

**Darwin Plus:  
Overseas Territories Environment and Climate Fund  
Annual Report**

To be completed with reference to the "Project Reporting Information Note"  
(<https://darwinplus.org.uk/resources/information-notes>)

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes)

**Submission Deadline: 30<sup>th</sup> April 2023**

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**Darwin Plus Project Information**

Project reference	DPLUS 147
Project title	A collaborative approach to managing coral disease in UK Overseas Territories
Territory(ies)	The British Virgin Islands, Cayman Islands, Turks and Caicos Islands
Lead partner	JNCC
Project partner(s)	Turks and Caicos Islands - Department of Environment and Coastal Resources, British Virgin Islands - Ministry of Natural Resources, Labour and Immigration, Cayman Islands' Government Department of Environment, Nature2
Darwin Plus grant value	£496,257
Start/end dates of the project	July 2021- March 2024
Reporting period (e.g. Apr 2021-Mar 2022) and number (e.g. Annual Report 1, 2)	April 2022- March 2023, Annual Report 2
Project Leader name	Alexandra Cunha, JNCC
Project website/blog/social media	<a href="https://jncc.gov.uk/our-work/collaborative-coral-reef-working-group/">https://jncc.gov.uk/our-work/collaborative-coral-reef-working-group/</a>
Report author(s) and date	Alexandra Cunha

## 1. Project summary

Stony Coral Tissue Loss Disease (SCLTD) spreads rapidly across reefs in the Caribbean UK Overseas Territories (OTs), threatening biodiversity, tourism, food security, livelihoods, and disaster resilience. An urgent priority, this project will develop a robust collaborative approach to managing the disease in the Cayman Islands, Turks and Caicos Islands, and the British Virgin Islands and consider modelling approaches to inform adaptive management options. Knowledge exchange will be extended to all Caribbean OTs, and a longer-term partnership to support coral reef resilience will be fostered.

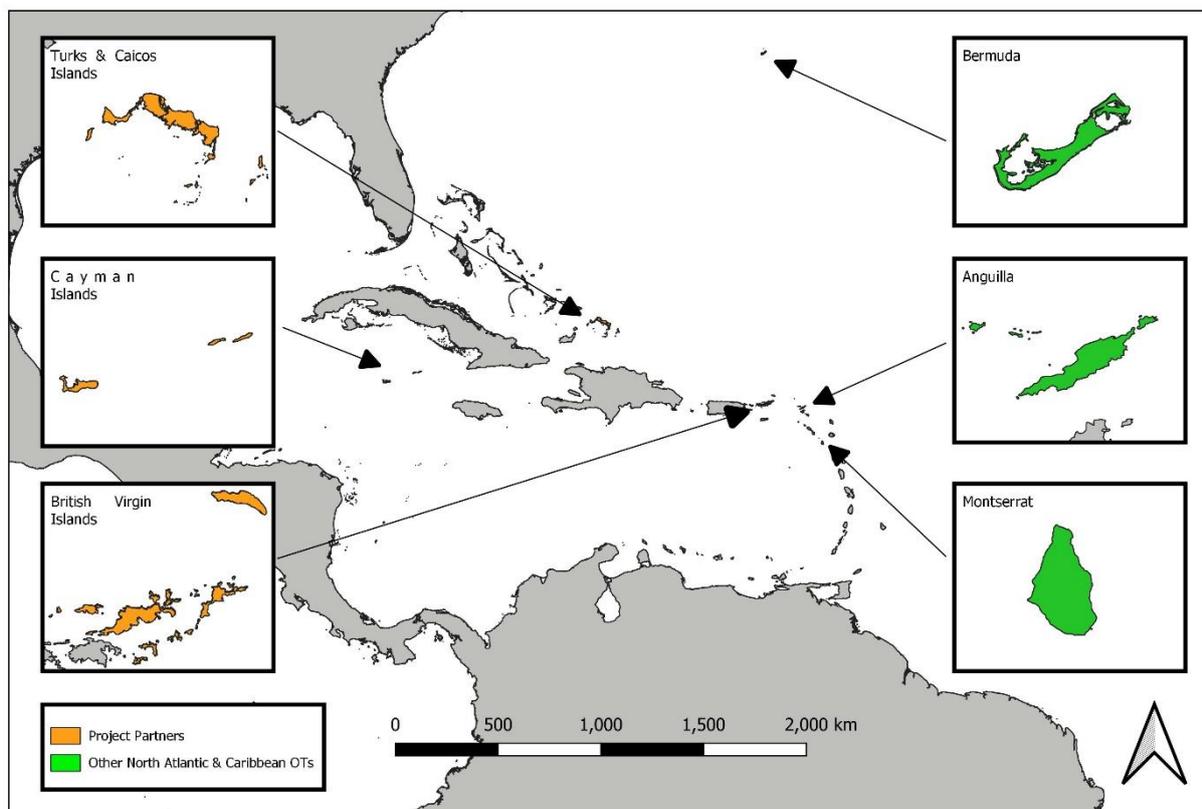


Figure 1. Map showing locations of DPLUS147 OT project partners and key stakeholders.

## 2. Project stakeholders/partners

The Coral Conservation in the Overseas Territories working group (C-COT) has met 12 times (see annexes folder) in year 2 (April to March 2023) and has involved members of all project partners. The group membership is now wider than project partners and involves key stakeholders within the OTs of the partners, such as NGOs (Turks and Caicos Reef Fund (TCRF), CCMI and MCS) and educational establishments (School for Field Studies, TCI).

Active group membership is also widened out to non- partner OTs that have confirmed the presence of SCTLD, such as Montserrat and Anguilla and OTs without the disease present (Bermuda). Given the importance of prevention and early detection of SCTLD outside the Caribbean region, the online Teams platform has also been made available to OTs with tropical coral reefs outside of the region (BIOT & Pitcairn).

## 3. Project progress

### 3.1 Progress in carrying out project activities

#### *Progress against activities for Output 1:*

The Coral Conservation in the Overseas Territories (C-COT) Working Group continued to meet and maintain the momentum from year one. Meetings were delivered throughout the financial year as agreed based on member availability, and 12 meetings were held between April to March 2023. Members agreed to have an informal approach with scientific experts and invite speakers on an ad-hoc basis to present to the group.

Table 1 outlines the science experts, their subject focus and the date to which they presented to the group. In late 2021, members began discussing the outward-facing identity of the CCRWG, and in February 2021, the name of the CCRWG was formally changed to Coral Conservation in the Overseas Territories (C-COT). Following this, in May 2022, discussions began around the visual identity of C-COT. Logo designs were proposed to the group and the final logo was decided upon in July 2022. See Figure 2 below for final C-COT logo.

The first face-to-face C-COT workshop was held from 9<sup>th</sup> to 12<sup>h</sup> August 2022, at The Westin Resort, Grand Cayman. There were 27 full participants (see attached folder for participants list) but we had Cayman Government representatives and Environment Department team members participating in some of the sessions. Alongside representatives from the six UK Overseas Territories (BVI, TCI, Cayman Islands, Montserrat, Anguilla, and Bermuda), the workshop brought together leading experts in coral disease management including Dr Greta Aeby, Dr Blake Ushijima (University of North Carolina, Wilmington), Kelly Pitts (Smithsonian Marine Station) and Dr Will Greene (Perry Institute of Marine Science) to share the latest scientific research to support the responses to SCTLD in the UKOTs.

It focused on practical approaches to managing Stony Coral Tissue Loss Disease and its impacts on coral reefs and biodiversity (see attached folder for workshop agenda). Workshop topics included, response plan development, photogrammetry and data analysis, monitoring disease treatment efforts and using probiotics to treat SCTLD.

Specific sessions included:

- Coral disease and bleaching response plan theory.
- Practical in-water sessions focussing on treatment techniques.
- In water and theory sessions on monitoring coral disease treatments, variables and metrics to consider.
- Data analysis with pre-collected data.
- Photogrammetry analysis interactive workshop.
- Probiotics culturing.
- Field application of probiotics.

Participants underwent surveys before and after the workshop (see attached folder for surveys and detailed survey results with participants quotes) to gauge their understanding of the topics covered in the sessions and monitor the impact of the workshop. Results showed that:

- The average rating of understanding across all respondents increased for overall understanding of SCTLD management options, monitoring coral disease treatment efforts, and using probiotics to treat SCTLD. There was no change in understanding for data analysis, photogrammetry, or coral management response planning.
- On average, participants rated the correspondence received for organising the workshop as 'Good' (4.37).
- On average, participants rated the overall effectiveness of the workshop as 'Very Good' (4.79)



Figure 2. Coral Conservation in the Overseas Territories Working Group Logo. Developed and approved by C-COT in year 2.

Table 1. Science experts presented at the C-COT Working Group meetings between March 2022 and April 2023, their presentation topic, and presentation date.

Science Expert	Topic	Date
Michael Studivan, NOAA	SCTLD Transmission – Ballast Water	19/04/2022
Dr Manuel Rivero, Australian Institute of Marine Science	Reef Cloud for coral reef monitoring data	14/06/2022
Dr Michelle Devlin, CEFAS	Water Quality and Reef Resilience in the UKOTs	05/07/2022
Dr Blake Ushijima and Erin Papke, University of North Carolina Wilmington	Identifying and culturing probiotics for SCTLD treatment	W/C 8/08/22 (Cayman Islands Workshop)
Dr Greta Aeby	Data collection for SCTLD monitoring	W/C 8/08/22 (Cayman Islands Workshop)
Dr Kelly Pitts, Smithsonian Marine Institute	Field application of probiotics treatment	W/C 8/08/22 (Cayman Islands Workshop)
Will Greene, Perry Institute of Marine Science	Interactive photogrammetry workshop for coral reef monitoring	W/C 8/08/22 (Cayman Islands Workshop)
Dr Greta Aeby	Response planning for coral disease and bleaching.	W/C 8/08/22 (Cayman Islands Workshop)
Stephanie Jones, University of Plymouth	MSc research into stakeholder perceptions to SCTLD management in Anguilla and the Cayman Islands	20/09/2022
Kalli De Meyer	Dutch Caribbean Biodiversity Database	25/10/2022
Judy Lang	Regional perspectives of SCTLD	07/02/2022

*Progress against activities for Output 2:*

SCTLD fieldwork is still ongoing to the three partner OTs, informed and guided by the SCTLD treatment strategy produced in year 1 and new and emerging evidence that is presented through C-COT meetings. Preparations and discussions have started towards the development of an adaptive management plan. Kalli De Meyer is working with C-COT members to scope the details of the plan in preparation for interactive planning sessions in the June 2023 workshop in Miami. A draft adaptive management plan will be an output of the workshop, which will then be finalized in the following months.

**SCTLD Treatment in TCI 2021-22:**

The Department of Environment & Coastal Resources (DECR) received positive responses following community outreach activities in search for potential probiotic sampling species. Responses reported living colonies of *Colpophyllia natans*, *Diploria labyrinthiformis* and *Meandrina meandrites* in areas longest impacted by the Stony Coral Tissue Loss Disease (SCTLD) - these are regionally and locally considered some of the most susceptible to SCTLD. Unfortunately, no colonies of *Dendrogyra cylindrus* were reported, which appears to have been

one of the most severely affected species within the TCI, along with *Meandrina meandrites*. It is considered highly fortunate that a *Meandrina* sp. species may be available for probiotic sampling. Follow-up fieldwork GPS pin-pointed the location of the *D. labyrinthiformis* colonies. Efforts continue to locate the single *M. meandrites* colony which would be prioritized for sampling - to-date, this colony has not been located. This fieldwork is in preparation for sample collection, as samples must be collected and exported to Dr. Ushijima's USA based laboratory as quickly as possible. DECRs vessels are currently being equipped with new engines. Once field ready, continued efforts will be employed for probiotic sampling.

A major challenge for SCTL D treatment is that affected colonies have little to no visual symptoms of infection. Learning that the SCTL D appears to affect the zooxanthellae of affected coral polyps and that coral fluorescence can act as an indicator to coral health (Roth and Deheyn, 2013) the DECR has ordered a coral fluorescence kit. On arrival this will be trialled in the field to test if this provides clearer indication of SCTL D disease spread within individual infected coral colonies.

Partnership with Dr. Greta Aeby has continued, collaborating with the DECR where we began drafting a national 'Coral Reef Diseases and Marine Species Response Plan' - once implemented, this could help improve TCI's marine biosecurity measures and improve its efficiency in response to such future incidences. The Development of this plan involved inter-Governmental and public stakeholder workshops on the three most populated of the Turks & Caicos Islands (Providenciales, Grand Turk and South Caicos). Conversation with fellow government representatives from other Departments and portfolios give hope for the successful development of such a plan, where those agencies appeared to recognize their individual roles and responsibilities. Distinctly connected to this plan is the continued regional networking and participation in groups like C-COT which offer the opportunity of advanced warning to contemporary coral reef threats. During the latest C-COT meeting, the DECR was able to report to C-COT news of a suspected re-emergence of the *Diadema* sp. mortality event of 2022 observed recently again in the USVI.

The potential partnership with the Turks and Caicos Reef Fund (TCRF) to continue alternative treatment trials and to potentially expand upon their ex-situ coral nursery efforts was unsuccessful with TCRF choosing to pursue the discussed activities independently, thus resulting in DECRs decision to reallocate funds to the 2023/24 fiscal year.

### **SCTL D Treatment in the Cayman Islands:**

The CIDoE SCTL D Response Team spent 229 days in the field, completing approximately 555 dives and 491 hours under water responding to the SCTL D outbreak in Grand Cayman. Atlantic and Gulf Rapid Reef Assessment (AGRRA) coral disease surveys were completed at 12 dive sites in the Grand Cayman at 3 time periods.

In November 2022, Photogrammetry surveys were conducted at 8 sites on Little Cayman and 6 sites in Cayman Brac, establishing baseline monitoring of coral reef habitat, before the possible arrival of SCTL D. Photogrammetry surveys were conducted at 10 dives sites at 2 time periods in Grand Cayman. This work was supported by Will Greene, a Research Associate at the Perry Institute for Marine Science and funded by JNCC.

In April and September 2022, SCTL D surveillance surveys were completed around Cayman Brac and Little Cayman at 2 different time periods. The Sister Islands remain to be SCTL D-Free.

In September 2022, Coral spawning surveys were completed on the East and West side of Grand Cayman.

*Denrogyra cylindrus* (DCYL) or Pillar Coral fragments from 10 known colonies around Grand Cayman were added to two nurseries on the East and West of Grand Cayman with the hopes to preserve genetic tissue.

The CIDoE SCTLD Response Team continued weekly monitoring of antibiotic survey at Barkers Nursery and Lighthouse Point dive site.

The CIDoE SCTLD Response Team and the Eastern District Strike Team continued weekly antibiotic treatments on corals at priority dive sites around Grand Cayman. The CIDoE SCTLD Response Team treated a total of 19511 coral colonies in 2022 (# includes retreatments). The Eastern District Strike Team treated 3902 coral colonies + DCYL (126).

Coral samples for histology and Virology were shipped in February 2022. Metabolomics and Microbial samples were shipped in November 2022.

In May 2022, the Cayman Islands were represented at an international Peer Exchange in Merida, Mexico to learn and share experiences while responding to SCTLD.

CIDoE attended and assisted to host a Coral Conservation in the Overseas Territories (C-COT) working group workshop: Stony Coral Tissue Loss Disease Management, in the Westin Grand Cayman.

In September 2022, the Cayman Islands were represented at Reef Futures in Key Largo, Florida, including participation in a one-day learning exchange on Coral Rescue organized by MPACConnect, NOAA's Coral Reef Conservation Program, AGRRA and Florida SeaGrant during this year's Reef Futures conference.

In November 2022, sea urchin samples and surveys were conducted around Cayman Brac. Coral Fest was held in Grand Cayman in August 2022 to raise awareness for coral reefs and communicate the ongoing threat of stony coral tissue loss disease. An update on the threat of SCTLD was communicated to the dive community in Little Cayman and Cayman Brac in February, May and November 2022.

Education and outreach were prioritized throughout the year via social media, school talks, public meetings and training days and volunteers and new SCTLD Response Divers were trained as necessary.

The DoE recruited two Caymanian Field staff to support the project which proved to be an essential step to the success of the planned actions.

### **SCTLD Treatment in BVI:**

The Government of the Virgin Islands through the Ministry of Natural Resources and Labour is continuing its efforts in monitoring and treating corals impacted by Stony Coral Tissue Loss Disease (SCTLD). SCTLD was first confirmed in the Virgin Islands in May of 2020 and has spread across the reef system ever since. Many highly susceptible coral species such as the iconic Pillar coral, Maze coral and Smooth Flower coral colonies just to name a few has significantly decrease in abundance or has become non-existent on most reef systems.

In the winter months of 2022, the non-profit organization Beyond the Reef reported the first occurrence of SCTLD on Anegada and has treated the infect colonies with the Amoxicillin Base2B treatment ever since.

In this project started in January 2023 and monitoring occurred in February and March at the time of this report. An alternative non antibiotic treatment utilizing chlorine and cocoa butter covered by a clay plaster was set up and administered across six (6) sites across Anegada. The treatment was reported to be successful in the Turks and Caicos Islands.

The Ministry of Natural Resources and Labour (MNRL) and volunteers from Beyond the Reef (BTR) monitored the spread of SCTLD across the six newly infected sites, treating all the corals impacted by SCTLD, compared the effective treatment success with the Amoxicillin Base2B and the chlorine/cocoa butter treatments and document any new coral outbreaks within the areas. At each site, a 30m transect line was placed. Line intercept data was recorded,

documenting the benthic composition. Numbered tags were hammered into the substrate at 5 m intervals along the transect line, creating a permanent “spine” of the belt transect which would allow divers to accurately conduct repeated surveys to document changes within the reef system. Divers swam on each side of the transect and recorded all coral colonies they encountered within each side of the line (30m x 2m belt transect).

Colonies were identified to the lowest taxa and recorded by size class (0-5cm, 6-10cm, 11-20cm, 21-40cm, 41-60cm, 61-80cm, >80cm). The data captured will provide information regarding the colonies’ density, biodiversity and its community structure and size class structure on the reef. A full disease assessment was conducted at each site by Dr. Greta Abey. Colonies along the transect showing signs of SCTLD were tagged and subdivided by treatments (purple- chlorine, orange- amoxicillin). Corals that were left untreated were tagged and recorded as controls.

All tagged colonies were mapped on the reef by recording their distance along the spine of the transect and their distance perpendicular from the spine. All tagged colonies were photographed, measured and their disease state were recorded. Each site was revisited within 2-week intervals and colonies were re-photographed and retreated if there were a spread of the lesion line or if there were signs of new lesions.

Coral colonies continued to be impacted by large scale mortality due to Stony Coral Tissue Loss Disease (SCTLD) throughout 2022 and 2023. In an ongoing effort to minimize coral cover loss, the tropical application of Base 2 B has been the primary source of treatment but as funds diminished, treatment measures by volunteers decreased as the administration of treatment across the British Virgin Islands required biweekly trips in the likelihood of new lesions on treated corals.

In seeking to minimize in-water time and looking for alternative to antibiotic treatment options, The Government of the Virgin Islands, utilize DPLUS grant funds and recruited, Dr Greta Aebly and Dr. Graham Forrester of the University of Rhode Island to assist with the set up and pilot study on the effectiveness of both treatments.

Anegada, the most northern island in the territory has the Territory's largest barrier reef, the Horseshoe reef is currently experiencing the invasion stage of SCTLD and was considered the best site for the study. Six treatment sites were set up within the area (Table 2). At each site an in-depth survey comprising of a full disease assessment, and benthic composition was conducted. Corals showing signs of SCTLD were tagged with cow tags for easy identification and the area was mapped for continual treating measures and documenting disease progression. Corals at each site were treated with either the medicated chlorine treatment, the Base 2B antibiotic treatment or left untreated as controls. Corals were photographed every two weeks.

**Table 2. Sites established for coral treatment monitoring.**

Date established	Country	Island	site	Depth (m)	Latitude (N)	Longitude (W)
12.12.22	BVI	Anegada	1	5	18° 40.325	64° 14.587
12.12.22	BVI	Anegada	2	5	18° 40.878	64° 15.146
13.12.22	BVI	Anegada	3	6	18° 40.129	64° 17.608
13.12.22	BVI	Anegada	4	2.9	18° 40.129	64° 17.608
14.12.22	BVI	Anegada	5	3.1	18° 40.028	64° 17.112
20.01.23	BVI	Anegada	6	4.6	18° 40.028	64° 17.112

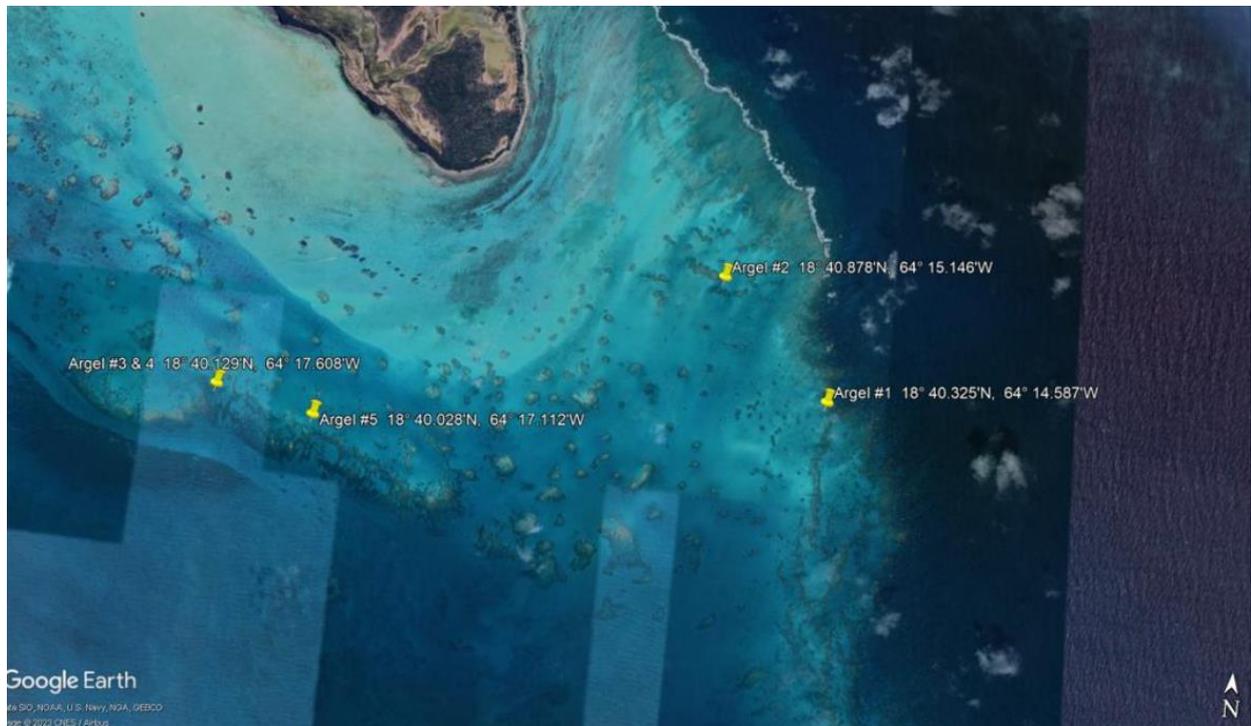


Figure 3. Location of monitoring and treatment sites in Anegada in December 2022.

### Histology

Divers were trained in histology collection. Seven samples from coral colonies that showed signs of tissue loss were collected at Seal Dog, BVI. Samples were collected using morse holesaw 1 1/2" and/ or 1 3/4", and utilizing a chisel, was removed from the colony (Table 3). Colony samples that were collected were placed in individually numbered Ziploc bags. The numbered bags were placed by each coral before sampled were taken and photographed.

This was used to easily identify each coral with the samples collected. Once divers surfaced, samples were cleaned and downsized (if needed) and placed into their numbered jars (corresponding to their Ziploc bag). Each coral fragment was placed in 10% formalin/seawater and sealed to prevent spillage.

Table 3. Coral histology samples collected at Seal Dog, BVI.

Date	Country	Site	GPS		Depth (m)	est. coral cover (%)	Jar #	Coral species	Lesion type	est. colony size (cm)
			18°	64°						
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	1	MCAV	mf satl+SEB	35
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	2	MCAV	mf satl+SEB	40
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	3	OFAV	mf bl+ctl	35
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	4	OANN	linear bl edge+ctl	30
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	5	OANN	linear bl edge+ctl	40x80
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	6	PSTR	f satl	19
2.23.23	BVI	Seal Dog	30.395	26.155	4.6	14	7	OANN	linear bl edge+ctl	200

## Probiotics

Probiotics samples were not conducted during the time of Dr. Greta Aeby's visit due to limited human resources to analyze samples from Dr. Blake Ushijima. Samples were task to be collected and send after the summer where new resources would be obtained. Training was conducted on how to obtain coral mucus samples and shipping procedures.

## Education

In an effort to continue educating the public about the ongoing monitoring and progress of our SCTL monitoring, the Government of the Virgin Islands in partnership with the National Parks Trust of the Virgin Islands created two additional animation series, "Meet Stony- Part 4" (Figure 4).

Currently in development at the time of this report, the video will highlight using probiotics as a form of treatment and the benefits it can create once beneficial bacteria (which is naturally resistant to the disease) is found. The animation explains what probiotics is and how we as humans use probiotics on a daily basis while providing examples of probiotic products we use. It explains probiotics isn't harmful and states how successful the treatment will be once the samples are collected and explains how the treatment will enhance the reef immune system and divers can stop utilizing antibiotics for treatment.

In the final episode - Part 5, the series, which has been released as yet as its still under production by the completion of this report, will highlight the process and implantation of the probiotics as well as thank you messages to the funders and all the volunteers who have contributed to the ongoing efforts in saving the coral reef ecosystem. Without their intervention, the coral reef community diversity and density would be significantly lower.



Figure 4. Screenshot of the animated video and the video running on a laptop during the Coral Fest in Cayman.

### ***Progress against activities for Output 3:***

The literature review on reef resilience models was finalised but the rest of the work will be delivered in the first quarter of FY 2022/2023 as per request change accepted.

### **Progress against activities for Output 4:**

The Project Management Group (PMG) met 4 times between April 2022 and March 2023. It was agreed that the meeting scheduling would be quarterly or as required.

The mid-year report was submitted in 31<sup>st</sup> October 2022.

## **3.2 Progress toward project Outputs**

**Output 1:** Collaborative partnership to optimise the treatment and management of Stony Coral Tissue Loss Disease (SCTLD) established.

A successful collaboration has been established between the Caribbean and Western Atlantic Overseas Territories. SCTLD remains a devastating disease that has significant impacts for our partner OTs.

**Output 2:** Optimised treatment and management of SCTLD using best available scientific evidence and expertise.

Progress has been made in delivering treatment and management of SCTLD in the OTs, with new treatment methodology trials underway, including probiotic sampling, in conjunction with Dr Blake Ushijima, chlorine trials guided by Dr Greta Aeby, natural antiseptic (honey) trials and a continuation of antibiotic treatment. Capacity in the OTs remains limited with many pressures placed upon key staff members, highlighting the importance of project partners to include wider partners to deliver appropriate work, e.g. NGOs, dive operators, and volunteers.

**Output 3:** Conceptual Reef Resilience Model to support the long-term management of coral reefs

Work towards this output started this year, but was rescheduled to allow learnings from ongoing projects in some OTs (e.g. DPLUS 150) to gain maximum benefit.

**Output 4:** Project management, monitoring and evaluation

A robust project team and governance structure has been established within C-COT meetings as well as a project management group (PMG) that meets quarterly or as required. Monitoring and Evaluation documents have been signed off through the PMG.

## **3.3 Progress towards the project Outcome**

*Outcome: Effective collaboration is established that shares information, knowledge, skills, resources and tools that supports evidence-based decisions to address the spread of Stony Coral Tissue Loss Disease in three Caribbean OTs*

- Good progress has been made towards an effective collaboration that addresses SCTLD in the three partner OTs and the three additional Caribbean and Western Atlantic OTs who have also more recently detected SCTLD in their waters (Montserrat and Anguilla) or wish to be as prepared as possible should it appear on their reefs (Bermuda). Attendance is good from government agencies, but more efforts will be made this coming year to broaden representation within C-COT from other key stakeholders in the SCTLD response, such as NGOs and dive operators. Discussions will shift to the group's long-term prospects, developing an exit strategy beyond Darwin+ investment.
- Caribbean UKOTs now have bespoke coral reef monitoring and Stony Coral Tissue Loss Disease (SCTLD) treatment programmes embedded into their workflow, which has been complemented by a suite of tools such as disease and bleaching response plans and a set of priority actions for reef health.

- Local government officers and policy makers became knowledgeable and aware of the importance of protecting their coral reefs for climate resilience, food security and tourism through the holding of several project meetings where the topic was discussed with experts and specific activities such as water quality training workshops and the development of the fishers code of best practice.
- There's awareness on the need to find funds to continue the work and for hiring dedicated technical personal and support from experts/scientists. Partners are taking steps to find funds to ensure the work continues) into the future which includes working together on a bid application. One of the NGOs involved in the C-COT group managed to successfully bid for funds to continue managing SCLTD and other efforts to preserve coral reefs.

### 3.4 Monitoring of assumptions

*Assumption 1:* Political will remains to support the project

*Comment:* MoA's signed by OT cabinets outline high-level commitment and support for the duration of the 3-year project. SCLTD remains a high priority within OT governments, but many other competing priorities may affect staff availability and resources.

*Assumption 2:* Partners remain committed and have the capacity to engage in the project

*Comment:* This assumption holds, OT partners remain fully engaged in project work. This is demonstrated through active engagement and attendance at C-COT meetings and regular fortnightly catch ups with individual partner governments. Group attendees regularly share lessons learnt with one another in group meetings.

*Assumption 3:* The work prepared for future bids aligns and is suitable for future funding streams

*Comment:* Changes to the project timeline and the development of a reef resilience model framework mean that currently, this assumption holds true but has not been tested. This will need to be revisited in Y3 of the project based on the reef resilience model framework outcome and other modelling exercises underway within the coral reef community. Once developed, it will be reassessed whether a bid to develop a new model is required or if sufficient models exist that can be modified to suit OT requirements. There's a whole session planned on funding stream and possible bid planned for the workshop to be held in June 2023.

*Assumption 4:* Experts and on-island Project Officers are available in a timely manner to contribute to discussions

*Comment:* This assumption is still correct, evidenced by the attendance of experts regularly at C-COT meetings and the continued attendance of project officers at C-COT meetings, project management group meetings and fortnightly project catch ups. Where project officers have been unable to attend, they have nominated a colleague to attend in their absence, as outlined in the C-COT terms of reference.

*Assumption 5:* Covid-19 or other natural disasters do not prevent Project Partners/Officers from collaborating at appropriate times

*Comment:* Covid-19 and other natural disasters did not prevent project partners from collaborating through remote, online mechanisms and attending C-COT meetings throughout the project.

*Assumption 6:* Covid-19 or other natural disasters do not prevent in-field training

*Comment:* Covid-19 and other natural disasters did not prevent project partners from in-field training throughout the project.

*Assumption 7:* The partners continue to be able to undertake SCLTD treatment

*Comment:* The partners have been able to undertake SCLTD treatment throughout Y2 of the project; however, some factors have impacted this, including poor weather conditions, Covid-19 restrictions, and staff resource availability. Moving forward, partners are planning to begin fieldwork earlier in the year in Y3 to avoid poor weather conditions as much as possible.

Partners have also identified on-the-ground collaborators in the form of NGOs, dive operators and fisherman (for vessels) involved in the delivery of SCTL management activities to reduce the demand on limited government staff resources.

*Assumption 8:* Experts available to support treatment and management of SCTL

*Comment:* Assumption still holds, as demonstrated by the range of experts available to present to C-COT and work with OT partners, as listed in Table 1. In addition, Dr Greta Aeby, a project partner, remains under contract through the project to provide scientific advice to the OTs and delivered face to face training during the workshop in Cayman Island.

*Assumption 9:* OT project partners have the technical abilities to feed into the model framework design

*Comment:* This assumption has not yet been tested as the development of the model framework has been postponed to Y3 of the project. This assumption will be re-visited in Y3 reporting but an extensive pre-workshop meeting plan to train project partners on the topic will take place early in Y 3 of the project.

*Assumption 10:* Project remains a priority with OT partners. OTs ensure continued staff and resource availability and engagement.

*Comment:* This assumption remains; OT partners remain fully engaged in project work. This is demonstrated through attendance at C-COT meetings and regular fortnightly catch-ups with individual partner governments. Partners have also committed staff time and resources to support an in-person workshop in Y2 which further demonstrates continued engagement.

#### **4. Project support to environmental and/or climate outcomes in the UKOTs**

Project outcomes support UK policy objectives within the **UK Overseas Territories Biodiversity Strategy (2014, UKOTBS) and the 25 Year Environmental Plan (25YEP)**. Strategic priorities under the UKOTBS include providing UK Government support to: 1) enable data collection on the location and status of biodiversity interests and the human activities affecting biodiversity to inform the preparation of policies and management plans (including baseline survey and subsequent monitoring); and develop ecosystem-based initiatives for the conservation and sustainable use of the marine environment. By supporting SCTL management and managing coral reefs for resilience, this project will also contribute to the following key policy areas of the **25YEP: Recovering nature and Securing clean, healthy, productive and biologically diverse seas and oceans.**

The **UK OT Coral Reef Initiative** was started to respond to the UK Government's **25 Year Environment Plan**, which states: *"Coral reefs are under direct and sustained pressure. The UK's ambition is to champion and support their conservation and biodiversity in UK and Overseas Territories' (OTs) waters and around the world-to work with OTs to encourage the adoption of best sustainable management practice of coral reefs, as well as their associated ecosystems. We want to provide sustainability for fisheries and ensure food security while upholding social and cultural wellbeing."*

The project also supports the **UKOT Coral Reef Action Plans** developed as part of the **UK OT Coral Reef Initiative** outline priorities for coral reef conservation in the UKOTs. A key priority is improving collaboration across OTs to knowledge share and build capacity to support management action.

Although some of the partner OTs are yet to ratify the Convention of Biological Diversity, it is under consideration to do so by OT governments and this project will contribute to achieving **Aichi Targets 1 (Public Awareness), 10 (Vulnerable Ecosystems), and 19 (Knowledge, Science and Technology)**. **UNCLOS 61(2)** also requires coastal states to take 'into account the best scientific evidence available to it' in determining conservation and management measures.'

At national levels, the project supports goals in the **TCI Vision 2040**: ‘SDD 3 – Healthy and Natural Environment and Heritage and Cultural Areas; NC3.1 Good Ecosystems, marine and aquatic resource management’ by supporting the ‘development of management frameworks and increasing management capacity through stakeholder partnerships’. A **TCI Environment Strategy** is being developed, and DPLUS147 supports objectives: 1) ‘Provide a framework for the sustainable management of natural resources to protect the future of healthy and productive ecosystems at land and sea’ and 3) ‘Facilitate the sharing of data between stakeholders so that the environment can be monitored and managed efficiently’.

**The Cayman Island Environment Charter (CI/UK)** outlines a commitment from the Cayman Islands Government to ‘Ensure the protection and restoration of key habitats, species and landscape features through legislation and appropriate management structures and mechanism’. DPLUS147 contributes to **Cayman Island National Biodiversity Action Plan (NBAP)**, particularly the **Coral Reefs Habitat Action Plan**, supporting goals to ‘maintain and manage the variety of habitats, communities and species on coral reefs’ and ‘seek improvement of coral reefs which have been degraded’.

The project is also contributing to the goal outlined in **The Green Paper on Environmental Management Climate Adaptation and Sustainable Development for the [British]Virgin Islands** to ‘actively promote and advance the restoration of the natural environment’ and the (British) **Virgin Islands Climate Change Policy**, by increasing the resilience of ecosystems to climate change by reducing the stress on these systems from controllable local impacts.

**5. OPTIONAL: Consideration of gender equality issues**

The gender split within the C-COT working group consists of 12 men and 10 women (Table 4). Age ranges amongst C-COT members from early 30s to 60s.

Table 4. Gender split at C-COT.

DPLUS project partner country	Membership gender	Leadership
Cayman	2 men, 1 woman	1 man, although scientific coral work is led by the woman.
BVI	2 men, 2 women	1 man and 1 woman in leadership and scientific coral work is led by one woman
TCI	1 man, 1 woman	1 woman in leadership and 1 man leading scientific work

Recordings of all training and expert presentations have been used to provide accessibility at times convenient for stakeholders. Future in-person venues will be made accessible for those with physical disabilities. In Y2, as the project hosted the first in-person workshop, specific consideration was given to accommodate those with caregiving responsibilities by taking a flexible approach to planning and timing of sessions, alongside recording sessions for those that are unable to attend. Final project outputs will be made accessible to those with learning, visual or hearing impairments and follow Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018.

**6. Monitoring and evaluation**

There is a strong monitoring process, with outputs and activities and documents being assessed and approved by both the PMG and the wider C-COT group. The Monitoring and Evaluation Plan was written and approved in Year 1 Q4 and is used to guide quarterly project monitoring. The project also retains the Risk Register as a further tool to monitor the progress of the project. The PMG, which is comprised of representatives from each partner institution and meets quarterly is jointly responsible for monitoring and steering the project, ensuring it

aligns with the project proposal, and that the project is delivered on time and within budget. Whilst the PMG is a critical component of the monitoring and evaluation process, JNCC takes a leading role in assessing the Monitoring and Evaluation Plan and Risk Register.

The project logframe is a core component of the Monitoring and Evaluation Plan and provides a clear set of indicators and outputs against which the project can be assessed. Timeframes have been amended (through an approved Change Request) for some deliverable approval dates (including the Monitoring and Evaluation Plan itself) in the logframe as a result of delays in the project start date and challenges presented by the Covid-19 pandemic. Progress towards the stated Outcome and Outputs can be clearly cross-referenced with the relevant indicators and information on a number of these is clearly demonstrated in this report, particularly related to C-COT's running and associated activities. Reflecting on future changes in this area, now that the Monitoring and Evaluation Plan has been approved, this year will involve more in-depth discussions with the PMG on the project evaluation and more clarity of the roles and responsibilities associated with this plan.

## **7. Lessons learnt**

Although the engagement is high at C-COT meetings with interactive group discussions attendance has been patchy at times. These periods of low attendance at C-COT meetings have coincided with times of on-island workshops, demands from other projects and busy periods such as the end of the financial year, highlighting the demand on partner staff time. The best way forward is to establish the on-island demand at the beginning of the year and establish more flexible ways to keep busy partners engaged such as one-to-one meeting and sharing the newsletter.

The C-COT chair reflected that it can be challenging soliciting feedback during the C-COT setting and it could be important to build in on-going opportunities for partners to provide feedback and make use of smaller settings and 1-1 feedback sessions. This format was implemented in Y2 when feedback for specific pieces of work were required, and it was very useful.

Engaging with other networks is extremely important but can be very time consuming. This requires a dedicated point of contact and open communication and collaboration to ensure success and will be considered in more detail in Y3.

The C-COT newsletter seems to be an excellent tool for engagement between meetings and maintaining momentum, but contributions are mainly from the secretariat with some contributions from C-COT members. In Y3 we would like further to encourage ownership and participation in the newsletter from members.

Recommendations for similar projects:

- Develop a strong and responsive secretariat and allocate write amount of staff time;
- Foster transparent communication and feedback from group;
- Have a neutral Chair and/or facilitator chairing/facilitating a diverse group of stakeholders i.e. not JNCC in this case;
- Allow flexibility so that partnerships and engagement can evolve.

## **8. Sustainability and legacy**

Partner OTs have increased their capacity to conduct SCTL management due to the provision of funds for these activities provided through MoAs and have enabled NGOs, dive operators and volunteers to be funded to carry out further activities. In addition, all members of C-COT have increased access to the most up-to-date science and experts working in the region, as evidenced in Table 1, scientific experts that have collaborated with C-COT. Increased capacity and information to support OT's SCTL responses is also evidenced in the production of project outputs, including the C-COT collaborative SCTL treatment strategy which outlines guiding principles for treatment trials, data collection and making evidence-based management

decisions. In addition, there has been increasing interest in C-COT from external conservation organisations looking to collaborate with the group and members, most of these collaborations are currently in discussion and include NGOs such as The Reef World Foundation (Green Fins initiative), other regional working groups, academics, and private, scientific consultants. C-COT has also established a close working relationship with NOAA's Caribbean Co-operation Team, NOAA's Disease Advisory Committee, and the Global Coral Reef Monitoring Network Steering Committee.

The current planned exit strategy still stands, in Y3, the project will begin to consider the ownership and identity of C-COT beyond the life of the project and potential sustainable financing mechanisms to support the sustainability of the group.

A whole section dedicated to the future of C-COT as well funding opportunities will take place during the workshop planned for June 2023.

## 9. Darwin identity

The DPLUS147 project has publicised Darwin Plus funding through a range of communication materials intended to reach project partners and stakeholders in the Overseas Territories, C-COT members, NGOs, funders, and the general public. Communication mediums which highlight Darwin Initiative funding through reference and the use of the logo include social media posts (Facebook, Twitter, LinkedIn), weekly C-COT newsletters (Mailchimp), a project summary leaflet, and a project webpage.

Darwin Plus is recognised throughout communications as funding a distinct project which is continuing the funding for the C-COT working group as part of DPLUS147. Regular DPLUS147 project updates have been provided to partners through PMG meetings and C-COT working group meetings, so partners and stakeholders in the Overseas Territories are familiar with the project delivery, and Darwin Plus provides that funding (Figures 5 and 6).

Communication materials promoting the Darwin identity are evidenced below:



Figure 5. Image from the technical session during the face-to-face workshop with Darwin Plus stand up banner.



Figure 6. Photo of one of the signs distributed around the workshop venue evidencing the use of the Darwin Plus logo.

## 10. Risk Management

There were 2 risks that were not foreseen this year:

- One of the partners was not aware of the legal needs to contracting out a local NGO to do some of the tasks planned. After lengthy discussions with the legal advisors, the partner concluded that it was not possible to contract the NGO and therefore the work planned for Y2 was delayed. A change note request to move the funds to complete the work next financial year was submitted with success.
- There have been unprecedented high levels of demand on the OTs which was difficult to predict and was/is out of JNCC control. Resource availability is quite different among OTs, and we will need to adapt the current low human resource moving forward.

## 11. Safeguarding

Biodiversity Challenge Funds are committed to supporting projects develop and strengthen their safeguarding capabilities and capacity to prevent, listen, respond and learn. Defra will not automatically penalise projects where safeguarding concerns are identified but will help projects respond and learn from the experience.

Table 5. Safeguarding policy summary.

Has your Safeguarding Policy been updated in the past 12 months?	Yes, it's due to be published in May 2023
Have any concerns been investigated in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes, the head of HR is the Safeguarding lead with support from HR Business Partners.
Has the focal point attended any formal training in the last 12 months	No.
What proportion (and number) of project staff have received formal training on Safeguarding?	None but SAFE training will provided to them in 2023 and other relevant

safeguarding training that we can obtain will also be provided.

Has there been any lessons learnt or challenges on Safeguarding in the past 12 months?  
Please ensure no sensitive data is included within responses.

We have updated the safeguarding policy to take on feedback from colleagues at JNCC and also to keep it in line with important priorities as they become clear in safeguarding, the policy will be reviewed annually at the very least and safeguarding issues that are identified will be dealt with in a confidential and speedy manner. An overview of our policy will take place by our ARAC board regularly and changes will be made where necessary to keep it current and at the heart of every project.

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so, please specify.

Once the new policy is released, all projects are to include safeguarding as part of their process and to ensure that project partners also have the safeguarding policy shared with them so that expectations for all participants are very clear.

## 12. Project expenditure

Table 7. Project expenditure during the reporting period (1 April 2022 – 31 March 2023)

Project spend (indicative) in this financial year	2022/23 D+ Grant (£)	2022/23 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Others (Please specify)				
<b>TOTAL</b>	<b>£166,391</b>	<b>£164,688</b>	<b>-1.2%</b>	

## 13. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes.

[I agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section \(please leave this line in to indicate your agreement to use any material you provide here\).](#)

The Coral Conservation in the Overseas Territories, or C-COT, working group is funded by the UK Government's Darwin Plus programme, and brings together, governments, non-governmental organisations from the six Caribbean and Western Atlantic territories with scientific experts and practitioners from the region to share knowledge and expertise on coral reef management, with a particular focus on the current stony coral tissue loss disease (SCTLD) outbreak impacting Caribbean coral reefs.

The first face-to-face workshop of C-COT (which has been meeting remotely since November 2020) was held in August 2022 in Grand Cayman. There were 27 participants and alongside representatives from the six UK Overseas Territories (BVI, TCI, Cayman Islands, Montserrat, Anguilla, and Bermuda), the workshop brought together leading experts in coral disease management including Dr Greta Aeby, Dr Blake Ushijima (University of North Carolina, Wilmington), Kelly Pitts (Smithsonian Marine Station) and Dr Will Greene (Perry Institute of

Marine Science) to share the latest scientific research to support the responses to SCTLTD in the UKOTs (Figure 7).

The workshop focused on practical approaches to managing Stony Coral Tissue Loss Disease and its impacts on coral reefs and biodiversity. Workshop topics included, response plan development, photogrammetry and data analysis, monitoring disease treatment efforts and using probiotics to treat SCTLTD.

Specific sessions included:

- Coral disease and bleaching response plan theory.
- Practical in-water sessions focussing on treatment techniques.
- In water and theory sessions on monitoring coral disease treatments, variables and metrics to consider.
- Data analysis with pre-collected data.
- Photogrammetry analysis interactive workshop.
- Probiotics culturing.
- Field application of probiotics.

The workshop coincided with the Coral Fest, an open public event which aimed at improving wider awareness about the importance of coral reefs and their protection (Figure 8). The event took place in a room next to the workshop and attracted a large audience. There were speeches by the Governor of Cayman and the Cayman *Prémiere*, and both expressed their support for coral conservation. They visited several of the coral booths (Figure 9) set up by the UK Overseas Territories present at the workshop and were able to increase their awareness of the work done across the region.

Participants underwent surveys before and after the workshop to gauge their understanding of the topics covered in the sessions and monitor the impact of the workshop. Participant quotes from the post-survey included:

- 'The technical-ness was helpful to understand SCTLTD options.'
- 'A very interesting and engaging conference. I made wonderful connections and learnt a lot! Maybe more discussion breaks or interactive activities between lectures.'
- 'Great meeting, should have more!'
- 'This was a great workshop well managed and informative. The subjects were appropriate and engaging. A little more technical one-support for photogrammetry would have been helpful though.'



Figure 7. Coral Conservation in the UK Overseas Territories (C-COT) workshop participants.



Figure 8. Print screen from one of the social media posts showing the Coral Fest poster with the Darwin Plus logo.



Figure 9. Examples of coral reef conservation booths at the Coral Fest: The Cayman Governor and wife learn about the use of probiotics on tackling SCLTD, the C-COT booths with and hands on activity – “Build your own coral reef!” which proved to be very popular and Dr Blake Ushijima near the probiotics treatment booth.

**Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023 – if applicable**

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
<p><b>Impact</b></p> <p>Effective collaboration and capacity building through partnerships established to support the UK OTs to deliver shared actions for the protection, restoration and management of coral reefs.</p>		<p>A collaborative online group (Coral Conservation in the UK OTs) has been established that meets regularly for the goal to protect coral reefs against SCTLD.</p>	
<p><b>Outcome</b></p> <p>Effective collaboration is established that shares information, knowledge, skills, resources and tools that supports evidence-based decisions to address the spread of Stony Coral Tissue Loss Disease in three Caribbean OTs</p>	<p>0.1 Collaboration has been effective between partners, and outcomes integrated into Collaborative adaptive management plan by March 2024</p> <p>0.2 Action Plan for longer-term, broader, partnership agreed by March 2024</p> <p>0.3 SCTLD Strategy successfully implemented in BVI, TCI and Cayman Islands by March 2024</p> <p>0.4 At least 1 funding proposal developed to pilot use of the Conceptual Reef Resilience Model to inform management decisions, by February 2024</p>	<p>Progress has started against all indicators.</p>	<p>Discussions started around the long-term strategy of the C-COT group, including how to maintain the chair and secretariat functions (including who will carry out these functions) beyond Darwin+ investment. There's a whole session dedicated to this topic in Y2 face-to-face workshop.</p>
<p><b>Output 1:</b> Collaborative partnership to optimise the treatment and management of</p>	<p>1.1 At least ten Collaborative Coral Reef Working Group (C-COT) meetings annually</p>	<p>1.1 Twelve C-COT (Now re-named CCOT) meetings were held in FY 22/23</p> <p>1.2 Agreements are in place with 2 regional bodies and one scientific institution.</p>	

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
Stony Coral Tissue Loss Disease (SCTLD) established	<p>1.2 Agreements in place with at least 3 regional and sub-regional bodies and/or scientific experts with the C-COT by no later than December 2021</p> <p>1.3 On-island project officers identified and operative in each OT no later than October 2021</p> <p>1.4 C-COT members engage well at two workshops and/or training events by end of March 2024</p> <p>1.5 At least two Officers per OT trained report increased understanding in SCTLD management options by April 2023</p>	<p>1.3 On-island project officers identified and operative for Cayman Islands, BVI and TCI by the end of FY22_23.</p> <p>1.4 On-island project officers are named in signed MoAs for Cayman Islands, and TCI. It was not possible to recruit on -island officers in BVI but there were graduated students and the consultant supporting the coral monitoring and treatment implementation.</p> <p>1.5 <u>One face-to-face workshop took place during FY 22_23</u> and the second one planned for 23-24 (June 23)</p>	
<p><b>Activities</b></p> <p>1.1 C-COT meet for project kick-off meeting;</p>		Activity completed, C-COT/C-COT met for the first time under this project on 13 <sup>th</sup> July 2021.	None.
1.2 Agree terms of reference and meeting scheduling and frequency;		Complete. Terms of reference and meeting frequency are outlined in the partnership agreement that was formally agreed on 24 <sup>th</sup> January 2023.	Reviewed and updated as necessary during Y2 and Y3.

<b>Project summary</b>	<b>SMART Indicators</b>	<b>Progress and Achievements April 2021 - March 2022</b>	<b>Actions required/planned for next period</b>
1.3 Deliver agreed regular meetings;		Complete for Y2.	Meetings will continue at 4 weekly intervals throughout Y3 unless reviewed again by C-COT.
1.4 C-COT members identify regional bodies and scientific experts to invite to the group;		Complete for Y2, regional bodies included NOAA Caribbean Co-Operation Team, and Disease Advisory Committee and UK OT Conservation Forum.	Ongoing and will be adapted to suit partner needs during Y3.
1.5 Agreements in place with identified bodies and experts;		Agreements in place with regional bodies including NOAA Caribbean co-operation team and experts such as Dr Blake Ushijima who is screening OT mucus samples for potential probiotics treatments. Discussions have begun with other regional organisations including the reef world foundation and experts from the Smithsonian Institute.	Maintain and build upon current agreements and partnerships, continue discussions started in Y2 and continue to horizon scan and response to OT expert needs during Y3. We plan to start engaging with The Coral Research & Development Accelerator Platform (CORDAP) in Y3 (may 2023).
1.6 Identify project officers and agree roles and responsibilities;		Complete and outlined in MoAs.	Reviewed and updated in MoA to reflect any changes during Y3.
1.7 Identify training needs and plan in-person training sessions;		Ongoing, needs identified for Y3 event include: sustainable finance, evolutive reef restoration, impacts of antibiotics in the ecosystem.  Longer term training needs include: reef restoration and micro-fragging and aquaria and still data management and analysis.	Will be reviewed and monitored throughout Y3.
1.8 Run in-person training session in Y3;		Planned for June 2023	Workshop already under advance planning for June 2023 in Miami.

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
			Venue and facilitator secured and agenda in discussion.
1.9 Evaluate C-COT ways of working, progress, governance		This discussion will be started with partners in person during Y2 training session (August 2022).	These discussions have been followed and will be revisited during workshop in Y3.
1.10 Plan in-person follow-on virtual training as required throughout Y3;		Planned for June 2023.	Workshop already under advance planning for June 2023 in Miami. Venue and facilitator secured and agenda in discussion.
1.11 Deliver virtual training sessions as required throughout Y3;		Planned for Y3	Planned for Y3 already during C-COT monthly meetings ahead of workshop in June 2023.
1.12 Plan Y2 workshop to evaluate group progress, review the roadmap for longer-term collaboration and identify next steps and develop adaptive management plan;		Plan to move this workshop to Y3 as per the change request.	Workshop in full planning mode at the moment with venue and facilitator secured, flights and accommodation booked - to be hold in June 2023.
1.13 Deliver workshop in Y2		Plan to move this workshop to Y3 as per the change request.	See above
<b>Output 2:</b> Optimised treatment and management of SCTL D using best available scientific evidence and expertise	<p>2.1 SCTL D baseline status report each OT partner signed off by PMG by February 2022</p> <p>2.2 Collaborative SCTL D treatment and management strategy agreed by OT partners by March 2022</p> <p>2.3 OT Partners trial at least three SCTL D treatment or</p>	<p>2.1 2.1 SCTL D baseline status report each OT partner signed off by PMG in March 2022</p> <p>2.2. Collaborative SCTL D treatment and management strategy agreed by CCOT group by March 2022</p> <p>2.3 OT Partners implemented five different treatment options in FY22/23; probiotics samples (BVI and TCI), honey trials (TCI), chlorine trials (TCI and BVI) and antibiotic treatments (Cayman).</p>	

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
	<p>management interventions annually</p> <p>2.4 SCTLD adaptive management plan signed off by C-COT by December 2023</p> <p>2.5 Project partners and stakeholders report 25% increased links to scientific research on SCTLD by March 2024</p>	<p>2.4 Planned to be create a draft document during face-to-face workshop in June 2023.</p> <p>2.5 Survey created for to C-COT participants</p>	
<p><b>Activities:</b></p> <p>2.1 Produce status reports of SCTLD and management to date in each OT to establish project baseline;</p>		<p>Complete and signed off by C-COT on 18<sup>th</sup> January 2022.</p>	<p>N/A</p>
<p>2.2 Discuss SCTLD treatment strategy in C-COT meeting and produce first draft;</p>		<p>Complete, originally presented to C-COT on 9<sup>th</sup> November 2021</p>	<p>N/A</p>
<p>2.3 Agree final version of collaborative treatment strategy with C-COT;</p>		<p>Complete, signed off by C-COT on 25<sup>th</sup> January 2022.</p>	
<p>2.4 OTs implement collaborative treatment strategy and regularly monitor, with support from scientific advisors and C-COT</p>		<p>Ongoing.</p>	<p>Will continue through Y3.</p>
<p>2.5 OTs evaluate progress and findings from the first round of fieldwork and produce annual progress reports;</p>		<p>None, planned for Q1 Y3.</p>	<p>Will commence in Q1 Y2 and feed into August 2022 in-person workshop.</p>
<p>2.6 Progress reports are reviewed collectively through C-COT meeting</p>		<p>Ongoing.</p>	<p>Will continue through Y3.</p>
<p>2.7 Treatment strategy is revised and updated based on outcomes of Y1 fieldwork to reflect changes and lessons learnt;</p>		<p>Ongoing.</p>	<p>Will continue through Y3.</p>

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
2.8 OT's implement revised treatment strategy and regularly monitor, with support from scientific advisors and C-COT;		Ongoing.	Will continue through Y3.
2.9 Develop regional SCTL D adaptive management plan, including findings from project fieldwork and other SCTL D initiatives underway in UKOTs;		None, planned for Y3.	To commence in Y3.
2.10 Review SCTL D adaptive management plan and refine through workshop;		None, planned for Y3.	To commence in Y3.
2.11 Final review and update of management plan at the end of the project through C-COT		None, planned for Y3.	To commence in Y3.
<b>Output 3:</b> Conceptual Reef Resilience Model to support the long-term management of coral reefs	<p>3.1 Reef Resilience Model Framework is completed and signed off through the C-COT by March 2023</p> <p>3.2 At least three OT project partners have increased knowledge of how to use the model framework to improve coral reef management by March 2023</p>		
<b>Activities:</b> 3.1 Review existing reef resilience and coral reef management models, considering geographical application and relevance, discriminators, and suitability for which models work best in which scenario in Y1;		The review began in Y1.	Review to be completed in Y2.
3.2 Design and distribute surveys to evaluate understanding before and after stakeholder consultation;		None, moved to Y2 as per change request.	To commence in Y2.

Project summary	SMART Indicators	Progress and Achievements April 2021 - March 2022	Actions required/planned for next period
3.3 Consultation with the UKOT partners to understand useability, requirements, capacity and desires for reef resilience models		None, moved to Y2 as per change request.	To commence in Y2.
3.4 Based on consultation, produce a draft framework to guide a tailored ensemble modelling approach based on review outputs		None, moved to Y2 as per change request.	To commence in Y2.
3.5 Present draft framework to stakeholders, with a demonstration case study, through the C-COT;		None, moved to Y2 as per change request.	To commence in Y2.
3.6 Refine and finalise framework, incorporating stakeholder feedback;		None, moved to Y2 as per change request.	To commence in Y2.
3.7 Produce a plan for next steps (e.g. building of a module with all open source code for all models in framework for ease of access an implementation), including identification of funding opportunities.		None, moved to Y2 as per change request.	To commence in Y2.
<b>Output 4:</b> Project management, monitoring and evaluation	<p>4.1 MOU developed and agreed by project partners by December 2021</p> <p>4.2 Project Management Group (PMG) established, and meetings held quarterly by July 2021</p> <p>4.3 Gender disaggregation designed into the project methodology; by February 2022</p>	<p>4.1 MoAs (BVI, TCI and MoUs (Dr Greta Aeby and Kalli de Meyer) signed by January 2022</p> <p>4.2 PMG established by July 2021 and met four times in FY 21/22</p> <p>4.3 &amp; 4.4 Gender disaggregation report designed into project methodology and M&amp;E report signed off by PMG and CCOT by March 2023</p>	

<b>Project summary</b>	<b>SMART Indicators</b>	<b>Progress and Achievements April 2021 - March 2022</b>	<b>Actions required/planned for next period</b>
	4.4 PMG sign off project Monitoring and Evaluation Plan by March 2022		
Activities:		Complete, PMG met for the first time on 24 August 2021.	
4.1 Establish project PMG, with TOR and meeting schedule			
4.2 Draft M&E plan		Complete and presented to C-COT in March 2022.	
4.3 Sign off M&E plan through PMG		Signed off by PMG and C-COT on 15 <sup>th</sup> March 2022.	Will be reviewed as necessary and used to guide reporting throughout project duration.
4.4 Gender disaggregation		Incorporated into M&E plan agreed on 15 <sup>th</sup> March 2022.	Will be reviewed as necessary and used to guide project design and reporting throughout project duration.
4.5 Monitor progress quarterly with PMG		Complete for Y2, PMG quarterly throughout Y2 (August, October 2022, January 2023 & March 2023).	Will be maintained throughout Y3.
4.6 Produce Darwin+ mid-year report		Complete for Y2, submitted on 31 <sup>st</sup> October 2022.	Will be completed for Y3.
4.7 Produce Darwin+ end of year report		Complete for Y2.	Will be completed for Y3.
4.8 Produce Darwin+ final report.		None. To be completed at the end of Y3.	Complete during Y3.

**Annex 2: Project’s full current logframe as presented in the application form (after change note no.4).**

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p><b>Impact:</b> Effective collaboration and capacity building through partnerships established to support the UK OTs to deliver shared actions for the protection, restoration and management of coral reefs</p>			
<p><b>Outcome:</b> Effective collaboration is established that shares information, knowledge, skills, resources and tools that supports evidence-based decisions to address the spread of Stony Coral Tissue Loss Disease in three Caribbean OTs</p>	<p>0.4 Collaboration has been effective between partners and outcomes integrated into Collaborative adaptive management plan by March 2024</p> <p>0.5 Action Plan for longer-term, broader, partnership agreed by March 2024</p> <p>0.6 SCTLD Strategy successfully implemented in BVI, TCI and Cayman Islands by March 2024</p> <p>0.7 At least 1 funding proposal developed to pilot use of the Conceptual Reef Resilience Model to inform management decisions, by February 2024</p>	<p>0.1 Collaborative Coral Reef Working Group agreed programme of work delivered</p> <p>0.2 Collaborative actions, Best Practice and Conceptual Reef Resilience model incorporated into Action Plan</p> <p>0.3 Progress reports to PMG</p> <p>0.4 Funding proposal submitted to funding body</p>	<p>Political will remains to support the project</p> <p>Partners remain committed and have capacity to engage in the project</p> <p>Covid-19 or other natural disasters do not prevent Project Partners/Officers from collaborating at appropriate times</p> <p>The work prepared for future bids aligns and is suitable for future funding streams</p>
<p><b>Output 1:</b> Collaborative partnership to optimise the treatment and management of Stony Coral Tissue Loss Disease (SCTLD) established</p>	<p>1.6 At least ten Collaborative Coral Reef Working Group (CCRWG) meetings annually</p> <p>1.7 Agreements in place with at least 3 regional and sub-</p>	<p>1.1 CCRWG Meeting minutes recorded and shared with group.</p>	<p><i>Assumptions:</i> Experts and on-island Project Officers are available in a timely manner to contribute to discussions</p>

	<p>regional bodies and/or scientific experts with the CCRWG by no later than December 2021</p> <p>1.8 On-island project officers identified and operative in each OT no later than October 2021</p> <p>1.9 CCRWG members engage well at two workshops and/or training events by end of March 2024</p> <p>1.10 At least two Officers per OT trained report increased understanding in SCTLD management options by April 2023</p>	<p>1.2 Formal or informal agreements, where appropriate, and meeting minutes of the CCRWG</p> <p>1.3 On-island project officers identified in project partner MOU</p> <p>1.4 Attendance by key staff from all relevant OTGs at training events, and workshop/event evaluation questionnaires completed.</p> <p>1.5 Pre and post-training surveys, and training records for BVI, TCI and Cayman Island staff</p>	<p>Covid-19 or other natural disasters do not prevent Project Partners/Officers from collaborating at appropriate times</p> <p>Covid-19 or other natural disasters do not prevent in field training</p> <p><i>Mitigation:</i> CCRWG schedule is determined by needs of group and communicated well in advance.</p> <p>Training can be moved online if situations arise that prevent travel.</p>
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Activities:

- 1.14 CCRWG meet for project kick-off meeting;
- 1.15 Agree terms of reference and meeting scheduling and frequency;
- 1.16 Deliver agreed regular meetings;
- 1.17 CCRWG members identify regional bodies and scientific experts to invite to the group;
- 1.18 Agreements in place with identified bodies and experts;
- 1.19 Identify project officers and agree roles and responsibilities;
- 1.20 Identify training needs and plan in-person training session;
- 1.21 Run in-person training session in Y2;
- 1.22 Evaluate CCRWG ways of working, progress, governance.
- 1.23 Plan in-person follow-on virtual training as required throughout Y2&3;

<p>1.24 Deliver virtual training sessions as required throughout Y2&amp;3;</p> <p>1.25 Plan Y2 workshop to evaluate group progress, review roadmap for longer-term collaboration and identify next steps and develop adaptive management plan;</p> <p>1.26 Deliver workshop in Y2</p>			
<p><b>Output 2:</b> Optimised treatment and management of SCTL D using best available scientific evidence and expertise</p>	<p>2.5 SCTL D baseline status report each OT partner signed off by PMG by February 2022</p> <p>2.6 Collaborative SCTL D treatment and management strategy agreed by OT partners by March 2022</p> <p>2.7 OT Partners trial at least three SCTL D treatment or management interventions annually</p> <p>2.8 SCTL D adaptive management plan signed off by CCRWG by December 2023</p> <p>2.9 Project partners and stakeholders report 25% increased links to scientific research on SCTL D by March 2024</p>	<p>1</p> <p>2</p> <p>2.1 SCTL D treatment strategy &amp; plan agreed by CCRWG</p> <p>2.2 Annual reports published on website and presented to Project Management Group</p> <p>2.3 Regional adaptive management strategy published on website and presented to Project Management Group.</p> <p>2.4 Project questionnaire sent through CCRWG</p>	<p>The partners continue to be able to undertake SCTL D treatment</p> <p>Experts available to support treatment and management of SCTL D</p>
<p>Activities</p> <p>2.1 Produce status reports of SCTL D and management to date in each OT to establish project baseline;</p> <p>2.2 Discuss SCTL D treatment strategy in CCRWG meeting and produce first draft;</p>			

- 2.3 Agree final version of collaborative treatment strategy with CCRWG;
- 2.4 OT's implement collaborative treatment strategy and monitor regularly, with support from scientific advisors and CCRWG;
- 2.5 OT's evaluate progress and findings from first round of fieldwork and produce annual progress reports;
- 2.6 Progress reports are reviewed collectively through CCRWG meeting;
- 2.7 Treatment strategy is revised and updated based on outcomes of Y1 fieldwork to reflect changes and lessons learnt;
- 2.8 OT's implement revised treatment strategy and monitor regularly, with support from scientific advisors and CCRWG;
- 2.9 Develop regional SCTL D adaptive management plan including findings from project fieldwork and other SCTL D initiatives underway in UKOTs;
- 2.10 Review SCTL D adaptive management plan and refine through workshop;
- 2.11 Final review and update of management plan at end of project through CCRWG.

<p><b>Output 3:</b> Conceptual Reef Resilience Model to support the long-term management of coral reefs</p>	<p>3.2 Reef Resilience Model Framework is completed and signed off through the CCRWG by July 2023</p> <p>3.3 At least three OT project partners have increased knowledge of how to use model framework to improve coral reef management by July 2023</p>	<p>3.1 Reef Resilience Model Framework endorsed by CCRWG and incorporated into adaptive management strategy (0.2)</p> <p>3.2 Changes in project partner survey responses assessed and reported to PMG .</p>	<p>Assumptions: OT project partners have the technical abilities to feed into the model framework design</p> <p>Mitigation: Project training planned in Y2 will include modelling background.</p>
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- Activities:
- 3.1 Review existing reef resilience and coral reef management models, considering geographical application and relevance, discriminators, and suitability for which models work best in which scenario in Y1;
  - 3.2 Design and distribute surveys to evaluate understanding before and after stakeholder consultation;
  - 3.3 Consultation with the UKOT partners to understand useability, requirements, capacity and desires for reef resilience models
  - 3.4 Based on consultation, produce a draft framework to guide a tailored ensemble modelling approach based on review outputs;
  - 3.4 Present draft framework to stakeholders, with a demonstration case study, through the CCRWG;
  - 3.5 Refine and finalise framework, incorporating stakeholder feedback;
  - 3.6 Produce a plan for next steps (e.g. building of a module with all open source code for all models in framework for ease of access an implementation), including identification of funding opportunities.

<p><b>Output 4:</b> Project management, monitoring and evaluation</p>	<p>4.5 MOU developed and agreed by project partners by December 2021</p> <p>4.6 Project Management Group (PMG) established, and meetings held quarterly by July 2021</p> <p>4.7 Gender disaggregation designed into the project methodology; by February 2022</p> <p>4.8 PMG sign off project Monitoring and Evaluation Plan by March 2022</p>	<p>4.1 Signed partner MOU's available in project file structure.</p> <p>4.2 Minutes of PMG meetings circulated to project partners and available within project files.</p> <p>4.3 Gender methodology integrated into the Monitoring and Evaluation report, signed off by PMG</p> <p>4.4 Signed off Monitoring and Evaluation Plan by PMG from meeting minutes shared with partners</p>	<p>Assumptions: Project remains a priority with OT partners. OTs ensure continued staff and resource availability and engagement.</p> <p>Mitigations: Project risks and assumptions will be assessed and addressed at PMG meetings and as outlined in the M&amp;E plan.</p> <p>High level conversations continue to raise profile and need for the project.</p>
<p>Activities:</p> <p>4.5 Establish project PMG, with TOR and meeting schedule</p> <p>4.6 Draft M&amp;E plan</p> <p>4.7 Sign off M&amp;E plan through PMG</p> <p>4.8 Gender disaggregation</p> <p>4.2 Monitor progress quarterly with PMG</p> <p>4.3 Produce Darwin+ mid-year report</p> <p>4.4. Produce Darwin+ end of year report</p> <p>4.5 Produce Darwin+ final report.</p>			



**Table 1. Project Standard Indicators**

DPLUS Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DPLUS Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
E.g. DPLUS-A01	E.g. People who attended training on CBD Reporting Standards	E.g. Number of officials from national Department of Environment who attended training on CBD Reporting Standards	People	Men	20			20	60
E.g. DPLUS-C17	E.g. Articles published by members of the project team	E.g. Number of unique papers published in peer reviewed journals	Number	None	1			1	4

In addition to reporting any information on publications under relevant standard indicators, in Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Mark with an asterisk (\*) all publications and other material that you have included with this report.

**Table 2 Publications**

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)

## Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	