



The Pitcairn Islands Marine Protected Area Annual Review

April 2022 to March 2023

THE PITCAIRN ISLANDS MARINE PROTECTED AREA ANNUAL REVIEW

INTRODUCTION

The Pitcairn Islands Marine Protected Area (MPA) Management Plan was published in October 2021. It sets out what will be done to effectively manage the MPA over the five-year period between 2021 and 2026. This annual review summarises what has been achieved during the period 1st April 2022 to 31st March 2023.

HIGHLIGHTS

On 5th February 2023, the Pitcairn Islands MPA [was awarded a prestigious platinum-level Blue Park Award](#) for exceptional marine wildlife conservation. This award recognises all of our work to ensure strong protection for our marine biodiversity and ecosystems. The Pitcairn Islands MPA now joins a network of 27 Blue Parks around the global ocean that have met the highest science-based standards for conservation effectiveness.

Also during February 2023, Operation Redfish took place. This scientific research expedition, jointly funded by the Government of Pitcairn Islands and the Blue Belt Programme,

visited 40 Mile Reef as well as the outer islands of Oeno and Henderson. Members of the Pitcairn Island community were joined by scientists from Cefas and the University of Edinburgh. The scientists used baited remote underwater video systems (BRUVs), drop-down video, eDNA sampling and carbonate chemistry sampling to better understand the deep reefs and seamount ecosystems within the MPA. Analysis of the data collected is now taking place with findings expected soon.



The Operation Redfish Team

Management Strategy 1: The appropriate legal, financial and human resource frameworks are in place and fit for purpose to ensure effective management of the MPA

Management Objective 1.1: The appropriate legal and policy frameworks are in place to deliver effective management

The Marine Conservation Regulations were signed into law in October 2022. These control how human activities within the Coastal Conservation Areas will be managed. They make sure that activities, including fishing by the local community, are sustainable.

With assistance from the Blue Belt Programme, we developed our first annual operational plan. This set out which actions within the MPA Management Plan would be taken forwards during the period of 1st April 2022 to 31st March 2023. We have conducted a review of the progress made to date, which has informed this Annual Review.

Management Objective 1.3: Appropriate human resources have been secured to deliver effective management

With funding from the Blue Belt Programme, our MPA Officer, Melva Evans registered to join the 5th International Marine Protected Areas Congress (IMPAC-5) virtually. Unfortunately, the slow internet connection in the Pitcairn Islands meant that she was unable to effectively participate in the conference. The Pitcairn Islands MPA still made its mark due to the announcement of the Blue Parks Award during the Congress.

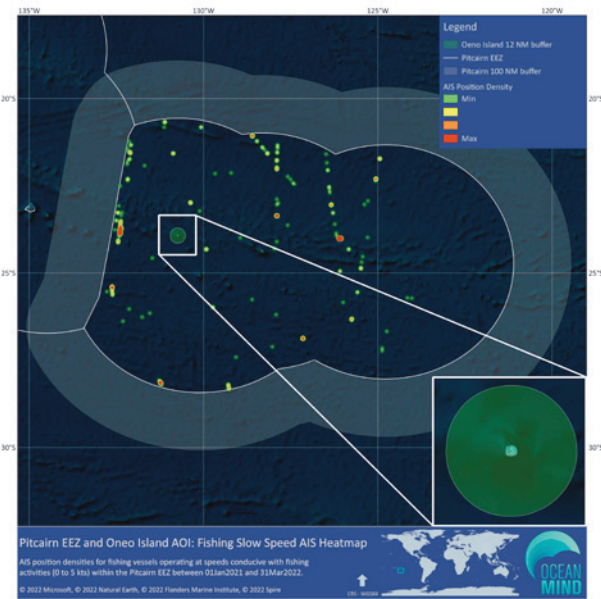
Management Objective 1.4: The local community understands and actively participates in MPA management

The Blue Belt Programme has funded one of the young people on-island to study for a Diploma in Marine Science.

Management Strategy 2: Human activities within the MPA are effectively managed to minimise threats to key species and habitats as far as is reasonably practical

Management Objective 2.1: Illegal, Unreported and Unregulated (IUU) fishing within the MPA is minimised

Between May 2022 and April 2023, intel analysts from the Marine Management Organisation (MMO) undertook a total of 249 daily checks of vessels' Automatic Identification Systems (AIS). These showed 99% compliance with the MPA. Requests for Vessel Monitoring System (VMS) data were made to China and Ecuador for two vessels that stopped reporting on AIS. The Chinese vessel was found to have transited the MPA without fishing, whilst the Ecuadorian vessel remained outside of the MPA.



Pitcairn Island MPA and Oeno Island Area of Interest: fishing slow speed AIS heatmap (OceanMind, 2023)

OceanMind was commissioned to undertake a historical analysis of AIS data and satellite imagery around Oeno Island between January 2018 and March 2022. This study investigated whether IUU fishing had caused a decline in shark numbers. Over 200,500 km² of satellite imagery was analysed resulting in the detection of five potential vessels. All of these detections were however low confidence. Due to their size and profile, it is likely that they were pleasure vessels. The study concluded that there was limited evidence to indicate that the low numbers of sharks found around Oeno is as a direct result of IUU fishing.

Objective 2.2: Impacts to coral reef habitats from anchor damage are reduced

An MSc student from Newcastle University, Joshua Crane, analysed the BRUVs and satellite imagery data collected during the Fafai'a expedition in 2021¹. This enabled production of a habitat map for the lagoon and fringing reef around Oeno Island. Live coral cover on the fringing reef was found to range from 40% up to 100%, with hard coral observed down to depths of 50m. The habitat map identified that the lagoon and an area to the north of the island would be suitable for anchoring due to the lack of coral in these areas.

¹Crane, J. (2022). Assessing the Natural Capital for the MPA Management of a Remote Island, Oeno, in the Pitcairn Islands. MSc thesis, Newcastle University, UK.

²Blue Abacus (2022). Report on 2022 Pitcairn Islands Field Survey

Objective 2.3: Fishing by the local communities within the Coastal Conservation Areas is sustainable

St Andrews University is developing a smartphone application that will be used by fishers to record their catches. This will provide long-term fishing effort and catch data to determine the status of the fishery and the effectiveness of the Fisheries Management Plan.

The Marine Conservation Regulations now require anyone wanting to fish around Pitcairn Island to apply for a fishing permit. All fishing must follow the rules in the latest Fisheries Management Plan. We worked with the Blue Belt Programme to develop a leaflet and poster to raise awareness of these new rules with the local community.

Analysis of the BRUVs data from the Fafai'a Expedition by Blue Abacus found that sharks were relatively common around the Pitcairn Islands occurring in 66% of samples². A total of 75 sharks from 3 species were recorded: the grey reef shark, Galapagos shark and the whitetip reef shark. Shark diversity was highest at Ducie and lowest at Oeno. Ducie was found to be a hotspot of shark diversity and abundance and exclusively included grey reef shark pups.

As part of the Redfish Expedition, Cefas staff trained members of the local community to collect gonad and otolith samples from key fisheries species. These are being sent to New Zealand for analysis to determine their reproductive cycle and to identify spawning periods.

During the same expedition, tail clips were taken from spiny lobsters around Pitcairn Island. These samples were collected as part of wider Pacific study on the range and different communities of lobsters across the region. The study is being conducted by the University of Auckland and will contribute to our understanding of how the Pitcairn lobster population fits within the Pacific and its potential for helping repopulate overfished areas.



The poster raising awareness of the new fishing rules



The students from Pulau School on the boat during their trip to the outer islands

Objective 2.5: Awareness of the issue of marine litter both within the local community, amongst visitors and internationally is improved

During June 2022, Pulau School and the Island Administrator organised a school trip to the outer islands. During the trip, the 3 students undertook beach litter surveys on Acadia Island (Ducie), East Beach and North Beach (Henderson Island) and Oeno Island.

From the data collected, Oeno Island was found to be the least impacted by litter with an average of 2 pieces of litter found along a 5 metre transect of beach. The East Beach of

Henderson Island was found to be the most impacted with an average of 87 pieces of litter along a 5 metre transect. The most common item found were fragments of plastic between 1 and 2.5 cm in size.

Following on from the 2019 Henderson Island Expedition, the artist Mandy Barker displayed her artwork (created using plastic collected on the expedition) in an art gallery in New Zealand. The exhibition aimed to highlight plastic pollution and society's reliance on different forms of plastic.

Objective 2.6: Understanding and awareness of marine invasive species is improved

Whilst on Pitcairn Island, Cefas staff trained the head of the Natural Resources Division and the MPA Officer on how to sample and identify marine invasive non-native species (INNS). The training looked at the most likely species that may be brought to the Pitcairn Islands accidentally from neighbouring countries and what to do if they were found.

The MMO reviewed our existing marine biosecurity management framework. They provided some recommendations to minimise the likelihood of visiting vessels bringing new marine INNS to the Pitcairn Islands. A leaflet was developed to highlight this marine biosecurity guidance, and this is now available on the [Pitcairn Islands Tourism website](#). The Blue Belt Programme also worked with the RSPB to design an interpretation board. This highlights the importance of biosecurity for the Pitcairn Islands, and the many pathways that invasive species can be transported to the islands and surrounding waters.

3

Management Strategy 3: Understanding of the marine environment around the Pitcairn Islands is enhanced through a research and monitoring programme

Objective 3.1: A comprehensive research programme has been established to address key evidence gaps

Over the past year, we have been working hard to construct the new marine science base. It was officially opened by the Governor, Iona Thomas, on 22nd September 2023. We are now looking forward to welcoming scientists from around the world.

A virtual workshop was organised by the Blue Belt Programme during January to finalise the Pitcairn Islands MPA Research and Monitoring Plan. This was attended by a range of stakeholders including the Joint Nature Conservation Committee (JNCC), St Andrews University, King's College London, Sea-Scope and Great Blue Oceans. to discuss priority areas for research within the MPA. The Research and Monitoring Plan will be published shortly.



The coral reef and associated fish observed during Operation Redfish

Objective 3.2: Understanding of the impacts of climate change on the Pitcairn Islands is improved

Data collected during the Operation Redfish Expedition was analysed to work out the resilience of the corals within the MPA to a changing climate. The images collected from the seabed were analysed to look at things such as coral cover, coral size, number of different species, number of herbivorous fish and number of top predators (sharks). The reefs around the Pitcairn Islands are currently some of the best examples of unimpacted corals in the world and the data within this report support this. Expeditions going forward will be able to use this data to identify changes in the reef caused by climate change. This can be used as an early warning system to inform new management or mitigation measures to protect this valuable habitat.



The new Marine Science Base being opened by the Governor



A shark recorded on one of the BRUVs

Objective 3.3: A long-term monitoring programme for key habitats and species has been established around all four islands

Analysis of the BRUVs data from the Fafai'a Expedition by Blue Abacus identified a total of 7,319 individuals from 203 taxa. In addition to the sharks detailed above, the surveys also

recorded endemic fish species as well as 6 humpback whales, present as 3 mother and calf pairs. Species richness was the highest recorded for subtropical regions, and for Ducie and Henderson Island, rivalled that of some of the most diverse tropical locations for which BRUVs data are available.

Professor Terry Dawson from King's College London was awarded Darwin Plus funding for his project '[Humpback Whales of the Pitcairn Islands](#)'. This project aims to document the behaviour and distribution of humpback whales in the Pitcairn Islands using photo-identification and genetic data. Over the past few months, Terry and new PhD student, Katy McColl, have been preparing for their first fieldwork campaign, which will start in July 2023. Scientific equipment and specialised electronics for drone blow sampling and hydrophone recorders have been designed, constructed, and tested in preparation.

Objective 3.4: The results of research and monitoring programmes are communicated at a local, regional, and international scale

The previous review of climate change and coral reefs in the Pitcairn Islands produced in 2021 by the Blue Belt Programme was published in the [Journal of the Marine Biological Association of the UK](#)³.

4

Management Strategy 4: The local community is obtaining economic benefit from the MPA and these benefits are distributed equitably

Objective 4.1: New marine ecotourism activities have been developed and promoted within the MPA

Two questionnaires have been designed. The first will form the baseline survey for the long-term socio-economic monitoring programme for the MPA. It will help us to understand the importance of the marine environment to the island community, how the MPA affects their lives and the current

level of understanding of the rules and regulations. The second questionnaire will help us to understand what visitors to the Pitcairn Island think about the MPA. It will also provide information on their interest in current and new marine nature-based tourism activities such as whale watching. Both questionnaires will be rolled out in September 2023.

5

Management Strategy 5: Understanding and appreciation of the MPA by the local community, visitors and the wider international community is enhanced

Objective 5.1: Understanding of the MPA is improved at a regional and international scale

In February, we set-up a new Twitter account for the MPA @PitcairnMPA to allow us to better communicate about our work on an international platform. Our Blue Park Award was promoted on Twitter with tweets from the Island Administrator and the Marine Conservation Institute receiving around 10,000 views each.

Objective 5.2: Understanding of the MPA is improved amongst the local community

With funding from the John Ellerman Foundation's UK Overseas Territories Fund, [Protect Blue](#) has established a project to develop a community-led branding and communications strategy for the MPA. To date, they have run 8 workshops to introduce us to some of the tools, to build up a clearer picture of what we want the work to achieve and to co-create a set of design principles. They also ran an island-wide community survey and have supplied us with a media kit to enable the community to tell better ocean stories.

6

Management Strategy 6: Understanding and appreciation of the Henderson Island World Heritage Site is enhanced

Objective 6.3: Non-native invasive rodent eradication and island restoration project supported by the Pitcairn Island community and progressed to a stage of operation for Henderson and Pitcairn Island

Andy Schofield from the RSPB was awarded Darwin Plus funding for a project '[Inhabited Territory restoration: completing preparations for a rodent-free Pitcairn Islands](#)'. The project aims to address outstanding questions around the feasibility

of removing rodents from Pitcairn Island and provide final technical inputs regarding Henderson Island. Andy visited the Pitcairn Islands in January to undertake the first stage of consultation with the Island Council and the community around the proposed eradications. This aimed to discuss community concerns and to work towards agreement on the operational approach and mitigation measures. The consultation went really well, and the community gave their full support to proceed with the next steps of eradication planning.

³ Lincoln S et al. (2022). Climate change impacts on the coral reefs of the UK Overseas Territory of the Pitcairn Islands: resilience and adaptation considerations. *Journal of the Marine Biological Association of the United Kingdom* 102, 535–549. <https://doi.org/10.1017/S002531542200090X>

Further information

For further information please contact:

Michele Christian,
*Division Manager,
Environmental, Conservation & Natural Resources
Adamstown, Pitcairn Islands*

Email: dmnature@pitcairn.gov.pn
Phone: +64 9 984 0153
(office hours Tuesday & Thursday 9am – 1pm)
