Darwin Initiative Main/Post/D+ Project
Half Year Report
(due 31st October 2017)

Project reference	DPLUS062
Project title	Securing the future of the Tristan marine environment
Country(ies)/territory(ies) Tristan da Cunha	Tristan da Cunha
Lead organisation	RSPB/Tristan Fisheries
Partner(s)	Tristan da Cunha Government
Project leader	Andy Schofield/James Glass
Report date and number (e.g., HYR3)	HYR 1
Project website/blog/social media etc.	

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

The main objective from the first stage of this project was for the head of Tristan Da Cunha's Fisheries Department to visit another rock lobster fishery within an existing MPA. James Glass (Head of Tristan's Fisheries Dep't) visited several small scale marine protected areas that also included a rock lobster fishery off the coast of California, USA.

The decision for James to visit these sites was led by the contacts that we forged with the University of California Santa Barbara during the recent National Geographic Pristine Seas and RSPB collaborative expedition to the Tristan da Cunha Islands.

Many of the UCSB scientist are also heavily involved in the Californian coast rock lobster fishery and associated marine reserves.

James Glass, Director of Fisheries departed Tristan on the 26th April and arrived in Cape Town on the 3rd May for the start of his trip to visit several small scale marine protected areas that also included a rock lobster fishery off the coast of California, USA.The decision for James to visit these sites was led by the contacts that we forged with the University of California Santa Barbara.

During the period in Cape Town he had several meetings with Ovenstone Agencies, MARAM-UCT, CAPFISH and DAFF. The issues discussed were; The OMP for Nightingale, Over catch of Total Allowable Catches (TAC's), TAC's at the Tristan group for the 2017/18 season and a longline proposal for the *M.V. Edinburgh*.

He departed Cape Town on the 19th May, arriving in the UK on the 20th May and went to Lowestoft. Here he spent two weeks with CEFAS, mostly sharing with them his data collected from the fishing vessels (trawler and longliners) that have operated at the Tristan da Cunha group in the past. This will be used in conjunction with biomass surveys due to be carried out in November 2017 and 2018. Planning the way forward for Bluebelt and how some of the

research overlapped with the upcoming Darwin Project. Having meetings and site visits with the various sections;Observing their Habitat Mapping and GIS techniques, Electrical Department which covers trackers and tags, Department which manages the drones for kelp mapping etc, and how this could help gather research at Tristan which would help to feed into our propose protected area.

He departed for the USA on the 5th June to attend the UN World Oceans Day 2017, where Kieran Glass (His Grandson) was to represent the UK on the 8th June, he then spent time with family until he flew to LA on the 24th June and took a coach to Santa Barbara. Here he stay and observered/worked at the Marine Science Institute at the University of California (UCSB) until the 19th July 2017, under the supervision of Jenn Caselle- Marine Biologist who was part of the Nat Geo Pristine Seas team that visited Tristan earlier in the year. During his time there he had several meetings with scientist involved in managing MPA's, as well as taking boat trips and speaking to those involved in the fishing industry. Some of the people he engaged with include the following;

Professor Steve Gaines - Who has served as director of the UC Santa Barbara Marine Science Institute, and as UCSB Acting Dean of Science and Acting Vice Chancellor for Research. He currently serves as a principal investigator for the Sustainable Fisheries Group (SFG), which seeks scalable solutions for the world's fisheries through partnerships among UCSB researchers, industry leaders, NGOs, and governments. Steve and his team would be excellent in providing advice on any Biomass survey work and Assessments needed on the Tristan fishery.

Juan Mayorga - Sustainable Fisheries Group - Research interests include bio-economic modelling, marine spatial planning, shark conservation and ecology, small-scale fisheries, and the role of data science to inform policy and management of marine resources. At SFG, Juan is leading a project in partnership with Global Fishing Watch that uses satellite data to conduct novel analyses. His first major project is a spatial analysis of fishing profits on the high seas that will provide valuable insight into the economic feasibility of creating marine reserves in the high seas. - James was introduced to the Global Fishing Watch software program, and was able to see previous fishing activity within Tristan's EEZ including previous licence fishing vessels. However, poor internet connectivity on Tristan prevents the Tristan Fisheries Department from using this tool.

Gavin McDonald – Sustainable Fisheries Group - Developed a model to quantify the socioeconomic value that non-consumptive private recreational boaters place on the Channel Islands National Marine Sanctuary. His interests lie in using science to improve fisheries management for the benefit of both conservation and the livelihoods of fishers. His work at SFG includes bio-economic modelling, data-poor stock assessments, and data collection and management. Gavin has worked with Belize's Caribbean spiny lobster (Panulirusargus) fishery. Along with collaborators from Belize Fisheries Department and various NGOs, he has developed an adaptive management framework for assessing and managing the fishery using data-limited performance indicators.Again it was interesting for James to interact with other fishery researchers, and exchange ideas views.

Dan Ovando - Interest are in developing practical solutions to the challenges facing marine ecosystems. He conducted research on the ecology of south Florida sharks and developed community awareness of these keystone predators Dan then worked as a research scientist with SFG, where his principal study areas included the development and performance of cooperative fisheries, the assessment of data-poor fisheries, and the use of bio-economic models in fisheries management.

Bren Lobster project - Bren Masters students - The Mexican State of Quintana Roo established 14 fish refuges (FRs; community based no-take zones) for the Caribbean spiny lobster (Panulirusargus) across five fishing cooperatives. The Claudia and Roberto Fernandez Foundation have enlisted the team at UCSB to develop a practical framework, including design tools, for implementing effective FRs.Identify the economic challenges and benefits from current FRs and develop strategies to overcome barriers and enhance benefits.Overall, the goal of the project is to create a manual detailing the steps needed to implement an effective FR in an easy to follow and digestible manner. The manual will be used as a tool in identifying effective FR sites and other design elements (e.g., size) to account for diverse objectives of different stakeholders. Furthermore, we will propose new market strategies or community involvement that could help the fishery achieve better profitability. The team of four working in Mexico was interested in learning how we on Tristan interact with the community, in applying fisheries management measures.

Professor Hunter Lenihan - Primary research interests lie in the fields of applied population and community ecology, especially in connection with fisheries management and restoration.He has collaborated with California fishing communities to design research projects intended to advance habitat-based fisheries management. His overall objective is to generate new ideas and methods for marine resource management and train young scientists interested in community-based research and management

Dr Jono - A fisheries ecologist working jointly with The Nature Conservancy and SFG. His research involves a blend of quantitative and empirical approaches to conservation and fisheries management issues. Recent work has involved design and simulation testing of novel fisheries management strategies, integrating marine reserves into fisheries management, and identifying the appropriate spatial scale with which to manage. He has worked with fishing communities in California to facilitate a transition to local, community-based management.

Jason Flower MSc - Works for the Foundation for Environmental Conservation (Blue Halo). and deals with Marine Spatial plans and fisheries legislation. He is working on spiny lobster management in Montserrat. James had several meetings with him and shared lobster data (length weight, size composition, CPUE, etc) as well as talked about management strategies, MPA management and Zoning.

Dr Will McClintock - McClintock Lab lead the development of MarineMap a web-based application used by stakeholders in California's Marine Life Protection Act (MLPA) Initiative for marine protected area (MPA) planning. Regarded as a significant breakthrough in the process of "GeoDesign", combining science with the unencumbered art of design, MarineMap set a new standard for decision support tools used for marine spatial planning. In 2009, MarineMap won the inaugural innovation In Technology Award from the U.S. Institute for Environmental Conflict Resolution. Dr. McClintock then initiated the development of the "next-generation" MarineMap, called SeaSketch designed such that anyone - regardless of their technical or scientific background - can participate in marine spatial planning, SeaSketch will bring the power of collaborative, spatial decision support systems to everyone with a web browser and internet connection. Unfortunately for James this program will not be possible to use at Tristan due to the poor internet connection.

Peter Carison – Peter along with other divers took James and Andy Schofield on a field trip to Santa Cruz Island, where nine crevice collectors were sampled, similar to the ones used at Tristan, with the same methods of data recording.

Lance Maassen - Lobster fishermen took James out in his boat “White Cap” and although it was during the close season, he did hear his and others opinion about their MPA, where they discussed the benefits and disadvantages of having an MPA in place around the Channel

Islands. They all agree it was a good thing, but that it shouldn't be a total closed area to fishing, as it put extra pressure on other areas around MPA.

Chris Voss - Chris Voss, CFSB executive director and longtime commercial lobsterman who fishes from the aptly-named F/V Opportunity. The Commercial Fishermen of Santa Barbara (CFSB) is a non-profit organization established in 1971 to advocate for economically and biologically healthy oceans, fisheries and fishing communities, collaborated with the venerable philanthropic Santa Barbara Foundation (SBF) to underwrite an economic impact report to highlight commercial fishing's relevance in the region. called the study "a critical first step" toward helping the CFSB deal with the challenges and issues commercial fishermen face, as well as creating strong partnerships with government, business, and community leaders. Their overall success, Voss and others notes, derives from the fishermen's involvement in the regulatory process - their main concern – and the community, simultaneously setting them apart and integrating them into a collaborative symbiosis with the city's leaders, agencies, businesses, and organizations. Chris gave James a tour of the harbour and fishing fleet and seems to be instrumental in implementing a number of conditions on behalf of the fishermen.
Summary - The feedback James had from Jennifer Bone who was responsible for James Schedule was that the people who he had meetings with were overall very impressed with what they learned about the management of Tristan's lobster fishery. Meetings with Julia Coates and her team from The California Department of Fish and Wildlife (CDFW) who is responsible for the stock assessment and management measures for the spiny lobster, were particularly interested as they had a lot in common with the Tristan fishery, such as a harvest control rule (HCR) for lobster. The HCR serves as the foundation for managing the fishery in the future as well as the primary mechanism to prevent, detect, and recover from overfishing. The HCR is a type of adaptive management framework that identifies potential conservation problems and prescribes appropriate management responses. However, it was interesting for James to find out that no fishery observers had been on any of the lobster boats in Santa Barbara to collect size composition and other data, and that everything was done shore based.

James arrived back in the UK on the 20th July, spent time at RSPB and attended the Tristan da Cunha marine science workshop at RSPB and in London. He also had the chance to visit Catapult that was doing some AIS work for Tristan da Cunha (Bluebelt). James departed the UK on the 3rd August for Cape Town, and arrived back at Tristan on the 29th September, he would have arrived back earlier, but had to stay in Cape Town to have an operation on his right eye.

Overall the trip was a real eye opener, especially James visit to the UN, on World Oceans Day 2017, to hear about how much plastic enter the sea and the damage it causes. Since arriving back at Tristan extra conditions have been incorporated in to the fishing licences;

General Environmental

1. The use of plastic packaging bands on fishing vessels which do not use on-board incinerators (closed systems) is prohibited.
2. Any packaging bands, once removed from packages, shall be cut into approximately 30 cm sections, so that they do not form a continuous loop and burned in the on-board incinerator at the earliest opportunity.
3. Any plastic residue shall be stored on board the vessel until reaching port and in no case discarded at sea.
4. Fishing vessels shall be prohibited from dumping or discharging:
5. oil or fuel products or oily residues into the sea, except as permitted under Annex I of MARPOL73/78;
    a. garbage;

b. food wastes not capable of passing through a screen with openings no greater than 25 mm;

c. Incineration ash.

Like one fishermen said “Every day on the ocean is different, and one learns how to read it," but fishing has changed dramatically over the past 20 years, pointing to the struggles fishermen face, much of it due to regulations and restrictions that make it "a continual fight just to go outside the harbour to fish." Thankfully on Tristan due to the community having an invested interest in the way the fishery is managed we are not yet faced with those problems.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

One unexpected development and outcome from Tristan Da Cunha’s recent MPA announcement and blue belt government money allocation is that CEFAS who are acting as the delivery agent for the Overseas Territories Blue Belt aspiration have offered substantial support to this project.

This is currently under discussion with Tristan and CEFAS on exactly what CEFAS will deliver as part of the project and what scientific support they will give.

A formal change request will obviously be submitted once this outline is confirmed from CEFAS but this is a very positive collaboration and outcome for Tristan Fisheries Department and this Darwin project.

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?	
Discussed with LTS:	No not yet as discussions are ongoing
Formal change request submitted:	No not yet but will be in due course
Received confirmation of change acceptance	No

3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes ☐ **No** ☒ Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

Not at this present time.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document. Additionally, if you were funded under R23 and asked to provide further information by your first half year report, please attach your response as a separate document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but should also be raised with LTS International through a Change Request.

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 22-035 Darwin Half Year Report**