

DPLR4\1036

Darwin Plus Local - Final Report (1)

Officer: Linzi Ogden

Section 1 - Darwin Plus Local Project Information (Essential)

Project Reference Number

DPLR4\1036

Q1. Project Title

No Response

Overseas Territory(ies)

☒ Turks and Caicos Islands (TCI)

Lead Organisation or Individual

The School for Field Studies

Partner Organisation(s)

No Partners

Value of Darwin Plus Local Grant Award

£50,000.00

Project Start Date

01 October 2024

Project End Date

31 March 2025

Project Leader Name

Heidi Hertler

Project Website/Twitter/Blog etc.

No Response

Report Author(s)

Report Date

05 April 2025

Project Summary

No Response

Project Outcomes

Checked	Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;
Checked	Climate Change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;
Checked	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?

⦿ 1 - Outcome substantially exceeded

Project outcomes and justification for rating above

Coral reefs are one of the most biodiverse and productive ecosystems in the world. The Turks and Caicos Islands are heavily dependent on healthy reefs for ecosystem services. The School for Field Studies is developing an innovated staged approach to the coral cultivation model in TCI. Corals are grown in the recirculating system (Darwin Plus Local), propagated, moved to ex situ and in situ nurseries where they adjust to environmental conditions then systematically outplanted to the reef. This model ensures corals are best prepared for outplanting. The Containers for Corals grant created a modular coral lab in the US by The Reef Institute and Containing Luxury that was shipped TCI. Our objective was to demonstrate the feasibility of establishing a sustainable closed system in a remote location as a tool for coral restoration, thus increasing the capacity on South Caicos and the Turks and Caicos Island to respond to future environmental threats. This project exceeded its outcomes of supporting South Caicos’s efforts to improve reef health, biodiversity and resilience to climate change by providing a facility that protects our vulnerable species. Our open system houses 1500 coral fragments but is exposed to environmental conditions. The modular coral lab (Darwin Plus Local) can hold a similar stock and house larger colonies in a


biobank system separated from environmental impact.


TCReef Fund (Providenciales, TCI), The Reef Institute (Florida), and Salterra Resort, partners with SFS in South Caicos Coral Reef Consortium (SCCRC), participated in the final installation of the system – plumbing and lights. TCReef Fund provided local expertise and support. We are now able to support gene-banking operations in both Providenciales (TCReef Fund) and South Caicos (SFS), northwest and southeast sections of TCI. We did experience delays in shipping; however, early planning, communication, and commitment by supporting organizations including Tropical Shipping, allowed seamless shipping and installation. The modular lab is self-sufficient, however, created so that it can quickly be connected to South Caicos power, a diesel generated source of electricity, in case of long-term solar electricity generation failure. SFS houses three small generators on site that can power the container short term.


This project currently runs along sides SFS's ongoing efforts to support local reef health including community and visitor education about reef health. The local knowledge and understanding of closed systems and solar energy generation has increased dramatically through this project. Between January 1 and March 31, 86 visitors (community members and tourists) learned about reef health and restoration efforts on South Caicos. Forty-six of these visitors toured all or part of the Container for Coral. SFS is currently monitoring reef health as part of our academic program. On March 12, SFS presented SeaDay to the local community focusing on coral reefs and sustainability. Nearly 100 children and teachers learned about coral conservation through hands on learning. We look forward to our next steps on South Caicos.

Supporting Evidence - file(s) upload


 [DPLR4 1039 packed and ready to go CS](#)


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 [DPLR4 1036 Container on the Move SFS](#)


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 [DPLR4 1036 Container on new slab SFS](#)


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 [Invoices DPLR4 1036 compressed](#)

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Supporting Evidence - links to published document/online materials

A 25 ft by 12 ft area of the SFS property near the existing open seawater system was prepared with a cement slab. A local crew was used to unload the container contents (the 3 lithium batteries are heavy) and placed the container on the slab. Containing Luxury and The Reef Institute arrived on site for five days of installation mid-March. TCReef Fund was also on site to collaborate with SFS scientists. Twenty-eight solar panels will support this climate-controlled container. The solar farm is located where it can be used for energy generation and education. Five 6 ft x 2 ft x 2 ft tanks were constructed by local boat builders and plumbed by SFS, The Reef Institute, and Salterra Resort staff. Two 250 water storage tanks and a seawater sterilization system were added near the module coral container. Tanks were filled and all systems are functioning.

Video of open seawater system and introduction to closed system (Darwin):

https://www.instagram.com/reel/DFyOilyv4f8/?utm_source=ig_web_copy_link&igsh=MzRIODBiNWFIZA==

SeaDay at SFS: [https://www.instagram.com/reel/DHLhRDsOo5z/?](https://www.instagram.com/reel/DHLhRDsOo5z/?utm_source=ig_web_copy_link&igsh=MzRIODBiNWFIZA==)

[utm_source=ig_web_copy_link&igsh=MzRIODBiNWFIZA==](https://www.instagram.com/reel/DHLhRDsOo5z/?utm_source=ig_web_copy_link&igsh=MzRIODBiNWFIZA==)

SFS in the local school teaching coral ecosystems:

https://www.instagram.com/p/DHWFeolRjQy/?utm_source=ig_web_copy_link&igsh=MzRIODBiNWFIZA==

The Reef Institute video about closed aquarium systems:
Building a Coral Biobank in a Shipping Container: Reef Conservation at The School for Field Studies

Project Challenges

Very few unexpected challenges were encountered as part of this project. Acquiring materials (container, solar, aquarium supplies) was smooth, vendors and collaborators were familiar with the equipment. Shipping included a steep learning curve, SFS typically imports less than container loads, but Tropical Shipping was supportive and helpful. Explaining the project to vendors promoted a greater understanding of the environment we work in and a smooth progression of the project.

SFS is taking a methodical approach to coral restoration starting with in situ nurseries, learning from open ex situ systems and now developing a closed system in a remote area. We are fortunate to have good sea water quality near our facility and will sterilize this water for our closed system (as opposed to making salt water typical of many closed systems). SFS is grateful to collaborators from whom we are learning coral husbandry and solar energy generation.

Lessons Learned

Lining up community support is critical. We experienced some delays but by explaining the value of the project to the community and environment, community members were more flexible in their schedule.

Some of the supplies were sent directly from vendors. In the future, these should be check and inventoried. On arrival, some small parts were missing which we found difficult to source in TCI resulting in substitutions. We have address this with vendors, parts are being shipped at no cost, and we can easily replace substitutions once these parts arrive.

Our goal was a self-contained coral aquarium system, we would not do anything different. Our SCCRC partners have already discussed this type of system for other areas around the Caribbean.

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	50,000.00	52,036.79	-4%

Please provide a short narrative summary on project finances.

We used an exchange rate of 1 USD = 0.76 GBP from Forbes.com on 2 April 2025 for the final budget.

Consultancy Costs: Local boat builders build and painted aquarium tanks

Staff Cost: Staffing costs were supported by SCCRC partners (SFS, TCReef Fund, The Reef Institute, and Salterra Resort).

Travel and Subsistence Cost: Travel and subsistence costs were not requested as part of this grant. It was anticipated that these would be supported by local and regional partners. All visiting staff costs were supported by SCCRC partners. This included:

- █████ GBP for Containing Luxury to install solar (Salterra)
- █████ GBP room and board on South Caicos SFS Campus (SFS)
- █████ GBP for The Reef Institute and TCReef Fund to install aquariums (Salterra)

Capital Equipment: The container was 9% under budget. This line includes the container, HVAC (Pioneer), solar panels (Hyperion 400W), battery system (EG4 PowerPro All Weather Lithium) and distribution system (Victron MultiPlus II Transfer Switch, Lynx Distributor, Smart Solar MPPT, and Energy Cerbo) and shipping to TCI (Avalon and Tropical Shipping)

Other Items: Consumables and light equipment - pumps, filters (including water sanitizer and protein skimmer), lights. Some of the initial budgeted items in capital equipment was moved to this item resulting in 13% over budget

Other contributions include:

materials and supplies (SFS)
shipping and customs in TCI (despite exemption, SFS)

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.
Unchecked	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

SFS is partnered with Salterra resort to support coral restoration near South Caicos. Between January 1 and March 31, 86 visitors (community members and tourists) learned about reef health and restoration efforts on South Caicos. Forty-six of these visitors toured all or part of the Container for Corals.

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.
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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.
Checked	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

See Group A

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

Unchecked	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.
Checked	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

All SFS data is presented to TCI Department of Environmental and Coastal Resources annually.

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.
Checked	DPLUS-D02: Number of people whose disaster/climate resilience has been improved.

Group D Indicator Results

The modular coral lab will support reef restoration, improving resilience and ecosystem services.

Section 5 - Project Partnerships, Wider Impacts and Contributions

Project Partnerships

Although no formal partners were included as part of this grant, we received support from our local and regional collaborators - The Reef Institute (West Palm Beach, Florida), TCReef Fund (Providenciales, TCI), and Salterra Resort (South Caicos, TCI) - that make of the South Caicos Coral Reef Consortium. As noted in the financial reporting, this project was slightly over budget and funding from collaborators was used to support this effort. Collaborators roles also included shared knowledge and experience.

Wider Impacts and Decision Making

Having two ex situ labs on the SFS campus, we can expand our research and restoration efforts. Community members are already visiting the facility and engaging in our research and restoration efforts. Our coral reefs are suffering from climate impact and disease. Efforts such as this will support a greater understanding of our reefs and what we can do to support their sustainability. Data and technology used will be shared locally and regionally.

Sustainability and Legacy

Funds were requested to establish a self contained coral modular lab. This lab will be in use this summer. Benefits will be long lasting in our restoration efforts. Staff continue to be supported by SFS and academic activities in the labs incorporated into our student academic and outreach program. Consumables for the container will be incorporated into annual the SFS budgets. Community members are welcome to tour and learn about our projects.

Section 6 - Communications & Publicity


Exceptional Outcomes and Achievements


Photos are included below and links to Instagram posts are in an earlier part of this report.


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.


 [Photo 10 DPLR4_1036](#)


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 [Photo 9 DPLR4_1036](#)


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 [Photo 8 DPLR4_1036](#)


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 [Photo 7 DPLR4_1036](#)


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 [Photo 6 DPLR4_1036](#)


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 [Photo 5 DPLR4_1036](#)


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 [Photo 4 DPLR4_1036](#)


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 [Photo 3 DPLR4_1036](#)


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 [Photo 2 DPLR4_1036](#)


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 [Photo 1 DPLR4_1036](#)

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

The arrival and installation of the mobile coral laboratory at The School for Field Studies on South Caicos.

Photo 1 DPLR4_1036 - SFS staff plumbing the aquariums in the container. Photo by Heidi Hertler

Photo 2 DPLR4_1036 - Salterra Resort representative supporting the build. It's all hands when you have five days to assemble power and aquariums. Photo by The Reef Institute

Photo 3 DPLR4_1036 - Final touches go on the lighting system. Photo by The Reef Institute

Photo 4 DPLR4_1036 - Water starts flowing in the aquariums. Photo by Heidi Hertler

Photo 5 DPLR4_1036 - Containing Luxury did an amazing job preparing what was needed to ship to South Caicos (site unseen) and install solar power system. Photo by Heidi Hertler

Photo 6 DPLR4_1036 - Solar farm to power HVAC, lights and plumbing in the 20 ft container lab. Photo by Heidi Hertler

Photo 7 DPLR4_1036 - Installation complete! Photo by The Reef Institute

Photo 8 DPLR4_1036 - SeaDay happening at SFS. Community children learn about coral reefs, conservation and sustainability, and our restoration efforts. Photo by The Reef Institute

Photo 9 DPLR4_1036 - Community children learning about coral restoration and nurseries. Photo by Heidi Hertler

Photo 10 DPLR4_1036 - Learning how to use tools for coral restoration. Photo by Heidi Hertler

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.

@SFS
@the_SFS_TCI
@SFS_SCCRC
Our SCCRC Partners - @saltterraresort @tcreef_fund @reef_institute
#theSFS
#coral
#sustainable
#coralreef
#restoration
#coralrestoration
#corallab
#outreach
#outplanting
#microfragmentation

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	Heidi Hertler
Role within Darwin Plus Project	Principal Investigator
Email	
Phone	
Do you need further sections to provide additional contact details?	<input checked="" type="radio"/> No