DPLR4\1065

Darwin Plus Local - Final Report (1)

Officer: Linzi Ogden

Section 1 - Darwin Plus Local Project Information (Essential)

Project Reference Number

DPL00107

Q1. Project Title

No Response

Overseas Territory(ies)

☑ British Virgin Islands (BVI)

Lead Organisation or Individual

H Lavity Stoutt Community College

Partner Organisation(s)

Virgin Islands Ministry of Environment, Natural Resources and Climate Change

Value of Darwin Plus Local Grant Award

£42,314.81

Project Start Date

01 October 2024

Project End Date

31 March 2025

Project Leader Name

Susan Zaluski

Project Website/Twitter/Blog etc.

No Response

Report Author(s)

Susan Zaluski, Laura Arton

Report Date

01 May 2025

Project Summary

No Response

Project Outcomes

Unchecked	**Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;**
Unchecked	**Climate Change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;**
Unchecked	**Environmental quality: improving the condition and protection of the natural environment;**
Checked	**Capability and capacity building: enhancing the capacity within OTs, including through community engagement and awareness, to support the environment in the short- and long-term.**

Section 2 - Project Outcomes (Essential)

On a scale of 1 (high – outcome substantially exceeded) to 5 (low – outcome substantially did not meet expectation), how successful do you think your project has been?

⦿ 2 - Outcome moderately exceeded

Project outcomes and justification for rating above

This project successfully built a functional framework for BVI environmental stakeholders to use Large Area Imaging (LAI) to support coral reef monitoring. Before the project, we felt that the successful implementation of LAI techniques for the Caribbean had many barriers to entry, including limited access to high-quality imaging equipment and a lack of training opportunities. By EOP (End of Project), HLSCC has acquired the requisite equipment to support on-going LAI use; developed training resources using online platforms (i.e. Moodle) that can be used to deliver future asynchronous online training (including use by other islands); and has trained its first cohort of local conservation professional to use photogrammetry to capture important data about BVI coral reefs.

In January 2025, a multi-agency workshop was held with 11 participants, who successfully collected images at 12 plots across 3 British Virgin Islands (BVI) sites. Orthomosaics for the 3 sites were produced using data collected during training. Key environmental variables were extracted from the orthomosaics, including coral coverage and health, algae coverage, and species richness. All three training sites had also been imaged in 2024 (by the

same team that led our 2025 training), enabling a comparative analysis of coral condition and trends over time.

A steering committee was formed to help guide project implementation and to ensure alignment with National priorities. This committee includes representatives from key organisations, such as the Director of the National Parks Trust of the Virgin Islands and the Environmental Officer from the Ministry of Environment, Natural Resources, and Climate Change (MENRCC), who is a point person for coral reef monitoring and management. The committee has already met and established protocols for long-term monitoring, including the designation of permanent monitoring sites to be surveyed every six months, contributing to larger Territorial plans by MENRCC. Steering committee members have each made commitments on behalf of their agencies to provide resources (i.e. personnel, equipment), and the National Parks Trust of the Virgin Islands has pledged use of one of its vessels following the end of this project to support quarterly LAI fieldwork. Together, these three agencies have formed an informal Coral Monitoring Working Group. The development of this group and the commitment of participating agencies, albeit informal, is one of the most significant outcomes of our project.

As suggested in our feedback letter, HLSCC team members shared information about the project with Caribbean regional partners, including the UKOT Caribbean Conservation Network (CCN) and UK Overseas Territories Conservation Forum (UKOTCF) Wider Caribbean Working Group. Project information was also shared with the Coral Conservation in the UK Overseas Territories (C-COT) network by our MENRCC steering committee member. The Project Lead also visited a LAI lab at CWORI in the neighbouring US Virgin Islands, identifying another partner to support sharing lessons learnt and best practices.

Supporting Evidence - file(s) upload

LAI Steering Committee Minutes April 2025
01/05/2025
20:02:19
pdf 181.62 KB

110 - Press Release - HLSCC HARNESSES TECHNOLOGY TO PROTECT BVI REEFS WITH “DIGITAL REEFS” INITIATIVE
01/05/2025
20:01:36
pdf 455.92 KB

DRAFT wreck alley data summary
01/05/2025
20:00:52
docx 13.25 MB

SOP LAI- Data Collection (camera-field)
01/05/2025
19:59:18
pdf 233.21 KB

Lecture 6 - Data Extraction
01/05/2025
19:58:19
pdf 3.17 MB

LAI Online Training Materials Moodle
01/05/2025
19:57:45
pdf 185.17 KB

LAI Jan 2025 Workshop Agenda
01/05/2025
14:33:12
pdf 323.07 KB

LAI Workshop Attendance
01/05/2025
14:31:38
pdf 1.34 MB

Supporting Evidence - links to published document/online materials

1. Workshop Agenda - Providing content overview
2. LAI Workshop Attendance: Attendance Sign-in for LAI Training Workshop - 5 days

3. LAI Online Training Materials Moodle - Screen shot showing Table of Contents for Training Materials in our HLSCC Moodle Site
4. Sample presentation from workshop Lecture (#6 of #7) - These are some of the materials included in our Moodle Site
5. SOP LAI- Data Collection (Camera, field): Standard Operating Procedures (SOP) for LAI were produced as part of this project
6. Sample Draft LAI Data Summary (Wreck Alley Site). These have been produced for all 3 training sites
7. Project Press Release (This was published on two online news sites for the BVI) : https://www.virginislandsnewsonline.com/en/news/hlscc-harnesses-technology-to-protect-vi-reefs-with-digital-reefs-initiative/8. Steering Committee Minutes (April 2025 Post project wrap-up meeting)
8. Link to Social Media (Facebook) post about the project (https://www.facebook.com/story.php?story_fbid=1113434757470836&id=100064129656268&mibextid=wwXIfr&rdid=RblLMYfSbhaAt98a#)
9. Steering Committee Minutes: There were three steering committee meetings during the project. These notes are from the final (post-project) meeting.

Project Challenges

During the implementation of the project, one of the main challenges encountered was related to delays in the procurement and delivery of equipment. These delays necessitated the rescheduling of the originally planned workshop from October/November 2024 to January 2025, allowing sufficient time for the equipment to arrive and be integrated into the project. The Seascape Ecology Lab team supported the workshop by bringing their own underwater cameras. This contribution enabled participants to be divided into smaller field teams, resulting in more focused, hands-on training and a more effective learning experience overall.

Lessons Learned

One of the key lessons learned was that the pre-course online training was not effective due to participants' limited time availability. The development of a Moodle site, which provided all course materials in an online format—including presentation slides, reference materials and training datasets—proved valuable as a post-workshop, self-paced resource. This allowed participants to review and reinforce their learning after the in-person sessions, providing a valuable reference.

For fieldwork, the strategy of assigning one camera to every two divers, accompanied by a trainer, worked very well. This setup was made possible through the additional underwater camera equipment brought by the LSU Seascape Ecology Lab team and additional GoPro cameras. Experimenting with different camera systems provided trainees with insight into the differences in model quality, allowing for a hands-on comparison to understand the strengths and limitations of each setup, and when each type of equipment is most appropriate.

Another important takeaway was that building orthomosaics using data collected during the workshop proved impossible within the limited time. To address this, the LSU team came prepared with completed datasets, allowing participants to visualise and explore models at each stage without the delays associated with data processing. This approach ensured the learning experience remained engaging and productive.

Finally, while some participants brought personal laptops and others used HLSCC-provided computers during the training workshop, more time than anticipated was spent installing software and downloading datasets. For future trainings, it would be beneficial to require the pre-installation of requisite software and training datasets.

Section 3 - Project Finance (Essential)

Project Expenditure

Project Spend (indicative) since last Annual Report	2023/24 Grant (£)	2023/24 Total actual Darwin Plus Costs (£)	Variance %	Comments (please explain significant variances)
Staff Costs				
Consultancy Costs				
Overhead Costs				
Travel and Subsistence				
Operating Costs				
Capital Items				
Others				
Total	42,415.04	39,147.18	7.72%	

Please provide a short narrative summary on project finances.

Overall, our budget only had minor differences between planned and actual expenses, reflecting strong planning during the proposal writing and budget forecasting stage. The major difference between planned and actual expenses were related to accommodation and travel costs. These expenses were higher than initially projected due to the rescheduling of the workshop to January 2025, which falls within the high season in the British Virgin Islands. Additionally, we identified a need during an early project steering committee meeting to have one team from the LSU Seascape Ecology Lab remain for a few extra days to assist with the initial stages of data processing, contributing further to accommodation costs.

For capital items, there was a minor adjustment in the procurement of computer hardware. The originally specified graphics card was no longer available at the time of purchase, and a suitable alternative—at a slightly higher cost—had to be sourced. Despite this, the overall costs for computer hardware were slightly under budget, as the increased hardware cost was offset by savings on shipping. Many of the necessary components were successfully sourced from local suppliers within the territory, reducing shipping costs.

Section 4 - Contribution of Project to Darwin Plus Programme Objectives

Please select up to **one** indicator that applies within **each group/indicator list (A, B, C, D)** and report your results for that indicator in the text box underneath. If you do not have relevant results to report for any of the indicators in a particular group, you can leave them blank.

Please also submit some form of evidence (above) to demonstrate any results you list below, where possible.

Group A: Capability and Capacity - Core Darwin Plus Standard Indicators (select one)

Checked	**DPLUS-A01: Number of people from key national and local stakeholder groups completing structured and relevant training.**
Unchecked	**DPLUS-A02: Number of secondments or placements completed by individuals of key local and national stakeholders.**
Checked	**DPLUS-A03: Number of local/national organisations with improved capability and capacity as a result of project.**
Unchecked	**DPLUS-A04: Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.**
Unchecked	**DPLUS-A05: Number of trainers trained reporting to have delivered further training by the end of the project.**

Group A Indicator Results

A total of 11 persons were trained improving the capacity of 3 local organisations: 2 persons Ministry of Environment, Natural Resources and Climate Change (MENRCC); 3 from National Parks Trust of the Virgin Islands (NPTVI) 6 from H. Lavity Stoutt Community College

Group B: Policies, Practices and Management- Core Darwin Plus Standard Indicators (select one)

Unchecked	**DPLUS-B01: Number of new/improved habitat management plans available and endorsed.**
Unchecked	**DPLUS-B02: Number of new/improved species management plans available and endorsed.**
Unchecked	**DPLUS-B03: Number of new/improved community management plans available and endorsed.**
Unchecked	**DPLUS-B04: Number of new/improved sustainable enterprises/ community benefits management plans available and endorsed.**

Unchecked	**DPLUS-B05: Number of people with increased participation in local communities / local management organisations (i.e., participation in Governance/citizen engagement).**
Unchecked	**DPLUS-B06: Number of Local Stakeholders and Local Communities (people) with strengthened (recognised/clarified) tenure and/or rights.**

Group B Indicator Results

NA

Group C: Evidence and Best Practices - Core Darwin Plus Standard Indicators (select one)

Checked	**DPLUS-C01: Number of best practice guides and knowledge products published and endorsed.**
Unchecked	**DPLUS-C02: Number of new conservation or species stock assessments published.**
Unchecked	**DPLUS-C03: New assessments of habitat conservation action needs published.**
Unchecked	**DPLUS-C04: New assessments of community use of biodiversity resources published.**
Unchecked	**DPLUS-C05: Number of projects contributing data, insights, and case studies to national Multilateral Environmental Agreements (MEAs) related reporting processes and calls for evidence.**

Group C Indicator Results

This project helped create 1 asynchronous online training course (hosted on HLSCC Moodle platform) and developed 1 SOP for using LAI for BVI Coral Reef Monitoring

Group D: Sustainable Benefits to People, Biodiversity and Climate - Core Darwin Plus Standard Indicators (select one)

Unchecked	**DPLUS-D01 Hectares of habitat under sustainable management practices.**
Unchecked	**DPLUS-D02: Number of people whose disaster/climate resilience has been improved.**
Unchecked	**DPLUS-D03: Number of policies with biodiversity provisions that have been enacted or amended.**

Group D Indicator Results

NA

Section 5 - Project Partnerships, Wider Impacts and Contributions

Project Partnerships

The Government of the Virgin Islands was involved in this project through the Ministry of Environment, Natural Resources and Climate Change (MENRCC), which served as a partner on this project and was listed on the initial application. A MENRCC officer was a steering committee member and participated in all training activities. The officer helped to guide training site selection, workshop design and played a key role in launching the post-project working group, which she is using to support broader, long-term Coral Reef Monitoring Plans for the Territory. Although not a named partner in the project proposal, the involvement of the National Parks Trust of the Virgin Islands (NPTVI) in the project, including the participation of the NPTVI Director in the Steering Committee, was critical to the project's success. Local project partners were first introduced to the LSU Seascape Ecology Lab when that team initially visited the BVI in 2024 as guests of the NPTVI as part of the Darwin-funded project (DPLUS147) "Collaborative Approach to Managing Coral Disease in UK Overseas Territories." This project introduced the BVI to the potential utility of photogrammetry for coral reef monitoring; however, that project had no formal capacity-building. NPTVI and MENRCC introduced faculty and staff at HLSCC's Centre for Applied Marine Studies (CAMS). HLSCC CAMS has been working to identify and address gaps in knowledge and training for marine resources management, and these introductions directly led to the development and implementation of DPLUS00107.

Wider Impacts and Decision Making

The short duration (6-month) nature of this project makes it difficult to assess impacts on wider decision-making. The working group that grew out of the project steering committee has plans to report project outcomes to relevant government agencies, including decision-makers (Ministers). We are happy to provide reports on follow-up actions outside of formal reporting periods to Darwin on this progress. Further, translating LAI data into actionable conservation strategies may not be straightforward. As the cohort of newly trained LAI users continues to build its capacity for integrating LAI datasets into marine conservation monitoring, we are confident that the information will help elucidate various changes and shifts in our marine ecosystems. We also anticipate that demand for using LAI to address specific marine conservation questions will arise, especially from other agencies in the BVI. In addition to sharing project findings with other partners in the region working on coral reef monitoring and management, we are equally excited to share project results with other agencies in the BVI, which may find the application of LAI technology useful for decision making in their respective agencies.

Sustainability and Legacy

HLSCC will continue to offer training in LAI to future cohorts. HLSCC already has an MOU in place that allows MENRCC use of its analytic laboratory, and by extension, access to the computer set up with the Agisoft software acquired during this project will also be granted to trained MENRCC personnel. HLSCC and partners of the newly established Coral Monitoring Working Group (HLSCC, MENRCC, NPTVI) will use the field equipment (camera setup) acquired to continue with regular LAI monitoring. 100% of workshop participants expressed interest in continuing LAI fieldwork and model-building to reinforce and improve newly acquired skills and to expand data sets. HLSCC is also exploring the inclusion of LAI for use in mangrove/seagrass restoration and monitoring. NPTVI workshop participants expressed an interest in adapting newly acquired LAI skills for use in their ongoing terrestrial vegetation and habitat management work. Training materials have been used to develop an online training course, housed on Moodle (HLSCC's online training platform).

Section 6 - Communications & Publicity

Exceptional Outcomes and Achievements

Our project, "Building the BVI's capacity to Use Photogrammetry for Marine Conservation", has successfully developed a framework for using a photogrammetric approach for coral reef monitoring in the BVI. The project supported the H. Lavity Stoutt Community College (HLSCC)'s Centre for Applied Marine Studies in acquiring the requisite underwater photography equipment, a perpetual license for photogrammetry software and a computer with data storage systems. Guided by a steering committee comprised of representatives from the H. Lavity Stoutt Community College (HLSCC) the Virgin Islands Ministry of Environment, Natural Resources and Climate Change (MENRCC) and the National Parks Trust of the Virgin Islands (NPTVI), the project hosted a training for 11 persons from these 3 key agencies in LAI field data collection, the development of orthomosaics and related data analysis. A week-long training workshop was facilitated by Dr. Dan Holstein of the Louisiana State University (LSU) Seascape Ecology Lab. Materials from the workshop were then curated into a training course, hosted on Moodle, an online learning management system. The course will provide a platform for current and future coral reef managers in the BVI to complete self-paced training in the use of Large Area Imaging (LAI). The project also led to the development of a LAI Coral Reef Monitoring Working Group through which the three participating BVI organisations (HLSCC, MENRCC and NPTVI) have committed to continue LAI work to support long-term monitoring at the three project sites and to collect baseline data at new sites.

Photo, video or graphic to be used for publicity and communications.

Please upload at least one relevant and engaging image, video or graphic that you consent to be used alongside the above text in Defra, JNCC or NIRAS communications material.

LAI Workshop
01/05/2025
19:46:57
jpg 2.02 MB

LAI Equipment
01/05/2025
19:46:43
jpg 1.16 MB

Finfun Peters NPTVI
01/05/2025
19:46:28
jpg 1.92 MB

Arton Rogers and Carpenter
01/05/2025
19:46:15
jpg 2.41 MB

LAI Darwin Poster_DRAFT_LA
01/05/2025
16:08:32
jpg 1.66 MB

Photo, video, and/or graphic captions and credits.

Arton Rogers and Carpenter: Laura Arton and J'Kyla Rogers of HLSCC collect field data at a BVI training workshop while workshop facilitator Gaby Carpenter Looks on. Photo Credit: Viktor Brandtneris, Reefs Unknown

LAI Equipment: Large Area Imaging (LAI) Field Equipment on display during a training workshop at BVI's H Lavity Stoutt Community College Photo Credit: Susan Zaluski, HLSCC

Finfun Peters: Finfun Peters of the National Parks Trust of the Virgin Islands using underwater photography equipment for recent Large Area Imaging (LAI) Workshop at H Lavity Stoutt Community College in the BVI. Photo Credit; Viktor Brandtneris, Reefs Unknoqn

LAI Workshop: Participants during a classroom session of the Large Area Imaging (LAI) Workshop in the BVI held

at the H Lavity Stoutt Community College. Photo Credit: Susan Zaluski, HLSCC

LAI Darwin Poster: An infographic produced by HLSCC's Laura Arton provides an overview of our recent Darwin Plus Local Project in the BVI.

Please note, we have video and photomosaics that we are happy to share with Darwin but they exceed the 20MB limit.

I agree for the Biodiversity Challenge Funds Secretariat, Administrator, and/or JNCC to publish the content of this section.

⦿ Yes, I agree for the BCFs Secretariat and/or JNCC to publish the content of this section.

Please list any accounts that you would like tagged in online posts here. This can include project pages, partners' pages or individuals' accounts for any of the following platforms: LinkedIn, Facebook, Twitter, or Instagram.

HLSCC-- Instagram: hlscc.edu.vg; Facebook: H.Lavity Stoutt Community College/ NPTVI – Instagram: nationalparkstrustvi; Facebook: National Parks Trust of the Virgin Islands/ Seascape Ecology Lab—Instagram: seascapelab/ Reefs Unknown Instagram: reefsunknown

Section 7 - Darwin Plus Contacts

Please tick here to confirm that you have read and acknowledge the BCF's Privacy Notice on how contact details will be used and stored and that you have sought agreement from anyone that you are sharing personal details with us on their behalf.

⦿ I confirm I have read the Privacy Notice and have consent to share the following contact details

Project Contact Details

Project Contact Name	Susan Zaluski
Role within Darwin Plus Project	Project Lead
Email	[redacted]
Phone	
Do you need further sections to provide additional contact details?	⦿ No