FISHERIES MANAGEMENT PLAN

for the Pitcairn Islands Coastal Conservation Areas

Final Version

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AUTHORS

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LIST OF ACRONYMS

BRUV	Baited Remote Underwater Videography
CCA	Coastal Conservation Area
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EEZ	Exclusive Economic Zone
GPI	Government of Pitcairn Islands
IUCN	International Union for Conservation of Nature
LMMA	Locally Managed Marine Area
ECNRD	Environmental, Conservation & Natural Resources Division (Government of Pitcairn)
PIC	Pitcairn Island Council
SPC	Secretariat of the Pacific Commission
UKOT	United Kingdom Overseas Territory

1. INTRODUCTION

The seas which isolate Pitcairn's island community undeniably shape their livelihoods and future welfare. The Pitcairn Islands are accessible only by boat, hence the Pitcairn islander's closest links to air transportation and civilisation are some 540 km west of Pitcairn in the Gambier Islands, French Polynesia. Given their extremely remote location and difficulties of access, the Pitcairn Islands' marine habitats are one of the United Kingdom Overseas Territories' (UKOT) least known ecosystems. Because the Pitcairn Islands' underwater status continues to remain relatively undiscovered, there exists a gap in our knowledge regarding the condition of the island group's marine ecosystem health and status of marine species populations. The local economy of the Pitcairn Islands is reliant primarily on tourism as the main source of income. This is achieved principally through the sale of souvenirs, landing and accommodation fees charged to visitors and the sale of Pitcairn products such as honey, stamps, postcards, 'signature' clothing/accessories and traditional crafts such as wood carvings. Crucially, the small local community has traditionally supported their livelihoods through fishing - for food and the occasional sale of fish and lobster to cruise ships and island visitors, providing some income support (Coghlan *et al*., 2017).

Good quality fisheries information and a full understanding of local fishing practices underpin the success of any fisheries management plan. Adopting a precautionary principle (UNESCO, 2005), protecting Pitcairn's marine environment through its sustainable management establishes one pathway, the most crucial, to benefit the present and future generations of Pitcairn islanders, as well as conserve the island's unique and unspoiled marine ecosystems and biodiversity. Following the legal designation of the Pitcairn Islands Marine Reserve on 14th September 2016 by the UK Government (PEW, 2016), legislation was introduced to establish an Ordinance to provide for the conservation and protection of the Pitcairn islands' marine environment (GPI, 2016). The Pitcairn Islands Marine Protected Area Ordinance 2016 establishes a zonation scheme for the whole of the Pitcairn Islands Exclusive Economic Zone (EEZ) and introduces the Coastal Conservation Areas (CCA). The fishery management plan for the Pitcairn Islands Coastal Conservation Areas aims to establish a set of guidelines, practices and regulations to ensure that the fisheries of the coastal and inshore areas of the Pitcairn islands are biologically sustainable and that the local community who depend on the fisheries for their livelihood continue to get this benefit. The plan promotes a Locally Managed Marine Areas (LMMAs) framework and has been developed based on workshops, stakeholder consultations, field surveys and the results of previous research conducted on the fisheries.

2. DEFINITION OF GEOGRAPHIC AREA

The Fisheries Management Plan applies only to the Coastal Conservation Areas (CCAs) in the Pitcairn Islands Marine Protected Area (Figure 1), which are defined as:

(a) the territorial seas around Pitcairn, Henderson, Ducie and Oeno Islands;

(b) the area within 2 nautical miles of 40 mile reef; and

(c) a transit zone between Pitcairn Island and 40 mile reef as described in Schedule 2 of the Pitcairn Islands Marine Protected Area Ordinance 2016 (GPI, 2016).

For the purpose of clarification, "territorial sea" means –

(d) in relation to Pitcairn and Henderson Islands, any part of the sea within 12 nautical miles measured from the nearest point of the low-water line along the coast; and

(e) in relation to Ducie and Oeno Islands, any part of the sea within 12 nautical miles measured from the nearest point of the seaward low-water line of the exposed reef (motus), together with the lagoons of those islands.

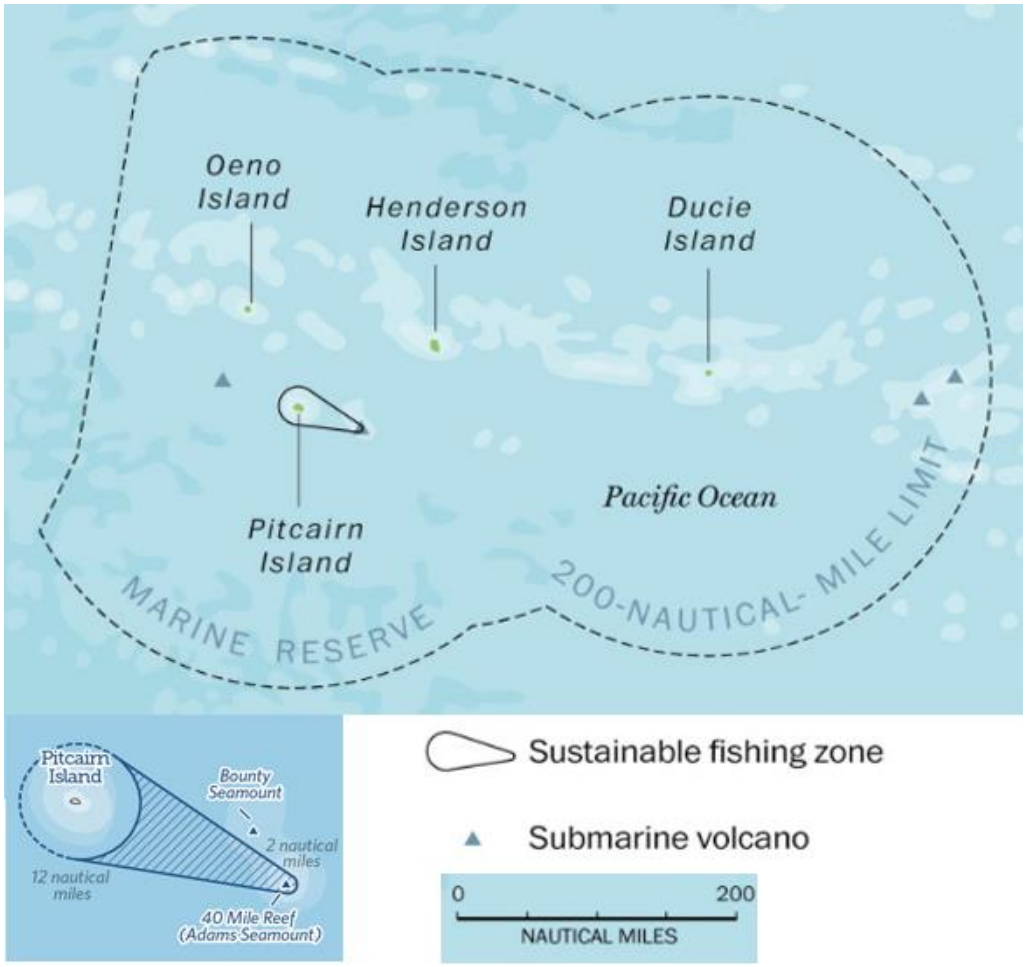

Figure 1. The Pitcairn Islands Marine Reserve (PEW, 2016)

3. FISHERIES IN THE COASTAL CONSERVATION AREAS

Fishing is an important source of food for subsistence and generates a small and occasional income for Pitcairn islanders. The few cruise ships that request fish supplies, professional visitors and the few tourists who come to the island, provide the only opportunity currently for the Pitcairn islanders to sell or trade their marine resources, mainly in the form of fresh fish (caught in the immediately previous days and refrigerated or frozen), or live lobsters. Most of the island households eat fish, with several families having 2-3 fish meals a week (Schuttenberg and Dawson, 2012). Although a lot of fishing is undertaken from the rocky shores, several households own small wooden boats (locally known as canoes) fitted with an outboard motor to enable access to nearshore rocky and coral reefs to catch their favoured species, or for trolling for pelagic species, such as tuna and wahoo. Most of the reef and shore fishing is conducted using hand-lines although some fishers use rod and line. A small number of islanders are scuba divers and catch fish through spear-fishing, or collect spiny lobsters

(there are two species: the Easter Island spiny lobster *Panulirus pascuensis* and Red spiny lobster *P. penicillatus*) by hand. Around four individuals are known to carry out spear-fishing and mostly visit the reefs north and east of Pitcairn between 10 and 20 m depths (Sala *et al*., 2012). Public or group fishing is community-spirited and is organised when a sufficient number of the community wish to go fishing. On fine days, when the sea is calm, one of the longboats may be launched and a party of islanders will go fishing, e.g. for a special public event such as Bounty Day. On these occasions, a public announcement will be made on the radio for those interested to join the fishing trip. Due to work commitments, these events might only take place a few times a year. All the fish caught by the party are divided up equally by household and shared out irrespective of individual catch size. In addition, lobster traps (pots) are deployed in the run up to cruise ship and on-island tourist visits. Baited traps to catch Aesop slipper lobsters, *Scyllarides haanii*, are set overnight from canoes between 800 and 1600m offshore in a depth of 70 – 145m (Götesson, 2012). When the traps are collected, lobsters are stored alive in holding pens in Bounty Bay until sale (Irving & Dawson, 2012). Octopus is taken from rocky pools using a traditional 3-pronged pole spear, either for use as bait or for eating directly. Night fishing for juvenile sharks using baited hand-lines with floats is occasionally undertaken, where the purpose here is to use the shark's teeth in some of the local wood carvings. Historically, net-fishing was a key method to collecting fish in the natural tide pools which are present along Pitcairn's shore line, for example at St Paul's Pool, the South-Eastern Point and Down Isaacs, but this method of fishing has not been practiced since the mid 20th century (Götesson, 2012).

Over a twelve month period from September 2014 to August 2015, a fish catch survey was conducted by the Fisheries Officer of the Environmental, Conservation & Natural Resources Division of the Pitcairn Government (which is ongoing). Fishers were encouraged to submit records of their catches, and around 6 (of the 12) regular fishers were passing on details of their catches to the Fisheries Officer. The monthly aggregated results presented here are based on a return take-up of 50% only, so their utility in analyzing trends or showing total catches should be undertaken with caution. Catch records were restricted to the Coastal Conservation Area surrounding Pitcairn Island only. It should be noted that catch returns will have been influenced by (1) weather conditions; (2) amount of leisure time available (a considerable number of the male workforce were involved with the construction of the Tedside alternative harbour project, particularly between January to April 2015); (3) time spent by would-be fishers off-island. Hence the data may not be typical of any other period. However, they do reveal some important aspects of the local fisheries, specifically the species caught and their relative abundance. Figure 2 shows the numbers of fish caught over the period with the total number of individual fish caught (= 1,090 fishes), and the number of different species of fishes caught (= 30 species). Figure 3 shows the number of fishing trips undertaken throughout the twelve months, broken down by scuba-diving, shore-based or boat forays (total = 43 trips).

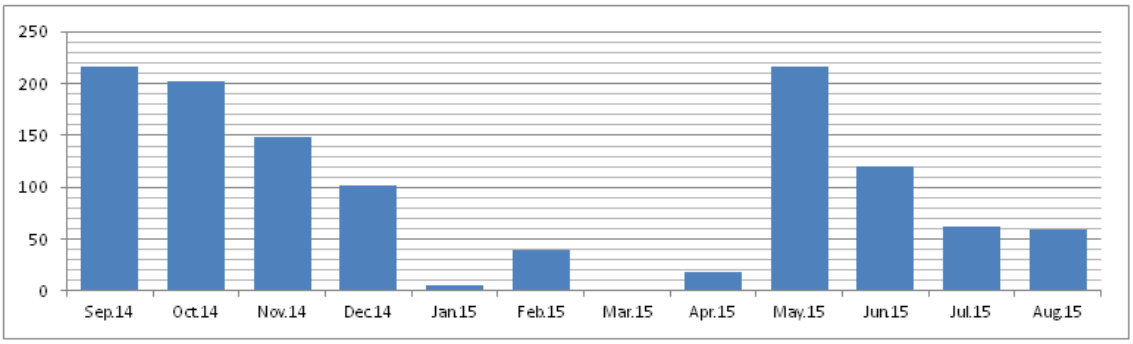

Figure 2. Total number of individual fish caught in the Coastal Conservation Area of Pitcairn Island

The low figures recorded during January to April 2015 (Figure 2) probably reflect the small number of fishing forays that took place, rather than there being fewer fishes caught. Zero records (of fishes caught) may indicate that no fishing events took place during that month, rather than there being a lack of individuals being caught. It is interesting to note that a total of 203 fish were caught in October 2014 from 1 shore trip and 2 boat trips, whereas only 102 fish were caught in December 2014 from 5 shore trips and 2 boat trips, reflecting different catch-per-unit effort in different months.

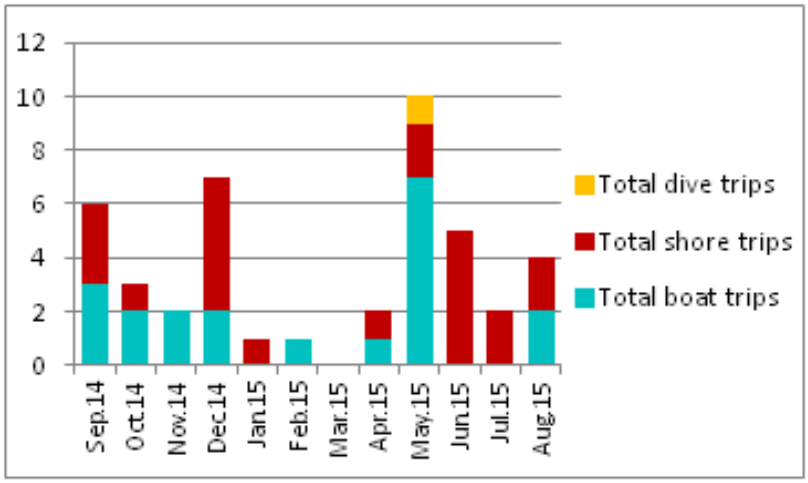

Figure 3. Number of fishing outings undertaken, categorised by dive, shore-based or boat trips

The proportion of species caught is presented in Figure 4. It is interesting to note that the Nanwe *Kyphosus pacificus* is clearly the most frequently caught fish species, with over twice the number of individuals caught (541) compared to red snapper (blacktip grouper) *Epinephelus fasciatus* in second place (203). Note that wahoo *Acanthocybium solandri* and yellowtail (yellowfin tuna) *Thunnus albacares*, both migratory pelagic species, are only caught from boats using trolling methods.

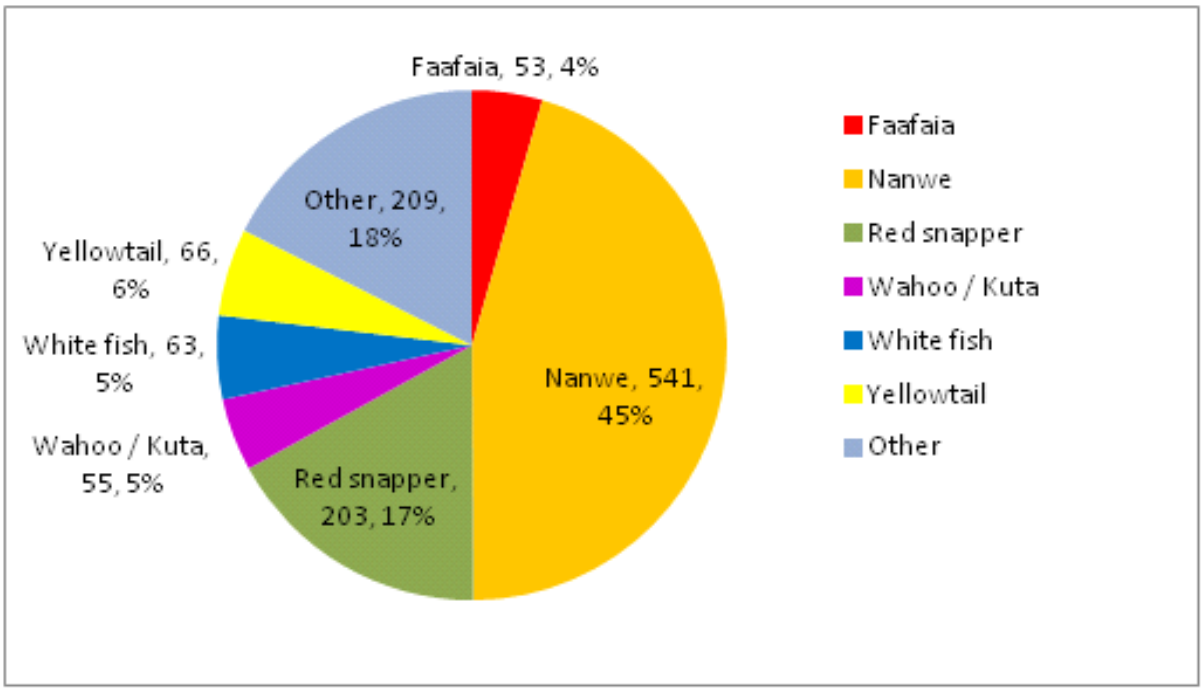

Figure 4. The proportion of recorded fish species caught within the CCA of Pitcairn Island

Whilst the data do not list any shark catch records during the period, shark fishing had been reported by visitors in April 2015 (Adam, 2015). Earlier data collected from 2006 to 2008 showed that 28 sharks were caught over 20 months (Götesson, 2012). Based upon the surveys conducted from Sept 2014 to Aug 2015, historical literature and reports, a complete list of the fish species caught for consumption by the Pitcairn islanders is provided in Table 1. Photographs of the most commonly caught species are presented in the Appendix 2.

Table 1. List of species commonly caught by Pitcairn fishers (adapted from Duffy, 2014).

Scientific Name	**Common Name**	**Pitcairn Name**
Acanthocybium solandri	Wahoo	Kuta
Abudefduf sordidus	Blackspot sergeant	Mummy
Carangoides orthogrammus	Island trevally	Ofe
Caranx ignobilis	Giant trevally	Ulwa
Caranx lugubris	Black trevally	Ulwa
Caranx melampygus	Bluefin trevally	Ulwa
Chaetodon smithii	Smith's butterflyfish	Letas
Coris aygula	Clown coris	Miti
Coris roseoviridis	Red-and green coris	Elwyn's Trousers
Epinephelus fasciatus	Blacktip grouper	Red Snapper
Epinephelus hexagonatus	Hexagon grouper	Rock Cod/Cod
Epinephelus tauvina	Greasy grouper	Rock Cod/ Fiti Cod
Kuhlia sandvicensis	Hawaiian flagtail	Whitefish
Kyphosus pacificus	Gray drummer	Nanwe
Mullidae (Parupeneus & Mulloidichthys spp.)	Goatfish (various species)	Beard-fish (Be'ard)
Scaridae (Scarus & Chlorurus spp.)	Parrotfish (various species)	Uhu
Seriola lalandi	Yellowtail Amberjack	Kingie
Thalassoma purpureum	Surge wrasse	Puhu
Thalassoma lutescens	Sunset wrasse	Whistling Daughter
Thunnus albacares	Yellow-fin tuna	Yellowtail
Xanthichthys mento	Crosshatch triggerfish	Pick-Pick
Variola louti	Yellow-edged lyretail	Fafaia

Fishing pressures

In comparison to global trends, the fishing pressure exerted by Pitcairn's population is both small-scale and erratic (Coghlan *et al*., 2017), despite 95% of surveyed households reporting that fishing – for subsistence, bartering or cash sales - was a key component to their culture and societal values (Schuttenberg & Dawson, 2012). In spite of this, the historical records, evidence from surveys and anecdotal information leads us to suggest that a few species fished at Pitcairn are potentially at risk of being over-harvested, specifically the lobster species (the spiny *Panulirus* spp. and the slipper lobster *Scyllarides* sp.; sharks; and groupers (specifically *Epinephelus fasciatus* and *Variola louti*), which all have some commercial basis for their exploitation, namely in their sale to passing cruise ships and visiting tourists. Other species listed in Table 1 which have commercial fishing restrictions (size limits and/or closed seasons) in other regions of the Pacific (SPC, 2005) but are currently believed to fished in Pitcairn waters at sustainable levels are listed in Table 2.

Table 2. Fish species having fishing restrictions in the Pacific Ocean (SPC, 2005)

Scientific name.	**Common name(s)**
Caranx sp.	trevallies, jacks
Epinephelus sp.	Groupers, cods
Kyphosus sp.	drummerfishes (sea chubs)
Mullidae sp.	goatfishes
Scaridae (Scarus & Chlorurus spp.)	parrotfishes

Evidence from Baited Remote Underwater Videography (BRUV) surveys undertaken in 2013 suggest that the long-term fishing pressure on apex predators, namely sharks, has resulted in their scarcity around Pitcairn Island – contrary to the uninhabited islands of Henderson and Ducie, where fish biomass is dominated by large carnivorous predatory species (Sala *et al*., 2012; Duffy, 2014). The two shark species regularly observed (and caught) around Pitcairn Island are the Grey Reef Shark (*Carcharhinus amblyrhynchos*) and the Whitetip Reef Shark (*Triaenodon obesus*) with both of these species listed on the IUCN red list of Threatened Species as 'Near Threatened' due to overfishing globally. The fish assemblage in the lower trophic classes has continued to provide island households with regular fish meals that fill an essential component of their diet (Schuttenberg & Dawson, 2012). Comparing all the islands in the group, Pitcairn Island has accommodated an historic artisanal fishery for the past two centuries (Duffy, 2014). Although Pitcairner islanders may visit the neighbouring islands of Oeno and Henderson occasionally, and Ducie even more rarely, it can be assumed that fishing activity at these islands is minimal, and if any, catch would be similar to that obtained from Pitcairn (Irving & Dawson, 2012). In general, fishing effort has remained much the same over the past five years where, on average 65% of households fish between once a week and once a month for between 3 and 6 hours per trip (Schuttenberg & Dawson, 2012). Some decrease is to be expected over the next few decades, however, due to the availability of frozen foodstuffs from New Zealand via the supply ship, associated changing dietary preferences, an ageing demographic and increased food quality standards of cruise ships has reduced the sale of fish in recent years (Schuttenberg & Dawson, 2012). Fishing activities are significantly increased prior to the arrival of a visiting cruise ship, where there is a possibility of a commercial sale of fish and lobster (Irving and Dawson, 2012). The Islands'

Provision Officer traditionally coordinates orders, sales and share of returns amongst local fishers and maintains the records. The Pitcairn community are generally aware of the estimated time of arrival of most of the scheduled tourist vessels through a cruise ship calendar published on the GPI's official tourism website line (http://www.visitpitcairn.pn, last accessed 7/12/2016). Any revision to these schedules is updated through the internet and ship to shore radio communications at the time of arrival. Approximately 6-10 cruise ships visit Pitcairn each year during the cruising season (normally from December to April), although not many of these will purchase seafood due to their requirement for food safety certification. For example, in 2011, 50 kg of yellowfin tuna, 50 kg of wahoo and 50 kg of reef fish (mainly coral trout, grouper and parrotfish) and about 400 kg of lobsters in total were purchased by cruise ships (Michel Blanc, personal communications 2011). In any one year, however, these orders are not always fully met, which is dependent on fishing effort and weather conditions. Lobsters are rarely targeted for personal consumption, but in the weeks leading up to a cruise ship visit an intensive lobster fishing effort is undertaken. Recent years, however has seen a significant decline in lobster catches and sales, with some overnight fishing for slipper lobsters yielding none, or maybe just a single specimen. Records for 2016 showed that 90 kgs of lobsters were sold to cruise ships and no sales were report in 2015 (Michele Christian, personal comunications 2016), which reveals the highly variable nature of this economic activity.

Data deficiencies

Although the Pacific Commission (SPC) initiated logbooks for the Pitcairn fisheries in 2011, catch has not been reported by the island fishers on a regular basis. Although this situation has improved since 2014 when the Natural Resources Division of the Government of Pitcairn established a part-time Fisheries Officer, records of fish catches continue to remain erratic with only 50% or so of the fishers providing records, and some gaps in the monthly records due to the Fisheries Officer absence. The lack of accurate long-term catch and effort data for individual species from specific locations has been a major hindrance in monitoring the status of the fishery.

4. MANAGEMENT POLICY

Rationale

"There is no single template for fisheries management that can be applied to all Pacific islands. However, most of the species that are fished in the region are the same from island to island. Because of this shared biological heritage, there are certain fundamental principles that can be transferred from each island as 'minimum terms and conditions' for maintaining viable coastal fisheries. Chief among these are biological and ecological protection measures that are simple to understand and therefore comparatively simple to enforce." (SPC, 2005). The principle goal of this management plan therefore is to protect the reproductive capacity of the fisheries by conserving existing and potential spawning stock. In common with other small-scale fisheries across the Pacific, there is a lack of data characterising specific fish stocks to reinforce specific management actions. This is largely down to the insufficient resources to generate stock-specific data, and even when this is possible, nature is too variable and complex that the data gathered do not provide a true reflection of stock and population dynamics (Johannes, 1998). On that basis, we initially propose a data-less management strategy, a simplification of precautionary management using pre-determined catch sizes based on other Pacific Islands' Nations due to their close proximity and similar species. This ensures that species can mature to a breeding and spawning age, to secure the conservation and sustainable management of fish stocks. However, in practice, this approach is not effective for some species of reef fish caught at

depths greater than 10 meters. Barotrauma is a common condition experienced by some deep water reef fish that are brought quickly to the surface. Symptoms include bulging eyes, protruding stomach and distended intestines and inflated or ruptured swim bladder. Fish experiencing barotrauma often sustain serious injuries, and upon release, are unable to swim or dive back to depth. Therefore, the survival rates of caught and released deep (>10m) sea fish are low. On that basis, we recommend that the application of minimum landing sizes for reef fish applies to spear fishers only. With regard to the lobsters, we also recommend that females carrying eggs be marked using v-notch pliers before being released. A v-notch is a mark on the tail flipper of a female lobster that was put there by a fisher as a means to identify and protect a known breeder in the population from harvest. Fishers make a v-notch in the tail flippers of egg-bearing female lobsters they encounter while lobster fishing (Figure 5). The v-notch remains in the female's flipper after she has hatched her eggs which protects her from harvest through additional molts. This enables reproductive females to be recognized if subsequently caught and re-released to enable them to continue to breed. Professional V-notch pliers have been provided to the ECNRD, and it is recommended that they be used on the boats when recovering lobster pots.

Figure 5. Lobster with eggs and v-notch in the tail fin (Credit: NOAA/Ocean Technology Foundation)

On the basis that potential over-harvesting of marine species is only likely to take place on the basis of commercial interests, it is recommended that those fishers who sell their catch are encouraged to register their business as a legal requirement under the Pitcairn Business Registrations Ordinance. This would only apply for those fishers who sell their fish or any other marine species, or products derived to outside customers (tourists, cruise ships, exporters). Registration will require that fishers log their catch to support on-going monitoring of the numbers of fish (or other marine species) being caught.

An activity that, whilst not currently practiced in the Pitcairn Island (although some enquiries have previously been made to the ECNRD about this), may have detrimental impacts on some of the rare or endemic reef fish is the live capture of species for the aquarium trade. The global trade in marine ornamental fish and invertebrates for home and public aquaria is a multi-million dollar industry that focuses in particular on tropical species. Whilst some of the species in the Pitcairn Islands that are popular for the aquarium trade can in principle be collected freely and without restriction, for others it is recommended that their collection and export is prohibited because the fish are either endemic or very rare, or don't survive well in captivity or they play a vital ecological role. On this basis we propose a regulation that requires explicit permission from the ECNRD, which may not be given.

The use of baited line fishing for sharks is a contentious issue for Pitcairn Island. The scientific evidence is strong that these top apex predators are very low in abundance around Pitcairn Island compared to other similar small island ecosystems in the tropical south Pacific (Duffy 2014). On a global scale, many shark species are endangered and many more are threatened as populations worldwide are dwindling. Specifically, the targeting of juvenile sharks can result in a depleted number of sexually mature individuals, which will adversely affect the long-term sustainability of sharks. As an alternative to shark fishing on Pitcairn Island, we recommend the sourcing of shark teeth from a sustainable supplier. Because sharks regularly shed their teeth as they grow (they shed 1000’s of teeth in a lifetime), shark teeth can be regularly collected from aquariums or gathered from beaches in several locations on the Gulf of Mexico, particularly Florida, USA. However, checks should be made with the relevant authorities and CITES to ensure that purchase and transfer of shark teeth from overseas does not break regulations.

Proposal to introduce regulations to amend the law relating to fisheries and the taking and protection of fish in the Coastal Conservation Areas of the Pitcairn Islands.

Based upon the above principles, the following regulations are proposed, specifically:

- To promote the conservation of fish and other forms of marine life within the CCAs of the Pitcairn Islands and to regulate fishing practices and to prevent activities detrimental to the fisheries.

- To ensure the Pitcairn laws relating to fisheries management are aligned with those existing in other neighbouring Pacific Islands as recommended by the Pacific Community (SPC) Coastal Fisheries Programme.

5. PROPOSED FISHING REGULATIONS

A. Prohibition of Netting – No person shall fish for or take any sea fish other than by rod and line (or hand line), spear-fishing or cage or trap capable of capturing a crustacean. The foregoing does not prohibit the use of a landing net when being used as an auxiliary to fishing with rod and line.

B. Protection of V-Notched Lobsters - No person using cage or trap capable of catching crustaceans shall remove from the fishery any V-Notched or mutilated lobster of the species:

(a) Red and Green (or Black) spiny lobsters (*Panulirus* spp.);
(b) Slipper lobster (*Scyllarides* sp.).

Any lobster so marked shall be returned to the sea as soon as practical.

C. Protection of Undersize and Berried Lobsters:

1. No person using cage or trap capable of catching crustaceans shall remove from the fishery any berried lobster, i.e. any lobster carrying any spawn (eggs) attached to the tail or some other exterior part of the lobster, or which is in such a condition as to show that, at the time when it was taken, it was carrying spawn so attached.

2. No person using cage or trap capable of catching crustaceans shall remove from the fishery any lobster of the species *Panulirus* which has a carapace length less than that specified in paragraph 3 below.

3. The minimum landing size for lobster *Panulirus*, as measured in accordance with paragraph 4 below, shall be 80 millimetres (3¼ inches).

4. *Panulirus* lobsters are to be measured using the carapace length and shall be measured parallel to the mid line from the rear of either eye socket to the distal edge of the carapace (Figure 5a).

5. No person using cage or trap capable of catching crustaceans shall remove from the fishery any slipper lobster of the species *Scyllarides* sp. which has a carapace width less than that specified in paragraph 6 below.

6. The minimum landing size for slipper lobster *Scyllarides* sp. as measured in accordance with paragraph 7 below shall be 76 millimetres (3 inches).

7. *Scyllarides* sp. lobsters are to be measured using the carapace width and shall be measured between the widest edge of the carapace in line with the eyes (Figure 5b).

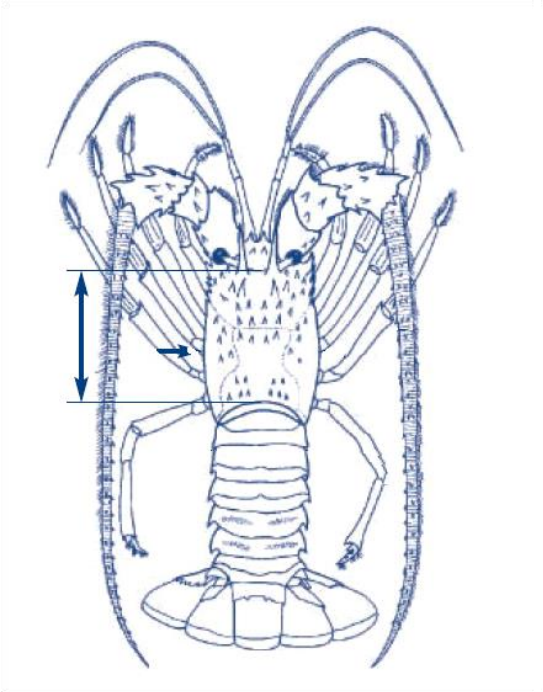

Figure 6a. Measuring carapace length for the spiny lobster (*Panulirus sp.*).

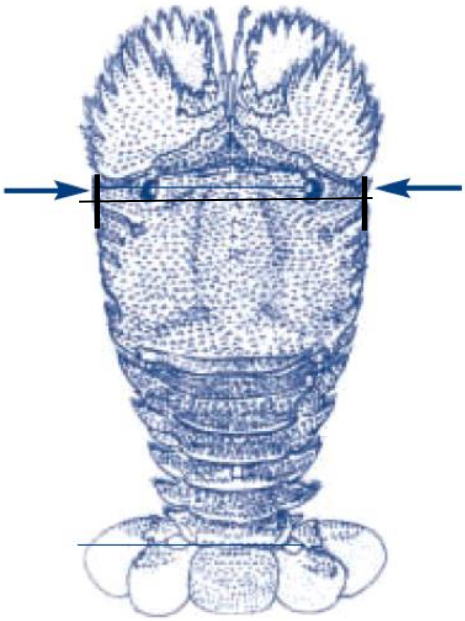

Figure 6b. Measuring carapace width for the slipper lobster (Scyllarides sp.).

D. Protection of undersized and juvenile fin fish species:

1. No person shall remove from a fishery any pelagic species below the specified size limit (Curved Fork Length, see figure 8) listed in the following table:

Local Name	Scientific Name	Common Name	Length (cm)
Kuta	*Acanthocybium solandri*	Wahoo	75
Yellowtail	*Thunnus albacares*	Yellow-fin Tuna	68

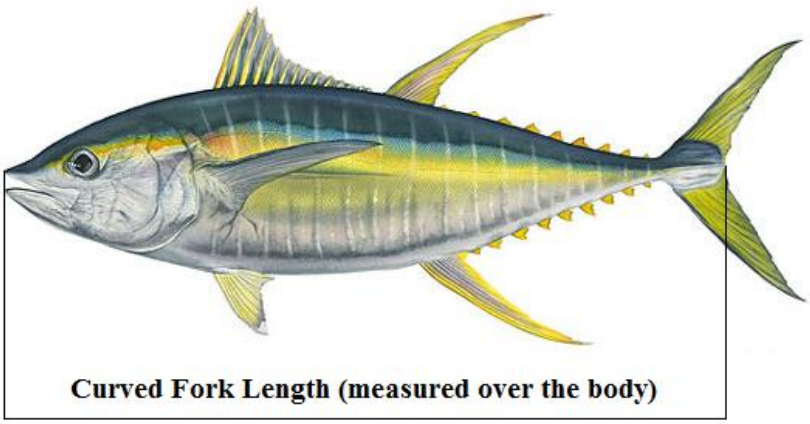

Figure 8. Measuring pelagic species using the curved fork length (the measuring tape is laid over the curvature of the body).

2. No person shall remove from a fishery any reef species below the specified size limit listed in the following table. All fin fish are measured from the tip of their snout to the end of their tail (Figure 7).

Scientific Name	**Common Name**	**Pitcairn Name**	**Length (cm)**
Abudefduf sordidus	Blackspot sergeant	Mummy	No restriction
Carangoides orthogrammus	Island trevally	Ofe	No restriction
Caranx ignobilis	Giant trevally	Ulwa	No restriction
Caranx lugubris	Black trevally	Ulwa	No restriction
Caranx melampygus	Bluefin trevally	Ulwa	No restriction
Chaetodon smithii	Smith's butterflyfish	Letas	No restriction
Coris aygula	Clown coris	Miti	No restriction
Coris roseoviridis	Red-and green coris	Elwyn's Trousers	No restriction
Epinephelus fasciatus	Blacktip grouper	Red Snapper	20
Epinephelus hexagonatus	Hexagon grouper	Rock Cod/Cod	No restriction
Epinephelus tauvina	Greasy grouper	Rock Cod/ Fiti Cod	No restriction
Kuhlia sandvicensis	Hawaiian flagtail	Whitefish	No restriction
Kyphosus pacificus	Gray drummer	Nanwe	No restriction
Mullidae (Parupeneus & Mulloidichthys spp.)	Goatfish (various species)	Beard-fish (Be'ard)	No restriction
Scaridae (Scarus & Chlorurus spp.)	Parrotfish (various species)	Uhu	No restriction
Seriola lalandi	Yellowtail Amberjack	Kingie	No restriction
Thalassoma purpureum	Surge wrasse	Puhu	No restriction
Thalassoma lutescens	Sunset wrasse	Whistling Daughter	No restriction
Xanthichthys mento	Crosshatch triggerfish	Pick-Pick	No restriction
Variola louti	Yellow-edged lyretail	Fafaia	31

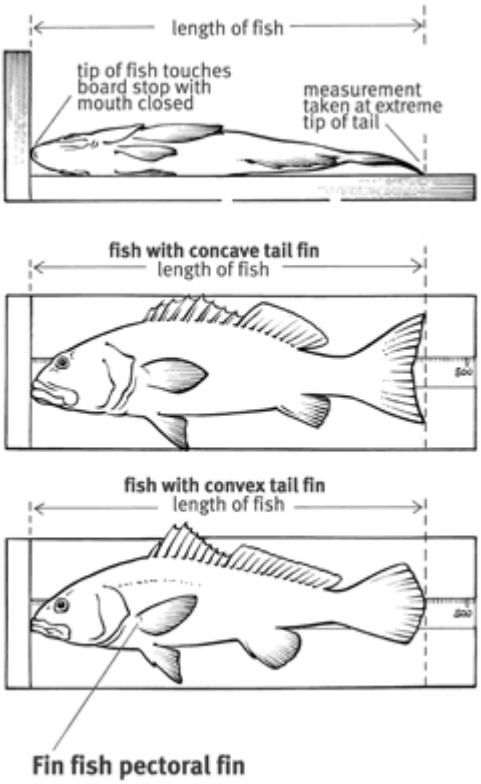

Figure 7. How to measure the length of fin fish.

3. No person shall remove from a fishery any shark species using a set shark line.

E. Aquarium fish:

1. No person shall engage in fishing for any marine aquarium fish, except with the written authorization of the ECNRD and in accordance with such conditions as they may specify.

F. Regulations for fishers having commercial interests:

1. Additional conditions may be applied to fishers having commercial interests. These conditions will be formulated by the ECNRD in agreement with the Pitcairn Island Council and Pitcairn fishers and may be changed from time-to-time in response to management needs, agreed through the adaptive management approach. The conditions will include, but not be confined to, the following:

a) Adherence to regulations concerning the size of fish that can be take
b) Adherence to regulations concerning the quantity of fish that can be taken by the commercial fisher.
c) Adherence to regulations concerning spatial and temporal closures of fishing areas and/or specific fisheries.
d) Completion of a log of fishing activities and catch record to be submitted to the Fisheries Officer, ECNRD.

6. REVIEW OF THE MANAGEMENT PLAN

It is recommended that this Management Plan is reviewed and revised/updated on an annual basis by the Division Manager (DM) of the Environmental, Conservation & Natural Resources Division of the Government of Pitcairn, in consultation with the Pitcairn fishers, and ad-hoc specialists/advisors on invitation of DM/Pitcairn Island Council. To ensure that the management of the Pitcairn Islands fisheries is both transparent and effectively locally managed, a proposed committee arrangement is proposed in Appendix 1.

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8. APPENDICES

APPENDIX 1

ESTABLISHMENT OF A PITCAIRN FISHERY MANAGEMENT COMMITTEE

1) There will be established a Management Body to be called the Pitcairn Islands Fisheries Management Committee

2) The Management Committee will comprise the following members:
   a) A Chairperson (Administrator)
   b) Director of NRD
   c) Fishing Officer, NRD
   e) Island Fishers
   f) Police representative
   g) Ad-hoc specialists/advisors on invitation of Pitcairn Island Council

3) The role of the Management Committee will be to:
   a) Review technical and other reports pertaining to the Fisheries.
   b) Make decisions on management measures in response to the outcomes and recommendations from the technical reports and evidence submitted to meetings.
   c) All management measures should be approved by the Pitcairn Island Council

4) The Management Committee will meet annually or more frequently if needed.

APPENDIX 2

The following figures are a photographic record of some of the most common of the fish species caught in the Pitcairn Islands.

Figure A1. Drummer (*Kyphosus pacificus*). Although normally all grey in colour, this specimen has an unusual yellow colour variation on the head. (inset, with full yellow colour variant). Known locally as Nanwe.

Figure A2. Clown coris (*Coris aygula*). Known locally as Miti.

Figure A3. Goatfish (*Parupeneus* sp.). Known locally as Be'ard (as for all goatfish).

Figure A4. Greasy Grouper (*Epinephelus tauvina*). Known locally as Fiti cod.

Figure A5. Red Parrot fish (*Scarus* sp.). Known locally as Uhu.

Figure A6. Coral Trout (*Variola louti*). Known locally as Fafaaya.

Figure A7. Blacktip grouper (*Epinephelus fasciatus*). Local name: Red Snapper

Figure A8. Blue (or Reef Crest) Parrotfish (*Chlorurus frontalis*)

Figure A9. Sunset Wrasse (*Thalassoma lutescens*). Known locally as Whistling Daughter.