

Darwin Plus Main: Annual Report

To be completed with reference to the “Project Reporting Information Note”
(<https://darwinplus.org.uk/resources/information-notes>)

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes)

Submission Deadline: 30th April 2024

Submit to: BCF-Reports@niras.com including your project ref in the subject line

Darwin Plus Project Information

Project reference	DPLUS162
Project title	Characterising the biodiversity of selected offshore seamounts to improve management
Territory(ies)	Cayman Islands
Lead Partner	Central Caribbean Marine Institute
Project partner(s)	Cayman Islands Department of Environment, Guy Harvey Ocean Foundation, Smithsonian Tropical Research Institute
Darwin Plus grant value	£490,384
Start/end dates of project	May 1, 2022 / March 31, 2025
Reporting period (e.g. Apr 2023-Mar 2024) and number (e.g. Annual Report 1, 2)	April 2023 – March 2024 Annual Report 2
Project Leader name	Dr. Gretchen [REDACTED]
Project website/blog/social media	www.reefresearch.org
Report author(s) and date	Dr. Gretchen [REDACTED], April 18, 2024

1. Project summary

Coral reefs have global ecological, structural, social, and economic importance that is disproportionately large relative to their areal extent. They are a fundamental component of marine ecosystems and a major locus of global biodiversity, providing an ecological reserve of genetic complexity. Coral reef systems are increasingly threatened by local and global impacts, including overfishing and climate change. Nearshore ecosystems are particularly vulnerable due to their proximity to humans and longer residence times of water, resulting in higher frequency of thermal anomalies. Offshore seamounts, however, are increasingly targeted for commercial and recreational fishing and thus may suffer from greater impacts of overfishing. In the archipelago of the Galapagos Islands, for example, international commercial fishing fleets line the border of the marine protected area to take advantage of these highly productive seamounts. Yet, seamounts often serve as critical stepping-stones, connecting oceanic islands and shaping community composition and distribution across broad geographic scales. In the Cayman Islands, two seamounts (12-Mile Bank and Pickle Bank) rise above the 30m depth contour and likely serve as important stepping-stone communities. Both seamounts are frequently visited by recreational and commercial fisherman as prime locations for catching large pelagic species, yet characterization of the biological communities and physical environments remains limited. This study will use advanced technologies and the proven strength of project partners to create precise, high-resolution characterization of these understudied ecosystems as well as generate outreach and educational content that will be distributed globally, highlighting the importance of protecting these valuable resources through sustainable management. Coupled with data

generated fish communities in deeper regions of the main platform around Grand Cayman and Little Cayman, this project will increase understanding of how these unique ecosystems function and maintain biodiversity, and the importance of connectivity among and between seamounts and nearshore communities. As such, this project will help guide future management of offshore seamounts and assist with marine spatial planning for offshore zones and the Blue Belt.

2. Project stakeholders/partners

The main stakeholder for this project is the Cayman Islands Department of Environment (DOE). This project was developed in direct collaboration with the DOE following several consultations to identify key outcomes that would benefit local marine spatial planning, while capitalizing on the key strengths of all partners. During the reporting period, the DOE provided housing to visiting researchers on Grand Cayman during expeditions. They also assisted with construction of weighted buoys to be used as descent lines and drop point markers. The DOE has also made introductions with collaborators on DPLUS140 to ensure data are shared among groups. At project end, the DOE will be directly involved with data interpretation, outreach initiatives, and development of the CIBAP chapter as well as any proposed legislation.

The second main stakeholder is the local commercial and recreational fishing community. To include this stakeholder group, we are collaborating directly with the Guy Harvey Ocean Foundation (GHOF). The GHOF has met continuously with the project team and will support this project in year 3 by disseminating our project intent, activities, and results directly to the fishing community. An initial press release was launched in the local newspaper to inform the public of the upcoming work. In project year 3, the postdoctoral researcher on the project will also interact directly with the fishing community through a series of workshops.

Another main stakeholder group is the local public. This group has already been engaged with the project through our initial press release and postings on social media. Likewise, the scientific community has been included with the project through presentation of project results at two international scientific symposia in Year 1 (Mesophotic Coral Ecosystem Gordon Research Conference and the Benthic Ecology Meeting) and at the Gulf Caribbean Fisheries Institute symposium in Year 2. A publication describing the benthic and pelagic biodiversity of mesophotic coral ecosystems in Grand Cayman has been submitted for publication to the journal *PeerJ* (See attached manuscript).

3. Project progress

3.1 Progress in carrying out project Activities

Over the previous reporting period we have completed a significant portion of our proposed deliverables. These efforts focused primarily on 12-Mile Bank seamount, for which the completed suite of sample collection has been completed (Activities 1.1 – 1.6). This included two separate missions to the seamount to complete the proposed fish surveys (1.1; Supp. Doc. 1 - Fig. 1), capture benthic imagery (1.2; Supp. Doc. 1 - Fig. 2a), collect samples for eDNA (1.3; Supp. Doc. 1 - Fig. 2b), collect light and temperature data (Supp. Doc. - Fig. 2c) and complete production for a series of short videos (2.1 & 2.4; via CCMI's YouTube channel: <https://www.youtube.com/@reefresearch>). In addition, we leveraged matching funds to also collect samples for genetic connectivity assessments and generate a bathymetric map of the seamount (Supp. Doc. 1 – Fig. 3). Specific outputs to which activities contributed to over the last reporting period are outlined below.

Data analysis of surveys from the mesophotic reefs near Grand Cayman was completed, presented at 2 international conferences, the Benthic Ecology Meeting in Miami (April 2023) and the Gulf Caribbean Fisheries Institute symposium in the Bahamas (November 2023), and has been submitted for publication to the journal *PeerJ* (1.3 & 1.7; Supp. Doc. 2).

Foul weather impeded our efforts in Year 2 to access Pickle Bank. However, we are currently planning another expedition to this distant seamount in July 2024, and are optimistic about completing surveys at the second seamount by project end.

3.2 Progress towards project Outputs

Output 1: Baseline assessment of benthic and pelagic biodiversity at 12-Mile and Pickle Banks.

We have made significant progress towards achieving this output. Specifically, we have completed all the proposed activities associated with Output 1 for one of the seamounts (12-Mile Bank). Although foul weather kept us from surveying Pickle Bank in year 1, we were able to use this expedition to gain considerably more data from 12-Mile Bank, including producing a full bathymetric map (Supp. Doc. 1 - Fig. 3) and collecting samples for genetic connectivity. Data from year 1 have already been presented at multiple scientific symposia and contributed to a manuscript currently under review for publication. We are scheduled to try again for Pickle Bank in July 2024. We remain confident, therefore, that we will achieve output 1 within the project timeline.

Output 2: Project specific educational and outreach programmes.

CCMI delivered 4 live educational broadcasts in project Year 2 highlighting the importance of biodiversity and conservation management. Information about seamounts was incorporated into standard educational modules. The project was also presented to the public via a press release in the local paper, multiple social media posts, and through the CCMI newsletter. In Year 2 we collaborated with a television producer to create a short docuseries following our expedition to 12-Mile Bank. These videos are publicly available on the CCMI YouTube channel (<https://www.youtube.com/@reefresearch>)

Output 3: New section for offshore seamounts included in the Cayman Islands Biodiversity Action Plan.

Activities associated with this output are scheduled for year 3.

3.3 Progress towards the project Outcome

Expected Outcome: Detailed baseline data on benthic and pelagic biodiversity at offshore seamounts coupled with targeted education and outreach activities will foster and guide future management strategies.

After completing the second year of the project, we feel confident that we can meet this outcome by project end. Our initial baseline knowledge of these offshore seamounts was completely lacking. We have now completed all the activities described in O1 and O2 with regards to 12-Mile Bank to meet this outcome. With these data, we will be able to achieve our first indicator of completing data collection and analysis by project end. We have also created extensive outreach materials, including a docuseries, that achieve our third indicator. In project year 3, we will be able to complete the second indicator related to incorporation of data into the Cayman Islands Biodiversity Action Plan and will increase contributions to indicators 1 and 2 by completing data acquisition from Pickle Bank and increasing public awareness through additional dissemination of workshops, webinars, and educational modules. We are certain, therefore, that we will achieve the proposed project outcome by the end of the funding period.

3.4 Monitoring of assumptions

Assumption 1: Delays related to recruitment, travel, weather, etc, do not hinder data collection/analysis.

Comments: This assumption still holds true and has caused a delay in data collection in years 1 and 2. However, the team was still able to collect useful data and reschedule the final field work for Q2 of Year 3.

Assumption 2: Suggested modifications to protection of offshore seamounts are well received; New chapter is approved by CIG

Comments: This assumption remains unchanged.

Assumption 3: Technical difficulties and COVID restrictions to not impact outreach

Comments: As COVID becomes less of a global issue this assumption is much lower risk. Likewise, given our initial expeditions have been conducted without difficulties, the risk of technical difficulties is extremely low.

Assumption 1.1 & 1.2:

- Weather is conducive to executing dives
- Liveaboard vessel is available to support technical diving
- Instruments do not flood

Comments: Weather is always an issue; the team has developed alternative strategies to ensure quality data is still obtained even if we cannot access the seamounts. The liveaboard vessel has been sourced and secured for the final trip that can support technical diving and is no longer a risk. Instruments have been purchased and tested and thus far we have had no failures, making this risk extremely low.

Assumptions 1.3

- Resulting images are high enough quality to generate photomosaics
- DNA is high enough quality to successfully sequence

Comments: Test mosaics have been generated for nearshore sites and are currently being analysed. Initial results are high quality and thus is now a very low risk. A failure rate of 20% is considered standard for molecular analyses, and thus some failure is always a risk.

Assumptions 1.4

- Publications are completed and accepted by end of project

Comments: although acceptance is never guaranteed, we have already presented initial project results at scientific symposia, and the first paper has been submitted for publication, making this a low-risk assumption.

Assumptions 2.1 – 2.5:

- Technological capabilities enable underwater video + audio recording at offshore sites
- Weather is conducive to completing expeditions
- Ample content is generated to create 2 modules
- Videography is available to join expeditions and film
- Local venue is available for hosting webinar and workshops

Comments: these assumptions remain unchanged

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

The Cayman Islands and UK governments have been engaged in delimiting the Cayman Islands Exclusive Economic Zone and other areas of offshore control (possibly part of the Blue Belt Program), which would include these seamounts. The detailed biodiversity profiling will inform management to preserve the biodiversity, and economic and social utility, of these locally important but vulnerable marine ecosystems. One seamount, '12-Mile Bank', was identified as a key site in the 2009 Cayman Islands National Biodiversity Action Plan (part funded by DEFRA) however Pickle Bank was not included in that project due to practical limitations. These seamounts meet the FAO Vulnerable Marine Ecosystem criteria, except for being in state waters, rather than high seas. This work also supports the Specially Protected Areas and Wildlife (SPAW) Protocol of the Cartagena Convention to protect biodiversity through preservation and sustainable management of areas of ecological value. This project has generated detailed data on benthic and pelagic biodiversity on 12-Mile bank and created a bathymetric map of the seamount, directly contributing to these objectives.

5. Gender Equality and Social Inclusion (GESI)

CCMI is a female led organization, with the top two positions in the organization held by females, both of whom are parents. CCMI is highly attuned to the issue of gender inequality, particularly in the sciences. We value gender equality as is evident in our predominately female staff and inclusion of non-binary individuals, with equitable recruitment policies and pay scales among genders. To ensure that our staff are treated fairly and pay particular attention to issues such as mobility of our staff that have children and encourage our staff to work remotely when applicable. This project promotes women’s empowerment, as outreach initiatives will showcase a female lead scientist, and gender equality, as key decisions for conservation policies will be led by the female Director of the DOE and outreach activities will be led by the female CEO of the GHOF (Jessica Harvey). The health of the coral reef, however, impacts all genders and thus the success of this project has no restrictions or biases in who will ultimately benefit from its success. Prior to project start we had recruited a female postdoctoral researcher to participate with the project, however, she decided to take an alternative position. Following a lengthy recruitment period, we have now hired a male researcher, however, an early career female intern was brought onto the project creating a gender balanced team.

Please quantify the proportion of women on the Project Board ¹ .	50% of the project board are women.
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	¾ of the project partners (CCMI, GHOF, and DOE) are led by women.

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn’t quite meeting the requirements of a ‘sensitive’ approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a ‘sensitive’ approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an ‘empowering’ approach whilst also addressing unequal power relationships and seeking institutional and societal change	x

This is an offshore expedition-based project that involves physically and mentally demanding technical diving to conduct science at depths of 30-70m, and it is led by a woman. She is one of only a few women doing research at these depths on SCUBA in the world. She was awarded the Explorer’s Club Flag to carry as a Fellow of the club for this mission bringing awareness to

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

the lack of female leaders in underwater exploration. We have made a docuseries highlighting her role as the lead scientist and expedition leader that has the potential to encourage more young women to pursue technical diving, exploration, and science. We therefore consider this project transformative.

As outlined above, the project is supported by an organisation that has gender and social inclusion at its core - whilst there are areas that need improvement at CCMI, namely due to the remote nature of our island (which can limit access and mobility) and the work we conduct (tech diving, which is not a commonly supported skill base), we are always looking for improvements to how we can be equitable and inclusive, including providing paid internships, skills training within the local community and ensuring we continually evolve our policies and infrastructure to support inclusion. This approach has been echoed via our project design, including key training for staff and ensuring the recruitment has been shared via our extensive network of women in science.

The outreach component of this project is the key strategic focus on gender and the importance of women taking part in a science and exploration. The project has leveraged CCMI's well developed outreach platform, including close connections with local and regional schools, who are provided free access to the Reefs Go Live broadcasts, which reaches 100,000 students per season (Feb-June each year). This outreach strategy also includes a deliberate focus on students from under-represented demographic backgrounds in science, especially within the Cayman Islands where there is a considerable poverty gap. The final project outreach component will also include a broader reach via the Guy Harvey Ocean Foundation, ensuring both the regional fishing community and citizen scientists are targeted via the project communications.

6. Monitoring and evaluation

This project has been managed to CCMI's established monitoring and evaluation (M&E) protocols, in addition to the M&E practice as outlined in the grant application. Internal activities that provide the structure and scope to facilitate the project M&E:

- The project team meet each month to update the outputs and Activities, with increased frequency when preparing for field work or data analysis;
- Project partners are involved in each stage of the monthly M&E that is relevant to them (and this will increase in frequency in line with year 2 and 3 deliverables).
- Project deliverables and updates are shared monthly with the CCMI Board of Directors, as well as project finances, as part of our overall financial governance protocols.
- CCMI holds a quarterly grants M&E meeting across the company, to discuss, assess and confirm the status of each project.
- A separate financial meeting is also held each quarter following the grants quarterly meeting, with the executive team, to discuss, assess and confirm the status of each project.
- A project summary is provided to our Board of Directors following the quarterly grant and financial meetings.

Both the Outputs and Activities, and the indicators of achievement are being driven by the approved project logframe. As outlined in this report, there have been minor changes to the Outputs and Activities due to weather issues and the delay in personnel recruitment, but the Outcomes remain achievable and on target for the project duration. The logframe identified clear indicators of achievements which have also been outlined in this report and remain on target. The risk assessment and viability of the study is ongoing and is communicated via the M&E protocols outlined above.

There have been no changes to the M&E plan over the reporting period. In addition to the internal project M&E updates, project updates are released via our social media and outreach activities, including a quarterly newsletter and ongoing website updates.

7. Lessons learnt

During our planned expedition to Pickle Bank, it was determined by the commercial liveaboard vessel that the weather was not conducive to offshore travel to the seamount. While the vessel provided excellent dive support, it was not equipped to handle high seas and thus the weather would need to be nearly perfect for an offshore trip on this boat. As we plan for another attempt to Pickle Bank we have decided to opt for a more sea-worthy vessel and incorporate support vessels to provide diving assistance.

During the expedition in Year 2, there was conflict among the teams for when activities needed to be conducted, i.e. diving vs. mapping. As we plan our next expedition, we have decided to enlist additional support so that activities can be conducted in tandem.

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

The first annual report received a score of 2, indicating strong probability of achieving the proposed outcome. Three issues were raised in the review. The first was lack of supportive materials to substantiate claims. To address this, we have included the submitted manuscript, data figures from 12-Mile bank surveys, and provided links to the docuseries produced from the year 2 expedition. The second comment was related to an underspend due to delay in hiring the postdoc, which was discussed. The third issue raised was continued weather delays. Despite still not reaching Pickle Bank, we have completed extensive assessment of 12-Mile that exceed the deliverables initially proposed. While we have plans to attempt Pickle Bank again in year 3, if weather delays again, our contingency plan is to conduct the surveys at Cayman Brac and Little Cayman, where these depths also remain largely unexplored.

9. Risk Management

The major risk that occurred in year 2 and continues to be a risk is inclement weather prohibiting field work. Thus far we have mitigated by shifting surveys from offshore to nearshore sites, and by focussing extensively on 12-Mile Bank. Given the timeframe for scheduled field work, the risk of inclement weather is low, however, should weather prohibit an expedition to Pickle Bank, an alternative trip will be planned and comparable nearshore data from Little Cayman and or Cayman Brac will be collected while we have access to the vessel.

10. Sustainability and legacy

This project has completed data collection at one of the two seamounts, as well as nearshore from Grand Cayman, with the final seamount expedition planned for Q2 of Y3. Key education and outreach deliverables linked to this field activity that underpin the sustainability and legacy of the project overall. Thus far we have delivered live-streamed videos, webinars, local press releases, and a publicly available docuseries, thereby ensuring project legacy. The project strategy to ensure the outcomes are sustainable and improve local capacity remain viable and on track for end of project delivery.

In addition to the key engagement deliverables outlined above, CCMI continually communicates with (and to) stakeholders in the Cayman Islands (including over 250 local students who visit CCMI for residential courses and 1000 students tuning in to our Reefs Go Live programme from the Cayman Islands) and across the UK Overseas Territories in the Caribbean, via our digital and web-based content. Ongoing social media, newsletter updates and our Reef Lecture Series and Reefs Go Live activity means the project is continually supported throughout the year thus far and will continue to support the sustainability and legacy of the project via a robust, consistent, and well executed communications and outreach strategy at CCMI.

This project has also been presented at the Gordon Research Conference (February 2023), and the Benthic Ecology Meeting (April 2023), the Gulf Caribbean Fisheries Institute (November 2023), and the Boston Sea Rovers (February 2024) reaching over 1000

professional stakeholders from across the region, building important knowledge sharing opportunities.

11. Darwin Plus identity

Darwin Plus's identity is supported heavily in the Cayman Islands via CCMI and our project partners, the Cayman Islands Department of Environment. This project is stand alone for CCMI, ensuring that the Darwin Plus logo has clear stand out and links to project success.

The Darwin Plus logo is used in all CCMI collateral. There is a specific webpage, plus 4 newsletters per year that include the logo (reach od 8,000 people per newsletter). The Darwin Plus logo was used on the scientific poster presented at the Gordon Research Conference (February 2023), and the Benthic Ecology Meeting (April 2023), which in addition to reaching 700 attendees, was also shared by CCMI's social media accounts. The logo was also included in the oral presentation given at the Gulf Caribbean Fisheries Institute meeting (November 2023) and at the Boston Sea Rovers Symposium (February 2024). CCMI will include the logo in the Reefs Go Live broadcast which will reach over 25,000 people.

CCMI also has an active social media programme, that reaches thousands of people per day. In addition to logo usage, CCMI tags both the Darwin Plus programme and DEFRA when project information is shared. CCMI stakeholders are continually briefed on who Darwin Plus is, and the funding support for the project. Therefore, Darwin Plus identity will be positively reinforced via CCMI's outreach and engagement for this project.

12. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes
Have any concerns been reported in the past 12 months	No
Does your project have a Safeguarding focal point?	Yes – Kate [REDACTED] and Robert [REDACTED]
Has the focal point attended any formal training in the last 12 months?	No
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 0% [and number] Planned: 50% [2]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.	
Yes - CCMI is a residential facility, with mixed aged groups, staff and volunteers residing on the same premises. Safeguarding is continually assessed and evolved, especially via our education department and the support for interns. We have recently updated our safeguarding, sexual harassment and our emergency response policies, which would include activities such as the offshore sea mount exploration, ensuring that PIs have a clearer understanding of their responsibilities for staff and third-party stakeholders who take part in the project. Safeguarding for interns in particular has been assessed in the last 12 months, to ensure planning for and the inclusion of interns in project activity is of the highest standards.	
Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.	
The project does not have any specific safeguarding requirements, outside of CCMI's policies and training (as a small, residential organisation, company Safeguarding is relevant to all projects and is therefore undertaken at company level).	

Please describe any community sensitisation that has taken place over the past 12 months; include topics covered and number of participants.

N/A

Have there been any concerns around Health, Safety and Security of your project over the past year? If yes, please outline how this was resolved.

This project includes sea mount exploration, using tech diving as the main research activity – therefore by its technical and complex nature, the health, safety and security is a significant part of the project design. The team are specialised in tech diving and have brought in local support to ensure the sea mount exploitation is conducted to the highest standards. There have been no specific concerns, just ongoing assessment and adjustment.

13. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2023 – 31 March 2024)

Project spend (indicative) in this financial year	2023/24 D+ Grant (£)	2024/25 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs				
Consultancy costs				
Overhead Costs				Underspend due to relative proportion of total budget
Travel and subsistence				
Operating Costs				Due to a nonweather-related delay with the offshore expedition in year 2, the charter vessel provided a partial refund of ██████ which accounts for this variance and will go towards a final expedition in year 3.
Capital items				
Others (Please specify)				This variance is due to a delay in receiving an invoice from our partner at STRI for their costs, estimated at ██████, accounting for the total variance. This invoice is expected in Q1 of year 3.
TOTAL	223,222	190,810		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2023 – 31 March 2024)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)	██████	██████	Private donor
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

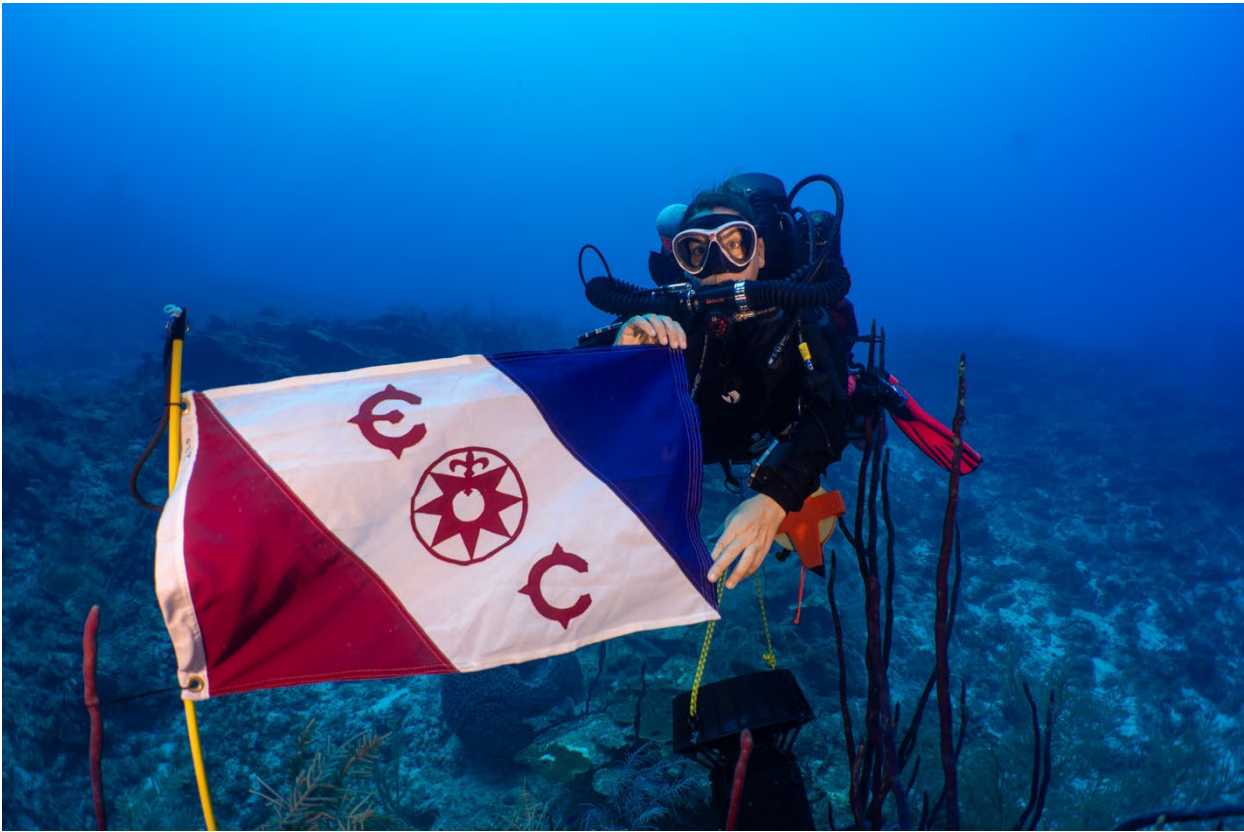
14. Other comments on progress not covered elsewhere

15. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes.

I agree for the Biodiversity Challenge Funds to edit and use the following for various promotional purposes (please leave this line in to indicate your agreement to use any material you provide here).

As a Fellow of The Explorer’s Club, project lead Goodbody-Gringley was selected to carry the flag on the Darwin Plus seamount expedition in 2023. To carry the Explorers Club flag as a female in a male-dominated field like scientific technical diving is to navigate uncharted depths, both literal and metaphorical. It signifies shattering the glass ceiling of expectation, plunging into the abyss with audacity and expertise. As a female bearer of the flag, one embodies the fusion of science and exploration, pioneering breakthroughs in understanding the mysteries of the ocean. It symbolizes not just individual triumph, but also a collective push for gender equality and recognition in the realms of underwater exploration and scientific inquiry. To be entrusted with this emblem of exploration is not just a personal achievement for Goodbody-Gringley, but a recognition of the strides we are making towards inclusivity and diversity in these fields. This extraordinary opportunity has been made possible by the invaluable support of the Darwin Plus award, which has provided the resources and platform for our project to thrive.

File Type (Image / Video / Graphic)	File Name or File Location	Caption including description, country and credit	Social media accounts and websites to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Image	GGG_ECflag_boat	Goodbody-Gringley on the liveaboard dive vessel with the Explorers Club Flag at the beginning of the 2024 seamount mission.	@reefresearch www.reefresearch.org	Yes
Image	ECflag_seamount	Goodbody-Gringley holding the Explorers Club flag underwater at 12 Mile Bank Seamount in the Cayman Islands	@reefresearch www.reefresearch.org	Yes
				Yes / No
				Yes / No
				Yes / No



Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p>Impact</p> <p>Increase protection and public awareness of unique offshore seamount ecosystems in the Cayman Islands.</p>	<p>All logistical preparations have been made and nearshore comparable data has been obtained to ensure this is impact is achieved by project end.</p>	
<p>Outcome Detailed baseline data on benthic and pelagic biodiversity at offshore seamounts coupled with targeted educational and outreach activities will foster and guide future management strategies.</p>		
<p>Outcome indicator 0.1</p> <p>Increased understanding of seamount biodiversity via data collection and analysis</p>	<p>0.1 Data has been collected from the 12-Mile Bank Seamount; New bathymetric map of the seamount was created; Manuscript describing biodiversity of nearshore mesophotic reefs in Grand Cayman submitted for publication.</p>	<p>All logistical aspects of final expedition to be planned in Q1 and executed in Q2 of year 3.</p>
<p>Outcome indicator 0.2</p> <p>Improved management of biodiversity via incorporation of data into the Cayman Islands Biodiversity Action Plan</p>	<p>0.2 NA – planned for Year 3</p>	<p>0.2 final data will be consolidated and included into new chapter of the CIBAP</p>
<p>Outcome indicator 0.3</p> <p>Heightened public awareness and local knowledge via dissemination of workshops, webinars, multi-media products and education modules</p>	<p>0.3 Initial dissemination occurred via press release, social media posts, presentations at scientific conferences, and submission of peer reviewed manuscript for publication</p>	<p>0.3 Continued public dissemination via social media and press releases; presentations at upcoming conferences (i.e. European Coral Reef Symposium); publication of additional manuscript.</p>
<p>Output 1 Baseline assessment of benthic and pelagic biodiversity at 12-Mile and Pickle Banks</p>		
<p>Output indicator 1.1 Knowledge gained on 12-Mile bank seamount biodiversity via data collection by end of Year 1</p>	<p>This output is complete. All data have been collected and are currently being analyzed. Map is included with this report as well as initial analyses of fish data.</p>	<p>Final data analysis and consolidation into a manuscript.</p>

Output indicator 1.2 Knowledge gained on Pickle Bank seamount biodiversity via data collection by end of Year 2	Initial attempt was delayed due to weather. Final attempt planned in Year 3	Completion planned in Year 3
1.3 Improved understanding of seamount ecosystem function via data consolidation and analysis completed by Jan. 2025	Completed for nearshore Grand Cayman. Data collected and being analysed for 12 Mile bank.	Final data consolidation and analysis to occur in Year 3
1.4 Increased stakeholder knowledge via publication of results by end of project	First publication submitted. Second publication in progress. Work was presented at multiple conferences	We expect publication of at least 2 additional manuscripts by project completion and presentation at 2 additional scientific conferences.
Output 2. Project specific educational and outreach programmes		
Output indicator 2.1. Increased global stakeholder engagement via 1 interactive educational broadcast delivered each project year, each reaching 250-450 via direct views In the Cayman Islands with up to 25,000 recording views per episode from 28 countries (this includes data on class sizes watching - i.e. 1 'view' included 25 students).	Completed for Year 1 and 2 via the Reefs Go Live programme. Disseminated via CCMI Reefs Go Live webpage (https://reefresearch.org/what-we-do/education/reefs-go-live/) and YouTube channel (https://www.youtube.com/@reefresearch/videos)	2 additional broadcasts will be completed in April 2024 (completed) and March 2025.
Output indicator 2.2. Increased local education via 1 education module related to the project delivered each project year reaching roughly 100 local primary students each year	Completed for Year 1 and 2 via CCMI's residential programmes to local primary school children, which included over 200 students in 2023. The docu-series was released in December 2023 and has been showed widely to CCMI residential students, we well as across our social media channels and at the Sea Rovers Conference.	A final project learning module will be completed and delivered in Year 3.
2.3 Broaden educational reach via 1 short educational video available online by end of Year 2 provided to local schools and available online reaching upwards of 1,000 students	Education video is complete and being shared with local school networks. Launch with project collateral (June 2024) as part of the sea mount expedition PR.	Completed Year 2 – disseminated Year 3. A final project video short will be completed in Year 3, including project results.
2.4 Increased stakeholder knowledge via one webinar delivered locally each project year reaching roughly 50 people via in person attendance and 100 via online stream.	Two Reef Lectures included the mesophotic reef/project content, delivered by Dr Gretchen Goodbody-Gringley (50 people) and intern Lucas De Gall (60 people).	Additional outreach lectures and webinar will be conducted in Year 3.

2.5 Improved fisherman understanding of seamount biodiversity and importance via consultation through 1 in-person workshop given at each of the 3 Cayman Islands by the end of Year 3, reaching approximately 50-200 local fisherman and anglers.	NA	Planned for year 3
Output 3. New section for offshore seamounts included in the Cayman Islands Biodiversity Action Plan		
3.1 Improved documentation of seamount biodiversity and sustainability via new seamount chapter written by Jan 2025	NA	These activities are planned for project year 3.
3.2. Better management of seamounts via chapter approval by DOE and incorporation in CI BAP by end of project.	NA	These activities are planned for project year 3.

Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project summary	SMART Indicators	Means of verification	Important Assumptions
Impact: Increase protection and public awareness of unique offshore seamount ecosystems in the Cayman Islands.			
Outcome: Detailed baseline data on benthic and pelagic biodiversity at offshore seamounts coupled with targeted educational and outreach activities will foster and guide future management strategies.	0.1 Increased understanding of seamount biodiversity via data collection and analysis 0.2 Improved management of biodiversity via incorporation of data into the Cayman Islands Biodiversity Action Plan 0.3 Heightened public awareness and local knowledge via dissemination of workshops, webinars, multi-media products and education modules	0.1 Biodiversity data available on public repositories 0.2 Updated Cayman Islands Biodiversity Action Plan; Final project report. 0.3 Documentation of outreach events; media files available online; education modules published online	1. Delays related to recruitment, travel, weather, etc, do not hinder data collection/analysis 2. Suggested modifications to protection of offshore seamounts are well received; New chapter is approved by CIG Technical difficulties and COVID restrictions to not impact outreach

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>Outputs:</p> <p>1. Baseline assessment of benthic and pelagic biodiversity at 12-Mile and Pickle Banks</p>	<p>1.1 Knowledge gained on 12-Mile bank seamount biodiversity via data collection by end of Year 1</p> <p>1.2 Knowledge gained on Pickle Bank seamount biodiversity via data collection by end of Year 2</p> <p>1.3 Improved understanding of seamount ecosystem function via data consolidation and analysis completed by Jan. 2025</p> <p>1.4 Increased stakeholder knowledge via publication of results by end of project</p>	<p>1.1 Project notebooks; internal online database; interim project report</p> <p>1.2 Project notebooks; internal online database; interim project report</p> <p>1.3 Documented presentations of results with interpretation; interim project report</p> <p>1.4 Documented presentations of results with interpretation; final project report; publications</p>	<p>1.1 & 1.2 Weather is conducive to executing dives</p> <p>1.1 & 1.2 Liveaboard vessel is available to support technical diving</p> <p>1.1 & 1.2 Instruments do not flood</p> <p>1.3 Resulting images are high enough quality to generate photomosaics</p> <p>1.3 DNA is high enough quality to successful sequence</p> <p>1.4 Publications are completed and accepted by end of project</p>
<p>2. Project specific educational and outreach programmes</p>	<p>2.1 Increased global stakeholder engagement via 1 interactive educational broadcast delivered each project year, each reaching 250-450 via direct views with up to 10,000 recording views from 28 countries.</p> <p>2.2 Increased local education via 1 education module related to the project delivered each project year reaching roughly 100 local primary students each year</p> <p>2.3 Broaden educational reach via 1 short educational video available online by end of Year 2 provided to local schools and available online reaching upwards of 1,000 students</p> <p>2.4 Increased stakeholder knowledge via one webinar delivered locally each project year reaching roughly 50 people via in</p>	<p>2.1 Recorded Reefs Go Live broadcast online via CCMI</p> <p>2.2 Education modules available on CCMI and GHOF websites</p> <p>2.3 Video (s) available online via CCMI and GHOF</p> <p>2.4 Recorded webinar available on CCMI YouTube page and via CCMI website/social media</p> <p>2.5 Recorded workshop available online via CCMI and GHOF</p> <p>2.1 – 2.4 Final project report</p>	<p>2.1 Technological capabilities enable underwater video + audio recording at offshore sites</p> <p>2.1 Weather is conducive to completing expeditions</p> <p>2.2 Ample content is generated to create 2 modules</p> <p>2.3 Videographer is available to join expeditions to film</p> <p>2.4 local venue is available for hosting webinar</p>

Project summary	SMART Indicators	Means of verification	Important Assumptions
	person attendance and 100 via online stream. 2.5 Improved fisherman understanding of seamount biodiversity and importance via consultation through 1 in-person workshop given at each of the 3 Cayman Islands by the end of Year 3, reaching approximately 50-200 local fisherman and anglers.		
3. New section for offshore seamounts included in the Cayman Islands Biodiversity Action Plan	3.1 Improved documentation of seamount biodiversity and sustainability via new seamount chapter written by Jan 2025 3.2. Better management of seamounts via chapter approval by DOE and incorporation in CI BAP by end of project.	3.1 Digital copy archived and publicly available on CCMI website 3.2 Updated version of the Biodiversity Action Plan publicly available.	3.1 Data collection and analysis is complete in time to develop chapter by end of project 3.2 DOE approve the chapter
<p>Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <ul style="list-style-type: none"> 1.1 12 in-situ fish surveys completed at each seamount (July – December 2022 & 2023) 1.2 5 benthic photomosaics generated from each seamount (July – December 2022 & 2023) 1.3 Fish and benthic data analyzed (January – July 2023 & 2024) 1.4 Water and sediment samples collected from each seamount (July – December 2022 & 2023) 1.5 Water samples analyzed for eDNA (January – July 2023-2024) 1.6 3 replicate light and temperature loggers deployed at each seamount for 1 month (July – December 2022 & 2023) 1.7 Data consolidated and results published (June 2024 – March 2025) 2.1 Interactive video with scientist filmed while diving on each seamount (July – December 2022 & 2023) 2.1 Video incorporated into a live broadcasted Q&A session with scientists (June each year) 2.2 Education modules created related to the project and delivered locally and regionally (1 per year) 2.3 Short educational video developed and broadcast only by December 2024 2.4 One webinar delivered locally each project year 2.5 One workshop delivered on each island (Grand, Little, Brac) (Year 3) 3.1 Consultations with DOE regarding interpretation of results and development of CIBAP chapter (Year 3) 			

Project summary	SMART Indicators	Means of verification	Important Assumptions
<p>3.2. Recommendations and data consolidated into new CIBAP chapter on seamounts (Year 3)</p> <p>3.3. Chapter approved and consultations held with relevant government agencies to discuss implications and potential changes to legislation (Year 3).</p>			

Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DPLUS Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DPLUS-A01	Number of people from key national and local stakeholders completing structured and relevant training	People	People	5	2	NA	7	6
DPLUS-A03	Number of local/national organization with improved capacity as a result of the project	Number of Organizations	Number of Organizations	1	1		1	1
DPLUS-A04	Number of people reporting that they are applying new capabilities	People	People	5	2	NA	7	5
DPLUS-C04	Number of new conservation or species stock assessments published	Number	Taxa (fish, corals, algae, sponges, etc); regional; visual and photographic surveys	1	1		2	2
DPLUS-C15	Number of Media related activities	Number	Print; national	1	1	1	2	3
DPLUS-C12	Social Media Presence	Number	By year; Instagram and Facebook; reach	180,000	180,00	180,000	360000	540000
DPLUS-A07	Number of government institutions/departments with enhanced awareness and understanding of biodiversity and associated local community issues	Number	Planning; environmental; tourism	0	0		0	1
DPLUS-B01	Number of new/improved habitat management plans available and endorsed	Number	Local; habitat; Chapter	0	0			1

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Benthic and fish community composition on mesophotic reefs in Grand Cayman	Journal article	Le Gall L, Johnson JV, Chequer AD, Doherty M, Goodbody-Gringley G. (In Review)	Male	French	PeerJ, London UK	In review, not yet available peerj.com

Annex 4: Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Supp. Doc. 1: Data figures and images from 12 Mile Bank field expeditions

Supp. Doc. 2: Manuscript currently under review with *PeerJ* for publication documenting biodiversity of mesophotic reefs in Grand Cayman

Supp. Doc. 3: PDF version of lecture presented as part of a local public seminar, to visiting university groups, and at the Boston Sea Rovers symposium.

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 correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	x
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	x
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	x
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	x
Have you involved your partners in preparation of the report and named the main contributors	x
Have you completed the Project Expenditure table fully?	x
Do not include claim forms or other communications with this report.	