

Applicant: **Johnson, Jack**  
Organisation: **Central Caribbean Marine Institute**  
Funding Sought: **£48,564.00**  
Funding Awarded: **£0.00**

## **DPLR3\1038**

### **Mapping critically endangered corals on Little Cayman to Inform Management**

The remote and isolated island of Little Cayman boasts the highest coral cover in the Caribbean. However, global warming and disease are driving many coral species towards extinction, eroding the remarkable diversity of life in our oceans. Here we will map and quantify the demographics of selected critically endangered charismatic coral species around Little Cayman. These efforts will inform conservation management to give these species the best chance for survival in the Anthropocene.

## CONTACT DETAILS

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**Title** Dr  
**Name** Jack  
**Surname** Johnson  
**Tel (Work)** [REDACTED]  
**Email (Work)** [REDACTED]  
**Address** [REDACTED]

# DPLR3\1038

Mapping critically endangered corals on Little Cayman to Inform Management

## Section 1 - Project Title & Contact Details

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### Q1. Project Title

Mapping critically endangered corals on Little Cayman to Inform Management

### Q2. Please select whether you are applying as an organisation or as an individual (Guidance section 3 and Guidance Glossary)

Organisation

#### CONTACT DETAILS

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Title	Dr
Name	Jack
Surname	Johnson
Tel (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

#### GMS ORGANISATION

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Type	Organisation
Name	Central Caribbean Marine Institute
Phone (Work)	[REDACTED]
Email (Work)	[REDACTED]
Website	[REDACTED]
Address	[REDACTED]

## Section 2 - Overseas Territory(ies)

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### Q3. Overseas Territory (Guidance section 1.3):

Which UK Overseas Territory(ies) will your project be working in? Please note that in case of a non-permanent resident population you need to demonstrate a clear, meaningful, long-term link to the territory.

Cayman Islands

\* if you have indicated a territory group with an asterisk, please give detail on which territories you are working on here:

*No Response*

In addition to the UKOT(s) you have indicated, will your project directly benefit any other UK OT(s) or country(ies)?

No

## Section 3 - Project Partners

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### Q4. Project partners (Guidance section 3.2)

In this section, please give details of all the partners involved (including the Lead Partner) and provide a summary of their roles.

Project Leader name (Guidance section 3.1):	Jack Johnson
Lead Partner name (if applying as an organisation; Guidance section 3.1):	Central Caribbean Marine Institute
Lead Partner Website (if applicable):	<a href="https://reefresearch.org/">https://reefresearch.org/</a>
Is the Lead Partner based in a UKOT where the project is working (Guidance section 3.1)?	<input checked="" type="radio"/> Yes
List other partners involved and where are they based:	None
Summary of roles and responsibilities of each partner in the project:	The Central Caribbean Marine Institute will facilitate all operations for this project
I confirm that all listed partners are aware of this application and have indicated support:	Checked

Attach a Cover Letter for your application (Guidance section 4.2).

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📎 [Cover Letter DPL\\_Jack\\_Johnson](#)

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## Section 4 - Project Summary & Description

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### Q5. Project Summary (Guidance section 3.8)

**Please provide a brief summary of your project. This may be used in communication activities and/or published online, if your application is successful.**

The remote and isolated island of Little Cayman boasts the highest coral cover in the Caribbean. However, global warming and disease are driving many coral species towards extinction, eroding the remarkable diversity of life in our oceans. Here we will map and quantify the demographics of selected critically endangered charismatic coral species around Little Cayman. These efforts will inform conservation management to give these species the best chance for survival in the Anthropocene.

### Q6a. Description (Guidance section 2.1 and 6)

**Please provide a description of your project, including:**

- the overall objective
- the current situation and the problem the project is trying to address
- what success will look like and how you will measure it

**Please be as specific as possible when describing the project, using quantified data and evidence where available. You may wish to consider: what are the specific threats to the environment that the project will attempt to address, and what should we know about these threats? What does your successful project look like? And how will you demonstrate whether and how your project has been successful?**

Over 50% of corals in the Caribbean are threatened with extinction because of global and local drivers such as climate warming, disease, and habitat destruction ("The IUCN Red List of Threatened Species," 2023). Within the Caribbean many charismatic coral species which are key reef builders and provide high habitat complexity are designated as critically endangered by the IUCN Red List. Extinction of these charismatic reef building species poses a serious threat to life in our oceans, as coral reefs support 25% of known marine biodiversity, driven by the complex 3d structures of coral species. Yet, to conserve these charismatic key reef building corals, high resolution data on where these colonies exist, and their local demographics (i.e., number of adult colonies and recruits) are required. Such demographic information forms the baseline data used to determine extinction risk of corals by quantifying their population trends.

The overall aim of our project is to assess the demographics of selected critically endangered coral species and map their location on the remote and isolated reefs of Little Cayman. Selected critically endangered coral species are based on their ecological importance (i.e. provision of habitat complexity) and the charismatic nature (i.e. well known by recreational divers). The coral species we will map and survey are *Acropora palmata*, *A. cervicornis* and *Dendryogrya cylindrus*. The project activities are multifaceted, with objectives to (1) enhance the protection of coral species, which relates to sustainable management of natural resources and recreational activities. (2) Build capacity for conservation by liaising with the local community and dive shops about the risk of extinction for evolutionarily distinct corals. And (3) inform policy and management for coral species around Little

Cayman by providing high resolution data on coral demographics, and the location of these critically endangered species.

We will undertake an exhaustive effort using SCUBA to locate critically endangered coral species listed above around Little Caymans dive sites and map their location. To identify where these colonies exist at dive sites, we will employ a two-stage approach. First, we will use local knowledge from personal experience and dive staff on island who are able to provide anecdotal information of colony locations. Second, we will use roaming diver surveys, conducting multiple surveys per site to cover the greatest area possible, to locate the presence of these critically endangered coral colonies. Once presence of colonies has been identified we will create a photomosaic of the reef area containing these colonies to produce 3D renderings of each colony to aid future monitoring efforts. After mapping these colonies around Little Cayman, we will monitor selected coral colonies to track health and conduct standardised SCUBA surveys based on the Atlantic and Gulf Rapid Reef Assessment (AGRRA) method to identify any recruits of these species for the project's duration. From the demographic information we obtain, we will provide data to GBIF, and help inform future projects aimed to protect corals, such as the Red List of corals. Additionally, data obtained on the location of these critically endangered species around Little Cayman, the production of a map, and high resolution 3d photomosaics will allow us to liaise with dive shops to educate the local community about risks these species face. Lastly, these data can be easily integrated into future marine spatial planning around the Cayman Islands and thus incorporated into the Cayman Islands Government Biodiversity action plan. These outcomes represent the immediate success we envision from this project.


## Q6b. Long-term sustainability (Guidance section 2.1 and 6)


**Please describe the long-term benefits of the project and the change it will bring about. How will the outcomes of the project be sustained after the funding is finished?**


The long-term sustainability and benefits of this project are multifaceted. The collection of high-resolution data for coral demographics around Little Cayman will be invaluable for future generations to monitor the population trends of critically endangered coral species and contribute to other world-renowned recognised organisations, such as extinction risk assessments by the IUCN Red List. Secondly, these data will be uploaded to the Global Biodiversity Information facility (GBIF), becoming a feature in the scientific record. Lastly, the map of these charismatic coral colonies will be a permanent record of location, which can be used by local dive shops to educate the community about the status of critically endangered corals in Little Cayman. This map can also be used by future researchers to conduct additional scientist work of these corals, helping future monitoring efforts.

**(Optional) Please upload any additional and supporting materials or files (such as maps of project sites, etc) below. Maximum of 5 sides of A4, and is combined as a single PDF:**

 [Q6\\_attachments](#)

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## Section 5 - Project Outcome(s)

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### Q7. Project Outcome(s) (Guidance section 1.2)

Successful Darwin Plus Local projects must demonstrate measurable outcomes in at least one of the themes of Darwin Plus with a clear focus on biodiversity and the natural environment, either by the end of the project or soon after through a credible plan.

Please confirm that your project has a clear focus on biodiversity and the natural environment.

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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**Please justify your selection. Please use quantitative information where possible here.**

Coral reefs are crucial to marine biodiversity, supporting over 25% of marine life. By mapping critically endangered coral species in Little Cayman, we can influence policy to enhance environmental quality, and in turn, prevent biodiversity reductions resulting from loss of coral species. Mapping also serves as a fundamental protection tool and a resource for community engagement. Disseminating maps to the local community fosters community involvement and awareness, enabling public participation in conserving these unique coral species in the short and long term. This approach addresses biodiversity, climate change, environmental quality, and capacity building within the project's scope.

## Section 6 - Workplan

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### Q8. Workplan (Guidance section 2.2)

**Please provide anticipated dates for the start and end of your planned project here. Please use the Darwin Plus Local Project Workplan (available at: [Darwin Plus website](#)) to provide a list of the individual activities you have planned for this project, a brief description of what each activity entails, and the months in which the activities will be carried out. If the project involves only one activity (e.g. a purchase), please still provide project start and end dates (noting estimated times for procurement). Please note that your project must start after 1 April 2024 and be completed by 31 March 2025.**

Start date:	End date:	Duration (e.g. 3 months):
01 April 2024	31 March 2025	12 months

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**Please upload the completed Darwin Plus Local Project Workplan with your proposed project activities here**

## Section 7 - Costs

### Q9. Costs (Guidance section 2.2 and please read the Finance Guidance)

Please provide a breakdown of costs to be funded through Darwin Plus Local (in GBP).

Are you seeking any matched funding for this project?

No

Budget line	Explanation	Cost in GBP
<b>Staff costs:</b>	Seven months salary for a full-time intern	████████
<b>Consultancy costs:</b>	None	£0.00
<b>Overhead costs:</b>	A & D 20% of total budget	████████
<b>Travel &amp; subsistence costs:</b>	Intern housing costs ██████ relocation flights ██████	████████
<b>Operating costs:</b>	Boat use at ██████ for 55 days	████████
	Cameras and equipment (three go pro Hero 12s) required for photomosaic images, SCUBA surveys, and photos of coral recruits to allow expert identification.	
	PC for processing photomosaics. ~ ██████	
<b>Capital equipment:</b>	Other miscellaneous camera and diving equipment (camera housing, triggers, bundles, clips, underwater notebooks, underwater paper etc).	████████
	Import duty (22-27%) and shipping costs all included under capital equipment	
<b>Other Costs</b>	Communications and outreach	████████
<b>Total:</b>		████████

This section provides more information on the budget to help evaluators understand how you will use the funds you are requesting. You do not need to list all costs, but please list and detail costs of more than £1,000 per item below, under the appropriate budget line.



**Details of staff costs over £1,000 (if relevant)**

Full-time research intern to dedicate 100% of their time to the project that will include education and outreach with the community. Cost are salary only (█████ per month)

**Details of overhead costs over £1,000 (if relevant):**

Required for the lead partner (Central Caribbean Marine Institute).

**Details of travel and subsistence costs over £1,000 (if relevant):**

Intern housing charged at █████ month, with █████ allowance for international relocation flights.

**Details of operating costs over £1,000 (if relevant):**

Sea based project that requires the use of a boat that that incurs costs for a captain, fuel, and maintenance.

**Details of capital equipment costs over £1,000 (if relevant):**

PC for processing agisoft photomosaics. Specialist equipment to create 3d rendered mosaics of reef area and critically endangered corals. Approximate cost █████ shipping █████ and import tax at █████

**Details of consultancy costs over £1,000 (if relevant):**

*No Response*

**Details of other costs over £1,000 (if relevant)**

Disseminate results with Cayman government and DoE (travel between Little and Grand Cayman, Hotel, Taxi, Per Diem) and the local community with field notebooks/guides produced for dive shops with information about these coral species, and their locations at Little Cayman dive sites.

**If your project budget was prepared in another currency and converted to GBP, please provide the exchange rate, its source, and the date it was accessed:**

Other currency:	Exchange rate:	Source of this exchange rate:	Date exchange rate accessed:
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>	<i>No Response</i>

**Darwin Plus Local has been created to build capacity and contribute to local economies in-territory.**

What % of the total will be spent in the OTs? 90

**If less than 80% of the total project spend is to be spent within the OT(s), please explain why.**

*No Response*

**Section 8 - Local and National Priorities**

**Q10. Local and national priorities**

**Please explain how this project aligns with local and national priorities? You may wish to consider the project in the context of national environmental laws, objectives, strategies, territory specific agreements, action plans or policies.**

Our project is in direct alignment with the national priorities of the Cayman Islands, specifically focusing on the sustainability of coral reefs. By assessing the demographics of critically endangered coral species, we contribute valuable data for conservation management, directly supporting the preservation of ecosystem services provided by Little Cayman's coral reefs. This project also aids the government in achieving biodiversity targets in the marine realm, crucial for national climate resilience efforts. At the local level, our initiative addresses the conservation priorities of Little Cayman's coral reefs, essential for the island's economy. Through mapping, we promote community engagement, ensuring well-informed policies to protect the invaluable coral reefs of Little Cayman.


**Will the project take place on Government owned land or water or involve biocontrol, invasive alien species control or eradication?**


Yes


**Please attach evidence that you have Government support for this project i.e. a Letter of Support. Applications which indicate that they do not take place on Government land or water, but which propose work that appears to the reviewers would be difficult/impossible to carry out without working on government land or waters may be ineligible if no Letter of Support is provided.**

 [CCMI Support Letter Darwin Local Jack Johnson](#)

[Nov 2023](#)

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## Section 9 - Project Risks

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### Q11. Project Risks

**Please demonstrate your consideration of any risks involved in this project and how you intend to manage them. Please note the importance of health and safety and environmental risk assessment in the design of your project. If there is any possibility that your project may have negative impacts on the environment or human health, it is important that you provide a comprehensive analysis of potential environmental and human health risks, and the prevention measures you will take to ensure the work does not cause harm.**

**Depending on your project, you may wish to consider:**

- Biosecurity risks – particularly for projects involving external equipment.
- Safeguarding risks – particularly for projects involving vulnerable groups such as children, older people or people with disabilities.

Risk	Mitigation
Dive incidents	All divers at least PADI rescue certified and AAUS qualified. AAUS standards to be always followed

Extreme weather limiting fieldwork	Standard operating procedures prohibit fieldwork during extreme weather for safety of staff. 12-month time-period provides mitigation for any cancelled fieldwork. Project lead (Postdoc researcher) lives full time on island and has access to facilities year-round.
No Response	No Response

**Do you require more fields?**

No

## Section 10 - Terms & Conditions

### Q12. Terms and conditions (Guidance section 3.10)

**By applying for Darwin Plus Local you are adhering in full to the grant Terms and Conditions in full (available at: [Darwin Plus website](#) and as referenced in the Guidance at section 3.10). For information, the Terms and Conditions include requirements for all applicants to (amongst other requirements as per the full Terms and Conditions):**

- Uphold a zero tolerance for inaction approach to tackling sexual exploitation, abuse, and harassment.
- Where appropriate, make all reasonable and adequate efforts to address gender inequality and other power imbalances.
- Notify all cases of fraud and theft (whether proven or suspected) relating to the project to the Grant Administrator as soon as they identified.

**Please indicate you have read, and understood, and will adhere to the Terms and Conditions.**

Checked

#### **Supporting documents list (please have these ready to attach with application)**

- Cover Letter of no more than two A4 pages. (Guidance section: 4.2 has information on what this cover letter should include).
- If the project takes place on public land or water or is addressing invasive alien species, a Letter of support from OT Government.
- Project Workplan in the template provided for Darwin Plus Local (available at: [Darwin Plus website](#)).
- Map and additional information (optional) maximum five additional pages.

#### **If your application is successful**

If your project application is successful, the Fund Administrator (NIRAS) will ask you to provide some financial evidence for due diligence checks before you receive your project grant. (Please see section 3.3 of the Darwin Plus Local Finance Guidance). Please be ready to provide this evidence promptly.

- **Financial evidence for organisations:** Year-end financial statements, the latest management accounts or audited accounts (if you have these).
- **Financial evidence for individuals:** Proof of identity such as a passport, ID card or driving licence and solvency (such as bank statements) and a police check.

## Section 11 - Certification

# Certification

**I certify that, to the best of my knowledge and belief, the statements made in this application are true and the information provided is correct.**

Checked

**I have the authority to submit an application on behalf of my organisation.**

Checked

**Name:** Jack Vincent Johnson

**Position in the organisation: (if applicable)** Central Caribbean Marine Institute

**Signature (please upload e-signature)**  [Signature .jvj](#)  
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**Date:** 24 November 2023

## Section 12 - Submission Checklist

### Checklist for submission

	Check
<b>I have read the Guidance documents, including the “Darwin Plus Local Guidance” and the “Darwin Plus Local Finance Guidance”.</b>	Checked
<b>If my proposed project takes place on public lands or water or is addressing alien invasive species, I have uploaded a Letter of Support from Government.</b>	Checked
<b>I have uploaded a cover letter that details the information requested in the guidance (Guidance section 4.2 has information on what this cover letter should include).</b>	Checked
<b>I have read, and can meet, the current Terms and Conditions for this fund.</b>	Checked
<b>I have provided actual start and end dates for my project that fit this Round.</b>	Checked
<b>I have provided my summary budget based on UK government financial years i.e. 1 April – 31 March and in GBP in the application form.</b>	Checked
<b>I have uploaded my project workplan using the specific template provided.</b>	Checked
<b>I have uploaded all supplementary documents if I have any.</b>	Checked
<b>(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.</b>	Checked

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<b>The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).</b>	Checked
<b>I have checked the Darwin Plus website immediately prior to submission to ensure there are no late updates.</b>	Checked
<b>I have read and understood the Privacy Notice on the Darwin Plus website.</b>	Checked

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### **We would like to keep in touch!**

**Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under Darwin Plus. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share project news. You are free to unsubscribe at any time.**

Checked

### **Data protection and use of personal data**

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This **Privacy Notice must be provided to all individuals** whose personal data is supplied in the application form. Some information may be used when publicising Darwin Plus including project details (usually title, lead partner, project leader, location, and total grant value).

Project Title:

## Darwin Plus Local

Provide a **Workplan** that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project. Round 3 is for a **maximum of 12 months** with activities starting from 1 April 2024. All activities must be completed by 31 March 2025.

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and shade only the months in which an activity will be carried out. The workplan can span multiple pages if necessary.

Activity #	Description (max 25 words)	No. of months	UK Financial Year 2024/25											
			Calendar Year 2024									Calendar Year 2025		
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	Planning, ordering, logistics, hiring intern	1	X											
2	Locate target species around every dive site in Little Cayman	7	X	X	X	X	X	X	X					
3	AGRRA coral surveys at colony sites to identify recruitment of target species	9			X	X	X	X	X	X	X	X	X	
4	Monitoring of selected colonies of target species for health (disease, bleaching, and mortality)	9			X	X	X	X	X	X	X	X	X	
5	Photogrammetry and production of 3D renderings for selected colonies of target species	9			X	X	X	X	X	X	X	X	X	
6	Write report, produce map, upload data	3										X	X	X