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Award

## The Canyons MCZ DY200 drop camera & AUV data analysis

JNCC SUPPORT CO

UK6: Contract award notice - Procurement Act 2023 - [view information about notice types](#)

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### Scope

### Reference

C25-0810-2081

### Description

NOC and JNCC will conduct a survey aboard the RSS Discovery (DY200) to gather evidence to monitor The Canyons MCZ and inform assessment of condition of the designated features of the site.

The Canyons MCZ is in the far south-west corner of the UK continental shelf and is unique within the context of England's largely shallow seas due to its depth, sea-bed topography and the coral features it contains. The designated features of The Canyons MCZ are listed in Table 1. More information on The Canyons MCZ can be found in the JNCC site information centre (<https://jncc.gov.uk/our-work/the-canyons-mpa/>).

Table 1 Designated features of The Canyons MCZ

Protected Feature Feature Type

Deep-sea bed BROADSCALE marine habitat

Cold-water coral reefs Marine habitat

Coral gardens Marine habitat

Sea-pen and burrowing megafauna communities Marine habitat

JNCC has been invited to collect imagery and video data on an upcoming survey to the Canyons MCZ by the National Oceanographic Centre (NOC), aboard the RRS Discovery as part of the DY200 expedition.

Figure 1 Location of The Canyons MCZ in the context of Marine Protected Areas proximal to the site with existing multibeam data from previous surveys to The Canyons MCZ from the MESH 2007, JC125 (2015) and JC237 (2022) surveys, and EMODnet bathymetry.

### 3. Project Aims

JNCC requires the analysis of seabed imagery (stills and video) collected on the DY200 survey from the drop-down camera and Autonomous Underwater Vehicle (AUV). As the survey has not been completed yet, estimates of still image numbers and video length have been provided. These numbers may be subject to change after the survey and will be discussed with the relevant contractor.

Table 2 Estimated number of stills and video data to be analysed from DY200.

Data type	Quantity
Drop camera video	50 hours video
Drop camera stills	5,000 images
AUV stills	1,000 images

The following will be supplied to the successful contractor:

- Access to BIIGLE project with all stills, video and label trees.
- o Please email the contacts for technical information (see page 1) if you would like to be added as a guest to the BIIGLE project to review the imagery.
- Epibiota Quality Assurance Framework Proforma spreadsheets

### 4. Project Objectives

1. Analysis of stills and video taken with the drop-camera system
2. Filtering, processing and analysis of a subset of AUV imagery
3. Provide substrate and taxonomic image reference collections for each substrate type and taxon identified from imagery.
4. Produce a final analysis report including, at a minimum, sections detailing the methodology, results, and details of all QA work undertaken with any remedial action deemed necessary. The report should be no longer than 10,000 words including all tables and appendices and be provided electronically via email as a Microsoft Word document.
5. Produce a report comparing the ability of the AUV and the drop camera to identify the following deep-sea features (if present in the AUV data) and make recommendations on the most appropriate survey technique for these features.
  - o Coral gardens
  - o Seapen and burrowing megafauna
  - o Deep Sea Sponge aggregations (if present in the data collected)
6. Create a subset of stills annotated in a way suitable to act as training data for artificial intelligence model training as described below

The contractor must

- Undertake the analysis as set out below and adhering to the NMBAQC Epibiota interpretation guidelines (Turner et al, 2016). Please note these guidelines are currently being updated by JNCC - the contractor must check with JNCC if the updated guidelines are available when the contract starts.
- Use BIIGLE to annotate video and stills as described below. Alternative image annotation software may be used subject to agreement with the project officer.
- Ensure that stills and video references used in analysis outputs are identical to those used in the naming of the original media to enable future reconciliation between data and media. If identical naming is not possible, a suitable alternative should be sought with JNCC.

Some information, where specified, may be recorded directly into the proformas provided. The majority will be recorded first into BIIGLE and then used to populate the proforma. No analysis additional to what is described in this document is required. Any deviation from this methodology should be approved in writing by the project officer.

#### 4.1. Analysis of video data from drop-camera

Video should be analysed in BIIGLE using the label trees shown in Table 2. A high-level review should be conducted as described in section 2.1 of Turner et al (2016).

Annotations can be added to videos as either tier 1 or tier 2 annotations depending on the label tree used. More details on the video annotation tiers and how they should be applied are provided in Appendix A.

Video will be analysed to extract the following information (all information should be recorded using the provided BIIGLE label trees, unless specified otherwise):

1. Video should be segmented into areas of continuous broadscale seabed habitat type (detailed in step 2) greater than or equal to 5 m along transect distance; JNCC will provide positional information for this purpose. The segment label tree should be used to delineate these segments and labels from other trees should be attached to each segment using the "add label" tool in BIIGLE.
2. The Marine Habitat Classification of Britain and Ireland (v 22.04) will be used, and a new segment should be started if the habitat classification changes.
3. Each segment will be assigned image quality scores using labels from the following two label trees. Further analysis of video segments will be dependent on the image quality score. For example, if a segment is given a score of zero, no further analysis should be carried out for that segment.
  - a. NMBAQC image quality, a summary of these scores is shown in Table 3 and described in more detail in section 2.1 of Turner et al (2016).
  - b. JNCC image quality, a summary of these labels is shown in Table 4.
4. Identify evidence of anthropogenic impacts on the seabed:
  - a. Use the litter label tree to record the presence of litter using the categories listed in Annex 5.1 of the Joint Research Centres Guidance on Monitoring of Marine Litter in European Seas<sup>6</sup>.
  - b. Use the Anthropogenic label tree to annotate trawl marks or anthropogenic impacts other than litter. This will not be a complete label tree and new labels may need to be added to the label tree.
5. Use the biotope label tree to assign biotopes, up to level 6 of the Marine habitat classification of Britain and Ireland hierarchy and in accordance with Parry (2019)<sup>7</sup>.

A reference collection of representative images must be provided for each discrete habitat

and biotope identified.

#### 4.3. Developing training data for artificial intelligence

AI deep-learning algorithms have the potential to be applied marine monitoring to detect animals in imagery. Pilot studies have highlighted the need for the development of a high-quality manually annotated dataset composed of images showing the diverse range of UK marine habitats in order to effectively train AI for this purpose.

In addition to providing costs for the analysis described above, please provide quotes for the following preparation of 100 stills from the drop-camera in BIIGLE to form a suitable training dataset for Artificial Intelligence models:

1. Stills will be re-annotated using a bounding box. Images of image quality zero (NMBAQC equivalent) should be excluded:
    - a. All points and polygons must be converted into a rectangle suitable for use in an AI model
    - b. Example box annotations for fauna annotated with a point will be provided to the successful contractor to enable an average box size (in pixels) to be estimated
  2. JNCC will provide 100 images randomly selected from across the dataset and from varying time points in a transect .
  3. Re-annotated images will be stored in a separate BIIGLE volume within the 2023 PBR survey project.
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## **Contract 1. The Canyons MCZ DY200 drop camera & AUV data analysis**

### **Supplier**

- NATIONAL OCEANOGRAPHY CENTRE INNOVATIONS LIMITED

### **Contract value**

- £160,000 excluding VAT
- £192,000 including VAT

Below the relevant threshold

### **Award decision date**

8 August 2025

### **Earliest date the contract will be signed**

9 October 2025

### **Contract dates (estimated)**

- 13 October 2025 to 16 March 2026
- 5 months, 4 days

### **Main procurement category**

Services

### **CPV classifications**

- 71700000 - Monitoring and control services
- 71900000 - Laboratory services

- 73112000 - Marine research services

## **Contract locations**

- UK - United Kingdom

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## **Procedure**

### **Procedure type**

Below threshold - without competition

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## **Supplier**

### **NATIONAL OCEANOGRAPHY CENTRE INNOVATIONS LIMITED**

- Companies House: 12250763
- Public Procurement Organisation Number: PRNW-5418-WCBR

National Oceanography Centre

Southampton

SO14 3ZH

United Kingdom

Email: [nocbusiness@noc.ac.uk](mailto:nocbusiness@noc.ac.uk)

Website: <https://noc-innovations.com/>

Region: UKJ32 - Southampton

Small or medium-sized enterprise (SME): Yes

Voluntary, community or social enterprise (VCSE): No

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## Contracting authority

### JNCC SUPPORT CO

- Companies House: 05380206
- Public Procurement Organisation Number: PRPL-6981-TDJT

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Email: [contractqueries@jncc.gov.uk](mailto:contractqueries@jncc.gov.uk)

Region: UKH11 - Peterborough

Organisation type: Public authority - central government

Devolved regulations that apply: Scotland