious degradation, primarily due to anthropogenic stresses.

The Convention on Wetlands of International Importance (Ramsar Convention) has as its aim '*the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world*'. Tidal mudflats, mangroves and some coral reefs are considered wetlands under the Convention.

Important Bird & Biodiversity Areas (IBAs) are designated by Birdlife International, using internationally agreed criteria. St. Francois was initially listed as an Important Bird Area in 1998 for the first inventory of sites, but was subsequently demoted to a shadow list due to the scarcity of relevant information. Subsequent data collected by ICS confirm the international significance of St Francois as a feeding and roosting area for non-breeding shorebirds and seabirds, and as a breeding site for Black-naped Terns of the restricted-range race *matthewsi*. A draft review of potential IBAs has also identified St Francois and Alphonse as candidates (Laselles 2014). Millett et al 2017 (annex) recommend formal acceptance of all islands of the Alphonse group as IBAs. Protected sea and land networks guided by IBAs, to include the south-central Amirantes with Poivre, Desroches and the Alphonse group, are also recommended.

Management & enforcement

The Managing Authority in the terms of the NRC will be the Island Conservation Society. Management of PAs must follow the approved management plan. Failure or inability to comply with MP priorities can result in de-listing. The PA Policy states that *'Effective regulation and control of activities in PAs depends largely on voluntary compliance, self-regulation and incentives for cooperation.'* The draft regulations will be discussed during the stakeholder consultation process and, when approved, will be well-publicised and explained. The revised legislation will clearly identify all personnel for purposes of enforcement in the PAs and the Managing Authority (ICS), in consultation with the Minister responsible for Environment, will have the power to train and appoint special enforcement officers not currently part of the enforcement agencies. These could be security officers or SPDF personnel based on the atoll. Enforcement of PA regulations and national laws in the Outer Islands will involve not just making sure visitors comply with regulations on anchoring, pollution, disturbance of wildlife etc. but could include encounters with serious criminal activities, drugs and arms. This calls for a broad-based and well-equipped response capability. The IDC Island Managers are Justices of the Peace with the power to arrest and detain. A recommended enforcement structure for Alphonse and the other Outer Islands involved in the project is:

2-3 island security staff or SPDF personnel trained[13] and appointed as Enforcement Officers, stationed on Alphonse Island under the authority of the IDC Island Manager with expertise provided by ICS and support from the tourist operator (e.g. use of fast boat). Use of Seychellois personnel in face to face encounters rather than ex-pats would be more likely to contribute to successful management of the PAs. A documented agreement between the bodies active on the atoll in consultation with Coastguard, SFA, SPDF and other mainland authorities, defining roles and responsibilities, communications procedures etc., will be required, and co-ordination with SMSP: '*Seychelles Maritime Security uses satellite imagery for surveil-*

13 If required, assistance with anti-poaching training may be available, through the French Embassy, from Brigades de la Nature (La Réunion and Mayotte).

lance and enforcement and is supportive of working with the SMSP to develop the best approach for control, monitoring and surveillance of the new marine protected areas' (from SMSP Phase 1).

A detention facility will also be needed. Powers of enforcement and penalties are defined in the NRC.

Protected Areas regulations/allowable activities

Aims:

1. To enforce protection of the PAs, in particular by preventing the introduction or spread of exotic species and the illegal or unauthorized harvesting of native biota.

2. To integrate the environmentally sustainable use and enjoyment of the PAs by Alphonse residents, visitors and commercial interests with the conservation objectives listed above so as to minimise the negative impacts of human activity.

The NRC lists prohibited activities for a terrestrial **Strict Nature Reserve** pertaining to Preservation of the Environment, obstruction of the enforcing officer, damage to infrastructure, erection of structures and fire. The Managing Authority (MA), which will be ICS, has the power through its Alphonse PA Management Plan & regulations, to authorize prohibited activities as long as they are lawful and in furtherance of management and scientific research aims.

The Management Plan will be reviewed and re-written after 5 years (2022). In line with an adaptive management approach these regulations/allowable activities will also be adjusted accordingly.

Alphonse Protected Areas draft regulations/allowable activities

Terrestrial Strict Nature Reserve (IUCN 1)

NB: It is a requirement of SNR that use & impacts are strictly controlled and visitor numbers capped.

Activity	C=allowed, conditions apply X=not permitted	Conditions
Scientific research & monitoring	C	All research & monitoring activities must comply with MP and have approval of MA & IDC Research must be fully authorized & activities, including handling, marking & sampling of species, monitored by ICS Minimal disturbance to sensitive sites (e.g. Bijoutier shearwaters)
Ecotourism **Regulated tourist visits to SNR**	C	St F max 2 visits per week, max 16 inc staff Bijoutier max 2 visits per week, max 16 inc staff Extra visit to St F or Bijoutier at peak tourist times if approved in advance by IDC & ICS One Palm Island max 3 visits per week outside BNT and (if this happens) G-c Tern breeding seasons Charter tourists: One landing visit per site by arrangement in advance with ICS & IDC (cap on numbers as above) Cruise ships: One landing visit per site by arrangement in advance with ICS & IDC (cap on numbers as above) Activities must comply with MP and have the approval of MA & IDC ICS or ICS-trained guide required Set routes to minimise disturbance No lunches on Bijoutier above MHWM Bijoutier shearwater colony to be marked off with tape and avoided Seasonal closure of Black-naped Tern sites Seasonal closure of Great-crested Tern sites should they attempt breeding MA has flexibility to manage regulation of visits to SNR according to season, tides & prevailing circumstances
Fly-fishing from beaches	C	Not above MHWM SFC guides to ensure minimal disturbance to birds,turtles & sensitive areas*

Beaching of boat	C	Authorized activities only, anchor offshore whenever feasible Subject to biosecurity protocols In compliance with MP & visits restrictions above
Surveillance & enforcement	C	Patrol & response in line with S & E protocols (to be agreed) Surveillance & enforcement plan is a Governance objective
Extractive activities	C	Conservation or scientific purposes only unless authorized by MA Must comply with MP and be approved by MA & IDC
Development	C	Not permitted apart from (if required): Basic Ranger station St Francois (option stipulated by IDC) Wildlife viewing screens
Educational visits	C	By arrangement with ICS and approval of IDC Numbers, duration and frequency regulated, as for ecotourism ICS guide Set route to minimise disturbance
Vegetation management	C	As required (e.g. storm damage) with approval of MA & IDC Overseen or carried out by ICS Minimal vegetation management required
Clearance of debris & pollution	C	Scheduled beach-clean Clearance of hazardous debris e.g. FADs Clean-up of significant pollution events e.g. oil-spill Avoidance of sensitive areas* where possible
Mariculture, land-based	X	
Overnight visits	C	Scientific & conservation purposes only, unless authorized by MA Monitored or conducted by ICS, with approval of IDC
***Sensitive areas: Black-naped Tern colonies, Wedge-tailed Shearwater colonies, freshwater pool, seabird roost sites (boobies & frigatebirds), shorebird roost sites, badly eroded sites (e.g. part of Bijoutier coastline). See zoning maps.**		

Alphonse & St Francois Marine Sustainable Use Zone (IUCN VI) draft regulations

Draft regulations are adapted from allowable activities defined in the Seychelles Marine Spatial Planning initiative, which allows for specific regulations within MPAs relevant to each site.

Nature Protection and Conservancy (Sustainable Use Prohibited Activities) Regulations state that 'No person shall undertake any activity contrary to the management plan of the Sustainable Use Area'.

Activity	C=allowed, conditions apply X=not permitted	Conditions
Scientific research & monitoring	C	Monitoring & research activities must comply with MP and have MA & IDC approval Research, including handling, marking & sampling of species, must be fully authorized and activities monitored by ICS Minimal disturbance to species & habitats
Surveillance & enforcement	C	Patrol & response in line with S & E protocols (to be agreed) Surveillance & enforcement plan is a Governance objective
Commercial fishing, demersal	C	Regulated by fishery management plan (tbd) Not in lagoons Fishing which targets sharks or rays is not permitted (below) Semi-industrial long-liners voluntarily do not operate at less than 200 m depth (SMSP)
Fishing, sea cucumber	C	Regulated by Alphonse fishery management plan (tbd) Not in lagoons Avoid sensitive reef areas* Sea cucumber fishing is regulated by SFA
Fishing, targeting elasmobranchs (sharks & rays)	X	
Fishing island subsistence	C	Subject to agreed policy & MP

		Consultation process with IDC and agreed plan are MP targets for a sustainable fishery
Fishing, trap/net	C	Trap only, when weather restricts hook & line subsistence fishing
Fishing, sport catch & release	C	Subject to MP zoning for sensitive areas Subject to SFC sustainable management guidelines including rod limits & rotation of trampling Avoid channel-cutting in seagrass beds
Fishing, sport catch & take	C	Island-based: for island subsistence only Visiting vessels: subject to bag limit & equipment controls (tbd)
Fishing, spinning, popping, teasing	C	Offshore only, not within 500 m of reef
Ecotourism	C	Regulated lunch visits to flats: Max. 2 per week, max. 90 inc staff Extra lunch visit at peak tourist times if approved in advance by IDC & ICS Avoidance of sensitive areas Avoid channel-cutting in seagrass beds MA has flexibility to manage regulation of visits to SUZ according to season, tides & prevailing circumstances
Boating, sport/recreation Small boat use Sailing Kayaking Sailboarding	C	Subject to MP zoning for sensitive areas, boat channels, mooring areas & designated anchor sites No sailing St Francois lagoon Avoid channel-cutting in seagrass beds
Cruise ship	C	ICS guidance prior to use of MPA Subject to MP zoning for sensitive areas, boat channels, mooring sites & designated anchor sites
Boating, supply & transport	C	Subject to MP zoning for sensitive areas, & boat channels – anchor only at designated sites or use surface mooring lines provided Avoid channel-cutting in seagrass beds
Recreational jet ski	X	
Recreational non-motorised activities (e.g. diving, snorkeling, swimming, walking)	C	Subject to MP zoning for sensitive areas, boat channels, anchor & mooring areas Code of Conduct for diving & snorkeling Approach dive sites by tender Alphonse Dive Centre guide for visiting divers where possible Flats walks led by ICS or TO guide
Anchoring/mooring	C	Subject to MP zoning for sensitive areas & boat channels, anchor only at designated sites
Extractive activities	C	Regulated commercial, subsistence & sport fishing Conservation or scientific purposes Mariculture No removal of marine invertebrates for non-scientific purposes, unless approved by MA Closure of SPAGS to all fishing activity Nov-Feb except for: removal of 6-8 groupers per season which may be requested for mariculture Corals may be requested for re-seeding purposes elsewhere All activities must comply with MP and have approval of MA & IDC
Mariculture, marine-based	C	Authorized extraction of groupers as above by arrangement with IDC & MA No other mariculture activities
Jetty/harbour/groyne/erosion defence Alphonse only	C	To serve staff or infrastructure of PA management and support Must have approval of MA & IDC & comply with MP Environmental Impact Assessment required
Renewable energy	C	e.g. solar, wind, to serve staff or infrastructure of PA management and support Must have approval of IDC & comply with MP Environmental Impact Assessment required
Dredging	C	To serve staff or infrastructure of PA management and support Must have approval of IDC & comply with MP Environmental Impact Assessment required

Reclamation	C	To serve staff or infrastructure of PA management and support Must have approval of IDC & comply with MP Environmental Impact Assessment required
Disposal & dumping	X	Visiting vessels must not discharge ballast or any other materials within MPAs
Deep sea mining	X	
Petroleum exploration geophysical & drilling survey	X	
Industrial petroleum production & transport	X	
***Sensitive areas: corals, seagrass, spawning sites. See zoning map.**		

ANNEX 2. ICS MANAGEMENT & MONITORING PROGRAMMES

Ecological value	Actions
Terrestrial & marine habitats	Categorisation & mapping
Marine mammals	Visual and/or acoustic survey
Seabirds	Annual census, breeding activity, selective breeding success, research
Waterbirds	Systematic census
Landbirds	Annual census or estimate, breeding activity
Vagrant birds	Submission of records to Seychelles Bird Records Committee
Marine turtles	Track counts, nesting activity, breeding success, disease, tagging, satellite tracking, population genetics, foraging areas, juvenile growth, numbers & distribution
Giant Tortoise	Census, growth & breeding
Other reptiles	Opportunistic recording
Marine fish	Abundance, distribution & diversity, research
Subsistence fishing	Locality, effort, total weight, species by number & mean length
Corals	Live cover, diversity, distribution, recruitment, health
Sea cucumbers	Density, diversity, size & distribution
Other marine invertebrates	Density, diversity, distribution, opportunistic recording
Seagrass	Distribution, diversity, health
Terrestrial invertebrates	Opportunistic recording
Plants	Opportunistic survey & recording
Mangrove	Distribution, diversity & growth patterns, health
Marine & terrestrial IAS	Monitoring, control & recording
Sea surface temperature	Data from deployed loggers
Beach profile, erosion/accretion	Systematic monitoring
Marine debris inc. FADs	Abundance & distrbution

In addition to standardised protocols maintained by ICS, specialist documents produced under the current GOS/UNDP/GEF Project *Expansion and Strengthening of the Protected Areas Subsystem of the Outer Islands of* Seychelles *and its integration into the broader land and seascape* contain analysis, monitoring & management protocols directly relevant to management of the Alphonse protected areas:

Sea Turtle Management Plan & rationale for monitoring protocols for UNDP-GEF OIP Outer Islands Protected Areas (and associated protocols) (Dr Jeanne A. Mortimer 2017).

Protocol for the monitoring of subsistence fisheries in the Seychelles Outer Islands
R Scripts for the visualisation and analysis of Subsistence Fishing Data
Identification Guide for fish caught in the subsistence fishery, Seychelles Outer Islands
Protocol for the monitoring of spawning aggregations of Brown-marbled (*Epinephelus fuscoguttatus*) and Camouflage (*E. polyphekadion*) Groupers in the Seychelles Outer Islands
(Jude Bijoux, Fisheries & Marine Consultancy Services 2017)

Citizen Science Programme Final Report & Codes of Conduct (Joanna Bluemel & Peter Holden (2017)

Coastal Erosion Assessment, Mitigation Strategies and Beach Profile Monitoring Protocol for Alphonse and Desroches Islands (Dr Ashton J. Berry 2016)
Coastal erosion: sand beach profile monitoring protocol for Farquhar, Alphonse group & Desroches (Pep Nogués 2017)

Conservation Management Plan for mangroves of the Outer Islands (Dr Ashton Berry & Sylvanna Antat 2017)
Monitoring Protocol for mangroves of the Outer Islands (Sylvanna Antat, Pierre-Andre Adam, Dr. Jeanne A. Mortimer & Dr Ashton J. Berry 2017)

Alphonse coral reef management plan (& monitoring protocol) (David Obura, Mishal Gudka, James Mbugua and Dismas Ayuya 2017)
ICS coral reef monitoring plan (David Obura & Mishal Gudka 2017)
Coral collection facility (David Obura 2017)

Seabird Management Plan for Alphonse and monitoring & training protocols
Long-term Seabird Monitoring Objectives for the Outer Islands
Seabird Monitoring Protocols for Proposed Protected Areas in the Outer Islands of Seychelles
ICS Seabird Research Priorities
Breeding seabird database
Shorebird count database
(James Millett, Rachel Bristol & Chris Feare 2017)

Pest abatement measures for the Outer Islands in the Seychelles for UNDP-GEF OIP Outer Islands Protected Areas (James Millett 2017)

Seagrass monitoring protocols (ICS, in prep)

Terrestrial & marine habitat maps for Alphonse (ICS)

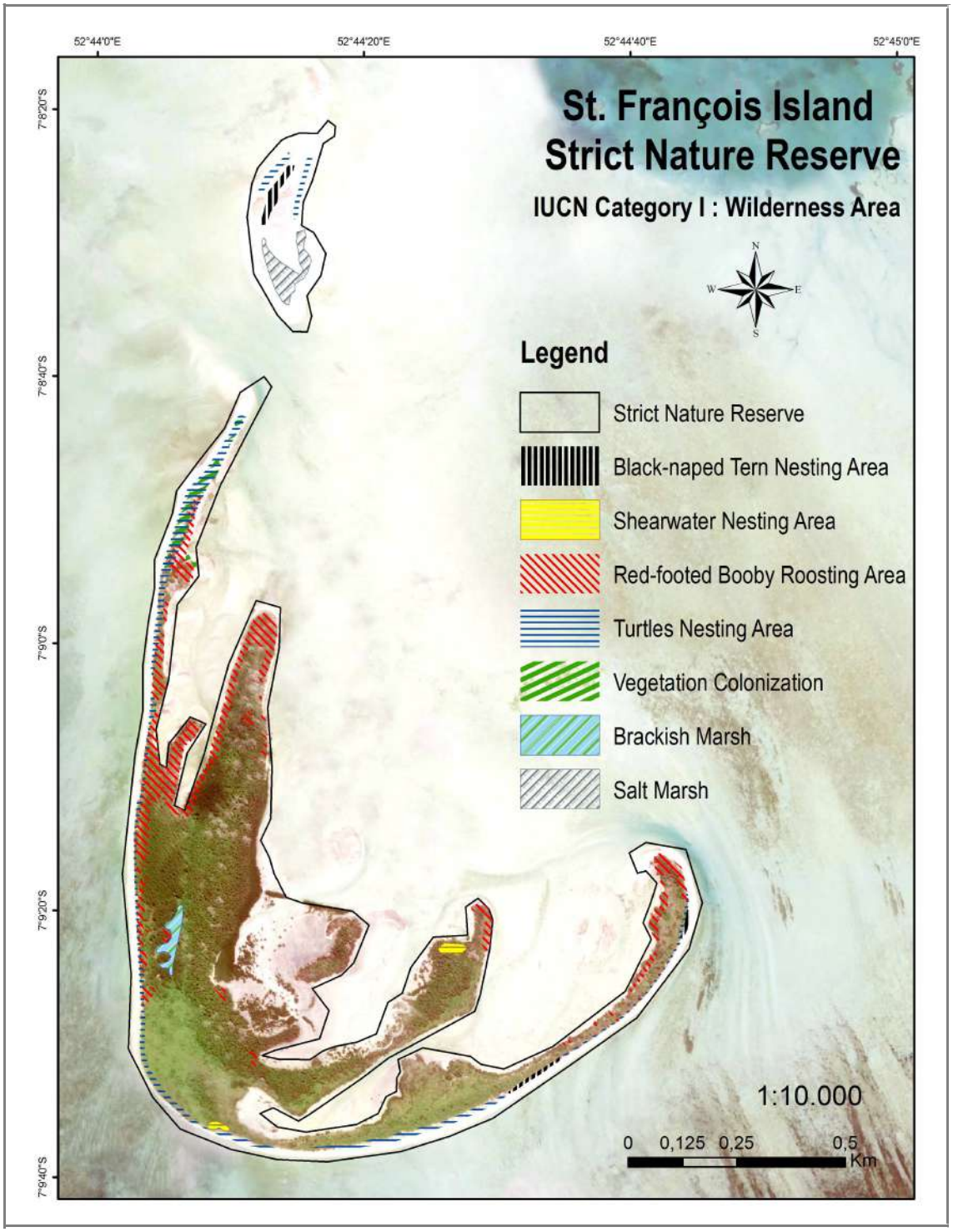
Standardization of data collection and creation of a biodiversity database: a PostgreSQL-PostGIS database for Island Conservation Society (Bruno Senterre & Michael Wagner 2016)

Anchoring and Mooring in the Alphonse Group, Seychelles Outer Islands Alphonse Group Conservation Centre, Island Conservation Society (Pep Nogués, Ari Fernandez & Chris Narty 2018)

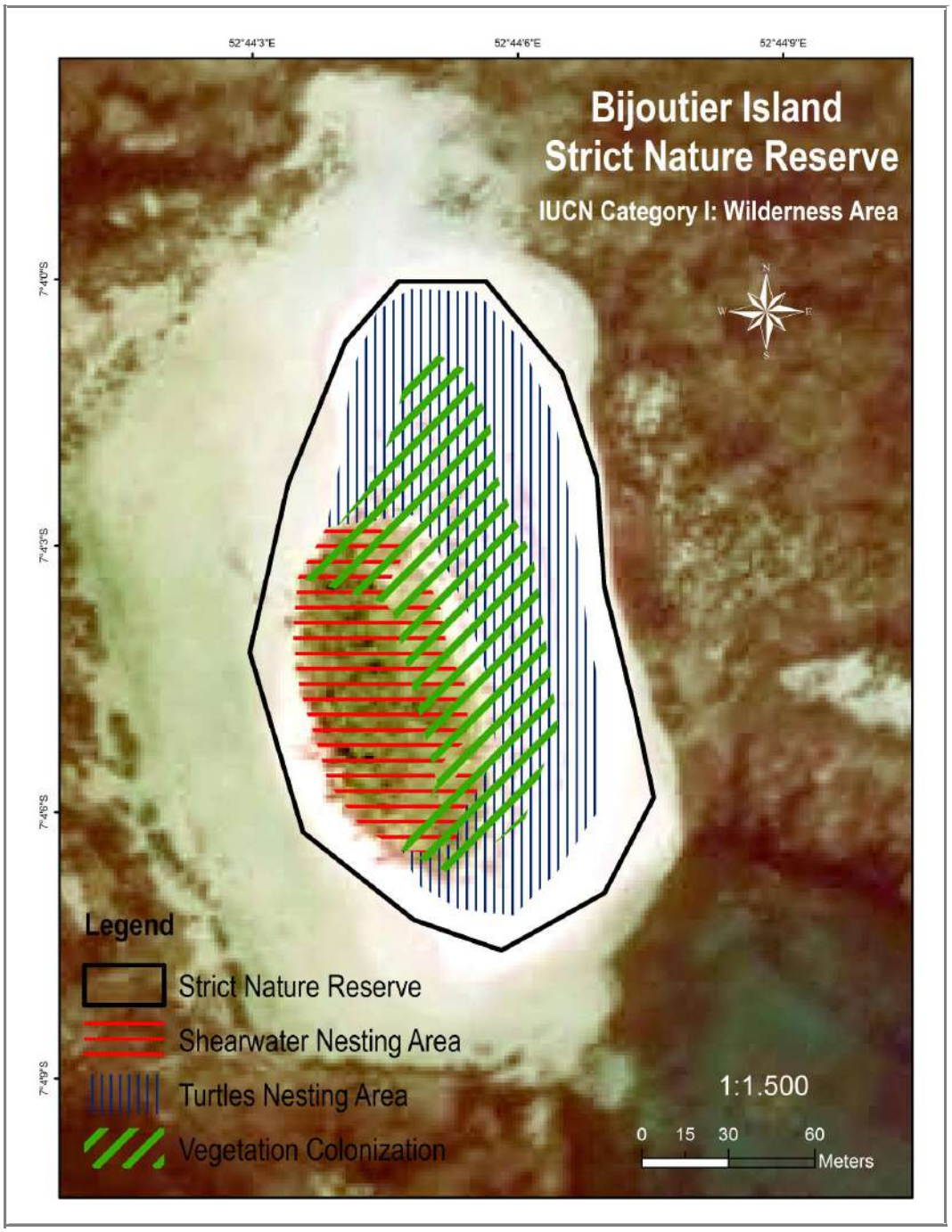
See also: **Alphonse Conservation Management Plan** for Alphonse Foundation (Michael Betts 2009)

ANNEX 3. STRICT NATURE RESERVE SENSITIVE AREAS

St Francois & One Palm Island SNR



Bijoutier SNR



ANNEX 4: IMPLEMENTATION PLAN

Items not covered by recurring annual budget

Management programme & activity	Inputs required	Responsible	Costs (SR)						
			2018	2019	2020	2021	2022	5 year total	Notes
1. Governance									
1.1 St Francois, Bijoutier & One Palm Island are legally gazetted as a Strict Nature Reserve and Alphonse and St Francois marine waters within a 21.9 x 9.5 km rectangle enclosing both atolls as Sustainable Use Zone under the Nature Reserves and Conservancy Act 2018	GIS mapping of PA boundaries	MHILT							MHILT from own budget
	Preparation of Nomination File, to include this Management Plan	Consultant (10 days?)	43,200					43,200	*Expansion and Strengthening of the Protected Areas Subsystem* budget
	Stakeholder consultation & validation of MP	MP consultant							Part of this plan, from *Expansion and Strengthening of the Protected Areas Subsystem* budget
	Submission of Nomination File, Cabinet Memo etc.	MEECC (DoE)							Technical support provided by DoE from own budget
1.2 Management regulations for St Francois, Bijoutier & One Palm Island Strict Nature Reserve and Alphonse and St Francois Sustainable Use Zone are issued by Minister MEECC as per provisions of the Nature Reserves and Conservancy Act 2018	Preparation of PA regulations	MP consultant							Part of this plan, from *Expansion and Strengthening of the Protected Areas Subsystem* budget
	Stakeholder consultation over regulations with particular regard to: Management of commercial fishing in the Sustainable Use Zone Cap on tourist use of Strict Nature Reserve Access to PAs for independent operators	MP consultant							Part of this plan, from *Expansion and Strengthening of the Protected Areas Subsystem* budget
	Submission of agreed regulations to the Minister MEECC (legal support)	MEECC (DoE)							Technical support provided by DoE from own budget
1.3 Rapid response to oil spill	Ensure readiness to implement National Oil Spill Contingency Plan	IDC							
1.4 Effective operational surveillance & enforcement structure for PAs by 2020	Registration of MPA with International Maritime Organization	MEECC							
	Agreement drafted between IDC, ICS, TO, SPDF, MEECC & AF defining duties, responsibilities & communications protocols for systematic surveillance, response & enforcement of PA regulations & national laws	ICS							Consultation with Coastguard, SFA & MCSD

	Training and authorization of enforcement officers, training as required for ICS & IDC staff	MEECC							MEECC (DoE) budget
	Managing Authority to provide staff with document detailing regulatory basis for enforcement interventions	ICS							Credentials for wardening & enforcement staff
1.5 Optimal ICS staffing for management of PAs by 2020	Add Asst CO, 2nd & 3rd Rangers to Alphonse staff, Outer Islands Officer, Communications Officer & Database Co-ordinator to Head Office staff	AF		2rd Ranger & ACO SR330,000	Plus 3rd Ranger 480,000 Plus one fourth of 3 Head Office posts costs SR144,000	624,000	624,000	2,202,000	Asst CO @ SR15,000/mth, Ranger @ 12,500/mth OI Officer @ 16,000/mth* Comms Officer @ 16,000/mth* Data/IT Co-ord 16,000/mth* *Costs split between 4 atoll Foundations
1.6 Annual budget finalized not later than 28th February	Annual work plan & budget produced by Conservation Officers, reviewed by ICS Head Office and approved by AF exercising cost control	ICS							
2. Biosecurity									
2.1 No new Invasive Alien Species established in Protected Areas by 2022 (rats colonising St Francois or Bijoutier from Alphonse is a major threat)	Implement Pest Abatement measures for the Outer Islands	IDC							ICS monitoring, TO support
	Implement Alphonse Seabirds Management Plan Invasive Species management actions	ICS							ICS oversight & monitoring, IDC & TO support
	Monitor IAS in Protected Areas	ICS							Ongoing priority activity
	Develop marine biosecurity plan	Consultant (10 days?)		SR10,800 (one fourth of 43,200)				10,800	Relevant to Desroches, Farquhar & Poivre MPAs, costs divided between the 4 Foundations
	Develop Alphonse rat Eradication Plan	Consultant (10 days?)		43,200				43,200	
	Assess feasibility of biosecurity facility at Alphonse for examination of materials brought in by sea or air	IDC							Estimate for 50m^2 SR400,000 Rocamora & Henriette 2015
Management programme & activity	**Inputs required**	**Responsible**	**Costs (SR)**						
			2018	**2019**	**2020**	**2021**	**2022**	**5 year total**	**Notes**
3. Ecotourism									
3.1 No significant negative impacts on PA fish populations and habitats recorded by 2022 due to sport fishing activities	Ensure compliance with sport fishery Code of Conduct, rod limits & rotation of trampling pressure	ICS							Support from TO Code of Conduct Bluemel & Holden (annex), ICS Outer Islands Visitor guidebook

	Establish consensus & protocols on minimising pressures on biodiversity areas within SUZ	ICS							IDC & SFC support
	Design & implement research into impacts of fly-fishing on target species and habitats	Consultant	400,000	300,000	300,000			1,000,000	Proposal submitted to SeyCCAT for funding
	Ensure no targeting or mistreatment of sharks	ICS							Support from IDC & SFC Ongoing priority activity
	Develop bag limit & equipment controls protocols for catch & take sport fishery, consultation through SSFC	ICS							
	Maintain ICS/SFC data-sharing agreement & analyse existing fishery data	ICS							Support from SFC
	Establish data-sharing with SFCS/SFA tagging programme	ICS							
3.2 No significant negative impacts on ecology of PAs recorded by 2022 due to ecotourist activities	All ecotourism activities to comply with this management plan and Codes of Conduct and have the approval of the Managing Authority & IDC	IDC							Codes of Conduct Bluemel & Holden (annex) ICS Outer Islands Visitor Guidebook
	Encourage use of green energy options	IDC							
	Ensure clean & efficient operation of infrastructure	IDC							
	Ensure proposals for groynes, jetties & erosion defences are assessed for environmental impacts	IDC							
	Ensure all tour operators and visitors are fully aware of regulations within this Plan and of PA legislation	ICS							Ongoing priority activity
	Implement ICS Communications Strategy	ICS							
	Regulate visits to St Francois, Bijoutier & One Palm Island SNR	IDC							Support from TO, monitored by ICS
	Assess feasibility of viewing screen(s) at St Francois to reduce disturbance	IDC		5,000				5,000	
	Regulate cruise ship visits to PAs	IDC							
	Alphonse Dive Centre staff to guide visiting divers	TO							
	Designate sand/rubble anchor sites	ICS							Support from IDC & TO
	Ensure anchoring at designated sand/rubble sites only and use tenders to approach dive sites	IDC							Support from ICS, TO & AHOA

	Assess feasibility of permanent moorings with charge for use by visiting vessels	IDC							
	Apply Code of Conduct for whale & turtle watching	TO							ICS Outer Islands Visitor Guidebook
	Provision of guides & training for PA visits	ICS							Ongoing priority activity
	ICS presentations and interaction with visitors to encourage them to feel part of conservation effort & understand PA regulations & management aims	ICS							Ongoing priority activity
3.3 No decline in visitor numbers or conservation revenue by 2022	Support TO marketing of Alphonse as a success story for conservation & ecotourism	ICS							Alphonse Foundation brochure 2017
	Streamline permissions process for visiting operators, consider seasonal permit, revocable if mis-used	IDC							Support from ICS
3.4 No decline detected by 2022 in quality of those aspects of the PAs of significance to tourism	Maintain compliance with PA regulations	ICS							
	Visitor satisfaction survey	TO							Ongoing
Management programme & activity	**Inputs required**	**Responsible**	**Costs (SR)**						
			2018	**2019**	**2020**	**2021**	**2022**	**5 year total**	**Notes**
4. Commercial & subsistence fishing, mariculture									
4.1 Sustainable commercial fishery plan operating by 2020	Calculate reef fin-fish biomass	ICS							
	Establish harvest strategies, monitoring & assessment protocols through research & consultation with stakeholders: a management plan	Consultant (15 days)	SR16,200 (one fourth of 64,800)					16,200	Potential consultant SwioFISH, funded through SeyCCAT & relevant to Desroches, Farquhar & Poivre, costs divided between the 4 Foundations
	As above, MP for sea cucumbers, consultation inc. SFA, AMSSI & other stakeholders	Consultant (10 days)	SR10,800 (one fourth of 43,200)					10,800	Relevant to Desroches, Farquhar & Poivre, cost divided between the 4 Foundations
	No extraction of 3 grouper species (*Epinephelus polyphekadion, E. fuscoguttatus, Plectropomus punctatus*) within MPA November to February inclusive, with exception for possible removal of 6-8 fish for Inner Islands mariculture 4.3 below Implement ICS SPAGS protocols	IDC							ICS & TO support
	Prevent poaching & unauthorised fishing, including targeted fishing for	IDC							Support from enforcement officers

	elasmobranchs (sharks & rays)								
4.2 Sustainable subsistence fishery plan operating by 2019	Analysis of existing data & calculation of current fin-fish stocks in MPAs (as 4.1 above)	Consultant (as 4.1 above)							
	Consultation on reef fish catch limits, rotation of fishing pressure & minimising pressure on biodiversity areas	ICS							ICS & IDC consultation, reference Aldabra Management Plan
	ICS to continue monitoring of all subsistence fish catch	ICS							Ongoing priority activity
	Large, slow-growing species such as sharks, rays, Potato Grouper & Napoleon Wrasse to be released where possible. Provide tools for swim bladder correction before release	IDC							Support from ICS & TO
	Catch for island consumption only	IDC							
4.3 Controlled & non-disruptive removal of groupers from Spawning Aggregation Sites	Provide access to SPAGS for extraction of 6-8 groupers per season for Inner Islands fish farming	IDC							
	Monitoring & annual reporting of activities	ICS							Ongoing priority activity
	Implement ICS SPAGS protocol	ICS							In consultation with IDC
4.4 No significant negative impacts on MPA ecology recorded annually	Maintain monitoring of key groups (fish, sea cucumbers, corals)	ICS							Ongoing priority activity
	Analyse data with reference to fishing activities	ICS							
Management programme & activity	**Inputs required**	**Responsible**	**Costs (SR)**						
			2018	**2019**	**2020**	**2021**	**2022**	**5 year total**	**Notes**
5. Research, monitoring & conservation									
5.1 PAs used for research which will increase understanding of key species, habitats and processes and of climate change, and support PA management, minimum one publishable project per year	Identify key areas of research which will support PA management	ICS							Support from ICS Science Committee
	Investigate partnerships and collaborations in line with key research areas	ICS							Support from ICS Science Committee
	Identify and cost facilities likely to attract researchers for priority projects	ICS							Support from ICS Science Committee
5.2 Ecologically and ethically sustainable research only	Ensure research projects are assessed by ICS science committee and authorised by SBS, MEECC, IDC and the Board of the Alphonse Foundation	ICS							Ongoing priority activity
	Monitor research activities and require	ICS							Ongoing priority activity

	regular and final reporting								
5.3 Annual report on natural & anthropogenic changes in key habitats by following February	Conduct monitoring according to the protocols developed (see Annex)	ICS							Ongoing priority activity, operational budget
	Trend analyses to include interpretation for climate change	ICS							
5.4 Annual report on numbers, reproductive success and trends in key animal & plant species by following February	Conduct monitoring according to ICS standard protocols (& annex)	ICS							Ongoing priority activity, operational budget
	Trend analyses to include interpretation for climate change	ICS							
5.5 Integrated database by 2020	Develop integrated data system & work towards national biodiversity database	ICS							Ref. Senterre & Wagner (annex)
5.6 Support for assessment of management plan's effectiveness at mid and end points, 2020 & 2022	Review monitoring programme at Plan's halfway and end points for relevance to management objectives & adjust accordingly	ICS							Support from ICS Science Committee
5.7 Clean environment maintained annually	Maintain regular beach clean	ICS							Support from IDC & TO, operational budget
	Maintain & improve FAD Watch & removal programme	ICS							Support from IDC & TO, operational budget
	Ensure boat use & other research, monitoring & conservation activities in MPA are non-damaging & non-polluting	ICS							Oil spill response is a Governance objective
5.8 Feasibility of small Ranger hut on St Francois assessed	Assess pros & cons, siting & design, & cost	IDC							
Management programme & activity	**Inputs required**	**Responsible**	**Costs (SR)**						
			2018	**2019**	**2020**	**2021**	**2022**	**5 year total**	**Notes**
6. Cultural & aesthetic									
6.1 Island staff enjoy PAs with minimal negative impacts, annual review	Ensure that all island staff are aware of Alphonse PA regulations and of PA legislation	ICS							
	Ensure that staff infrastructure, equipment and activities are conducted or operated in a manner that is sustainable and non-damaging to the PAs	IDC							
	Encourage development of leisure-time interest options and occupations for island staff	TO							
	ICS to liaise closely with IDC & TO to enforce regulations, deal with transgressions & report annually	ICS							Include in annual report

6.2 No decline detected by 2022 in those aspects of the PAs of significance to the island life of workers	Identify those PA values important to workers in review of MP performance at mid and end point of Plan, 2020 & 2022	TO							Support from IDC
6.3 No decline detected by 2020 & 2022 in aesthetic features of PAs contributing to impression of remoteness	Ensure that any proposed new structures (ranger's hut, viewing screen) within PAs will not diminish aesthetic features	IDC							
	Ensure that any proposed developments on Alphonse Island will not diminish aesthetic features of the PAs through visual or other impacts	IDC							
	Maintain beach and lagoon clean-ups as 5.7	ICS							
	Review in mid and end point assessments of Plan	ICS							
6.4 Sustainable subsistence fishery adequate for island needs by 2019 (see also 4.2 above)	Monitor catch relative to island consumption needs	IDC							

ANNEX 5: PARTICIPANTS AT PRESENTATION OF MANAGEMENT PLANS

GOS-UNDP-GEF OUTER ISLANDS PROJECT

DATE: 4/JUNE/2018. LOCATION: PCU meeting Room

EVENT: Protected Area Mgt plan - Poivre, Desroches, Alphonse, Farquhar

NO	Name	Organisation	Email	Contact	Signature
1	Louis Desnousse	Tourism	ldesnousse@tourism.gov.sc	2724234	
2	Veronique Hibon-Gerard	SMSA	[illegible]	2581168	
3	Jan Robinson	Sverofish	janrobinson71@gmail.com		
4	~~Nicola~~ Natalie Bodin	SFA	nbodin@sfa.sc		
5	Martin Callow	SEYCAT	mcallow@seyccat.org		
6	Joanna Prosper	PCU			
7	Mike Betts	Consultant			

GOS-UNDP-GEF OUTER ISLANDS PROJECT

DATE: 6/6/18 LOCATION: PCU Meeting Room

EVENT: Protected Area Management Plan Presentation OIP

NO	Name	Organisation	Email	Contact	Signature
1	Pierre-Andre Adam	ICS	science@ics.sc	4375354	
2	Annabelle Cupidon	ICS	nanabel06@yahoo.fr		
3	Hannah Hames	WiseOceans	hannah@wiseoceans.com	—	
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5	AMEER EBRAHIM	CONSULTANT	ameer.ebrahim@griffithuni.edu.au	2822066	
6	Ashley Dias	MEECC	a.dias@env.gov.sc	2727006	
7	Dominique Ann	MEECC	D.D.n@gmail.com	2536117	
8	Charles Morel	National Herbarium	charles6422@gmail.com	2520596	
9	Edwin Palmer	ICS	edwinpalmers@gmail.com	2520003	Edwin S. Palmers
10	Rachel Bristol	—	rachelbristol@seychelles.net	2560778	
11	Michelle Murray	ICS	ceo@ics.sc	2632045	
12	James Mazlan	PCU	jcmcdell2005@yahoo.ca	2754287	
13	Joanna Prosper	PCU			
14	Mike Betts	Consultant			
15	Andy Rylance	PCU			

GOS-UNDP-GEF OUTER ISLANDS PROJECT

DATE: 6/6/18 LOCATION: PCU meeting Room

EVENT: OIP Conservation Management Plan Presentation

NO	Name	Organisation	Email	Contact	Signature
16	Jeanne Mortimer	ICS			
17	Daig Romain	PCU - PAF			
18	Bernard Belle	MHILT - Consultant hand line plans			
19	Sylvanna Antat	Unisey - Consultant mangroves			
20	Gerard Rocamora	ICS			

GOS-UNDP-GEF OUTER ISLANDS PROJECT

DATE: 7/June 2018 LOCATION: PCU Meeting Room

EVENT: Charter Operators/fishing sports - PA management Plan.

NO	Name	Organisation	Email	Contact	Signature
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	Edwin Adrienne	Seyscapes Yacht Charter	deeja2267@gmail.com	2575048	
	Amit Wasserberg	Silhouette cruises	amit@seychelles-cruises.com	2514051	
	Didier Dugasse	VPM-Bestsail	Seychelles@vpm-bestsail.com	2516946	
	Joanna Prosper	PCU			
	Mike Betts	Consultant			

GOS-UNDP-GEF OUTER ISLANDS PROJECT

DATE: 8th June 2018 LOCATION: PCU Meeting Room

EVENT: PA Management Plan Alphane, Desroches, Farquhar & Poivre

NO	Name	Organisation	Email	Contact	Signature
1.	Michelle Murray	ICS	ceo@ics.sc	2632045	
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	Glemy Day	SDC			
	Joanna Prosper	PCU			
	Denis Matatiken	GOS DOE			
	Mike Betts	Consultant			

DATE: 9 June 2018 LOCATION: Praslin Baptist Center

EVENT: PA Mg plan presentation: Praslin & La Digue Stakeholders

NO	Name	Organisation	Email	Contact
1	Remy Ursenie	Fishermen	La Digue.	2505166
2	Ernest Constance	"	"	2632612
3	Angelin Boudreau	Fishermen	"	2756509
4	Fred Lespérance.		PFA.	2590258
5	Teddy Stravens		FBOA/PFA	2530920.
6	Mastura Gilbert		PFA	2533759.
7	Richard Bony		FBOA.	2524008.
8	Nigel Marcelline		PFA/FBOA	4234237.
9	Pascal André.		PFA/FBOA.	4233973.
10	George Souffe		PFA/FBOA	2513349.
11	ALF LABONTE	Fisherman	FBOA	2781674
12	Julian Lepathy	Fisherman	FBOA	2516320
13	ELUCS DIAGWALL	FISHERMAN	FBOA	2520571

NO	Name	Organisation	Email	Contact
14	Emmanuel Rose		La Digue	2502546
15	Roy PAPET	LASOSIASYON PESEP LADRIG	payetray@gmail.com	2544944
16	Marvin Smith.	Sea Cucumber Association	La Digue.	2773781.
17	Michelle Murray	ICS		
18	Mike Betts	Consultant		
19	Lisette Rose	PCU		
20	Joanna Prosper	PCU		