

# Blue Belt Programme



Annual update  
Financial Year 2017/18



Marine  
Management  
Organisation



Centre for Environment  
Fisheries & Aquaculture  
Science



Funded by  
UK Government

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# Introduction

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*Our British Overseas Territories Blue Belt Programme is one of the most ambitious environmental initiatives the UK Government has ever undertaken. By 2020, over 4 million square kilometres of British waters will be designated with strengthened protective measures. Working together with our Overseas Territories, we are well on course to deliver this ambition.*

*This report highlights the work undertaken over the past year to enhance our scientific understanding of our unique Territories, and to develop cost effective compliance and enforcement regimes to ensure their long-term and meaningful marine protection*

”

**LORD (TARIQ) AHMAD OF WIMBLEDON**  
Minister of State for the Overseas Territories

The Blue Belt Programme supports the delivery of the UK Government's commitment to enhance marine protection of over four million square kilometres of marine environment across UK Overseas Territories (UKOTs).

It is providing up to £20 million between 2016-2020 to:

- Improve scientific understanding of the marine environment;
- Develop and implement evidence-based, tailored marine management strategies, including novel and effective approaches to surveillance and enforcement across these very remote and sparsely populated areas; and
- Ensure management is sustainable and long term.

Home to over 90% of the UK's biodiversity, the UKOTs are of fundamental importance to regional and international marine conservation. The better we

understand these ecosystems and the marine life they support, the better scientific advice we can give on how to protect biodiversity and support thriving ecosystems.

The Blue Belt Programme will assist UKOTs to sustainably manage human activities in our oceans, based on best scientific evidence and governance structures. Importantly, this will support UKOT communities in sustainably developing their local economies whilst protecting the vulnerable ecosystems which support rich marine life. The design of the marine protection measures will be science-based and in accordance with the views of Territory governments and administrations.

The Programme is an innovative partnership between two world-leading agencies of the UK Government, the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the Marine Management Organisation (MMO). In partnership with the Overseas Territories, the Blue



# Introduction

Belt delivery partners have developed schemes of work to help them understand their marine environments, design appropriate marine management and protection strategies, and develop effective monitoring, surveillance and enforcement strategies.

The Blue Belt Programme seeks to enhance long-term sustainable marine protection strategies for the UKOTs. Through this programme, the UKOTs are able to access resources and long-term scientific, management, monitoring and surveillance expertise, both from the UK and *in situ*, as well as benefiting from economies of scale for practical surveillance and technology solutions. By pooling capability the partnership will deliver a legacy that will protect a wealth of globally significant diversity, from vast penguin colonies in South Georgia & the South Sandwich Islands to the marine turtles of Ascension Island. Since its initiation, the Blue Belt Programme has made substantial progress working with stakeholders (including UKOT-specific work by NGOs) to identify and deliver priority work commitments.

The focus now is to build on the evidence gathered and to inform and deliver protection strategies, working

closely with each UKOT. This publication describes what the Blue Belt Programme has achieved to date, and sets out our key activities for the coming year, demonstrating progress with the individual Territories as well as the cross-cutting work we are doing across all the territories, such as engaging with the Regional Fisheries Management Organisations (RFMOs) to better manage fish stocks that straddle national boundaries. Progress in delivering Blue Belt Programme commitments is at different stages across each UKOT and the content of this publication reflects this.

**For more information about the programme:**

**Web:** [www.gov.uk/government/publications/the-blue-belt-programme](http://www.gov.uk/government/publications/the-blue-belt-programme)

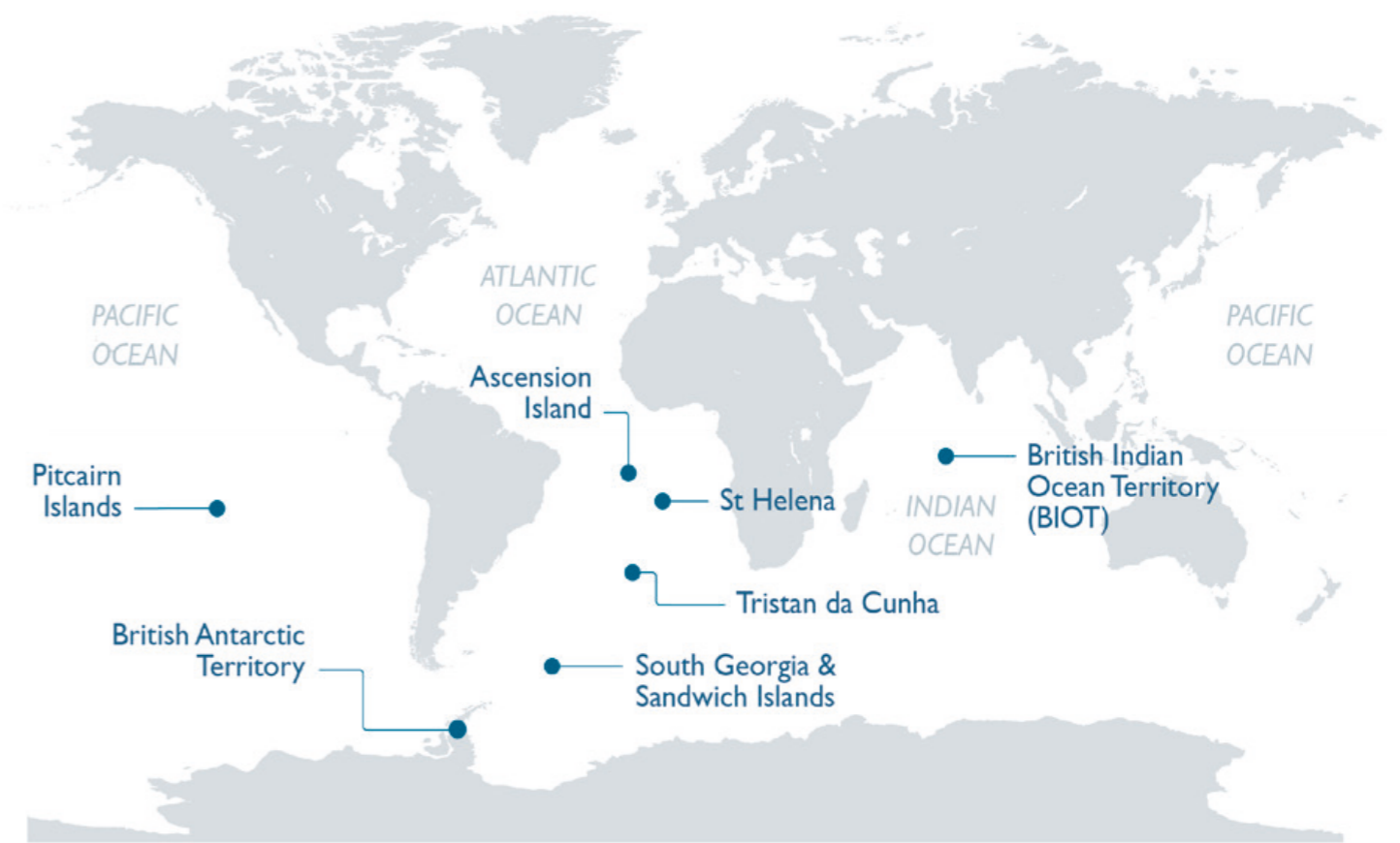
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**Twitter:** [@UKGovBlueBelt](https://twitter.com/UKGovBlueBelt)

**Blue Belt Blogs:** [marinedevelopments.blog.gov.uk/category/blue-belt](http://marinedevelopments.blog.gov.uk/category/blue-belt)

**Publications and research:** [gov.uk/government/publications/the-blue-belt-programme](http://gov.uk/government/publications/the-blue-belt-programme)

Location of the UK Overseas Territories currently in the programme



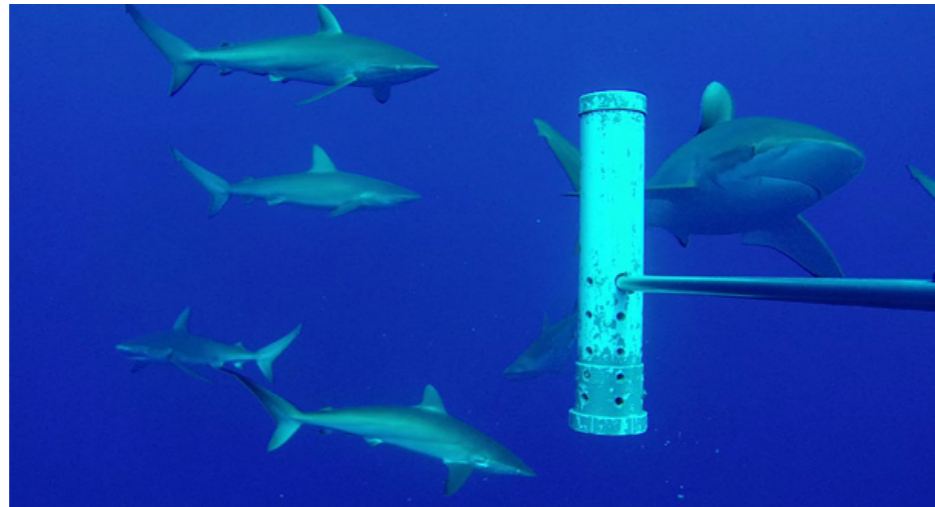
# Ascension Island

Ascension Island is situated in the tropical South Atlantic and the 200 nm Exclusive Economic Zone (EEZ) has historically been an important area for tuna fishing. Currently the entire southern half of the EEZ and an inner ring surrounding the Island are closed to commercial fishing with an agreement that at least half of Ascension Island's 445,390 km<sup>2</sup> maritime environment will remain permanently closed to fishing and designated a Marine Protected Area (MPA) by 2019.



## Strengthening governance

The Blue Belt Programme has been working with the Ascension Island Government (AIG) and other partners to develop a strategy and timetable for the designation of the Ascension Marine Protected Area in 2019. Blue Belt staff have also provided advice on amendments to the existing Protected Areas Ordinance that will enable the legal designation of MPAs in Ascension waters.



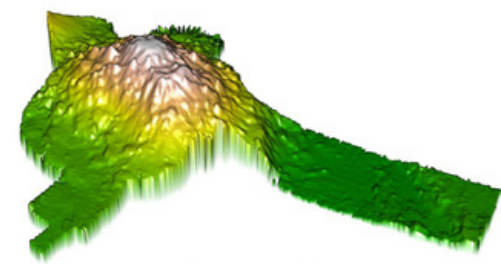
Using a baited underwater video camera deployed over the Grattan Seamount complex to attract Galapagos sharks

## Understanding and protecting biodiversity

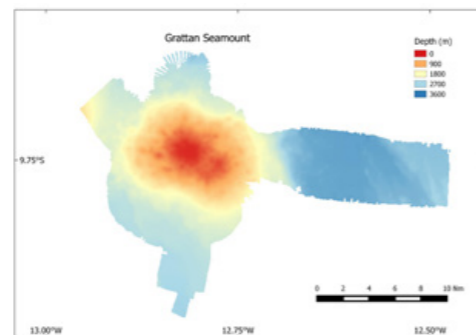
The Blue Belt Programme partnered with the Ascension Island Government Conservation and Fisheries Department to investigate how seamount habitats influence marine productivity and biodiversity and over what range the influence of the seamount extends. The study used acoustic data and underwater video to identify the presence of pelagic fish and invertebrates (living in the water column) around two seamounts in the Ascension Islands EEZ. The acoustic signatures of key fish species such as tuna and shark, and planktonic

invertebrates were identified, and confirmed, using underwater video footage and plankton samples. Studies such as these increase our understanding of how these diverse seamount ecosystems are utilised by key fish and planktonic species, enhancing our ability to successfully manage and protect them.

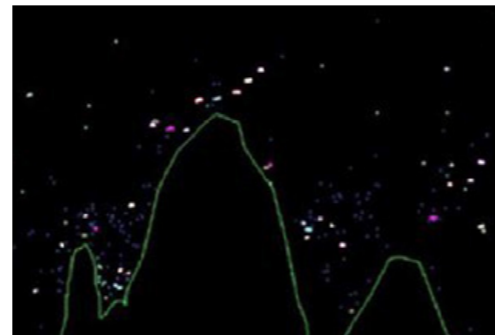
These study findings and information from other on-going biodiversity studies are being incorporated into a document outlining the best available evidence and design options for an Ascension Island MPA.



Computer modelling image illustrating the profile of Grattan seamount.



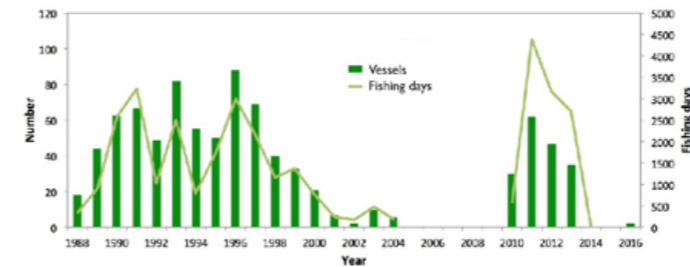
Bathymetric image illustrating the profile of Grattan seamount.



Seamount acoustic image (green line) with fish tracks (coloured dots) above illustrating how fish species congregate around these important geological features.

## Supporting sustainable fisheries management

Large schools of migratory tuna are found in the waters around Ascension Island and bigeye tuna are particularly abundant from November to February, when they are caught by regional longline fisheries. One of the first tasks of the Blue Belt Programme was to review previous fishing activities in the Ascension EEZ, which will help inform future management decisions.



Number of licences and fishing days in the Ascension Island fishery since 1988

In January and February 2018, the Blue Belt Programme supported an Ascension Island-led fisheries patrol and research trip on board the FV Extractor.



The FV Extractor which undertook scientific research and patrolling activities in the Ascension EEZ

During the patrol of the EEZ, a licensed fishing vessel was inspected to ensure that all licence conditions were being adhered to. Research work focussed on tracking the movements of key pelagic fish species, including bigeye and yellowfin tuna, which were tagged with satellite and conventional tags. The aims of the tagging programme are to assess how tuna species utilise the pelagic environment around Ascension Island. Based on the information collected from the tags, effective management strategies for these important fisheries species can be developed and implemented. Tuna tagging data is submitted to the International Commission for the Conservation of Atlantic Tuna (ICCAT) to inform in regional management.



A yellowfin tuna that has had a satellite tag fitted

## Managing other human activities

During a recent visit by Blue Belt staff to Ascension Island, meetings were held with key stakeholder groups and Ascension Island Government departments. Site visits were carried out to begin assessing where human activities may

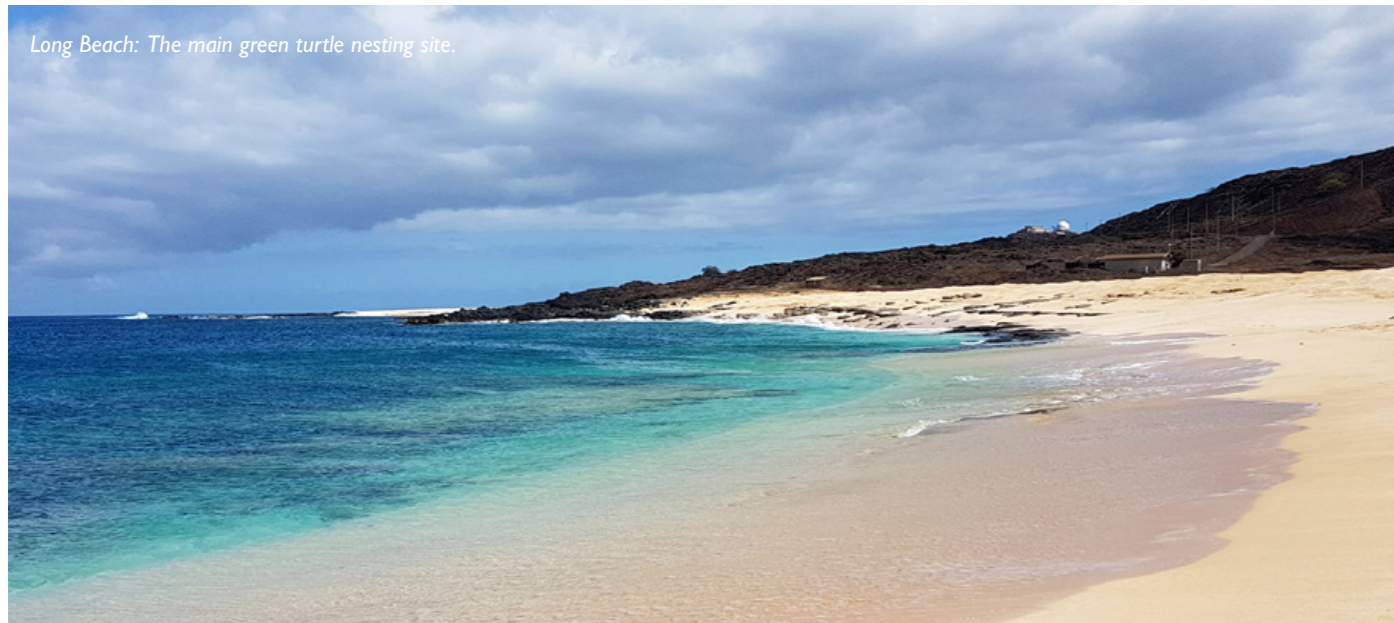
interact with key marine habitats. Recommendations will be made to the Ascension Island Government to suggest ways in which activities can be managed to mitigate or minimise impacts on marine and coastal ecosystems.

The information gathered during these meetings and sites visits will also support the development of the Ascension Island Marine Management Plan.

## Supporting compliance and enforcement

Blue Belt staff have reviewed AIG's current enforcement procedures and made recommendations with regard to process and policy. In addition, training has been provided on compliance and enforcement best practice, including intelligence, pocket notebook procedures, statement writing, evidence and disclosure. Drone surveillance techniques have been trialled as a tool to identify any Illegal, Unreported and Unregulated (IUU) fishing.

# Ascension Island (cont.)



Long Beach: The main green turtle nesting site.

“ Support and collaboration with Blue Belt partners has significantly increased our capacity to deliver the objectives of the Ascension Island Scientific Roadmap. The additional technical support and access to experts helps to ensure that continuing research and post-designation management will be both effective and sustainable. ”

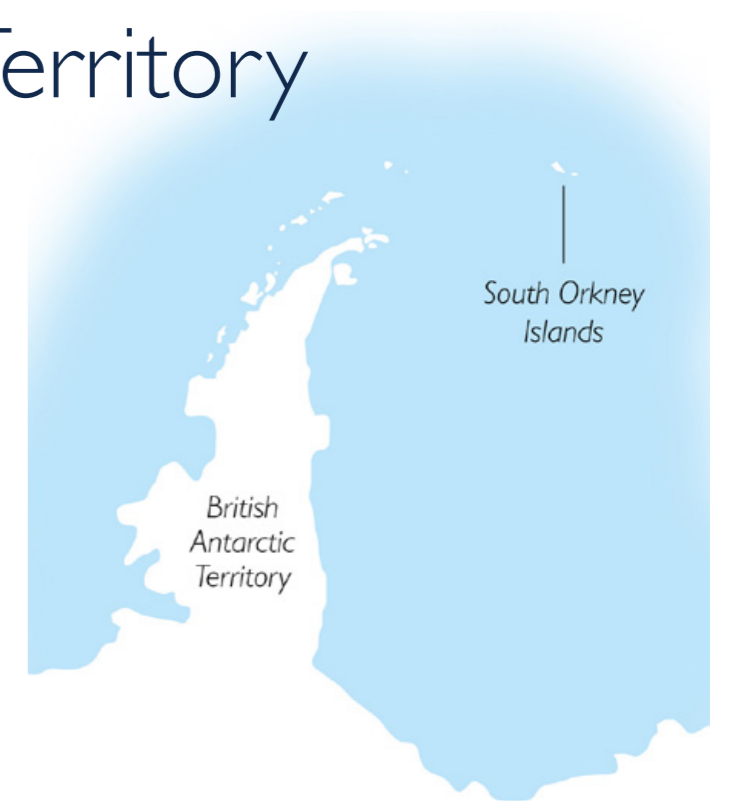
**DR ANDREW RICHARDSON,**  
Acting Director of Fisheries and  
Senior Marine Fisheries Scientist,  
Ascension Island

## Work Plans (2018 –2019)

- Assist Ascension Island Government (AIG) in the production of an Ascension Island MPA evidence and options document;
- Support AIG in the preparation, publication and implementation of a marine management plan and MPA legislation;
- Provide advice to AIG on the development of inshore fisheries management plans;
- Work with AIG to finalise inshore and pelagic biodiversity and ecosystem studies;
- Assess existing and new technologies in relation to future fisheries enforcement and surveillance initiatives;
- Support AIG in the MPA designation process.

# British Antarctic Territory

The waters around the British Antarctic Territory are amongst the most productive in the Southern Ocean, supporting large populations of krill, which, in turn feed larger predators, such as baleen whales, penguins and seals. A fishery for Antarctic krill operates during the austral summer, managed by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). There is also a small fishery for the valuable Antarctic toothfish. The first high seas Marine Protected Area was created near the South Orkneys in 2012, on the basis of a scientific rationale presented at CCAMLR by the UK.



## Supporting sustainable fisheries management

Over the past year, the Blue Belt Programme has undertaken a comprehensive review of fishing activity in the region to help inform management strategies.



Scientists from our partner organisations, with support from Blue Belt, are collaborating closely with the wider CCAMLR and Antarctic community on the life cycle of Antarctic toothfish, to provide CCAMLR with more accurate information for the management of this species.

Four deep-water longline cameras have been purchased by the Blue Belt Programme. Together with temperature loggers, movement sensors and additional miniature cameras, these will provide data and information for modelling the impact of longlines during fishing operations on the seabed, as well as collect data on the deep-sea environment for informing marine predictive models.

## Work Plans (2018 –2019)

- Deployment of longline cameras on vessels fishing for toothfish;
- Support for the South Orkneys MPA review within CCAMLR;
- Continue the collaborative partnership with the British Antarctic Survey on marine science and management in the BAT region.

# British Indian Ocean Territory

The British Indian Ocean Territory (BIOT) is located in the central Indian Ocean, and is made up of 58 islands and atolls. Diego Garcia is the only inhabited island within the territory, hosting a US-British naval facility. The archipelago is surrounded by a 640,000 km<sup>2</sup> maritime zone which was declared a "no-take" Marine Protected Area (MPA) in April 2010. A low level of recreational fishing is allowed around Diego Garcia. The territory contains some of the largest unexploited reefs anywhere in the world and to date remains largely unexplored.

## Strengthening governance

In March 2018 the Blue Belt Programme assisted the BIOT Administration in the organisation and facilitation of a workshop focusing on the development of a new Conservation Management Plan (CMP) for the territory. The workshop brought together experts from organisations working in or with an interest in the territory, in both the marine and terrestrial environments. The outputs from the workshop and the key areas identified will feed into the CMP. The CMP will help to guide future conservation efforts in the territory and will act as a route map to maintain and restore the natural environment.

## Supporting sustainable fisheries management

In October 2017 members of the Blue Belt Programme attended a two-day workshop on pelagic species within the BIOT MPA. The aim of the workshop was to develop a research programme for studying pelagic fishes, such as tuna and shark, in the BIOT MPA. The workshop considered existing data, identified gaps and key species. The workshop also developed a detailed proposal to address fundamental questions on the distribution and movements of pelagic species; the connection between the BIOT MPA and the wider Indian Ocean; and efficacy of the present management regime within the BIOT MPA. Since 2010, the whole maritime zone has been closed to



commercial fishing. Before this the waters were open to licensed fishing from predominantly longline and purse seine netting. Understanding the historical fishing records and the current status of Illegal, Unreported and Unregulated (IUU) fishing is important to future studies of commercially important species in the territory. The Blue Belt Programme has undertaken a review of the past fisheries data, governance and surveillance of the fisheries within and around BIOT. This document will feed into future studies and plans for the continued conservation of the MPA.

## Supporting compliance and enforcement

The Blue Belt Programme is supporting enforcement activity, including a BIOT Administration-led patrol and satellite surveillance, which recently led to two Indian boats and one Sri Lankan boat being detained following evidence of illegal fishing activity.

Blue Belt liaised with the local enforcement patrol unit to



Participants from the March 2018 workshop, focusing on the development of a new Conservation Management Plan (CMP) for the Territory.

provide tasking support to patrols. In addition, a drone trial has been agreed with the patrol unit for June 2018 and training has been arranged for new Fisheries Protection Officers ahead of deployment.



Fisheries Protection Officer undertaking an inspection of a fishing vessel.

“ The BIOT Administration is very grateful for the ongoing support and advice provided by the Blue Belt Programme in the development of our new Conservation Management Plan, particularly in the run-up to the March workshop where we had a very productive engagement with parties who have an interest and stake in the environmental protection of the British Indian Ocean Territory. We look forward to continuing to work with the Blue Belt Programme to protect and enhance the incredible biodiversity and ecological integrity of BIOT. ”

**BEN MERRICK**

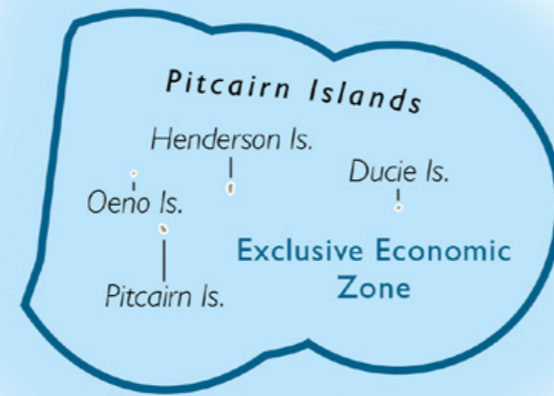
HM Commissioner for the British Indian Ocean Territory.

## Work Plans (2018 –2019)

- Continue to assist in drafting the marine aspects of the BIOT Conservation Management Plan;
- Work with the BIOT Administration on the assessment of the nearshore and offshore recreational fisheries;
- Sampling and analysis of marine water quality within the territory and to help establish a water quality monitoring programme;
- Work with the Zoological Society of London, Stanford University and others to develop and implement a study of pelagic fishes within the BIOT MPA;
- Undertake an analysis of IUU fishing levels around the territory working with the Marine Resources Assessment Group (MRAG) and develop a strategy to reduce IUU fishing around the territory;
- Advise on responding to spillage of oil and other pollutants within the territory to minimise impacts to the marine environment.

# Pitcairn Islands

The Pitcairn Islands are an isolated archipelago located in the South Pacific and are made up of four islands with only one being inhabited. The Pitcairn EEZ covers an area of 834,000 km<sup>2</sup> and was declared a no-take MPA in 2016, which made it the largest contiguous protected area anywhere in the world at that time. Artisanal fishing rights are still held by the small island population of 45 to 50 residents within 12 nm of the islands and a specified area between Pitcairn (the inhabited island) and the nearby '40 Mile Reef'.



## Strengthening governance

Blue Belt Programme has provided advice to the Pitcairn Government on ballast water management to inform drafting of the new Marine Conservation Regulations.



management and monitoring within the Territory. The Blue Belt Programme has compiled a comprehensive fisheries profile for the territory covering the governance, management, current status and surveillance of the fishery. This document will feed into a marine management plan for the territory.

## Supporting sustainable fisheries management

Most of the waters around the Pitcairn Islands are a no-take zone, with fishing only permitted within 12 nm of the islands and within 2 nm of 40 Mile Reef. Although there is no current commercial fishery in the territory, it is important to establish the historical context and examine the past fisheries as these may influence future

## Supporting compliance and enforcement

Blue Belt has provided support to the Pitcairn administration in how they follow up Vessel Monitoring System (VMS) and logbook data requests, as part of monitoring and enforcement activities.

## Work Plans (2018 –2019)

- Assist Pitcairn Government to develop a Marine Management Plan for the island to ensure that the Marine Protected Area is effectively managed;
- Work with Pitcairn Government to undertake a programme of seabed habitat mapping, using seabed cameras and earth observation data, creating useful tools for management and tourism;
- Undertake a series of hydrographic investigations around the island to help inform management and development (anchoring and tourism);
- Use seabed cameras to collect information on the populations of lobsters around Pitcairn;
- Work with the Pew Charitable Trusts and other organisations to undertake a clean-up and scientific investigation of the marine litter on Henderson Island;
- Support Pitcairn Government to design and implement a monitoring programme for the key species and habitats of the Pitcairn Islands to assess the effectiveness of the MPA;
- Develop a code of conduct for whale watching activities to minimise disturbance to the visiting humpback whale population;
- Train local staff and community members in marine ecology, fisheries and marine management principles.

# St Helena

St Helena is an isolated island in the tropical South Atlantic, surrounded by a 445,000 km<sup>2</sup> EEZ, which includes some major seamounts. St Helena Government (SHG) declared a sustainable use Marine Protected Area in the entire EEZ in September 2016, but work is required to fully implement the Marine Management Plan.



## Strengthening governance

Although St Helena has designated a sustainable use Marine Protected Area (MPA) the Fisheries Limits Ordinance (FLO) must be revised to fully implement the commitments made in the Marine Management Plan (MMP). The Blue Belt Programme has been assisting SHG to review the existing FLO and provide advice on the drafting of new legislation.

## Understanding and protecting biodiversity

There is limited information available on the biodiversity of the St Helena marine environment, particularly offshore species and habitats, such as the seamounts. During 2017-18, the Blue Belt Programme has undertaken a background review or 'characterisation' of St Helena's marine environment and its biodiversity, and started to compile available biological, physical and chemical data for its wider marine area.

In addition, Blue Belt undertook a research survey in St Helena's EEZ in April 2018 to collect biological samples and physical evidence to provide baseline information on the MPA (see page 20). A second research survey is planned for April 2019.



Waiting to board the JCR. Left to right: Leeann Henry (SHG), Tammy Stamford (Cefas), Beth Taylor (St Helena National Trust), Donnie O'Bey (St Helena Fishermen's Association), Alison Small (SHG), Paul Cherrett (SHG).

Blue Belt is also providing support for the refurbishment of a laboratory that is necessary to enable marine science studies and monitoring of the marine environment to happen safely and effectively. In 2017-18, work to review the existing facilities was undertaken, laboratory requirements were catalogued and discussions held with SHG to identify a suitable building. This facility will be developed in conjunction with a marine visitor centre funded by the Blue Marine Foundation.

## Supporting sustainable fisheries management

St Helena has three principal fisheries: a pole and line tuna fishery, an inshore fishery for grouper and an inshore fishery for spiny and stump lobster. The Blue Belt Programme has undertaken a review of St Helena fisheries to help plan future work.

Yellowfin and bigeye tuna are the main target species of the tuna fishery, with skipjack caught seasonally. Whilst



Fishing vessels and yachts on their moorings in James Bay.

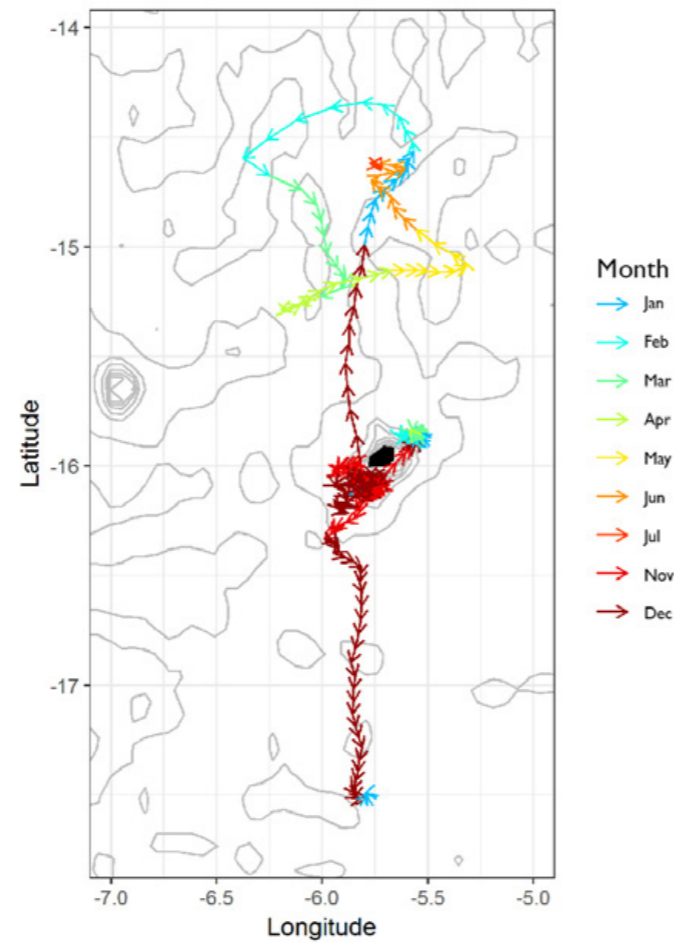
# St Helena (cont.)

tuna stocks are migratory and managed on a pan-Atlantic basis, St Helena can provide valuable data to support this management. Working with SHG, the Blue Belt Programme has expanded the existing tuna tagging programme and provided tagging training to local staff. The existing tagging data has been analysed, and conventional and satellite tagging data demonstrate that yellowfin tuna remain around St Helena for more than 6 months and hence stocks may benefit from local management measures. Further tagging work, with satellite, data storage and conventional tags is planned for 2018/19.

In March 2018, Cefas commenced a separate programme with the International Commission for the Conservation of Atlantic Tunas (ICCAT) to undertake further tagging work in collaboration with SHG. Data collected under the ICCAT project will complement data collected under Blue Belt and the two projects will be closely aligned.

In the case of grouper and lobster there is little or no data on stock sustainability. In close co-operation with SHG, the Blue Belt Programme has established programmes of work to assess the status of grouper stocks. This includes tagging, age-determination and reproductive ecology work, with the tagging undertaken by local staff trained and funded by the Blue Belt Programme.

The Blue Belt Programme is also supporting a Darwin Plus-funded project, led by the SHG, entitled "Sustainable fishery management for St Helena lobster populations", which is due to commence in September 2018. This



Tracks of the horizontal movement of seven yellowfin tuna for which data were recovered from pop-up satellite tags.

project will focus on understanding the population dynamics of lobster species in relation to the ecosystem and how current fishing practices may impact lobster abundance and distribution.

The Blue Belt Programme is working with SHG to enhance their fisheries and data management collection and facilitate submissions to ICCAT. Blue Belt is also supporting St Helena at the Regional Fisheries Management



Grouper caught for tagging with Speary Island in the background.

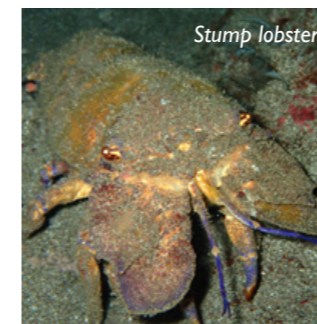
A grouper tagged and ready to be released as part of the tagging programme.

Organisations (RFMOs). In 2017, Blue Belt staff attended the ICCAT Commission meeting on behalf of the UKOTs, including St Helena.

## Managing other human activities

Aside from fishing, other human activities occur in the St Helena EEZ that could impact the marine environment, including waste water discharges, sand extraction and tourism. A series of monitoring and research activities have been planned to ensure SHG understands the impacts of these human activities on the marine environment and can manage those activities effectively to minimise impacts and ensure sustainability.

Evidence has been gathered to inform the assessments and establish the risk to the marine environment of these activities. A preliminary assessment of the island's physical processes (ocean currents and sediment transport) and



Stump lobster

a review of the existing legislation, regulatory and management frameworks have been undertaken. Recommendations have been made to the SHG on policy, licensing and environmental safeguards in relation to these activities.

The Blue Belt Programme has also conducted an initial assessment of St Helena's capacity to respond to marine pollution emergencies.

## Supporting compliance and enforcement

IUU activity is being monitored around St Helena following the establishment of a central compliance and enforcement intelligence hub in the National Marine Intelligence Centre (NMIC). Blue Belt has provided support on compliance issues, including liaison with the relevant Flag States on both information quality control and the admissibility of evidence.

“ *St Helena highly values its marine environment. The Blue Belt Programme is playing a crucial role in helping us to learn more about what's in our waters, and how to protect and manage our marine ecosystems effectively.* ”

LISA HONAN  
Governor, St Helena, Ascension  
and Tristan da Cunha

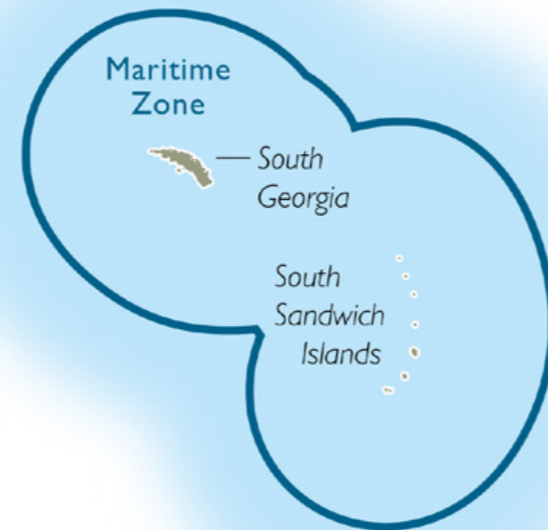
## Work Plans (2018 –2019)

- Support SHG to revise its marine management plan to include new information, policies and management strategies for the Island's principal human activities (fishing, sand extraction, tourism and waste water discharges);
- Assist the further development of the Marine Accreditation scheme for marine tourism operators;
- Key reports will be delivered to enhance our understanding of biodiversity of the marine environment and impacts of anthropogenic activities;
- Support SHG to map inshore habitats to better inform the marine management plan and underpin the assessment of sand extraction on the marine environment;
- Recommendations will be delivered for biosecurity monitoring;
- Samples collected on the James Clark Ross survey in April 2018 will be processed and data analysed to characterise the marine environment;
- Inshore and offshore tagging work is planned under the Blue Belt and ICCAT projects, together with analysis and interpretation of data extracted from returned tags;
- Work closely with SHG to deliver improved laboratory facilities and specialist training for SHG staff;
- Data management systems will be reviewed and methods investigated to enhance data management in the long-term.



# South Georgia & the South Sandwich Islands

South Georgia & the South Sandwich Islands (SGSSI) is a sub-Antarctic archipelago in the Atlantic sector of the Southern Ocean. In 2012, 1.07 million km<sup>2</sup> of the Maritime Zone was declared a sustainable use Marine Protected Area, including no-take areas around all the island and seasonal closures designed to protect the territory's exceptional wildlife. The fisheries for toothfish, icefish and krill, which are managed within the CCAMLR system, are internationally recognised as well managed.



## Strengthening governance

In 2017, the Government of SGSSI (GSGSSI) initiated the first 5-year review of scientific progress towards achieving the objectives of the MPA and invited stakeholders to provide evidence-based contributions on the best available science underpinning the MPA, priorities for future research and the effectiveness of monitoring measures. The Blue Belt Programme is supporting GSGSSI by facilitating the MPA review meeting.



South Georgia & the South Sandwich Islands MPA review group, including Blue Belt delivery team and stakeholders.

The Blue Belt Programme has also supported GSGSSI in drafting and reviewing legislation updates and policy notes, and provided advice for the SGSSI legislative review.

## Understanding and protecting biodiversity

Trials of a fibre optic winch and state-of-the-art deep-water camera system were successfully conducted from



the MV Pharos SG during a Blue Belt funded collaborative survey with the British Antarctic Survey. The camera system was deployed across a range of depths to the north of South Georgia within the MPA, within the Benthic Closed Areas and across a variety of inshore habitats to examine community diversity and structure. Following the successful test, the camera system will be deployed on future surveys around South Georgia & the South Sandwich Islands to collect information on the benthic biodiversity and its distribution within the MPA.

## Supporting sustainable fisheries management

A key question in relation to longline fishing is potential interaction with benthic fauna. To address this four deep-water longline cameras have been purchased by the Blue Belt Programme.



One of the longline cameras purchased by the Blue Belt Programme for deployment at South Georgia

Together with temperature loggers, movement sensors and additional miniature cameras, these will provide data and information for evaluating the impact of longlines during fishing operations.

## Supporting compliance and enforcement

The Blue Belt Programme has been developing procedures for aerial monitoring of fishing activities.



A test deployment of the deep-water camera system from the MV Pharos SG at 300m just outside of Cumberland Bay, South Georgia.

Image from the deep-water camera system showing Sea Lilies (crinoids) filtering food from the sediment deposited by South Georgia's glaciers.



## Work Plans (2018 –2019)

- A collaborative survey with the British Antarctic Survey on RRS Discovery to investigate krill biomass and distribution in the South Sandwich Islands;
- A survey on the RRS Discovery to investigate the islands' benthic diversity using the state-of-the-art deep-water camera system;
- Analysis of data collected by the deep-water camera and by the longline cameras and sensors;
- Ongoing logistical support for the Government of South Georgia & the South Sandwich Islands MPA research and monitoring science review;
- Support planned updates to the Fisheries Ordinance;
- Continued satellite surveillance monitoring of risk areas and seasons.

# Tristan da Cunha

Tristan da Cunha (TdC) is an isolated archipelago in the South Atlantic, comprising four islands and an Exclusive Economic Zone (EEZ) of 750,000 km<sup>2</sup>. As part of the Blue Belt Programme, Tristan da Cunha Government has committed to developing and implementing a marine protection strategy for its EEZ by 2020.

## Strengthening governance

In July 2017, the Blue Belt Programme assisted the TdC Government with organising a marine protection strategy planning workshop. The workshop reviewed current scientific evidence, identified key Blue Belt research priorities and identified a course of action for development of the strategy. The workshop was attended by Blue Belt staff, scientists, NGOs, business managers and other experts with long-term involvement in TdC research and management.

The design of the marine protection strategy will be decided upon by the TdC Island Council, using an evidence-based approach, informed by work conducted by the Blue Belt Programme and collaborating organisations, such as the British Antarctic Survey (BAS) and the Royal Society for the Protection of Birds (RSPB). The Blue Belt Programme is supporting the development of the associated management plan, regulations and enforcement strategies that will ensure human activities



Stakeholders gathered at the Foreign and Commonwealth Office chambers for the Blue Belt Tristan da Cunha marine protection planning workshop.

are sustainable and compatible with TdC's marine protection objectives. As part of this process, the Blue Belt Programme is providing legal and regulatory advice on updating the relevant legislation that supports fisheries management and marine protection.

## Understanding and protecting biodiversity

The Blue Belt Programme has supported TdC Government to carry out a series of research projects to establish biodiversity baseline information and data for monitoring of the marine environment. These include offshore work focused on the McNish, Yakhont, RSA and Crawford seamounts in the south of the EEZ, as well as inshore studies around the four islands that make up the TdC archipelago.

The inshore research, such as the use of baited cameras and tags to investigate the abundance and movements of fish and sharks, is being

Blue Belt scientist collecting data on stomach contents of bluenose sampled from the Argos Vigo.

led by the TdC Fisheries and Conservation Departments in collaboration with Blue Belt and a range of stakeholders and long-term supporters of TdC marine conservation initiatives.

Long-term efforts to ensure the sustainability of TdC's inshore fisheries have been extremely successful. As a result, most of the marine protection priorities identified during the 2017 TdC marine protection planning workshop are focused on the biologically rich offshore seamounts in the south of the TdC EEZ.

The Yakhont and Crawford seamounts were visited by the RRS James Clark Ross in March 2018 during an eight-day intensive survey. The survey was undertaken in partnership with BAS, but also involved a range of experts from other institutions (see page 20). The survey will provide invaluable baseline data on the habitats and biodiversity of the TdC EEZ and will directly inform the design of the marine protection strategy. This initial survey will be complemented by a longer deployment on board the RRS Discovery in March next year.

## Supporting sustainable fisheries management

TdC has an excellent record in fishery management, with the TdC lobster fishery certified by the Marine Stewardship Council. The Blue Belt Programme has provided an independent evaluation of the lobster stock assessment and is providing constructive feedback to help safeguard the lobster fishery into the future.



Tristan da Cunha as seen from Nightingale Island. Yellow-nosed albatross in the foreground.

A fishery for bluenose warehou has operated sporadically on the seamounts in the south of the TdC EEZ since 1997, with a mixture of trawl and longline fishing vessels licensed by the TdC Government. The Tristan marine protection workshop identified the urgent need to determine a sustainable catch limit and establish appropriate management measures for the fishery. To address this, the Blue Belt Programme has conducted a review of bluenose warehou fisheries in other parts of the world and has worked with TdC Government to undertake surveys, develop licence conditions and data collection protocols for commercial fishing. The Blue Belt Programme has worked with the TdC Fisheries department to develop observer protocols and an updated observer manual. Two surveys have been conducted on the FV Edinburgh and the data from those surveys, coupled with commercial fishing



Inshore marine conservation work is performed by Tristan da Cunha Fisheries and Conservation Department staff.

# Tristan da Cunha (cont.)

data, will be used to undertake a preliminary stock assessment. The Programme will also support TdC Government to implement technical measures to help ensure that the stocks are managed sustainably into the future, providing a source of revenue to the island. In addition, an assessment of seabird bycatch in the longline fishery has been undertaken, with recommendations to ensure that international best practice mitigation measures are adopted.

## Managing other human activities

Being the most remote inhabited island on earth has its benefits, one of which is that isolation protects the island from many sources of human impacts. The remoteness of the archipelago limits tourism to cruise ships traversing the South Atlantic and visiting ocean-going yachts. As other human impacts are inherently reliant on ship travel to and from the island, the Blue Belt Programme is working with the TdC government to develop vessel traffic regulations within territorial waters to decrease the risk of ship-based accidents close to the islands. Investigations are also looking into the possibility of introducing more stringent management measures for international vessel traffic across the EEZ to reduce the risk of groundings that could cause significant environmental damage, as occurred when the MV Oliva went off course and was wrecked on Nightingale Island in 2011.



One of the Tristan lobster fishing vessels, pictured in the harbour at Edinburgh of the Seven Seas.

Complementing such shipping vessel management measures, the Blue Belt Programme is collaborating with the Maritime & Coastguard Agency (MCA) to identify TdC's capacity to respond effectively to marine emergency situations. This is part of a collaborative effort between the Blue Belt Programme and MCA across the Overseas Territories. An initial capacity assessment was conducted with the TdC Government to identify the capacity and requirements on TdC.

With the support of the TdC community in 2017, Blue Belt organised and implemented marine litter surveys on TdC to identify the levels of plastic pollution around the islands.



Tristan da Cunha fishers prepare to pick up the first collection of lobsters in the inshore fishery.

## Supporting compliance & enforcement

The Blue Belt Programme supported a patrol of the TdC EEZ and provided training on catch recording processes, management measures, surveillance and enforcement protocols. The condition and adequacy of the TdC fisheries and conservation vessels was assessed. Following that initial evaluation, and with the support of BAS, the 38 ft Pacific patrol/ survey vessel, Wave Dancer, was transported to the UK for further assessment.

“ The designation of a marine protection regime in the Tristan da Cunha EEZ will secure the sustainable management of the outstanding marine environment for future generations. The Blue Belt Programme is an amazing opportunity for Tristan to access world class advice and guidance to inform their decision on the design and management of their marine protection strategy. ”

SEAN BURNS  
Administrator,  
Tristan da Cunha Island Council



View from the 1961 volcano of Edinburgh of the Seven Seas, the main settlement on Tristan da Cunha.

## Work Plans (2018 –2019)

- Continued monitoring of the commercial bluenose fishery, including wider ecosystem impacts upon seabirds and seafloor habitats;
- Supporting the domestic legislation for adoption that will enable the TdC Island Council to designate an MPA within the EEZ;
- Infrastructure improvements to enable TdC staff to conduct inshore biodiversity surveys and fish tagging projects along with the capability to patrol the northern islands;
- Inshore biodiversity surveys to enhance the data collection of pelagic and benthic species;
- Production of habitat classification maps of the seamounts from the James Clark Ross (JCR) survey;
- Initial stock assessment analysis using the bluenose fishery data collections;
- RRS Discovery cruise to build on the JCR survey and to map and sample other seamounts;
- Develop an appropriate management plan, supported by TdC stakeholders, to accompany the marine protection strategy agreed by the Island Council;
- Update legislation to support agreed management of TdC fisheries.

# JCR Survey

## RRS James Clark Ross surveys the Tristan and St Helena EEZs

In March – April 2018, the Blue Belt Programme teamed up with the British Antarctic Survey (BAS) to undertake surveys of the St Helena and Tristan da Cunha EEZs using the RRS James Clark Ross (JCR). Every year the JCR travels from the UK to the Antarctic and back, passing close to the mid-Atlantic UKOTs; the programme took advantage of this to work with BAS, spending eight days in the EEZ of each UKOT.

The survey used a high-resolution multi-beam acoustic system (Swath Bathymetry) to produce detailed maps of the seafloor around the islands and seamounts. The surface of the seabed and overlying water were then sampled using a combination of cameras and nets to determine the distribution and abundance of species.

Oceanographic data was collected using a conductivity, depth & temperature probe. The mid-water (pelagic) fauna was sampled using scientific nets that could be opened and closed remotely to sample discreet layers and were fished from the surface to 1000 m in distinct layers.

In the TdC EEZ, the survey focussed on two seamounts (Yakhont and Crawford) that have been subject to fishing in recent years. The aim was to improve our understanding of biodiversity and productivity of the seamounts and consider what impact fishing may have on the animals of the sea-floor. Initial analysis indicate that



the seamounts are more productive than the surrounding ocean and hence support large populations of fish. The camera system has produced some excellent images of the benthic fauna, which are currently being analysed by Blue Belt and BAS scientists.

In St Helena, the survey focussed on the area around the island and the Bonaparte Seamount, which is 70 miles to the north-west. St Helena waters attract large schools of tuna and are believed to be a breeding site for whale sharks. A key part of the work was to investigate the environmental conditions and potential food that attract these charismatic animals to St Helena waters.

The pelagic nets caught over 200 species of fish and invertebrates in close proximity to St Helena, including several that are thought to be new to science. A representative sample of specimens was preserved, transported back to the UK, lodged at the Natural History Museum in London and made available to experts for further analysis.

The work undertaken by scientists on the JCR has added greatly to our knowledge of the biodiversity of these remote archipelagos and will help ensure that the waters are properly managed for future generations. During the survey, scientists from Blue Belt and BAS, were supported by a range of experts from the UK Hydrographic Office, RSPB, Plymouth University, SAERI, St Helena Government, St Helena National Trust and the St Helena Fishermen's Association.

*Pelagic animals caught in mid-water trawls around St Helena. Clockwise from top-left: a viper fish (Chauliodus sp.); a hatchet fish (Argyropelecus sp.); a juvenile angler fish (Lionophryniidae sp.) and an amphipod (Phronima sp.)*



# Cross-territory management activities

A number of the workstreams are relevant to several or all of the UK Overseas Territories (UKOTs) in the Blue Belt Programme and these cross-territory activities are outlined here. This work is helping the UKOTs to develop, implement and enforce marine management strategies within their maritime zones.

## Monitoring and Enforcement: Combatting Illegal Unregulated and Unreported fishing

Detecting and preventing IUU fishing within the UKOT maritime zones is a key part of the Blue Belt Programme. To date the Blue Belt project has established an end-to-end system on IUU fishing, ranging from ongoing surveillance across the UKOTs to a co-ordinated process for liaising with Flag States and relevant Regional Fisheries Management Organisations (RFMOs) in suspected cases of IUU in UKOT waters or non-compliance with RFMO Conservation Management Measures (CMMs). Where necessary, the Blue Belt Programme supports the UKOTs in strengthening their systems to deliver effective and proportionate enforcement outcomes.

In order to understand the nature and extent of IUU fishing the Blue Belt Programme has developed and implemented a system that allows the objective assessment of the relative risks of IUU fishing around the individual UKOTs, developed specific vessel threat profiles, and identified reciprocal Monitoring and Control and Surveillance (MCS) countermeasures and areas where they can be improved.

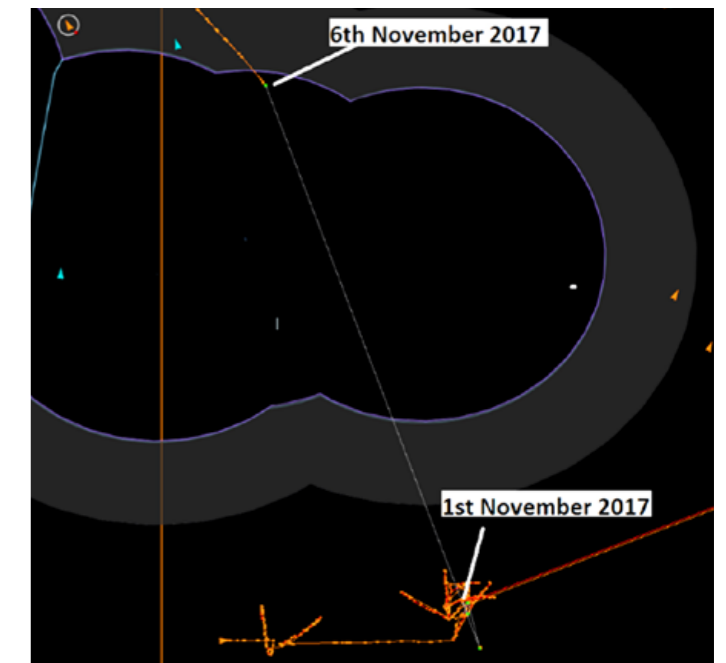


The Blue Belt Programme is working closely with the National Maritime Information Centre (NMIC), allowing the use of the NMIC systems to undertake surveillance of all UKOTs. This close collaboration enables the Blue Belt Programme to record, analyse, develop and disseminate intelligence across the UKOTs in accordance with the National Intelligence Model and in a coordinated manner between UKOTs.

## Satellite surveillance

Satellite surveillance using Automatic Information System (AIS) data, Synthetic Aperture Radar (SAR) and cross reference with RFMO records has been conducted over all Blue Belt UKOTs at various times since 2014. Satellite surveillance over Pitcairn is PEW funded.

Through the Blue Belt Programme, the proposed recommendations in each of these reports have been used to feed into an intelligence, risk assessment and threat analysis.

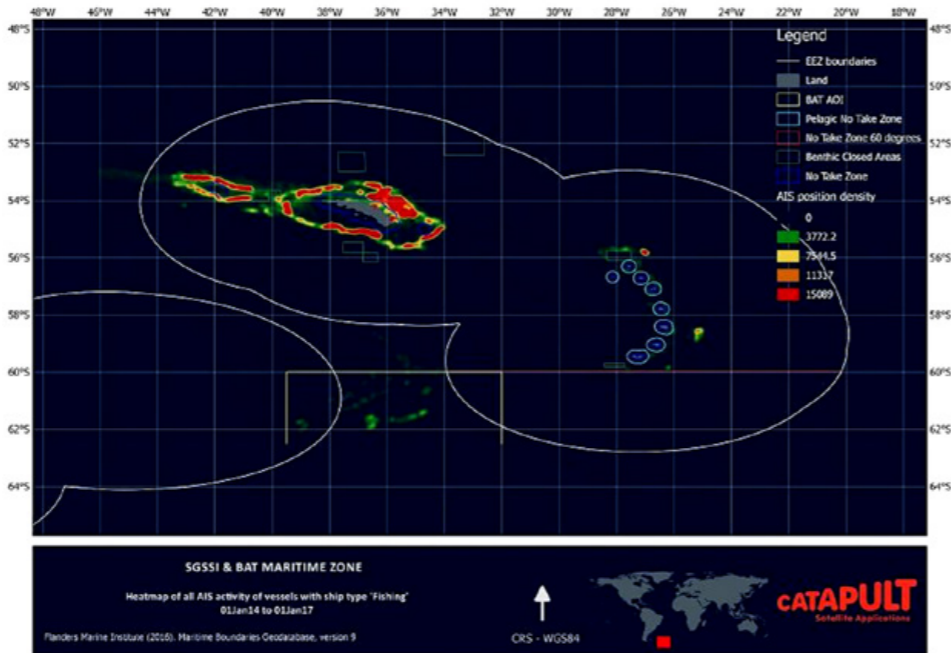


*AIS transmission gap detected by Catapult Satellite Applications as part of satellite surveillance of Pitcairn EEZ*

Compliance monitoring around the UKOTs from January to March 2017, plus on-going monitoring around Pitcairn, identified 63 suspicious instances in relation to 49 vessels from nine flag states. In each case, Blue Belt has liaised with the relevant Flag State to request Vessel Monitoring System (VMS) and logbook data to confirm the activity of the vessel. In the majority of instances, the VMS has been provided and assessed, and the activity of the vessel validated. In all cases and specifically where data has yet to be received, we are continuing to work with the Flag States to obtain the information.

Ongoing satellite surveillance is being tasked on a risk and intelligence-led basis across the programme to target the times and areas that represent the highest risk for each of the UKOTs. This process permits higher intensity surveillance in the most active areas, whilst maintaining the ability to react to dynamic threats as they arise.

The programme is working closely with the Defra Earth Observations centre of excellence to acquire and analyse high-resolution imagery from the European Space Agency sentinel programme to complement the use of AIS data.



Heatmap of all AIS activity of vessels with the ship type "fishing" operating between 0.25 and 5kts (speeds associated with fishing activity)

### Technology: Adding value to compliance and enforcement around the UKOTs

The Blue Belt Programme has used a problem-solving approach to identify which technological solutions would be most appropriate to conduct compliance and enforcement within the challenges and constraints inherent for each UKOT.

Initially this was completed through an open-source review of available and emerging technologies. The review was followed by an assessment of the potential applicability in each of the UKOTs, and the results are now informing

discussions with industry on how these technological solutions could be developed.

The Blue Belt Programme is working in collaboration with the Zoological Society of London and the Marine Resources Assessment Group to trial long-range reconnaissance drones. As a first step, trials of a small, off-the-shelf Unmanned Aerial Vehicle (UAV; drone) were conducted in Ascension Island, which highlighted both the potential and the challenges associated with the application of technology for gathering evidence in the UKOTs.

### Training & Development: Building capability in the UKOTs

At the outset, the Blue Belt Programme conducted a scoping exercise with each UKOT to understand specific training requirements. A comprehensive training package has been developed based on UK and internationally recognised best practices. Delivery platforms for the training are *in-situ* training and the MMO's Learning Management System (LMS). The key elements of bespoke training packages developed for the UKOTs include:

- Intelligence;
- Pocket notebook protocols;
- Statement writing and evidence;
- Disclosure.

To date, face-to-face training on these elements have been delivered to Tristan da Cunha, Ascension Island, St Helena and BIOT officers. Blue Belt is converting the packages so that the UKOTs have access via the MMO's

LMS, an online platform where training packages can be developed, modified and accessed remotely.

Visits to Tristan da Cunha, Ascension Island and St Helena have provided the opportunity to conduct enforcement work alongside UKOT staff, which permitted a review of the processes and procedures *in situ*, and guided further practical recommendations based on adapting the UK fisheries enforcement to a UKOT setting.

### Regional Fisheries Management Organisations

Regional Fisheries Management Organisations (RFMOs), which have been established under the United Nations Convention on the Law of the Sea (UNCLOS) are responsible for managing migratory, straddling or high seas stocks in the world's oceans. The Blue Belt UKOTs are isolated, oceanic islands with large marine areas that are in the range of important migratory species, such as tuna, that are managed by RFMOs. Engagement with the relevant RFMOs is therefore important to contribute scientifically to the management of the stocks and, in some cases, to protect quota allocations.

The RFMOs also have mechanisms to deal with issues of non-compliance by vessels flagged to member states and can blacklist vessels guilty of serious infringements of RFMO regulations.

With their extensive experience in fisheries and marine management, Blue Belt staff are supporting the UKOTs in their interactions with RFMOs. The Blue Belt Programme has reviewed the relationship between the UKOTs and the 16 established RFMOs, to prioritise engagement activities. Subsequently Blue Belt staff attended meetings of the International Commission for the Conservation of Atlantic Tuna and of the South East Atlantic Fisheries Organisation. The Blue Belt team has also been assisting some UKOTs with the submission of catch, biological and tagging data, which will be submitted to the relevant RFMO.

### Data systems and management

With their unique ecosystems, endemic species, and remoteness, the UKOTs are particularly well suited for scientific investigations and experiments. As such, they have attracted interest and attention from a wide range of organisations, conservation groups, universities and NGOs involved in the collection and analysis of data from the UKOTs. These studies, outcomes, and datasets provide invaluable input to inform environmental management decisions. The Blue Belt Programme is reviewing the



Blue Belt staff delivering enforcement training to Ascension Island officers in February 2018

different data management and accessibility mechanisms across the UKOTs for data collected within their individual territories. While some have fully developed data management and GIS capabilities, others may need more support in developing suitable methods of data and metadata management and storage.

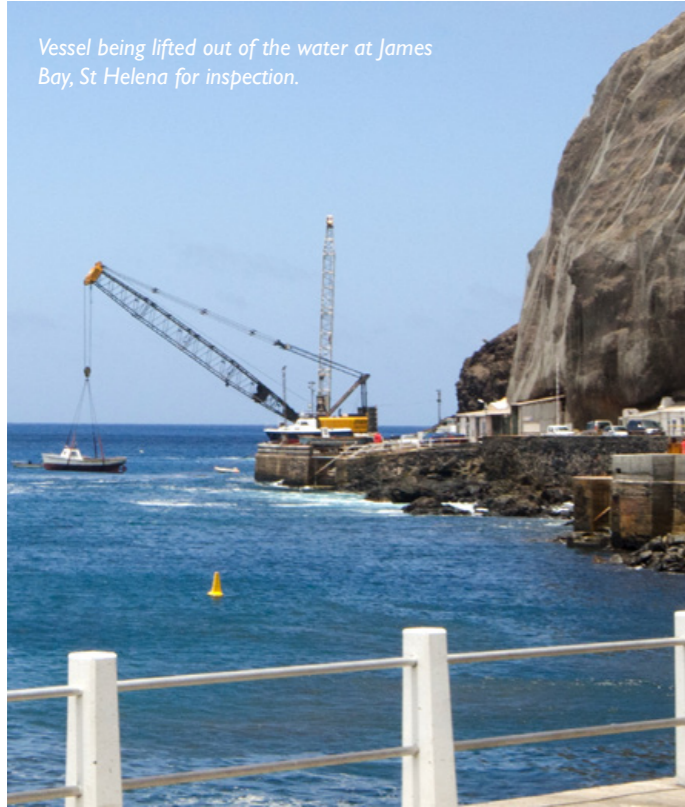
### Minimise and monitor the risk to the marine environment of invasive, non-native species

The Blue Belt Programme is working closely with UKOT governments and another HMG-funded programme *Tackling Invasive Non-native Species in the UKOTs* (led by the Non-native Species Secretariat) to develop strategies to minimise the risk of marine non-native species in Blue Belt UKOT waters. As a first step the Blue Belt Programme has reviewed the existing marine non-native species in each Blue Belt UKOT and identified the likely transport pathways that brought them there. We will support development of advice on strategies to monitor for new non-natives, minimise the risk of future invasive species, and mitigate the impacts and spread of established invasives.



Blue Belt team member preparing the Unmanned Aerial Vehicle (UAV; drone) on Ascension Island in February 2018.

Vessel being lifted out of the water at James Bay, St Helena for inspection.

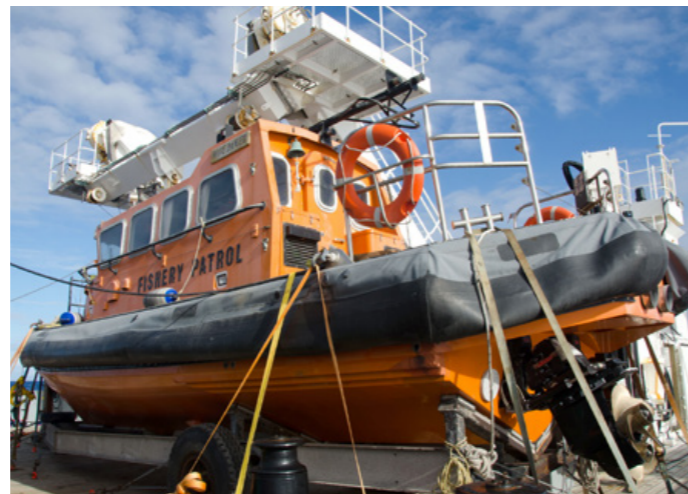


### Support for development of Marine Emergency Response Plans

Marine pollution incidents in Tristan da Cunha have highlighted the devastating effects that such events can have on the marine environment. Having an effective marine emergency response plan in place is an important element of effective marine protection for all the UKOTs in the Blue Belt Programme.

The Blue Belt Programme is collaborating with the Maritime and Coastguard Agency (MCA) to identify each territory's capacity to respond effectively to marine emergency situations. In relation to marine emergency response, the Blue Belt is supporting the ratification of international conventions and the development of new maritime legislation.

During January to May 2018, marine emergency response assessments have been undertaken with key stakeholders in Ascension, Tristan da Cunha and St Helena.



Tristan da Cunha patrol vessel on the deck of James Clark Ross.

## The Blue Belt Programme 2016-2020

The UK is on course to protect over four million km<sup>2</sup> of ocean by 2020.

The **focus** of the Blue Belt Programme is to help ensure that by 2020, UKOTs will have enhanced marine protection that is:

- **Designed**, based on the best available scientific knowledge and taking into account current and potential local marine use;
- **Legally designed**, in accordance with domestic legislation;
- **Effectively managed**, in accordance with comprehensive and locally-agreed Management Plans, which bring together scientific baseline information and include an analysis of current and future threats;

- **Monitored**, on the basis of cost-effective and sustainable plans to ensure the objectives of the designations are being delivered into the long-term; and
- **Enforced**, through effective surveillance and enforcement strategies, on the basis of cost-effective solutions to support OTs deliver this into the long-term.

**A key part of the Programme will be working with the OTs to develop cost-effective legacy arrangements for post-2020, recognising that managing, monitoring and enforcing large, remote marine areas is expensive and that many of the OTs have limited resources.**

### Work Plans (2018 –2019)

- Support Atlantic UKOTs in their engagement with ICCAT, including compliance with ICCAT Recommendations, refinement of Access agreements with other member states, and scientific support and data submission;
- Development of procedures and systems for non-compliance and IUU fishing, where necessary;
- Development of data management systems for UKOTs;
- Complete Marine Emergency Response assessments in Pitcairn and BIOT;
- Long-range evidence gathering trials using drone technology in BIOT;
- Explore options to provide long term, low cost surveillance using satellite imagery beyond the life of the Blue Belt Programme;
- Support the UKOT capability in reporting IUU fishing through testing procedures for capturing and presenting evidence collected using unmanned surveillance assets;
- Support development of strategies to minimise the risk of invasive non-native species in Blue Belt UKOTs.

The Blue Belt Programme would like to thank all those involved in the production of this Annual update, including contributions from the UKOTs and the use of any third party images.

#### For more information about the Blue Belt Programme:

**Web:** [www.gov.uk/government/publications/the-blue-belt-programme](http://www.gov.uk/government/publications/the-blue-belt-programme)

**Email:** [Bluebelt@cefas.co.uk](mailto:Bluebelt@cefas.co.uk)

**Twitter:** @UKGovBlueBelt

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