

# DPLR1\1059

Darwin Plus Local - Final Report (1)

Officer: Linzi Ogden

## Section 1 - Darwin Plus Local Project Information (Essential)

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### Project Reference Number

DPLR1\1059

### Q1. Project Title

*No Response*

### Overseas Territory(ies)

Montserrat

### Lead Organisation or Individual

Island Solutions

### Partner Organisation(s)

N/A

### Value of Darwin Plus Local Grant Award

£48,024.00

### Project Start Date

15 May 2023

### Project End Date

01 April 2024

### Project Leader Name

Andrew Myers

### Project Website/Twitter/Blog etc.

*No Response*

### Report Author(s)

## Report Date

10 July 2024

## Project Summary

*No Response*

## Project Outcomes

Checked **Biodiversity: improving and conserving biodiversity, and slowing or reversing biodiversity loss and degradation;**

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Checked **Climate Change: responding to, mitigating and adapting to climate change and its effects on the natural environment and local communities;**

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Checked **Environmental quality: improving the condition and protection of the natural environment;**

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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.**

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## Section 2 - Project Outcomes (Essential)

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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?

4 - Outcome moderately did not meet expectation

### Project outcomes and justification for rating above

One of this project's themes was "climate change" and during the duration of this project the impacts of climate change were on display. From early June of 2023 a bleaching event began within the Caribbean basin and the forecast predicted it would be region-wide. Given the restoration activities of this project we were monitoring the region and our reefs. The mass bleaching event did come to Montserrat and the impacts were the most extreme our team had witnessed in 18 years of residence here. Though this project was heavily impacted by this event caused by a regional extreme high seawater temperature event throughout the Caribbean region we were able to adjust our programmes to maintain an impactful and valuable project. Though adjustments were made, the project delivered the following:

-Produced a map of Acropora colony - The project expanded on the basic activity of surveying Montserrat's reef and produced a GIS/Google Earth map that highlighted both living and dead colonies. The data collected during the survey included species, health, size and GPS location to develop the most thorough dataset associated with the Acropora species and a reference guide to see survival in follow-up surveys.

-Created four Acropora nursery sites - This is double the planned number of nurseries. With the high water temperatures and the observed bleaching to the Acropora species the installation of nurseries had to be delayed. Additionally, to add to the value of the project the nurseries were placed in two different depth profiles - 6-8m and 12-15m - to provide data on the different water depths and related environmental conditions. The deep nurseries used reef stars exclusively - 9 total. The two shallow reef mixed reef types - 3 reef balls/2 stars and 2 reef balls/2 stars and 1 holding table, respectively.


-Produced 251 total Acropora propagates - The project stated a delivery of a minimum of 100; this is 2.5x as many. Given the necessity to delay the creation of nurseries until the corals had recovered fully from bleaching impacts the project team increased the number of corals to offset the inability to do out plantings and ensure the development of new colonies was at least as projected (this amount is still far greater than if out plantings would have been done). Specific data on each site is in the evidence section. 83% survival rate.


-Three JNCC/GOM trained divers, 1 youth diver, and 1 member of the general public were trained on the restoration practices - This was 1 less than projected from the focus dive team. Though the project engaged with all members of the JNCC/GOM dive team multiple times during the project most cited being unavailable.


-Conducted an outreach program and produced a project video - As stated, 1 outreach day was conducted and supported by project media.


Though the bleaching event was highly impactful to the Acropora species our project was able to utilise survivor colonies from the event to create the nurseries. We believe that this may be a long-term benefit.

## Supporting Evidence - file(s) upload

 [1059-Acropora Survey Map - 2023](#)

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## Supporting Evidence - links to published document/online materials

Survey metadata:

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## Project Challenges

Environmental conditions:

Part of this project was to address climate change and the reality of that impact created a great challenge for our project. With an extreme high temperature seawater event expanding across the Caribbean and a forecast for the same impacts to affect Montserrat our forecast project schedule was not possible. Water temperatures rose through the summer and corals began bleaching in October. Our focus species *Acropora* would be heavily impacted with significant mortality, even on corals that were normally exposed to high temperatures. The *Acropora* would not recover enough to work with until February.

The project was further impacted by repeated ground swells which made installation of the reef system not possible on multiple rescheduled days.

Because of these repeated impacts the design of the project was adapted to deliver an equally effective project through the doubling the number of nurseries and nearly tripling the number of coral propagates.

Personnel:

The project had issues again with availability of GoM dive team. During various phases of the project, including land-based work, members of the dive team were contacted to participate. Unfortunately, many stated they were unavailable. To offset this issue those that were available were asked to help more and the core team covered additional needs.

Our changing schedule impacted the availability of our data processing support. Though the project data has now been completed it did result in an excessively late delivery of this report. To offset that we expanded the mapping outputs for more robust datasets.

## Lessons Learned

This project provided many valuable lessons, including the following:

WORKED WELL:

1. We focus on projects to tackle the issues of a changing planet and impacted ecosystems so it is essential to have contingency plans designed to adjust extreme changes. We were able to deliver an equally effective and valuable project because we had a secondary plan.
2. By using cloud storage for the project's data we have created a database that can support future researchers, monitoring and reef restoration efforts. With the easy access to affordable virtual storage it is an easy method to both protect project data and share it.
3. Working with our Monitoring and Evaluation support team - we used coral-focused marine biologist so when we had the bleaching event we were able to reach out to them for guidance. Having the right person(s) for M&E helps navigate challenges.

**DID NOT WORK WELL:**

1. We did a poor job communicating with the BCF team when the bleaching event happened to ensure the issue was known. Being a regional event our thought was that the problem would be known but we should have discussed the issues with them.
2. Managing our data analysis - we did not engage with our data processing support until later in the project which has lead to analysis and output delays. We have adjusted our process and will provide data as soon as received to begin the analysis process.

## Section 3 - Project Finance (Essential)

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### 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)
<b>Staff Costs</b>				
<b>Consultancy Costs</b>				
<b>Overhead Costs</b>				
<b>Travel and Subsistence</b>				
<b>Operating Costs</b>				
<b>Capital Items</b>				
<b>Others</b>				
<b>Total</b>	48,024.00	45,800.00	-5%	

## Please provide a short narrative summary on project finances.

There has been a reduction in overall costs and some changes in expense categories to adjust for the impacted project:

1. The amount of planned monitoring was not possible because of the delayed coral nursery installations. We did conduct more monitoring prior to installation but the reduced costs of that portion of the program reduced the total costs of both salaries and operating costs.
2. There were increased costs associated with the production of more nurseries, which was labelled as T&S but clarified as Other, we when doubled the number of nurseries to provide the potential of less high seawater temperatures in deeper water. The operational and labour costs for this portion of the project increased.

Island Solutions maintained its reduced rates for equipment and labour. We also covered a portion of the additional costs associated to develop up the GIS and Google MyMap mapping.

## Section 4 - Contribution of Project to Darwin Plus Programme Objectives

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

### Group A Indicator Results

This project provided new training, skills and capacity 4 Montserrat residents on reef restoration.

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

Unchecked	<b>DPLUS-B01: Number of new/improved habitat management plans available and endorsed.</b>
Unchecked	<b>DPLUS-B02: Number of new/improved species management plans available and endorsed.</b>
Unchecked	<b>DPLUS-B03: Number of new/improved community management plans available and endorsed.</b>
Unchecked	<b>DPLUS-B04: Number of new/improved sustainable enterprises/ community benefits management plans available and endorsed.</b>
Unchecked	<b>DPLUS-B05: Number of people with increased participation in local communities / local management organisations (i.e., participation in Governance/citizen engagement).</b>
Unchecked	<b>DPLUS-B06: Number of Local Stakeholders and Local Communities (people) with strengthened (recognised/clarified) tenure and/or rights.</b>

## Group B Indicator Results

Not applicable.

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

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

## Group C Indicator Results

Not applicable though project data is available to further development, regional databases and other researchers.

## 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.**

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

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Unchecked **DPLUS-D03: Number of policies with biodiversity provisions that have been enacted or amended.**

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## Group D Indicator Results

Not applicable though this restoration program aimed to improve climate resilience for the focus coral species.

## Section 5 - Project Partnerships, Wider Impacts and Contributions

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### Project Partnerships

There were no formal partners in this project but all data, reports and mapping have been provided to the Government of Montserrat departments of Agriculture and Environment.

### Wider Impacts and Decision Making

The data generated through this project provides information that can be applied to decisions on conservation, marine protected areas and general environmental policies.

### Sustainability and Legacy

The four nurseries are permanent structures that will continue to support Acropora restoration efforts. To further expand the sustainability of the programs our commercial partner company, Scuba Montserrat Dive Shop, will provide both scuba tours to and experiences with the nurseries for conservation interested divers.

## Section 6 - Communications & Publicity

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### Exceptional Outcomes and Achievements

Though this project faced major challenges as a direct result of climate change, our project, Strengthening Montserrat's Marine Ecosystem through Coral Restoration Implementation and Training, was able to deliver highly valuable results and provide positive actions for marine habitat health, developed an extensive new dataset for critically endangered species, and increased local capability and capacity. The following are key points for this project:

- Development of a detailed map of Acropora species - Over 20km of reef habitat was surveyed over multiple days, both on SCUBA and via surface towed free diving, using previous local knowledge to focus in likely areas for Acropora. Both live and dead colonies were documented with species, size, health information and photos recorded for each live colony. This data was used to produce an interactive public access Google Map.
- Creation of GIS map to expand national GIS database - To strengthen the national GIS database we also created



a GIS version of the map that was provided to the Government of Montserrat GIS unit, as well as being publicly available to interested persons.

- Creation of 4 nurseries that cover multiple depth profiles - Having an extreme seawater event occur during the heart of the project lead our team to develop up four nurseries instead of the planned two. Those 4 nurseries increased our target of 100 coral plantings to 251 corals on 19 reef units. This change in the program will allow for assessment of different depth profiles both during monitoring and by temperature and light loggers that have been placed on the two deep nurseries and 1 shallow nursery.

- Able to utilise survivor colonies from a mass bleaching event - Though the bleaching event resulted in the death of multiple Acropora colonies, even ones that we had believed to have become thermally tolerant, the donor colonies that were used were able to fully recover from the climate impacts.


- Training of members of the government of Montserrat on reef restoration techniques - We were able to provide training on new restoration techniques to the Government of Montserrat and youth marine science dive team. This had added another layer of capacity to those divers.


## 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.**

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 [DPLR1-1059-RESTORING CORALS](#)


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 [1059-Acropora Survey Map - 2023](#)


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 [DPLR1-1059-S2-View](#)


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 [DPLR1-1059-S1-nursery.](#)


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 [DPLR1-1059-S1-Star](#)

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

1. 1059-Acropora...Map - 2023: This map shows the locations of all identified Acropora colonies - Montserrat - credit Island Solutions
2. DPLR1-1059 - Restoring Corals: Infographic of restoration program - Montserrat - credit Island Solutions
3. DPLR1-1059-S2-View: View of Shallow Nursery 2 in Rendezvous Bay - Montserrat - credit Island Solutions
4. DPLR1-1059 - S1 Nursery - View of Shallow Nursery 1 in Woodlands Bay - Montserrat - credit Island Solutions
5. DPLR1-1059 - Top view of a reef star in Woodlands Bay - Montserrat - credit Island Solutions

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.

Island Solutions Facebook - <https://www.facebook.com/IslandSolutions.org>

Island Solutions Instagram - @IslandSolutions\_org

Scuba Montserrat Facebook - <https://www.facebook.com/scubamontserrat>

Scuba Montserrat Instagram - @scubamontserrat

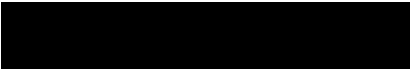

## Section 7 - Darwin Plus Contacts

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

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