

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

To be completed with reference to the "Project Reporting Information Note"  
(<https://dplus.darwininitiative.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 2022**

**Darwin Plus Project Information**

Project reference	DPLUS152
Project title	Coastal Resource Atlas 2021 & Temporal Analysis for the BVI
Territory(ies)	BVI
Lead partner	NOC
Project partner(s)	Joint Nature Conservation Committee Coastal Management Consulting BVI National Parks Trust of the Virgin Islands Ministry of Natural Resources, Labour and Immigration (BVI Gov)
Darwin Plus grant value	£248,650.00
Start/end dates of project	01/07/21 – 30/06/23
Reporting period (e.g. Apr 2021-Mar 2022) and number (e.g. Annual Report 1, 2)	Annual Report 1
Project Leader name	James Strong
Project website/blog/social media	None
Report author(s) and date	James Strong 17/05/2022

## 1. Project summary

Marine habitat maps provide vital information on 'what is where'. Consequently, marine habitat maps are necessary for understanding the distribution of impacts, the planning of sustainable human activities at sea and the placement of protected marine areas. This project will combine recent high-value surveys of the physical seabed with additional fieldwork to produce new and more extensive maps for the BVI's marine environment surround. The fieldwork will also examine the change in marine habitats over time and their current condition.

## 2. Project stakeholders/partners

Project partners:

The Joint Nature Conservation Committee (JNCC) - JNCC have used their existing relationship with Vulcan and the Allen Coral Atlas (ACA) to facilitate the exchange of data to allow ACA validation and use of coral polygons in the CRA.

Dr Shannon Gore (BVI independent consultant) - Dr Gore has helped plan and conduct the in situ observations (ROV and diver transects), and also help prepare the temporal analysis and condition assessment.

National Parks Trust of the Virgin Islands (NPTVI) and the Ministry of Natural Resources, Labour and Immigration (MNRLI) - NPTVI has assisted in the collation of historical data and the

collection of new in situ observations (provision of a survey vessel and crew – vessel 'Missfit'). During the three weeks afloat, Trust staff were always present. Senior Trust staff, Dr Cassander Titley-O'Neal (Director) and Nancy Woodfield Pascoe (Deputy Director), joined the survey on several occasions.

The recent bout of fieldwork (17<sup>th</sup> April to the 9<sup>th</sup> May, 2022) resulted in NOC completing three weeks of fieldwork the NPTVI. Equally, NOC conducted multiple impromptu capacity building sessions with staff from the Ministry. These events included the construction and deployment of water quality instrumentation (YSI Exo 2 Sonde) and a full day afloat using both drop down cameras and a sidescan sonar. The need for this training stemmed from the requirements outlined by Ministry staff.

### **3. Project progress**

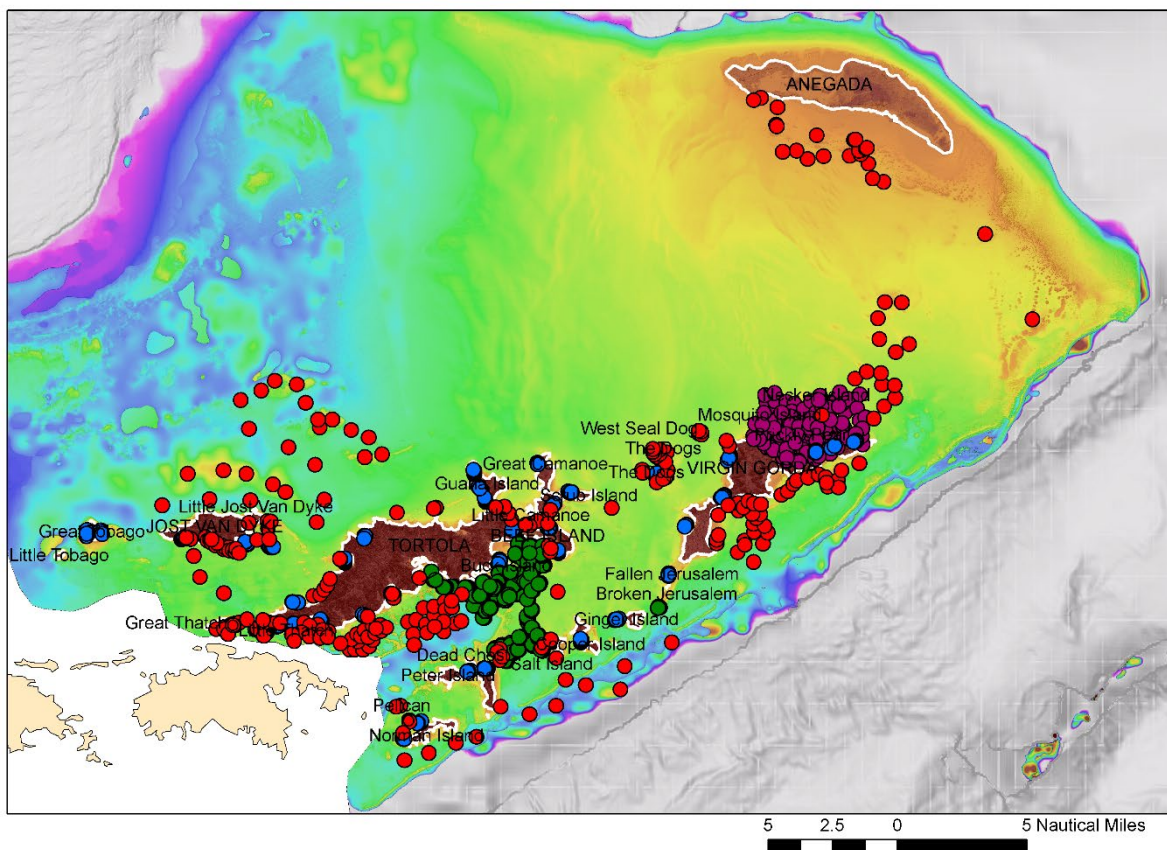
#### **3.1 Progress in carrying out project Activities**

Progress within the project is very much on schedule. The most challenging and risky component of the project, which is the survey phase where the new ground-truthing is collected, is now complete and has been a great success. Specific progress within each work package is:

Activity 1.1: collation of the remotely sensed data for the BVI is now complete. The collated data includes the ship-based bathymetry collected by CEFAS (35 km<sup>2</sup> of bathymetry and backscatter data delivered by CEFAS in 2015 through a Darwin Plus project), the bathymetric LiDAR collected by the UKHO (~7,200 km<sup>2</sup> of bathymetric LiDAR and aerial imagery delivered by the UKHO in 2019), ~200 km<sup>2</sup> of satellite-derived bathymetry produced by various sources (e.g. NOC and NPTVI) and bathymetry based on satellite altimetry for all other areas. These data sources have been merged into a single bathymetric surface that covers the entire Exclusive Fisheries Zone and uses the best-available data. Activity 1.1 is now complete.

Activity 1.2: Habitat observations collected in 1991, 2015 and 2018 have now been collated into a single GIS project. To achieve this, NOC formally entered into several data sharing agreements with the respective data sources (CEFAS, JNCC and University of Newcastle). A similar collation has also been completed for the historical data, with the raw data collected by Dunne and Brown (1975 and 1977) and Anderson et al. (1985) has also been centralised into one GIS project. All raw notes have been either hyperlinked to spatial objects or carefully georeferenced.

Activity 2.1: the ground-truthing survey, scheduled for 2022, has now been successfully completed. NOC's video and dive stations are shown in red (a total of 270 stations – see figure 1 below). The total available ground-truthing dataset available for the updated Coastal Resource Atlas now sits at around 500 stations (i.e. NOC, CEFAS and University of Newcastle stations). Our dives fully documented nine patch reefs (Anegada) that were first described in two historical studies (Dunne and Brown ~1977; Anderson et al., ~1985). The data collected during the survey far exceeded our expectations for the project.



Activity 2.2 (delivery of the seabed imagery and GT interpretations to the MNRLI with report) is on-going. Clearly, having only just returned from the fieldwork, progress on this activity is small. However, this activity remains on schedule.

Activity 3.1: all of the collated bathymetry datasets have been merged into a single bathymetric surface for the BVI. Using this surface, additional terrain variables have been derived and geomorphological surfaces made. Use the terrain variables to model the distribution of observed seabed habitats throughout the waters of the BVI.

Activities 3.2: The recent bout of fieldwork (17th April to the 9th May, 2022) resulted in NOC completing three weeks of fieldwork the NPTVI. Equally, NOC conducted multiple impromptu capacity building sessions with staff from the Ministry. These events included the construction and deployment of water quality instrumentation (YSI Exo 2 Sonde) and a full day afloat using both drop down cameras and a sidescan sonar. The need for this training stemmed from the requirements outlined by Ministry staff. The training provided meets all of the expected training outputs requested by the Ministry and Trust staff. This activity has been complete.

Activity 4.1: the examination of the new temporal data has just begun (as scheduled). This activity will continue for the next 6 months or so.

Activity 4.2 and 4.3: the report of the temporal trends observed is not scheduled to start yet. Equally, the condition report is also not due to start yet

### 3.2 Progress towards project Outputs

Output 1 (collated database of historical biological and physical seabed observations): this output is predominately complete. The new survey data is been processed currently and will join the historical data within the next 4 months. Once the new data has been entered into the database, this output will be complete.

Output 2 ('dataset of in situ seabed (camera imagery) data for historical and new ground-truthing stations in the BVI'): this output is predominately complete. The new survey data is been processed currently and will join the historical data within the next 4 months. Once the new data has been entered into the database, this output will be complete.

Output 3 ('updated CRA covering the major habitats out to both the 12 nm area (predictive habitat maps) and EFZ (geomorphology maps/seascape). Attribution of mapped classes with the results of the temporal analysis (i.e. identity and trajectory over time')): this output is dependent on the processing of the recently collected survey data. Once the data has been processed, it can be used to model the seabed habitats round the BVI and produce the habitat map (CRA2).

Output 4 ('better understand of the temporal change and overall trajectories of the major marine habitats in the BVI. Updated condition assessment for coral habitat in the BVI'): this output is dependent on all of the survey data been processed. It is anticipated that the survey data will be fully processed by October 2022.

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

Outcome: 'High-quality habitat maps made available for marine management, research, resource/inventory assessments, natural capital validations and the placement of protected sites etc. Improved management for a larger sea area (deeper waters)'.

Indicator 1: Ongoing and on schedule.

Indicator 2: Ongoing and on schedule.

Indicator 3: Ongoing and on schedule.

Indicator 4: Ongoing and on schedule.

Indicator 5: Survey work is complete and the field data are being processed.

Overall progress towards the overall outcome is progressing very well. Successful completion of the survey in the BVI has delivered significant amounts of required data for the project and ensures that the final habitat map produced will be extremely high quality and rigorously validated.

### **3.4 Monitoring of assumptions**

Assumption 1: NOC would be able to collect enough data during the fieldwork period in the BVI.

Comments: NOC staff have just returned from a very successful bout of fieldwork (extended from 2 to 3 weeks to ensure adequate collection). The number of stations visited greatly exceeded the expectations of the lead. Equally, the quality of the temporal data sets collected round Anegada were more superior that had been anticipated.

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

The overarching objective of Darwin Plus is to provide support to the UKOTs to achieve strategic long-term outcomes for the natural environment.

- The collated data provides an excellent baseline for most of the important marine habitats to be found in the BVI's waters.
- The newly acquired ground-truthing (270 odd observations of the seabed round all of the island in the BVI provides an excellent data set for providing a much-needed condition assessment of the marine habitats.
- However, it is only the end products from this project that will make tangible impacts on local long-term goals. The updated Coastal Resource Atlas will provide critical information on the 'what, where and how much' for the seabed habitats of the BVI. Equally, deliver of the CRA to the Marine Spatial Planning project will provide the meaningful contributions to the: (i) Convention on Biological Diversity (CBD), which requires parties to undertake a comprehensive list of actions to protect species and ecosystems; (ii) MSP requirements outlined in the Blue Charter, Blue Belt and Virgin Islands Strategic Blue Economy Roadmap initiatives.

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

#### **6. Monitoring and evaluation**

The monitoring and evaluation processes associated with this project appear to be suitable and robust. This is mostly delivered by the carefully stated activities, outputs and outcomes listed in the log frame that was drafted at the proposal stage.

All of the activities and outputs are critical components required for the habitat map, the temporal analysis and the condition assessment. These products, such as the habitat map, follow strict scientific methodologies for the production of products. It is not possible to produce maps without both carefully collated bathymetry and a substantial ground-truthing database.

The M&E work is currently delivered by the lead. However, performance in the later stages of the project will be better assessed by end users (MNRLI and NPTVI).

#### **7. Lessons learnt**

The most important lesson learnt was probably not to schedule fieldwork at a major reporting point for the project. However, it was felt that delivering the work was critically important for the main outputs of the project. As such, it was decided that the fieldwork would be prioritised over other deadlines.

The project lead, Dr James Strong, also suffered a family bereavement near an important reporting deadline. It was quickly apparent that Dr Strong was the only person capable of finalising the annual report. This lack of redundancy within the management structure of the project is a weakness and one that will need to be addressed for the remaining lifetime of the project.

#### **8. Actions taken in response to previous reviews (if applicable)**

None necessary

#### **9. Other comments on progress not covered elsewhere**

Successful completion of the fieldwork and training opportunities in April and May has significantly de-risked the project. Fieldwork at sea is particularly susceptible to weather downtime, equipment failures or staff fatigue. However, extending the fieldwork over three weeks meant that failures could be countered (e.g. the camera umbilical did get damaged and was successfully repaired overnight) and productivity greatly increased.

## 10. Sustainability and legacy

The impact and legacy of the work is very much centred round the delivery of the ground-truthing data set (which has multiple other valuable uses) and especially the production of the new habitat map. On discussion with our local BVI partners, it was decided that the final map could be printed and sent to every school in the BVI on completion.

## 11. Darwin identity

The survey team met with all in-country partners on multiple occasions during the fieldwork. Equally, Dr Shannon Gore, a resident of the BVI, continues to promote the Darwin Plus project locally. Admittedly, the NOC team have not utilised social media to promote the project and Darwin Plus – this will be remedied on delivery of the final products (maps, temporal analysis and condition assessment).

## 12. Impact of COVID-19 on project delivery

For many of our projects, we know that COVID-19 will have impacted project delivery and so it might be relevant to discuss the pandemic throughout your report. Here, we would like you to summarise the impact of COVID-19 on your project as well as providing an overview of how you have responded.

COVID has perhaps delayed the fieldwork by about 1 month. However, the overall progress of the project has mostly hampered by the slow release of the award letters, which delayed the project by several months - NOC will endeavour to make this time up during the project.

## 13. Safeguarding

Please tick this box if any safeguarding violations have occurred during this financial year.

If you have ticked the box, please ensure these are reported to [ODA.safeguarding@defra.gov.uk](mailto:ODA.safeguarding@defra.gov.uk) as indicated in the T&Cs.

**14. Project expenditure**

**Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)**

<b>Project spend (indicative) in this financial year</b>	<b>2021/22 D+ Grant (£)</b>	<b>2021/22 Total actual D+ Costs (£)</b>	<b>Variance %</b>	<b>Comments (please explain significant variances)</b>
Staff costs	██████	██████	██████	Staff overseas, change of staff and pay band.
Consultancy costs				
Overhead Costs	██████	██████	██████	As above
Travel and subsistence		██████		
Operating Costs				
Capital items				
Others (Please specify)				
<b>TOTAL</b>	██████	██████		

**15. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes**

I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

## 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?	Yes
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	Yes
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	No
<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.	Yes
<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.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	