



Foreign &
Commonwealth
Office



Cefas



giving
nature
a home



Marine
Management
Organisation

Report on the Tristan da Cunha Marine Protection Planning Workshop

RSPB & FCO
July 27th 2017

Author (s): James Bell, Tammy Stamford, Jonathan Hall, Sean Burns & Martin Collins

Issue date: 1st March 2018

Document Control

Submitted to:	Tristan da Cunha Government
Date submitted:	
Project Manager:	Ralph Butcher
Report compiled by:	James Bell, Tammy Stamford
Quality control by:	Martin Collins
Approved by and date:	Martin Collins, 26/02/2018
Version:	V 1.0

Version Control History			
Author	Date	Comment	Version
James Bell	09/10/2017	Version 1	V0.1
Tammy Stamford	13/10/2017	Comments on V0.1	V0.2
James Bell	30/10/2017	Redraft and document in Cefas template	V0.3
James Bell	09/11/2017	Redraft, following comments by MC. Added in talk summaries	V0.4
Martin Collins	01/01/2018	Redraft to include more detailed text on workshop	V0.5
James Bell	16/01/2018	Comments from MC & RSPB	V0.6

Table of Contents

Summary	3
Background	4
The workshop	5
Appendix 1: Summary of Talks	14
Appendix 2: Participants	20
Appendix 3: Workshop Agenda.....	22

Summary

As part of the Blue Belt programme, the Tristan da Cunha Government (TdCG) has committed to developing a strategy for marine protection and sustainable management in its 750,000 km² Exclusive Economic Zone¹, by 2020. In July 2017, TdCG held a one-day workshop at the Foreign and Commonwealth Office (FCO) to:

1. establish what we already know about the marine environment in the Tristan da Cunha EEZ;
2. establish where we have gaps and where necessary, come up with an action plan to fill those gaps;
3. plot a course for a 2020 declaration of a marine protection strategy that allows for the sustainable development of the Tristan fisheries.

Additionally, the Royal Society for the Protection of Birds (RSPB) hosted a two-day workshop prior to the FCO workshop, to focus on reviewing current scientific evidence, identifying knowledge gaps and prioritising scientific work. This facilitated more time for discussion of TdCG's priorities at the FCO. The RSPB workshop was attended by a range of scientists, managers and other experts from the UK and abroad, including three representatives from the TdCG and a number of scientists with long-term involvement in Tristan research.

The FCO workshop was attended by those at the RSPB workshop, in addition to stakeholders from the UK Government, NGOs and industry. The workshop reviewed different approaches to marine protection in other UKOTs and small island states and considered what may be an appropriate model for Tristan da Cunha. The meeting identified priority tasks considered essential to the development of a marine protection strategy. The high priority activities agreed were:

- (i) Determining the sustainability of the bluenose (*Hyperoglyphe antarctica*) fishery;
- (ii) Designation of a Particularly Sensitive Sea Area (PSSA);
- (iii) Developing a sustainable surveillance & enforcement strategy;
- (iv) Investigating the life history of Tristan lobster (*Jasus tristani*), particularly larval stages;
- (v) Improving Tristan's infrastructure & capacity.
- (vi) Developing a communications strategy, including flagship species.

Some of these actions are already being addressed (e.g. from Darwin Plus grants) but others will be specifically addressed by Blue Belt partners during the programme. Additional priority actions were also identified.

¹ An EEZ gives various additional rights to a nation state over and above the previous status of 'Exclusive Fishing Zone', including mineral deposits and other extractive activities on the seafloor (e.g. aggregate dredging).

Background

Tristan da Cunha is the most remote inhabited archipelago in the world and forms part of the UK Overseas Territory (UKOT) of St Helena, Tristan da Cunha & Ascension. The island has a population of around 270 and is self-governing, with an elected Legislative Council. Executive authority is exercised by the Governor, who is represented on the island by an Administrator, who acts on the advice of the Island Council.

The archipelago consists of four principal islands: Tristan da Cunha, Nightingale, Inaccessible (the 'top islands') and Gough, approximately 220 nm to the south. A 200 nm (754,000 km²) Exclusive Fishing Zone (EFZ) was established around the archipelago in 1983 and has recently been declared as an Exclusive Economic Zone (EEZ). The Tristan archipelago is of global significance for seabirds, with 25 breeding species, 4 of which are endemic. The area around Gough and Inaccessible Islands is designated as a natural World Heritage Site. The waters around Tristan also support high biodiversity, including southern bluefin and albacore tuna, various sharks and endemic fish and invertebrates.

As part of the UKOT Blue Belt, Tristan da Cunha has made a commitment to establish a regime for protecting the waters across its entire maritime zone by 2020. To inform this process, the Tristan da Cunha Government (TdCG) convened a stakeholder workshop to address the following objectives:

1. To establish what we already know about the marine environment in the Tristan da Cunha EEZ;
2. To establish where we have gaps and where necessary, come up with an action plan to fill those gaps;
3. To plot a course for a 2020 declaration of a marine protection strategy that allows for the sustainable development of the Tristan fisheries.

The workshop was held in the Foreign and Commonwealth Office (FCO) on July 27th 2017. Additionally, the Royal Society for the Protection of Birds (RSPB) hosted a two-day meeting prior to the FCO workshop, to focus specifically on reviewing current scientific evidence and identifying knowledge gaps. This facilitated more time for discussion of TdCG's priorities at the FCO.

The workshop

A vision for Tristan da Cunha

The workshop agreed to the vision that: “Tristan da Cunha will have a well-managed marine environment, with safe, sustainable, environmentally friendly fisheries and effectively regulated marine activities, all underpinned by robust scientific evidence.”

Objective 1. Determine what we already know about the marine environment in the Tristan da Cunha

A series of presentations reviewed the existing information on the Tristan da Cunha marine environment (see Appendix 1 for abstracts of talks) and considered some of the activities that may threaten the marine environment. A recent report commissioned by PEW (Scott, 2017) reviewed much of the existing knowledge about Tristan’s marine environment and provides a valuable reference.

The region is oceanographically complex, with Gough Island separated from the northern group by a dynamic frontal system. Whilst the biodiversity of the nearshore area is reasonably well described there is limited knowledge of the biodiversity of the deeper areas and the offshore seamounts. The recent Pristine Seas Expedition (Caselle *et al.*, 2017) has provided some baseline data for nearshore areas.

The Tristan archipelago is of global significance for seabirds, with 25 breeding species, 4 of which are endemic. The existing data on demography and foraging patterns were reviewed and it was acknowledged that there is a considerable volume of data available on seabirds. A priority for the seabird data was to integrate all the tracking data and link with oceanographic data.

Objective 2: To establish where there are key gaps and, where necessary, come up with an action plan to fill those gaps

During the 2-day science workshop at the RSPB, six high priority activities were identified and those priorities were agreed at the FCO workshop. The six high priority activities were:

1. Sustainability of the bluenose (*Hyperoglyphe antarctica*) fishery. A fishery for bluenose has operated sporadically on the seamounts in the southern part of the Tristan EEZ. TdCG wish to diversify their fisheries and have recently licensed trawlers and have agreed to establish a regular longline fishery. The fishery has been a mixture of longlining and bottom trawling (see Collins, 2017), but there is no information on sustainable catch limits or on the impacts of the fishery on non-target species. Vulnerable marine ecosystems (VMEs) have been

identified on seamounts just outside the EEZ (SEAFO Data) and it is likely that similar VMEs are present on seamounts inside the EEZ. Habitat-forming species like corals and sponges are highly vulnerable to disturbance and consequently, demersal fishing can have a significant impact. Particular concern was expressed by some participants about the impact of bottom trawling on VMEs, which are likely to be found on the seamounts.

Key priorities for the bluenose fishery were identified as follows:

- a. To estimate stock size, stock structure and sustainable catch levels for bluenose. There is limited historic data relating to the bluenose fishery, and the stock size and biological parameters are very uncertain. An enhanced data collection programme is essential to help develop a stock assessment and provide estimates of sustainable catches;
 - b. To determine the characteristics of seamount habitats, particularly the distribution of vulnerable marine ecosystems;
 - c. To consider the long-term viability of funding for further surveys and stock assessments. Funding post-2020 is uncertain but, to support the ongoing management of the demersal fishery, it will be important for the Tristan da Cunha Government and its partners to secure longer-term funding streams.
2. Designation of a Particularly Sensitive Sea Area (PSSA). Tristan da Cunha has had recent incidents of ships (e.g. MV *Oliva*) and oil rigs running aground and experiences high volumes of shipping through its zone every year (data from Catapult Project under Blue Belt Programme). A PSSA is an area that is afforded special protection through action by the International Maritime Organisation (IMO), because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities (IMO Assembly 24; Resolution 983, 2006). An application to IMO for designation of a PSSA and the adoption of associated protective measures, should be submitted by a Member Government (the UK on behalf of TdC). The waters around Tristan meet the requisite criteria for designation and the workshop considered that achieving such a designation for the area around the islands should be a high priority.
3. Sustainable surveillance & enforcement strategy. The implementation of a marine protection regime requires appropriate surveillance and enforcement at a level commensurate with threats. It is a high priority to develop a strategy for surveillance and enforcement that is cost effective and can be continued beyond the current Blue Belt Programme. Such a system is likely to require new technology, including satellite

surveillance tools and could link with relevant Regional Fisheries Management Organisations (RFMOs) for enforcement (e.g. blacklisting of vessels).

4. Life history of Tristan lobster (*Jasus tristani*) (and other commercially fished species). The MSC certified Tristan lobster fishery is the main source of income for the island, but significant gaps remain in our knowledge of the life history, particularly the larval stage. The duration of the planktonic larval stage is uncertain, but likely to be 1-2 years, during which time the larvae may be dispersed by currents. It is not known if larvae are retained around the archipelago or carried away with the currents. A better understanding of the larval population dynamics and distribution and links to regional oceanography will help predict recruitment and consider the potential impacts of climate change. The bluenose also has a pelagic larval stage, with recruitment likely linked to oceanography.
5. Improving Tristan's infrastructure & capacity. Tristan requires small boat capability to help deliver some of the marine science work. The *Wave Dancer* (a Pacific 38 with diesel inboard) is in need of refurbishment and the conservation RIB is in need of replacement. Tristan also requires simple laboratory facilities. Training / capacity building in all aspects of marine science and management is also a high priority.
6. Communications strategy and flagship species. Developing a communications strategy around the theme of marine protection is important. Such a strategy will promote Tristan's stewardship of the EEZ and may increase the value of fishery products and help lever future funding post-2020. Such a strategy could utilise "flagship" species, such as albatross, penguins, the blue shark nursery and marine mammals to help promote Tristan.

For each of the activities, lead organisations and likely sources of funding were identified (Table 1). In addition to the six high priorities above a number of important, but lower priority activities or actions were also identified (Table 2). These additional priority areas are as follows:

1. Policy decision on licensing of tuna fishing vessels. Tuna fisheries operate just outside the Tristan da Cunha EEZ, with albacore (*Thunnus alalunga*) targeted to the north and southern bluefin tuna (*Thunnus maccoyii*) to the south. In 2014 TdCG licensed a Japanese vessel to fish in the EEZ. Licensing foreign vessels to fish for tuna has the potential to raise additional revenue for TdCG, but as part of a marine protection strategy TdCG will need to ensure vessels are operated to high environmental standards. Any vessels must be registered with ICCAT and an access agreement must be in place between UKOT (on behalf of Tristan da Cunha) and the fishing state. TdCG need to consider under what conditions external vessels may be licensed and, if foreign vessels are to be licensed,

develop appropriate licence conditions with particular focus on implementing and monitoring compliance with seabird bycatch mitigation measures.

2. Tracking and oceanographic data. Whilst there is a considerable amount of seabird and fur seal (*Arctocephalus tropicalis*) tracking data, there are still gaps (species, spatial² or temporal gaps). Important gaps could be addressed with additional tracking data. There is a need to review and integrate the existing data with bathymetric and oceanographic data to determine if particular species are reliant on constrained areas or forage on particular oceanographic features (e.g. gyres). Such information will be important in planning any temporal or spatial closed areas.
3. Cetaceans / sharks: data on distribution and abundance. Data on both cetaceans and sharks are lacking. Data from recent NatGeo/RSPB expedition suggests that Tristan waters may be an important pupping area for blue sharks (*Prionace glauca*). Further work on sharks using baited cameras and satellite tags may provide valuable data on abundance and movements. There is little data on cetaceans in Tristan waters, but there is some evidence that the area is an important nursery area for southern right whales (*Eubalaena australis*) and also important for Shepherd's beaked whales (*Tasmacetus shepherdi*) (Scott, 2017). Cetacean observations can be conducted from ships or using hydrophones.
4. Emergency response planning. An emergency response plan is required to ensure prompt and effective response to marine incidents such as the MV *Oliva* in 2011. It is hoped that the risk of such events can be significantly reduced by PSSA designation (see above), but it is still important to have emergency response plan that recognises the limited resources available on Tristan. TdCG has already started work on this.
5. Other threats to the marine environment. Other threats to the marine environment need to be considered, reviewed and, where practicable, mitigation measures implemented. Such threats include non-native species, climate change and pollution (e.g. plastics, waste from human activities on the shore).
6. Data management. Good data management is essential to ensure management decisions are based on all the available data. There is a need to improve data collection locally on Tristan and to ensure that any data collected about the Tristan da Cunha marine environment is available to decision-makers in TdCG.

² Spatial in this context means a species might be tracked from one breeding location only.

7. Quarterly implementation meetings. There is a need for regular co-ordination meetings with the different organisations to ensure work is properly integrated.

In addition, there is a general lack of baseline information on the biodiversity of the Tristan da Cunha EEZ. The forthcoming cruise on JCR will help address some of the gaps, particularly in respect of the benthic fauna of the seamounts.

Table 1. Priority actions identified during the Tristan da Cunha workshop.

Action	Details	Lead Organisations	Priority H/M/L	Cost H/M/L	Funding
Sustainability of the bluenose fishery	Bluenose stock assessments from commercial fishery data and surveys. Tagging. Seamount benthic biodiversity assessment (JCR survey in 2018).	TdCG Cefas (surveys, stock assessment) BAS & CEFAS (seamount biodiversity)	H	H	Bluebelt Programme and BAS ODA
PSSA Designation	PSSA needs to be proposed at IMO. MMO to liaise with MCA who represent UK at IMO.	MMO & MCA engaging the IMO on behalf of TdC	H	L	Bluebelt Programme
Sustainable Surveillance & Enforcement Strategy	Develop long-term, cost-effective strategy. Opportunities for sharing across the OTs for surveillance. Technology expected to improve and costs expected to decrease. Sustainability post-2020 key. Enforcement supported through RFMO engagement and diplomatic channels.	MMO / NMIC / TdCG / FCO	H	H	Bluebelt Programme
Life history of lobster	Particle retention / oceanography. Sequencing. Larval duration.	TdC/ RSPB Darwin Plus / BAS / Cefas	H		RSPB Darwin Plus; Bluebelt Programme; BAS ODA
Tristan Infrastructure & Capacity-Building	Wave Dancer (Tristan vessel) needs refurbishment to deliver work. Simple lab designed around science needs. Both very important for the island & legacy. All opportunities to pass on expertise to be taken.	TdC with Blue Belt Programme funding	H	H	Bluebelt Programme?
Comms Strategy & Flagship Species	Raise profile, gain publicity, develop flagship species to secure long-term funding. Especially blue shark nursery, potential for penguins & whales.	Lead by TdC G with support from RSPB/Nat Geo/ BAS/BirdLife/Cefas/MMO	H	L	? Bluebelt Programme

Table 2. Additional priorities identified during the Tristan da Cunha Workshop. *If blank, priority not defined.

<u>Action</u>	<u>Details</u>	<u>Lead Organisation(s)</u>	<u>Priority</u> H/M/L*	<u>Cost</u> H/M/L	<u>Funding</u>
Policy decision on licensing of tuna fishing vessels	TdCG need to consider whether foreign vessels should be licensed to catch tuna in the EEZ and, if so, develop appropriate licence conditions	TdCG with advice from Cefas & MMO	H	L	Bluebelt Programme to provide advice.
Tracking and oceanographic data	Review seabird and fur seal tracking data, identify gaps and relate foraging distribution to environment.	RSPB /Cefas/BAS/ UCT	M	L	RSPB (?) / Bluebelt Programme
Cetaceans & sharks	Cetacean monitoring on cruises and possible deployment of hydrophones to determine distribution of cetaceans. Tagging & pelagic baited cameras to investigate shark populations.	TdCG / NatGeo? / Cefas / BAS / RSPB?	M	M	Bluebelt Programme (TBC)
Emergency Response Planning	Develop emergency response plan. Risk may be reduced if PSSA declaration achieved.	TdCG / MMO / Cefas	M	L	Bluebelt Programme
Other threats to the marine environment	Review other threats, including non-native species, pollution, climate change.	TdCG / Cefas / MMO	M	M	Bluebelt Programme
Data management	Need to improve data management systems and bring all data together to help inform management decisions.	TdCG / Cefas / MMO	H	M	Bluebelt Programme
Quarterly implementation meetings	Regular co-ordination meetings between organisations involved in work related to TdC marine protection strategy	TdCG	H	L	All organisations involved

Objective 3: To plot a course for a 2020 declaration of a marine protection strategy that allows for the sustainable development of the Tristan fisheries

A series of presentations reviewed marine protected areas and marine protection strategies in other UKOTs and small island states (see Appendix 1). Given the requirement to maintain sustainable fisheries in the EEZ, options for Tristan da Cunha include *inter alia*:

- (i) Establishing the entire EEZ as a Category VI MPA, which is a similar approach to South Georgia and the South Sandwich Islands;
- (ii) Establish a network of areas for different uses, including areas closed to all activities and areas restricted to certain activities.

Regardless of the approach taken, Tristan da Cunha will need to have the necessary legislation and Marine Management Plan (or MPA Plan) in place by 2020. Tristan da Cunha could use legislation from other UKOTs (e.g. SGSSI or St Helena) as a model for their legislation. SGSSI enacted the Wildlife & Protected Areas Ordinance in 2011, which enabled the Commissioner to declare (by Order) marine protected areas in the SGSSI Maritime Zone. The SGSSI Marine Protected Areas Order was enacted in 2012 (and revised in 2013) and was accompanied by a detailed MPA Management Plan.

New legislation is likely to require a consultation period, hence it is important that the process of drafting legislation is started at an early stage. A marine management plan or MPA management plan will also require time to prepare. The Fisheries Limits Ordinance will also need to be updated.

Table 3. Indicative timetable for the legislation required for the declaration of an MPA or Marine Protection Strategy by April 2020.

Theme	Item Activity	2017/18			2018/19								2019/20																
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
MPA Ordinance (enabling legislation)	1 Protected Areas Ordinance drafted																												
	2 Consultation period																												
	3 Ordinance revised																												
	4 Ordinance enacted																												
MPA Order (declares MPA)	1 MPA Order drafted																												
	2 Consultation period																												
	3 Order revised																												
	4 Designation (MPA Order Enacted)																												
MPA Management Plan (supports MPA designation)	1 MPA Management Plan prepared																												
	2 Consultation period																												
	3 MPA Plan revised																												
	4 Designation (MPA Plan Published)																												
Fisheries Ordinance (to replace Fishery Limits Ordinance)	1 Fisheries Ordinance Drafted																												
	2 Consultation period																												
	3 Ordinance revised																												
	4 Ordinance enacted																												

Some of the priority activities identified under Objective 2 (above) will also need to be completed in advance of the 2020 target. In particular, it will be essential that the bluenose fishery is sustainably managed by 2020. The process to create a PSSA may extend beyond the 2020 deadline.

References

Caselle, J.E., Hamilton, S.L., Davis, K., Bester, M., Wege, M., Thompson, C., Turchik, A., Jenkinson, R., Simpson, D., Mayorga, J., Rose, P., Fay, M., Myers, D., Glass, J., Glass, T., Green, R., Repetto, J., Swain, G., Herian, K., Lavarello, I., Hall, J., Schofield, A., Dews, S., McAloney, D., and Sala, E. 2017. Ecosystem Assessment of the Tristan da Cunha Islands. National Geographic Pristine Seas, Royal Society for the Protection of Birds and Tristan da Cunha Government. Expedition Report. July 2017.

Collins, M.A. 2017. A detailed report of the Tristan da Cunha fisheries. Royal Society for the Protection of Birds.

Scott, S. 2017. A biophysical profile of the Tristan da Cunha archipelago. Pew Charitable Trusts.

Appendix 1: Summary of Talks

This section gives a short summary of talks presented at the workshop, at the RSPB, FCO or both. These summaries reflect the content of the talks given by each of the presenters and consequently, do not necessarily represent the position of the Tristan da Cunha Government, the Foreign and Commonwealth Office or any of their partners. Several of the talks given at the RSPB were also given at the FCO (or summaries of a talks series) and summaries are not duplicated for such talks. Presentations that were made available by the authors are attached with this document.

Talks given at the RSPB

[Martin Collins: Introduction to Blue Belt programme & its objectives](#)

The Blue Belt programme supports delivery of the UK government's manifesto commitment to provide long term protection of over four million square kilometres of marine environment across the UK Overseas Territories (OTs). The programme is focused on five UKOTs, one of which is the Territory of St Helena, Ascension and Tristan da Cunha. Each of the participating OT Governments has committed to implementing a marine protection strategy by 2020. Cefas and the MMO are the delivery partners for the programme and will work closely with the OT governments to implement bespoke marine protection strategies for each territory. Some of the UKOTs have already declared Marine Protected Areas and examples are given of the different approaches taken by South Georgia & the South Sandwich Islands, St Helena, Ascension Island and British Indian Ocean Territory.

[Alan Friedlander: Examples of MPAs from other small island nations](#)

Declines in the health of many marine ecosystems around the world, and the likelihood that climate change will only exacerbate this problem, have led to a call for dramatic action to confront this impending crisis. Marine protected areas (MPAs) have been shown to conserve biodiversity within their borders and enhance fisheries in adjacent areas, and have thus been strongly advocated for as a tool to help combat these global declines. As a result, MPAs have become a key conservation tool, with most nations agreeing to commitments to protect 10–30% of the world's ocean at various global summits. Large-scale marine protected areas (LSMPAs, >100 000 km²) are a new concept in global marine conservation that offer real hope in achieving global conservation targets. Established LSMPAs now account for more than 11 million km² and contribute 73% of the c.7.2% of the ocean within existing MPAs and promised/proposed LSMPAs. Because of their size, LSMPAs encompass biologically-connected and diverse ecosystems from coastal to pelagic and deep-sea regions, thereby benefiting both resident species and animals that can move large distances among habitats. They also remove or limit direct anthropogenic stressors that may promote greater ecological resilience to environmental disturbances and the effects of climate change and are also more likely to encompass species' range shifts under climate change. LSMPAs are an important component of the management portfolio that will help temper potential losses, hedge against uncertainty, and enhance the probability of achieving sustainably managed oceans.

[James Glass: Introduction to Tristan da Cunha and history of the lobster fishery](#)

Tristan da Cunha, one of the most remote inhabited islands in the world, is home to a great many endemic species of plants, birds and invertebrates. Tristan da Cunha prides itself in being largely self-supporting, with the commercial rock lobster (*Jasus tristani*) fishery contributing around 80 % of the island's revenue. The fishery is MSC certified and subject to an annual stock assessment. The lobster fishery operates around the three northern islands and Gough island in the south, with a mixture of small traps and hoop nets deployed by local fishermen and monster traps deployed by an external vessel under the Ovenstones Fishing Company. Ovenstones also provide an important source of transport (of persons and cargo) to Tristan Island.

Tristanians have a documented and laudable sense of stewardship for their marine & terrestrial environment but also depend heavily upon marine resources and it remains challenging for islanders to reconcile their environmental concerns with the need to increase revenue and maintain living standards. The idea of a MPA of some description has been welcomed by the islanders but any strategy must recognise the importance of marine resources for the Tristanian community.

[Tammy Stamford: Tristan da Cunha marine environment](#)

Tristan da Cunha is a remote archipelago in the temperate south Atlantic, positioned between the South Atlantic gyre and the Southern Ocean. Tristan's EEZ contains four islands and several large seamounts but the majority of the territory is abyssal (90 % deeper than 3000 m). The three northern islands (Tristan, Nightingale and Inaccessible) are separated from Gough island in the south by 380 km (235 m). Annual range in SST is 13 - 20°C around the northern islands and 10 - 15°C around Gough. Due to the seasonal latitudinal shift in the positions of the sub-tropical convergence, the northern islands enter into the south Atlantic gyre in the austral summer (Feb-Mar) but Gough island remains between the sub-tropical convergence and the sub-polar front year-round. Consequently the waters around Gough island are more productive. There is also some suggestion that the islands and seamounts can elevate local surface productivity but this has yet to be confirmed.

[Jennifer Caselle: The recent National Geographic Expedition to Tristan da Cunha](#)

Summary from Expedition Report: Tristan da Cunha Islands are a unique archipelago with healthy marine ecosystems – although with low species diversity, likely due to extreme isolation. This remote temperate archipelago provides one of few places in the world to establish a baseline for unimpacted temperate systems. Quantitative data from the kelp forests was lacking, while pelagic and deep benthos were mostly unexplored prior to this expedition. We found that, despite an important commercial fishery for lobster and subsistence fishing for local islanders, marine habitats and biota appeared in very good condition. Biomass of fishes and lobster in particular were high. However, this unique ecosystem is not without potential threats: shipping traffic leading to wrecks and species introductions, pressure to increase fishing effort beyond sustainable levels and climate change all could potentially increase in the coming years. Currently the low population density, difficult access to the marine environment and a proactive, well-managed lobster fishery provide a level of protection to nearshore habitats. However, offshore areas, including seamounts, would benefit from strong, enduring protection.

[Simon Morley: Benthic biodiversity of Tristan da Cunha & upcoming BAS research plans](#)

The food security and economies of the UK Overseas Territories in the South Atlantic, Tristan da Cunha and St Helena, are heavily reliant on marine harvestable resources and tourism. Understanding how vulnerable these resources are to the impact of climate change will be key to the future cultural and economic security of these nations. During this project our multi-disciplinary team will construct a food web for the exploited marine populations that will allow us to identify critical links in the food chain and identify their vulnerability to environmental variability. The assembled team will investigate the communities underpinning the harvestable resources from shelf depths (1000m) to the surface, both benthic and pelagic. They will describe the ecological and physiological interactions, food web connections (stable isotopes and fatty acids) and connectivity and phylogeny related to the current patterns over the Island shelves.

[Cleo Small: Albatross Task Force and RSPB BirdLife programme](#)

Seabirds, and albatross and petrel species in particular, are highly susceptible to incidental bycatch in longline and trawl fisheries. The South Atlantic, especially south of 25°S, is an important foraging area for albatrosses and petrels, which overlap with domestic fleets in several African and South American nations and high seas tuna fisheries. The RSPB's Albatross Task Force has demonstrated seabird bycatch mitigation measures (night setting, line weighting and deployment of a bird-scaring line) can reduce bycatch by >80% in domestic fisheries. Tuna fisheries in the South Atlantic are governed by the International Commission for the Conservation of Atlantic Tuna (ICCAT) and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). Both Commissions require use of seabird bycatch mitigation measures, but seabird bycatch reductions are yet to be achieved. Improved compliance with regulations and longterm monitoring and reporting systems in domestic fleets and through tuna commissions for the high seas is required to achieve sustainable fleet-wide seabird bycatch reductions.

[James Bell: Tristan da Cunha and surrounding area finfish fisheries](#)

Tristan da Cunha has an intermittent demersal longline and trawl fishery distributed across the seamounts in the centre of its EEZ. This fishery predominately targets bluenose (*Hyperoglyphe antarctica*), a slow-growing scavenging demersal fish that occurs in near-bottom areas between 200 and 1100 m depth. Cefas have reviewed the available data regarding bluenose fisheries in Tristan da Cunha and elsewhere and current concerns about the sustainability of the resource are highlighted here. There are a number of unknowns, including stock biomass and extent; biological data for Tristan bluenose and wider impacts of the fishery. We also review the status of fisheries on the periphery of the Tristan da Cunha EEZ (for albacore and southern bluefin tuna) and highlight considerations for the Tristan Government.

[Charles Kilgour: IUU fishing and remote surveillance](#)

Satellite Applications Catapult has been commissioned by the MMO, on behalf of several of the UKOTs, including Tristan da Cunha, to examine the extent and behaviour of marine traffic. Particularly in the northern areas, there is substantial shipping traffic between South America and Africa, potentially posing threats of collisions, pollution and the introduction of invasive species.

[Katie McPherson: Compliance and Surveillance](#)

Compliance and enforcement within the overseas territories is going to be challenging. It doesn't matter whether you are trying to manage tourists watching whales or tackle illegal, unlicensed and unregulated vessels in all cases good management, surveillance, intelligence and response are needed. This presentation looked at the set up of an intelligence hub, the technologies available to identify incidents of non-compliance (from vessel patrols to AUV to satellite technology) and the actions that need to be taken to address them, investigations and prosecutions. We want to ensure that compliant individuals and organisations are operating within the marine environment and within the OTs there is a risk-based intelligence-led approach to compliance and enforcement.

[Katrine Herian: Pressures in the marine environment from shipping, pollution, invasive species and climate change at Tristan da Cunha](#)

Tristan da Cunha experiences substantial international shipping activity within its 200 nm EEZ, in particular heavy maritime traffic in the north. Additionally, increases in fishing, cargo and hazardous cargo transits have been observed in the EEZ in recent years, (2014-16). Tristan da Cunha's biodiversity is vulnerable to shipping impacts and there have been two notable marine incidents recently: the 2006 rig stranding at Tristan and the 2011 grounding of MS *Oliva* at Nightingale, and their impacts. Threats to the economy and marine environment include shipping activity; introduction of non-native invasive marine species via ballast water exchange; hull fouling; attached to floating debris; pollution from oil spillage, hazardous cargo, garbage waste and plastics; accidental introduction of rodents at uninhabited island and IUU fishing activity. Tristan Government have identified a need for further monitoring of shipping activity in EEZ; development of a marine incident contingency plan and investigation into the designation of 'Particularly Sensitive Sea Area' (PSSA) around TdC.

Talks given at the FCO

[Jo Stockhill: Integrated Marine Management](#)

Integrated Marine Management brings together decision makers and stakeholders to collaborate jointly towards a sustainable future for the marine area where activities are well managed, the environment is protected and communities benefit. It is an end to end process from understanding what is in the marine area, deciding on how we want to manage it, developing policy and monitoring outcomes. Tristan da Cunha aims to have a management regime in place to sustainably manage and protect the marine environment by 2020. To enable sustainability, it is important to set clear long term goals relating to environmental, social and economic outcomes and ensure that stakeholders are involved. A stocktake assessed what we know now and questions to consider in developing a roadmap for marine management. A number of case studies were presented to show different management options and tools available to help inform decisions. Monitoring is an important part of any management plan. A logic approach was presented for monitoring to enable adaptive management to meet changing needs.

[Peter Ryan \(with contributions from Antje Steinfurth, Alex Bond, Marthan Bester & Susana Reguena\): Marine Top Predators at Gough](#)

The seas around Tristan da Cunha and Gough Island are important foraging areas for a diversity of top predators. The islands are the only breeding locations for four seabirds (all globally threatened), and support the world's largest populations of four other seabirds (three of which are

threatened) as well as Subantarctic fur seals. Threats include fishery impacts, pollution at sea, climate change and, for many seabirds, introduced terrestrial predators. We know much more about the movements and habitat requirements of seabirds and seals that breed at the islands than we do about other top predators such as cetaceans, turtles, sharks, gamefish that do not come ashore to breed or moult. However, only half of all breeding seabird species have been tracked, and few age classes other than adults have been studied. Most of the breeding seabirds have foraging ranges that extend well beyond Tristan's EEZ even while breeding. However, the EEZ is an important foraging area for most species at least during the early chick-rearing period, when adults are most constrained to forage close to their nests. The areas close to the islands and around seamounts are foraging hotspots for these birds. Northern rockhopper penguins and fur seals comprise a large proportion of the top predator biomass in the region, and because they travel more slowly than flying seabirds, most of their foraging trips occur within Tristan's EEZ. More data are needed on the foraging areas of lactating fur seals, especially for seals from Gough Island, which supports the world's largest population of this species.

[Tammy Stamford: Data Management](#)

Cefas have begun a process of reviewing the status of the existing data holdings concerning Tristan's marine environment. Under the Blue Belt programme, data storage and sharing is a cross-cutting theme affecting many of the UKOTs but it is essential as part of the legacy of the programme to ensure that data are stored securely and accessible to TdC Government and its partners. Consequently, there is a need to develop a strategy for data management by the TdC and UK Governments, together with the scientific partners involved in Tristan da Cunha research, including metadata conventions, data sharing agreements and data transfer facilities.

[Chris Jenkins: Management, monitoring and marine spatial planning](#)

This presentation demonstrated how management and monitoring (with appropriate assessments) are intrinsic to the MPA lifecycle. Effective monitoring allows for evidence based decision making and informs the application of appropriate management measures. The monitoring of an MPA, or a network of MPAs, can be simplified to understanding the natural cycling of a system, and whether current observed conditions are within those expected of natural variability. Monitoring efforts for Tristan should be targeted towards species and habitats of a particular level of sensitivity as well as exploring the evidence base for assessing the potential impacts of human activities on Tristan's marine environment. Where monitoring is undertaken, efforts should be made to ensure good scientific questions are being posed, that data is managed appropriately and that the scale of monitoring is relative to resource available (ie less objectives, but done well).

[Sean Burns: Tristan da Cunha objectives and a roadmap to a marine protection strategy](#)

The Tristan government had welcomed the opportunity to sign up to some form of marine protection regime by 2020. This was not about fixing a problem as the marine environment was in good shape with an internationally recognised well managed fishery. This was about preserving it that way for future generations. But the Island Council, representing the views of the community, was very clear that they would only do so on the understanding that they would retain the right to develop fishing opportunities across the zone. This was important to the island's very survival. That said, they recognised this would have to be done in a sustainable manner and at the moment there was a gap in knowledge on how to achieve that goal. Discussions had already started with CEFAS on conducting biomass surveys. On illegal fishing, a satellite project had

already taken place and a fishery patrol organised with MMO. Both the biomass survey and the patrol would involve Tristanians. The island was also looking to see what locally implemented projects and equipment might be needed and these would be discussed once James Glass and I returned to the island and consulted Council. The Tristan Government looked forward to working with all interested parties at the workshop to deliver on the marine protection regime undertaking by 2020.

Appendix 2: Participants

Table 1: Attendees of the science workshop at RSPB HQ (Sandy, Bedfordshire: 24-25th July).

Participant	Institute & Position/ Area of Expertise
Bell, James	Cefas. Fisheries & Ecosystem scientist.
Bester, Martan	University of Pretoria, Mammal Research Institute. Fur Seal research programme lead.
Bond, Alex	RSPB Centre for Conservation Science. Seabird scientist.
Burns, Sean	Tristan da Cunha Government, Administrator. Foreign & Commonwealth Office.
Caselle, Jennifer	University of Santa Barbara California. National Geographic Pristine Seas lead scientist (Tristan expedition).
Collins, Martin	Cefas. Principal Investigator, Blue Belt Programme.
Friedlander, Alan	National Geographic Pristine Seas Programme. Pristine Seas Chief Scientist.
Glass, James	Tristan da Cunha Government. Director of Fisheries.
Hall, Jonathan	RSPB. Head of Overseas Territories.
Herian, Katrine	Tristan da Cunha Government. Policy Officer.
Jenkins, Chris	Cefas. Marine Ecologist.
Kilgour, Charles	Satellite Applications Catapult. Fisheries Ecologist.
McPherson, Katie	MMO. Marine spatial planning, surveillance and enforcement.
Morley, Simon	British Antarctic Survey. Marine ecologist.
Myers, Daniel	National Geographic Pristine Seas Programme. Director.
Oppel, Steffen	RSPB Centre for Conservation Science. Seabird ecologist.
Phillips, Richard	British Antarctic Survey. Seabird ecologist.
Requena, Susana	RSPB Centre for Conservation Science. Seabird ecologist.
Ryan, Peter	Percy Fitzpatrick Institute for Ornithology. Seabird ecologist.
Schofield, Andy	RSPB, UK Overseas Territories Officer.
Scott, Sue	Independent Marine Biologist. Consultant.
Small, Cleo	RSPB/ BirdLife International. RFMO engagement.
Stamford, Tammy	Cefas. Marine scientist.
Steinfurth, Antje	RSPB Centre for Conservation Science. Seabird ecologist.

Table 2: Attendees of the science workshop at FCO (27th July). *Invited person absent, represented by a colleague.

Person	Institution
Ahmad, Tariq (Lord)	FCO, Minister for Commonwealth & Overseas Territories
Bell, James	Cefas
Bester, Martan	University of Pretoria, Mammal Research Institute
Bond, Alex	RSPB Centre for Conservation Science
Briggs, Johnny	PEW Charitable Trusts
Burns, Sean	Tristan da Cunha Government
Carnegy, Chris	Tristan da Cunha Association, UK Representative
Caselle, Jennifer	University of Santa Barbara California
Collins, Martin	Cefas
Darby, Chris	Cefas
Finan, David*	DFID
Beth Flavel	JNCC
Friedlander, Alan	National Geographic Pristine Seas Programme
Gasgcoigne, Jo	MacAllister Elliot, MSC certifiers
Glass, James	Tristan da Cunha Government
Grundy, Richard	UK Tristan da Cunha Association
Hall, Jonathan	RSPB, Head of Overseas Territories
Hartmann, Craig	Ovenstones Fishing Agencies
Herian, Katrine	Tristan da Cunha Government, Policy Officer
Jenkins, Chris	Cefas
Karsten, Tom	Cefas
Kilgour, Charles	Satellite Applications Catapult
McPherson, Katie	MMO
McNeil, Theresa	South Atlantic Environmental Research Institute
Morley, Simon	British Antarctic Survey
Morrall, Hari	BIOT Administration
Myers, Daniel	National Geographic Pristine Seas Programme
Oppel, Steffen	RSPB Centre for Conservation Science
Pelembe, Tara	JNCC
Phillips, Richard	British Antarctic Survey
Ratcliffe, Norman	British Antarctic Survey
Requena, Susana	RSPB Centre for Conservation Science
Rose, Paul	National Geographic Pristine Seas Programme
Ross, Rebecca	Plymouth University
Ryan, Peter	Percy Fitzpatrick Institute for Ornithology
Schofield, Andy	RSPB, UK Overseas Territories Department
Scott, Sue	Independent marine biologist/ consultant
Sigley, Andrew	FCO
Small, Cleo	RSPB/ BirdLife International
Stamford, Tammy	Cefas
Steinfurth, Antje	RSPB Centre for Conservation Science
Stockhill, Joanna	MMO

Appendix 3: Workshop Agenda

Table 3: Schedule of talks at RSPB.

Time	Activity	Who
Day 1		
09:00	Welcomes and arrival at RSPB UK Headquarters	Jonathan Hall/ Andy Schofield
09:30	Introduction to workshop and aims, including round table introductions	Sean Burns/ All
10:00	Introduction to Blue Belt Programme across the territories & examples of MPAs in other Overseas Territories	Martin Collins
10:25	Examples of MPAs from other small island states (Juan Fernandez, Palau, Seychelles.)	Alan Friedlander
11:05	Introduction to Tristan	James Glass
11:30	Tristan da Cunha marine environment	Tammy Stamford
11:50	Benthic and pelagic biodiversity	Jen Caselle
12:10	Benthic biodiversity and recent BAS research	Simon Morley
12:30	Pelagic Baited Remote Underwater Video Systems (PBRUVS)	Jen Caselle
13:30	Seabird population overview within the island group and distribution at sea.	Peter Ryan
13:50	Seals, distribution, population and tracking. What does this tell us?	Marthan Besther
14:10	Project pinnamin and Northern Rockhoppers	Antje Steinfurth
14:25	Albatross Task Force: Mitigation measures and successes of relevance to Tristan's albatrosses.	Cleo Small
14:45	Foraging hotspots and fisheries, what the maps are telling us?	Alex Bond/ Susana Requena
15:15	Group discussion: what are the priority scientific knowledge gaps encompassed by this session?	
15:45	Lobster fishery	James Glass
16:00	Bluenose and other finfish fisheries	James Bell
16:15	IUU fishing, Catapult and satellite surveillance and monitoring	Charles Kilgour
16:30	Review of compliance and surveillance	Katie McPherson
16:45	Group Discussion: what are the priority scientific knowledge gaps encompassed by this session?	
17:15	Summary and conclusions	Chair: Martin Collins
Day 2		
09:00	Re-cap on first day + further thoughts	Andy Schofield
09:15	Invasive marine species	James Glass/ Jen Caselle
09:35	Shipping and marine incidents	Katrine Herian
09:50	Climate change – group discussion?	All
10:10	Discussion - Priority scientific knowledge gaps?	All
11:00	Nat Geo/RSPB scientific expedition	Jenn Caselle
11:15	Sub Antarctic Fur Seal research plans.	Marthan Bester
11:30	Upcoming BAS Research Plans	Simon Morley

11:50	Upcoming Cefas/MMO Bluebelt plans	Tammy Stamford & Katie McPherson
12:20	Group Discussion – what other research is planned over the next three years? What funding and personnel resources are potentially available? What are the gaps? Upcoming and existing ornithological research and can this be used for MPA purposes?	
13:45	Break-out groups: What are the priority scientific knowledge gaps for marine protection regime designation by 2020?	
14:15	Group discussion: Science priorities.	
15:00	Tristan Roadmap to designation	Sean Burns/ Andy Schofield
16:00	Tristan marine data management	Tammy Stamford
16:30	Tristan legacy	Sean Burns
16:45	Outstanding issues and summing up	Sean Burns

Table 4: Schedule of talks at the FCO.

Section	Title	Lead
Introduction	Introductions	Sean Burns
	Background on Tristan da Cunha and objectives for the day	Sean Burns
Options for marine management	Integrated marine management	Jo Stockill
	Options for marine management with examples from other OTs and global perspective.	Martin Collins/ Alan Friedlander
Review of available data	Oceanographic context, pelagic & benthic biodiversity	Jen Caselle
Review of available data	Marine mammals & seabirds	Marthan Bester/ Peter Ryan
Human activities	Tristan fisheries and IUU fishing	Martin Collins
	Other pressures on the marine environment: pollution, shipping, invasive species and climate change	Katrine Herian
	Further discussion	Sean Burns/ Martin Collins
Gap analysis	Summary of gap analysis (from science days)	Jonathan Hall
	Recent/ ongoing research (incl. planned cruises)	Simon Morley
	Break out groups to review gap analysis	Sean Burns/ Cefas
Further work	Data management & GIS + Discussion	Tammy Stamford
	Surveillance & enforcement + Discussion	Katie McPherson
	Management and monitoring + Discussion	Chris Jenkins
	Summing up and next steps	Sean Burns