Darwin Plus Main & Strategic: 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 2025

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

• Darwin Plus Project Information

Scheme (Main or Strategic)	Main
Project reference	DPLUS213
Project title	Building baseline knowledge of mesophotic ecosystems in Ascension Island MPA
Territory(ies)	Ascension Island
Lead Organisation	Plymouth Marine Laboratory
Project partner(s)	Plymouth Marine Laboratory, University of Plymouth, Ascension Island Government Conservation and Fisheries Department
Darwin Plus grant value	£375,153
Start/end dates of project	01/04/2024 - 31/03/2026
Reporting period (e.g. Apr 2024-Mar 2025) and number (e.g. Annual Report 1, 2)	Apr 2024-Mar 2025; Annual Report 1
Project Leader name	Kerry Howell
Project website/blog/social media	N/A
Report author(s) and date	Amelia Bridges Phil Hosegood Kerry Howell Tiffany Simpson Dan Simpson

1. Project summary

Environmental and Climate Change Issues Addressed

This project addresses a critical knowledge gap in mesophotic ecosystems (30–300 m depth) within the Ascension Island Marine Protected Area (MPA). These ecosystems are likely to play a key role in biodiversity conservation, carbon sequestration, and fisheries sustainability, yet they remain poorly understood due to previous limitations in survey technology and logistical challenges.

Key environmental and climate-related challenges addressed by the project include:

- Biodiversity Conservation: Without baseline data on species composition and habitat distribution, Ascension's MPA management lacks the evidence required to protect these ecosystems effectively.
- Climate Change Impacts: Rising ocean temperatures and changing oceanographic conditions may alter the structure and distribution of mesophotic communities, with cascading effects on fisheries and ecosystem stability.
- Blue Carbon Assessments: Mesophotic habitats, including mesophotic coral ecosystems, are potential carbon-sequestering ecosystems, but their contribution to blue carbon storage in the central Atlantic is currently unknown.
- Sustainable Fisheries Management: Many commercially and ecologically important fish species, such as the rockhind grouper, likely use mesophotic habitats during critical life stages. Understanding these connections is essential for evidence-based fisheries management.

Relevance and Beneficiaries

This project is directly relevant to:

- The Ascension Island Government Conservation and Fisheries Directorate (AIGCFD) – Providing data essential for evidence-based decision-making and effective marine management.
- Local fishers – Supporting sustainable fisheries by identifying key mesophotic habitats used by economically and ecologically important species (e.g., rockhind grouper).
- The wider UKOT conservation community – Developing and testing a scalable methodology for mesophotic surveys that can be applied to other UK Overseas Territories (UKOTs), including St Helena, Gibraltar, and Bermuda.
- The scientific community – Contributing valuable data to global efforts, such as the UN Ocean Decade, and improving understanding of mesophotic biodiversity in the Central Atlantic, one of the most poorly studied ocean regions.

Problem Identification

The need for this project was identified through:

- The Ascension Island MPA Management Plan and its Monitoring, Evaluation, and Research Strategy, which identify poor knowledge of mesophotic communities as a major management limitation, and therefore a high priority for research.
- Findings from past deep-water surveys, including towed camera deployments from the Blue Belt-sponsored Discovery Cruise (2022), that identified the presence of deep-water coral and other carbon-sequestering communities.
- Consultation with AIGCFD, who emphasized the importance of understanding deeper marine habitats for effective resource management and biodiversity protection.

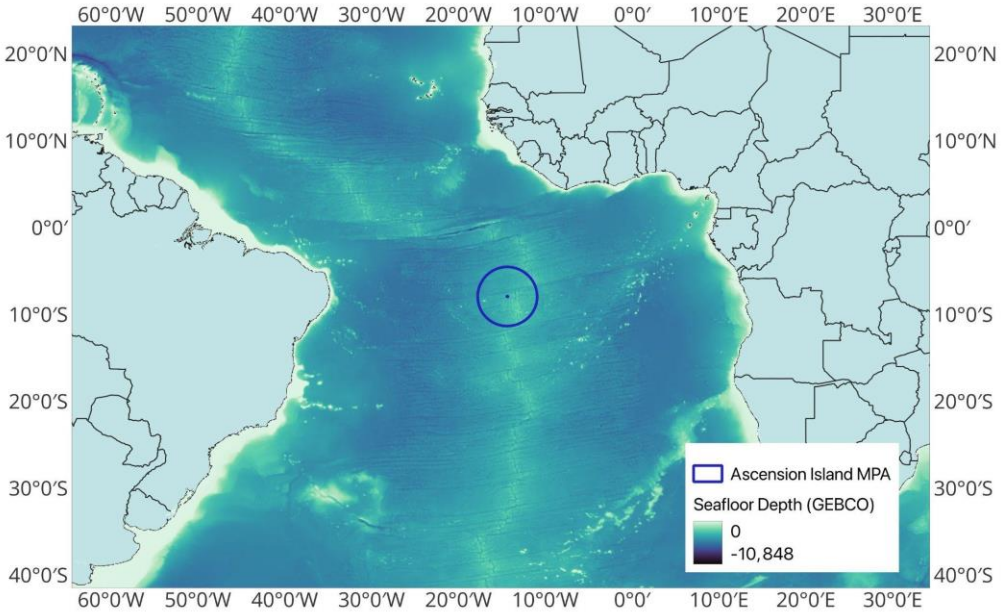
Building on Existing Evidence and Scaling Approaches

The project builds on previous research in the region and applies proven methodologies developed through other deep-sea and mesophotic habitat studies:

- Towed camera and habitat mapping techniques used in BIOT and Cabo Verde have been adapted for Ascension's conditions, enabling cost-effective deep-sea exploration without requiring large research vessels.
- Oceanographic monitoring methods developed at the University of Plymouth provide a foundation for linking environmental conditions to species distributions, a key step in climate impact assessments.
- Knowledge exchange with other UKOTs ensures that lessons learned, and methodologies developed from Ascension's mesophotic surveys can be replicated and scaled in other UKOTs with similar conservation challenges.

Project Location

The project is based in the Ascension Island Marine Protected Area, which covers the entirety of Ascension's 445,000 km² Exclusive Economic Zone (EEZ). However, the focus is on mesophotic habitats surrounding Ascension Island itself, where fieldwork is being conducted using AIG vessels.



2. Project stakeholders/partners

Development of Partnerships and Stakeholder Involvement

This project was developed in direct response to the needs identified by the Ascension Island Government Conservation and Fisheries Directorate (AIGCFD), which co-designed the project alongside the University of Plymouth (UoP) and Plymouth Marine Laboratory (PML); the latter organisation now leads to project as the PI moved institutions). The AIG MPA Management Plan and its associated Monitoring, Evaluation, and Research Strategy highlight the urgent need to fill knowledge gaps in mesophotic ecosystems, making this project a high-priority initiative for AIGCFD and local stakeholders.

Since the project began, all formal partners have been actively involved in planning, monitoring, and decision-making. Key developments in collaboration include:

- Joint planning of fieldwork surveys: AIGCFD, UoP and PML worked together to refine sampling designs and locations, ensuring data collection is aligned with AIG's management needs whilst also considering the challenges associated with small boat work in an oceanic setting.
- Capacity-building and training design: The training curriculum for mesophotic survey methods was co-developed, incorporating AIGCFD's existing capacity (both human and technical) for long-term monitoring.
- Regular project meetings: Virtual meetings have been held between PML, UoP and AIGCFD to review progress, address challenges, and adapt plans as needed. These meetings ensure shared decision-making and accountability.

Achievements, Strengths, and Lessons Learned

Key achievements in collaboration over the past year include:

- Effective coordination between the UK and island-based teams, ensuring logistical and technical feasibility of survey operations using AIG's small research vessels.

- Progress in developing mesophotic survey capacity within AIGCFD, with four staff members receiving core training, and additional staff members and volunteers also involved.

Lessons learnt and challenges encountered include:

- Project start delay: The project started late due to a late funding decision by Defra, and a change in project lead organisation (the project leader moved from University of Plymouth to Plymouth Marine Laboratory). As a result, it took longer than expected to organise contracts with partners and this delayed hiring staff.
- Staff recruitment: Hiring staff to work on Ascension Island took longer than anticipated due to the aforementioned contract delay combined with the island's remote location and the logistical complexities of relocation. This challenge was addressed through interim support from existing AIGCFD staff and flexibility in project timelines but has delayed the core community engagement aspects of the project.
- Fieldwork health and safety: Ascension's oceanic setting requires detailed fieldwork planning, dynamic risk assessing and high levels of flexibility in the survey design. Whilst on-island, decisions to alter the survey design to ensure vessel safety were required, to which the team adapted well.
- Fieldwork logistics: Limited accommodation on-island, paired with challenges regarding boat and staff availability on Ascension Island meant we were unable to complete the first field campaign in the originally proposed timeframe (Y1Q1). As a result, the first fieldwork session took place later than anticipated (November 2024), and the second fieldwork session has been moved forward to November 2025.

Engagement with Local Stakeholders

Beyond formal project partners, engagement with local stakeholders and technical specialists has been central to the project's success. This includes:

- Local community involvement: Whilst the UoP and PML teams were on-island, AIGCFD organised a public talk for the researchers to share their project and highlight some initial findings. The talk was extremely well-attended with a full cinema audience, fostering ownership and engagement with marine conservation.
- UK Government engagement: Regular updates have been provided to the Blue Belt Programme's Ascension Island lead.

3. Project progress

3.1 Progress in carrying out project Activities

Output 1: Improved on-island capacity for mesophotic marine biodiversity research

Activity 1.1 (Develop training protocols and resources for fieldwork and data analysis) [Q1-Q2] - complete: Training materials and protocols have been developed to ensure AIGCFD staff can effectively use and maintain survey equipment. These included guides on camera build, deployment, recovery, data storage/management and image processing (**Evidence: Annex 4a**). Protocols are to be reviewed after the KEF training has taken place to maximise applicability across territories.

Activity 1.2 (Identify in-person fieldwork trainees) [Q1-Q2] - complete: Four AIGCFD staff members were identified as primary trainees. We are in contact with KEFs from St Helena, Bermuda, and Gibraltar regarding planned training during the second field season.

Activity 1.3 (Deliver training courses) [Q3-Q4] - ongoing: In-person training sessions began in November 2024, taking place over a three-week period. Topics covered included survey methodology and equipment deployment (**Evidence: Annex 4b**). A more advanced session is scheduled for the second field deployment where the KEFs from other UKOTs will also join.

Activity 1.4 (Develop best-practice protocol for mesophotic surveys) [Q3-Q4] - ongoing: A preliminary version of the survey protocol has been drafted (**Evidence: Annex 4c**). Further refinements will be made after the second field season.

Output 2: The distribution of mesophotic benthic species and habitats at Ascension Island is understood

Activity 2.1 (Design survey strategy) [Q1-Q2] - complete: A stratified sampling approach was developed based on existing bathymetric data from DPLUS142. Transects were designed to capture variation across depth gradients and topographic habitat types derived from the DPLUS142 bathymetry (**Evidence: Annex 4d: Topographic habitat classification map)**, as well as areas expected to have complex oceanographic regimes based on prevailing currents.

Activity 2.2 (Undertake baseline biological surveys) [Q3-Q4] - ongoing: The first biological field campaign with drift cameras was conducted in November 2024 to survey mesophotic habitats (**Evidence: Annex 4d: Video transects and moorings map**). Initial benthic image analysis indicates the presence of several habitat types potentially important for blue carbon including rhodolith beds, maerl beds, and mesophotic coral gardens (**Evidence: Annex 4d: Example images**). Further locations will be sampled to extend the baseline survey in the second field campaign.

Activity 2.3 (Characterise and map species and communities) [Q3-Q4, continuing into Year 2] - ongoing: Due to the delay in scheduling the first fieldwork campaign, activity 2.3 is behind schedule. An initial assessment of the video data was undertaken in December 2024 (**Evidence: Annex 4e**) to inform oceanographic deployment locations in January 2025, but the detailed image analysis is ongoing. Where applicable, dominant habitat types have been mapped (**Evidence: Annex 4d: Habitat map**).

Output 3: Ecological/environmental drivers of species and habitat distribution are understood

Activity 3.1 (Undertake baseline oceanographic surveys) [Q3-Q4] - ongoing: An oceanographic mooring array was successfully deployed during January 2025 to identify the drivers of thermal variability in the benthic environment across the mesophotic depth range. Moorings comprised a variety of acoustic Doppler current profilers (ADCP) and temperature sensors. The deployment spanned 15 days to resolve the influence of the spring-neap cycle and was focussed on the region to the north-west of Ascension Island off Clarence Bay (**Evidence: Annex 4d: Video transects and moorings map**).

Activity 3.2 (Characterise and map the dominant oceanographic regime) [Q3-Q4, continuing into Year 2] - ongoing: Preliminary analysis of the oceanographic mooring datasets identifies the dominant impact of the tide in driving horizontal currents that, through their interaction with the sloping seafloor, further generates significant vertical excursions of the thermocline. The resulting internal waves cause temperature variations (at the 75 m isobath for which data are presented in **Evidence: Annex 4d: Preliminary oceanographic data**) of >4C within timescales of minutes; results from the deeper (100 m) and shallower (35 m) moorings further demonstrate the spatial extent of the thermocline excursions, identifying the role of the prevailing oceanographic regime in modulating the near-bed temperature throughout the mesophotic depth range.

Output 4: Survey results are used to produce management recommendations incorporated into MPA decision making tools

Activities 4.1 through 4.5 are only scheduled for Year 2.

Output 5: Raised on-island community awareness of mesophotic marine ecosystems

Activity 5.1 (Design community engagement strategy) [Q1-Q2] - ongoing: Drafting of a community engagement strategy is ongoing and due to be completed soon now that two Project Officers have been officially employed on this project. Engagement activities will also be supported by an additional staff member, the MPA Engagement and Development Officer. Aims outlined in this strategy will include sharing videos and imagery from surveys with the local community through presentations, social media, involvement with the Two Boats School and showcasing the mesophotic zone at the annual Marine Festival which will be held in August 2025. To date, a public presentation has been delivered at the NAAFI cinema to raise awareness of the mesophotic habitat and associated species throughout the MPA. This showcased videos and imagery generated by this project as well as other sites throughout the MPA as surveyed on the RRS Discovery cruise in 2022 and earlier German research cruises. The presentation was well attended with around 60 people in the audience (**Evidence: Annex 4d: Photo from public talk**).

Activity 5.2 (Develop outreach resources) [Q3-Q4] - ongoing: Newly collected imagery is still being analysed by the Project Officer with training from the University of Plymouth. Once the habitats and species have been identified, resources including fact sheets can be developed.

Activity 5.3 (Visit on-island school to run workshops) [Q3-Q4] - ongoing: Discussions have been initiated with the Two Boats School to determine the best options for integrating this project into the classroom. There may be opportunities to incorporate the long-term monitoring of the mesophotic habitat into the curriculum of the Marine Science GCSE class. There may also be opportunities to involve the lower grades in short workshops and fun activities to engage the younger children. These discussions will be progressed with the relevant teachers when classes resume after the Easter holidays.

Activity 5.4 (Develop citizen-science mini-project with MPA Youth Committee) [Q2-Q4] - ongoing: The MPA Youth Committee has been on a break since the departure of the coordinating AIGCFD staff member. After the Easter holidays, it will be reinstated and some of their upcoming activities will involve learning about the mesophotic habitat and species.

Output 6: Knowledge exchanged with other UKOTs

Activity 6.1 (Introduce project to knowledge exchange fellows) [Q2] - complete: Conversations were initiated and are ongoing with KEFs from St Helena, Gibraltar and Bermuda. We are in the process of finalising travel arrangements for the training programmed during the second field campaign.

Activity 6.2 (Identify how to port the project to other UKOTs) [Q3-Q4, continuing into Year 2] - ongoing: Initial discussions with KEFs have highlighted how we might adapt parts of the survey methodology to suit different technical capacities in other UKOTs (e.g., different vessel types). These discussions will largely take place during the in-person training in Year 2.

3.2 Progress towards project Outputs

Output 1: Improved On-Island Capacity for Mesophotic Marine Biodiversity Research

Prior to the project, the Ascension Island Government Conservation and Fisheries Directorate (AIGCFD) lacked the capacity to conduct mesophotic surveys due to a lack of specialized equipment, trained personnel, and established methodologies. Furthermore, owing to sporadic shark activity in recent years, SCUBA-based work has been postponed meaning marine biodiversity assessments were largely restricted to intertidal and shore/boat-based surveys. Over the past year, significant steps have been taken to address this gap.

Training materials and protocols have been developed to ensure AIGCFD staff can effectively use and maintain survey equipment. Four members of the AIGCFD team have received training in mesophotic survey methods (**Evidence: Annex 4b**), including camera operation and oceanographic sensor deployment. A preliminary best-practice protocol has been drafted and will be refined following further field deployments (**Evidence: Annex 4a**). Training session debriefs and Q&A indicate improvements in confidence and technical ability. These efforts

provide a strong foundation for long-term monitoring of mesophotic habitats, ensuring that AIGCFD will be able to conduct independent surveys by the project's conclusion.

Output 2: The Distribution of Mesophotic Benthic Species and Habitats at Ascension Island is Understood

The lack of systematic mapping of mesophotic ecosystems beyond diver depths has been a major barrier to effective conservation planning in the Ascension Island Marine Protected Area (MPA). Previous surveys, such as those conducted during the 2022 Blue Belt Discovery Cruise, provided limited imagery but focused on deep-water habitats (mostly 500 m+) and did not yield comprehensive habitat classifications. To support such systematic mapping, a stratified survey methodology was developed based on existing bathymetric data (**Evidence: Annex 4d: Video transects and moorings map**), ensuring that sampling efforts were capturing appropriate variability along the depth gradient, across topographic habitat types and in exposure to the prevailing currents.

The first field campaign successfully deployed drift cameras to survey mesophotic habitats, capturing high-resolution imagery of mesophotic coral communities and other benthic communities (**Evidence: Annex 4d: Example images**). Preliminary species identification and habitat mapping have begun (**Evidence: Annex 4d: Habitat map**), with initial data supporting the development of mesophotic habitat classifications. Raw data processing is ongoing, and a full analysis will be completed in the second year of the project. The publication of habitat maps and species records on open-access platforms, alongside updated biodiversity databases, will provide essential resources for conservation planning and research.

Output 3: Ecological and Environmental Drivers of Species and Habitat Distribution are Understood

Understanding the ecological and environmental drivers of species and habitat distribution in mesophotic ecosystems is critical for assessing the potential impacts of climate change and human activity. Before the project commenced, no systematic data had been collected on how oceanographic conditions, such as temperature and currents, influence mesophotic species distribution.

Over the past year, oceanographic moorings were successfully deployed at several locations, collecting short- and long-term data on water column properties (**Evidence: Annex 4d: Video transects and moorings map**). Correlations between oceanographic conditions and species distributions are yet to be explored given the delay in undertaking the first fieldwork campaign, but these findings will inform predictive habitat suitability models in the coming year. Data retrieval and preliminary processing from the recovered sensors has been completed (**Evidence: Annex 4d: Preliminary oceanographic data**), reinforcing the project's capacity to meet its research objectives within the project timeframe.

Output 4: Survey Results Used to Produce Management Recommendations

The integration of mesophotic survey results into management frameworks is a key aim of the project, as prior to its implementation, mesophotic habitats were not explicitly considered in Ascension's fisheries stock assessments, threat assessments, or MPA management plan.

While the full analysis of existing survey data, and the collection of additional survey data, is still in progress, preliminary GIS mapping of mesophotic species distributions has begun (**Evidence: Annex 4d: Habitat map**). Previous survey design was based on maps of rough bathymetry and estimated substrate types leading to suboptimal sites for research and monitoring. Integrating more accurate habitat maps into survey planning and site selection has already improved the methodology and data collection, leading to a better quality evidence base for decision making.

Output 5: Raised On-Island Community Awareness of Mesophotic Marine Ecosystems

Historically little has been known about the water surrounding Ascension Island below the safe diver depth of 30m. Community awareness of the Ascension Island MPA including the mesophotic and deep water habitats will lead to a higher appreciation of the marine environment and promote a sense of pride and ownership. It is important that knowledge gained through this project is shared throughout the community in a way that is accessible and meaningful to those that enjoy and depend on the MPA.

To date a public presentation has been delivered to the community which was very well attended. This provided an opportunity to share background information about mesophotic ecosystems in general as well as what is known so far for Ascension's environment. Images and data collected from previous research cruises as well as the first field season for this project were shared. Discussions and planning are underway for continuing opportunities to raise awareness throughout the community on the island as well as abroad. These include knowledge sharing events such as another public presentation in year 2 and the annual Marine Festival, integration into the Two Boats School curriculum, development of a citizen science program for all ages to interact with, and social media posts to share key findings.

Output 6: Knowledge Exchanged with Other UKOTs

The project is facilitating knowledge exchange with other UKOTs, ensuring that methodologies developed in Ascension can be adapted for use in other territories. Before the project, there was limited inter-UKOT collaboration on mesophotic biodiversity research.

KEFs from St Helena, Bermuda and Gibraltar have been introduced to the project, and discussions have taken place on how to adapt survey methodologies for their respective territories. The project aims to develop a replicable model that can be applied across other UKOTs with mesophotic ecosystems, contributing to broader conservation efforts beyond Ascension Island. The second fieldwork campaign scheduled for November 2025 includes KEFs receiving in-person training on Ascension Island, with time scheduled for in-depth discussion on how to best replicate projects in their respective OTs. Travel bookings for this visit are already in place (**Evidence: Annex 4f**).

3.3 Progress towards the project Outcome

The project's intended outcome is to improve understanding of the distribution of marine species and habitats and associated oceanographic conditions around Ascension Island to provide a scientific basis for evidence-based management recommendations for the marine protected area (MPA). Over the past year, substantial progress has been made toward achieving this outcome, with key fieldwork activities completed, data collection underway, and initial analyses supporting the development of species and habitat maps.

Outcome Indicator 0.1: Mesophotic ecosystems around Ascension Island are mapped and characterised according to species diversity and distribution by Year 2, Quarter 3 (Y2Q3)

Before the project commenced, no systematic mapping of mesophotic ecosystems around Ascension Island existed, and species distribution patterns at depths of 30–300 m were largely unknown. Without this knowledge, mesophotic ecosystems cannot be effectively incorporated into biodiversity monitoring or MPA management.

To address this gap, the project has successfully completed the first field campaign, deploying drift cameras and oceanographic sensors across key mesophotic habitats. High-resolution imagery has been collected from multiple survey sites, providing the first direct observations of benthic communities in this depth range. Preliminary analysis of this imagery suggests the presence of habitats of blue carbon significance including mesophotic coral habitats, rhodoliths and maerl beds. These may play an important role in supporting biodiversity and fisheries.

Habitat classification and species identification are ongoing. The development of mesophotic habitat maps is progressing in line with the project timeline, with a full dataset expected to be available by Y2Q3 for final analysis and publication.

Evidence for progress includes: (1) field deployment logs confirming successful survey execution, with cameras deployed across a range of mesophotic habitats; (2) preliminary species distribution data from analysed imagery confirm the presence of key blue carbon habitats; (3) GIS layers and draft habitat classification schemes have been developed and are being refined as additional data are processed.

The indicator is well-designed to measure progress towards this outcome, as it directly assesses the extent to which mesophotic ecosystems have been mapped and characterized. Given the success of the first field season and the data processing workflow in place, the project is on track to fully meet this indicator by Y2Q3.

Outcome Indicator 0.2: Project data are incorporated into MPA stock assessments, threat assessments, management plans, and the GIS mapping tool used in MPA decision-making by Year 2, Quarter 4 (Y2Q4)

Prior to the project, mesophotic habitats were not explicitly included in Ascension's key marine management frameworks, such as MPA stock assessments, threat assessments, or the inshore fisheries strategy. This was due to a lack of available data, preventing decision-makers from incorporating mesophotic habitats into conservation planning and fisheries management.

Preliminary species and habitat distribution data from the first field season have already been incorporated into draft GIS layers, forming the foundation for integrating mesophotic ecosystems into AIGCFD's decision-making processes. Additionally, discussions with AIGCFD managers have been initiated to determine how best to integrate mesophotic data into stock assessments and the broader MPA management framework. The full integration of mesophotic survey results into MPA decision-making tools will require the completion of Year 2 fieldwork and data analysis, particularly in terms of species distribution modelling and stock assessment updates. However, the project remains on schedule to achieve this indicator, with a structured plan in place for the final quarter of Year 2.

Evidence for progress includes: (1) draft GIS layers incorporating mesophotic species and habitat distributions have been produced; (2) engagement with AIGCFD managers has begun to ensure that data products align with management needs.

This indicator provides a strong measure of progress toward integrating project data into management frameworks, ensuring that research outputs translate into actionable conservation measures. While full integration depends on the completion of Year 2 data analysis, the groundwork has been laid, and the project is expected to meet this outcome by Y2Q4.

3.4 Monitoring of assumptions

Outcome-Level Assumptions

Assumption 1: Long-term monitoring can be implemented

Comments: This assumption remains partially valid. While the project is making strong progress in developing on-island capacity for mesophotic research, sustaining long-term monitoring beyond the project period will depend on continued funding and resource availability. To address this, the project is working closely with AIGCFD and potential funding bodies to explore post-project financing options. The training of AIGCFD staff ensures that expertise is retained locally, and by embedding mesophotic surveys into AIGCFD's routine monitoring framework, the likelihood of long-term sustainability is increased.

Assumption 2: Management of the MPA continues

Comments: This assumption remains valid. AIGCFD continues to actively manage the Ascension Island MPA, and there is strong institutional support for integrating mesophotic ecosystem data into conservation planning. Discussions with AIGCFD decision-makers confirm that project outputs, such as species distribution maps and habitat models, will be incorporated into the MPA's updated management plan. This commitment ensures that project findings will directly inform long-term conservation strategies.

Output-Level Assumptions

Assumption 3: Funding is available for long-term monitoring of the Ascension Island MPA

Comments: This assumption is uncertain and requires ongoing attention. While the Darwin Initiative grant supports short-term capacity-building, securing post-project funding is a priority. The project team is identifying potential funding sources, a Darwin Plus Strategic bid, to support continued monitoring efforts beyond the current grant period.

Assumption 4: Equipment is not lost or irreparably damaged during the project

Comments: This assumption remains valid, as all deployed equipment has been successfully recovered and is in working order. However, risks remain due to the harsh oceanic conditions around Ascension Island. Equipment maintenance protocols have been developed, and spare parts have been secured in advance to mitigate potential downtime.

Assumption 5: The fieldwork element of the project is successful

Comments: This assumption remains valid, as the first field season was successfully completed with all planned surveys undertaken. Favourable weather conditions allowed for efficient data collection, and no significant technical issues were encountered. The second field season will build on this success, with refined survey protocols ensuring further data quality improvements.

Assumption 6: There is sufficient data to provide definitions for habitat units

Comments: This assumption remains valid, though final validation of habitat units is ongoing. Initial image analysis suggests distinct benthic community types, and data collected so far are sufficient to develop a structured habitat classification scheme. Continued species identification and environmental data analysis will further refine these definitions.

Assumption 7: Environmental data available to the study or collected during the study can explain some aspects of species and habitat distributions

Comments: This assumption is likely to hold, as initial analysis of oceanographic sensor data suggests measurable variations in temperature, currents, and thermocline depth, which are expected to correlate with species distribution patterns. Further statistical modelling will explore these relationships in Year 2.

Assumption 8: Survey results show clear patterns that can be translated into management recommendations and decision-making tools

Comments: This assumption remains valid, as preliminary habitat maps and species distributions are already in production. Full incorporation into stock assessments and the MPA management plan will occur in Y2.

Assumption 9: People will attend a public meeting about the project and engage with a citizen science initiative

Comments: This assumption remains valid, as initial public engagement efforts have received positive responses. The first public meeting was well attended and a lengthy Q&A session following the presentation demonstrated interest and engagement with the topic. Other public engagement opportunities including the citizen science initiative will be targeting the school children, particularly the MPA Youth Committee. Their interest in other Conservation and marine topics has been very positive and similar activities have been well received. There has been a pause in the Youth Committee as we have had a change in staff, but the children are excited to resume activities and get involved in new science initiatives.

Assumption 10: There are persons interested in participating in a cross-OT event and future project proposals

Comments: This assumption remains valid, as KEFs from St Helena, Gibraltar, and Bermuda have been actively engaging with the project. Discussions are ongoing regarding scaling this research approach to other UKOTs, with funding opportunities being explored to support regional expansion.

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

The DPLUS213 project in the first year has actively contributed to enhancing our knowledge of the mesophotic environment around Ascension Island, a high priority research area identified in Ascension MPA Monitoring, Evaluation and Research Strategy. The increased capacity for surveying these environments combined with the data collected and tools generated from the outputs will directly help meet strategic objective (1) in Ascension Island MPA Management Plan, to 'conserve Ascension Island's marine biodiversity, habitats and ecological functions for long-term ecosystem health'. The knowledge sharing and community engagement will also help to meet strategic objective (3) 'to promote scientific research and share knowledge about Ascension Island's biodiversity'.

This project also helps to address an important principle in the Ascension National Biodiversity Strategy and Action Plan (NBSAP) that decisions are based on the best information available. A strategic improvement identified by the NBSAP is that baseline data is collected from mesophotic habitats. Already in the first year of the project, the field campaign completed collection of high-resolution imagery from stratified surveys around the island, providing information on benthic communities and oceanographic variability to begin the process of species identification and habitat mapping. Full analysis will be completed within the second year of the project to meet this objective.

Many of the targets of the Convention on Biological Diversity are also being addressed by this project. The baseline data and mapping specifically support targets 1,3,5 and 8 by providing information that is critical to informing effective management and reducing threats to biodiversity. Target 9 is also being addressed through better understanding of the distribution of exploited fish species and their associated habitats. Target 20 is being addressed through increased capacity building, transfer of technology and promotion of innovation locally and with knowledge exchange partners in other UKOTs. AIGCFD staff have received training in the first year of this project that will enable long-term monitoring of the Ascension Island MPA in a methodology that can be standardised for use throughout the Atlantic. In the second year of the project other UKOTs will be trained in the same technology and analysis to promote technical and scientific cooperation and foster joint research programs for better conservation outcomes across the whole Atlantic.

5. Gender Equality and Social Inclusion (GESI)

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.	X
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	

Since the project primarily focuses on research rather than direct community engagement or development, a "Sensitive" classification on the GESI scale is appropriate. The project has considered the GESI context in its design and implementation by ensuring that activities do not exacerbate inequalities and by incorporating inclusive practices where possible.

Justification for "Sensitive" Classification

The project takes into account the GESI context by considering accessibility and inclusivity in training and capacity-building activities. Opportunities for engagement, such as workshops and training sessions, are made available to all interested individuals, ensuring that participation is not restricted by gender, socioeconomic status, or other identity markers.

Consideration of Core GESI Principles

- Practice (attitudes, customs & beliefs): The project operates in an inclusive manner, ensuring that no group is unintentionally excluded from participation.
- Representation (participation, inclusion & power): Stakeholder engagement has been designed to ensure that a diverse range of voices, including young people and fishers (e.g., Activities 5.1-5.4), are included in discussions on biodiversity conservation.
- Resources (access & control of assets and services): Capacity-building activities, where applicable, are structured to provide equitable access to training and knowledge-sharing opportunities.

Lessons Learned & Challenges

Due to staff availability, and therefore a limitation beyond the project's control, only one woman was able to participate in training activities on the island (representing 25% of the trainees rather than the target of 50%). The second project officer, recently recruited and due to start 1st April, is female. She will receive training during the second-year field campaign. The project will continue to seek ways to broaden participation, ensuring that training opportunities remain as accessible as possible within the constraints of local staffing and resource availability.

While the project does not currently have a direct social inclusion mandate, it remains mindful of GESI considerations and is committed to ensuring that its activities are equitable and do not contribute to existing disparities.

6. Monitoring and evaluation

The project's monitoring and evaluation (M&E) approach is designed to demonstrate clear links between project outputs, activities, and the overall outcome through systematic tracking of progress against defined indicators.

As per the Darwin Plus application, each activity is aligned with a specific output, which in turn contributes to achieving the project outcome. For example, habitat mapping and survey training activities contribute to building local capacity (an output), which enhances the ability of AIGCFD to conduct independent monitoring and conservation actions (supporting the outcome). Similarly, data collection and analysis from field surveys will feed directly into improved biodiversity management strategies, demonstrating a tangible link between project interventions and long-term environmental objectives.

Regular progress meetings between project partners have been essential in ensuring transparency and alignment. These meetings provide a platform for reviewing activities, discussing challenges, and making data-driven adjustments where needed. Each partner plays an active role in M&E, contributing data and insights relevant to their specific areas of expertise. Information between partners is shared on online collaborative platforms (e.g., Google Drive) and via email communication.

One challenge identified over the past year has been the time required for recruitment to Ascension Island, which affected the timeline of some activities. This has prompted a review of the scheduling process to improve contingency planning in future project phases, and a submitted change request to the funder. No major changes have been made to the M&E plan itself.

7. Lessons learnt

What Worked Well

- Strong partnership and coordination between PML, the University of Plymouth and AIGCFD enabled successful planning and delivery of Year 1 activities.
- The first field season was successfully completed, with good-quality data collected across key sites using locally deployed equipment.
- Training materials and delivery methods were effective, with participants demonstrating increased technical competence and confidence.

What Didn't Work Well

- Delays in contract signing affected the Year 1 schedule with the first fieldwork campaign being pushed back
- The aforementioned delay also affected staff recruitment on Ascension Island resulting in a change request to move salary from Year 1 to Year 2
- Staffing constraints on Ascension Island meant only one female was available to participate in the training, resulting in a 25/75 gender balance, as opposed to the 50/50 target.
- Limited redundancy in trained personnel means the absence or turnover of staff could significantly affect continuity.

What We Would Do Differently

- Schedule field activities later in the timeline to accommodate delays in staff recruitment/contract signing.

- Build greater redundancy into capacity-building, by training additional individuals to cover core roles and mitigate availability risks.

Recommendations for Others

- In remote UKOTs, co-develop field methods with local partners who understand vessel constraints.
- When planning fieldwork, make sure to include a buffer to allow for bad weather (e.g., we spent three weeks on Ascension Island but were only able to sample for two - this was fine as we'd planned for this and still completed all planned transects and more)
- Invest in building large, multi-skilled teams, particularly in contexts with small staff pools.

How We Are Using These Lessons

- We have adjusted the Year 2 activity timelines to align with the new dates for the second fieldwork campaign.
- If possible, additional training opportunities will be offered to other AIGCFD staff members, with a focus on increasing gender representation and technical redundancy.
- Contingency plans for equipment and data processing workflows are being developed to reduce delays in survey preparation and analysis.

At this stage, no additional formal Change Request is planned, as adaptations fall within the current project scope and timeline.

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

There was no actionable feedback provided on our Year 1 half year report that we have been able to find.

9. Risk Management

No new risks have arisen in the past 12 months that were not already accounted for in the original project design and planning. All previously identified risks, such as delays in recruitment and fieldwork scheduling, remain relevant and continue to be actively managed through ongoing coordination between partners, flexibility in delivery timelines, and contingency planning.

As such, no significant adaptations to the project design have been required this year beyond minor adjustments to activity timelines, which remain within the original scope and objectives.

10. Scalability and durability

The project is making strong progress toward ensuring both the scalability and durability of its outputs and outcomes, laying the groundwork for a sustained legacy beyond the end of the funding period.

- Stakeholder awareness and engagement: Project stakeholders, particularly the Ascension Island Government (AIGCFD), have been closely involved in all stages of the project - from survey design to training and outreach. Regular communication, co-developed protocols, and shared fieldwork have ensured that key adopters fully understand the benefits, requirements, and future potential of mesophotic monitoring.
- Attractiveness to adopters: The project's approach, using accessible equipment and scalable methods, has been attractive to other UKOTs (e.g. St Helena, Bermuda, Gibraltar), whose representatives have engaged through the Knowledge Exchange Fellow scheme. AIGCFD has expressed strong interest in continuing mesophotic work

independently, supported by the development of in-house skills and ownership of project equipment.

- Incentives aligned with government priorities: The project directly supports Ascension's MPA Management Plan, biodiversity strategy, and environmental action planning, aligning with existing government incentives for sustainable marine management. The work also complements UK Government objectives under the Blue Belt programme.
- Shifting knowledge and behaviours: Public outreach (e.g. talks) has helped raise awareness of deep-sea ecosystems, previously unfamiliar to much of the Ascension community.
- Exit plan progress: As outlined in the original exit strategy, key steps to support longevity, such as developing a best-practice protocol, training AIGCFD staff, and integrating project data into GIS tools, are already well underway. Initial drafts of protocols and datasets are being refined, and GIS layers are being incorporated into AIGCFD's existing systems.
- Promoting long-term legacy: To extend the project's impact, we are exploring opportunities to support continued monitoring through additional funding sources, such as follow-on Darwin projects. Engagement with regional UKOT partners also supports future replication and scaling across other territories.

11. Darwin Plus identity

Darwin Plus was formally acknowledged during a public talk on Ascension Island during the first field campaign, with strong recognition of the programme's role in supporting local conservation efforts. Awareness of Darwin Plus is high within AIGCFD and the wider community, due to previous and ongoing Darwin-funded projects.

While the project does not operate its own social media channels, we plan to use the Ascension Island MPA's platforms (Instagram and Facebook) to share updates in Year 2 and will, of course, credit Darwin Plus. The Darwin Plus logo will be used on all public-facing materials and acknowledged as the funder in scientific outputs.

12. Safeguarding

[redacted]

Table 1: Project expenditure during the reporting period (1 April 2024 – 31 March 2025)

Project spend (indicative) in this financial year	2024/25 D+ Grant (£)	2024/25 Total actual D+ Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				

Operating Costs	[redacted]			
Capital items				
Others (Please specify)				
TOTAL	**£178,996**	**£180057**		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2024 – 31 March 2025)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)	[redacted]		AIG In-kind support for staff costs (Tiffany Simpson and Cuen Muller)
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).

In its first year, the DPLUS213 project has achieved a major scientific milestone: delivering the first dedicated survey of mesophotic habitats (30–300 m depth) within the Ascension Island Marine Protected Area (MPA). Until now, these habitats had never been directly observed or mapped in the region, but may be critical for biodiversity, fisheries, and blue carbon storage.

In November 2024, the project team completed a successful field campaign deploying drift cameras and oceanographic sensors across a range of mesophotic sites. This effort produced high-resolution imagery and environmental data that are already bettering our understanding of this poorly known zone. Initial analysis has confirmed the presence of several benthic habitat types including rhodolith beds, maerl beds, and mesophotic coral gardens – ecosystems that may play a vital role in carbon sequestration and fish population support.

Equally significant has been the development of local capacity. Four staff members from the Ascension Island Government Conservation and Fisheries Directorate (AIGCFD) have received hands-on training in survey equipment use and deployment techniques. This marks the first time AIGCFD has had the tools and expertise to monitor deeper ecosystems independently.

Community engagement has been strong. A well-attended public talk drew more than 60 residents, sharing never-before-seen footage of Ascension's mesophotic world. Feedback was enthusiastic, reinforcing local pride and interest in marine conservation. Plans are underway to expand outreach through school visits, citizen science activities, and participation in the 2025 Marine Festival.

Finally, the project has catalysed regional momentum. Knowledge Exchange Fellows from St Helena, Bermuda, and Gibraltar have joined discussions on scaling the approach across other UKOTs. The project's simple, cost-effective methodology offers a replicable model that could fill similar data gaps elsewhere.

These achievements mark a step change in marine science within the Ascension Island MPA and lay the foundation for evidence-based conservation of one of the Atlantic's most remote ecosystems.

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	Asc_MCEs_black_coral_garden.png	Never-before-seen mesophotic coral gardens in the Ascension Island MPA at 100 m depth. Credit: AIGCFD.	Instagram: @ascension_mpa Facebook: Ascension Island MPA	N/A

- **Annex 1: Report of progress and achievements against logframe for Financial Year 2024-2025**

Project summary	Progress and Achievements April 2024 - March 2025	Actions required/planned for next period
Impact AIGCFD will have the capability to manage and monitor important mesophotic habitats within the Ascension MPA.	The project has contributed to a positive impact on biodiversity by generating the first baseline data on mesophotic habitats around Ascension Island, enabling their planned inclusion in marine management and conservation planning for the first time. The identification of key benthic habitats such as rhodolith beds and mesophotic coral gardens supports the protection of biodiversity and informs sustainable fisheries strategies within the MPA.	[redacted]
Outcome The distribution of marine species and habitats, and associated oceanographic conditions, of Ascension Island are better understood and form the basis of evidence-based management recommendations for the marine protected area.		
Outcome indicator 0.1. Mesophotic ecosystems around Ascension Island are mapped and characterised according to species diversity and distribution by Y2Q3	Successfully completed the first field campaign (biological and oceanographic deployments. Preliminary analysis of datasets has begun. Preliminary habitat maps have been created. Evidence provided in section 3.3 of report and Annex 4d.	Ongoing analysis of biological and oceanographic datasets. Site selection and planning for the second field campaign.
Outcome indicator 0.2. Project data are incorporated into MPA stock assessments, threat assessments, management plans and GIS mapping tool used in MPA management decision making by Y2Q4.	Preliminary mesophotic species and habitat data have been used to create draft GIS layers and initiate discussions with AIGCFD managers on integrating this information into stock assessments and MPA management. Although full integration depends on completing Year 2 fieldwork and analysis, the project is on track, with clear progress and a structured plan to achieve this goal by the end of Year 2.	Ongoing discussion with AIGCFD managers Preparation of data for incorporation into assessments
Output 1. Improved on-island capacity for mesophotic marine biodiversity research. On-island partners are confident in all aspects of the process (maintenance of equipment, fieldwork, data and analysis and archiving).		
Output indicator 1.1. Four members of the AIG Conservation Team (50/50 male/female split if staffing allows) receive training in the use and maintenance of field equipment and design of survey methods by Y2Q1 [DPLUS-A01].	Four staff members (3 male and 1 female) have been training in the use and maintenance of the camera system and survey design. Evidence provided in section 3.2 of report and Annex 4b.	N/A

Output indicator 1.2. Four members of the AIG Conservation Team receive training in image processing and data analysis by Y2Q1 [DPLUS-A01].	Discussions are taking place regarding appropriate trainees and methods given the remote location (and therefore unstable internet) connection.	Identify trainees and deliver training sessions
Output indicator 1.3. A best-practice protocol for surveying mesophotic communities developed by Y2Q2 [DPLUS-C01].	Training materials and protocols have been developed to ensure AIGCFD staff can effectively use and maintain survey equipment. Evidence provided in section 3.2 of report and Annex 4a, 4c.	Continue developing draft survey protocol and training materials.
Output indicator 1.4. AIG Conservation Team has the capacity to conduct mesophotic monitoring surveys independently following established protocol by Y2Q3 [DPLUS-A03].	Led by the Project Officer, AIGCFD are planning to undertake additional independent data collection between field campaigns one and two.	AIGCFD continue to undertake independent data collection and keep skills up to date.
Output 2. The distribution of mesophotic benthic species and habitats at Ascension Island is understood.		
Output indicator 2.1. Detailed habitat/species maps are developed of mesophotic communities by Y2Q3.	Preliminary species identification has begun, and draft habitat maps have been created based on the data from the first field campaign. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of images from the first field campaign and update resulting habitat maps.
Output indicator 2.2. Habitat units within mesophotic ecosystems are defined by Y2Q3.	Preliminary analysis has facilitated identification of specific habitat units (habitat types); these have been mapped. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of images from the first field campaign and update resulting habitat maps.
Output 3. Ecological/environmental drivers of species and habitat distribution are understood.		
Output indicator 3.1. Species and habitats relationship with environmental drivers are formalised within a modelling framework by Y2Q3.	Biological and oceanographic datasets have been collected and are being prepared for modelling. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of biological (images) and oceanographic data from first field campaign. Format datasets ready for modelling framework.
Output indicator 3.2. Oceanographic environment affecting mesophotic ecosystems is described by Y2Q3.	Oceanographic moorings were successfully deployed at several locations, collecting short- and long-term data on water column properties. Preliminary analysis and description has begun. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of oceanographic data from the first field campaign. Prepare analysis for the addition of new data collected during the second field campaign.
Output 4. Survey results are used to produce management recommendations incorporated into MPA decision making tools.		

Output indicator 4.1. Outline possible climate-change induced shifts in distribution of target fish species in updated MPA stock assessments (> 3) and inshore fisheries strategies (using habitat/species maps and oceanographic mapping from output 2/3) by Y2Q4 [DPLUS-B02, DPLUS-C02].	Preliminary GIS mapping of mesophotic species distributions has begun, improving the evidence base for assessing climate-change-induced shifts in target fish species. Assimilation of this data into assessments is scheduled for Year 2. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of biological (images) and oceanographic data from first field campaign. Format datasets ready for stock assessment framework.
Output indicator 4.2. Incorporate knowledge of environmental and oceanographic drivers (output 2/3) into an improved MPA threat assessment by Y2Q4 [DPLUS-B01].	Preliminary GIS mapping of mesophotic species distributions has begun, improving the evidence base for assessing threats to the MPA. Assimilation of this data into assessments is scheduled for Year 2. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of biological (images) and oceanographic data from first field campaign. Format datasets ready for threat assessment framework.
Output indicator 4.3. Habitat/species maps from mesophotic zone (output 2) combined with deep-water work to broadly map blue carbon assets of MPA and inform research strategy.	Preliminary habitat maps derived from the first field campaign have been added to a GIS alongside the deep data collected during previous surveys. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of biological (images) and oceanographic data from first field campaign. Undertake a literature review on the blue carbon value of mapped habitats.
Output indicator 4.4. Use baseline ecological knowledge (output 2/3) to update MPA management plan (including recommendations) to ensure sustainable management of the 140km2 of the MPA that falls between 30 and 300 m by Y2Q4 [DPLUS-B01, DPLUS-D01].	Preliminary GIS mapping of mesophotic species distributions has begun, improving the evidence base for updating the MPA management plan. Assimilation of this data into assessments is scheduled for Year 2. Evidence provided in section 3.2 of report and Annex 4d.	Continue analysis of biological (images) and oceanographic data from first field campaign. Format datasets ready for management plan framework.
Output 5. Raised on-island community awareness of mesophotic marine ecosystems and their importance.		
Output indicator 5.1. At least 40 people have improved knowledge of mesophotic ecosystems following attendance at public and stakeholder meetings by Y2Q4.	A public presentation on mesophotic ecosystems, attended by around 60 people, has already been delivered, showcasing survey imagery and raising awareness of the habitat and associated species. A community engagement strategy is being finalised to further enhance outreach, with planned activities including school involvement, social media content, and participation in the August 2025 Marine Festival. Evidence provided in section 3.1 of report and Annex 4d.	Finalise community engagement strategy. Plan activities for the 2025 Marine Festival.

Output indicator 5.2. A minimum of 5 species/habitat factsheets created and distributed on Ascension website, local newspaper and by social media by Y2Q3.	Images are still being analysed by the Project Officer. Once the habitats and species have been identified, resources including fact sheets will be developed.	Continue analysis of image data from first field campaign.
Output indicator 5.3. A minimum of 3 school visits by the project officer to run sessions on marine biodiversity, why it's important and how to conserve it by Y2Q4.	Discussions have been initiated with the Two Boats School. Possibilities include incorporation of mesophotic ecology into GCSE frameworks, workshops and activities for younger pupils. Evidence provided in section 3.1 of report.	Resume discussions after the Easter holidays.
Output indicator 5.4. Co-development of an ongoing citizen science mini-project with MPA Youth Committee focused on engaging people with images and video (e.g. annotation) by Y2Q2 [DPLUS-B05].	Discussions have been initiated with the MPA Youth Committee. Platforms are being investigated to host a joint annotation project.	Resume discussions after the Easter holidays.
Output 6. Knowledge exchanged with other UKOTs.		
Output indicator 6.1. Successful knowledge exchange events include at least 3 people from 3 other OTs by Y2Q4.	KEFs from St Helena, Bermuda and Gibraltar have been introduced to the project. Discussions are ongoing about how to best port the project to other UKOTs with different fieldwork and capacity constraints. Travel arrangements are in place for KEFs to join the second field campaign.	Continue discussing the project with KEFs. Follow relevant training materials to the KEFs to consider how these may need to be changed based on OT.
Output indicator 6.2. Co-developed plans to replicate the project in at least 1 other UKOT produced by Y2Q4.	KEFs from St Helena, Bermuda and Gibraltar have been introduced to the project. Discussions are ongoing about how to best port the project to other UKOTs with different fieldwork and capacity constraints.	N/A

- **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: AIGCFD will have the capability to manage and monitor important mesophotic habitats within the Ascension MPA.			
Outcome: The distribution of marine species and habitats, and associated oceanographic conditions, of Ascension Island are better understood and form the basis of evidence-based	0.1 Mesophotic ecosystems around Ascension Island are mapped and characterised according to species diversity and distribution by Y2Q3.	0.1 Publication of maps on open access platforms. Screenshot of species record database. 0.2 Copy of updated documents (stock assessments, inshore fisheries	Long term monitoring can be implemented. Management of the MPA continues.

Project summary	SMART Indicators	Means of verification	Important Assumptions
management recommendations for the marine protected area.	0.2 Project data are incorporated into MPA stock assessments, threat assessments, management plans and GIS mapping tool used in MPA management decision making by Y2Q4.	strategies, threat assessment, research strategy and management plan). Screenshot of GIS mapping tool.	
Output 1 Improved on-island capacity for mesophotic marine biodiversity research. On-island partners are confident in all aspects of the process (maintenance of equipment, fieldwork, data and analysis and archiving).	1.1 Four members of the AIG Conservation Team (50/50 male/female split if staffing allows) receive training in the use and maintenance of field equipment and design of survey methods by Y2Q1 [DPLUS-A01]. 1.2 Four members of the AIG Conservation Team receive training in image processing and data analysis by Y2Q1 [DPLUS-A01]. 1.3 A best-practice protocol for surveying mesophotic communities developed by Y2Q2 [DPLUS-C01]. 1.4 AIG Conservation Team has the capacity to conduct mesophotic monitoring survey independently following established protocol by Y2Q3 [DPLUS-A03].	1.1 Record of training session attendance by 2 male and 2 female AIGCFD team members (if staffing allows). Self-assessment of skills pre and post training. 1.2 Record of training session attendance. Self-assessment of skills pre and post training. 1.3 Copy of protocol. 1.4 Record of results from AIG-led survey.	Funding is available for long term monitoring of the Ascension Island MPA. Equipment is not lost or irreparably damaged during the project.
Output 2 The distribution of mesophotic benthic species and habitats at Ascension Island is understood.	2.1 Detailed habitat/species maps are developed of mesophotic communities by Y2Q3. 2.2 Habitat units within mesophotic ecosystems are defined by Y2Q3.	2.1 Publication of maps on open access platforms. 2.2 Publication of report/paper describing habitat units with example images.	The field work element of the project is successful. There is sufficient data to provide definitions for units.

Project summary	SMART Indicators	Means of verification	Important Assumptions
Output 3 Ecological/environmental drivers of species and habitat distribution are understood.	3.1 Species and habitats relationship with environmental drivers are formalised within a modelling framework by Y2Q3. 3.2 Oceanographic environment affecting mesophotic ecosystems is described by Y2Q3.	3.1 Publication of report/paper quantifying the significance of different environmental drivers in terms of variance explained or similar metrics. 3.2 Publication of report/paper on the oceanographic conditions of Ascension Island.	Environmental data available to the study or collected during the study can explain some aspects of species and habitat distributions.
Output 4 Survey results are used to produce management recommendations incorporated into MPA decision making tools.	4.1 Outline possible climate-change induced shifts in distribution of target fish species in updated MPA stock assessments (> 3) and inshore fisheries strategies (using habitat/species maps and oceanographic mapping from output 2/3) by Y2Q4 [DPLUS-B02, DPLUS-C02]. 4.2 Incorporate knowledge of environmental and oceanographic drivers (output 2/3) into an improved MPA threat assessment by Y2Q4 [DPLUS-B01]. 4.3 Habitat/species maps from mesophotic zone (output 2) combined with deep-water work to broadly map blue carbon assets of MPA and inform research strategy. 4.4 Use baseline ecological knowledge (output 2/3) to update MPA management plan (including recommendations) to ensure sustainable management of the	4.1 Copy of updated MPA stock assessments and mapping tool. 4.2 Copy of updated threat assessment. 4.3 Broad-scale maps of blue carbon assets & research strategy. 4.4 Copy of management recommendations and updated management plans.	Survey results show clear patterns that can be translated into management recommendations and decision-making tools.

Project summary	SMART Indicators	Means of verification	Important Assumptions
	140km2 of the MPA that falls between 30 and 300 m by Y2Q4 [DPLUS-B01, DPLUS-D01].		
Output 5 Raised on-island community awareness of mesophotic marine ecosystems and their importance.	5.1 At least 40 people have improved knowledge of mesophotic ecosystems following attendance at public and stakeholder meetings by Y2Q4. 5.2 A minimum of 5 species/habitat factsheets created and distributed on Ascension website, local newspaper and by social media by Y2Q3. 5.3 A minimum of 3 school visits by the project officer to run sessions on marine biodiversity, why it's important and how to conserve it by Y2Q4. 5.3 Co-development of an ongoing citizen science mini-project with MPA Youth Committee focused on engaging people with images and video (e.g. annotation) by Y2Q2 [DPLUS-B05].	5.1 Number of local stakeholders attending the public meeting. Structured formal feedback from Attendees. 5.2 Document downloads/numbers printed. 5.3 Record of school sessions. 5.4 Copy of citizen science mini- project protocol and records of engagement.	People will attend a public meeting about the project. People will engage with a citizen science initiative.
Output 6 Knowledge exchanged with other UKOTs.	6.1 Successful knowledge exchange events include at least 3 people from 3 other OTs by Y2Q4. 6.2 Co-developed plans to replicate the project in at least 1 other UKOT produced by Y2Q4.	6.1 Feedback reports from UKOT representatives attending the event. 6.2 Draft project funding proposal.	There are persons interested in participating in a cross OT event and future project proposal. There are suitable funding streams to submit a proposal to.

Project summary	SMART Indicators	Means of verification	Important Assumptions
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) 1.1 Develop training protocols and resources for fieldwork and data analysis 1.2 Identify in-person fieldwork trainees (AIGCFD team members and knowledge exchange fellows) 1.3 Deliver training courses to on-island participants and knowledge exchange fellows 1.4 Combine above resources and lessons learnt from this project into best-practice protocol for surveying mesophotic communities 2.1 Design survey strategy to maximise knowledge acquired during baseline surveys 2.2 Undertake baseline biological surveys of mesophotic habitats around Ascension Island 2.3 Characterise and map the species and communities comprising mesophotic habitats around Ascension Island 3.1 Undertake baseline oceanographic surveys of mesophotic habitats around Ascension Island 3.2 Characterise and map the dominant oceanographic regime around Ascension Island 3.3 Investigate the role of oceanography in, and identify key forces driving, species distribution around Ascension Island 3.4 Develop state-of-the-art habitat suitability models for mesophotic habitats around Ascension Island 4.1 Integrate species distribution maps (including modelled distributions) and other key layers into AIGCFD GIS 4.2 Carry out new stock assessments and update inshore fisheries strategies for commercial species observed to use mesophotic habitats using habitat/species maps 4.3 Re-assess threats to the MPA based on vulnerability to change of key forces driving species distribution around Ascension Island 4.4 Update MPA management plan based on results of new stock and MPA threat assessments 4.5 Combine habitat maps from activity 2.3 with models from activity 3.4 with deep-water (>200 m) research to broadly map blue carbon in the Ascension Island MPA 4.6 Advise additions to AIG's MPA research strategy relating to blue carbon assets 5.1 Design community engagement strategy based around sharing imagery and video from surveys 5.2 Develop outreach resources (e.g. marine species fact sheets) using newly-collected imagery 5.3 Visit on-island school to run workshops, incorporating marine biodiversity and conservation into the curriculum 5.4 Develop citizen-science mini-project with MPA Youth Committee to involve on-island community in analysis and sorting of image and video data 6.1 Introduce project to knowledge exchange fellows 6.2 Through discussion, identify how best to develop the project further so that it can be successfully ported to other OTs			

Project summary	SMART Indicators	Means of verification	Important Assumptions
6.3 Work with knowledge exchange fellows to draft project funding proposal to port project to other OTs			

■ Table 1 Project Standard Indicators

Please see the Standard Indicator guidance for more information on how to report in this section, including appropriate disaggregation.

DPLUS Indicator number	Name of indicator	If this links directly to a project indicator(s), please note the indicator number here	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DPLUS-A01	Number of people in eligible countries who have completed structured and relevant training.	1.1, 1,2	Number of people	Men	3	N/A	N/A	3	2
DPLUS-A01	Number of people in eligible countries who have completed structured and relevant training.	1.1, 1,2	Number of people	Women	1	N/A	N/A	1	2
DPLUS-C01	Number of best practice guides and knowledge products published and endorsed.	1.3	Number	Ascension Island	0	N/A	N/A	0	1
DPLUS-A03	Number of local or national organisations with enhanced capability and capacity.	1.4	Number of organisations	Public	1	N/A	N/A	1	1
DPLUS-B02	Number of new or improved species management plans available and endorsed.	4.1	Number of plans	Improved	0	N/A	N/A	0	1
DPLUS-C02	Number of new conservation or species stock assessments published.	4.1	Number	Fauna	0	N/A	N/A	0	1
DPLUS-B01	Number of new or improved habitat management plans available and endorsed.	4.2, 4.4	Number of plans	Improved	0	N/A	N/A	0	1
DPLUS-D01a	Area of land or sea under ecological management; Area under Sustainable Management Practices	4.4	Number of hectares	Improved	0	N/A	N/A	0	14000
DPLUS-B05	Number of people with increased participation in governance.	5.3	Number of people	Ascension Island	0	N/A	N/A	0	12

■ 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)

- **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, scheme, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	Yes
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	Yes
Is your report more than 10MB? If so, please consider the best way to submit. One zipped file, or a download option, is recommended. We can work with most online options and will be in touch if we have a problem accessing material. If unsure, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	N/A
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.	Yes
Have you provided an updated risk register? If you have an existing risk register you should provide an updated version alongside your report. If your project was funded prior to this being a requirement, you are encourage to develop a risk register.	Yes
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 15)?	Yes
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	