

Acknowledgements

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Executive Summary

General Findings

The survey SeaRover (Sensitive Ecosystem Assessment and ROV Exploration of Reef) 2018 aimed to map the distribution and abundance of Ireland's geogenic and biogenic reef habitat along the Irish continental margin from Porcupine Bank up to the Rockall Bank (Figure 1) with high-definition (HD) camera. The 2018 survey is one of three surveys commissioned and jointly funded by the Irish Government and the EU's European Maritime and Fisheries Fund.

This technical report provides a detailed ecological analysis of 52 ROV dives.

The following briefly summaries the findings of this analysis and additional detail available in the subsequent chapters.

Reef/Non-reef

- 27 dives encountered geogenic reef
- 29 dives encountered biogenic reef
- 17 dives hosted neither biogenic nor geogenic reef

Diversity

- 344 putative species were identified from HD video footage supplemented by high resolution imagery (using operational taxonomic unit (OTU) system as it is not always possible to identify fauna to species level)
- 86 OTUs were identified in the most species rich dive (D538/RB15)
- 3 OTUs were identified in the least species rich dive (D563/PB34)
- 52 OTUs were identified on the average dive
- 9 OTUs were found in more than half of the transects
- 55 OTUs were found in only one transect

Biotopes

- 48 potential biotopes were identified in line with the Marine Habitat Classification for Britain and Ireland (v.15.03), of which:
 - 43 are existing biotopes, un-altered from the MHCBI listing
 - 4 are potential new biotopes, or variant which may warrant becoming new child biotopes
 - 16 variant biotopes that follow the existing biotope descriptions, but variations of depth zones and morphologies were observed

Conservation targets

- 44 dives encountered conservation listed habitats, being either an ICES Vulnerable Marine Ecosystem, and/or an OSPAR Threatened and/or Declining Habitat.
- 10 dives encountered conservation listed species (ICES/IUCN)
- 2 conservation listed species were encountered:

- 7 dives encountered *Hoplostethus atlanticus* (Orange Roughy) including one dive where they were aggregated and abundant (D541/RB20)
- 7 dives encountered *Centrophorus squamosus* (Leafscale Gulper Shark)

Observations of note

- Atlantic boreo-arctic deep sea sponge *Strhyphus fortis* was encountered on 3 SeaRover dives (D575/PB21, D531/RB06, D545/RB30), and once with epibiont *Hexadella deditifera*. This is the first record of *S.fortis* in the Rockall and Porcupine Bank.
- Sub-fossil corals were encountered for the first time in the Rockall and Porcupine Bank. They were found in 3 SeaRover dives (D557/PB17, D559/PB27, D564/PB16) between 2070 and 2700 m depth.
- A large school of blackmouth catsharks (*Galeus melastomus*) was found around thousands of elasmobranch egg cases in 1 SeaRover dive (D573/PB23). Egg cases were found on dead coral rubble and no juveniles were observed.
- The most epifaunally diverse dive was the D538/RB15 at 900 m depth. The community included many species of sponges (e.g. *Asconema*, *Phakellia ventilabrum* and *Aphrocallistes* sp) and coral gardens (including colonies of *Lophelia pertusa* and *Madrepora oculata*) on hard substrata.

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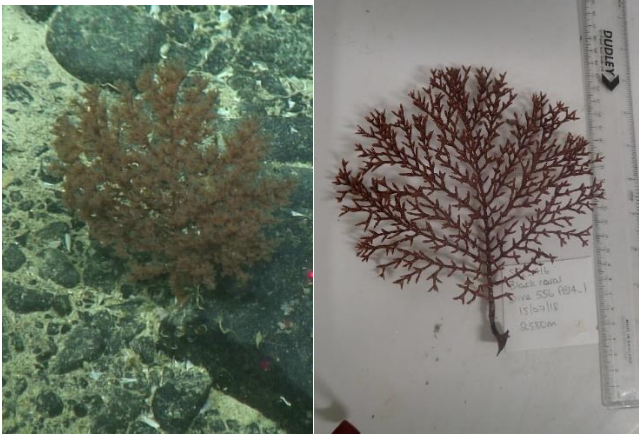

1. Recommendations

1.1 Species ID imagery and/or sampling

Many successful imagery grabs and sampling were carried out in SeaRover 2018, which allowed the identification of potential new species (Table 1). Further confirmation is required for official higher taxonomical classification. In the following table, examples of successful imagery and/or sampling efforts and 'unidentifiable' species are presented (Table 2).

However, improvements should be considered at this stage to increase the chance of better ID.

Table 1 Examples of successful imagery and/or sampling of species found in Rockall Bank and Porcupine Bank during SeaRover 2018 including dive, transect, images, O.T.U. species name and description.

Dive	Transect	Digital still images/image grabs	O.T.U. species name	Description
556	PB14		1208 Stauropathes	This Stauropathes sp has never been recorded before SeaRover 2018 in Irish waters. Further species ID is required. Species sampled in SeaRover 2018.
544	RB29		994 Metallogorgia, Iridogorgia or Cirripathes.	This white spring-like individual was encountered a few times in the video analysis. Species sampled in SeaRover 2018.

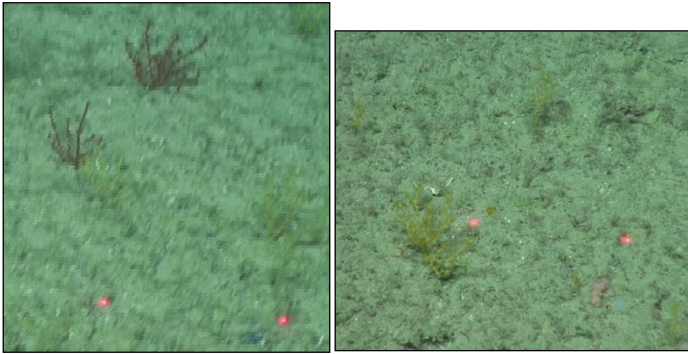
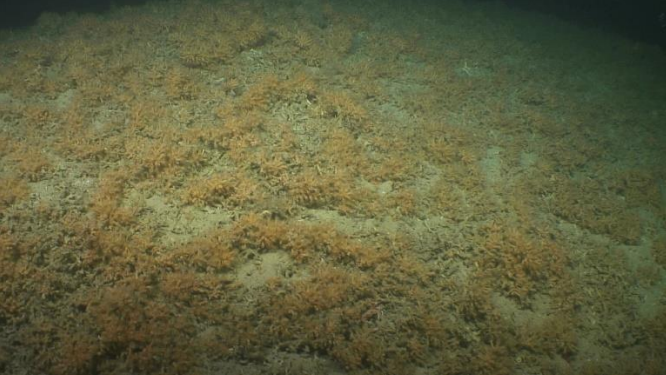
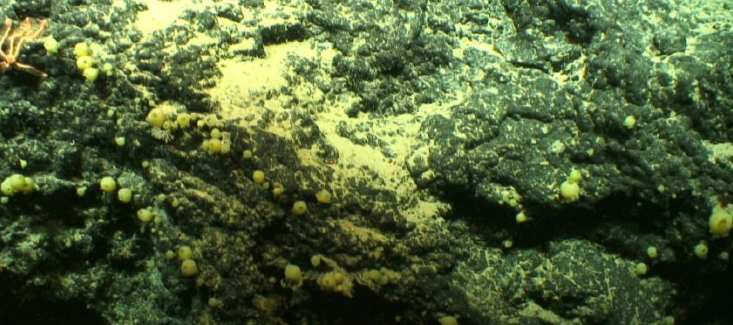
557A PB17



1203 Corallium
sp2

This is the first record of Corallium in the <http://www.deepseacatalogue.fr/>. High-resolution zoomed-in image allowed for higher taxonomic ID.

Table 2 Examples of unidentified species found in Rockall Bank and Porcupine Bank during SeaRover 2018 including dive, transect, images, O.T.U. species name and description.

Dive	Transect	Digital still images/image grabs	O.T.U. species name	Description
575 562	PB21 PB33		1215 Unknown anthozoa (red) 1028 Unknown anthozoa (yellow)	Image resolution was not good enough for ID purposes and they are catalogued as 'Unknown anthozoa red' and 'unknown anthozoa yellow'. Sampling effort should be considered when next encountered.
572	PB32		1217 Zoanthidae sp5	Extensively encountered in D572/PB32 and it is a potential new species of Zoanthidae in Irish waters. Sampling effort should be considered in this case.
564	PB16		Porifera/Tunicates?	Small yellow spherical individuals (<3cm) are unidentifiable. Sampling should be considered at the next encounter.

As in SeaRover 2018, a “wanted” list with species will be provided ready for SeaRover2019.

1.2 New Biotopes

Biotopes were assessed based on the Marine Habitat Classification for Britain and Ireland (MHCBI) (v.15.03) new deep sea section. However, the video analysis annotated variations to the former and suggestions are included in the subsequent chapters. Nevertheless, the below annotations and suggestions should be re-assessed before officially implementing any variations and additions to the current MHCBI deep sea section. The biotopes assessment was conducted by eye and therefore investigation that is more detailed should be considered.

1.2.1 Minor variants

Some minor variations of listed biotopes has been annotated throughout the video analysis. Variants of biotope stem from the existing MHCBI biotope descriptions but differ in depth zones and morphologies. The existing classification acknowledges that these are likely to be found and therefore this dataset might fulfil the data gap required to add new biotope variants.

Depth variant biotopes follow the existing biotope description, however some assemblages were found in a new depth zone. An example of new depth zone is “Burrowing anemone field in Atlantic mid bathyal mud (M.AtMB.Mu.BurAne)” which is already listed, however similar biotope was found at shallower zones. In total, 4 potential depth zone biotope variants were encountered in this analysis. Noteworthy, (var)M.AtMB.Mu.EreCor.AcaArb was already recorded in SeaRover 2017.

A total of 12 minor variations of morphologies were recorded throughout the analysis. These variations are notable for the abundance of dominant species in the listed biotope and could potentially be incorporated as new child biotopes into the existing list. For examples, deep sea sponge aggregations were likely to be encountered in large communities and mostly dominated by one species of porifera. This was recorded for *Polymastia penicillus* at mid bathyal on mud and *Mycale lingua* at upper bathyal on rock and hard substrata.

List of potential new child biotopes are indicated as (var) in the excel spreadsheets and listed in Table x. Should these variations be considered, further investigation is recommended.

1.2.2 Potential new biotopes

The following four variants were observed in this analysis. One of these potential new biotopes was described in SeaRoVer 2017. Should these variations be considered, further investigation is required.

Potential New Sub Fossil Corals biotope

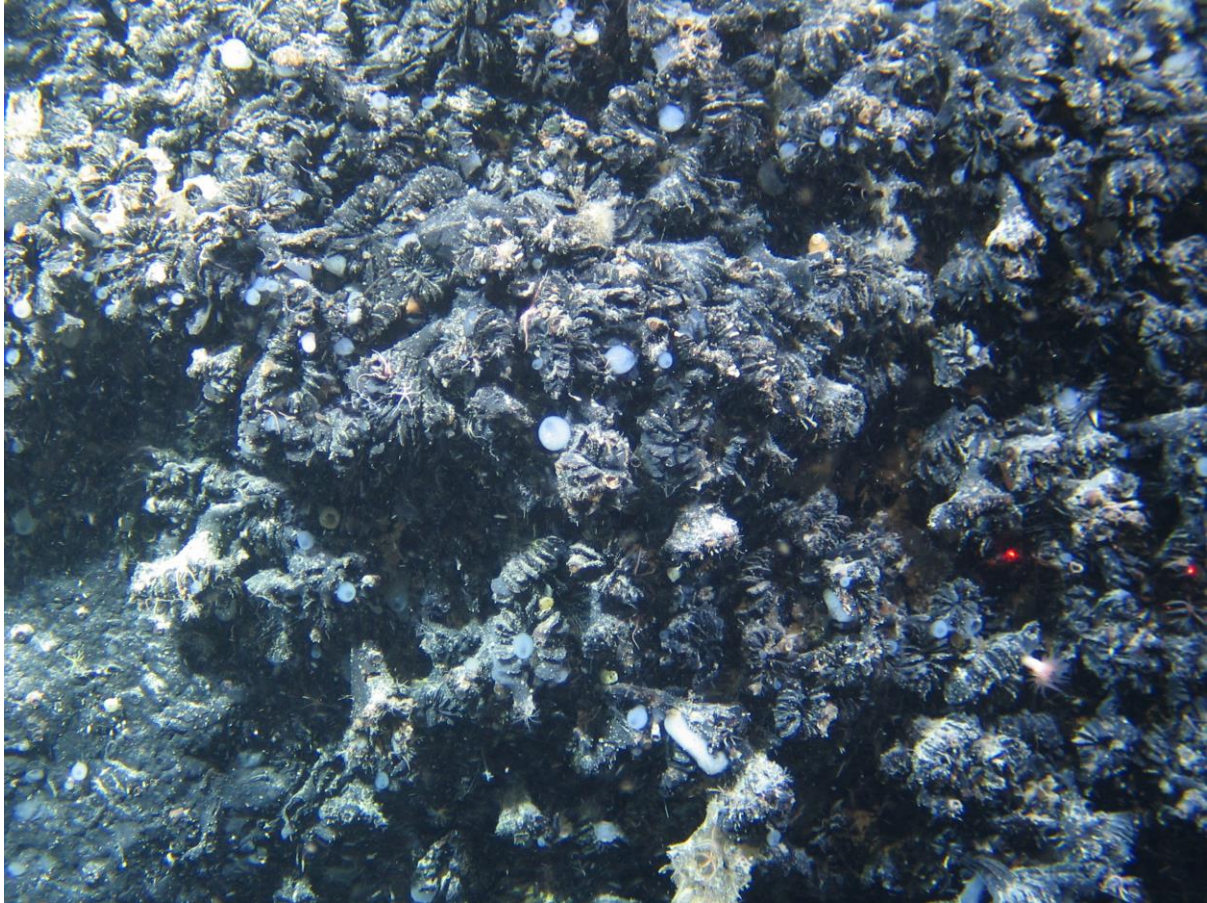


Figure 1 Image of potential new deep biotope with sub fossil corals (IMG_7015.JPG from D557/PB17)

Noted in the analysis as:

- (var) M.AtUA.Bi: (variant of) Atlantic upper abyssal biogenic structure
- Seen in transect PB16, PB17, PB19

This assemblage is likely to be formed by scleractinian corals. Sub fossil corals completely covered vertical walls on deeper transects (>2000 m depth). This biogenic reef was associated with high diversity of other fauna; often observed with a suspected bacterial mat presenting as 'cobweb' in appearance.

This assemblage is likely to be new to the classification. It has never been observed in the Porcupine Bank canyons as deep sea research in this area rarely reached these depths and only recently the exploration of >2000m became accessible. The novelty and consistency of this biotope may be considered a new child biotope.

Sub fossil specimens were sampled in the survey.

Potential New Aphrocallistes Biogenic Reef biotope

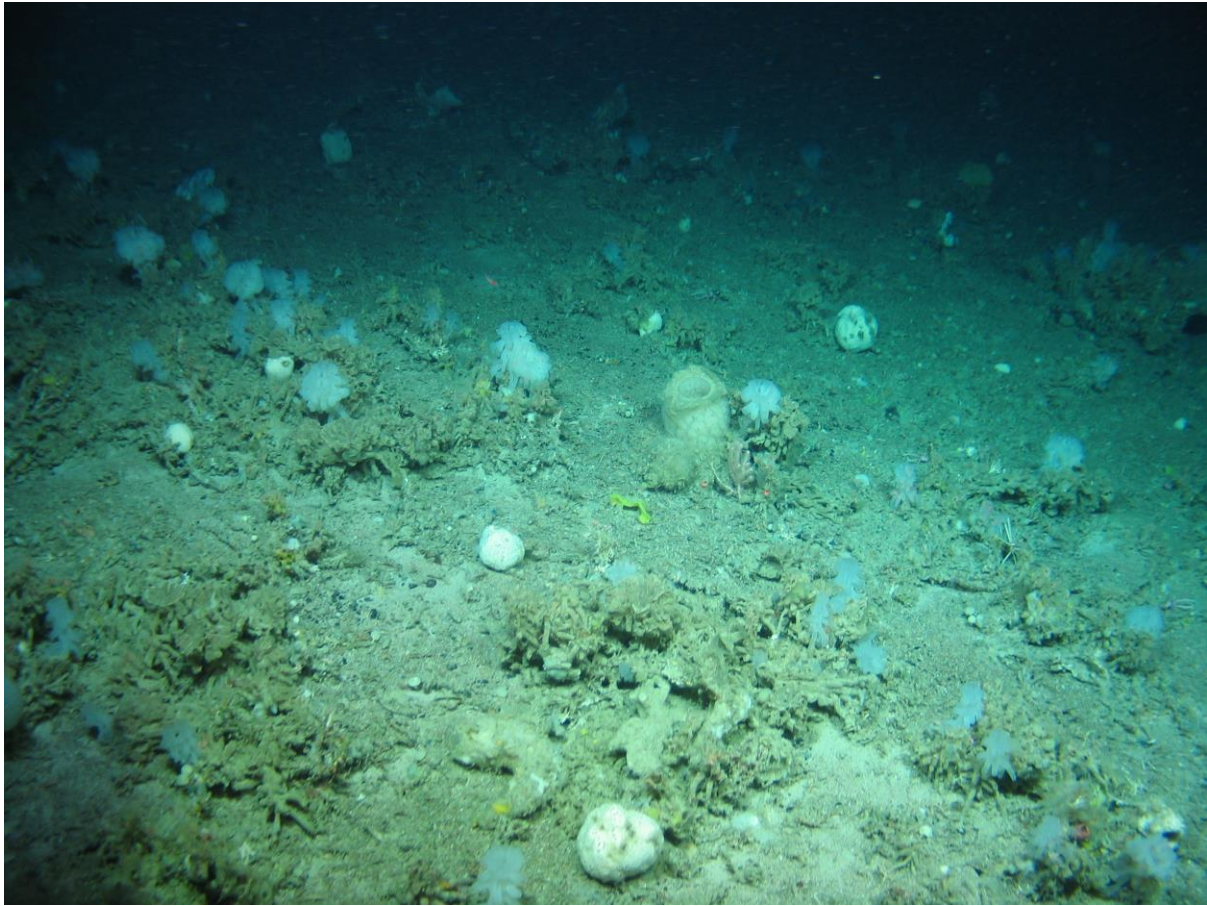


Figure 2 Image of potential new Aphrocallistes biogenic reef biotope (IMG_2123.JPG from D545/RB30).

Noted in the analysis as:

- (var) M.AtMB.Bi: (variant of) Atlantic mid bathyal biogenic structure
- Seen in transect RB30

This potential new biogenic reef biotope is formed of Aphrocallistes sponges and grows over the surrounding area forming a secondary substrate over the top. It provides a stable surface for epifauna to attach. The seafloor is completely covered and was observed associated with high diversity of fauna, including lobose sponges and Lophelia colonies.

This assemblage is likely to be new to the classification and this record is likely to be the first of deep sea sponge reef on Rockall Bank.

Potential New Zoanthidae biotope

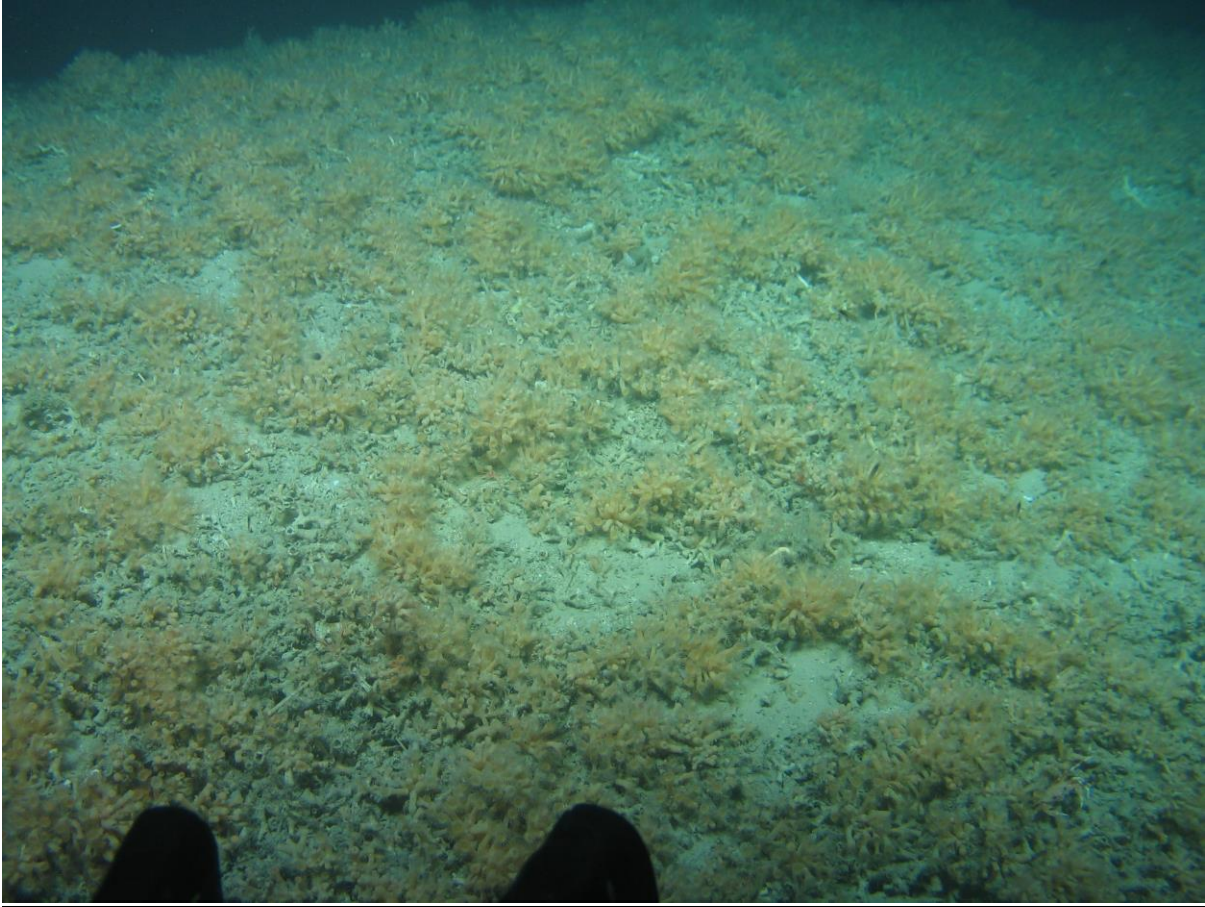


Figure 3 Image of potential new deep biotope with Zoanthidae reef (IMG_1421.JPG from D572/PB32)

Noted in the analysis as:

- (var) M.AtUB.Bi.CorRee: (variant of) Atlantic upper bathyal cold water coral reef (biogenic structure)
- Seen in transect PB32

This assemblage is formed of Zoanthidae species on *Lophelia pertusa* reef rubble (recorded in the analysis as Zoanthidae OTU1217). The zoanthid completely covered the coral rubble forming a secondary substrate over the top. It is associated with other coral species, including live *Lophelia pertusa* colonies and high diversity of other fauna.

Potential New Stalked Crinoids, Sponges, and Corals biotope

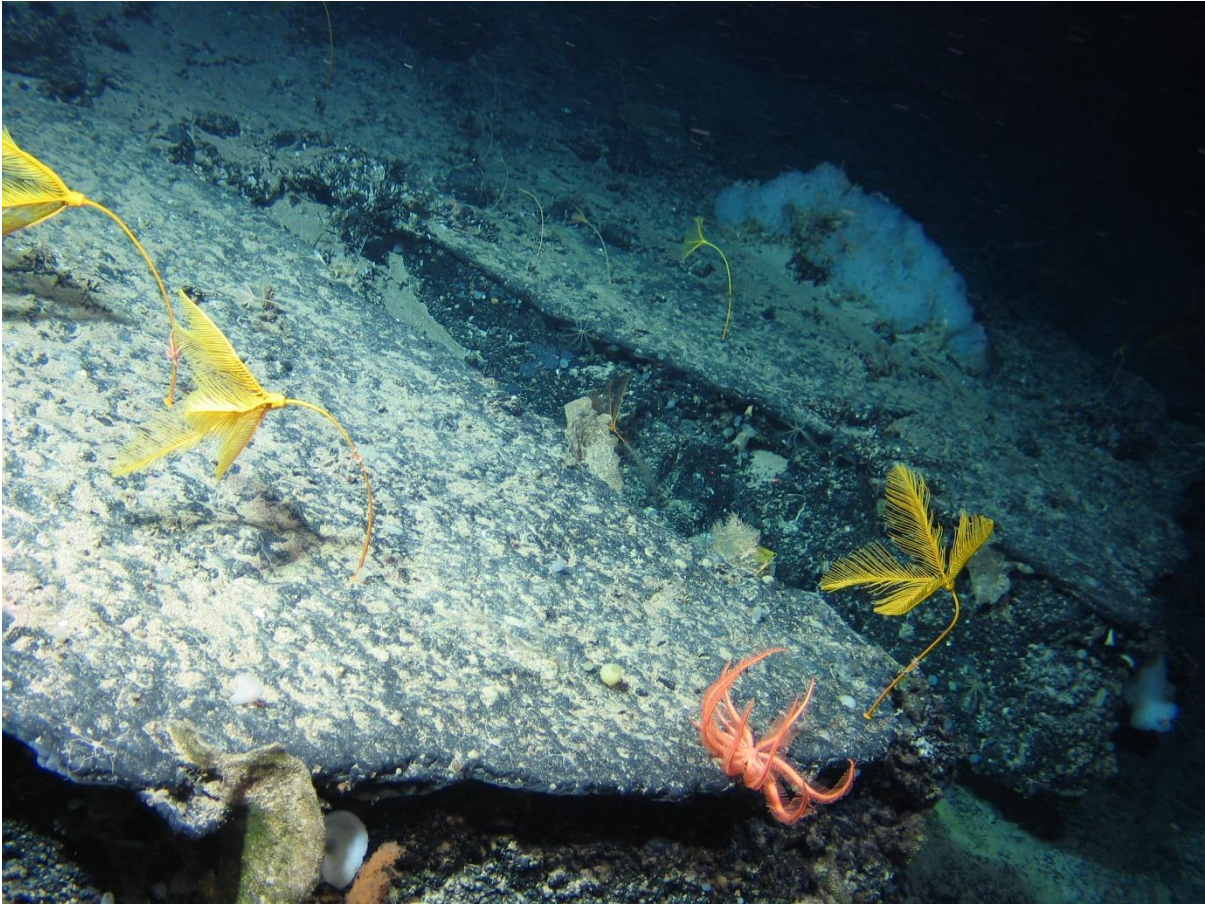


Figure 4 Image of potential new deep biotope with stalked crinoids, sponges and corals (IMG_7285.JPG from D557/PB17)

Noted in the analysis as:

- (var) M.AtUA.Ro: (stalked crinoids, sponges and corals on) Atlantic upper abyssal rock and other hard substrata
- Seen in transect PB17

This assemblage is formed of stalked crinoids, sponges, and corals on hard substrate. It resembles the mixed coral rock assemblages, but corals are rarely dominant.

This biotope was observed at >2000m. The SeaRover 2017 report already noted the peculiarity of this assemblage: it was suggested that the water dynamics present at those depths may promote such diversity and further surveying effort of upper abyssal geogenic features should be paramount for future explorations.

1.3 Future Work

Future survey efforts could focus on:

- Physical sampling of taxa commonly observed in video and imagery but not yet positively identified.
- Understanding whether the sub-fossil coral habitat is present south of the Porcupine Seabight.
- Collecting additional data on hard substrate fauna at depths >2000m as these areas are less well known than shallow hard substrate areas.
- Revisiting the elasmobranch nursery ground observed in D573/PB23. This special encounter has potentially significant ecological relevance: “this discovery shows the importance of documenting sensitive marine habitats and will give a better understanding of the biological background of these ecosystems” as David O’Sullivan explained (<https://www.gsi.ie/en-ie/events-and-news/news/Pages/Government-supported-scientists-discover-rare-shark-nursery-in-deep-waters-west-of-Ireland.aspx>).

2. Introduction

2.1 Background to the project

As part of the European Habitats Directive (EC 92/43/EEC), Ireland is required to promote sustainable conservation management of protected areas and avoid destruction by human activities. The Department of Culture, Heritage and the Gaeltacht (DCHG) identified the protection of offshore reef habitats of high priority to fulfil the Habitats Directive obligations.

The Irish Government and the EU through the European Maritime Fisheries Fund and National Parks and Wildlife Service fund the SeaRover survey (Sensitive Ecosystem Assessment and ROV Exploration of Reef Habitat Survey).

SeaRover 2018 was conducted in July 2018 along the Irish continental shelf, including Porcupine and Rockall Banks. It was the second offshore mapping survey of three surveys between 2017 and 2020. The survey used the Marine Institutes' Holland 1 ROV to map deep water reefs and associated habitats using high-resolution bathymetric maps and robotic arms to collect biological specimens for research at NUI Galway and University of Plymouth's Deep Sea Conservation Unit. In addition the survey collected ground truth data to test published models of habitat suitability for reef and sponge habitat (Ross & Howell, 2013, Ross et al., 2015).

In total, 52 transects were completed, 70 biological specimens and 65 sediment samples were collected over a 3 week period. Each transect was accompanied by HD footage, high resolution still images and bathymetric information.

This report presents a biological analysis using HD footage, still images and standard definition footage where necessary. The layout and each phase of the analysis described in the current report follows that of the SeaRover 2017 report.

The survey undertook further mapping of offshore biogenic and geogenic reefs with the aim of evaluating status and reviewing requirements for conservation and management measures consistent with the Habitats Directive.

3. Methods

The methodology followed the methods used in SeaRover 2017. Each video was reviewed at least twice and was conducted by stopping and starting to ensure that all species were captured and all required details were logged. Digital stills images accompanied the analysis and identification of species, sediments and biotopes.

Per each video, dive summary and enhanced OFOP logging files were created. The first viewing was used to annotate a species list and dive summary. The second viewing was used to create the enhanced OFOP file, which included substrate characteristics, geomorphologies and features biotopes and dominant species, reef presence, Annex I reef type, and presence of listed species and habitats. In addition, the second viewing was useful to estimate species abundance based on SACFOR system. Once second viewing was completed, the enhanced OFOP data were reviewed and a biotope list was added to the dive summary.

3.1 Physical Data

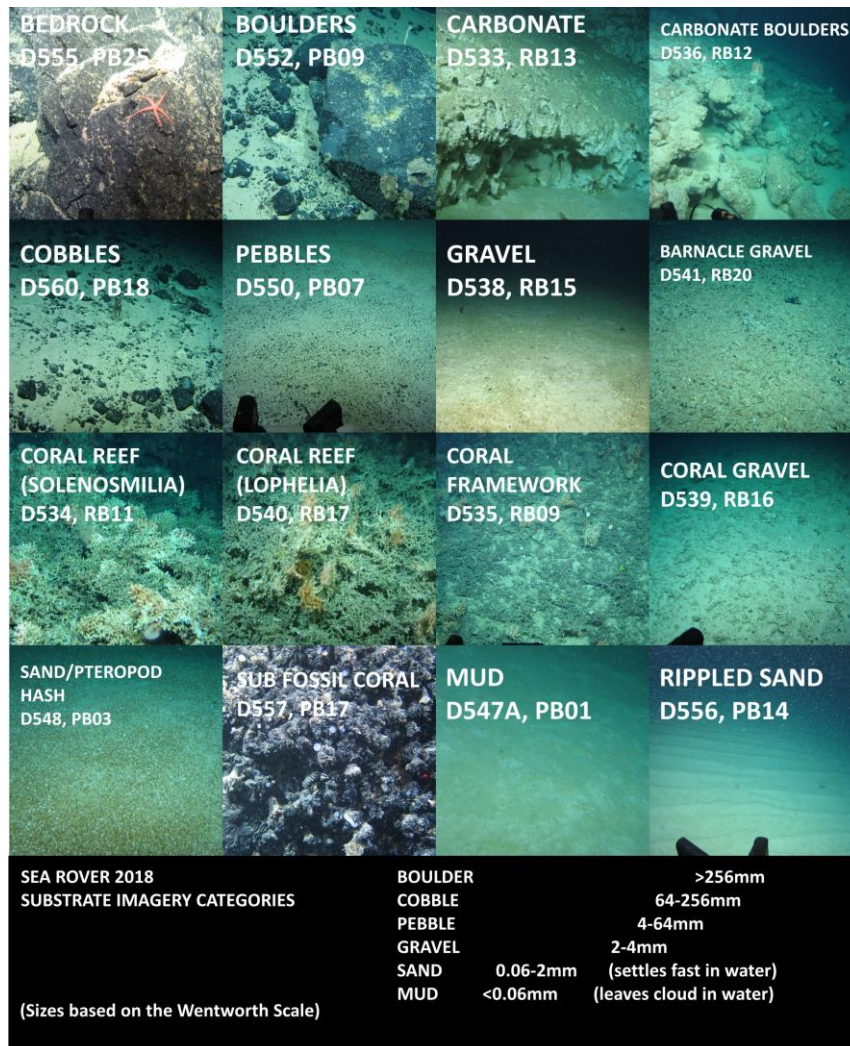


Figure 5 Substrata chart of SeaRover 2018. All images are from SeaRover 2018.

3.1.1 Sediment

Substrate analysis was conducted by eye and used as a complementary feature to identify fauna and biotope. Substrata characteristics were recorded during the HD video and still images assessments.

Primary and secondary substrata were logged in order to accurately show the complexity of the biotope. Mosaicked substrata were indicated and given a value of >1 when present. Assessing the extent of co-existing substrata types was conducted by eye and an estimate of start/end time is provided in the enhanced OFOPs *per* dive.

N.B. In the absence of physical samples, sand/mud sediments and mixed/coarse biotopes were difficult to reliably distinguish using video data only. Therefore, as suggested in SeaRover 2017, an adapted Wentworth grain size scale was used to help the assessment (Figure 5).

3.1.2 Reef type

Reefs can be either biogenic or geogenic in origin. They are defined by Joint Nature Conservation Committee (JNCC) as follows: “biogenic reefs are created by animals themselves, such as *Lophelia pertusa* and *Solenosmilia variabilis*; whereas, geogenic reefs occur where the bedrock or stable

boulders and cobbles arise from the surrounding seabed creating a habitat that is colonised by many animals and plants”.

Biogenic and geogenic reefs were recorded. A patch size of 5m x 5m was considered to be a standard minimum area to be considered a biotope (see SeaRover 2017 report). The percentage of reef presence per transect was assessed using HD footage and estimated by eye. Categories of reef presence were assigned on quartiles:

<1%, <25%, 25-50%, <75% and up to 100%.

If biogenic reef was present then an estimate of living and dead reef forming coral was provided. The percentage of living and dead coral reef is provided in **Error! Reference source not found.** a quick-view summary of all transects. In the current report, living and healthy coral reefs are not defined.

3.1.3 Geomorphology, Features and Annex I habitat types

Geomorphological features were included in the report. Large landscape features (e.g. canyon) were derived from the transect planning process. Annex I habitat categories were recorded and listed in the subsequent chapters.

3.2 Biological Data

3.2.1 Species Lists & SACFOR

Species lists were annotated in the first viewing of the video. A species catalogue was compiled throughout the video analysis phase. The catalogue comprised video image frame grabs, and digital stills images where available. Species identification was undertaken with reference to Howell, Davies & van den Beld (2017, at <http://www.deepseacatalogue.fr/>), the SeaRover 2017 species catalogue, and supplemented with taxonomic literature and expert advice.

As species identification can be problematic, an operational taxonomic unit approach was used throughout, identification was made to the highest taxonomic resolution that could be reliably achieved from image-based data. All identification were quality controlled to minimise observer bias between this analysis and the SeaRovers 2017 data.

Species abundance measures were recorded qualitatively throughout the analysis with numerical order and timestamped counts – where necessary – given in the dive excel spreadsheet. Each species was rated based on SACFOR (Superabundant, Abundant, Common, Frequent, Occasional, and Rare) (Figure 6). This method allows rapid estimates of abundance based on percent cover or density of organisms. Throughout the analysis, a ‘conservative’ approach on percentage cover was used, therefore for official reference, re-viewing the HD footage is recommended.

% Cover	Growth form		Size of individuals/colonies			Density	
	Crust/ Meadow	Massive/ Turf	1-3cm	3-15cm	>15cm		
	e.g. encrusting sponges	e.g. Dense large barnacles	e.g. halcampid anemones	e.g. echinoids	e.g. leiopathes black corals		
> 80%	S					>10 000 /m2	>1 per cm2
40-79%	A	S	S			1000-9999 /m2	
20-39%	C	A	A	S		100-999 /m2	1-9 per 10cm2
10-19%	F	C	C	A	S	10-99 /m2	
5-9%	O	F	F	C	A	1-9 /m2	1-9 per 1m2
1-5%	R	O	O	F	C	1-9/10m2	
< 1%		R	R	O	F	1-9/ 100m 2	1-9 per 10m2
				R	O	1-9/ 1000m2	
					R	<1/ 1000m2	

Figure 6 SACFOR (Superabundant, Abundant, Common, Frequent, Occasional, and Rare) scale readapted from JNCC (see <http://jncc.defra.gov.uk/page-2684> for more info)

3.2.2 Biotopes

All biotopes were logged in line with the Marine Habitat Classification for Britain and Ireland (v.15.03) new deep sea section where possible. Novel biotopes were encountered and biotopes were classified to the highest level possible (sometimes this was only level 3 [substrate]) and potential new assemblages were highlighted and qualitatively described.

Some new biotopes were encountered and were considered clear extensions of existing categories recorded at new depths. E.g.

Existing Biotope:	Variant Logged in SeaRover 2018:	Potential future biotope:
M.AtUB.Ro.DeeSpo	(var) M.AtUB.Ro.DeeSpo	M.At UA .Ro.DeeSpo
Deep sponge aggregations on Atlantic upper bathyal rock and other hard substrata	(variant of) Deep sponge aggregations on Atlantic upper bathyal rock and other hard substrata	Deep sponge aggregation on Atlantic upper abyssal rock and other hard substrata

If the biotope was present that was entirely new, then the nearest parent biotope complex was identified and biotope marked as a variant with a new child label indicated in brackets e.g.

Existing Biotope Complex:	Variant Logged in SeaRover 2018:	Potential future biotope:
M.AtUA.Bi	(var) M.AtUA.Bi	M.AtUA.Bi. SubFos
Atlantic upper abyssal biogenic structure	(variant of) Atlantic upper abyssal biogenic structure	Atlantic upper abyssal sub-fossil coral reef (biogenic structure)

Biotope changes were recorded when patch size was assumed to be 5m x 5m or greater, such as for reef presence.

3.2.3 Listed Habitat Occurrence

One of the main objectives of the offshore reef survey is to identify the presence of habitats and species of conservation concern in Irish waters; therefore a list of such habitats as defined by the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the International Council for the Exploration of the Sea (ICES) that are likely to occur in Irish waters was produced (Figure 7).

OSPAR	ICES	ICES subcategory
Lophelia pertusa reefs	Cold-water coral reef	Lophelia pertusa/Madrepora oculata reef
(Lophelia pertusa reefs)	Cold-water coral reef	Solenosmilia variabilis reef
Coral gardens	Coral garden	Hard-bottom coral garden
Coral gardens	Coral garden	Hard-bottom coral garden: hard-bottom gorgonian and black coral gardens
Coral gardens	Coral garden	Hard-bottom coral garden: colonial scleractinians on rocky substrata
Coral gardens	Coral garden	Hard-bottom coral garden: non-reefal scleractinian aggregations
Coral gardens	Coral garden	Hard-bottom coral garden: stylasterid corals on hard substrata
Coral gardens	Coral garden	Soft-bottom coral garden
Coral gardens	Coral garden	Soft-bottom coral garden: soft-bottom gorgonian and black coral gardens
Coral gardens	Coral garden	Soft-bottom coral garden: cup-coral fields
Coral gardens	Coral garden	Soft-bottom coral garden: cauliflower coral fields
Deep sea sponge aggregations	Deep sea sponge aggregations	Soft-bottom sponge aggregations
Deep sea sponge aggregations	Deep sea sponge aggregations	Hard-bottom sponge aggregations
Sea pen and burrowing megafauna communities	Sea pen fields	-
-	Anemone aggregations	Soft-bottom anemone aggregations
-	Anemone aggregations	Hard-bottom anemone aggregations
-	Mud and sand emergent fauna	-
-	Bryozoan patches	-
-	Cold seeps	-
Carbonate mounds	-	-

Figure 7 A list of habitats of conservation concern likely to be found in Rockall Bank and Porcupine Bank. Listed habitats selected from OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) and ICES (International Council for the Exploration of the Sea).

Four OSPAR listed species (fish and sharks only) are likely to be encountered in deep sea Irish waters.

- Portuguese Dogfish (*Centroscymnus coelolepis*, IUCN Near threatened)
- Gulper Shark (*Centrophorus granulosus*, IUCN Data Deficient)
- Leafscale Gulper Shark (*Centrophorus squamosus*, IUCN Endangered)
- Orange Roughy (*Hoplostethus atlanticus*, IUCN Vulnerable)

3.2.4 Quality Assurance

To ensure the standard of identifications of animals 5% of transects (3 transects) were independently analysed by Dr Kerry Howell. Transects were selected to cover a range of habitats and depths and were as follows: D545_RB30, D557_PB17, D575_PB21. Each transect was reviewed and all taxa observed were noted. Taxa were identified using the species catalogue produced for the project. Taxon lists produced by Ms La Bianca and Dr Howell were then compared for consistency. The results of the QA analysis show minor differences in the number of OTU's recorded between observers (Table 3). These differences are a result of missed OTUs as well as some discrepancies in identification (where observers disagreed on the identification of an animal). Discrepancies in identification were generally low except for PB17. In this transect 4 out of 10 discrepancies were for sponge taxa, 2 were for pterastid starfish. Sponges are notoriously difficult to classify, particularly where the form (colour and shape) is not distinctive. The pterastid starfish are also a challenge.

The missed OTU's came from a broad range of taxonomic groups. Many were small or cryptic organisms for example encrusting sponges, saddle oysters etc but not all. Some only appear to have been "missed". This occurred where one observer identified 2 morpho-types and the other observer only 1, e.g. one observer has lumped taxa together, the other has split them apart. Some are likely miss-classifications that are difficult to reconcile as such (for example various morphotypes of lamellate / lobose sponges). Relatively few were straight forward missing observations.

For all transects the combined number of OTU's observed on any one transect was consistently higher than that recorded by a single observer. This suggests lists of OTU's provided in this project are under-estimates of the number of taxa present rather than over estimates. Trends in the number of species between transects remained consistent between observers, as well as when considering only those OTU's in common, or the combined total number of OTU's. With inter-observer agreement at between 56 and 65%, this analysis is at a standard quality level relative to published averages of 43-72% inter-observer agreement (MacLeod, Benfield & Culverhouse 2010). These levels are lower than those achieved in the 2017 analysis undertaken by Howell and Ross. This is likely due to 2 issues: 1) the length of time Drs Howell and Ross had worked together on image analysis (>7 years compared to <2 years for GLB and KH) resulting in a more consistent interpretation between observers, 2) encountering novel taxa in the 2018 survey as a result of the deeper depths of some dives.

Table 3 Quality assurance of species identification between expert analysers.

Transect	Total No. O.T.U		No. O.T.U. in common	Inter-observer agreement	No of discrepancies in ID	No. O.T.U. missed		Combined total no. O.T.U.	Accuracy	
	KH	GLB				KH	GLB		KH	GLB
D545_RB30	61	59	46	66%	4	9	11	70	87	84
D557_PB17	59	52	36	56%	10	5	11	64	92	81
D575_PB21	63	61	49	63%	4	17	15	78	81	78

3.3 Deliverables

3.3.1 Composite Log

The detailed ecological assessment was incorporated to the enhanced OFOP data sheets *per* transect and presented in GIS compatible format (Figure 8). In order to achieve this:

- Substrata, geomorphologies/feature, reef types and percentages, Annex I Habitats, biotopes, dominant species and presence of listed species/biotopes were recorded to the final combined excel sheets and aligned to the timestamps and positions.
- Sampling events were recorded.
- Image EXIF data for all dives was extracted using <https://www.sno.phy.queensu.ca/~phil/exiftool/> (as suggested in SeaRover 2017) and summarised in excel format using a MatLab script. The VLOOKUP tool in excel was then used to align each digital stills image using the timestamps.

The screenshot shows an Excel spreadsheet with columns labeled A through AJ. The data is organized into rows, with columns B through I containing time and depth data, and columns J through AJ containing various observations and parameters. The spreadsheet is titled 'D530_1828_merged.xlsx - Excel' and is open in the 'Guilfa Blanca' window.

Figure 8 Screenshot of an example "enhanced OFOP file" showing USBL data (columns B>I), CTD data (J-L), OFOP observations (M,N), and additional analysis parameters (A,O-AJ) all aligned by time (C).

3.3.2 Dive Summaries

Dive summary reports are provided *per* dive. Following SeaRover 2017 report format, all dives contain:

- Time/location/image/sampling/planning metadata;
- A pair of maps showing planned location and actual track with transitions (derived from the enhanced OFOP files);
- Four annotated representative images *per* dive displaying biotopes, substrates, species, and geomorphologies considered to be representative of the dive;
- A summary description detailing timings of biotope transitions and the progress/general observations of the dive;
- A physical data summary showing reef percentages, a list of substrates (dominant substrates for the dive are shown in bold), geomorphologies, features, annex I types and pressures encountered *per* dive;
- A biological data summary showing number of species, species list and SACFOR abundance measures, biotope list and their conservation status, biotope progression with dominant species (numbers aligning to the dive summary numbers in square brackets), and a summary list of the conservation listed habitats and species encountered;
- An area for additional comments regarding the dive if necessary.

Full dive summaries for all dives are presented in Dive summaries 4.2 of this report.

3.3.3 GIS Data

GIS maps were supplied, created from the enhanced OFOP and metadata files. The data provided georeferenced images *per* transect, including ecological variables such as substrata, geomorphologies, dominant species, biotopes and listed habitats. Also, polyline shapefiles include reef presence, digital stills and pressures.

3.3.4 Pressures

One of the additional purposes of this survey was to identify anthropogenic pressures on deep-sea ecosystems. As such all visible anthropogenic impacts were recorded, including fishing gear, trawl marks, litter etc. Digital stills images and image grabs were catalogued and recorded in the enhanced OFOPs files.

4. Results

This section includes two deliverables: quick-view metadata and dive summaries.

- Quick-view metadata provide an overview of key ecological variables assigned to each dive.
- Comprehensive dive summaries provide an extensive overview *per* dive, including physical and biological analyses, metadata, example images, basic maps, and a video time stamped narrative. After quick-view metadata consultation, these provide an in-depth description for each dive.

4.1 Quick-view metadata

The following tables provide an overview of the dives undertaken and their analysis summaries. In this report, a single excel spreadsheet is shown as multiple tables for easy filtering and sorting of data.

Table 4 Time and location metadata for all dives along with associated image numbers (images are stored as IMG_XXXX.JPG) (1 of 2).

Dive	Transect	Start Date & Time (HD Video)	Start Lat (USBL)	Start Long (USBL)	Start Depth (USBL)	End Date & Time (off Bottom/HD video off)	End Lat (USBL)	End Long (USBL)	End Depth (USBL)	Average Depth	Images
526	RB02	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	4004-4028
527	RB03	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	4029-4205
528	RB26	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	4206-4596
529	RB27	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	4601-4998
530	RB28	05/07/2018 10:19	56.24202083	-14.03145883	-1781.4	05/07/2018 12:01	56.24153867	-14.0245245	-1705.5	-1743.45	4999-5124
531	RB06	05/07/2018 16:20	56.232047	-14.27591883	-1042.3	05/07/2018 17:54	56.23478867	-14.28945217	-806.2	-924.25	5101-5803
532	RB07	05/07/2018 20:37	56.19487517	-14.24553567	-1376	05/07/2018 22:13	56.20508883	-14.242967	-1320.3	-1348.15	5804-6227
533	RB13	06/07/2018 03:28	55.83896933	-14.21696883	-2241.6	06/07/2018 05:25	55.845636	-14.21674433	-2185.6	-2213.6	6228-6492
534	RB11	06/07/2018 10:14	55.981299	-14.48510383	-1556.8	06/07/2018 12:13	55.98464	-14.4702		-1556.8	6493-7165
535	RB08	06/07/2018 19:05	55.91355467	-14.54974933	-1702.1	06/07/2018 20:16	55.91559367	-14.55893567	-1440.9	-1571.5	7423-7742
535	RB09	06/07/2018 18:15	55.91707883	-14.54137167	-1525.9	06/07/2018 16:36	55.91804383	-14.53467783	-1679.2	-1602.55	7166-7422
536	RB12	06/07/2018 23:39	56.02483	-14.75553	-570	06/07/2018 01:40	56.03814	-14.74943	-503	-536.5	7743-7917
537	RB24	07/07/2018 04:21	55.90543	-14.77215	-713	07/07/2018 06:21	55.89638	-14.77385	-670	-691.5	7918-8419
538	RB15	07/07/2018 10:03	55.72525	-14.8276	-1244	07/07/2018 11:56	55.74237	-14.8372	-888	-1066	8423-8960
539	RB16	07/07/2018 14:24	55.72931	-14.96423	-870	07/07/2018 15:56	55.72926	-14.9771	-820	-845	8962-9192
540	RB17	07/07/2018 18:34	55.6743	-15.415	-870	07/07/2018 20:29	55.67624	-15.16375	-720	-795	0001-9990
541	RB20	08/07/2018 23:23	55.57106	-15.29627	-1219	08/07/2018 01:09	55.57959	-15.30098	-1044	-1131.5	0055-0215
542	RB21	08/07/2018 03:18	55.60186	-15.30274	-935	08/07/2018 05:25	55.61328	-15.31378	-840	-887.5	0216-1157
543	RB18	08/07/2018 08:12	55.59997	-15.40762	-873	08/07/2018 10:35	55.59097	-15.41951	-877	-875	1158-1797
544	RB29	08/07/2018 23:50	55.28501	-16.35925	-1210	09/07/2018 01:55	55.28928	-16.35078	-1200	-1205	1798-1855
545	RB30	09/07/2018 07:20	55.51963	-15.53165	-1094	09/07/2018 09:13	55.54073	-15.54073	-834	-964	1856-2613
546	RB23	09/07/2018 14:29	55.40655	-15.05545	-2297	09/07/2018 18:11	55.40851	-15.06509	-2262	-2279.5	2614-2974
547	PB01	12/07/2018 14:18	53.32081767	-14.80210267	-1846.9	12/07/2018 16:31	53.33012283	-14.7869515	-1633.8	-1740.35	2901-3360
547	PB02	12/07/2018 18:09	53.3181123	-14.77022667	-1541	12/07/2018 20:36	53.3189452	-14.74571867	-1255	-1398	3361-3568
548	PB03	13/07/2018 01:01	53.242406	-15.04198767	-2367.6	13/07/2018 03:02	53.24351183	-15.027424	-2233.6	-2300.6	3569-3758

Table 5 Time and location metadata for all dives along with associated image numbers (image are stored as IMG_XXXX.JPG) (2 of 2).

Dive	Transect	Start Date & Time (HD Video)	Start Lat (USBL)	Start Long (USBL)	Start Depth (USBL)	End Date & Time (off Bottom/HD video off)	End Lat (USBL)	End Long (USBL)	End Depth (USBL)	Average Depth	Images
549	PB05	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	missing OFOPs	3701-3992
550	PB07	13/07/2018 17:25	52.874258	-15.26401817	-2194.8	13/07/2018 19:37	52.8909712	-15.26549433	-2036.6	-2115.7	3993-4581
551	PB08	14/07/2018 00:30	52.735923	-15.19641033	-2118.5	14/07/2018 02:29:49	52.744268	-15.17381633	-1853.5	-1986	4582-4629
552	PB09	14/07/2018 10:13	52.29465917	-15.446672	-2672.3	14/07/2018 12:14:48	52.30349367	-15.4374055	-2445.7	-2559	4630-4804
553	PB24	14/07/2018 18:24	52.00729683	-15.139399	-2251.5	14/07/2018 20:01:06	52.01604117	-15.14318	-2174.6	-2251.5	4878-4805
554	PB11	15/07/2018 02:25	51.8391233	-15.29072433	-2531.6	15/07/2018 04:21	51.8524983	-15.29012533	-2417.3	-2474.45	4879-5446
555	PB25	15/07/2018 09:47	51.8014027	-15.2187033	-2536.468	15/07/2018 12:18	51.8022761	-15.19848867	-2010.03	-2273.249	5447-5974
556	PB14	15/07/2018 19:22	51.6511964	-15.2696297	-2617.007	15/07/2018 17:28	51.6554385	-15.2656231	-2490.805	-2553.906	5975-6444
557	PB17	16/07/2018 03:21	51.3485698	-15.2526512	-2758.734	16/07/2018 06:17	51.3517769	-15.24259475	-2339.609	-2549.1715	6401-7574
558	PB27	16/07/2018 11:23	51.1431664	-15.06253702	-2113.27	16/07/2018 14:28	51.1379462	-15.04592033	-1791.306	-1952.288	7578-7639
559	PB19	16/06/2018 21:13	50.6975	-14.76179984	-2584.249	17/07/2018 00:54	50.700396	-14.75268001	-2068.659	-2326.454	7640-8216
560	PB18	17/07/2018 05:43	50.5904851	-14.51904215	-2140.435	17/07/2018 07:31	50.5989346	-14.50538526	-1917.136	-2028.7855	8217-8476
561	PB20	17/07/2018 12:49	50.8713846	-14.75613712	-1947.611	17/07/2018 14:00	50.8762945	-14.74888312	-1720.934	-1834.2725	8217-8476
562	PB33	17/07/2018 17:51	51.0935747	-14.59747154	-767.748	17/07/2018 19:46	51.0958844	-14.5840282	-739.398	-753.573	8488-9133
563	PB34	18/07/2018 00:46	50.910325	-14.90109959	-2923.041	18/07/2018 01:50	50.9144665	-14.90096816	-2790.27	-2856.6555	9135-9146
564	PB16	18/07/2018 09:48	51.4104071	-15.18430682	-2719.853	18/07/2018 13:05	51.4173542	-15.17177683	Missing	-2719.853	9149-9779
565	PB13	18/07/2018 22:28	51.694355	-15.31579383	-2765.53	19/07/2018 00:33	51.7004833	-15.30342267	-2459.113	-2612.3215	0001-9899
566	PB35	19/07/2018 05:33	51.86156	-15.120181	-2008.131	19/07/2018 08:57:10	51.8665723	-15.11178733	-1671.35	-1839.7405	0101-0675
567	PB36	19/07/2018 12:31	51.862089	-15.03030933	-945.23	19/07/2018 14:11	51.8667517	-15.02753583	-793.11	-869.17	0676-0708
568	PB31	19/07/2018 17:50	52.0468707	-15.0001205	-1724.538	19/07/2018 20:35	52.0419305	-14.98075217	-1456.617	-1590.5775	0709-1370
569	PB10	20/07/2018 00:32	52.2284902	-14.8547575	-794.32	20/07/2018 02:32	52.239048	-14.856671	-664.18	-729.25	1371-1393.
570	PB29	20/07/2018 06:14	51.998844	-14.49308417	-325.47	20/07/2018 07:57	52.00091817	-14.4790275	-312.71	-319.09	0676-1031.
571	PB30	20/07/2018 10:25	52.049907	-14.29137267	-340.013	20/07/2018 11:55:46	52.05935983	-14.3021365	-300.94	-320.4765	1001-1368
572	PB32	20/07/2018 18:15	52.2813953	-13.0932655	-657.104	20/07/2018 20:08	52.2934773	-13.08142333	-569.751	-613.4275	1001-1457
573	PB23	20/07/2018 23:00	52.225477	-12.81529717	-739.153	21/07/2018 01:00	52.227065	-12.823309	-588.88	-664.0165	1458-1641
574	PB22	21/07/2018 03:32	52.159268	-12.76267483	-866.199	21/07/2018 05:10	52.16543967	-12.7645945	-691.96	-779.0795	1642-2401
575	PB21	21/07/2018 07:56	52.215018	-12.57516767	-824.02	21/07/2018 09:57	52.225789	-12.57734367	-659.23	-741.625	2402-3162

Table 6 Summary descriptions and reef data per dive (1 of 2)

Dive	Transect	Average Depth	Summary	Number Spp	% Reef	% Geogenic	% Biogenic	ReefCoral
526	RB02	missing OFOPs	Muddy slope with occasional carbonate boulders and wall.	16	0	0	0	0
527	RB03	missing OFOPs	Mix of dense Lophelia/Madrepora reefs and colonies on slope and vertical wall.	39	45%	75%	<25% (<1% living)	<i>Lophelia pertusa</i>
528	RB26	missing OFOPs	Dense biogenic Solenosmilia reefs on slope and vertical wall.	57	85	<25	<75	<i>Solenosmilia variabilis</i>
529	RB27	missing OFOPs	Biogenic and geogenic Solenosmilia reefs on vertical wall and slope.	54	85%	<45%	<50%	<i>Solenosmilia variabilis</i>
530	RB28	-1743.45	Mud slope with occasional boulders and carbonate, patches of corals and ophiuroids	48	10%	100%	0	0
531	RB06	-924.25	Dead Lophelia reefs hosting occasionally <i>Leiopathes sp</i> and <i>Phakellia ventilabrum</i> .	74	95%	5%	95% (<25% living)	<i>Lophelia pertusa</i>
532	RB07	-1348.15	Deep sea sponge aggregations on hard substrata with patches of Solenosmilia.	74	55%	<85%	<15%	<i>Solenosmilia variabilis</i>
533	RB13	-2213.6	Mud/boulders/carbonate wall. Sea pen aggregations	36	0	0	0	0
534	RB11	-1556.8	Rich epifauna on diverse sediments with Solenosmilia reefs and mixed sponges.	75	85%	15%	85% (mostly dead)	<i>Solenosmilia variabilis</i>
535	RB08	-1571.5	cobble/boulder/coral framework/carbonate cliff. Biogenic and geogenic Solenosmilia reefs.	56	80%	45%	55% (<25% living)	<i>Solenosmilia variabilis</i>
535	RB09	-1602.55	Dense Solenosmilia reefs. Steep slope/vertical walls with mixed corals and sponges.	68	90%	<25%	<75% (<25% living)	<i>Solenosmilia variabilis</i>
536	RB12	-536.5	Gravel/cobble/boulder/carbonate cliff with Lophelia/Madrepora reefs.	37	60%	85%	15%	<i>Lophelia pertusa</i>
537	RB24	-691.5	Mosaic sediment (gravel/boulders/bedrock) on slope with Lophelia/Madrepora reefs. Mud with Cidaris cidaris	65	65%	<45%	<55%	<i>Lophelia pertusa</i>
538	RB15	-1066	Very diverse. Mixed sediment with sponges and coral gardens on hard substrate and xenophyophora on mud.	88	65%	100%	0	0
539	RB16	-845	Mixed sediment slope with occasional Lophelia/Madrepora reefs on cobble/boulders and anemones/sea urchin on mud.	40	85%	<25%	<75% (dead)	<i>Lophelia pertusa</i>
540	RB17	-795	Epifaunally diverse with abundant antipathes and sponges. Dense colony of Lophelia/Madrepora reefs.	62	90	20%	80% (<25% living)	<i>Lophelia pertusa</i>
541	RB20	-1131.5	Solenosmilia reefs on boulders/bedrock. Abundant juvenile sponges of Aphrocallistes sp on boulders. Elasmobranch egg cases	67	80%	55%	45%	0
542	RB21	-887.5	Extensive Lophelia reefs and geogenic colonies on various sediment across the transect with many epifauna such as soft corals, cup corals, sponges, crinoids.	72	100	0%	100% (mostly dead)	<i>Lophelia pertusa</i>
543	RB18	-875	Coral gardens of Lophelia/Madrepora reefs (<25% living) with various species of antipathes.	66	100	<25%	<75% (dead)	<i>Lophelia pertusa</i>
544	RB29	-1205	Rippled sand/mud/soft sediment throughout the transect with occasional sponges	33	0	0	0	0
545	RB30	-964	Sponge aggregations/reefs on coarse sediment/coral rubble. Barnacle gravel/gravel/pebbles/cobbles with frequent Lophelia reefs and Aphrocallistes sp.	65	100%	0%	100%	<i>Lophelia pertusa/Aphrocallistes sp</i>
546	RB23	-2279.5	Mud/cobble/boulders with many epifauna including holothuroidea, ophiuroidea, scleractinians and sponges.	45	0%	0	0	0
547	PB01	-1740.35	Predominantly muddy slopes with scattered carbonate boulders with mainly antipathes and ophiuroids.	44	0	0	0	0
547	PB02	-1398	Very diverse. Mosaic substrata of mud/cobbles/carbonate boulders/wall. Solenosmilia reefs present on hard substrata.	80	20%	100%	0	0

Table 7 Summary descriptions and reef data per dive (2 of 2).

Dive	Transect	Average Depth	Summary	Number Spp	% Reef	% Geogenic	% Biogenic	ReefCoral
548	PB03	-2300.6	Rippled sand/boulders/carbonate wall with mainly crinoidea colonies.	35	0	0	0	0
549	PB05	missing OFOPs	Sloping carbonate, boulders, cobbles and mud on slope and vertical wall with sparse epifauna including sponges, crinoids and <i>Brisingidae</i> .	47	0	0	0	0
550	PB07	-2115.7	sand/pebble/occasional boulders with various sponges.	41	0	0	0	0
551	PB08	-1986	Mosaic sediment with mud and carbonate bedrock with several epifauna species including soft corals and xenophyophora.	78	0	0	0	0
552	PB09	-2559	Mud/pebble/carbonate with sparse epifauna.	37	0	0	0	0
553	PB24	-2251.5	Muddy slope with occasional epifauna	28	0	0	0	0
554	PB11	-2474.45	Muddy slope with sparse/rare epifauna	19	0	0	0	0
555	PB25	-2273.249	Diverse epifauna on mud/cobble/carbonate substrata with pennatulacea and many species of crinoids.	77	0	0	0	0
556	PB14	-2553.906	Mosaic substrata with with soft corals, crinoids and brisinga on hard substrate	45	<15%	100%	0	0
557	PB17	-2549.1715	Sub-fossil corals on bedrock. Diverse substrata on slope and vertical wall. Vary epifauna including alcyonacea, antipathes and sponges	53	85	<15%	<85% (dead)	Sub fossil coral
558	PB27	-1952.288	Slope/steep slope/vertical wall host many epifauna (mainly spherical sponges, crinoids and antipathes) on mud/cobble/boulders.	64	25%	100%	0	0
559	PB19	-2326.454	Sub-fossil corals. Mosaic substrata with mud/gravel/cobble/bedrock. Various epifauna with mainly stalked sponges and crinoids.	42	<65%	0%	100%	Sub fossil coral
560	PB18	-2028.7855	Muddy sediment with scattered hard substrata. Sparse epifauna on rock including sponges.	46	0%	0	0	0
561	PB20	-1834.2725	Slope and vertical carbonate wall with scattered sponges, xenophyophora and ophiuroids on mud/gravel/cobble/boulders.	36	<15%	<50%	<50%	<i>Solenosmilia variabilis</i>
562	PB33	-753.573	Madrepora/Lophelia colonies on cobble. Predominantly muddy sediment with occasional cobbles/boulders.	42	<40%	0	100% (mostly dead)	<i>Lophelia pertusa</i>
563	PB34	-2856.6555	Muddy slope with organic matter/debris on sea floor	3	0	0	0	0
564	PB16	-2719.853	Notable sub-fossil corals on vertical walls. Very diverse. Mud/cobbles/fossilized corals/carbonate. Plethora of epifauna species.	81	35%	<75%	<25%	Sub fossil coral
565	PB13	-2612.3215	Mainly hard substrata throughout the dive. Reefs formed of sponges, brisinga and soft corals.	47	0	0	0	0
566	PB35	-1839.7405	Slope and steep slope with soft and hard substrata. Antipathes, demosponges and stalked crinoids on rock.	78	40%	100%	0	0
567	PB36	-869.17	Lophelia reefs and colonies on cobbles/boulders/carbonate/bedrock.	49	50%	<25%	<75% (dead)	<i>Lophelia pertusa</i>
568	PB31	-1590.5775	Solenosmilia reefs. Solenosmilia colonies on cobble/boulders with many epifauna, including sponge aggregations.	66	<25%	<95%	<5%	<i>Solenosmilia variabilis</i>
569	PB10	-729.25	Lophelia reefs on boulders/hard substrata and sea urchins mainly on mud sediments.	45	55%	10%	90% (mostly dead)	<i>Lophelia pertusa</i>
570	PB29	-319.09	Gentle slope with mud/pebble/boulders hosting sparse epifauna including anemones. Fish <i>Micromesistius poutassou</i> is particularly abundant.	24	<10%	<75%	<25%	<i>Lophelia pertusa</i>
571	PB30	-320.4765	Mud sediment intersperse with boulders. Anemone <i>Phelliactis sp</i> is dominant epifauna. <i>M.poutassou</i> is the dominant pelagic species.	32	0	0	0	0
572	PB32	-613.4275	Mixed substrata (mud/cobble/boulders). Possible new biogenic reefs of zoanthids.	38	50%	0	100% (<50% living)	<i>Zoanthidae and Lophelia pertusa</i>
573	PB23	-664.0165	Elasmobranch nursery ground on Lophelia reefs and scattered boulders.	32	<90%	0	100%	<i>Lophelia pertusa</i>
574	PB22	-779.0795	Notable biogenic and geogenic Lophelia reefs	41	<75%	0	100% (<50% living)	<i>Lophelia pertusa</i>
575	PB21	-741.625	Dense Lophelia reefs on steep slope with various species of antipathes.	61	65	0	100 (25-50% living)	<i>Lophelia pertusa</i>

Table 8 Additional information on planned targets, samples collected, and pressures observes per dive (1 of 2).

Dive	Transect	Average Depth	Target Feature(s)	Samples	Pressures	AvTemp
526	RB02	missing OFOPs	Mound, Escarpment	n/a	1 x fishing net, 1 x fishing rope	
527	RB03	missing OFOPs	Escarpment	2 x pushcores, 1 x <i>Lophelia pertusa</i>	n/a	
528	RB26	missing OFOPs	Escarpment	1 x <i>Solenosmilia variabilis</i>	n/a	
529	RB27	missing OFOPs	Escarpment, Comparative Biology	1 x <i>Acanella arbuscula</i>	1 x plastic bag	
530	RB28	-1743.45	Escarpment, Selected by NPWS	1 x pushcore, 1 x sunlike anemone	n/a	3.74
531	RB06	-924.25	Ridge, Mound, straddles SAC, PINNACLE mapped in SORBEH cruise	n/a	n/a	4.73
532	RB07	-1348.15	Escarpment, Ridge, SAC	2 x <i>Pheronema carpenteri</i> , 2 x pushcores	n/a	4.89
533	RB13	-2213.6	Fished, Escarpment	1 x <i>Acanella arbuscula</i>	n/a	3.26
534	RB11	-1556.8	Ridge, Escarpment, Mound, SAC	n/a	n/a	n/a
535	RB08	-1571.5	Wall, Escarpment, 2009, SAC	1 x rock sample, 1x Cirripedia, 1 x pushcore	1 x Trawling marks	4.13
535	RB09	-1602.55	Ridge, Wall, Escarpment, Mound, SAC	1 x <i>Solenosmilia variabilis</i> rubble; 1 x yellow encrusting sponge (SolenAssociate); 1 x Ophiuroidea sp (indet)(SolenAssociate)	n/a	4.33
536	RB12	-536.5	Escarpment, Ridge	2 x pushcores	4 x fishing ropes	7.07
537	RB24	-691.5	Escarpment, Ridge, Straddles SAC	n/a	1 x fish can	8.51
538	RB15	-1066	Escarpment, Mound, SAC	n/a	1 x Plastic bag	5.37
539	RB16	-845	Escarpment, Straddles SAC	1 x <i>Aphrocallistes beatrix</i> with associated Zoanthidea sp., 3 x pushcores.	1 x plastic bag	7.39
540	RB17	-795	Escarpment, Mound	1 x unknown sponge; 1 x Euplectellid with associated shrimp pair; 1 x <i>Acanella arbuscula</i> (firtree)	1 x fishing net	-1.62
541	RB20	-1131.5	Escarpment	n/a	n/a	1.48
542	RB21	-887.5	Mound, Ridge	1 x Euplectella sp, 1 x <i>Madrepora oculata</i> ; 2 x <i>Koehlermetra porrecta</i> ; 1 x <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> ; 1 x <i>Aphrocallistes</i> sp; 1 x Hydrozoa flat branched	n/a	2.8
543	RB18	-875	Mound, Escarpment	1 x Primnoidea sp (unbranching) OTU1193(08:49:42); 1 x Octocorallia sp (pink) (09:26:00); 2 x pushcore	1 x rope	6.72
544	RB29	-1205	n/a	2 x pushcores; 1 x <i>Polymastia</i> sp; 1 x demospongiae; 1 x <i>Geodia</i> cf <i>baretti</i> ; 1 x demospongia; 1 x demospongia; 1 x demospongia; 1 x white spring OTU994; 1 x hexactinellid(glass vase); 1 x <i>polymastia</i> sp.	1 x rope	5.27
545	RB30	-964	n/a	1 x pushcore, 1 x <i>Lophelia pertusa</i> ; 1 x <i>Eunice norvegica</i> .	n/a	3.91
546	RB23	-2279.5	Rise, Depth	1 x anemone, 2 sponges, 1 x pushcore	n/a	3.29
547	PB01	-1740.35	Canyon, Ridge	n/a	n/a	1.42
547	PB02	-1398	Canyon	1 x cf <i>Thouarella</i> sp; 2 x pushcores	n/a	3.91
548	PB03	-2300.6	Ridge, wall	2 x pushcores, 1 x <i>Actiniaria</i> sp18	1 x rope	2.54
549	PB05	missing OFOPs	Deep Canyon Wall	1 x <i>Freyella</i> ?, 1 x globose sponge	n/a	n/a
550	PB07	-2115.7	Deep Rise	1 x pushcore, 1 x Echinoidea sp5 (Echinothuroidea)	n/a	6.45
551	PB08	-1986	Ridge, Wall	2 x pushcores	n/a	3.39
552	PB09	-2559	Very Deep wall, Ridge, Canyon	2 x pushcores	n/a	-1.53
553	PB24	-2251.5	NPWS selected	1 x pushcore	1 x plastic bag	1.39
554	PB11	-2474.45	Straddles SAC, depth, mound wall	2 x scleractinians	1 x trawling marks	3.08
555	PB25	-2273.249	NPWS selected	n/a	n/a	1.87
556	PB14	-2553.906	Very deep rise	n/a	1 x fishing rope	-1.42
557	PB17	-2549.172	Deep Canyon	Sub fossil coral	n/a	3.18
558	PB27	-1952.288	Deep Water, Midway, NPWS selected	1xLollipop sponge	n/a	-1.63
559	PB19	-2326.454	Canyon Wall	1 x fossilized corals	n/a	3.69
560	PB18	-2028.786	Ridge	1 x <i>Stauropathes arctica</i> OTU547, 2 x pushcores, 1 x <i>Syringammina fragilissima</i> OUT261	n/a	3.31

Table 9 Additional information on planned targets, samples collected, and pressures observes per dive (2 of 2).

Dive	Transect	Average Depth	Target Feature(s)	Samples	Pressures	AvTemp
561	PB20	-1834.273	Canyon	2 x pushcores	n/a	3.95
562	PB33	-753.573	n/a	1 x pushcore	n/a	9.4
563	PB34	-2856.656	n/a	2 x pushcores	n/a	2.92
564	PB16	-2719.853	Deep Canyon Rise	1 x <i>Acanella arbuscula</i>	n/a	1.31
565	PB13	-2612.322	Very Deep Ridge	1 x pushcore	n/a	3
566	PB35	-1839.741	n/a	1 x pushcore, 1 x cf Halcampoididae sp	n/a	1.23
567	PB36	-869.17	Missing OFOPs	2 x pushcores	1 x fishing rope	9.41
568	PB31	-1590.578	Canyon wall, deep, NPWS selected	2 x pushcores, 1 x yellow demospongiae	1 x fishing rope, 1 x large fishing net.	2.94
569	PB10	-729.25	SAC Boundary, Wall, Ridge	n/a	n/a	9.52
570	PB29	-319.09	Mounds, NPWS selected	2 x pushcores	n/a	5.55
571	PB30	-320.4765	Mounds, NPWS selected	1 x pushcore	n/a	9.8
572	PB32	-613.4275	Mounds, NPWS	n/a	n/a	9.86
573	PB23	-664.0165	SAC, Ridge	2 x pushcores	n/a	8.87
574	PB22	-779.0795	SAC, Mound, Ridge	2 x pushcores, 1 x <i>Lophelia pertusa</i>	n/a	8.04
575	PB21	-741.625	SAC, Mound	2 x pushcores	n/a	9.2

Table 10 Listed species and habitats per dive (1 of 2)

Dive	Transect	Average Depth	ListedSpec	ListedHab
526	RB02	missing OFOPs		
527	RB03	missing OFOPs		
528	RB26	missing OFOPs		
529	RB27	missing OFOPs		
530	RB28	-1743.45	n/a	Carbonate mound; mud and sand emergent fauna; coral gardens; soft-bottom gorgonian and black corals gardens; sea-pen and burrowing megafauna communities
531	RB06	-924.25	n/a	Cold water coral reefs; Lophelia pertusa reef; coral gardens; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens
532	RB07	-1348.15	n/a	Deep-sea sponge aggregations; hard-bottom sponge aggregations; coral gardens; hard-bottom gorgonian and black coral gardens; soft-bottom gorgonian and black coral gardens; cold water coral reefs; Solenosmilia variabilis reefs; mud and sand emergent fauna
533	RB13	-2213.6	n/a	Sea-pen and burrowing megafauna communities; mud and sand emergent fauna; coral gardens: soft-bottom coral garden
534	RB11	-1556.8	Leafscale Gulper Shark (Centrophorus squamosus); Orange Roughy (Hoplostethus atlanticus)	Coral gardens; hard-bottom coral garden: colonial scleractinians on rocky outcrops; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens; cold water coral reef; Solenosmilia variabilis reef; deep sea sponge aggregations
535	RB08	-1571.5	Leafscale Gulper Shark (Centrophorus squamosus)	Cold-water coral reefs; Solenosmilia variabilis reefs; mud and sand emergent fauna; coral gardens: hard-bottom coral garden: colonial scleractinian on rocky outcrops; carbonate mounds
535	RB09	-1602.55	Leafscale Gulper Shark (Centrophorus squamosus)	Coral gardens; hard-bottom coral garden: colonial scleractinian on rocky outcrops; cold water coral reefs; Solenosmilia variabilis reef
536	RB12	-536.5	Leafscale Gulper Shark (Centrophorus squamosus)	Mud and sand emergent fauna; deep sea sponge aggregations; hard bottom sponge aggregations; coral gardens:hard-bottom coral garden: colonial scleractinians on rocky outcrops; anemone aggregations; hard bottom anemone aggregations
537	RB24	-691.5	Leafscale Gulper Shark (Centrophorus squamosus)	Cold water coral reefs; Lophelia pertusa reefs, coral gardens: hard-bottom coral garden: colonial scleractinians on rocky outcrops; deep sea sponge aggregations; hard bottom sponge aggregations
538	RB15	-1066	Leafscale Gulper Shark (Centrophorus squamosus)	Mud and sand emergent fauna; deep sea sponge aggregations; coral gardens; soft bottom coral garden:cup-coral field; hard-bottom coral gardens: colonial scleractinians on rocky outcrops
539	RB16	-845	n/a	Cold water coral reefs; Lophelia pertusa/Madrepora oculata reefs; mud and sand emergent fauna; deep sea sponge aggregations; coral gardens
540	RB17	-795	n/a	Cold water coral reefs; Lophelia pertusa/Madrepora oculata reef; coral gardens:hard-bottom coral garden; hard-bottom gorgonian and black coral gardens
541	RB20	-1131.5	Orange Roughy (Hoplostethus atlanticus)	Coral garden; hard-bottom coral garden: colonial scleractinians on rocky outcrops; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens; deep sea sponge aggregations; cold water coral reefs; - Solenosmilia variabilis reefs
542	RB21	-887.5	n/a	Cold water coral reefs; Lophelia pertusa/Madrepora oculata reefs
543	RB18	-875	Orange Roughy (Hoplostethus atlanticus)	Deep sea sponge aggregations; coral gardens; hard-bottom coral garden: gorgonian and black coral gardens; cold water coral reefs; Lophelia pertusa/Madrepora oculata reef
544	RB29	-1205	n/a	Mud and sand emergent fauna; deep sea sponge aggregations
545	RB30	-964	n/a	Cold water coral reefs; Lophelia pertusa/Madrepora oculata reefs; deep sea sponge aggregations
546	RB23	-2279.5	n/a	Mud and sand emergent fauna; carbonate mounds
547	PB01	-1740.35	n/a	Mud and sand emergent fauna; carbonate mounds
547	PB02	-1398	n/a	Carbonate mounds; mud and sand emergent fauna; coral gardens:hard-bottom coral garden; hard-bottom gorgonian and black coral gardens
548	PB03	-2300.6	n/a	Mud and sand emergent fauna; carbonate mounds
549	PB05	missing OFOPs	n/a	Mud and sand emergent fauna; carbonate mounds
550	PB07	-2115.7	n/a	Mud and sand emergent fauna; deep sea sponge aggregations

Table 11 Listed species and habitats per dive (2 of 2)

Dive	Transect	Average Depth	ListedSpec	ListedHab
551	PB08	-1986	n/a	Mud and sand emergent fauna; coral gardens (ICES/OSPAR); soft-bottom coral gardens: soft-bottom gorgonian and black coral garden (ICES subcategory)
552	PB09	-2559	n/a	Mud and sand emergent fauna
553	PB24	-2251.5	n/a	Mud and sand emergent fauna
554	PB11	-2474.45	n/a	Mud and sand emergent fauna
555	PB25	-2273.249	n/a	Mud and sand emergent fauna; carbonate mounds
556	PB14	-2553.906	n/a	Mud and sand emergent fauna; coral gardens; hard-bottom coral garden; hard-bottom gorgonian and black coral gardens
557	PB17	-2549.1715	n/a	Cold water coral reefs; coral gardens; hard bottom coral gardens; deep-sea sponge aggregations
558	PB27	-1952.288	n/a	Coral gardens; hard-bottom coral garden: hard bottom gorgonian and black coral gardens; deep-sea sponge aggregations; mud and sand emergent fauna
559	PB19	-2326.454	n/a	Mud and sand emergent fauna; cold water coral reefs; deep-sea sponge aggregations; hard-bottom sponge aggregations
560	PB18	-2028.7855	n/a	Mud and sand emergent fauna
561	PB20	-1834.2725	n/a	Mud and sand emergent fauna; coral gardens; hard-bottom coral garden: colonial scleractinians on rocky outcrops
562	PB33	-753.573	Orange Roughy (<i>Hoplostethus atlanticus</i>)	Mud and sand emergent fauna; cold water coral reefs; <i>Lophelia pertusa</i> /Madrepora oculata reefs; coral gardens: soft bottom coral garden: soft-bottom gorgonian and black coral gardens
563	PB34	-2856.6555	n/a	Mud and sand emergent fauna
564	PB16	-2719.853	n/a	Mud and sand emergent fauna; deep-sea sponge aggregations; hard-bottom sponge aggregations; coral gardens; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens
565	PB13	-2612.3215	n/a	Mud and sand emergent fauna; deep-sea sponge aggregations; carbonate mound
566	PB35	-1839.7405	n/a	Mud and sand emergent fauna; deep-sea sponge aggregations; coral gardens; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens
567	PB36	-869.17	n/a	Mud and sand emergent fauna; anemone aggregations; cold water coral reef; <i>Lophelia pertusa</i> /Madrepora oculata reef; coral gardens; hard-bottom coral garden: hard-bottom gorgonian and black coral garden; deep-sea sponge aggregations
568	PB31	-1590.5775	n/a	Coral garden; hard-bottom coral garden: hard-bottom colonial scleractinians on rocky outcrops; hard-bottom coral garden: hard-bottom gorgonian and black coral gardens; mud and sand emergent fauna; cold water coral reefs; <i>Solenosmilia variabilis</i> reefs
569	PB10	-729.25	n/a	Cold water coral reefs; <i>Lophelia pertusa</i> /Madrepora oculata reefs; mud and sand emergent fauna; coral garden; hard-bottom gorgonian and black coral gardens
570	PB29	-319.09	n/a	Anemone aggregations; mud and sand emergent fauna; coral gardens; hard-bottom coral garden: colonial scleractinians on rocky outcrops
571	PB30	-320.4765	n/a	Anemone aggregations; mud and sand emergent fauna
572	PB32	-613.4275	n/a	Mud and sand emergent fauna (ICES); cold water coral reefs; <i>Lophelia pertusa</i> /Madrepora oculata reef (ICES subcategory)
573	PB23	-664.0165	Leafscale Gulper Shark (<i>Centrophorus squamosus</i>)	Cold water coral reefs; <i>Lophelia pertusa</i> / Madrepora oculata reefs; mud and sand emergent fauna
574	PB22	-779.0795	n/a	Cold water coral reefs; <i>Lophelia pertusa</i> /Madrepora oculata; mud and sand emergent fauna
575	PB21	-741.625	n/a	Cold water coral reefs; <i>Lophelia pertusa</i> /Madrepora oculata reefs; mud and sand emergent fauna

Table 12 List of biotopes encountered that are listed in the Marine Habitat Classification for Britain and Ireland (v.15.3). Depth zones are colour coded.

List of Biotopes encountered	Biotope descriptor	Transects
M.AtUB.Bi.CorRee	Atlantic upper bathyal cold water coral reef (biogenic structure)	PB29
M.AtUB.Co	Atlantic upper bathyal coarse sediment	PB32, RB12
M.AtUB.Co.UrcCom.CidUrc	Cidarid urchin assemblage on Atlantic upper bathyal coarse sediment	RB12
M.AtUB.Mu	Atlantic upper bathyal mud	PB29, PB30, PB32
M.AtUB.Ro	Atlantic upper bathyal rock and other hard substrata	PB29, PB30, PB32
M.AtUB.Ro.MixCor	Mixed cold water coral community on Atlantic upper bathyal rock and other hard substrata	PB29, RB12
M.AtUB.Ro.DeeSpo	Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	RB12
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	PB10, PB21, PB22, PB23, PB33, PB36, RB06, RB16, RB18, RB21, RB30, RB20, RB08
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal Lophelia pertusa reef framework (biogenic structure)	PB10, PB21, PB22, PB23, RB06, RB16, RB17, RB18, RB18, RB21, RB24, RB30, RB08
M.AtMB.Co	Atlantic mid bathyal coarse sediment	PB10, PB33, PB36, RB20, RB17
M.AtMB.Co.MixCor	Mixed cold water coral community on Atlantic mid bathyal coarse sediment	PB33, PB36
M.AtMB.Co.MixCor.DisLop	Discrete Lophelia pertusa colonies on Atlantic mid bathyal coarse sediment	RB18
M.AtMB.Co.SolScl	Solitary scleractinian field on Atlantic mid bathyal coarse sediment	RB15
M.AtMB.Co.XenCom.SyrFra	Syringamina fragilissima field on Atlantic mid bathyal coarse sediment	RB15
M.AtMB.Mu	Atlantic mid bathyal mud	PB21, PB22, PB23, PB33, PB36, RB16
M.AtMB.Mu.BurAne	Burrowing anemone field in Atlantic mid bathyal mud	PB36
M.AtMB.Mu.DeeSpo	Deep sponge aggregation on Atlantic mid bathyal mud	RB29
M.AtMB.Mu.UrcCom	Urchin dominated community on Atlantic mid bathyal mud	PB23
M.AtMB.Mx	Atlantic mid bathyal mixed sediment	RB15, RB24
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	PB10, PB23, PB33, PB36, RB08, RB20, RB24, RB16, RB15
M.AtMB.Ro.BarCom	Barnacle dominated community on Atlantic mid bathyal rock and other hard substrata	PB33, RB29
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	PB10, PB36, RB06, RB15, RB17, RB24, RB16, RB18
M.AtMB.Sa	Atlantic mid bathyal sand	RB29
M.AtMB.Sa.UrcCom	Urchin dominated community on Atlantic mid bathyal sand	PB10
M.AtMB.Ro.SpaEnc	Sparse encrusting community on Atlantic mid bathyal rock and other hard substrata	PB21, PB22
M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	PB31, RB07, RB11, RB20
M.AtLB.Bi.CorRee.SolFra	Mixed coral assemblage on Atlantic lower bathyal Solenosmilia reef framework (biogenic structure)	RB08, RB09, RB11, RB20
M.AtLB.Co	Atlantic lower bathyal coarse sediment	PB07, PB16, PB18, PB20, PB27, RB11
M.AtLB.Co.MixCor	Mixed cold water coral community on Atlantic lower bathyal coarse sediment	RB11
M.AtLB.Mu	Atlantic lower bathyal mud	PB01, PB02, PB07, PB16, PB18, PB20, PB27, PB31, PB35, RB07, RB08, RB28
M.AtLB.Mu.BurOph	Burrowing ophiuroid community on Atlantic lower bathyal mud	RB28
M.AtLB.Mu.EreCor	Erect coral field on Atlantic lower bathyal mud	RB13, RB28
M.AtLB.Mu.XenCom	Xenophyophore dominated community on Atlantic lower bathyal mud	RB28, PB02, PB07, PB16, PB18., PB20, PB27, RB08
M.AtLB.Ro	Atlantic lower bathyal rock and hard substrata	PB01, PB02, PB07, PB16, PB18, PB27, PB35, RB13, RB28
M.AtLB.Ro.MixCor	Mixed cold water coral community on atlantic lower bathyal rock and hard substrata	RB20, RB08, PB02, PB27, PB31, PB35, RB11, RB07
M.AtLB.Ro.MixCor.DisSol	Discrete Solenosmilia variabilis colonies on Atlantic lower bathyal rock and other hard substrata	PB20, RB08, RB09
M.AtLB.Sa	Atlantic lower bathyal sand	PB20, RB08, RB09
M.AtUA.Co	Atlantic upper abyssal coarse sediment	PB17, RB13, PB03, PB09, PB14, PB16, PB19
M.AtUA.Mu	Atlantic upper abyssal mud	PB24, PB08, PB09, PB11, PB13, PB14, PB16, PB19, PB25, PB34, RB13, RB23
M.AtUA.Mu.HolCom	Holothurian dominated community on Atlantic upper abyssal mud	PB09, PB16, PB24
M.AtUA.Mu.UrcCom	Urchin dominated community on Atlantic upper abyssal mud	RB23
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	PB03, PB08, PB09, PB13, PB14, PB16, PB17, PB19, PB25, RB23
M.AtUA.Sa	Atlantic upper abyssal sand	PB03, PB09, PB14

Table 13 List of variant biotopes (with reference to Marine Habitat Classification for Britain and Ireland (v.15.3)) encountered and transects where they were found. Depth zones are colour coded. Potential new biotopes are highlighted in red.

List of Biotopes observed	Variant	Depth variant	Sediment Variant	Species/Other Variant	Variant details	(parent) biotope descriptor	Transects
(var)M.AtUB.Ro.DeeSpo	y	y			with sponge aggregations	(variant of) Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	PB17
(var)M.AtUB.Ro.MixCor	y			y	with Phelliactis sp	(variant of) Mixed cold water coral community on Atlantic upper bathyal rock and other hard substrata	PB29
(var)M.AtUB.Ro.DeeSpo	y			y	with Mycale lingua	(Mycale)Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	RB12
(var) M.AtUB.Ro.DeeSpo		y			upper abyssal	(variant of) Deep sponge aggregations on Atlantic upper bathyal rock and other hard substrata	RB20
(var) M.AtUB.Bi.CorRee	y			y	with Zoanthidae aggregations	(variant of) Atlantic upper bathyal cold water coral reef (biogenic structure)	PB32
(var) M.AtMB.Mu.DeeSpo	y			y	with cf Polymastia penicillus	(variant of) Deep sponge aggregation on Atlantic mid bathyal mud	RB29
(var)M.AtMB.Mu.EreCor.AcaArb	y	y			upper abyssal	(variant of) Acanella arbuscula assemblage on Atlantic mid bathyal mud	PB08
(var)M.AtMB.Mu.BurAne	y	y			upper bathyal	(variant of)Burrowing anemone field in Atlantic mid bathyal mud	PB30
(var)M.AtMB.Mu	y			y	with Bonellia viridis	(variant of) Atlantic mid bathyal mud	PB36
(var) M.AtMB.Bi	y			y	with sponge aggregations (Aphocallistes sp)	(variant of) Atlantic mid bathyal biogenic structure	RB30
(var) M.AtLB.Mu.BurOph	y			y	with Ophiomusa lymani	(variant of) Burrowing ophiuroid community on Atlantic lower bathyal mud	RB28
(var)M.AtLB.Mu.UrcCom	y			y	with Phorsonoma placenta	(variant of) Urchin dominated community on Atlantic lower bathyal mud	PB01
(var)M.AtLB.Mu	y			y	with Epizoanthus sp1	(variant of) Atlantic lower bathyal mud	PB02
(var)M.AtLB.Mu	y			y	with Democrinus sp	(variant of) Atlantic lower bathyal mud	PB07
(var)M.AtLB.Mu.EreCor	y			y	with Paramuricea sp	(variant of)Erect coral field on Atlantic lower bathyal mud	RB28
(var) M.AtLB.Ro.DeeSpo	y	y			lower bathyal	(variant of) Deep sponge aggregations on Atlantic lower bathyal rock and other hard substrata	RB07
(var)M.AtUA.Mu.HolCom	y			y	with Peniagone sp	(variant of) Holothurian dominated community on Atlantic upper abyssal mud	PB09
(var)M.AtUA.Ro	y			y	with Brisingidae	(brisingidae)Atlantic upper abyssal rock and other hard substrata	RB13
(var)M.AtUA.Mu	y			y	with bathyrcrinidae	(variant of)Atlantic upper abyssal mud	RB23
(var) M.AtUA.Bi	y			y	with sub-fossil corals	(variant of) Atlantic upper abyssal biogenic structure	PB16, PB17, PB19
(var) M.AtUA.Ro	y			y	with stalked crinoids, sponges, and corals	(stalked crinoids, sponges and corals on) Atlantic upper abyssal rock and other hard substrata	PB17

4.2 Dive summaries

This section provides the dive summary from every dive undertaken on SeaRover 2018. Summaries are ordered by number.

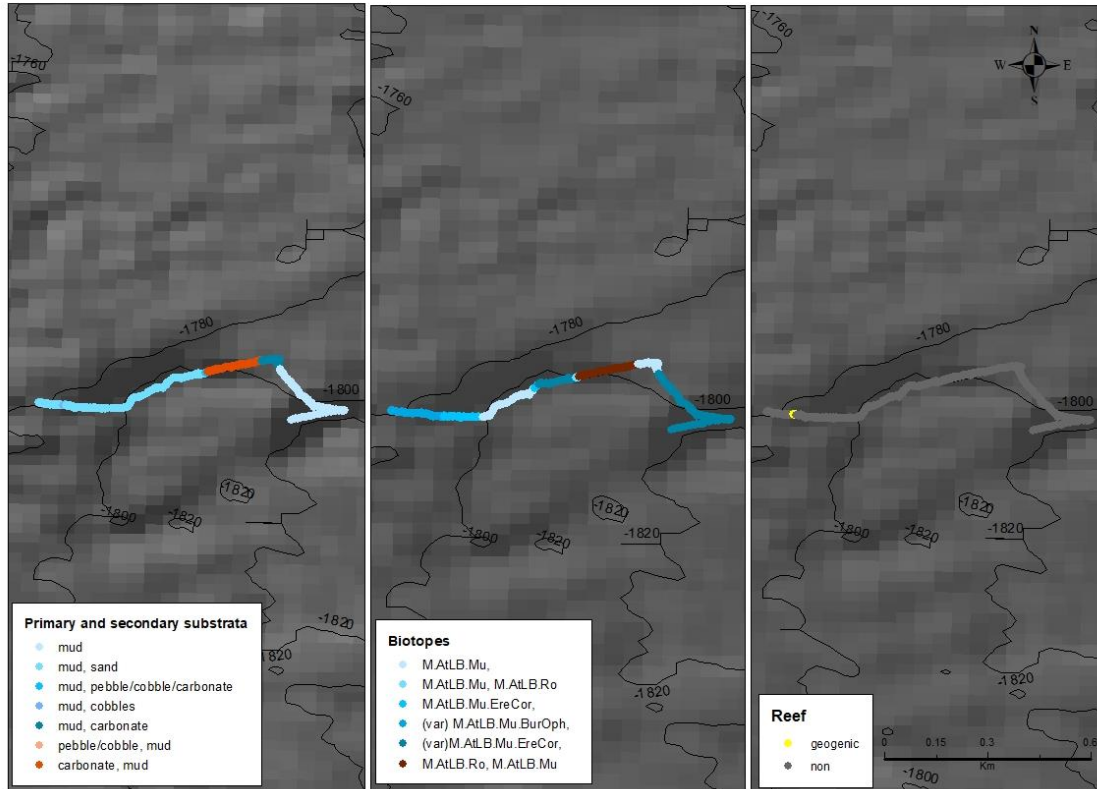
DIVE SUMMARY	
DIVE # 526	TRANSECT # RB02

	Start	End
Date & Time	Missing OFOPs data	Missing OFOPs data
Latitude/ Longitude	Missing OFOPs data	Missing OFOPs data
Depth	Missing OFOPs data	Missing OFOPs data
Images	IMG_4004-IMG_4028.JPG	
Samples	n/a	

Location	RT02
Target Features	Mound, Escarpment
Depth Range	-460, -640

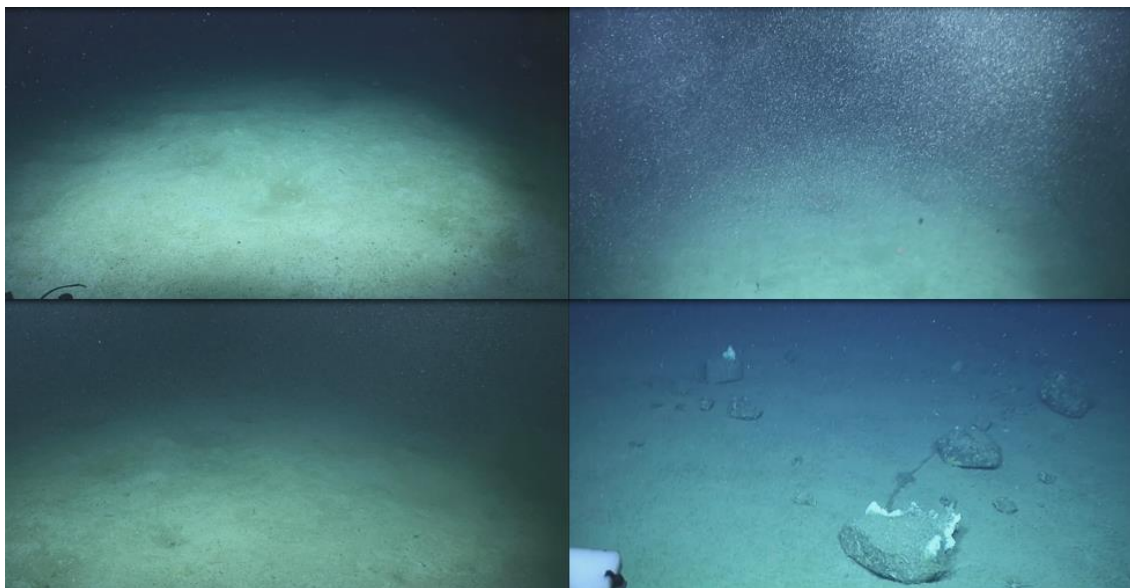
Maps of Dive
OFOP BMP and/or GIS Maps

Dive 530, RB28



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)



Top L. Mud slope with some depressions on the seafloor (M.AtUB.Mu).

Top R. Marine snow is evident throughout the transect. Mud slope with some depressions on the seafloor (M.AtUB.Mu).

Bottom L. Mud slope with some depressions on the seafloor (M.AtUB.Mu).

Bottom R. Deep sea sponge isolated colonies on boulders/large cobbles (M.AtUB.Ro).

Summary Description (habitat transitions noted)

START OF VIDEO 'A' AT 04:33. [1] The transect is set on mud flat/gentle upslope. Sparse epifauna including sea cucumber OTU266, sea urchin OTU211 and a few species of fish. **10m** ROV stops for imagery. **20m** ROV stops for imagery again. **25m** ROV stops for imagery. **33m** ROV stops for imagery of pelagic jellyfish. **50 m** ROV stops for imagery and mud cloud. **01h02m** ROV stops for imagery. Mud cloud. 01:22 Mud cloud. **END OF VIDEO 'A' AT 06:00.**

VIDEO 'B' STARTS AT 06:02. [2] Mud flat/up slope hosts *Cidaris cidaris* OTU211 and *Bonellia viridis* OTU267. 03m19s **[3]** Carbonate boulders on very steep slope. 04m54s **[4]** mud slope again. 10m33s **[5]** carbonate slopes and vertical carbonate. 11m33s **[6]** vertical carbonate. 13m27s mud/gravel on slope. 14m20s *C.cidaris* OTU211 and *B.viridis* OTU267 on mud carbonate slope. 17m16s ROV climbs a steep carbonate boulders/bedrock. 18m51s Carbonate ledges. 20m20s **[7]** Deep sea sponge aggregations on carbonate/boulders/large cobbles. 21m24s Fishing rope on sea floor. 23m03s **[8]** horizontal carbonate/carbonate ledges/boulders. Sparse and vary epifauna including *Parastichopus tremulus* OTU266 and demospongiae OTU83. 06:27 ROV goes back to the surface until **VIDEO 'B' ENDS AT 06:44.**

Physical Data							
Reef (types can be concurrent)	<table border="1"> <tr> <td></td> <td>0% geogenic</td> </tr> <tr> <td>0% reef</td> <td>n/a</td> </tr> <tr> <td>0% biogenic</td> <td>n/a</td> </tr> </table>		0% geogenic	0% reef	n/a	0% biogenic	n/a
	0% geogenic						
0% reef	n/a						
0% biogenic	n/a						
Substrates	<ul style="list-style-type: none"> - Mud - Carbonate wall - Carbonate boulders 						
Geomorphology/Features	slope						
Annex 1 Types	<ul style="list-style-type: none"> - Sloping carbonate - Vertical carbonate - Horizontal carbonate/ledges/boulders 						
Pressures	1 x fishing net 1 x fishing rope						

Biological Data	
Number of Species	16
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
266	Parastichopus tremulus	L	R
227	Helicolenus dactylopterus	L	R
211	Cidaris cidaris	L	R
249	Lepidion eques	L	R
188	Araeosoma fenestratum	L	R
198	Stichastrella rosea	L	R
12	Bolocera tuediae	L	R
265	Chimera monstrosa	L	R
1017	Teuthida sp1	L	R
1005	Galeus melastomus	L	R
250	Lophelia pertusa	L	R
621	Hypsogastropoda	M	R
440	Synaphobranchus kaupii	M	R
120	Corymorphidae sp	M	R
601	Geodia cf baretti	M	R
205	Paguridae	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUB.Mu	Atlantic upper bathyal mud	Mud and sand emergent fauna (ICES)
M.AtUB.Ro	Atlantic upper bathyal rock and other hard substrata	

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUB.Mu	266 Parastichopus tremulus, 211 Cidaris cidaris
2	M.AtUB.Mu	211 Cidaris cidaris, 267 Bonellia viridis
3	M.AtUB.Ro	

	n/a
4	M.AtUB.Mu
	n/a
5	M.AtUB.Ro
	n/a
6	M.AtUB.Ro; M.AtUB.Mu
	211 Cidaris cidaris, 267 Bonellia viridis
7	M.AtUB.Ro
	83 Porifera massive lobose sp6 (cfGeodia)
8	M.AtUB.Ro
	266 Parastichopus tremulus, 83 Porifera massive lobose sp6 (cfGeodia)

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments

- N.B.: In this transect, a few depressions on the sea floor were detected indicating signs of bioturbation.
- Missing OFOPs data, therefore location is not provided. Depth is extracted from SeaRover Transect Proposal 2018.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 527	TRANSECT # RB03

	Start	End
Date & Time	Missing OFOPs	Missing OFOPs
Latitude/ Longitude	Missing OFOPs	Missing OFOPs
Depth	Missing OFOPs	Missing OFOPs
Images	IMG_4029-IMG_4205.JPG	
Samples	2 x pushcores 1 x <i>Lophelia pertusa</i>	

Location	RT03
Target Features	Escarpment
Depth Range	-810, -870

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Carbonate/cobbles/pebbles on mud sediment. This substrate is encountered frequently in this transect (M.AtMB.Mu; M.AtMB.Ro).

Top R. *Lophelia pertusa*/*Madrepora oculata* reef on carbonate which hosts encrusting sponges including porifera encrusting blue OTU800 (M.AtMB.Ro.SpaEnc; M.AtMB.Ro.MixCor).

Bottom L. *Bonellia viridis* OTU267 and *Cidaris cidaris* OTU211 co-habit on steep carbonate with scattered *L.pertusa*/*M.oculata* reefs (M.AtMB.Mu; M.AtMB.Ro.MixCor).

Bottom R. *L.pertusa*/*M.oculata* reef framework on muddy summit (M.AtMB.Co.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

HD VIDEO STARTS. ROV stops for sampling 2 pushcores. **[1]** Mud flat/gentle up slope. Mud cloud is present/poor camera vision. *Cidaris cidaris* OTU211 on mud. **24m [2]** Mud slope with cobble fields/sparse dead and living *Lophelia pertusa* reefs (<25% living). **28m [3]** Isolated scleractinian colonies on soft bottom/mud (dead). 32m Mud slope again. 33m shoal of eels (possibly *Synaphobranchus kaupii* OTU440). **45m [4]** Steep mud slope with scattered cobbles/pebbles. 50m mud moderate slope. **53m [5]** Carbonate cobbles on moderate slope. **58m [6]** Holothurians OUT432 on mud gentle/moderate slope. 01h20m ROV stops for imagery of *Lophelia pertusa* reef on cobble and porifera encrusting blue OTU800. Then ROV checks on the machine itself and it spends some time at the bottom. **01h11m [7]** Large cobbles on mud slope. 01h18m Isolated scleractinians on rocks. 01h24m Mud cloud. **01h29m [8]** Encrusting sponges and isolated scleractinian colonies on rocks. 01h41m ROV is on top of vertical wall, on up slope. **01h51m [9]** Vertical carbonate wall hosts isolated *L.pertusa* colonies. **01h56m [10]** here *L.pertusa* reef is dense (<1% living). Sea urchins and anemones found on corals. **02h00m [11]** carbonate bedrock hosts anemones. 02h05m coral reefs on slope. **02h08m [12]** very sparse coral reef. Broken carbonate on steep slope. 02h17m ROV stops for imagery and sampling of *Madrepora oculata* OTU251. **END OF HD VIDEO 02h23m.**

Physical Data			
Reef (types can be concurrent)	45% reefs	75% geogenic	
		<25% biogenic	<1% living
			99% dead
Substrates	<ul style="list-style-type: none"> - Mud - Cobble fields - Boulders - Carbonate - Coral framework 		
Geomorphology/Features	Slope Vertical wall		
Annex 1 Types	<ul style="list-style-type: none"> - Cobble fields - Sloping carbonate - Vertical carbonate - Coral reef 		
Pressures	n/a		

Biological Data	
Number of Species	39

DIVE SUMMARY

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
12	Bolocera tuediae	L	R
188	Araeosoma fenestratum	L	R
198	Stichastrella rosea	L	R
211	Cidaris cidaris	L	R
250	Lophelia pertusa	L	R
251	Madrepora oculata	L	R
254	Chaceon affinis	L	R
255	Phellactis sp	L	R
258	Brosme brosmes	L	R
265	Chimera monstrosa	L	R
266	Parastichopus tremulus	L	R
267	Bonellia viridis	L	R
273	Lophius piscatorius	L	R
278	Anthomastus grandiflorus	L	R
303	Coelorhynchus coelorhynchus	L	R
349	Mora moro	L	R
388	Ceremaster Peltaster Plinthaster sp2	L	R
432	Holothuroidea cf Laetmogone (purple)	L	R
440	Synaphobranchus kaupii	L	R
446	Trachyrhynchus sp	L	R
566	Coryphaenoides rupestris	L	R
581	Umbellula sp	L	R
930	Actinopterygii sp3	L	R
1003	Nezumia aequalis	L	R
1005	Galeus melastomus	L	R
1006	Actinopterygii sp4	L	R
1017	Teuthida sp1	L	R
1080	Pseudoanthomastus sp	L	R
1125	Phormosoma placenta	L	R
1138	Eucaridea sp2 (redDeep)	L	R
1149	Zoanthidae sp	L	R
1166	Guttigadus latifrons	L	R

DIVE SUMMARY

1216	Trachiscoropia cristulata echinata	L	R
249	Lepidion eques	M	R
1069	Ceriantharia	M	R
339	Munida tenuimana	S	R
605	Actiniaria sp20	S	R
1129	cf Echinus (deepPinkSpine)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mu.BurAne	Burrowing anemone field in Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); <i>Lophelia pertusa/Madrepora oculata</i> reefs (ICES subcategory)
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Ro.SpaEnc	Sparse encrusting community on Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Co.MixCor	Mixed cold water coral community on Atlantic mid bathyal coarse sediment	Coral gardens (ICES/OSPAR);

DIVE SUMMARY

		<i>Lophelia pertusa/Madrepora oculata</i> reefs (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Mu.BurAne	
	211 <i>Cidaris cidaris</i>	
2	M.AtMB.Mu; M.AtMB.Ro.MixCor	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i>	
3	M.AtMB.Mu; M.AtMB.Ro.MixCor	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 440 <i>Synaphobranchus kaupii</i>	
4	M.AtMB.Mu; M.AtMB.Ro	
	n/a	
5	M.AtMB.Ro	
	n/a	
6	M.AtMB.Mu	
	432 <i>Holothuroidea</i> cf <i>Laetmogone</i> (purple)	
7	M.AtMB.Ro; M.AtMB.Mu	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i>	
8	M.AtMB.Ro.SpaEnc; M.AtMB.Ro.MixCor	
	800 <i>Porifera</i> encrusting blue, 250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i>	
9	M.AtMB.Ro.MixCor	
	250 <i>Lophelia pertusa</i>	
10	M.AtMB.Co.MixCor	

DIVE SUMMARY

	250 Lophelia pertusa, 605 Actiniaria sp20
11	M.AtMB.Ro.MixCor
	250 Lophelia pertusa
12	M.AtMB.Ro.MixCor
	250 Lophelia pertusa, 251 Madrepora oculata

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Coral gardens	ICES/OSPAR	
- <i>Lophelia pertusa/Madrepora oculata</i> reefs	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> Missing OFOPs data, therefore location is not provided. Depth is extracted from SeaRover Transect Proposal 2018.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 528	TRANSECT # RB26

	Start	End
Date & Time	Missing OFOPs	Missing OFOPs
Latitude/ Longitude	Missing OFOPs	Missing OFOPs
Depth	Missing OFOPs	Missing OFOPs
Images	IMG_4206-IMG_4596.JPG	
Samples	1 x <i>Solenosmilia variabilis</i>	

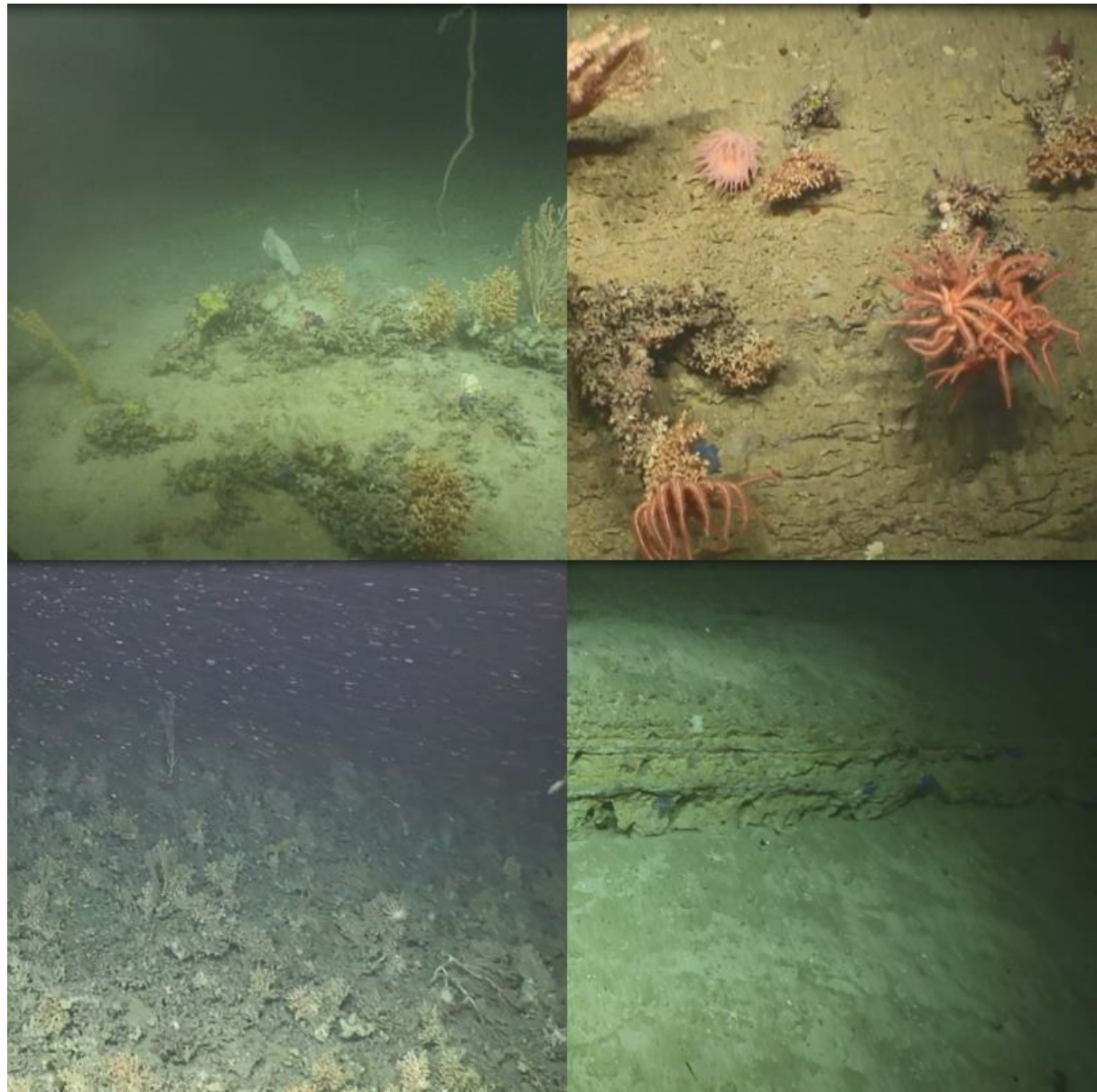
Location	RT26
Target Features	Escarpment
Depth Range	-1600, -1680

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Isolated *Solenosmilia variabilis* coral reefs living on muddy gentle slope, hosting erect sponges, Paramuricea and Keratoisis species (M.AtMB.Mu.EreCor; M.AtMB.Co.MixCor).

Top R. *Solenosmilia variabilis* overhanging vertical wall. Reefs host *Brisingidae* OTU274 and *Actinostolidae* sp1 OTU132 (M.AtMB.Ro.MixCor).

Bottom L. Dense *Solenosmilia variabilis* reef on slope (<25% living). This reef is wide spread across the transect (M.AtMB.Bi.CorRee).

Bottom R. Carbonate ledges host sparse epifauna including some encrusting sponges OTU800 (M.AtMB.Ro.SpaEnc).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO A. 0m [1] Video A lasts 10 sec. Poor vision, however mud slope with scattered isolated *Solenosmilia variabilis* (poss) framework. **VIDEO ENDS.**

VIDEO B. 0m [2] Mud sediment on gentle upslope hosts isolated colonies, such as *Paragorgia*, *Leiopathes*, *Paramuricea* on small pebbles/cobbles. 7m ROV stops for imagery of coral reef made of *Solenosmilia variabilis* OTU700, *Keratoisis* sp OTU1157 and lamellate sponges OTU422. 12m **[3]** *S.variabilis* framework on mud slope. 28m **[4]** carbonate vertical wall/carbonate ledges with inlets. Encrusting sponges OTU800 and sparse isolated scleractinian OTU6 on hard substrate. 29m now ROV reaches a **[5]** muddy flat/gentle upslope hosting scattered coral framework/rubble of *S.variabilis* OTU700. 32m here *Paramuricea* sp and *Keratoisis* sp are frequent. 36m ROV flared mud cloud. 42m Mud cloud. 40m **[6]** coral framework is dense here. 45m ROV stops for mud cloud/vision obscured. 48 vision slightly clear. ROV stops for imagery and sampling of *Keratoisis* sp (fine branching) OTU1157. 56m **[7]** dense coral reef (<25% living reef) on upslope hosting *Keratoisis* sp. 01h19m Water column vision. 01h24m **[8]** steep mud slope with scattered boulders. 01h26m vertical wall with scattered overhanged coral reef. 01h35m **[9]** now coral framework on steep slope, reefs include *S.variabilis* and *Keratoisis* sp. Steep muddy slope with scattered *S.variabilis* reefs. 01h42m **[10]** Mud slope with frequent encounters of lamellate sponges OTU1010. **VIDEO B ENDS AT 01h48m. VIDEO C. 0m** Muddy summit. 5m ROV reaches the edge of the cliff. 7m ROV goes down steep slope. 8m water column vision. 9m **[11]** *S.variabilis* on steep slope. 13m dense coral reef (25-50% living). Mud on steep slope. 19m ROV stops for imagery of *Dendrobathypathes* sp (brown) OTU1015. **VIDEO C ENDS AT 24m.**

Physical Data		
Reef (types can be concurrent)	85% reef	<25% geogenic
		<75% biogenic
		<25% living
		<75% dead
Substrates	<ul style="list-style-type: none"> - Mud - Pebbles - Cobbles - Coral framework - Coral reef 	
Geomorphology/Features	Slope Vertical wall	
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble fields - Coral reef - Dead coral structure 	
Pressures	n/a	

DIVE SUMMARY

Biological Data			
Number of Species		57	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
608	Acanthagorgia cf armata	L	R
1047	Actinoscyphiidae sp1 (pink)	L	R
132	Actinostolidae sp1	L	R
278	Anthomastus grandiflorus	L	R
1120	Anthoptilum sp	L	R
1038	Asconema sp	L	R
471	Euryalida	L	R
284	Bathypathes sp (brown)	L	R
1107	cf Anthoptilum sp	L	R
566	Coryphaenoides rupestris	L	R
1015	Dendrobathypathes sp (brown)	L	R
1005	Galeus melastomus	L	R
307	Gorgonacea sp7 cf Isidella	L	R
1185	Harriotta haeckeli	L	R
1039	Hydrolagus cf affinis	L	R
1070	Jasonisis sp (pinkSolenAssoc)	L	R
1157	Keratoisis sp (fineBranching)	L	R
578	Keratoisis sp2	L	F
612	Leiopathes sp (dense)	L	R
557	Lepidisis sp	L	O
349	Mora moro	L	R
171	Mycale lingua	L	R
1003	Nezumia aequalis	L	R
551	Ophiomuseum lymani	L	R
1065	Paragorgia sp (deepPink)	L	R
1050	Paramuricea sp	L	R

DIVE SUMMARY

1042	Parantipathes sp	L	R
1083	Pennatula inflata	L	R
436	Pentametrocrinus atlanticus	L	R
552	Polyacanthonotus rissoanus	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1010	Porifera lamellate sp12	L	R
422	Porifera lamellate sp7	L	R
616	Porifera massive lobose sp21 (yellow cf Rhabdodictyum)	L	R
1115	Pterasteridae sp	L	R
573	Solaster endeca	L	R
700	Solenosmilia variabilis	L	F
569	Squaliformes (possEtmopteridae)	L	R
547	Stauropathes arctica	L	R
259	Zoarcidae sp1	L	R
1149	Zpanthidea sp	L	R
1006	Actinopterygii sp4	M	R
267	Bonellia viridis	M	R
274	Brisingidae	M	O
214	Gorgonocephalus sp1	M	R
563	Neocyttus helgae	M	R
646	Ophiuroidea sp (orangeDeep)	M	R
263	Porania pulvillus	M	R
560	Stichopathes sp	M	R
446	Trachyrhyncus sp	M	R
6	Caryophyllia sp	S	R
1129	cf Echinus sp	S	O
131	Crinoidea sp1 (red)	S	R
1154	Henricia sp (deep)	S	R
1036	Ophiuroidea sp11	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mu.EreCor	Erect coral field on Atlantic mid bathyal mud	Coral gardens (ICES/OSPAR)

DIVE SUMMARY

M.AtMB.Co.MixCor	Mixed cold water coral community on Atlantic mid bathyal coarse sediment	Cold water coral reef (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory)
M.AtMB.Ro.SpaEnc	Sparse encrusting community on Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR)
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Coral gardens (ICES/OSPAR); cold water coral reef (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtMB.Co.MixCor
	700 <i>Solenosmilia variabilis</i>
2	M.AtMB.Mu.EreCor; M.AtMB.Ro
	1065 <i>Paragorgia</i> sp (deepPink), 1050 <i>Paramuricea</i> sp, 612 <i>Leiopathes</i> sp
3	M.AtMB.Co.MixCor
	700 <i>Solenosmilia variabilis</i>
4	M.AtMB.Ro.SpaEnc
	800 Porifera encrusting blue, 6 Caryophyllia
5	M.AtMB.Mu.EreCor; M.AtMB.Co.MixCor
	700 <i>Solenosmilia variabilis</i> , 1050 <i>Paramuricea</i> sp. 578 <i>Keratoisis</i> sp2

DIVE SUMMARY

6	M.AtMB.Co.MixCor
	1157 Keratoisis sp (fineBranching)
7	M.AtMB.Bi.CorRee
	700 Solenosmilia variabilis, 578 Keratoisis sp2
8	M.AtMB.Ro.MixCor
	700 Solenosmilia variabilis
9	M.AtMB.Co.MixCor; M.AtMB.Ro.MixCor
	700 Solenosmilia variabilis, 578 Keratoisis sp2
10	M.AtMB.Mu.DeeSpo
	1010 Porifera lamellate sp12
11	M.AtMB.Bi.CorRee
	700 Solenosmilia variabilis

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Coral gardens:	ICES/OSPAR	
- Cold water coral reef	ICES/OSPAR	
- <i>Solenosmilia variabilis</i> reef	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments

DIVE SUMMARY

- Missing OFOPs data.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 529	TRANSECT # RB27

	Start	End
Date & Time	Missing OFOPs	Missing OFOPs
Latitude/ Longitude	Missing OFOPs	Missing OFOPs
Depth	Missing OFOPs	Missing OFOPs
Images	IMG_4601-IMG_4998.JPG	
Samples	1 x <i>Acanella arbuscula</i>	

Location	RT27
Target Features	Escarpment, Comparative Biology
Depth Range	-1500, -1660

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Bivalve *Acesta excavate* OTU1062 and *Solenosmilia variabilis* reef OTU700 overhanging from vertical wall (M.AtLB.Ro.MixCor).

Top R. *Solenosmilia variabilis* forms biogenic reef on vertical wall, hosting many epifauna species including *Brisingidae* OTU274 (M.AtLB.Bi.CorRee; M.AtLB.Mu.DeeSpo).

Bottom L. *Keratoisis* sp2 OTU578 and *Brisingidae* on *S.variabilis* framework (M.AtLB.Ro.MixCor).

Bottom R. Deep sea sponge aggregations OTU1151, *Keratoisis* sp OTU1157 and *S.variabilis* reef on slope (M.AtLB.Mu.DeeSpo; M.AtLB.Co.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS AT 02:46. 0m. [1] Mud gentle/moderate slope. Sparse epifauna including *Acanella arbuscula* OTU585. 20m **[2]** Mud steep slope hosts lamellate sponges OTU1010 and *Ophiomusa lymani* OTU551. ROV samples two pushcores. Soon after ROV stops for imagery of *Acanella arbuscula* OTU585. Vision is poor at this stage due to mud cloud. 19m Vision back to normal. However, mud cloud and marine snow are frequently detected throughout the transect. 32m marine snow/water column vision. 41m **[3]** Here the slope becomes steeper and steeper. Listed species *Hoplostethus atlanticus* OTU227 encountered. **[4]** Here coral framework covers the seafloor. 42m Now vertical wall. *Solenosmilia variabilis* OTU700 framework (100% dead) host several epifauna, mainly erect sponges. 47m **[5]** *S.variabilis* reefs on vertical wall host Brisingidae OTU274 and *Acesta excavata* OTU1062. 01h01m **[6]** ROV reaches the summit where flat/gentle slope begins. Sparse epifauna, mainly sponge lamellate OTU1010. 01h12m Mud cloud. 01h18m **[7]** Boulder with encrusting fauna, including sponge OTU800. Ceriantharia OTU1069 inhabits mud sediment. 01h20 ROV stops for imagery and sampling of *Acanella arbuscula*. 01h40m **[8]** erect sponges OTU1010 living on mud. 01h48m ROV stops for imagery of boulder with encrusting species and *S.variabilis* reef. When approaching the sea floor, ROV causes mud cloud. Now obscured vision. 01h57m here again erect deep sea sponge aggregations OTU1010 on mud.

VIDEO B. 0m Video B lasts 33 minutes. **[9]** Mud sediment on gentle slope with coral framework/rubble and erect sponges. 5m ROV stops for imagery of Keratoisis (fineBranching) OTU1157, coral framework and sponges. **[10]** 14m coral framework is dense here with yellow sponges and Brisingidae. **[11]** 15m coral garden (<25% living) hosting alcyonacea OTU1157 and erect sponges OTU1151. 16m water column vision. 17m ROV reaches the edge of the cliff and it goes filming down slope along the vertical wall. **[12]** Coral reef hanging from the vertical wall. Brisingidae on corals. 23m water column. 24m **[13]** coral framework and coral reef on gentle slope. Other epifauna include Keratoisis OTU1157. 30m **[14]** dense coral reef on moderate slope hosting abundant *A.excavata* on reef. 31m Plastic bag on coral reef. 32m mud cloud. **END.**

Physical Data			
Reef (types can be concurrent)	85% reef	<45% geogenic	
		<50% biogenic	<15% living
			<85% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral rubble - Coral framework - Coral reef 		
Geomorphology/Features	Slope Vertical wall		

DIVE SUMMARY

Annex 1 Types	<ul style="list-style-type: none"> - Vertical wall - Coral reef - Dead coral structure
Pressures	1 x plastic bag (video B)

Biological Data

Number of Species

54

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
551	Ophiomusa lymani	L	R
446	Trachyrhynchus sp	L	R
440	Synaphobranchus kaupii	L	R
566	Coryphaenoides rupestris	L	R
1010	Porifera lamellate sp12	L	R
307	Gorgonacea sp7 cf Isidella	L	R
39	Corallimorphidae sp1	L	R
436	Pentametrocrinus atlanticus	L	R
305	Leiopathes sp	L	R
1042	Parantipathes sp	L	R
936	Harriotta raleighana	L	R
573	Solaster endeca	L	R
1039	Hydrolagus cf affinis	L	R
267	Bonellia viridis	L	R
552	Polyacanthonotus rissoanus	L	R
563	Neocyttus helgae	L	R
227	Hoplostethus atlanticus	L	R
700	Solenosmilia variabilis	L	R
1047	Actinoscyphiidae sp1 (pink)	L	R
20	Ascidacea sp2	L	R
258	Brosme brosmes	L	R
555	Phormosoma placenta	L	R
261	Syringammina fragilissima	L	R

DIVE SUMMARY

284	Bathypathes sp (brown)	L	R
994	White spring	L	R
1080	Pseudoanthomastus sp	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1157	Keratoisis sp (fineBranching)	L	R
578	Keratoisis sp2	L	R
585	Acanella arbuscula (bushy)	M	R
278	Anthomastus grandiflorus	M	R
274	Brisingidae	M	R
1129	cf Echinus (deepPinkSpine)	M	R
263	Porania pulvillus	M	R
554	Actinernus sp	M	R
1089	Lophaster furcifer	M	R
1062	Acesta excavate	M	R
339	Munida tenuimana	M	R
146	Aphroditidae sp1	M	R
1006	Actinopterygii sp4	M	R
361	Stylaster sp1	M	R
621	Hypsogastropoda	M	R
930	Actinopterygii sp3	M	R
6	Caryophyllia sp	S	R
82	Cirripedia sp	S	R
560	Stichopathes sp	S	R
131	Crinoidea sp1	S	R
4	Actiniaria sp1	S	R
1077	Caridea (indet)	S	R
1069	Ceriantharia sp	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1054	Chyrostylidae (indet)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)

DIVE SUMMARY

M.AtLB.Mu.DeeSpo	Deep sponge aggregation on Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES); Deep sea sponge aggregations (ICES/OSPAR)
M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	Coral gardens (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
M.AtLB.Co.MixCor	Mixed cold water coral community on Atlantic lower bathyal coarse sediment	Coral gardens (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory)
M.AtLB.Co.MixCor. DisSol	Discrete <i>Solenosmilia variabilis</i> colonies on Atlantic lower bathyal coarse sediment	Coral gardens (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Mu	
		585 Acanella arbuscula
2	M.AtLB.Mu.DeeSpo	
		1010 Porifera lamellate sp12, 551 Ophiomusa lymani
3	M.AtLB.Mu	
		n/a
4	M.AtLB.Bi.CorRee; M.AtLB.Mu.DeeSpo	
		700 Solenosmilia variabilis, 1010 Porifera lamellate sp12
5	M.AtLB.Ro.MixCor	

DIVE SUMMARY

	700 Solenosmilia variabilis, 274 Brisingidae, 1062 Acesta excavate
6	M.AtLB.Mu; M.AtLB.Mu.DeeSpo
	1010 Porifera lamellate sp12
7	M.AtLB.Mu; M.AtLB.Ro
	1069 Ceriantharia, 800 Porifera encrusting blue
8	M.AtLB.Mu.DeeSpo; M.AtLB.Co.MixCor
	1010 Porifera lamellate sp12, 700 Solenosmilia variabilis
9	M.AtLB.Co.MixCor; M.AtLB.Mu.DeeSpo
	700 Solenosmilia variabilis, 1010 Porifera lamellate sp12
10	M.AtLB.Co.MixCor
	58 Porifera encrusting sp15 yellow, 274 Brisingidae
11	M.AtLB.Co.MixCor
	1157 Keratoisis sp (fineBranching), 1151 Porifera lamellate (hexactinosida)
12	M.AtLB.Ro.MixCor
	700 Solenosmilia variabilis, 274 Brisingidae
13	M.AtLB.Co.MixCor.DisSol
	700 Solenosmilia variabilis, 1157 Keratoisis sp (fineBranching)
14	M.AtLB.Ro.MixCor
	700 Solenosmilia variabilis, 1062 Acesta excavata

Conservation Targets	
Listed Habitats Encountered	
Name	Authority

DIVE SUMMARY

Mud and sand emergent fauna		ICES
Coral gardens		ICES/OSPAR
- <i>Solenosmilia variabilis</i> reef		ICES subcategory
Deep sea sponge aggregations		ICES/OSPAR
Listed Species Encountered (Fish, Count)		
- <i>Hoplostethus atlanticus</i>	1	OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 530	TRANSECT # RB28

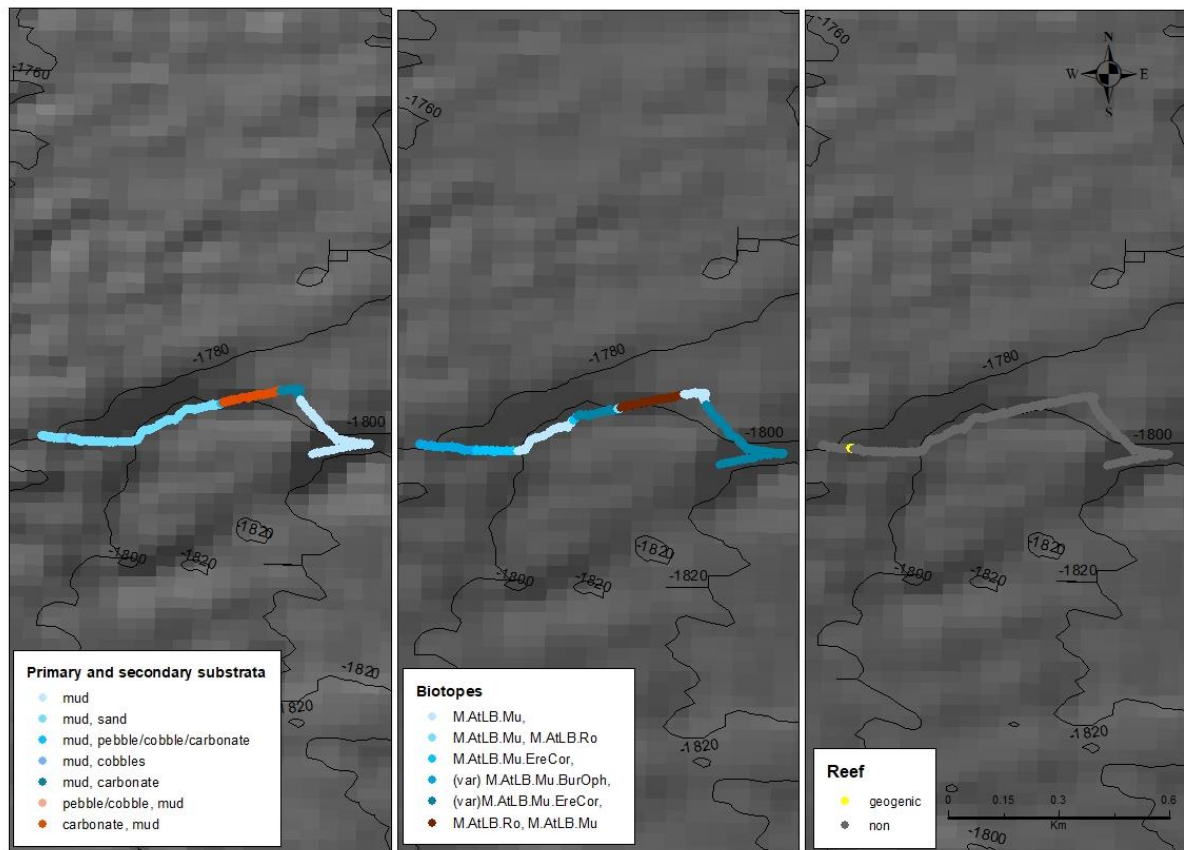
	Start	End
Date & Time	05/07/2018 10:09:17	05/07/18 12:44:20
Latitude/ Longitude	56.24239, -14.0316	56.24156, -14.022
Depth	-1780m	-329m
Images	IMG_4999-IMG_5124.JPG	
Samples	2 x pushcore 1 x sunlike anemone	

Location	PB28
Target Features	Escarpment, Selected by NPWS
Depth Range	-1790, -1840

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

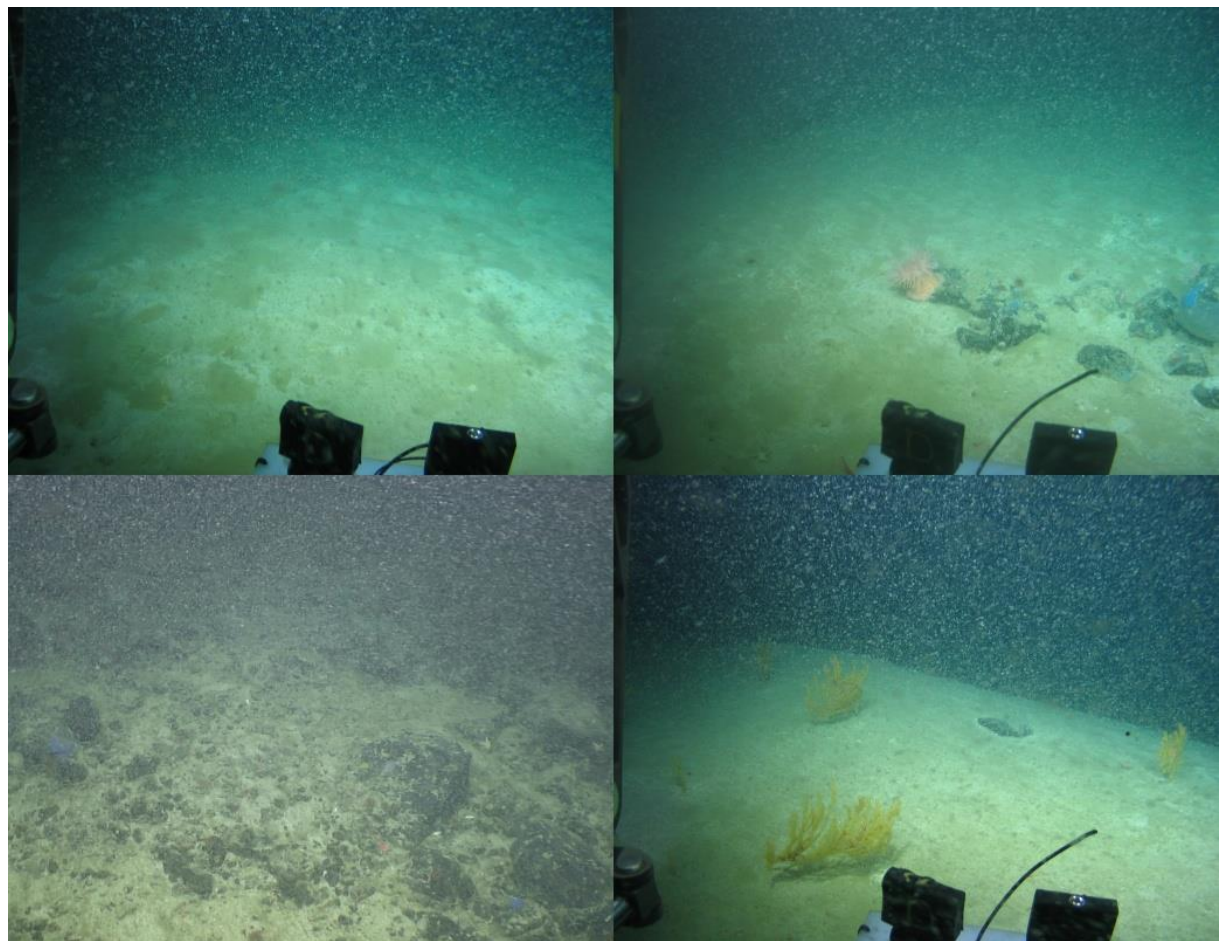
Dive 530, RB28



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mud sediment on gentle up slope with thick marine snow (M.AtLB.Mu).

Top R. Actinostolida sp OTU132 and encrusted blue sponge OTU800 on cobbles (M.AtLB.Mu; M.AtLB.Ro).

Bottom L. Typical mud veneered cobble and pebble fields encountered a few times in this transect (M.AtLB.Ro; M.AtLB.Mu)

Bottom R. Paramuricea sp OTU1050 field on muddy down slope (M.AtLB.Mu.EreCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

HD VIDEO STARTS AT 10:18am. The whole transect occurs on mud with flocculent detritus apparent on its surface with frequent patches of carbonate and boulders. Heavy marine snow throughout the entire dive. **10:18am [1]** The transect starts on a moderate continental slope with soft muddy sediment dominated by *Ophiomusa lymani*. **10:19:50 – 10:26:00** The ROV stops for core sampling. The ROV moves again. **10:29m [2-3-4]** *O. lymani* co-dominate the transect with *Anthomastus grandiflorus* and *Paramuricea* sp, which co-occur until 10:38m. **10:38m [5]** *Pennatula aculeata*, *A. grandiflorus* and *O.lymani* co-dwell on muddy sediment. **10:43m [6]** Ceriantid anemones dominate muddy sediment. **10:53m [7]** soft corals dominate the site.11:04m [9] The slope becomes steeper, pebbles and cobbles become more common, ophiuroids are generally dominant on soft sediment, while encrusted sponges occupy the hard substrate.**11:17m [11] [12] [13]** Patches of pebbles and cobbles are scattered, while mud sediment becomes more spread dominated by *O.lymani* and *Caridea* sp. The sediment is muddy with many *Acanella arbuscula* **11:22am** The ROV reaches the summit where flocculent detritus are particularly abundant and the resolution of the video is not clear enough to spot species. The ROV dives in the water column for a while. **11:46am** The ROV goes down the carbonate cliff and recording the water column. **11:50am** The ROV reaches the summit of another carbonate mound with carbonate and mud sediment dominated by *Paramuricea* sp until the end of the dive at 12:01am. HD VIDEO ENDS AT 12:01am.

Physical Data									
Reef (types can be concurrent)	<table border="1"> <tr> <td><10% reef</td> <td>100% geogenic</td> </tr> <tr> <td></td> <td>0% biogenic</td> </tr> <tr> <td></td> <td>n/a</td> </tr> <tr> <td></td> <td>n/a</td> </tr> </table>	<10% reef	100% geogenic		0% biogenic		n/a		n/a
	<10% reef	100% geogenic							
	0% biogenic								
	n/a								
	n/a								
Substrates	<ul style="list-style-type: none"> - Mud - Sand - Gravel - Pebbles - Cobbles - Boulders - Carbonate 								
Geomorphology/Features	<ul style="list-style-type: none"> - Continental slope - Carbonate mound <ul style="list-style-type: none"> o Carbonate crack o Carbonate overhang o Carbonate summit o Carbonate vertical wall 								
Annex 1 Types	<ul style="list-style-type: none"> - Carbonate mound - Pebble/cobble - Boulders 								
Pressures	n/a								

DIVE SUMMARY

Biological Data			
Number of Species		48	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
551	Ophiomusa lymani	L	F
1046	Pennatula aculeata	L	F
555	Phorsonoma placenta	L	O
547	Stauropathes arctica	L	R
1050	Paramuricea sp	L	F
132	Actinostolidae sp	L	R
1072	Crinodea sp(10 arms)	L	R
1039	Hydrolagus cf affinis	L	O
1044	Radicipes sp	L	R
581	Umbellula sp	L	R
557	Lepidisis sp	L	R
582	Actinaria sp 18	L	R
577	Coryphaenoids guentheri	L	R
1009	Notacanthidae sp1(possNotacanthus cheminizii)	L	R
1039	Hydrolagus cf affinis poss pallidus	L	R
1008	Chrysogorgiidae sp1	M	O
278	Anthomastus grandiflorus	M	F
255	Phelliactis sp1	M	R
274	Brisingidae	M	R
554	Actinernus sp	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
991	Acanella arbuscula (firtree)	M	R
566	Coryphaenoids rupestris	M	R
39	Corallimorphidae sp1	M	R
1059	Colosseindes sp	M	R
440	Synaphobrancus kaupii	M	R
800	Porifera encrusting blue	Mass	R
1	Porifera encrusting white sp1	Mass	R
2	Ceriantharia	S	F
605	Actinaria sp20	S	R
1138	Eucaridae sp2(redDeep)	S	O

DIVE SUMMARY

1098	Hormatiidae sp	S	R
471	Asteronyx loveni	S	F
194	Echinidae sp(pink)	S	O
263	Porania pulvillus	S	O
1114	Pennatulacea (indet)	S	R
1077	Caridea sp	S	O
585	Acanella arbuscula (bushy)	S	R
1079	Rhodaliidae sp	S	R
1056	Flabellum sp	S	R
205	Paguridae sp	S	R
1169	Psychropotes depressa	S	R
1036	Ophiuroidea sp11	S	R
1	Porifera encrusting sp1 white	S	R
6	Caryophyllia sp	S	R
1174	cf Hymenaster	S	O
1154	Henricia sp(deep)	S	R
930	Actinopterygii sp3	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Co	Atlantic lower bathyal coarse sediment	
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES); soft-bottom gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities (OSPAR)
(var) M.AtLB.Mu.BurOph	(variant of) Burrowing ophiuroid community on Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES); soft-bottom gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities (OSPAR)
M.AtLB.Mu.EreCor	Erect coral field on Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES); soft-bottom gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities

DIVE SUMMARY

		(OSPAR)
M.AtLB.Mu.EreCor.AcaAr b	<i>Acanella arbuscula</i> assemblage on Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES); soft-bottom gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities (OSPAR)
(var)M.AtLB.Mu.EreCor	(variant of)Erect coral field on Atlantic lower bathyal mud	Soft-bottom coral gardens: gorgonian and black corals gardens (ICES subcategory)
M.AtLB.Mx	Atlantic lower bathyal mixed sediment	Carbonate mound (OSPAR); mud and sand emergent fauna (ICES); soft-bottom coral gardens: gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities (OSPAR)
M.AtLB.Ro	Atlantic lower bathyal rock and hard substrata	Mud and sand emergent fauna (ICES); soft-bottom coral gardens: gorgonian and black corals gardens (ICES subcategory); sea-pen and burrowing megafauna communities (OSPAR)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	(var) M.AtLB.Mu.BurOph	551 Ophiomusa lymani, 1046 Pennatulacea aculeata, 278 Anthomastus grandiflorus
2	(var) M.AtLB.Mu.BurOph	551 Ophiomusa lymani, 278 Anthomastus grandiflorus, 1050 Paramuricea sp
3	(var) M.AtLB.Mu.BurOph	551 Ophiomusa lymani, 1050 Paramuricea sp
4	M.AtLB.Mu.EreCor	

DIVE SUMMARY

	1046 Pennatulacea aculeata, 278 Anthomastus grandiflorus, 551 Ophiomusa lymani
5	M.AtLB.Mu 1069 Ceriantharia, 551 Ophiomusa lymani, 1046 Pennatulacea aculeata
6	M.AtLB.Mu.EreCor 278 Anthomastus grandiflorus, 1050 Paramuricea sp, 471 Asteronyx loveni
7	(var)M.AtLB.Mu.EreCor 1050 Paramuricea sp, 471 Asteronyx loveni, 278 Anthomastus grandiflorus
8	M.AtLB.Mu; M.AtLB.Ro 551 Ophiomusa lymani
9	M.AtLB.Mu; M.AtLB.Ro 1076 Ophiuroidea sp(indet)
10	M.AtLB.Ro; M.AtLB.Mu 1076 Ophiuroidea sp(indet)
11	M.AtLB.Ro; M.AtLB.Mu 1076 Ophiuroidea sp(indet)
12	M.AtLB.Mu n/a
13	(var)M.AtLB.Mu.EreCor 1050 Paramuricea sp

Conservation Targets	
Listed Habitats Encountered	
Name	Authority

DIVE SUMMARY

Carbonate mound	OSPAR	
Mud and sand emergent fauna	ICES	
Coral gardens	ICES/OSPAR	
- Soft-bottom gorgonian and black corals gardens	ICES subcategory	
Sea-pen and burrowing megafauna communities	OSPAR	
Listed Species Encountered (Fish, Count)		
n/a	n/a	n/a

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 531	TRANSECT # RB06

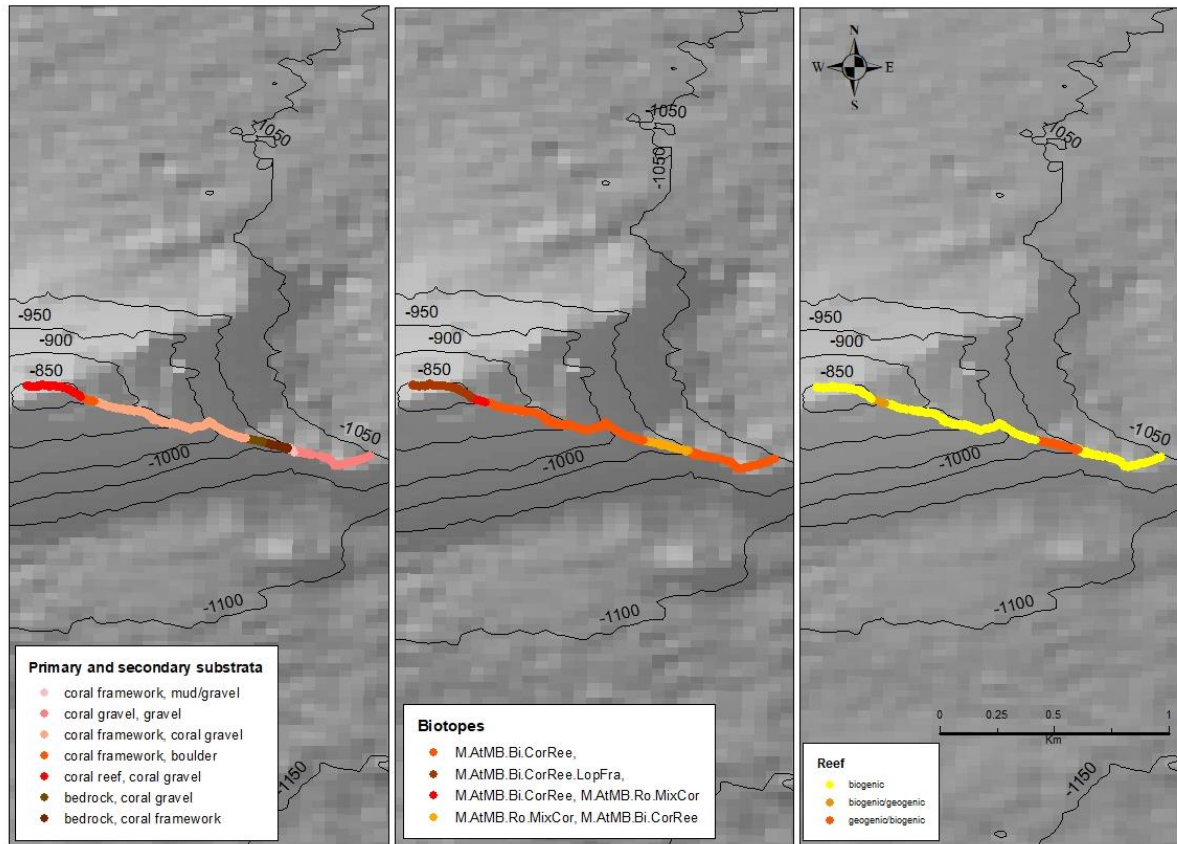
	Start	End
Date & Time	07/05/2018 16:20:30	07/05/2018 17:54:15
Latitude/ Longitude	56.23205, -14.2759	56.23479, -14.2895
Depth	-1036m	-806m
Images	IMG_5101-IMG_5803.JPG	
Samples	n/a	

Location	RB06
Target Features	Ridge, Mound, straddles SAC, PINNACLE mapped in SORBEH cruise. Two transects.
Depth Range	-850, -1150

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

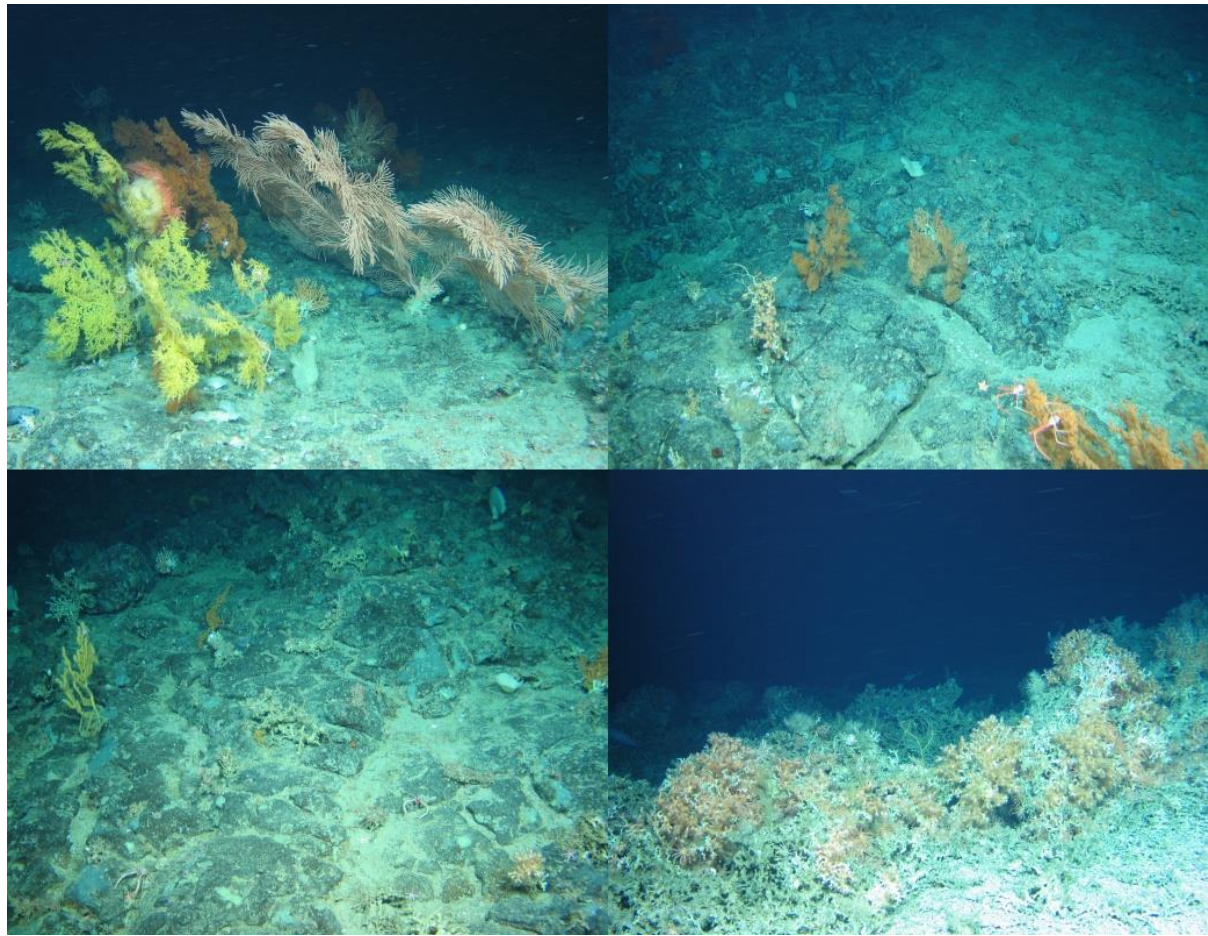
Dive 531, RB06



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mixed coral community *Callogorgia verticillata* OTU280, *Leiopathes* sp OTU305 and *Phanopathes* sp 330 on mud veneered bedrock (M.AtMB.Ro.MixCor).

Top R. *Leiopathes* sp OTU305 and scattered *Phakellia ventilabrum* OTU202 on hard substrata (M.AtMB.Ro.MixCor).

Bottom L. Mixed coral community on bedrock, including *Lophelia pertusa* OTU250, *Paramuricea* sp OTU1050 and *Leiopathes* sp OTU305 ((M.AtMB.Ro.MixCor).

Bottom R. Biogenic reef of *Lophelia pertusa*/*Madrepora oculata* OTU250/251 (M.AtMB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 0m/16:20:28 *Lophelia pertusa* coral reef framework spans across the whole transect. 16:20 [1] the ROV climbs a steep canyon covered by coral gravel and occasional boulders where Ophiuroidea sp (indet) dominate. Frequent sights of *Coryphaenoides guentheri*. 16:37 [2] dense colonies of *Lophelia* reefs. 16:43 [3] Here sediment changes into hard substrate, mainly boulders, with frequent *Leiopathes* sp, *Paramuricea* sp and sponge aggregation of *Phakellia ventilabrum*. 16:58 [4] now coral reef framework and coral rubble alternate frequently. 17:26 Frequent encounters of *Callogorgia* sp. 17:38 [5] Biogenic and geogenic reefs intersperse, hosting rich biodiversity hotspots. 17:30 [6] coral framework and coral gravel densely dominate this area. **END OF HD VIDEO AT 17:54.**

Physical Data									
Reef (types can be concurrent)	<table border="1"> <tr> <td>95% reef</td> <td>5% geogenic</td> </tr> <tr> <td></td> <td>95% biogenic</td> </tr> <tr> <td></td> <td><25% living</td> </tr> <tr> <td></td> <td><75% dead</td> </tr> </table>	95% reef	5% geogenic		95% biogenic		<25% living		<75% dead
95% reef	5% geogenic								
	95% biogenic								
	<25% living								
	<75% dead								
Substrates	<ul style="list-style-type: none"> - Boulder - Coral reef - Coral framework - Coral rubble - Coral gravel - Gravel - Mud/gravel 								
Geomorphology/Features	Continental slope								
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Boulders 								
Pressures	n/a								

Biological Data	
Number of Species	73
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
577	Coryphaenoides guentheri (juvenile)	L	F
1090	Porifera tubular glassy(cfFarreidae)	L	R
328	Bathypathes sp1	L	R
283	Stichopathes cf gravieri	L	R
305	Leiopathes sp	L	O
1050	Paramuricea sp	L	F
214	Gorgonocephalus sp1	L	R
273	Lophius piscatorius	L	R
274	Brisingidae	L	R
1042	Parantipathes sp	L	R
540	Chrysopathes sp Trissopathes sp	L	R
657	Stryphnus fortis	L	R
557	Lepidisis sp	L	R
254	Chaceon affinis	L	R
284	Bathypathes sp(brown)	L	R
280	Callogorgia verticillata	L	R
330	Phanopathes sp	L	R
654	Molva molva	L	R
1157	Keratosis sp(fineBranching)	L	R
973	Graneledone verrucosa	L	R
188	Araeosoma febeistratum	L	O
304	Paramola cuvieri	L	R
649	Eknomisis sp	L	O
293	Zoantharia sp 6	L	R
250	Lophelia pertusa	M	F
264	Aphrocallistes sp	M	O
211	Cidaris cidaris	M	O
285	Chryrostylidae sp	M	R
930	Actinopterygii sp3	M	R
106	Paragorgia sp (deepPink)	M	R
563	Neocyttus helgae	M	R
249	Lepidion eques	M	O
131	Crinoidea sp1	M	R
320	cf Anthipathella sp	M	R
202	Phakellia ventilabrum	M	R
266	Parastichopus tremulus	M	R
574	Holothuroidea sp2	M	R
279	Echinoidea sp1	M	R
278	Anthomastus grandiflorus	M	R
20	Ascidacea sp2 (clear)	M	R
198	Stichastrella rosea	M	R
227	Helicolenus dactylopterus	M	R
251	Madrepora oculata	M	F
1187	Antipathes dichotoma	M	O
1064	Isididae sp (fineBranching)	M	R
289	cf Clavulariidae sp	M	O
307	Gorgonacea sp7 cflsidella	M	R
433	Pseudarchaster sp1	M	R
263	Porania pulvillus	M	R
380	Porifera massive globose sp9	Mass	O
658	Hexadella dedritifera	Mass	R
311	Anthothelia grandiflora	Mass	O
657	Stryphnus fortis	Mass	R
658	Hexadella dedritifera	Mass	R
605	Actinaria sp20	S	O
1126	Munnidopsis sp	S	R
6	Caryophyllia sp	S	O
234	Ceremaster Peltaster Plinthaster	S	R

DIVE SUMMARY

299	Pterasteridae sp	S	R
1162	Porifera vase (cfAphrocallistes)	S	R
106	Serpulidae sp1	S	R
2	Ceriantharia	S	O
255	Phelliactis sp1	S	R
1186	Asteroidea (cf Spinulosida)	S	R
56	Hydrozoa flat branched	S	R
1077	Caridea sp	S	R
1106	Eucarida sp	S	R
4	Actiniaria sp1	S	O
1076	Ophiuroidea sp (indet)	S	O
339	Munida tenuimana	S	O
1149	Zoantheida sp	S	R
1121	Majoidea sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> reef (ICES/OSPAR)
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> reef (ICES/OSPAR)
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtMB.Bi.CorRee 250 <i>Lophelia pertusa</i> , 1076 <i>Ophiuroidea</i> sp (indet)
2	M.AtMB.Bi.CorRee

DIVE SUMMARY

	305 Leiopathes sp, 202 Phakellia ventillabrum
3	M.AtMB.Ro.MixCor; M.AtMB.Bi.CorRee
	305 Leiopathes, 330 Phanopathes sp, 250 Lophelia pertusa
4	M.AtMB.Bi.CorRee
	250 Lophelia pertusa, 305 Leiopathes sp
5	M.AtMB.Bi.CorRee; M.AtMB.Ro.MixCor
	250 Lophelia pertusa, 305 Leiopathes sp, 280 Callogorgia verticillata
6	M.AtMB.Bi.CorRee.LopFra
	250 Lophelia pertusa, 305 Leiopathes sp

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Cold water coral reefs:	ICES/OSPAR
- <i>Lophelia pertusa</i> reef	ICES subcategory
Coral gardens	ICES/OSPAR
- Hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments

DIVE SUMMARY

- Notable extensive coral reef

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 532	TRANSECT # RB07

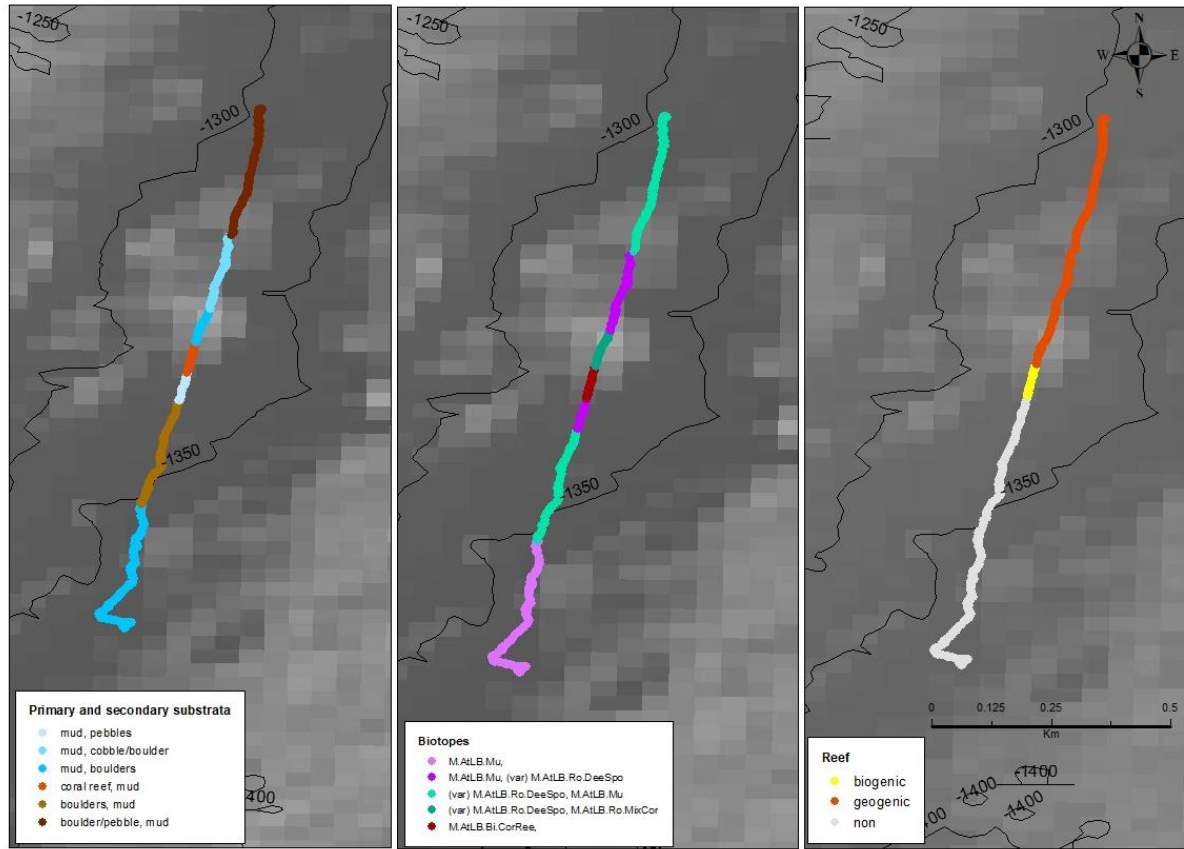
	Start	End
Date & Time	05/07/2018 20:37:31	05/07/2018 22:13:10
Latitude/ Longitude	56.19487, -14.24553	56.20509, -14.24295
Depth	-1376m	-1320m
Images	IMG_5804-IMG_6227.JPG	
Samples	2 x <i>Pheronema carpenteri</i> 2 x pushcores	

Location	RT07
Target Features	Escarpment, Ridge, SAC
Depth Range	-1260, -1400

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

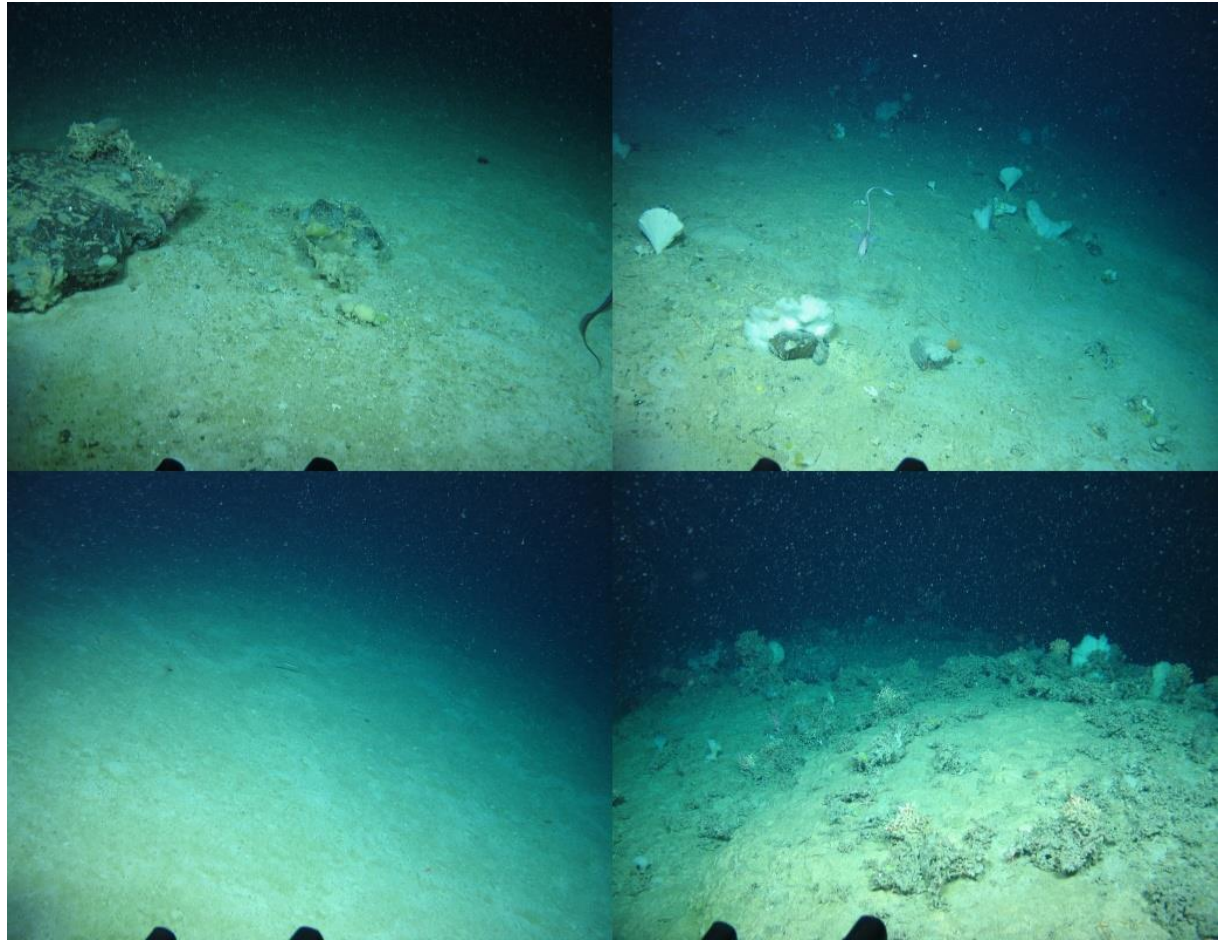
Dive 532, RB07



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Boulders on muddy slope with occasional *Solenosmilia variabilis* OTU700 colonies on hard substrata (M.AtLB.Ro.MixCor).

Top R. Frequent lamellate sponges, possibly *Phakellia ventilabrum* OTU202, down slope (M.AtLB.Mu; (var) M.AtLB.Ro.DeeSpo).

Bottom L. Muddy sediment on up slope (M.AtLB.Mu).

Bottom R. *S.variabilis* OTU700 biogenic reef on slope with sparse lamellate sponges (M.AtLB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO [1] 20:37m Transect starts on a moderate slope of muddy sediment with occasional cobbles and boulders and many juvenile *Coryphaenoides rupestris* and *Synaphobranchus kaupii* being encountered. Encrusted sponges with patches of dead *Solenosmilia variabilis* reefs predominantly cover boulders. **[2] 20:56m** The boulders become more abundant and prevail on muddy sediment. Porifera lamellate (hexactinosida) dominate the site. At 20:57m the ROV zooms on the muddy sediment, which reveals a small sea pen field (poss *Distichoptilum gracile*) (<5x5m). **[3] 21:12m** Porifera (poss *Pheronema carpenteri*) dominates the muddy and pebble substrate for a short distance **[4] 21:18m** Here colonies of *Solenosmilia* reefs. Muddy sediment with occasional boulders become more abundant again, where porifera lamellate (hexactinosida) dominates. **[5] 21:26m** The ROV reaches a carbonate summit with a small patch of *Solenosmilia variabilis* framework. **[6] 21:29m** The ROV descends the summit, travelling down on a moderate muddy slope with abundant boulders where, again, porifera lamellate (hexactinosida) dominates. **[7] 21:33m** The muddy sediment is substituted with pebbles, while boulders persist. Towards the end of the video, deep sea sponge aggregations –including encrusting- are widely spread on hard substrata. **END OF HD VIDEO 22:13m**

Physical Data			
Reef (types can be concurrent)	55% reefs	<85% geogenic	
		<15% biogenic	<99% dead
			<1% living
Substrates	<ul style="list-style-type: none"> - Mud - Pebbles - Cobbles - Boulders - Carbonate mound - Coral reef 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble - Cobble - Boulder - Carbonate - Coral reef 		
Pressures	n/a		

Biological Data	
Number of Species	73

DIVE SUMMARY

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1082	<i>Apristurus profundorum</i>	L	R
653	<i>Chimera opalescens</i>	L	R
649	<i>Eknomisis</i> sp	L	R
1078	<i>Ipnopidae</i> sp	L	R
305	<i>Leiopathes</i> sp	L	R
436	<i>Pentametocrinus atlanticus</i>	L	R
347	<i>Phoronema carpenteri</i>	L	R
1151	Porifera lamellate (hexactinosida)	L	R
623	Porifera lamellate sp10(Yellow)	L	R
576	Porifera massive lobose sp18 (cfFarrea_sp)	L	R
616	Porifera massive lobose(yellow) sp21 (yellow cf Rhabdodictyum)	L	R
1090	Porifera tubular glassy (cfFarreidae)	L	R
652	Rajiformes sp1 poss Neoraja caerulea	L	R
440	<i>Synphobranchus kaupii</i>	L	O
446	<i>Trachyrhynchus</i> sp (pevCoryphaenoides guentheri OTU577)	L	R
585	<i>Acanella arbuscula</i> (bushy)	M	R
478	<i>Actiniaria</i> sp13	M	R
311	<i>Anthothelia grandiflora</i>	M	R
274	<i>Brisingidae</i>	M	R
RB07	<i>Cidaris cidaris</i>	M	R
1059	<i>Colossendeis</i> sp	M	R
577	<i>Coryphaenoides guentheri</i>	M	O
566	<i>Coryphaenoides rupestris</i>	M	R
1072	<i>Crinoidea</i> sp	M	R
1108	<i>Distichoptilum gracile</i>	M	R
1052	<i>Gracilechinus</i> cf alexandri (deep_whitePink)	M	R
973	<i>Graneledone verrucosa</i>	M	R
917	<i>Hyalonema</i> sp1	M	R
249	<i>Lepidion eques</i>	M	R
250	<i>Lophelia pertusa</i>	M	R
171	<i>Mycale lingua</i>	M	R
563	<i>Neocyttus helgae</i>	M	R
1065	<i>Paragorgia</i> sp(deepPink)	M	R
1042	<i>Parantipathes</i> sp	M	R
1046	<i>Pennatula aculeata</i>	M	R
255	<i>Phelliactis</i> sp1	M	R
606	Porifera lamellate sp9(foliate)	M	R
433	<i>Pseudarchaster</i> sp1	M	R
41	<i>Sagartidae</i> sp3	M	R
1061	<i>Solasteridae</i> sp (7arm)	M	R
547	<i>Stauropathes arctica</i>	M	R
560	<i>Stichopathes</i> sp	M	R
532	Porifera encrusting (blue)	Mass	R
105	Porifera encrusting (cream)	Mass	R
1	Porifera encrusting (white)	Mass	R
648	Porifera massive globose sp13	Mass	R
605	<i>Actiniaria</i> sp20	S	R
930	<i>Actinopterygii</i> sp3	S	R
1066	<i>Adamsia</i> sp (PaguridaeAssoc)	S	R
278	<i>Anthomastus grandiflorus</i>	S	R
146	<i>Aphroditidae</i> sp1	S	R
6	<i>Caryophyllia</i> sp	S	R
584	<i>Caryophyllia</i> sp5 (bullseye)	S	R
234	<i>Ceremaster peltaster</i> Plinthaster	S	R

DIVE SUMMARY

2	Ceriantharia	S	R
1107	cf Anthoptilum sp	S	R
285	Chyrostylidae (indet)	S	R
82	Cirripedia sp	S	R
113	Colus sp	S	R
131	Crinoidea sp1	S	R
1138	Eucaridea sp2 (redDeep)	S	O
TBC	Euryalida	S	R
208	Henricia sanguinolenta	S	R
628	Holothuroidea sp4 (cfAmperima)	S	R
432	Holothuroidea_cf_Laetmogone (purple)	S	R
339	Munida tenuimana	S	R
551	Ophiomusa lymani	S	R
205	Paguridae	S	R
202	Phakellia ventillabrum	S	R
555	Phormosoma placenta	S	R
982	Porifera massive lobose sp30	S	R
950	Rhodallidae sp	S	R
TBC	Solasteridae sp(white)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
(var) M.AtLB.Ro.DeeSpo	(variant of) Deep sponge aggregation on Atlantic lower bathyal rock and other hard substrata	Deep-sea sponge aggregations (ICES/OSPAR); hard-bottom sponge aggregations (ICES subcategory).
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom gorgonian and black coral gardens (ICES subcategory).
M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Solenosmilia variabilis</i> reefs (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Mu
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DIVE SUMMARY

	577 <i>Coryphaenoides guentheri</i> , 566 <i>Coryphaenoides rupestris</i>
2	(var) M.AtLB.Ro.DeeSpo; M.AtLB.Mu
	1151 Porifera lamellate (hexactinosida)
3	M.AtLB.Mu; (var) M.AtLB.Ro.DeeSpo
	560 <i>Stichopathes</i> sp, 1151 Porifera lamellate (hexactinosida), 250 <i>Lophelia pertusa</i>
4	M.AtLB.Bi.CorRee
	700 <i>Solenosmilia variabilis</i>
5	(var) M.AtLB.Ro.DeeSpo; M.AtLB.Ro.MixCor
	1151 Porifera lamellate (hexactinosida), 305 <i>Leiopathes</i> sp
6	M.AtLB.Mu; (var) M.AtLB.Ro.DeeSpo
	202 <i>Phakellia ventillabrum</i> , 1151 Porifera lamellate (hexactinosida)
7	(var) M.AtLB.Ro.DeeSpo; M.AtLB.Mu
	202 <i>Phakellia ventillabrum</i> , 1 Porifera encrusting (white), 347 <i>Pheronema carpenteri</i>

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Deep-sea sponge aggregations	ICES/OSPAR
- Hard-bottom sponge aggregations	ICES subcategory
Coral gardens	ICES/OSPAR
- hard-bottom gorgonian and black coral gardens	ICES subcategory
- soft-bottom gorgonian and black coral gardens	ICES subcategory
Cold water coral reefs	ICES subcategory
- <i>Solenosmilia variabilis</i> reefs	ICES/OSPAR
Mud and sand emergent fauna	ICES subcategory
	ICES

DIVE SUMMARY

Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 533	TRANSECT # RB13

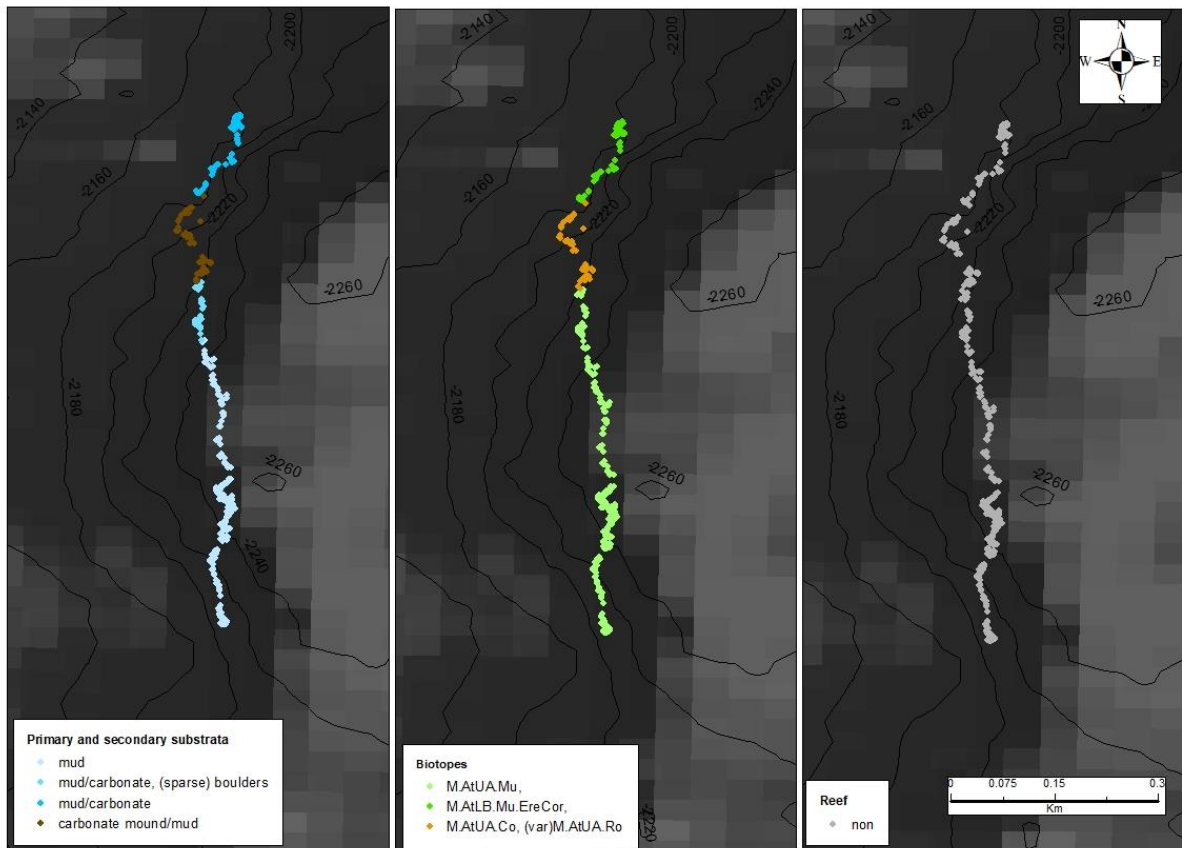
	Start	End
Date & Time	06/07/2018 03:28:25	06/07/2018 05:25:50
Latitude/ Longitude	55.83897, -14.217	55.84564, -14.2167
Depth	-2245m	-1658m
Images	IMG_6228-IMG_6492	
Samples	1 x <i>Acanella arbuscula</i>	

Location	13, Rockall Bank
Target Features	Fished, Escarpment
Depth Range	-2160, -2230

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

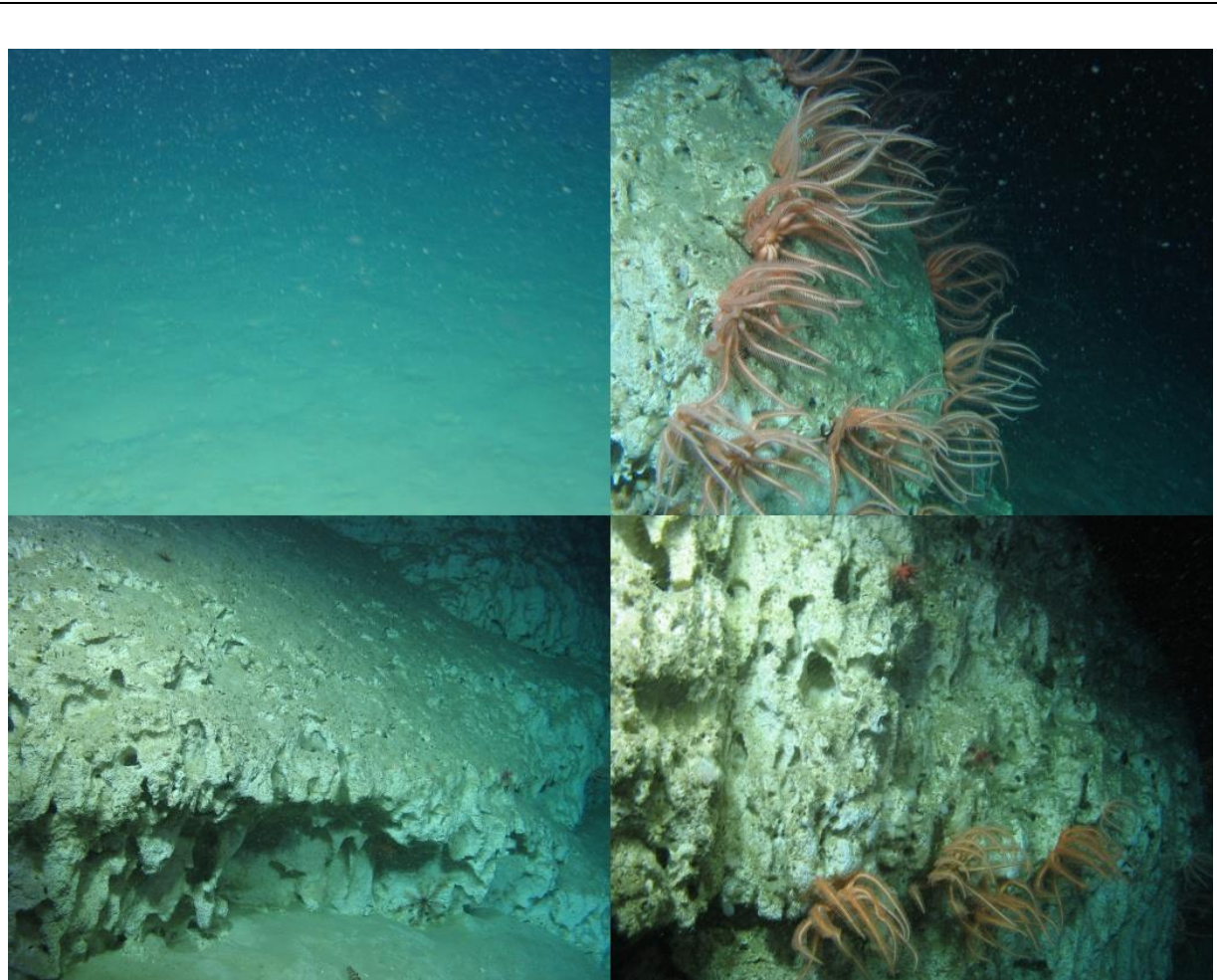
Dive 533, RB13



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Muddy sediment on slope (M.AtUA.Mu).

Top R. Brisingidae OTU274 colony on carbonate boulder (M.AtLB.Ro).

Bottom L. Carbonate crust on slope (M.AtLB.Ro).

Bottom R. Carbonate wall hosts Brisingidae OTU274 colonies (M.AtLB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO [1] 03:28m The video starts with the ROV carrying out core sampling which takes place in muddy sediment on a moderate slope. Ceriantharia species are most abundant species with frequent sights of *Coryphaenoides guentheri*. Similar muddy sediment carries on for the first hour of the transect. [2] 04:34m Sparse boulders appear during this part of the transect where a small patch of sea pen aggregation (Pennatulacea indet) is present. [3] 04:41m Transect crosses small escarpment (overhanging carbonate mound) dominated by Brisingidae OTU274. [4] The ROV reaches a flat summit of muddy sediment dominated by *Acanella arbuscula* for most of the last part of the video. Between 05:13 and 05:25 the ROV collects a sample of *A.arbuscula* **END OF HD VIDEO.**

Physical Data	
Reef (types can be concurrent)	0% reef
	0% geogenic
	0% biogenic
	n/a
	n/a
Substrates	<ul style="list-style-type: none"> - Mud - Boulders - Carbonate mound - Carbonate crust
Geomorphology/Features	Continental slope Escarpment
Annex 1 Types	<ul style="list-style-type: none"> - Carbonate - Boulders
Pressures	n/a

Biological Data	
Number of Species	36
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
258	Brosme brosme	L	R
1160	Lepidion cf guentheri	L	R
1194	Muusoctopus johnsonianus	L	R
1050	Paramuricea sp	L	R
552	Polyacabthonotus rissoanus	L	R
585	Acanella arbuscula	M	R
554	Actinernus sp	M	R
278	Anthomastus grandiflorus	M	R
274	Brisingidae	M	R
2	Ceriantharia	M	R
984	cf Halcampoididae sp	M	R
577	Coryphaenoides guentheri	M	R
131	Crinoidea sp1	M	R
1103	Democrinus sp	M	R
1106	Eucarida sp	M	R
1176	Grimpoteuthis sp	M	R
249	Lepidion eques	M	R
TBC	Solasteridae sp (white)	M	R
1126	Munnidopsis sp	M	R
551	Ophiomusa lymani	M	R
1114	Pennatulacea(indet)	M	R
202	Phakellia ventilabrum	M	R
255	Phelliactis sp1	M	R
555	Phorsonoma placenta	M	R
1128	Porifera globose (muddy)	M	R
380	Porifera massive globose sp9	M	R
547	Stauropathes arctica	M	R
440	Synaphobranchus kaupii	M	R
1	Porifera encrusting white sp1	Mass	R
605	Actiniaria sp20	S	R
1077	Caridae sp (indet)	S	R
1107	cf Anthoptilum sp	S	R
335	Demophyllum sp1 cf dianthus	S	R
559	Echinidae sp (white)	S	R
339	Munida tenuimana	S	R
1191	Pennatulacea sp (submergedAxis)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
(var)M.AtUA.Ro	(brisingidae)Atlantic upper abyssal rock and other hard substrata	

DIVE SUMMARY

M.AtUA.Co	Atlantic upper abyssal coarse sediment	
M.AtLB.Mu.EreCor	Erect coral field on Atlantic lower bathyal mud	Coral gardens (ICES/OSPAR); soft-bottom coral garden (ICES subcategory)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Carbonate mound (OSPAR)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu	
		1069 Ceriantharia
2	M.AtUA.Mu,	
		1114 Pennatulacea (indet), 274 Brisingidae
3	M.AtUA.Co; (var)M.AtUA.Ro	
		274 Brisingidae
4	M.AtLB.Mu.EreCor	
		1008 Chrysogorgiidae sp

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Sea-pen and burrowing megafauna communities	ICES/OSPAR
Mud and sand emergent fauna	ICES
Coral gardens:	ICES/OSPAR
- soft-bottom coral garden	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

DIVE SUMMARY

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 534	TRANSECT # RB11

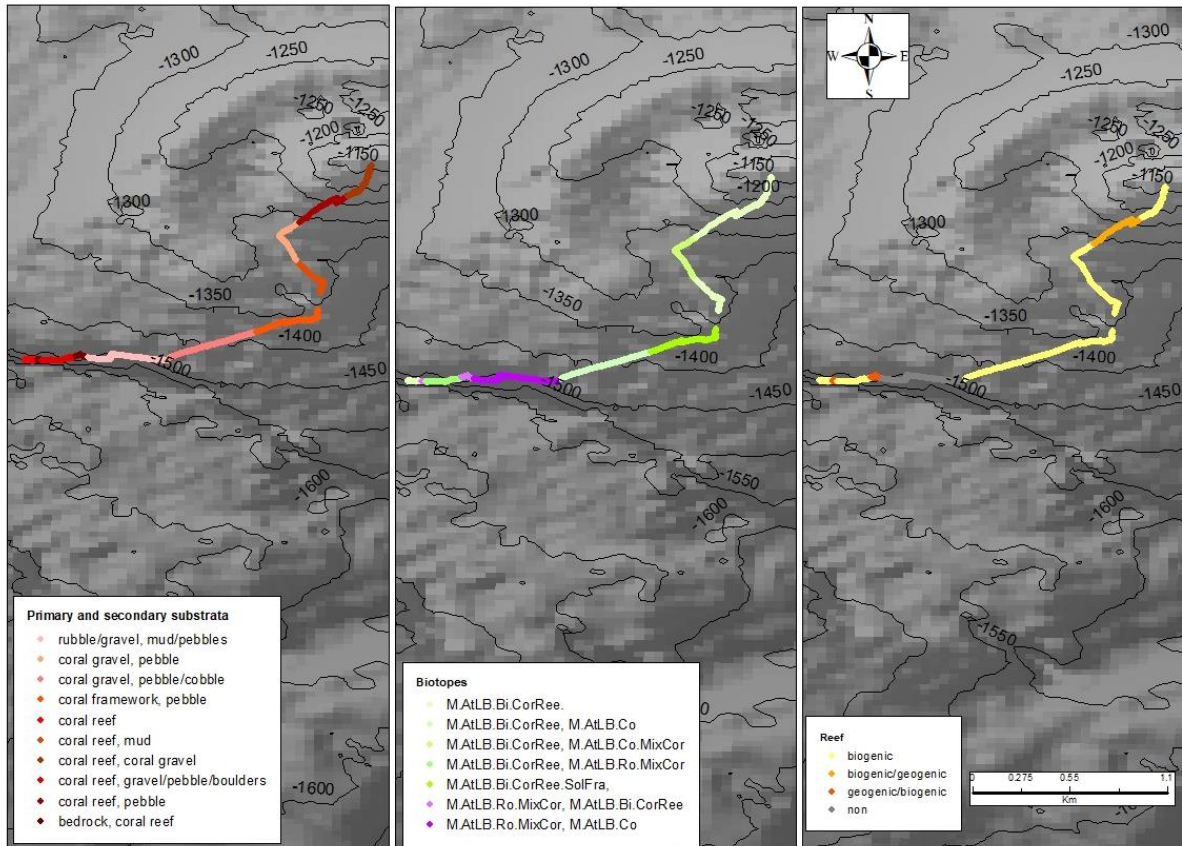
	Start	End
Date & Time	06/07/2018 10:14:24	06/07/2018 13:38:45
Latitude/ Longitude	55.98131, -14.4851	55.9913852, -14.46713917
Depth	-1556.8	-1114.3
Images	IMG_6493-IMG_7165.JPG	
Samples	n/a	

Location	RT11
Target Features	Ridge, Escarpment, Mound, SAC
Depth Range	-1150, -1500

Maps of Dive
OFOP BMP and/or GIS Maps

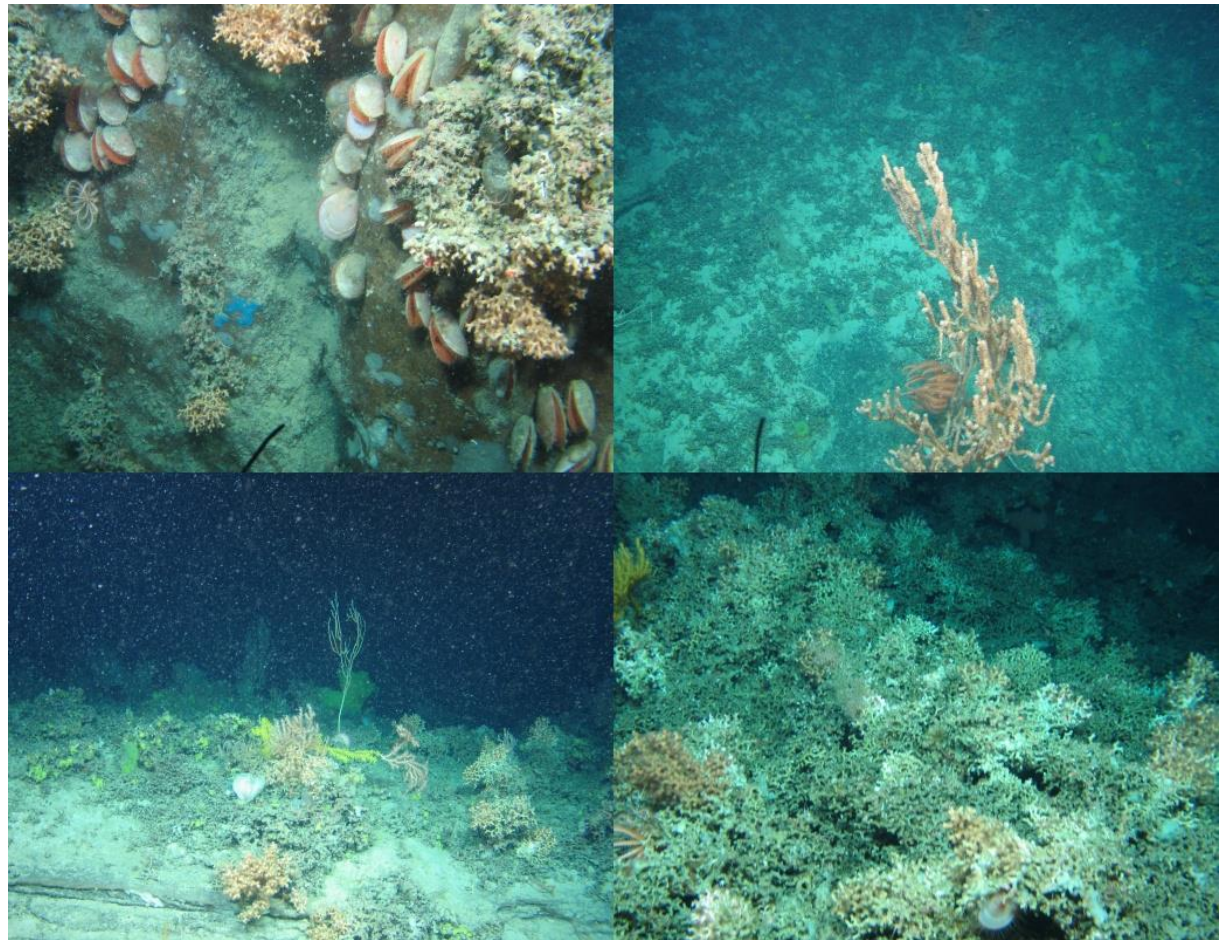
DIVE SUMMARY

Dive 534, RB11



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)



Top L. *Acesta excavata* OTU106 and *Solenosmilia variabilis* OTU700 colonies co-habit on vertical hard substrata (M.AtLB.Ro.MixCor).

Top R. *S.variabilis* OTU700 reefs on slope with closed up imagery of large *Eknomisis* sp OTU640 (M.AtLB.Bi.CorRee.SolFra).

Bottom L. Biogenic reefs on *S.variabilis* OTU700 on slope, hosting many epifauna species including *Eknomisis* sp OTU640 and *Zoanthidae* sp2 OTU586 (M.AtLB.Bi.CorRee.SolFra).

Bottom R. Extensive *S.variabilis* reefs (M.AtLB.Bi.CorRee.SolFra).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO A [1] 10:14am [1] Epifaunally rich gently upsloping coral garden with dense ophiuroidea, bivalve shells of possible *Acesta excavata*, and sparse deep sea sponge aggregations. In front of the ROV, two individual of *Hoplostethus atlanticus* are swimming, which is an IUCN endangered species. 10:25 [2] Geogenic and biogenic reefs co-dominate on this part of the transect. 10:52am the ROV reached the summit and it dives through the water column for ~10 minutes before heading towards the vertical wall. The ROV dives along the continental cliff. 11:00 [4] mosaic substrata (coral reef, mud, gravel and cobbles). Coral reefs host a variety of sponge and coral aggregations. *Neocyttus helgae* often encountered. 11:02 [5] Here coarse sediments with scattered pebble/cobble, which host mixed coral gardens. 11:23 [6] Biogenic *Solenosmilia* reefs made of gravel and rubble on slope. 12:00pm less dense epifauna in this part of the transect. Three encounters of leafscale gulper sharks, which is an IUCN endangered species. Here muddy sediments with sparse *Solenosmilia variabilis* reef framework. 11:43 [7] Coral reefs (mainly coral framework) on slope 12:01pm *Molva molva* sight. **HD VIDEO A ENDS AT 12:04. HD VIDEO B STARTS AT 12:14.** [8] Again coral reef framework on a gentle down slope with several species of porifera vase and lobose/globose. 12:16 - 12:17 The ROV stops for imagery on *S. variabilis* reef framework with poss. *Mycale lingua* aggregations as well as a few individuals of echiunoidea and scleractinians. 12:18pm the ROV moves forward. 12:20pm Leafscale gulper shark. 12:21 *Synaphobranchus kaupii* eel. 12:23pm The ROV changes direction of ~45° moving uphill. [9] Now coral reefs is less abundant, muddy/coral gravel/cobbles/boulders predominate. Large individuals of *Leiopathes* species. 12:24 slope becomes steep with frequent sights of leafscale gulper sharks (possibly the same individual fast swimming in front of the ROV). 12:47 [10] Here flat substrata with bedrock becoming more visible. Hosting cobbles and coral framework (100% dead) with *Leiopathes* and sponge aggregations. 12:36pm Here The ROV shows mud and gravel with sparse sponge aggregations. 12:49pm Again The ROV climbs a steep hill, while substrata changes into coral reef framework (100% dead) and cobbles which host sparse sponge aggregations and *Leiopathes*. 12:50 – 12:53pm The ROV hovers high from the ground and descends slowly soon after for imagery of black coral species (possible *Eknomisis sp.*). Mud obscures camera for a few seconds. 12:54pm the ROV hits the ground and stops for a few seconds while mud obscures the camera. ROV moves soon after. 12:55 again substrata changes into mud and coral gravel with sparse coral reefs (*Solenosmilia*) and sponge aggregations. 13:02 coral reef framework is back again with interspersed coral gravel and boulders. 13:04pm the ROV climbs a steep hill and 13:05 changes directions and goes downhill. 13:08 ROV changes direction again, now it goes ~45 ° uphill. 13:15pm trawls marks on the ground. 13:11 [11] Dense coral reefs. 13:25pm the ROV reaches the summit and hover high on the reef. 13:26pm the ROV descends on the reef. 13:37pm the ROV hovers on the reef. Blue water for a few minutes until **END OF HD VIDEO B 13:38pm.**

Physical Data	
Reef (types can be concurrent)	15% geogenic
	85% reef
	85% biogenic
	5% living
	95% dead

DIVE SUMMARY

Substrates	<ul style="list-style-type: none"> - Mud - Coral reef - Coral framework - Boulders - Bedrock
Geomorphology/Features	Escarpment
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Boulders - Bedrock
Pressures	n/a

Biological Data

Number of Species 74

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	O
20	Asciacea sp2 (clear)	L	O
284	Bathypathes sp(brown)	L	R
1048	Centrophorus squamosus	L	R
1142	cf Farreidae	L	R
566	Coryphaenoides rupestris	L	R
640	Eknomisis sp	L	R
651	Hoplostethus atlanticus	L	R
1070	Jasonisis sp (pinkSolenAssoc)	L	R
305	Leiopathes sp	L	R
250	Lophelia pertusa	L	F
654	Molva molva	L	R
1042	Parantipathes sp	L	R
1165	Plexauridae sp (rigidFan)	L	R
552	Polyacanthonotus rissoanus	L	R
535	Porifera cup 2	L	R
1128	Porifera globose (muddy)	L	R
380	Porifera tubular (cfAsconema foliatum)	L	R
1162	Porifera vase (cfAphrocallistes)	L	R
547	Stauropathes arctica	L	R
560	Stichopathes sp	L	R
440	Synphobranchus kaupii	L	O
1149	Zoanthidea sp	L	R
991	Acanella arbuscula (firtree)	M	R
106	Acesta excavate	M	O
554	Actinernus sp	M	R
4	Actiniaria sp1	M	R

DIVE SUMMARY

930	Actinopterygii sp3	M	R
1047	Actinoscyphiidae sp1(pink)	M	R
1047	Actinoscyphiidae sp1(pink)	M	R
132	Actinostolidae sp1	M	R
278	Anthomastus grandiflorus	M	R
311	Anthothelia grandiflora	M	R
264	Aphrocallistes sp	M	R
274	Brisingidae	M	R
211	Cidaris cidaris	M	R
1059	Colossendeis sp	M	R
131	Crinoidea sp1 (red)	M	R
194	Echinidae sp(pink)	M	O
601	Geodia cf baretti (por m glob sp11)	M	R
973	Graneledone verrucosa	M	R
249	Lepidion eques	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
171	Mycale lingua	M	R
563	Neocyttus helgae	M	R
551	Ophiomusa lymani	M	R
1065	Paragorgia sp (deepPink)	M	R
1050	Paramuricea sp	M	R
1046	Pennatula aculeata	M	R
436	Pentametrocrinus atlanticus	M	R
202	Phakellia ventilabrum	M	R
1075	Porifera cylindrical sp	M	R
81	Porifera lamellate lobose	M	R
1090	Porifera tubular glassy (cfFarreidae)	M	R
1169	Psychropotes depressa	M	R
299	Pterasteridae sp	M	R
1	Porifera encrusting sp1 white	Mass	R
58	Porifera encrusting sp15 yellow	Mass	R
TBC	Euryalida	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1049	cf Psolus sp	S	R
82	Cirripedia sp	S	R
113	Colus sp	S	R
131	Crinoidea sp1	S	R
335	Desmophyllum sp1 cf dianthus	S	R
56	Hydrozoa flat branched	S	R
TBC	Solasteridae sp	S	R
1126	Munnidopsis sp	S	R
1036	Ophiuroidea sp11	S	O
137	Porifera massive globose sp6	S	R
616	Porifera massive lobose sp21 (yellow cf Rhabdodictyum)	S	R
586	Zoantheida sp 2	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	Cold water coral reef (ICES); <i>Solenosmilia variabilis</i> reefs (ICES subcategory).
M.AtLB.Co.MixCor	Mixed cold water coral community on Atlantic lower bathyal coarse sediment	Coral gardens (ICES); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory)
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)
M.AtLB.Co	Atlantic lower bathyal coarse sediment	Deep sea sponge aggregations (ICES/OSPAR)
M.AtLB.Bi.CorRee.SolFra	Mixed coral assemblage on Atlantic lower bathyal <i>Solenosmilia</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Solenosmilia variabilis</i> reefs (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Bi.CorRee	700 <i>Solenosmilia variabilis</i> , 58 Porifera encrusting sp15 yellow
2	M.AtLB.Ro.MixCor; M.AtLB.Bi.CorRee	700 <i>Solenosmilia variabilis</i> , 305 <i>Leiopathes</i> sp, 1132 Porifera lamellate lobose
3	M.AtLB.Bi.CorRee; M.AtLB.Ro.MixCor	700 <i>Solenosmilia variabilis</i> , 305 <i>Leiopathes</i> sp, 1132 Porifera lamellate lobose

DIVE SUMMARY

4	M.AtLB.Ro.MixCor; M.AtLB.Bi.CorRee
	700 Solenosmilia variabilis, 171 Mycale lingua, 305 Leiopathes sp
5	M.AtLB.Ro.MixCor; M.AtLB.Co
	171 Mycale lingua, 305 Leiopathes sp
6	M.AtLB.Bi.CorRee; M.AtLB.Co
	700 Solenosmilia variabilis, 171 Mycale lingua, 305 Leiopathes sp, 1162 Porifera vase (cfAphrocallistes)
7	M.AtLB.Bi.CorRee.SolFra
	700 Solenosmilia variabilis, 171 Mycale lingua, 1162 Porifera vase (cfAphrocallistes)
8	M.AtLB.Bi.CorRee
	700 Solenosmilia variabilis, 171 Mycale lingua, 305 Leiopathes sp, 1162 Porifera vase (cfAphrocallistes), 640 Eknomisis sp
9	M.AtLB.Bi.CorRee; M.AtLB.Co.MixCor
	700 Solenosmilia variabilis
10	M.AtLB.Bi.CorRee
	700 Solenosmilia variabilis, 640 Eknomisis sp, 305 Leiopathes sp
11	M.AtLB.Bi.CorRee
	700 Solenosmilia variabilis, 640 Eknomisis sp, 305 Leiopathes sp

Conservation Targets

Listed Habitats Encountered

Name

Authority

DIVE SUMMARY

<p>Coral gardens</p> <ul style="list-style-type: none"> - hard-bottom coral garden: colonial scleractinians on rocky outcrops - hard-bottom coral garden: hard-bottom gorgonian and black coral gardens <p>Cold water coral reef:</p> <ul style="list-style-type: none"> - <i>Solenosmilia variabilis</i> reef <p>Deep sea sponge aggregations</p>	<p>ICES/OSPAR</p> <p>ICES subcategory</p> <p>ICES subcategory</p> <p>ICES</p> <p>ICES subcategory</p> <p>ICES/OSPAR</p>				
<p>Listed Species Encountered (Fish, Count)</p>					
<ul style="list-style-type: none"> - Leafscale Gulper Shark (<i>Centrophorus squamosus</i>) - Orange Roughy (<i>Hoplostethus atlanticus</i>) 	<table border="1"> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">IUCN Endangered</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">IUCN Vulnerable</td> </tr> </table>	3	IUCN Endangered	5	IUCN Vulnerable
3	IUCN Endangered				
5	IUCN Vulnerable				

<p>Additional Comments</p>
<ul style="list-style-type: none"> • Possible new biotope: sponges on hard substrata (coral framework) at lower bathyal • N.B. At the beginning of the dive, a large patch of broken shells (possible <i>Acesta excavate</i>) were present among the <i>L. pertusa</i> reefs. Furthermore, several encounters of orange Roughy (<i>Hoplostethus atlanticus</i>) which is a listed species, as well as 3 sights (video A) and sights (video B) of leafscale gulper shark (<i>Centrophorus squamosus</i>) which is an endangered species. Sparse <i>Synaphobranchus kaupii</i> eels throughout this dive were spotted

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 535	TRANSECT # RB08

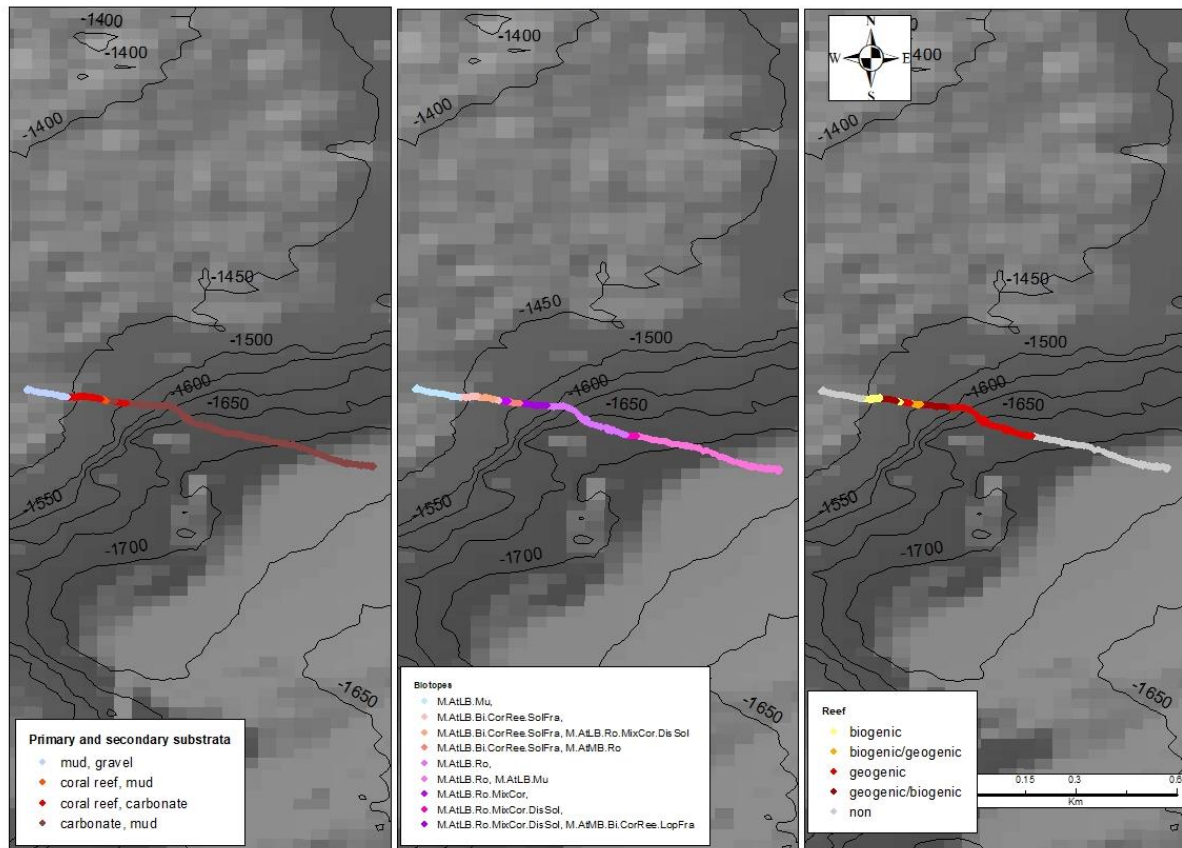
	Start	End
Date & Time	06/07/2018 19:05:43	06/07/2018 20:16:48
Latitude/ Longitude	55.91355, -14.5497	55.9155, -14.5589
Depth	-1705m	-1446m
Images	IMG_7423-IMG_7742.JPG	
Samples	1 x rock sample (with Cirripedia) 1x Cirripedia 1 x pushcore	

Location	8, Rockall Bank
Target Features	Wall, Escarpment, 2009, SAC
Depth Range	-1450, -1700

Maps of Dive
OPOP BMP and/or GIS Maps

DIVE SUMMARY

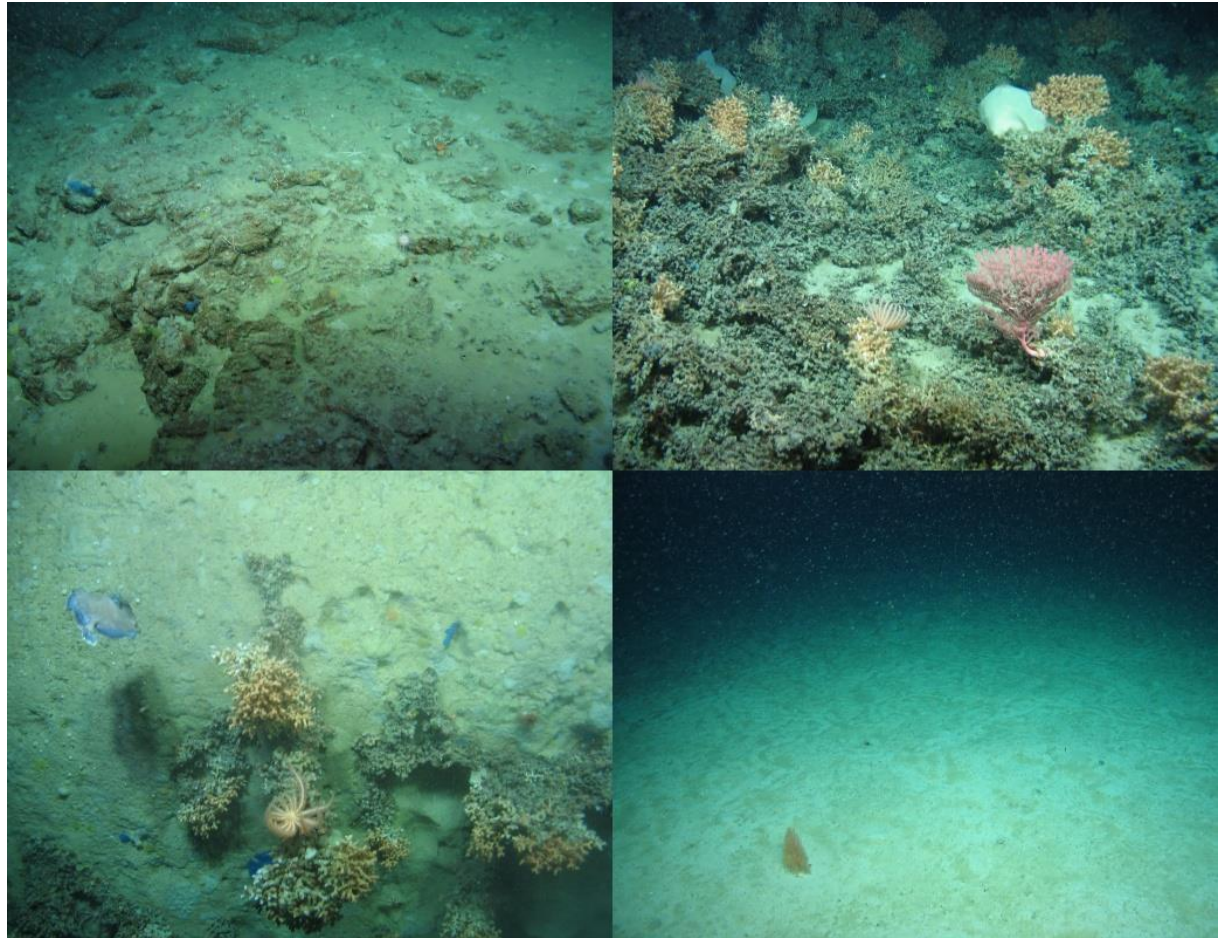
Dive 535, RB08



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mud veneered bedrock with sparse epifauna, such as *Actinaria sp20* OTU605 (M.AtLB.Ro).

Top R. Dense *Solenosmilia variabilis* OTU700 reefs host many epifauna, including *Phakellia ventilabrum* OTU202 and *Paragorgia sp* OTU1065 (M.AtLB.Bi.CorRee.SolFra).

Bottom L. *S.variabilis* OTU700 colonies on carbonate vertical wall (M.AtLB.Ro.MixCor.DisSol).

Bottom R. Sparse colonies of *Acanella arbuscula* OTU585 on muddy slope (M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 19:05 Bedrock and mud with sparse epifauna including ophiuroidea and anemones on a gentle down slope. Suspended mud. 19:08 The ROV moves up and down along the water column. Poor visibility. 19:10 Visibility back to normal, although ROV escapes from mud clouds. 19:12 Here carbonate mounds and crusts with scarce visible epifauna. 19:13 ROV hovers close to a carbonate boulder, which reveals a field of sea pens. 19:14 Poor visibility. 19:15 The ROV reaches the edge of the carbonate boulder and descends on a flat/slightly down hill muddy sediment with carbonate boulders with scarce epifauna. Holothuroidea species and *Ophiomusa lymani* dominate. 19:18 Frequent cobbles and carbonate boulders in this part of the transect. *O. lymani* dominates. 19:20 substrata changes into boulders, coral framework (mainly dead reef) and mud with sparse epifauna. 19:22 Now substrata intersperse between mud/cobbles and bedrock/mud. Epifaunally scarce. Visibility at times poor as ROV hovers high on the ground. 19:24 Steep bedrock with overhanging antipatharians and *Solenosmilia variabilis* reefs (living and dead). 19:27 ROV reaches the summit. 19:27 – 19:28 Blue water for a minute while ROV descends the steep carbonate cliff. 19:30 Visibility is clear again and ROV moves along the cliff. Sparse epifauna with a few individual of *Coryphaenoides* species. 19:31 the ROV gets closer to the ground showing *O. lymani* and *Stichopathes* sp. 19:31 ROV stops for imagery and hits the carbonate mound. Mud obscures the video for a few seconds. ROV moves upwards to escape the muddy cloud. 19:32 – 19:37 ROV stops for imagery and carbonate cobble sampling. 19:39 ROV climbs steep carbonate cliff with dominant *Ceriantharia* sp. 19:46 Coral reef framework (100% dead) on carbonate mound. 19:49 A few dead bivalvia (poss *Acesta excavate*). 20:00 ROV reaches the summit. Coral reef framework (living and dead) persists with abundant sponge aggregations. 20:05 No more coral reef framework, now muddy sediment with sparse cobbles. 20:08 Sampling of cobble with cirripedia sp and *Anthomastus grandiflorus* as well as 1 pushcore until **END OF VIDEO 20:16**.

Physical Data	
Reef (types can be concurrent)	45% geogenic
	80% reef
	55% biogenic
	<25% living
	<75% dead
Substrates	<ul style="list-style-type: none"> - Mud - Gravel - Coral reef - Carbonate mounds
Geomorphology/Features	Continental slope Carbonate cliff
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Sloping carbonate
Pressures	1 x Trawling marks

DIVE SUMMARY

Biological Data			
Number of Species		56	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1012	Notacanthiformes sp1	L	R
552	Polyacanthonotus rissoanus	L	R
560	Stichopathes sp	L	R
478	Actiniaria sp13	L	R
1042	Parantipathes sp	L	R
274	Brisingidae	L	R
649	Eknomisis sp	L	R
653	Chimera opalescens	L	R
1065	Paragorgia sp (deepPink)	L	R
202	Phekallia ventilabrum	L	R
606	Porifera lamellate sp9 (foliate)	L	O
1075	Porifera cylindrical sp	L	R
436	Pentametrocrinus atlanticus	L	R
623	Porifera lamellate sp10	L	R
299	Pterasteridae sp	L	R
1157	Keratosia sp(fineBranching)	L	R
278	Anthomastus grandiflorus	M	R
700	Solenosmilia variabilis	M	R
1169	Psychropotes depressa	M	R
585	Acanella arbuscula (bushy)	M	R
1114	Pennatulacea (indet)	M	R
1046	Pennatula aculeata	M	R
536	Mesothuria intestinalis	M	R
1055	Liponema sp	M	R
432	Holothuroidea cf Laetmogone (blue)	M	O
605	Actiniaria sp20	M	R
1052	Gracilechinus cf alexandri (deep whitePink)	M	R
566	Coryphaenoides rupestris	M	R
1062	Acesta excavate	M	R
601	Geodia cf baretti (por m glob sp 11)	M	R
20	Asciacea sp2 (clear)	M	R
577	Coryphaenoides guentheri	M	R
984	cf Halcampoididae sp	M	R
900	Actiniaria sp21	M	R
1072	Crinoidea sp (10 arms)	M	R
305	Leiopathes sp	M	R
137	Porifera massive globose sp6	M	R
284	Bathypathes sp (brown)	M	R
563	Neocyttus helgae	M	R
1095	Sepiolidae sp	M	R
554	Actinernus sp	M	R
1149	Zoanthidae sp	M	R
573	Solaster endeca	M	R
171	Mycale lingua	M	O
1166	Guttigadus latifrons	M	R
800	Porifera encrusting blue	Mass	R
551	Ophiomusa lymani	S	R
12	Bolocera tuediae	S	R
132	Actinostolidae sp1	S	R
2	Ceriantharia	S	R
1077	Caridae (indet)	S	R
432	Holothuroidea cf Laetmogone (purple)	S	R

DIVE SUMMARY

6	Caryophyllia sp	S	R
131	Crinoidea sp1	S	R
13	Porifera encrusting green	S	R
208	Henricia sanguinolenta	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Ro.MixCor	Mixed cold water coral community on atlantic lower bathyal rock and hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinian on rocky outcrops (ICES subcategory).
M.AtLB.Bi.CorRee.SolFra	Mixed coral assemblage on Atlantic lower bathyal <i>Solenosmilia</i> reef framework (biogenic structure)	Cold-water coral reef (ICES); <i>Solenosmilia variabilis</i> reef (ICES subcategory).
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
M.AtLB.Ro.MixCor.DisSol	Discrete <i>Solenosmilia variabilis</i> colonies on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom colonial scleractinian (ICES subcategory)
M.AtLB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)

DIVE SUMMARY

Biotope progression per habitat transition (# species, dominant/characteristic species)	
1	M.AtLB.Ro; M.AtLB.Mu 551 Ophiomuseum lymani, 536 Mesothuria intestinalis
2	M.AtLB.Ro.MixCor.DisSol 551 Ophiomuseum lymani, 536 Mesothuria intestinalis, 700 Solenosmilia variabilis
3	M.AtLB.Ro 6 Caryophyllia, 649 Eknomisis sp
4	M.AtLB.Ro.MixCor.DisSol; M.AtMB.Bi.CorRee.LopFra 700 Solenosmilia variabilis, 6 Caryophyllia
5	M.AtLB.Bi.CorRee.SolFra; M.AtLB.Ro 700 Solenosmilia variabilis, 6 Caryophyllia
6	M.AtLB.Ro.MixCor 700 Solenosmilia variabilis, 1062 Acesta excavate, 274 Brisingidae
7	M.AtLB.Bi.CorRee.SolFra 700 Solenosmilia variabilis, 606 Porifera lamellate sp9 (foliate), 649 Eknomisis sp
8	M.AtLB.Bi.CorRee.SolFra; M.AtLB.Ro.MixCor.DisSol 700 Solenosmilia variabilis, 606 Porifera lamellate sp9 (foliate), 649 Eknomisis sp
9	M.AtLB.Bi.CorRee.SolFra 700 Solenosmilia variabilis, 1062 Acesta excavate, 606 Porifera lamellate sp9 (foliate)
10	M.AtMB.Mu 585 Acenalla arbuscula (bushy)

Conservation Targets

DIVE SUMMARY

Listed Habitats Encountered		
Name	Authority	
Cold-water coral reefs - <i>Solenosmilia variabilis</i> reefs Mud and sand emergent fauna Coral gardens: - hard-bottom coral garden: colonial scleractinian on rocky outcrops Carbonate mounds	ICES ICES subcategory ICES ICES/OSPAR ICES subcategory OSPAR	
Listed Species Encountered (Fish, Count)		
<i>Centrophorus squamosus</i>	1	OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> • Notable biogenic and geogenic <i>Solenosmilia</i> reef.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 535	TRANSECT # RB09

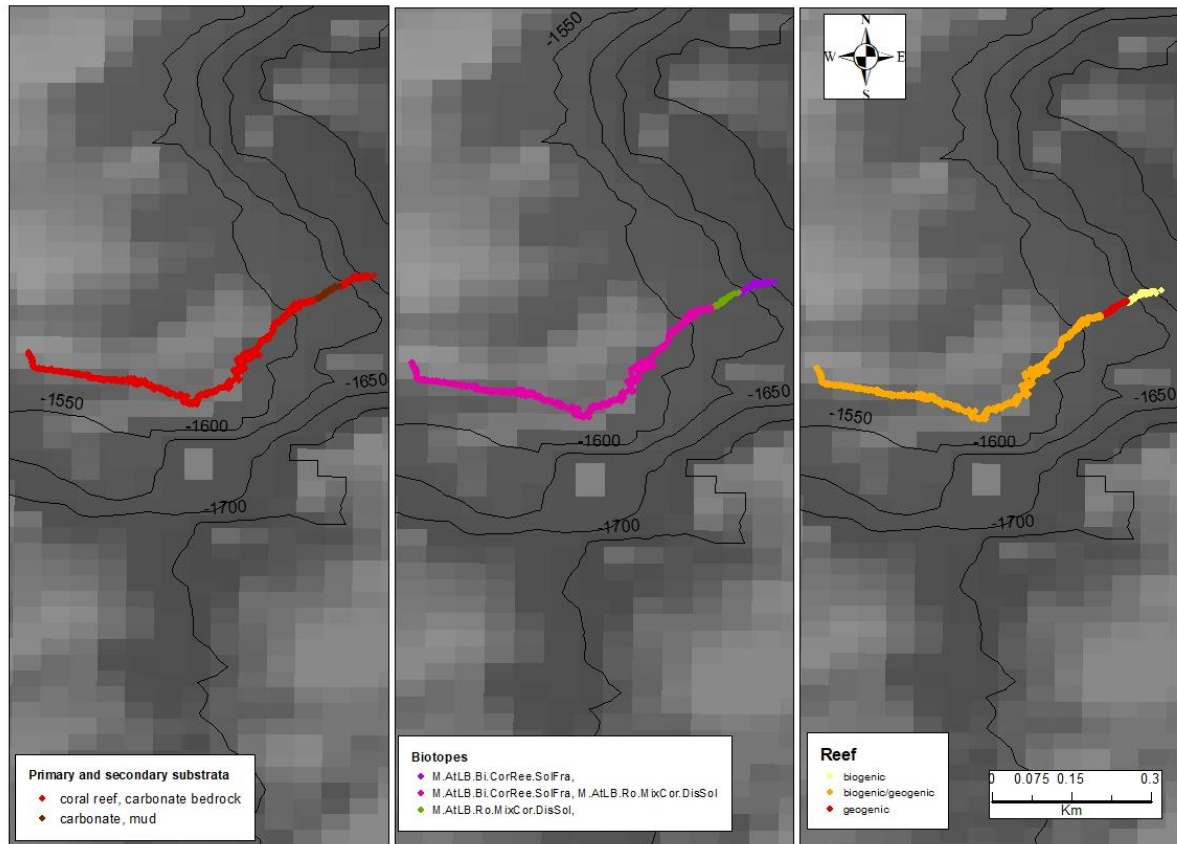
	Start	End
Date & Time	06/07/2018 16:36:01	06/07/2018 18:15:27
Latitude/ Longitude	55.91804, -14.53467	55.91707, -14.54137
Depth	-1679m	-1532m
Images	IMG_7166-IMG_7422.JPG	
Samples	1 x <i>Solenosmilia variabilis</i> rubble; 1 x yellow encrusting sponge (SolenAssociate); 1 x Ophiuroidea sp (indet)(SolenAssociate).	

Location	RT09
Target Features	Ridge, Wall, Escarpment, Mound, SAC
Depth Range	-1550, -1700

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

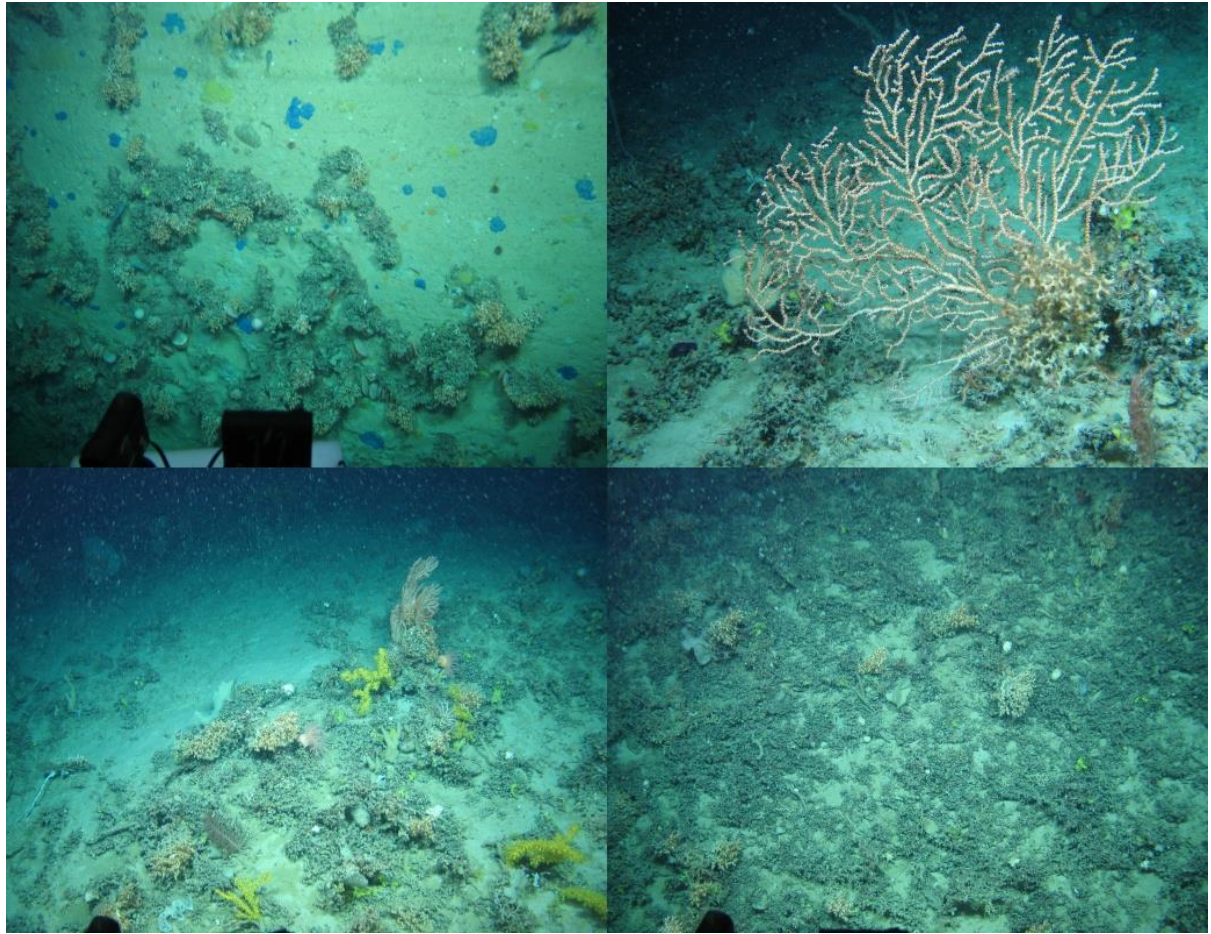
Dive 535, RB09



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. *Solenosmilia variabilis* OTU700 colonies on vertical wall co-occurring with encrusted yellow OTU58 and blue OTU800 sponges (M.AtLB.Ro.MixCor.DisSol).

Top R. Zoomed-in image of *Jasonisis* sp OTU1070 on *S.variabilis* OTU700 biogenic reefs (M.AtLB.Bi.CorRee.SolFra).

Bottom L. Biogenic reefs of *S.variabilis* OTU700 hosting several epifauna species, including *Zoanthidea* sp OTU1149 and *Jasonisis* sp OTU1070 (M.AtLB.Bi.CorRee.SolFra).

Bottom R. Dense biogenic reefs of *S.variabilis* OTU700 on slope (M.AtLB.Bi.CorRee.SolFra).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO 16:36 [1] *Solenosmilia variabilis* reef (mainly dead) on vertical wall boulder hosting several species of coral and sponge assemblages. First sight of *Centrophorus squamosus*. Suspended mud present. 16:37 – 16:38 the ROV moves up and down in the water column following a wiggly direction and it moves slowly for imagery. 16:41 the ROV moves uphill. Dominant species *Ophiomusa lymani*. 16:44 [2] Steep muddy bedrock with overhanging *S. variabilis*. Jasonisis sp dominates. 16:51 The ROV hovers high in the water column to descend on the ground. Accidental mud cloud obscures the camera for a few minutes. The ROV moves in the water column to escape the mud cloud. 16:52 Visibility clear again. Muddy bedrock cliff hosting *S. variabilis* reefs with several species of sponges. 17:02 -17:08 ROV stops for imagery, including Jasonisis sp and *S. variabilis* zoomed images. 17:10 camera is using a dark light. 17:10:40 - 17:11:00 Quick shot of possible Coryphaenoides species eggs/nursery among *S. variabilis* reef (beneath *Jasonisis sp*). 17:10-17:21 ROV stops for imagery and sampling (Porifera encrusting green OTU802). 17:21 The ROV hovers high on the ground. 17:23 ROV descends on the ground. 17:28 Images are dark. 17:30 ROV reaches the cliff edge; it changes direction by ~45° to the right and continues to investigate the summit. 17:34 Muddy and *S. variabilis* reef (mainly dead) on a moderate uphill. *Mycale lingua* is the dominant species. 17:37-17:52 ROV stops for sampling *S. variabilis* with porifera encrusting yellow OTU58 and Caryophyllia sp OTU6 (This sample is not recorded in the log book neither in the sample images folder). 17:54 ROV zooms in revealing a dense patch of Stichopathes sp OTU560 on muddy substrata. 17:57 Images particularly dark. 17:58 Images back to normal. 18:13 ROV moves up and down, showing blue water for a few seconds while spotting a *C. squamosus* just before **END OF HD VIDEO 18:15**.

Physical Data			
Reef (types can be concurrent)	90% reef	<25% geogenic	
		<75% biogenic	<25% living
			<75% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral reef - Carbonate bedrock 		
Geomorphology/Features	Vertical wall Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Carbonate 		
Pressures	n/a		

Biological Data

DIVE SUMMARY

Number of Species	62
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Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1120	Anthoptilum sp	L	R
284	Bathypathes sp(brown)	L	R
1111	Cataetx laticeps	L	R
1048	Centrophorus squamosus	L	R
1142	cf Farreidae	L	R
653	Chimera opalescens	L	R
1180	Cirrata sp (indet)	L	R
1015	Dendrobathypathes sp(brown)	L	R
649	Eknomis sp	L	R
1070	Jasonis_sp(pinkSolen_Assoc)	L	O
1157	Keratois sp (fineBranching)	L	O
1055	Liponema sp	L	R
171	Mycale lingua	L	O
1050	Paramuricea sp	L	O
442	Kophobelemn stelliferum	L	R
436	Pentametrocrinus atlanticus	L	R
1020	Phycis blennoides	L	R
552	Polyacanthonotus rissoanus	L	R
1151	Porifera lamellate (hexactinosida)	L	R
606	Porifera lamellate sp9(foliate)	L	R
700	Solenosmilia variabilis	L	O
560	Stichopathes sp	L	R
1181	Telopathes sp2	L	R
1149	Zoantheida sp	L	O
585	Acanella arbuscula (bushy)	M	R
1062	Acesta excavate	M	R
930	Actinopteryigy sp3	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
132	Actinostolidae sp1	M	R
278	Anthomastus grandiflorus	M	R
311	Anthothela grandiflora	M	R
20	Asciacea sp2 (clear)	M	R
TBC	Bivalvia sp	M	R
274	Brisingidae	M	R
584	Caryophyllia sp5 (bullseye)	M	R
2	Ceriantharia sp	M	R
1059	Colossendeis sp	M	R
973	Graneledone verrucosa	M	R
56	Hydrozoa flat branched	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
563	Neocyttus helgae	M	R
551	Ophiomusa lymani	M	F
646	Ophiuroidea sp (orangeDeep)	M	R
1042	Parantipathes sp	M	R
1010	Porifera lamellate sp12	M	R
616	Porifera massive lobose sp21 (yellow cfRhabdodictyum)	M	R
1090	Porifera tubular glassy (cfFarreidae)	M	R
1162	Porifera vase (cfAphrocallistes)	M	R
573	Solaster endeca	M	R
TBC	Solasteridae sp	M	R
446	Trachyrhynchus sp	M	R
800	Porifera encrusting blue	Mass	R
802	Porifera encrusting green	Mass	R

DIVE SUMMARY

58	Porifera encrusting yellow	Mass	R
554	Actinernus sp	S	R
605	Actiniaria sp20	S	R
1077	Caridae sp(indet)	S	R
6	Caryophyllia sp	S	R
1052	Gracilechinus cf alexandri (deep whitePink)	S	R
1126	Munnidopsis sp	S	R
1076	Ophiuroidea (indet)	S	R
299	Pterasteridae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Ro.MixCor.DisSol	Discrete <i>Solenosmilia variabilis</i> colonies on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinian on rocky outcrops (ICES subcategory)
M.AtLB.Bi.CorRee.SolFra	Mixed coral assemblage on Atlantic lower bathyal <i>Solenosmilia</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Solenosmilia variabilis</i> reef (ICES subcategory);

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Bi.CorRee.SolFra	700 <i>Solenosmilia variabilis</i>
2	M.AtLB.Ro.MixCor.DisSol	700 <i>Solenosmilia variabilis</i> , 800 Porifera encrusting blue, 1062 <i>Acesta excavate</i>
3	M.AtLB.Bi.CorRee.SolFra; M.AtLB.Ro.MixCor.DisSol	700 <i>Solenosmilia variabilis</i> , 171 <i>Mycale lingua</i> , 274 <i>Brisingidae</i> , 1070 <i>Jasonisis sp</i>

DIVE SUMMARY

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Coral gardens	ICES/OSPAR	
- Hard-bottom coral garden: colonial scleractinian on rocky outcrops	ICES subcategory	
Cold water coral reefs	ICES/OSPAR	
- <i>Solenosmilia variabilis</i> reef	ICES subcategory	
Listed Species Encountered (Fish, Count)		
- <i>Centrophorus squamosus</i>	2	OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> • Large <i>Solenosmilia variabilis</i> reefs throughout the entire transect.

DIVE SUMMARY

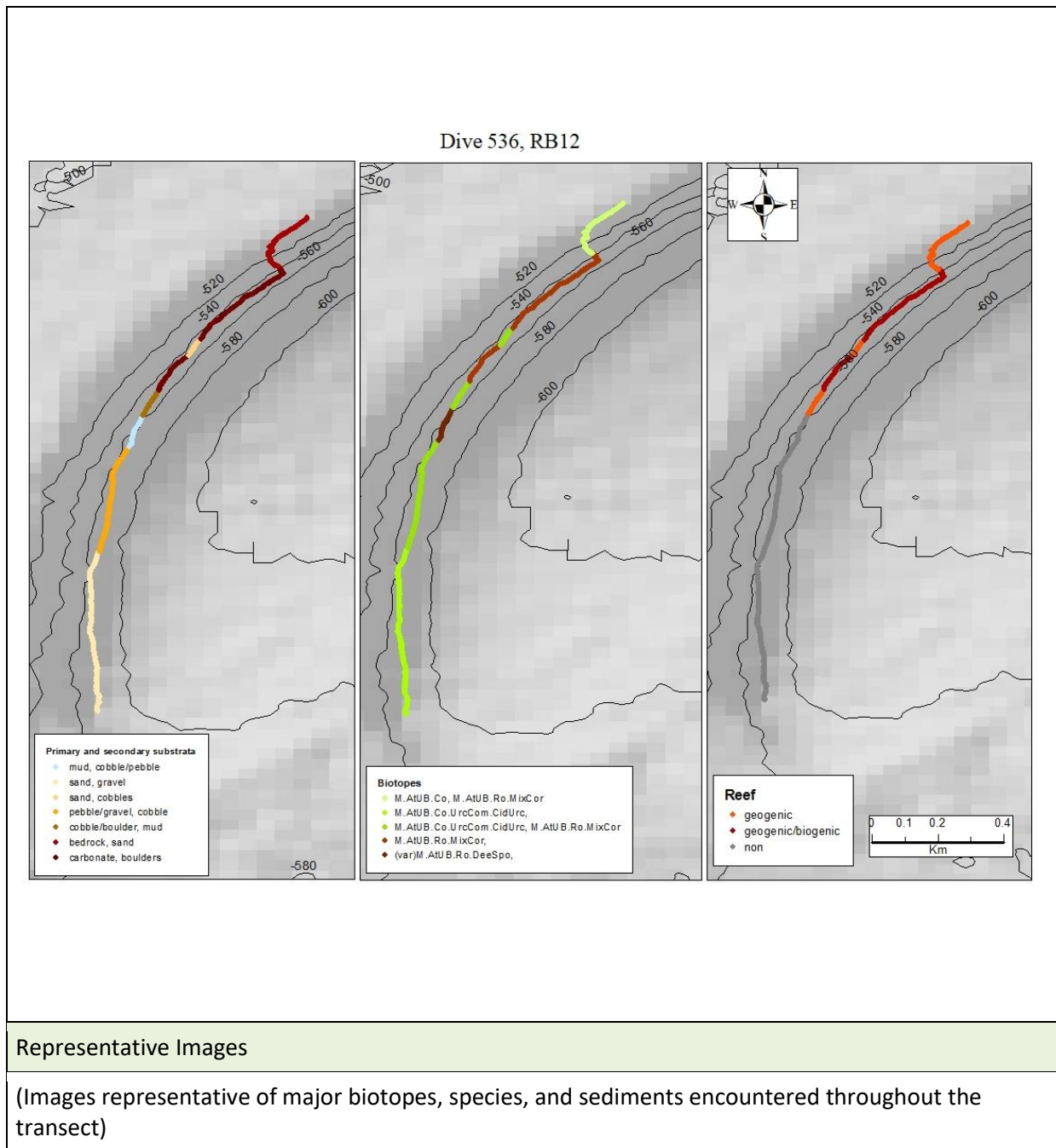
DIVE SUMMARY	
DIVE # 536	TRANSECT # RB12

	Start	End
Date & Time	06/07/2018 23:39:51	06/07/2018 01:40:36
Latitude/ Longitude	56.02483, -14.75553	56.03814, -14.74943
Depth	-570m	-503m
Images	IMG_7743-IMG_7917.JPG	
Samples	2 x pushcores	

Location	RT12
Target Features	Escarpment, Ridge
Depth Range	-530, -560

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Deep sea sponge aggregations on carbonate boulders at the edge of the cliff (M.AtUB.Ro.DeeSpo).

Top R. Fishing gear (poss. net) anchored on boulder. Hydrozoans, poss. *Stylaster sp1* OTU361, co-inhabiting with annelids and anemones on rocky outcrop (M.AtUB.Ro.MixCor).

Bottom L. Several epifauna species found on escarpment, including *Lophelia pertusa* and yellow sponge (M.AtUB.Ro.MixCor).

Bottom R. Sea urchin *Cidaris cidaris* OTU211 dominates on muddy sediment, while *Stylaster sp1* and *Lophelia pertusa* co-dominate on boulders (M.AtUB.Ro.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 23:39 [1] Gravel and sandy gently upsloping bottom with sparse pebbles with dominant *Cidaris cidaris*. 23:4-23:49 two pushcores. 00:24 Mud and cobbles sediment with dominant *C.cidaris*. 00:37 [2] Mosaic substrata (gravel, sand, boulders) hosting *Lophelia pertusa/Madrepora oculata* reefs with sponge aggregations (poss *Mycale lingua* OTU171) co-dominant with *C. cidaris*. Frequent sights of *Coryphaenoides* and *Lepidion* species. 00:43 [3] Now sandy sediment again with sparse cobbles on steep continental slope. *C. cidaris* as dominant species with frequent encounters of *Parastichopus tremulus* OTU266. 00:49 [4] Carbonate crust on steep continental slope covered in boulders hosting *L.pertusa/M.oculata* reefs. 00:56 [5] Now substrata changes again into sand sediment on steep continental slope with dominant *C.cidaris*. 01:00 [6] Again carbonate crust on steep slope with abundant *C.cidaris*. 01:04 ROV climbs up the carbonate crust and explores the moderate slope edge on top of the crust that host *L.pertusa/M.oculata* reefs with *M.lingua* and *Stylaster* sp1 OTU361 aggregations. Now sand with boulders hosting *L.pertusa/M.oculata* reefs and porifera lobose or globose (poss *M. lingua*). 01:19 [7] vertical bedrock and soon changes into large bedrock on a moderate uphill slope with dominant *Actinaria* sp13 OTU478 and frequent encounters of *M.lingua*. 01:30 [8] Sandy flat/moderately downhill bedrock with cobbles. *M.lingua* and sea anemones as co-dominant species. 01:39 The ROV sits at the bottom until **END OF HD VIDEO AT 01:40AM.**

N.B. *Synaphobranchus kaupii* throughout the whole transect. 01:09 *Centrophorus squamosus* OTU1048.

Physical Data			
Reef (types can be concurrent)	60% reef	85% geogenic	
		15% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Sand - Mud - Pebble/cobble - Gravel - Cobble/boulder - Boulders - Carbonate - Bedrock 		
Geomorphology/Features	Continental slope Canyon		
Annex 1 Types	<ul style="list-style-type: none"> - Cobbles/pebbles - Boulders - Carbonate 		

DIVE SUMMARY

	- Bedrock
Pressures	4 x fishing ropes recorded at 00:54, 01:11, 01:14, 01:25.

Biological Data

Number of Species

37

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
274	Brisingidae	L	R
1048	Centrophorus squamosus	L	R
265	Chimaera monstrosa	L	R
211	Cidaris cidaris	L	F
110	Coryphaenoides armatus	L	R
543	Decapoda sp3	L	R
1005	Galeus melastomus	L	R
1160	Lepidion cf guentheri	L	R
249	Lepidion eques	L	R
273	Lophius piscatorius	L	R
654	Molva molva	L	R
304	Paramola cuvieri	L	R
1042	Parantipathes sp	L	R
266	Parastichopus tremulus	L	O
1020	Phycis blennoides	L	R
361	Stylaster sp1	L	R
344	Actiniaria sp10	M	R
478	Actiniaria sp13	M	R
188	Araeosoma fenestratum	M	R
1186	Asteroidea (cf Spinulosida)	M	R
12	Bolocera tuediae	M	R
234	Ceremaster Peltaster Plinthaster sp2	M	R
1129	cf Echinus (deepPinkSpine)	M	R
1018	Epigonus telescopus	M	R
227	Helicolenus dactylopterus	M	R
250	Lophelia pertusa	M	R

DIVE SUMMARY

1019	Merlangius merlangus	M	R
171	Mycale lingua	M	R
106	Serpulidae sp1	M	R
440	Synaphobranchus kaupii	M	R
800	Porifera encrusting blue	Mass	R
75	Porifera encrusting globose sp2	Mass	R
907	Actiniaria sp24	S	R
1077	Caridae sp (indet)	S	R
388	Ceremaster Peltaster Plinthaster sp2	S	R
335	Desmophyllum sp1 cf dianthus	S	R
207	Pliobrothus sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUB.Co.UrcCom.CidUrc	Cidarid urchin assemblage on Atlantic upper bathyal coarse sediment	
M.AtUB.Ro.DeeSpo	Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	Deep sea sponge aggregations (ICES/OSPAR); hard bottom sponge aggregations (ICES subcategory)
M.AtUB.Ro.MixCor	Mixed cold water coral community on Atlantic upper bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinian on rocky outcrops (ICES subcategory).
(var)M.AtUB.Ro.DeeSpo	(Mycale)Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	Deep sea sponge aggregations (ICES/OSPAR); hard bottom sponge aggregations (ICES subcategory)
M.AtUB.Co	Atlantic upper bathyal coarse sediment	Anemone aggregations (ICES); hard bottom anemone aggregations

DIVE SUMMARY

		(ICES subcategory).
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUB.Co.UrcCom.CidUrc	
	211 Cidaris cidaris	
2	M.AtUB.Co.UrcCom.CidUrc; (var)M.AtUB.Ro.DeeSpo	
	171 Mycale lingua, 211 Cidaris cidaris	
3	M.AtUB.Co.UrcCom.CidUrc; M.AtUB.Ro.DeeSpo	
	171 Mycale lingua, 211 Cidaris cidaris	
4	M.AtUB.Co.UrcCom.CidUrc; M.AtUB.Ro.MixCor	
	211 Cidaris cidaris, 250 Lophelia pertusa/251 Madrepora oculata	
5	M.AtUB.Co.UrcCom.CidUrc; M.AtUB.Ro.MixCor	
	211 Cidaris cidaris, 250 Lophelia pertusa/251 Madrepora oculata, 171 Mycale lingua	
6	M.AtUB.Ro.MixCor	
	250 Lophelia pertusa/251 Madrepora oculata, 211 Cidaris cidaris	
7	M.AtUB.Co; M.AtUB.Ro.MixCor	
	478 Actiniaria sp13, 171 Mycale lingua, 250 Lophelia pertusa	

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Deep sea sponge aggregations	ICES/OSPAR
- hard bottom sponge aggregations	ICES subcategory
Coral gardens:	

DIVE SUMMARY

<ul style="list-style-type: none"> - hard-bottom coral garden: colonial scleractinians on rocky outcrops <p>Anemone aggregations</p> <ul style="list-style-type: none"> - hard bottom anemone aggregations 	<p>ICES/OSPAR</p> <p>ICES subcategory</p> <p>ICES</p> <p>ICES subcategory</p>	
<p>Listed Species Encountered (Fish, Count)</p>		
<ul style="list-style-type: none"> - <i>Centrophorus squamosus</i> 	<p>1</p>	<p>OSPAR/IUCN</p>

<p>Additional Comments</p>
<p>n/a</p>

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 537	TRANSECT # RB24

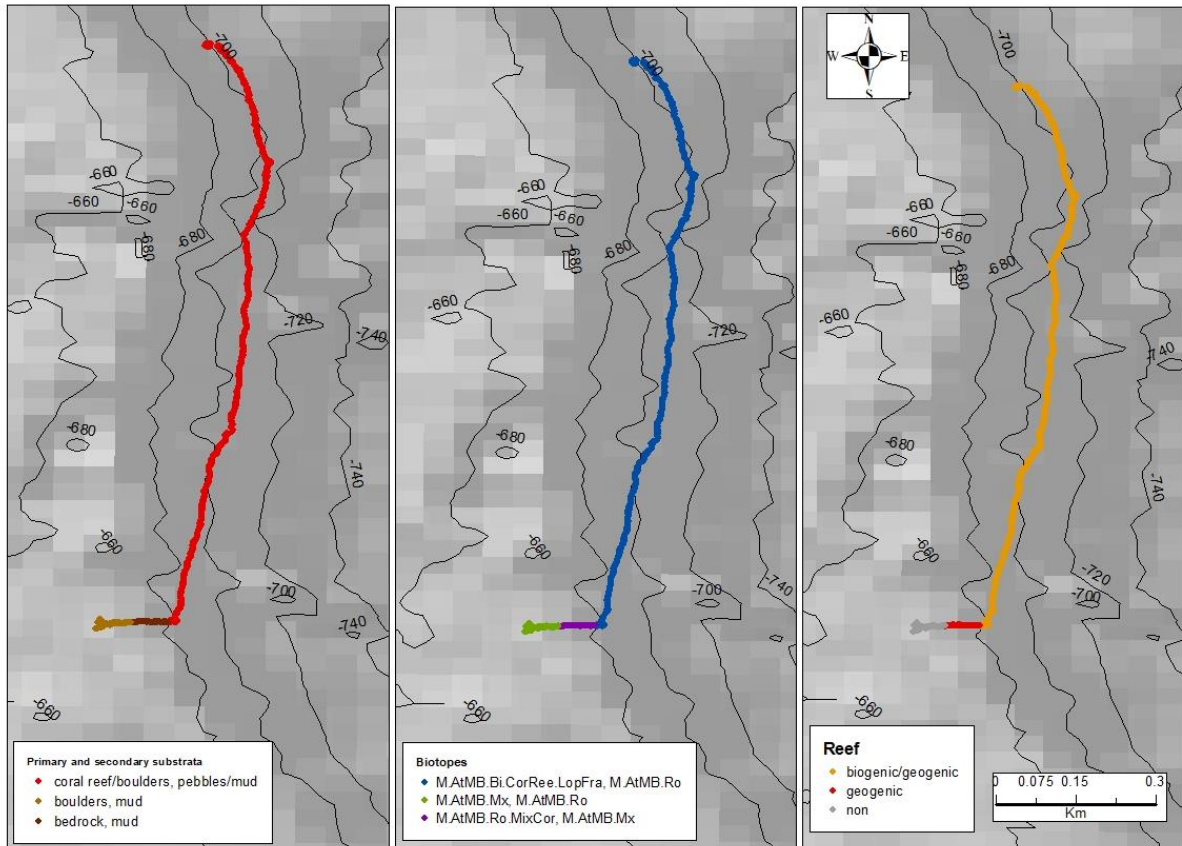
	Start	End
Date & Time	07/07/2018 04:21:16	07/07/2018 06:21:29
Latitude/ Longitude	55.90543, -14.77215	55.89638, -14.77385
Depth	-713m	-670m
Images	IMG_7918-IMG_8419.JPG	
Samples	2 x pushcores	

Location	RT24
Target Features	Escarpment, Ridge, Straddles SAC
Depth Range	-640, -730

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

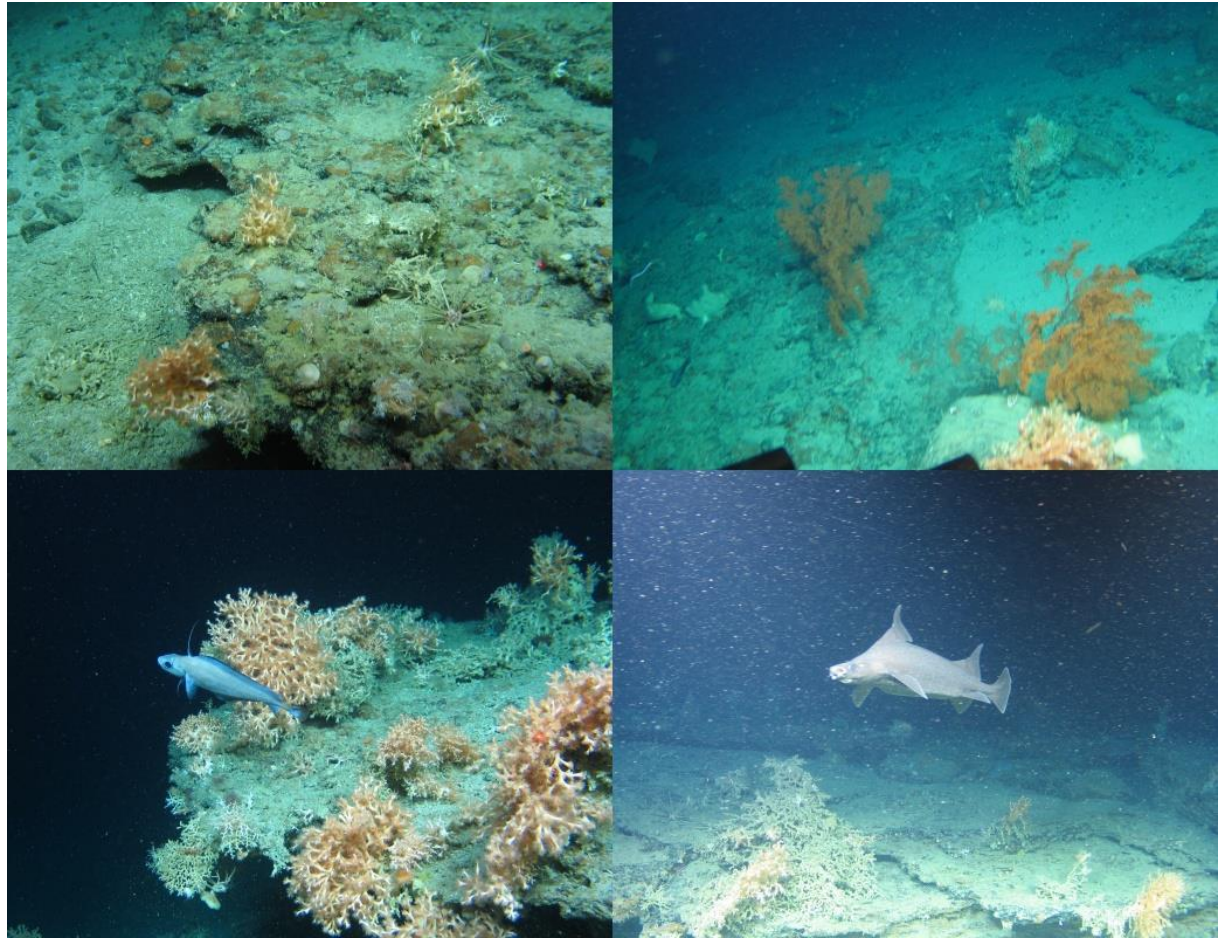
Dive 537, RB24



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Boulders and mixed sediment on moderate slope with *Lophelia pertusa*/*Madrepora oculata* colonies and sparse individuals of *Phakellia ventilabrum* OTU202 (M.AtMB.Mx; M.AtMB.Ro).

Top R. Boulders and mixed sediment with sparse *Leiopathes sp* OTU305 colonies and a few individuals of possible *P. ventilabrum* (M.AtMB.Ro.MixCor).

Bottom L. Boulders with aggregations of *L. pertusa*/*M. oculata* OTU250/251 reefs and a *Lepidion eques* OTU249 swimming nearby a biogenic reef (M.AtMB.Bi.CorRee.LopFra).

Bottom R. Bedrock and mud sediment with sparse *L. pertusa*/*M. oculata* OTU250/251 reefs with an adult *Oxynotus paradoxus* (OTU to be confirmed) passing by (M.AtMB.Bi.CorRee.LopFra).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 04:21 [1] The entire transect is on mosaic sediment (mud/gravel/boulders) on moderate slope where *Lophelia pertusa*/*Madrepora oculata* colonies dominate on hard substrata and *Cidaris cidaris* dominate on mud. 04:22. 04:37 From this point until the end of the transect, frequent/abundant aggregations of *Phakellia ventilabrum* OTU202 on boulders, at times co-dominating with *L.pertusa*/*M.oculata* colonies. 05:03- ROV stops for imagery. **05:38** The ROV is now on top of bedrock, which is covered in mosaic sediment (mud/gravel/boulders). *L.pertusa*/*M.oculata* colonies dominate on hard substrata while *C.cidaris* dominates on mud. **05:44** Now no more bedrock. Mud/gravel/boulders continue. 05:46-05:51 ROV stops for one pushcore sample. The ROV moves a little bit further until 05:54-06:02 ROV stops for pushcore sampling and imagery. 06:06 ROV stops for sampling, although sampling aborted. In this part of the transect, boulders are less abundant as well as *C.cidaris*. 06:18 ROV stops again for sampling/sampling aborted. **END OF HD VIDEO AT 06:21.**

Eels were present (at times abundant) throughout the entire transect. An individual of *Centrophorus squamosus* was observed, also another small elasmobranchia species was encountered (possibly *Centrophorus sp.*).

Physical Data		
Reef (types can be concurrent)	65% reef	<45% geogenic
		<55% biogenic
		n/a
		n/a
Substrates	<ul style="list-style-type: none"> - Mud - Pebbles - Coral reef - Boulders - Bedrock 	
Geomorphology/Features	Continental slope	
Annex 1 Types	<ul style="list-style-type: none"> - Pebbles - Boulders - Bedrock - Coral reef 	
Pressures	1 x fish can (?) (06:04:05)	

Biological Data	
Number of Species	65
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
278	<i>Anthomastus grandiflorus</i>	L	R
1187	<i>Antipathes dichotoma</i>	L	R
188	<i>Araeosoma fenestratum</i>	L	R
284	<i>Bathypathes</i> sp (brown)	L	O
12	<i>Bolocera tuediae</i>	L	R
274	Brisingidae	L	R
1048	<i>Centrophorus squamosus</i>	L	R
1142	cf Farreidae	L	R
265	<i>Chimaera monstrosa</i>	L	R
211	<i>Cidaris cidaris</i>	L	O
1172	Macrouridae sp (cfCoelorhynchus)	L	R
577	<i>Coryphaenoides guentheri</i>	L	R
649	<i>Eknomis</i> sp	L	R
214	<i>Gorgonocephalus</i> sp1	L	R
227	<i>Helicolenus dactylopterus</i>	L	R
578	<i>Keratois</i> sp2	L	R
305	<i>Leiopathes</i> sp	L	O
1160	<i>Lepidion</i> cf guentheri	L	R
249	<i>Lepidion eques</i>	L	R
250	<i>Lophelia pertusa</i>	L	F
273	<i>Lophius piscatorius</i>	L	R
1019	<i>Merlangius merlangus</i>	L	R
1194	<i>Muusoctopus johnsonianus</i>	L	R
1050	<i>Paramuricea</i> sp	L	R
1161	<i>Parantipathes</i> sp (branching)	L	R
266	<i>Parastichopus tremulus</i>	L	R
1046	<i>Pennatula aculeata</i>	L	R
202	<i>Phakellia ventilabrum</i>	L	F
1020	<i>Phycis blennoides</i>	L	R
433	<i>Pseudarchaster</i> sp1 (giant)	L	R
569	Squaliformes (possEtmopteridae)	L	R
283	<i>Stichopathes</i> cf gravieri	L	R
560	<i>Stichopathes</i> sp	L	R
554	<i>Actinernus</i> sp	M	R
605	<i>Actinaria</i> sp20	M	R
2	<i>Ceriantharia</i>	M	R
1137	cf <i>Polymastia penicillus</i>	M	R
285	<i>Chyrostylidae</i> sp	M	R
131	<i>Crinoidea</i> sp1	M	R
131	<i>Crinoidea</i> sp1 (red)	M	R
56	Hydrozoa flat branched	M	R
251	<i>Madrepora oculata</i>	M	O
1126	<i>Munnidopsis</i> sp	M	R
458	<i>Pachycerianthus multiplacatus</i>	M	R
304	<i>Paramola cuvieri</i>	M	R
255	<i>Phelliactis</i> sp1	M	R
281	Porifera branching-erect sp1/Antho dichotoma	M	R
81	Porifera lamellate lobose	M	R
137	Porifera massive globose sp6	M	R
440	<i>Synaphobranchus kaupii</i>	M	R
196	<i>Geodia barretti</i>	Mass	R
800	Porifera encrusting blue	Mass	R
75	Porifera encrusting globose sp2	Mass	R
802	Porifera encrusting green	Mass	O
52	Porifera encrusting sp14	Mass	R
58	Porifera encrusting sp15 yellow	Mass	R
1077	<i>Caridae</i> sp (indet)	S	R
6	<i>Caryophyllia</i> sp	S	O
234	<i>Ceremaster Peltaster Plinthaster</i>	S	R
289	cf <i>Clavulariidae</i> sp	S	R
194	<i>Echinidae</i> sp (pink)	S	R

DIVE SUMMARY

307	Gorgonacea sp7	S	R
277	Margarites sp1	S	R
950	Rhodaliidae sp	S	R
106	Serpulidae sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mx	Atlantic mid bathyal mixed sediment	
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory); deep sea sponge aggregations (ICES/OSPAR); hard bottom sponge aggregations (ICES subcategory).
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory)
M.AtMB.Bi.CorRee.Lo pFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> reefs (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		

DIVE SUMMARY

1	M.AtMB.Bi.CorRee.LopFra; M.AtMB.Ro
	250 Lophelia pertusa/251 Madrepora oculata, 211 Cidaris cidaris
2	M.AtMB.Ro.MixCor; M.AtMB.Mx
	250 Lophelia pertusa/251 Madrepora oculata, 211 Cidaris cidaris
3	M.AtMB.Mx; M.AtMB.Ro
	250 Lophelia pertusa/251 Madrepora oculata, 211 Cidaris cidaris

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs: - Lophelia pertusa reefs	ICES/OSPAR ICES subcategory	
Coral gardens: - Hard-bottom coral garden: colonial scleractinians on rocky outcrops	ICES/OSPAR ICES subcategory	
Deep sea sponge aggregations - hard bottom sponge aggregations	ICES/OSPAR ICES subcategory	
Listed Species Encountered (Fish, Count)		
- <i>Centrophorus squamosus</i>	2	OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 538	TRANSECT # RB15

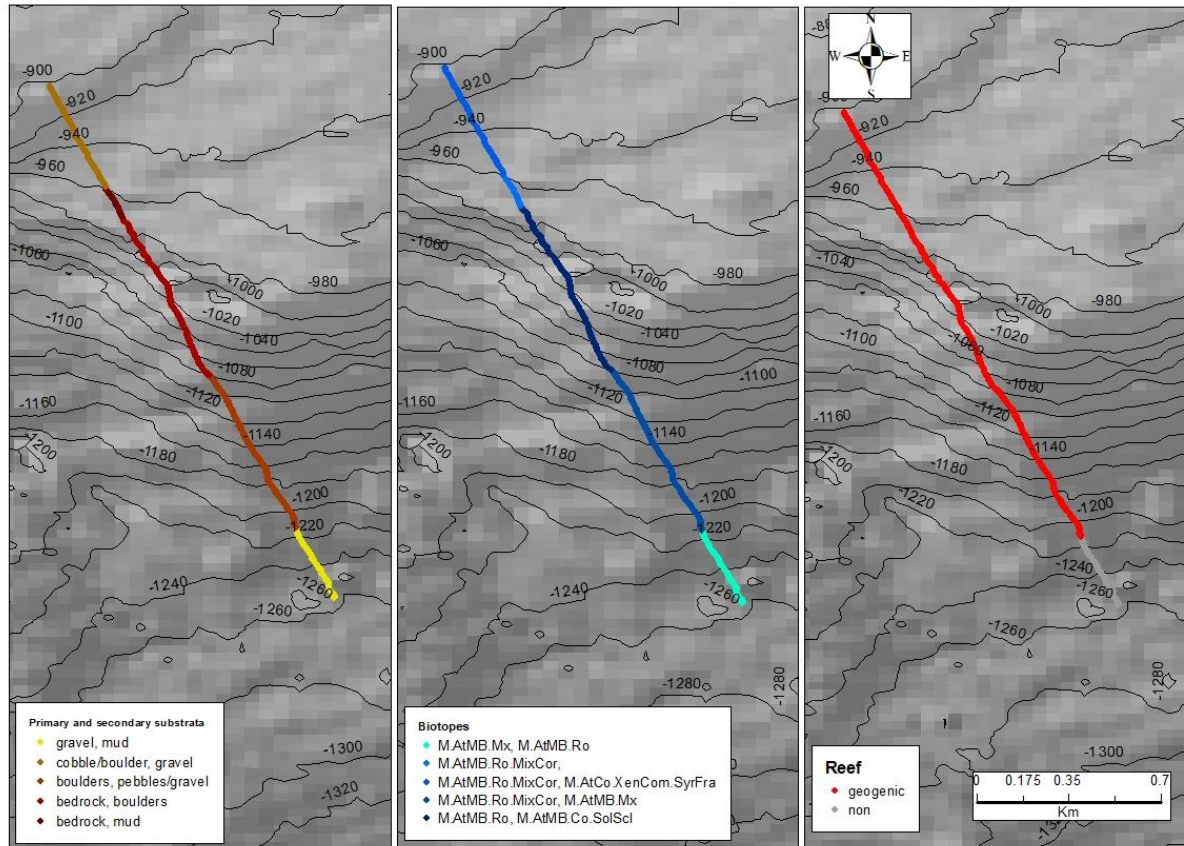
	Start	End
Date & Time	07/07/2018 10:03:13	07/07/2018 11:56:45
Latitude/ Longitude	55.72525, -14.8276	55.74237, -14.8372
Depth	-1244m	-888m
Images	IMG_8423-IMG_8960.JPG	
Samples	n/a	

Location	RT15
Target Features	Escarpment, Mound, SAC
Depth Range	-950, -1150

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

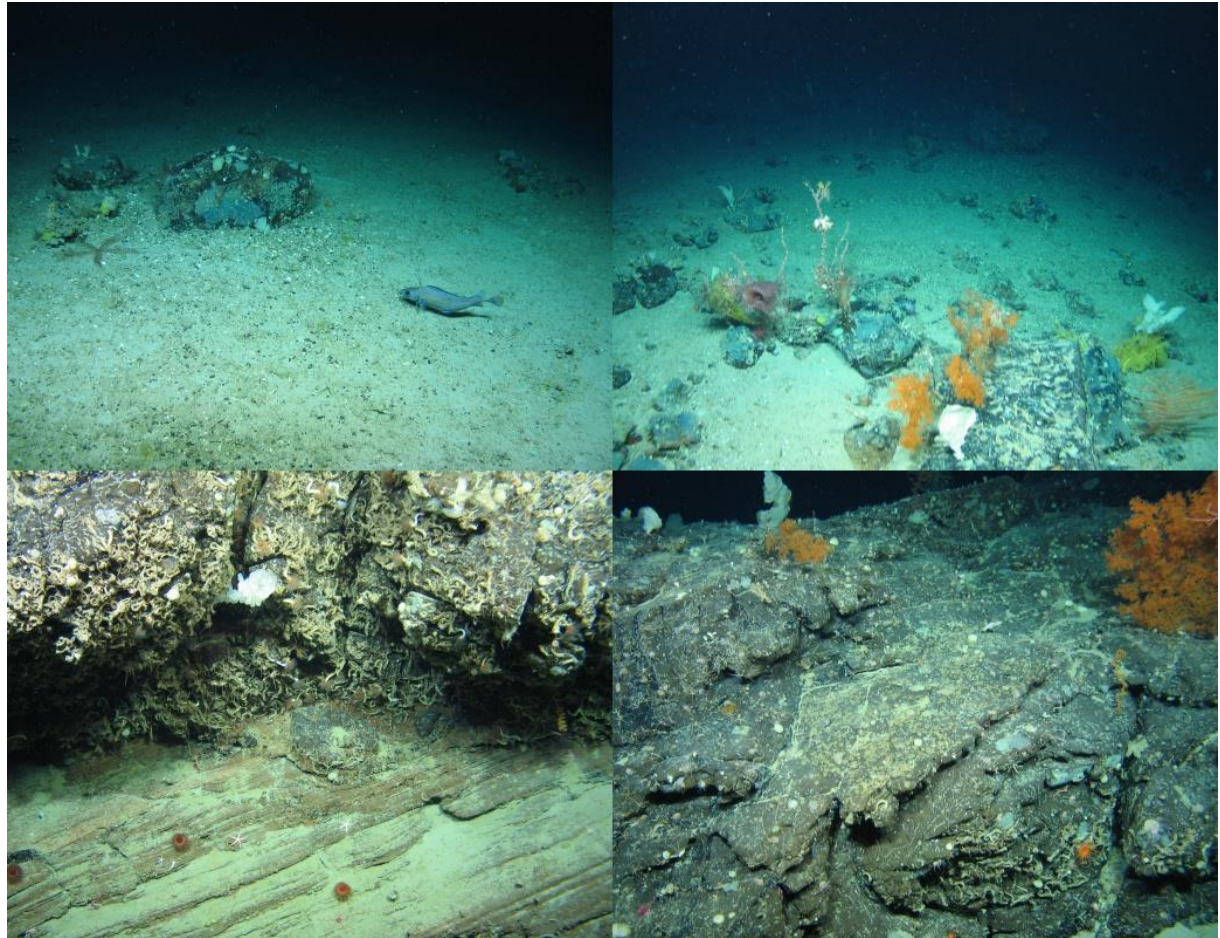
Dive 538, RB15



Representative Images

(Images representative of major biotoypes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Boulders and gravel with encrusted sponges OTU1 and a *Lepidion eques* OTU1160.

Top R. Boulders and gravel on moderate slope with dominant *Leiopathes* sp OTU305 and several species of sponges (M.AtMB.Ro.MixCor; M.AtMB.Mx).

Bottom L. Bedrock veneered with fine sediment dominated by *Caryophyllia* sp OTU6, *Ophiuroidea* sp (indet) OTU1046 and *Serpulidae* sp1 OTU106 aggregations (M.AtMB.Ro; M.AtMB.Co.SolScl).

Bottom R. Bedrock dominated by *Leiopathes* sp OTU305 and several sponge species (M.AtMB.Ro.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 10:03 [1] Gravel/sand/mud substrate with dominant Ceriatharia OTU1069 on moderate slope. Suspended sediment. 10:03-10:09 1 pushcore sampling. 10:21; 10:55 *Centrophorus squamosus*. **10:26 [2]** Boulders, gravel and mud. Porifera co-dominate with Leioathes sp on hard substrata; Ceriantharia sp OTU1069 dominates mud/gravel sediment. Throughout the transect, a variety of porifera and actinopterygii are encountered. 10:45 Bedrock, boulders with mud sediment. Porifera (mainly porifera lamellate hexactinosida) dominates. **10:54 [3]** Bedrock, pebbles, mud sediment. Caryophyllia sp dominate on mud/gravel; porifera lamellate hexactinosida and *Phekallia ventilabrum* OTU202 co-dominate on pebbles and bedrock. 11:00 Now is bedrock and mud on steep slope with frequent cobbles and boulders. 11:23 Now no boulders, instead mixed sediment (mud, gravel). **11:26 [4]** bedrock again intersperse with mud and gravel. Leioathes sp is dominant species. **11:31 [5]** Not bedrock recorded here, mud and gravel takes place again with xenophyophora (*Syringamina fragilissima*) abundant in this part of the transect. 11:53 ROV stops for imagery. 11:55 ROV leaves the bottom. **END OF HD VIDEO AT 11:56.**

Physical Data							
Reef (types can be concurrent)	<table border="1"> <tr> <td></td> <td>100% geogenic</td> </tr> <tr> <td>65% reef</td> <td>n/a</td> </tr> <tr> <td>0% biogenic</td> <td>n/a</td> </tr> </table>		100% geogenic	65% reef	n/a	0% biogenic	n/a
	100% geogenic						
65% reef	n/a						
0% biogenic	n/a						
Substrates	<ul style="list-style-type: none"> - Mud - Gravel - Pebbles - Cobbles - Boulders - Bedrock 						
Geomorphology/Features	Continental slope						
Annex 1 Types	<ul style="list-style-type: none"> - Pebble - Cobble - Boulder - bedrock 						
Pressures	1 x Plastic bag						

Biological Data	
Number of Species	87
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
991	Acanella arbuscula (firtree)	L	R
608	Acanthagorgia cf armata	L	R
582	Actinaria sp18	L	R
930	Actinopterygii sp3	L	R
20	Ascidacea sp2 (clear)	L	R
1038	Asconema sp	L	R
284	Bathypathes sp(brown)	L	R
328	Bathypathes sp1	L	R
12	Bolocera tuediae	L	R
267	Bonellia viridis	L	R
274	Brisingidae	L	R
1048	Centrophorus squamosus	L	R
289	cf Clavulariidae sp	L	R
653	Chimaera opalescens	L	R
1008	Chrysogorgiidae sp1	L	R
540	Chrysopathes sp Trissopathes sp	L	R
211	Cidaris cidaris	L	R
577	Coryphaenoides guentheri	L	R
128	Cottunculus microps	L	R
1072	Crinoidea sp (10 arm)	L	R
1015	Dendrobathypathes sp (brown)	L	R
1005	Galeus melastomus	L	R
601	Geodia cf baretii (Por m glob sp11)	L	R
1179	Holothuroidea sp (pinkDeep)	L	R
917	Hyalonema sp1	L	R
1024	Hydrolagus mirabilis	L	R
305	Leiopathes sp	L	R
1160	Lepidion cf guentheri	L	R
654	Molva molva	L	R
349	Mora moro	L	R
1042	Parantipathes sp	L	R
1046	Pennatula aculeata	L	R
436	Pentametrocinus atlanticus	L	R
202	Phakellia ventilabrum	L	R
330	Phanopathes sp	L	R
1075	Porifera cylindrical sp	L	R
1151	Porifera lamellate (hexactinosida)	L	O
576	Porifera massive lobose sp18(cfFarrea sp)	L	R
1162	Porifera vase (cf Aphrocallistes)	L	R
1080	Pseudoanthomastus sp	L	R
1080	Pseudoanthomastus sp1	L	R
652	Rajiformes sp1 poss Neoraja cae	L	R
573	Solaster endeca	L	R
283	Stichopathes cf gravieri	L	R
581	Umbellula sp	L	R
1149	Zoantheida sp	L	R
585	Acanella arbuscula (bushy)	M	R
1099	Actinaria sp30	M	R
1047	Actinoscyphiidae sp1(pink)	M	R
1187	Antipathes dichotoma	M	R
264	Aphrocallistes sp	M	R
650	Asconema sp (Porifera mass glob 14)	M	R
584	Caryophyllia sp5 (bullseye)	M	R
234	Ceremaster Peltaster Plinthaster	M	R
1049	cf Psolus sp	M	R

DIVE SUMMARY

131	Crinoidea sp1	M	R
1094	Echinothuroidea sp (purple)	M	R
1022	Gersemia sp3	M	R
973	Graneledone verrucosa	M	R
1154	Henricia sp (deep)	M	R
628	Holothuroidea sp4 (cfAmperima)	M	R
1125	Hygrosoma sp	M	R
250	Lophelia pertusa	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
251	Madrepora oculata	M	R
563	Neocyttus helgae	M	R
340	Ophiuroidea sp7 (red)	M	R
1084	Porifera spherical sp.5	M	R
299	Pterasteridae sp	M	R
440	Synaphobranchus kaupii	M	R
261	Syringammina fragilissima	M	R
446	Trachyrhynchus sp	M	R
800	Porifera encrusting blue	Mass	R
1	Porifera encrusting sp1 white	Mass	R
58	Porifera encrusting sp15 yellow	Mass	R
605	Actiniaria sp20	S	R
1186	Asteroidea cf Spinulosida	S	R
1077	Caridae (indet)	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1129	cf Echinus (deepPinkSpine)	S	R
82	Cirripedia sp	S	R
TBC	Solasteridae sp (white)	S	R
339	Munida tenuimana	S	R
1076	Ophiuroidea sp (indet)	S	O
106	Serpulidae sp1	S	O
199	Velatida sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mx	Atlantic mid bathyal mixed sediment	Mud and sand emergent fauna (ICES).
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral gardens: colonial scleractinians on rocky outcrops (ICES subcategory).
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	

DIVE SUMMARY

M.AtMB.Co.SolScl	Solitary scleractinian field on Atlantic mid bathyal coarse sediment	Coral gardens (ICES/OSPAR); soft bottom coral garden:cup-coral field (ICES subcategory).
M.AtCo.XenCom.SyrFra	<i>Syngammina fragilissima</i> field on Atlantic mid bathyal coarse sediment	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Mx	
	1069 Ceriantharia	
2	M.AtMB.Ro.MixCor; M.AtMB.Mx	
	305 Leiopathes sp, 1069 Ceriantharia	
3	M.AtMB.Ro; M.AtMB.Co.SolScl	
	6 Caryophyllia sp, 1151 porifera lamellate (hexactinosida), 202 Phekallia ventilabrum	
4	M.AtMB.Ro.MixCor;	
	305 Leiopathes sp	
5	M.AtMB.Ro.MixCor; M.AtCo.XenCom.SyrFra	
	305 Leiopathes sp, 261 Syngammina fragilissima	

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Deep sea sponge aggregations	ICES/OSPAR
Coral gardens	ICES/OSPAR
- Soft bottom coral garden:cup-coral field	ICES subcategory
- hard-bottom coral gardens: colonial scleractinians on rocky outcrops	ICES subcategory
Listed Species Encountered (Fish, Count)	

DIVE SUMMARY

- <i>Centrophorus squamosus</i>	2	OSPAR/IUCN
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Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 539	TRANSECT # RB16

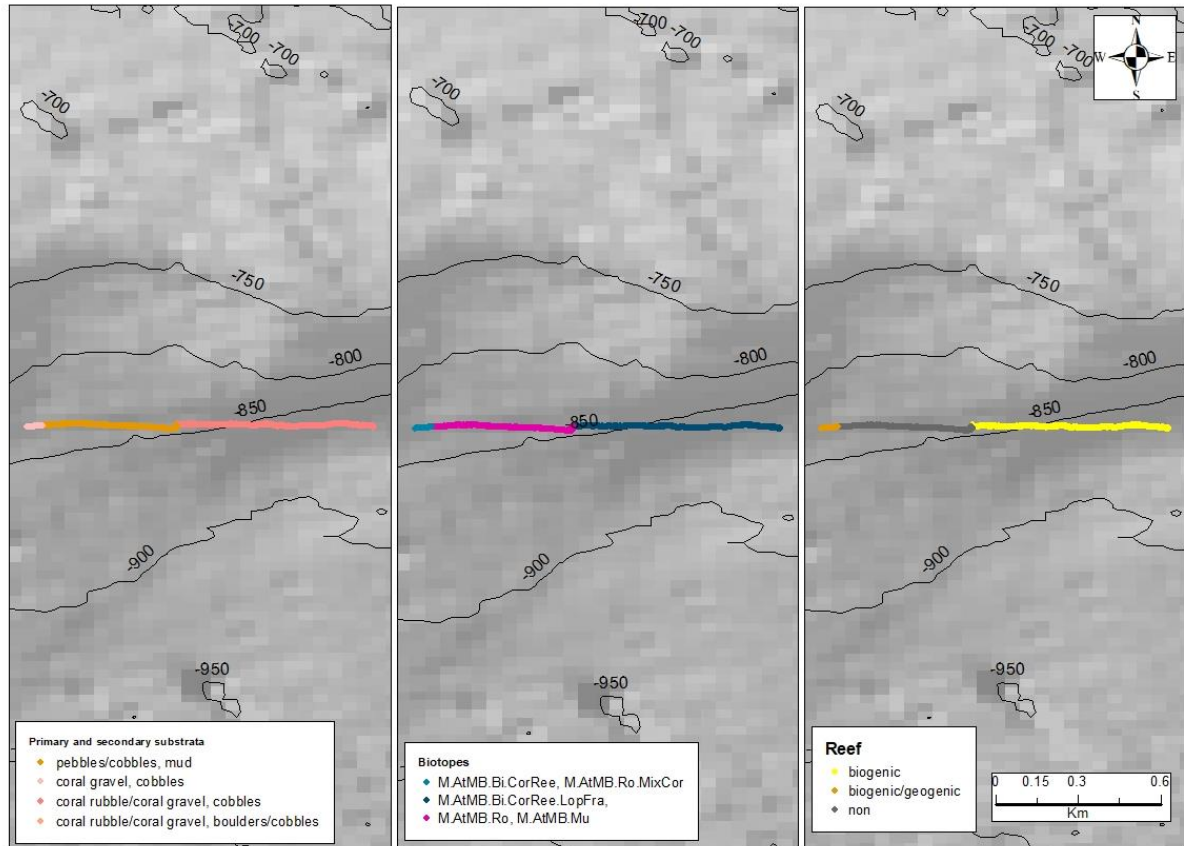
	Start	End
Date & Time	07/07/2018 14:24:54	07/07/2018 15:56:30
Latitude/ Longitude	55.72931, -14.96423	55.72926, -14.9771
Depth	870m	820m
Images	8962-9192	
Samples	1 x <i>Aphrocallistes beatrix</i> with associated <i>Zoanthidea</i> sp. 3 x pushcores.	

Location	RT16
Target Features	Escarpment, Straddles SAC
Depth Range	-730, -830

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

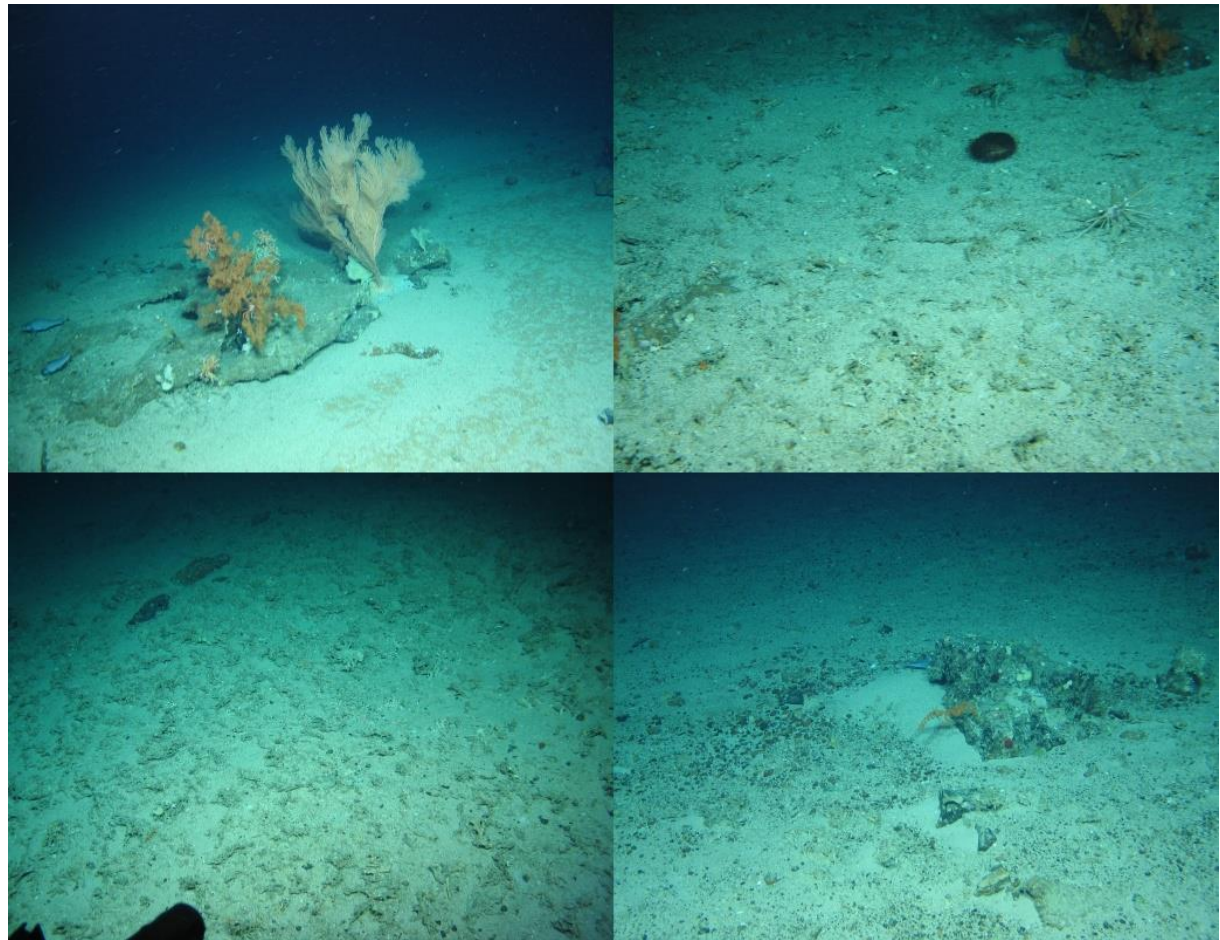
Dive 539, RB16



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Gravel and boulders with *Callogorgia verticillata* OTU280, *Madrepora oculata* OTU251, *Leiopathes* sp and *Phakellia ventilabrum* OTU202 (M.AtMB.Ro; M.AtMB.Ro.MixCor).

Top R. Coral gravel and coral rubbles with *Leiopathes* sp OTU305 (M.AtMB.Ro.MixCor; M.AtMB.Ro.SpaEnc).

Bottom L. Coral rubble and coral gravel with sparse cobbles/boulders. Epifaunally sparse/scarce (M.AtMB.Bi).

Bottom R.) Gravel, pebbles and cobbles with *Stichopathes cf gravieri* OTU283 and *Actinaria* sp20 OTU605 (M.AtMB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 14:25 Lophelia reefs span across the transect (mainly gravel and rubble). **[1]** Coral gravel and cobbles with no dominant epifauna. 14:36 ROV leaves the bottom and descends slowly again. **14:52 [2]** *Lophelia pertusa/Madrepora oculata* co-dominates with encrusted sponges on boulders. Coral gravel is the main substrata type. **14:59 [3]** Cobbles and boulders with sparse coral gravel/rubble with co-dominant porifera, actiniaria, *Stichopathes cf gravieri* OTU283 and *Cidaris cidaris* OTU211. 15:04-15:10 ROV stops for sampling 1 pushcore. 15:14-15:30 ROV stops for imagery and sampling (*Aphrocallistes* sp OTU264 with associated *Zoanthidea* sp OTU1149). **15:40 [4]** Now sand/gravel/sparse pebbles/cobbles/boulders. Porifera, mixed coral and Cirripedia species dominate on hard substrata and sparse *C.cidaris* as well as *Araesoma fenestratum* on soft bottom substrata. **END OF HD VIDEO AT 15:56.**

Physical Data			
Reef (types can be concurrent)	85% reef	<25% geogenic	
		<75% biogenic	0% living
			100% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral gravel - Coral rubble - Pebbles - Cobbles - Boulders 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/Cobble fields - Boulders - Coral reef 		
Pressures	n/a		

Biological Data	
Number of Species	41
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1187	<i>Antipathes dichotoma</i>	L	R
188	<i>Araeosoma fenestratum</i>	L	R
280	<i>Callogorgia verticillata</i>	L	R
211	<i>Cidaris cidaris</i>	L	R
566	<i>Coryphaenoides rupestris</i>	L	R
128	<i>Cottunculus microps</i>	L	R
305	<i>Leiopathes</i> sp	L	R
1160	<i>Lepidion</i> cf <i>guentheri</i>	L	R
557	<i>Lepidisis</i> sp	L	R
250	<i>Lophelia pertusa</i>	L	R
273	<i>Lophius piscatorius</i>	L	R
251	<i>Madrepora oculata</i>	L	R
654	<i>Molva molva</i>	L	R
349	<i>Mora moro</i>	L	R
1050	<i>Paramuricea</i> sp	L	R
1042	<i>Parantipathes</i> sp	L	R
83	Porifera massive lobose sp6 (cf <i>Geodia</i>)	L	R
283	<i>Stichopathes</i> cf <i>gravieri</i>	L	R
991	<i>Acanella arbuscula</i> (firtree)	M	R
278	<i>Anthomastus grandiflorus</i>	M	R
264	<i>Aphrocallistes</i> sp	M	R
234	<i>Ceremaster Peltaster Plinthaster</i>	M	R
1137	cf <i>Polymastia penicillus</i>	M	R
254	<i>Chaceon affinis</i>	M	R
540	<i>Chrysopathes</i> sp <i>Trissopathes</i> sp	M	R
285	<i>Chyrostylidae</i> sp	M	R
1172	<i>Macrouridae</i> sp (cf <i>Coelorhynchus</i>)	M	R
1126	<i>Munnidopsis</i> sp	M	R
202	<i>Phekallia ventilabrum</i>	M	R
1075	Porifera cylindrical sp	M	R
547	<i>Stauropathes arctica</i>	M	R
440	<i>Synaphobranchus kaupii</i>	M	R
1	porifera encrusting sp1 white	Mass	R
105	Porifera encrusting sp18 (creamPatterned)	Mass	R
7	Porifera encrusting sp2 (cream)	Mass	R
605	<i>Actiniaria</i> sp20	S	R
82	<i>Cirripedia</i> sp	S	R
1076	<i>Ophiuroidea</i> sp (indet)	S	R
266	<i>Parastichopus tremulus</i>	S	R
263	<i>Porania pulvillus</i> (poss stormi)	S	R
1149	<i>Zoanthidea</i> sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Ro	Atlantic mid bathyal rock and hard substrata	Coral gardens (ICES/OSPAR)

DIVE SUMMARY

M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR)
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reef (ICES subcategory).
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reef (ICES subcategory).

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtMB.Bi.CorRee.LopFra	250 <i>Lophelia pertusa</i>
2	M.AtMB.Bi.CorRee.LopFra	250 <i>Lophelia pertusa</i> , 202 <i>Phekallia ventilabrum</i> , 305 <i>Leiopathes</i> sp
3	M.AtMB.Ro; M.AtMB.Mu	82 Cirripedia, 211 <i>Cidaris cidaris</i>
4	M.AtMB.Bi.CorRee; M.AtMB.Ro.MixCor	211 <i>Cidaris cidaris</i> , 250 <i>Lophelia pertusa</i>

Conservation Targets

Listed Habitats Encountered

Name	Authority
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DIVE SUMMARY

Cold water coral reefs	ICES/OSPAR
<i>Lophelia pertusa/Madrepora oculata</i> reefs	ICES subcategory
Mud and sand emergent fauna	ICES
Deep sea sponge aggregations	ICES/OSPAR
Coral gardens	ICES/OSPAR
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 540	TRANSECT # RB17

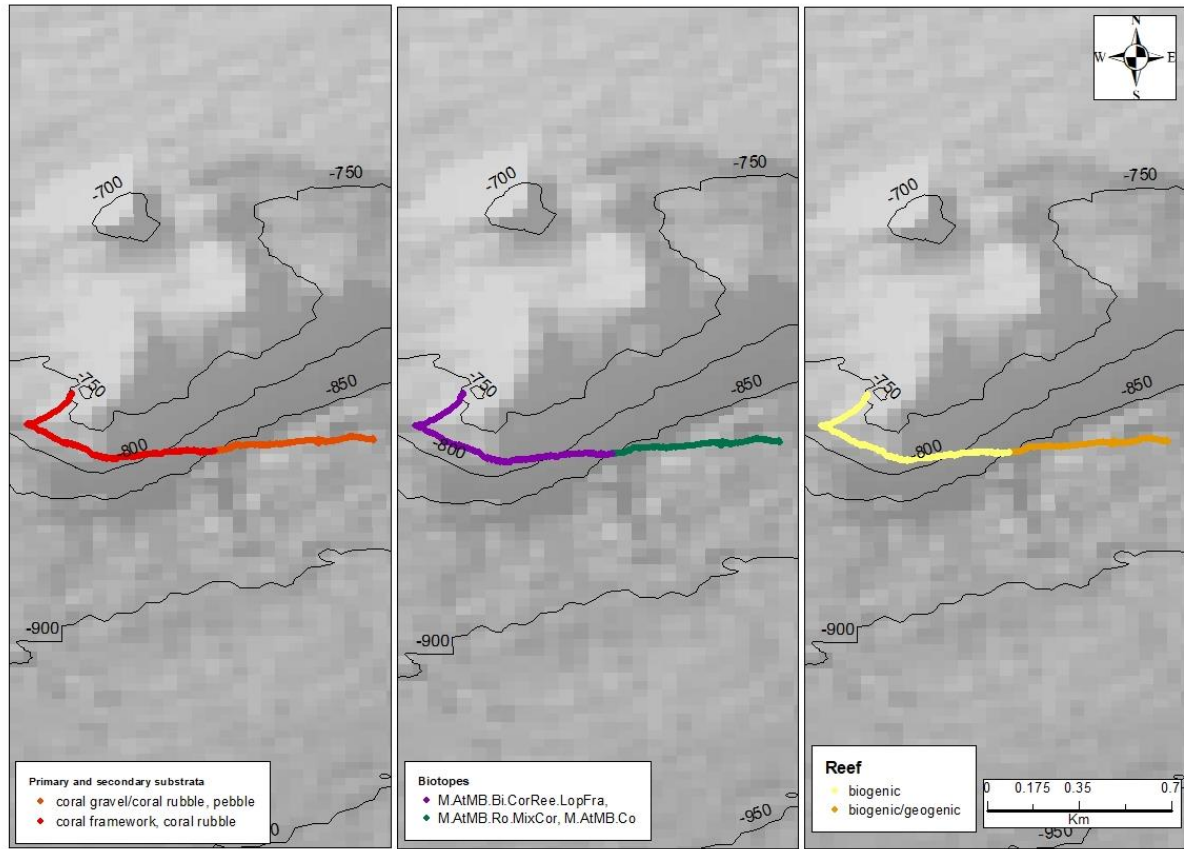
	Start	End
Date & Time	07/07/2018 18:34:38	07/07/2018 20:29:49
Latitude/ Longitude	55.67430, -15.415	55.67624, -15.16375
Depth	-870m	-720m
Images	0001-9990	
Samples	1 x Sponge ; 1 x Euplectellid with associated shrimp pair; 1 x <i>Acanella arbuscula</i> (firtree).	

Location	RT17
Target Features	Escarpment, Mound
Depth Range	-780, -860

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

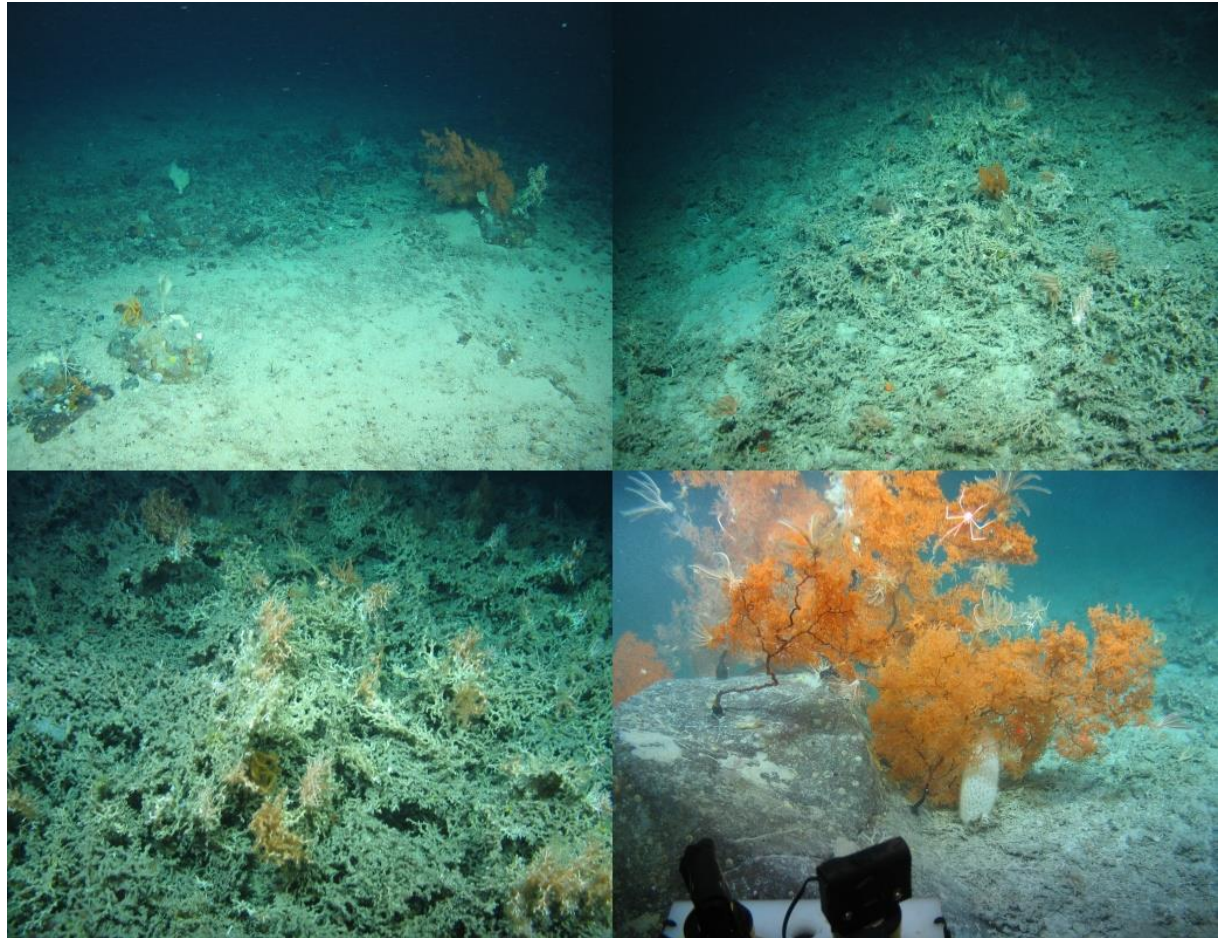
Dive 540, RB17



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mosaic substrata of mud/pebble/cobbles with *Leiopathes sp* OTU305, *Stichopathes cf gravieri* OTU283 and *Cidaris cidaris* OTU211 (M.AtMB.Ro.MixCor).

Top R. Dense live *Lophelia pertusa/Madrepora oculata* reefs with mixed corals and mobile species living on the biogenic structure (M.AtMB.Bi.CorRee.LopFra).

Bottom L. Dense live *Lophelia pertusa/Madrepora oculata* reefs with mixed corals and mobile species living on the biogenic structure (M.AtMB.Bi.CorRee.LopFra).

Bottom R. Zoomed-in imagery of large *Leiopathes sp* OTU305 on coral rubble and boulder with associated Chyrotylidae (indet) OTU1054 and *Euplectella suberea* OTU1198 (M.AtMB.Bi.CorRee.LopFra).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 18:34 [1] The transect starts on an epifaunally diverse moderate pebble /gravel/coral gravel /cobble/ boulders slope. Abundant/dominant *Leiopathes* sp OTU305 and *Phakellia ventilabrum* OTU202 on cobbles. Bed of ophiuroidea sp (indet) OTU1076. **18:42 [2]** Sediment changes now predominantly into coral rubble and coral gravel, with sparse/rare boulders. 18:46 ROV stops for imagery and sampling of a sponge. Bed of ophiuroids continues until **19:12 [3]** Now substrate changes into coral framework (mostly dead) with frequent sightings of crinoids *Koehlermetra porrecta* OTU315 and *Acanella arbuscula* (firtree) OTU991. 19:08 – 19:14 ROV stops for imagery and sampling of *A. arbuscula* (firtree). 19:16 ROV stops for imagery. **19:18 [4]** ROV swims on the edge of continental slope covered in dense *Lophelia pertusa/Madrepora oculata* reef on soft bottom. Here the geomorphology features (predominantly ridges) intersperse erratically, from steep up ridge to moderate down ridge. The ROV surveys the transect along and across the ridges. 19:19 *Leiopathes* sp, *A. arbuscula* (firtree) and *Cidaris cidaris* OTU211 are frequent in this part of the transect. 19:38 Here dense *L.pertusa/M. oculata* reefs (dead and living) with mixed coral and *K.porrecta* living on them. 19:47-19:50 ROV stops for sampling (sampling aborted). **20:00 [5]** Mosaic substrata (coral rubble/coral framework/coral garden/sparse cobbles) with abundant *K.porrecta* and mixed corals. ROV surveys the site across the ridges. 20:18 – 20:22 ROV stops for imagery and sampling of Euplectellid (1) with associated shrimps (2). **END OF HD VIDEO AT 20:29**

Physical Data									
Reef (types can be concurrent)	<table border="1"> <tr> <td>90% reef</td> <td>20% geogenic</td> </tr> <tr> <td></td> <td>80% biogenic</td> </tr> <tr> <td></td> <td><25% living</td> </tr> <tr> <td></td> <td><75% dead</td> </tr> </table>	90% reef	20% geogenic		80% biogenic		<25% living		<75% dead
90% reef	20% geogenic								
	80% biogenic								
	<25% living								
	<75% dead								
Substrates	<ul style="list-style-type: none"> - Pebbles - Coral reef - Coral gravel - Coral rubble - Coral framework 								
Geomorphology/Features	Continental slope								
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Coral reef/pebble 								
Pressures	1 x fishing net (19:01)								

Biological Data	
Number of Species	62

DIVE SUMMARY

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
991	Acanella arbuscula (firtree)	L	R
1187	Antipathes dichotoma	L	R
264	Aphrocallistes sp	L	R
188	Araeosoma fenestratum	L	R
284	Bathypathes sp (brown)	L	R
328	Bathypathes sp1	L	R
1137	cf Polymastia penicillus	L	R
254	Chaceon affinis	L	R
540	Chrysopathes sp Trissopathes sp	L	R
1198	Euplectella suberea	L	R
1022	Gersemia sp3	L	R
214	Gorgonocephalus sp1	L	R
305	Leiopathes sp	L	R
1160	Lepidion cf guentheri	L	R
249	Lepidion eques	L	R
273	Lophius piscatorius	L	R
251	Madrepora oculata	L	R
349	Mora moro	L	R
1194	Muusoctopus johnsonianus	L	R
1042	Parantipathes sp	L	R
330	Phanopathes sp	L	R
202	Phekallia ventilabrum	L	R
1020	Phycis blennoides	L	R
1010	Porifera lamellate sp12	L	R
283	Stichopathes cf gravieri	L	R
560	Stichopathes sp	L	R
585	Acanella arbuscula (bushy)	M	R
278	Anthomastus grandiflorus	M	R
311	Anthothela grandiflora	M	R
235	Bathynectes sp	M	R
274	Brisingidae	M	R
289	cf Clavulariidae sp	M	R
1049	cf Psolus sp	M	R
285	Chyrostylidae sp	M	R
211	Cidaris cidaris	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
131	Crinoidea sp1	M	R
307	Gorgonacea sp7 cfsidella	M	R
227	Helicolenus dactylopterus	M	R
315	Koehlermetra porrecta	M	R
250	Lophelia pertusa	M	R
1126	Munnidopsis sp	M	R
1076	Ophiuroidea sp (indet)	M	R
266	Parastichopus tremulus	M	R
255	Phelliactis sp1	M	R
547	Stauropathes arctica	M	R
440	Synaphobranchus kaupii	M	R
75	Porifera encrusting globose sp2	Mass	R
58	Porifera encrusting sp15 yellow	Mass	R
58	Porifera encrusting sp15 yellow	Mass	R
7	Porifera encrusting sp2	Mass	R
43	Corallimorphidae sp2	S	R
605	Actiniaria sp20	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R

DIVE SUMMARY

234	Ceremaster Peltaster Plinthaster	S	R
194	Echinidae sp (pink)	S	R
1154	Henricia sp (deep)	S	R
299	Pterasteridae sp	S	R
339	Munida tenuimana	S	R
340	Ophiuroidea sp7(red)	S	R
263	Porania pulvillus (poss_stormi)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Co	Atlantic mid bathyal coarse sediment	
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblages on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory).
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtMB.Ro.MixCor; M.AtMB.Co 250 <i>Lophelia pertusa</i> , 305 <i>Leiopathes</i> sp, 202 <i>Phakellia ventilabrum</i>
2	M.AtMB.Bi.CorRee.LopFra 250 <i>Lophelia pertusa</i> , 211 <i>Cidaris cidaris</i>

DIVE SUMMARY

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs	ICES	
<i>Lophelia pertusa/Madrepora oculata</i> reef	ICES subcategory	
Coral gardens:	ICES/OSPAR	
hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
Extensive biogenic <i>Lophelia</i> reefs.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 541	TRANSECT # RB20

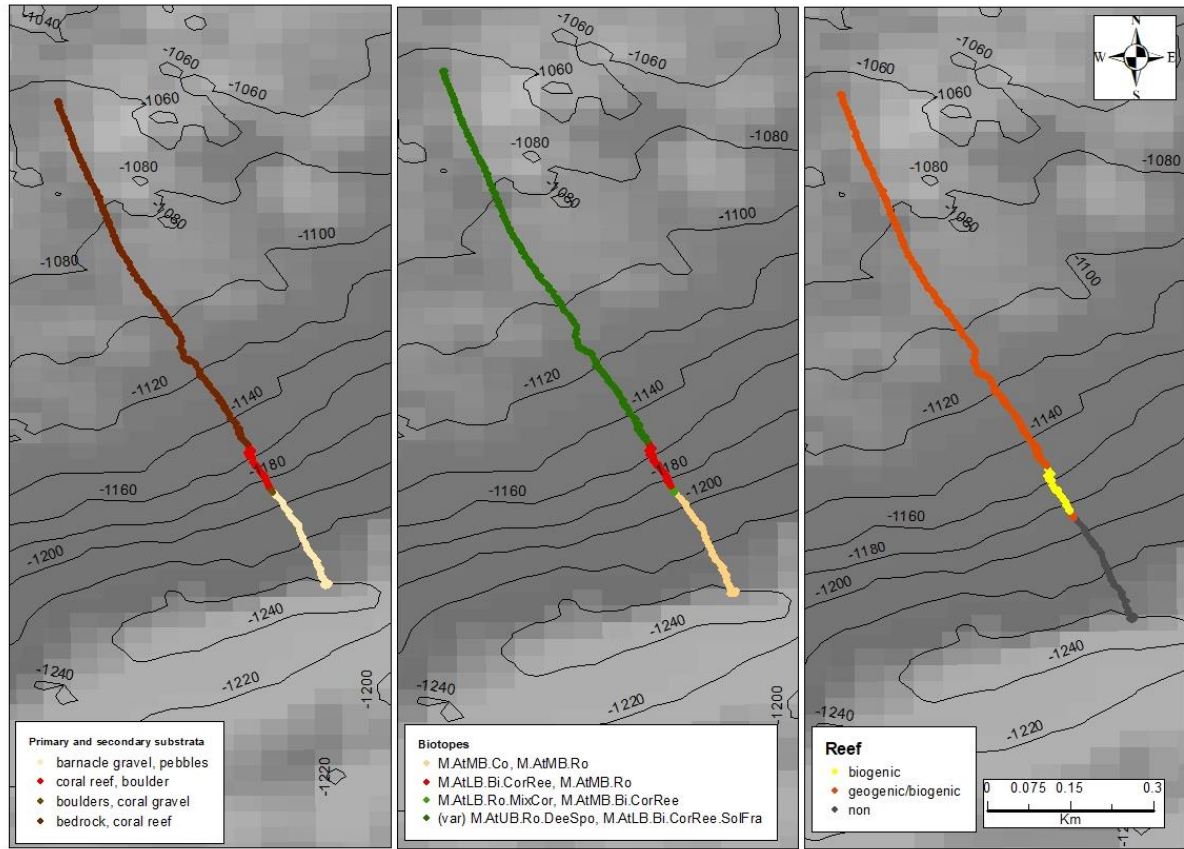
	Start	End
Date & Time	08/07/2018 23:23:12	08/07/2018 01:09:44
Latitude/ Longitude	55.57106; -15.29627	55.57959; -15.30098
Depth	-1219m	-1044m
Images	IMG_0055-IMG_0215.JPG	
Samples	n/a	

Location	RT20
Target Features	Escarpment
Depth Range	-1080, -1240

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

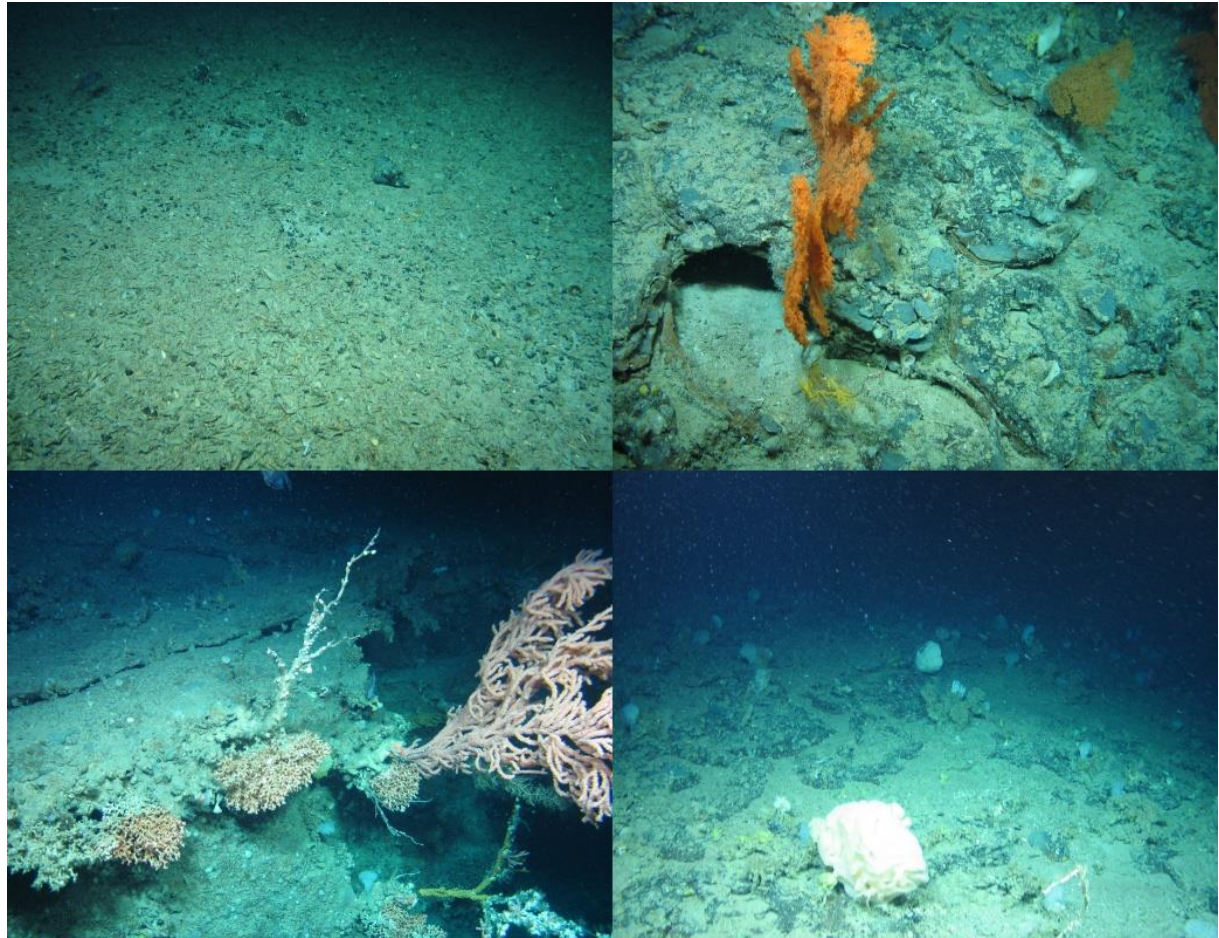
Dive 541, RB20



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Right at the beginning of the video, ROV is sampling pushcore on barnacle gravel sediment with a few sponges, including (possible) *Aphrocallistes* sp. (M.AtMB.Co; M.AtMB.Ro).

Top R. *Leiopathes* sp OTU305 colonies on bedrock (M.AtLB.Ro.MixCor).

Bottom L. Edge of steep bedrock with overhanging *Primnoa resedaeformis* OTU541 and *Solenosmilia variabilis* (M.AtLB.Bi.CorRee; M.AtMB.Ro).

Bottom R. Bedrock, boulders and gravel host several species of sponges. Two orange roughly were passing by the sponge aggregations. This listed species is found frequently throughout the transect (M.AtLB.Bi.CorRee; M.AtMB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 23:23 The video starts on barnacle gravel substrate. 23:39 ROV samples 2 pushcores. 23:39 ROV leaves the bottom, only blue water for 1 minute. **23:40 [1]** Continues on barnacle gravel sediment moderately flat/gentle up slope dwelled by several species of sponges. 23:42 Shark egg cases (no ID), possible of *Galeus melastomus* OTU1005 (encountered by the end of the transect (1 juvenile)) or Rajiformes sp1 OTU652. **23:51 [2]** Here no more barnacle gravel . Now boulders/cobbles/mud/sparse coral gravel take place on steep up slope with many associated epifauna, including *Leiopathes sp* and glass sponges. Large boulders host isolated *Solenosmilia variabilis* aggregations. 23:56 ROV stops for imagery of pink octocorallia (possibly Paragorgia sp). 00:01 the ROV moves slowly on the right and then forward. **00:06 [3]** Mosaic of coral framework (mostly dead) and boulders with abundant Aphrocallistes sp OTU264, porifera lamellate sp7 and porifera encrusting sp2 . 00:08 ROV climbs a steep bedrock with overhanging *Solenosmilia variabilis* colonies (living/dead), encrusted sponges and soft corals. **00:11 [4]** Now the ROV reaches the summit. The site is dominated by Asconema sp OTU1038 and Aphrocallistes sp on coral gravel/rubble/sparse large cobbles flat/gentle up slope. Abundant Caryophyllia sp OTU6 on gravel. 00:13 ROV stops for imagery of Aphrocallistes sp (for less than a minute). 00:23 Now the substrate changes into large boulders/bedrock covered in coral gravel. Same epifauna as in the last biotope type. Here Orange Roughy are frequently encountered. **00:29 [5]** Here gravel and sand/mud sediment on a gentle down slope with sparse boulders where encrusted sponges co-dominate with *Aphrocallistes sp* and porifera lamellate sp7. **00:34 [6]** now coral rubble and coral gravel intersperse with boulders/bedrock. Same dominant epifauna. A few *Syringammina fragilissima* observed sparsely on gravel/sand/mud sediment. **00:39 [7]** Now boulders/bedrock is the primary substrate hosting abundant sponge aggregations and hydrozoa species. **00:43 [8]** Again substrate changes into mud/gravel/sparse boulders on gentle down slope with sparse sponge aggregations. 00:58-01:04 ROV stops for imagery and sampling 1 pushcore. **01:04[9]** Now gently upslope on mud/gravel sediment with sparse cobbles/boulders hosting sponges. 01:06 ROV stops for imagery of Aphrocallistes sp and encrusted sponges on boulders until **END OF HD VIDEO AT 01:09.**

N.B. This site is of particular interest for the abundance of small sponges, mainly Aphrocallistes sp and (possibly) porifera lamellate sp9 (foliate).

Moreover, throughout the transect, 26 individuals of *Hoplostethus atlanticus* (Orange Roughy) – which is assigned to the IUCN Vulnerable species- are encountered.

Additionally, *Primnoa resedaeformis* OTU54 is rarely encountered in the North East Atlantic. There are records from Canada and Norway but rarely from the NE Atlantic at -1100 m depth (however species recorded in Davies et al 2017).

Physical Data	
Reef (types can be concurrent)	55% geogenic
	80% reef
	45% biogenic
	n/a
	n/a

DIVE SUMMARY

Substrates	<ul style="list-style-type: none"> - Mud - Barnacle gravel - Coral reef - Coral gravel - Pebbles - Cobbles - Boulders
Geomorphology/Features	Continental slope
Annex 1 Types	<ul style="list-style-type: none"> - Pebbles - Cobbles - Coral reef - Boulders - Bedrock
Pressures	n/a

Biological Data

Number of Species

67

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1038	Asconema sp	L	R
1084	cf Pheronema sp (rock_pongophore_horrida)	L	R
1137	cf Polymastia penicillus	L	R
211	Cidaris cidaris	L	R
649	Eknomisis sp	L	R
973	Graneledone verrucosa	L	R
651	Hoplostethus atlanticus	L	R
578	Keratoisis sp2	L	R
305	Leiopathes sp	L	R
1160	Lepidion cf guentheri	L	R
249	Lepidion eques	L	R
557	Lepidisis sp	L	R
654	Molva molva	L	R
1194	Muusoctopus johnsonianus	L	R
563	Neocyttus helgae	L	R
1003	Nezumia aequalis	L	R
347	Pheronema carpenteri	L	O

DIVE SUMMARY

124	Porifera cup sp3	L	R
1010	Porifera lamellate sp12	L	R
422	Porifera lamellate sp7	L	F
606	Porifera lamellate sp9 (foliate)	L	O
576	Porifera massive lobose sp18 (cfFarrea sp)	L	R
616	Porifera massive lobose sp21 (yellow cfRhabdodictyum)	L	R
1162	Porifera vase (cf Aphrocallistes)	L	R
331	Primnoa resedaeformis	L	R
652	Rajiformes sp1 poss Neoraja caerulea	L	R
547	Stauropathes arctica	L	R
930	Actinopterygii sp3	M	R
278	Anthomastus grandiflorus	M	R
264	Aphrocallistes sp	M	F
20	Asciacea sp2 (clear)	M	R
1077	Caridea (indet)	M	R
388	Ceremaster Peltaster Plinthaster sp2	M	R
1084	cf Pheronoma sp (Rock_ poss Aphorme horrida)	M	R
285	Chyrostylidae sp	M	R
1059	Colossendeis sp	M	R
1072	Crinoidea sp (10 arms)	M	R
1005	Galeus melastomus	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
50	Hydrozoa bushy	M	R
1078	Ipnopidae sp	M	R
1089	Lophaster furcifer (white)	M	R
339	Munida tenuimana	M	R
1050	Paramuricea sp	M	R
436	Pentametrocrinus atlanticus	M	R
552	Polyacanthonotus rissoanus	M	R
137	Porifera massive globose sp6	M	R
1090	Porifera tubular glassy (cfFarreidae)	M	R
700	Solenosmilia variabilis	M	O
361	Stylaster sp1	M	R
440	Synaphobranchus kaupii	M	R
261	Syringammina fragilissima	M	R
446	Trachyrhynchus sp	M	R
800	Porifera encrusting blue	Mass	R
58	Porifera encrusting sp15 yellow	Mass	O

DIVE SUMMARY

7	Porifera encrusting sp2	Mass	R
605	Actiniaria sp20	S	R
6	Caryophyllia sp	S	R
584	Caryophyllia sp5 (bullseye)	S	R
2	Ceriantharia	S	O
82	Cirripedia sp	S	R
194	Echinidae sp (pink)	S	R
1154	Henricia sp (deep)	S	R
56	Hydrozoa flat branched	S	R
207	Pliobrothus sp	S	R
263	Porania pulvillus (poss_stormi)	S	R
1149	Zoanthidea sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Co	Atlantic mid bathyal coarse sediment	
M.AtMB.Ro	Atlantic mid bathyal rock and hard substrata	
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal coarse sediment	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory)
M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES); <i>Solenosmilia variabilis</i> reefs (ICES subcategory)
(var) M.AtUB.Ro.DeeSpo	(variant of) Deep sponge aggregations on Atlantic upper bathyal rock and other hard substrata	Deep sea sponge aggregations (ICES/OSPAR)

DIVE SUMMARY

M.AtLB.Bi.CorRee.SolFra	Mixed coral assemblage on Atlantic lower bathyal <i>Solenosmilia</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Solenosmilia variabilis</i> reefs (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Co; M.AtMB.Ro	
	264 <i>Aphrocallistes</i> species, 1090 porifera tubular glassy	
2	M.AtLB.Ro.MixCor; M.AtMB.Bi.CorRee	
	305 <i>Leiopathes</i> sp, 1090 porifera tubular glassy, 700 <i>Solenosmilia variabilis</i>	
3	M.AtLB.Bi.CorRee; M.AtMB.Ro	
	700 <i>Solenosmilia variabilis</i> , 305 <i>Leiopathes</i> sp, 1090 porifera tubular glassy, 264 <i>Aphrocallistes</i> sp	
4	(var) M.AtUB.Ro.DeoSpo; M.AtLB.Bi.CorRee.SolFra	
	700 <i>Solenosmilia variabilis</i> , 305 <i>Leiopathes</i> sp, 1090 porifera tubular glassy, 264 <i>Aphrocallistes</i> sp	

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Coral garden	ICES/OSPAR
- hard-bottom coral garden: colonial scleractinians on rocky outcrops	ICES subcategory
- Hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory
Deep sea sponge aggregations	
Cold water coral reefs	ICES/OSPAR
- <i>Solenosmilia variabilis</i> reefs	ICES/OSPAR
	ICES subcategory
Listed Species Encountered (Fish, Count)	

DIVE SUMMARY

- <i>Hoplostethus atlanticus</i> (Orange Roughy)	26	OSPAR/IUCN
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Additional Comments

- *Hoplostethus atlanticus* encountered at 23:53, 00:01, 00:05, 00:08, 00:12, 00:23, 00:24, 00:25, 00:26 (3= 1 juvenile and 2 adults), 00:29 (2 adults), 00:30, 00:37, 00:47, 00:50, 00:53 (2 adults), 00:55, 00:57, 00:59, 01:04 (2 adults), 01:06 (2 adults).
- New biotope variant of deep sea sponge aggregations on lower bathyal rocky outcrops

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 542	TRANSECT # RB21

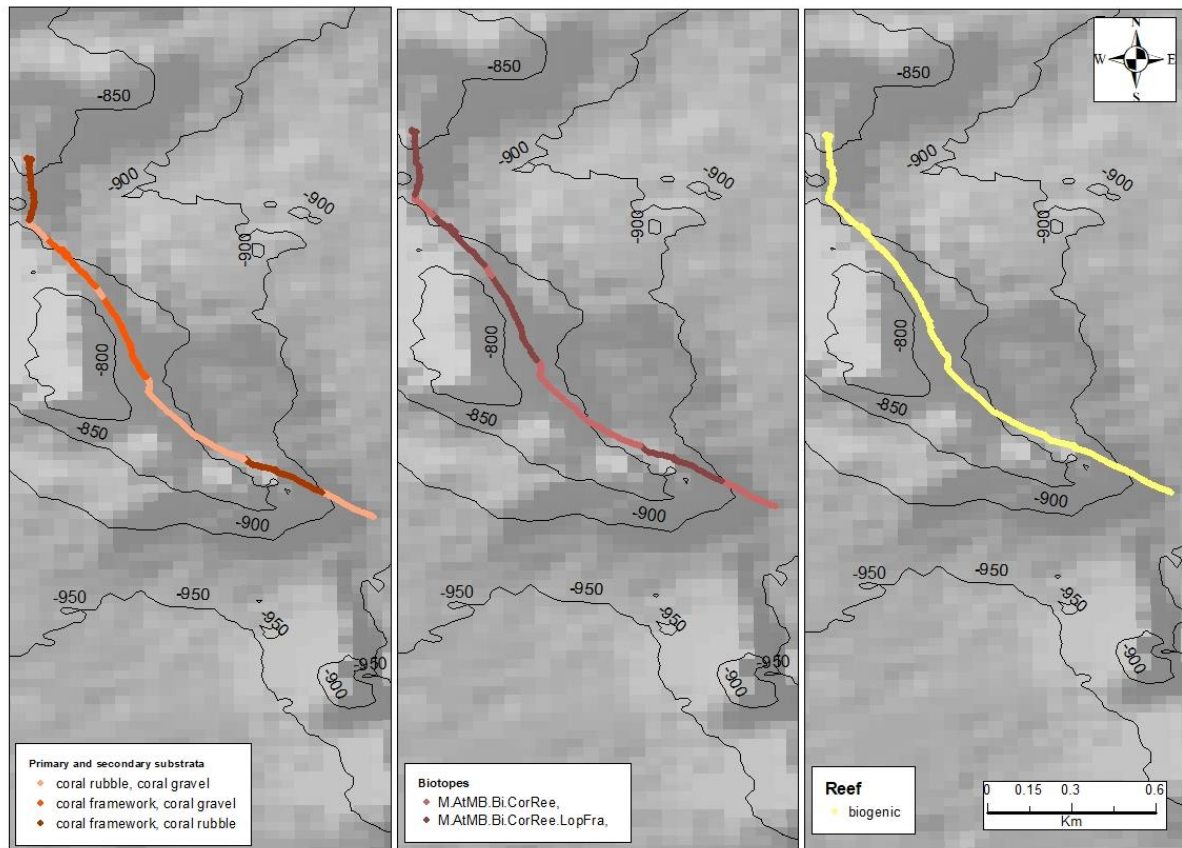
	Start	End
Date & Time	08/07/2018 03:18:41	08/07/2018 05:25:51
Latitude/ Longitude	55.60186, -15.30274	55.61328, - 15.31378
Depth	-935m	-840m
Images	IMG_0216-IMG_1157.JPG	
Samples	1 x Euplectella sp, 1 x <i>Madrepora oculata</i> ; 1 x Leiopathes sp; 2 x <i>Koehlermetra porrecta</i> ; 1 x <i>Lophelia pertusa/Madrepora oculata</i> ; 1 x Aphrocallistes sp; 1 x Hydrozoa flat branched.	

Location	RT21
Target Features	Mound, Ridge
Depth Range	-820, -940

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

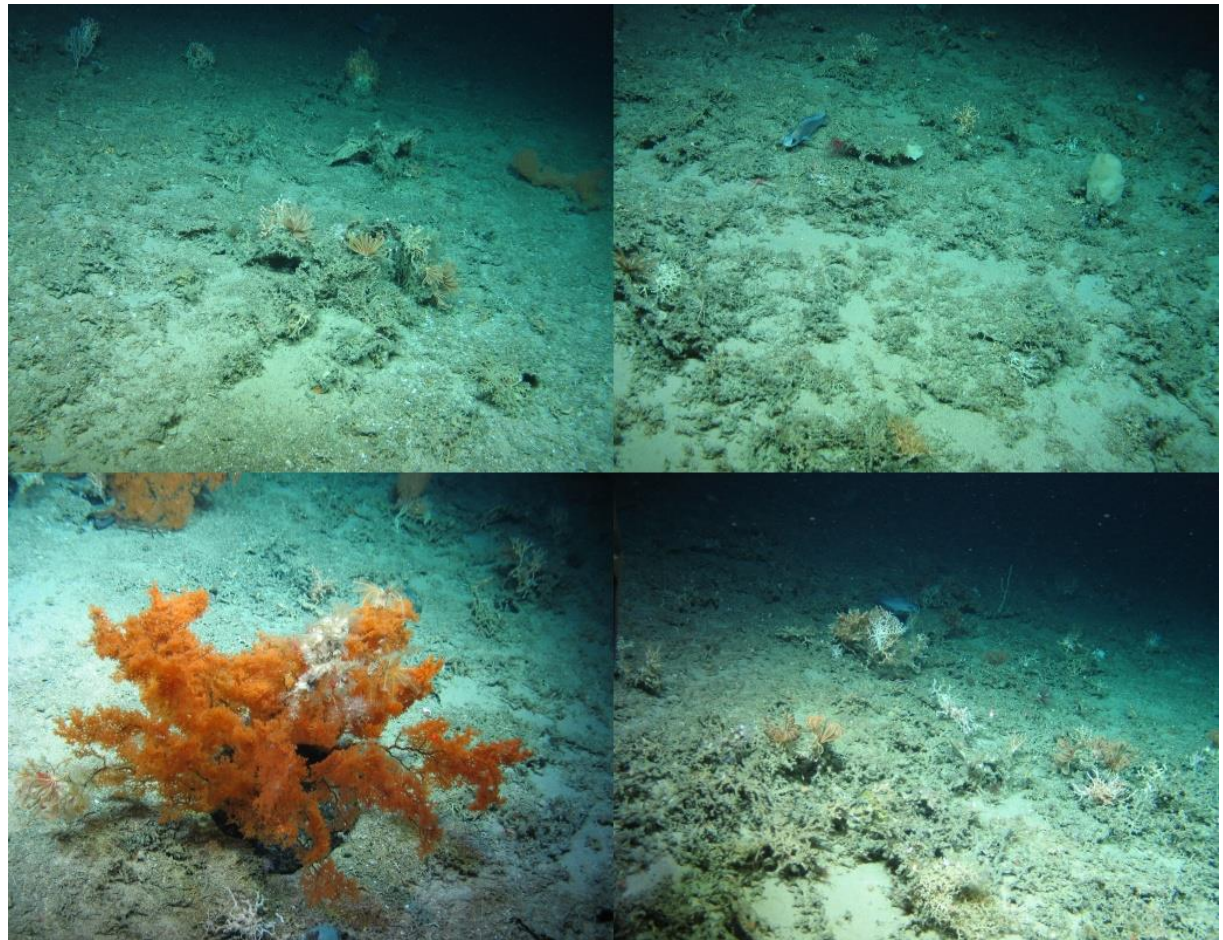
Dive 542, RB21



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. *Lophelia pertusa*/*Madrepora pertusa* reef framework on moderate/gentle up slope with *Koehlermetra porrecta* OTU315 and *Acanella arbuscula* (bushy) OTU585 (M.AtMB.Bi.CorRee).

Top R. Coral reef framework/rubble with possible porifera lamellate sp7 OTU422 and *Koehlermetra porrecta* OTU315 (M.AtMB.Bi.CorRee).

Bottom L. Zoomed-in imagery of *Leiopathes* sp OTU305 living on *L.pertusa* OTU250 rubble. (M.AtMB.Bi.CorRee).

Bottom R. Dense coral reef of *L.pertusa*/*M. oculata* hosting abundant *K. porrecta* OTU315 (M.AtMB.Bi.CorRee.LopFra).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 03:19 [1] Gravel/coral gravel/ coral rubble flat/gentle upslope with abundant *Aphrocallistes* sp and sparse *Madrepora oculata* reef (living and dead). 03:25 [2] Mosaic sediment (coral framework/coral rubble/coral gravel/sand/mud/sparse cobbles) on a moderate uphill ground where soft corals and *Koehlermetra porrecta* becomes more frequent as well as a variety of glass sponges. 03:35- 03:47 ROV stops for imagery and sampling. The ROV moves sediment, sand cloud obscures the vision. 03:42 [3] Dense *L.pertusa*/*M.oculata* framework with many species living on top including: soft corals, cup corals, sponges, crinoids, ophiuroids, crinoids, echinoidea. 03:57 [4] Now sediments shift into coral rubble and coral gravel hosting sparse epifauna: crinoids, sponges, soft corals, cupcorals, actiniaria. 04:23 Here coral framework becomes more widespread. Same epifauna. 04:41 [6] From this point til the end of the transect, the sediment intersperse with coral rubble/coral gravel and dense coral framework hosting same epifaunal community as in previous biotopes. *K.porrecta* and *Leipathes* sp are the most abundant. 04:38 – 04:40 ROV stop for imagery. 04:42- 04:43 blue water for a few seconds, while ROV swims in the water column. 05:20-05:25 Sampling of coral framework and its community. **END OF HD VIDEO AT 05:25.**

Physical Data			
Reef (types can be concurrent)	100% reef	0% geogenic	
		100% biogenic	<10% living
			<90% dead
Substrates	Coral reef: <ul style="list-style-type: none"> - Coral framework - Coral rubble - Coral gravel 		
Geomorphology/Features	Continental slope		
Annex 1 Types	- Coral reef		
Pressures	n/a		

Biological Data	
Number of Species	72
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1075	Porifera cylindrical sp	L	R
991	Acanella arbuscula (firtree)	L	R
566	Coryphaenoides rupestris	L	R
1160	Lepidion cf guentheri	L	R
611	Rhabdodictyum cf delicatum	L	R
2	Ceriantharia	L	R
654	Molva molva	L	R
307	Gorgonacea sp7 cflsidella	L	R
1005	Galeus melastomus	L	R
202	Phekallia ventilabrum	L	R
305	Leiopathes sp	L	R
1065	Paragorgia (twiggy) (possSwiftia)	L	R
284	Bathypathes sp (brown)	L	R
320	cf Antipathella sp	L	R
1187	Antipathes dichotoma	L	R
283	Stichopathes cf gravieri	L	R
188	Araeosoma fenestratum	L	R
422	Porifera lamellate sp7	L	R
330	Phanopathes sp	L	R
540	Chrysopathes sp Trissopathes sp	L	R
	Euplectella	L	R
249	Lepidion eques	L	R
973	Graneledone verrucosa	L	R
254	Chaceon affinis	L	R
1042	Parantipathes sp	L	R
1137	cf Polymastia penicillus	L	R
1216	Trachiscorpiia cristulata	L	R
1157	Keratoisis sp (fineBranching)	L	R
563	Neocyttus helgae	L	R
1126	Munnidopsis sp	L	R
280	Callogorgia verticillata	L	R
349	Mora moro	L	R
612	Leiopathes sp (dense)	L	R
552	Polyacanthonotus rissoanus	L	R
347	Pheronema carpenteri	L	R
1020	Phycis blennoides	L	R
250	Lophelia pertusa	M	R

DIVE SUMMARY

251	Madrepora oculata	M	R
264	Aphrocallistes sp	M	R
315	Koehlermetra porrecta	M	R
585	Acanella arbuscula (bushy)	M	R
211	Cidaris cidaris	M	R
440	Synaphobranchus kaupii	M	R
20	Ascidacea sp2 (clear)	M	R
433	Pseudarchaster sp1	M	R
278	Anthomastus grandiflorus	M	R
285	Chyrostylidae sp	M	R
1059	Colossendeis sp (pair)	M	R
50	Hydrozoa bushy	M	R
137	Porifera massive globose sp6	M	R
235	Bathynectes sp	M	R
234	Ceremaster Peltaster Plinthaster	M	R
547	Stauropathes arctica	M	R
1017	Teuthida sp1	M	R
1162	Porifera vase (cf Aphrocallistes)	M	R
56	Hydrozoa flat branched	M	R
261	Syringamina fragilissima	M	R
259	Zoarcidae sp1	M	R
1176	cf Grimpteuthis sp	M	R
198	Stichastrella rosea	M	R
339	Munida tenuimana	S	R
605	Actiniaria sp20	S	R
1149	Zoantheida sp	S	R
4	Actiniaria sp1	S	R
458	Pachycerianthis multiplacatus	S	R
1076	Ophiuroidea sp (indet)	S	O
1077	Caridea (indet)	S	R
207	Pliobrothus sp	S	R
6	Caryophyllia sp	S	R
255	Phelliactis sp1	S	R
1049	cf Psolus sp	S	R
311	Anthothela grandiflora	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory).
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory).
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Bi.CorRee	
		251 <i>Madrepora oculata</i> , 264 <i>Aphrocallistes</i> sp
2	M.AtMB.Bi.CorRee.LopFra	
		315 <i>Koehlermetra porrecta</i> , 585 <i>Acanella arbuscula</i> , 305 <i>Leiopathes</i> sp
3	M.AtMB.Bi.CorRee	
		305 <i>Leiopathes</i> sp, 315 <i>Koehlermetra porrecta</i>
4	M.AtMB.Bi.CorRee.LopFra	
		315 <i>Koehlermetra porrecta</i>
5	M.AtMB.Bi.CorRee	
		315 <i>Koehlermetra porrecta</i> , 305 <i>Leiopathes</i> sp
6	M.AtMB.Bi.CorRee.LopFra	
		315 <i>Koehlermetra porrecta</i> , 305 <i>Leiopathes</i> sp
7	M.AtMB.Bi.CorRee	
		315 <i>Koehlermetra porrecta</i> , 305 <i>Leiopathes</i> sp
8	M.AtMB.Bi.CorRee.LopFra	
		315 <i>Koehlermetra porrecta</i> , 305 <i>Leiopathes</i> sp

DIVE SUMMARY

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs - <i>Lophelia pertusa/Madrepora oculata</i> reefs	ICES/OSPAR ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments		
<ul style="list-style-type: none"> • Notable extensive <i>Lophelia pertusa</i> reefs. 		

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 543	TRANSECT # RB18

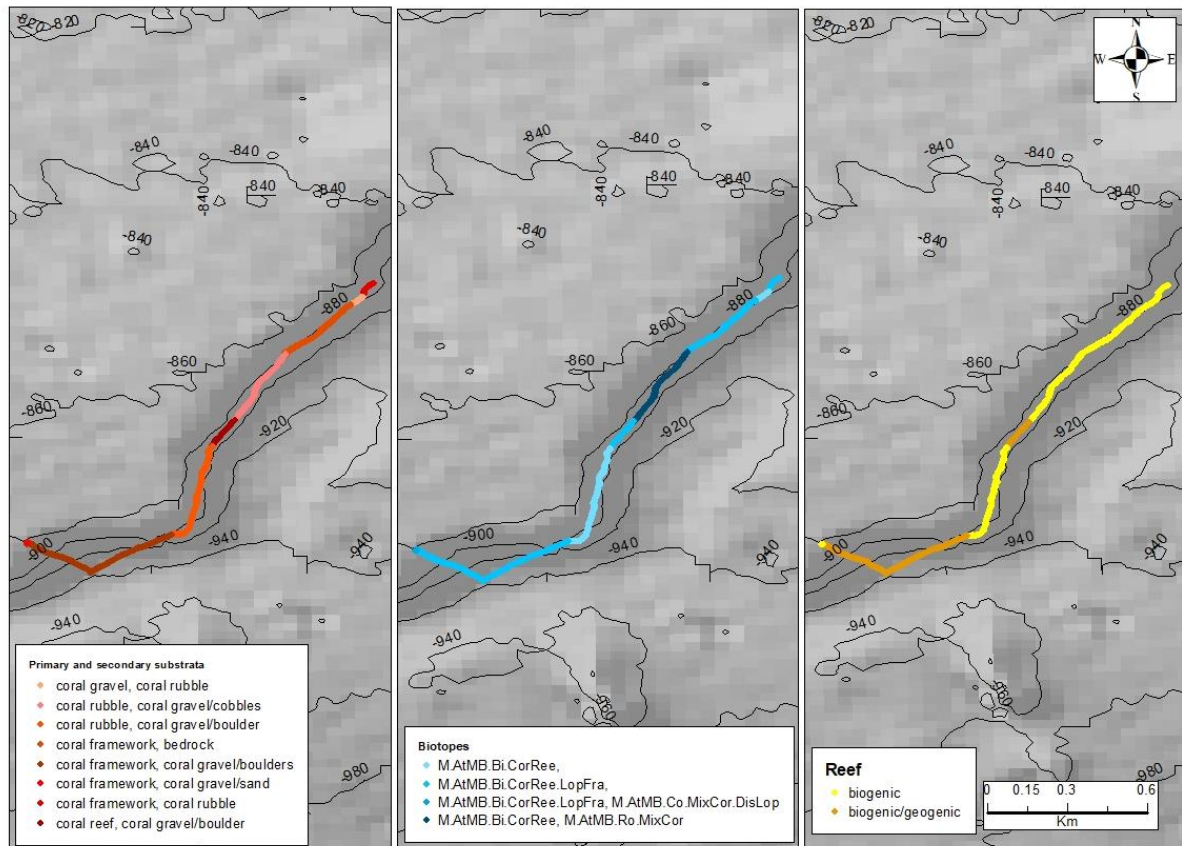
	Start	End
Date & Time	08/07/2018 08:12:14	08/07/2018 10:35:00
Latitude/ Longitude	55.59997, -15.40762	55.59097, -15.41951
Depth	-873m	-877m
Images	IMG_1158-IMG_1797.JPG	
Samples	1 x Primnoidea sp (unbranching) OTU1193(08:49:42); 1 x Octocorallia sp (pink) (09:26:00); 2 x pushcore.	

Location	RT18
Target Features	Mound, Escarpment
Depth Range	-880, -930

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

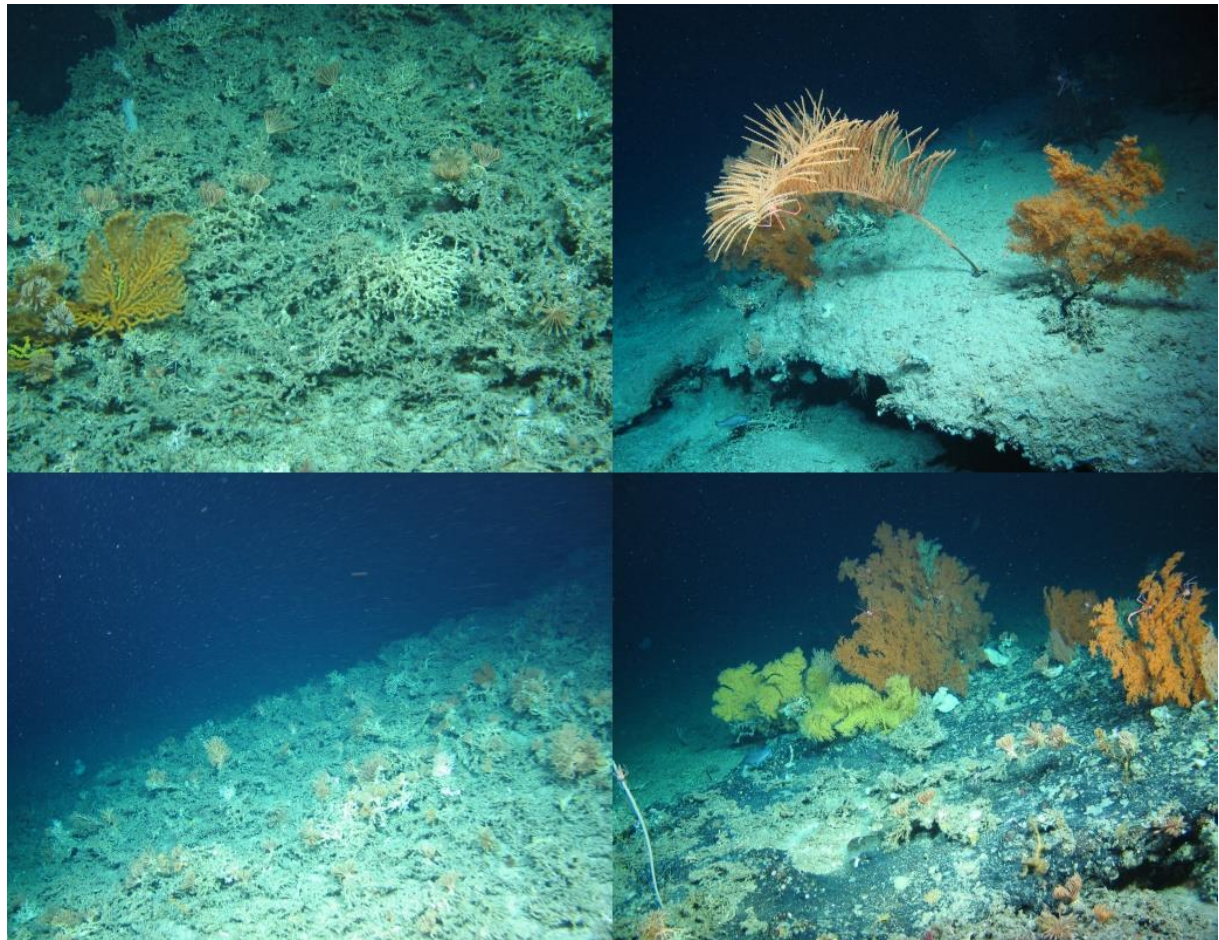
Dive 543, RB18



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Dense *Lophelia pertusa*/*Madrepora oculata* reef (mostly dead) with *Koehlermetra porrecta* OTU315 and *Paramuricea* sp (M.AtMB.Bi.CorRee.LopFra).

Top R. Overhanging *Bathypathes* sp (brown) and *Leiopathes* sp with a visiting *Lepidion eques* on bedrock and mud substrata (M.AtMB.Bi.CorRee; M.AtMB.Ro.MixCor).

Bottom L. Dense *L.pertusa*/*M.oculata* OTU250/251 on gentle slope hosting *K.porrecta* OTU315 (M.AtMB.Bi.CorRee.LopFra).

Bottom R. *Leiopathes* sp OTU305, *Phanopathes* OTU330 and *K.porrecta* OTU315 living on large boulder (M.AtMB.Bi.CorRee; M.AtMB.Ro.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 08:12 [1] *Lophelia pertusa*/*Madrepora oculata* reef on raised ground hosting *Leiopathes* sp and *Phanopathes* sp. *Koehlermetra porrecta* dominates. 08:14 Rope found at the bottom. 08:17 [2] Here steep downhill mud/coral gravel/coral rubble with occasional coral reef framework until 08:25[3] where the sediment is the same plus occasional cobbles/boulders. Epifaunally rich on boulders which include scleractinians, antipatherians, *K.porrecta* and encrusted sponges. 08:28-08:30 ROV stops for imagery. 08:35-08:49 ROV stops for imagery and sampling *Primnoidea* sp (unbranching) OTU1193. 09:24-09:28 ROV stops for imagery and sampling *Octocorallia* sp (pink). 09:34-09:35 ROV stops for imagery. 09:39-09:40 ROV stops for imagery. 09:41 Vision blurred for a few seconds. 09:44 Vision is fuzzy/too bright on bottom right of the camera. 10:11 The ROV reaches an interfluvial at the bottom on the hill and start climbing a steep/vertical wall. [4] Gravel/coral gravel/coral rubble/cobbles/sparse boulders. This part of the transect hosts *Aphrocallistes* sp, sparse living/dead *L.pertusa* colonies and antipatherians (including *Stichopathes cf gravieri* and *Bathypathes* sp). Note, abundant porifera ‘white ping pong balls’ cover the bottom. 10:21 A glimpse shows the bedrock substrate beneath gravel. [5] From this point, the transect is covered in large boulders that host large sized *Leiopathes* sp, *Phanopathes* sp, *Demophyllium* sp as well as different species of porifera (giant, glass, encrusted). 10:24 [6] The sediment is predominately sand/gravel/mosaic coral reef framework (dead) on steep/vertical wall with sparse/rare *Cidaris cidaris* and ophiuroids sp (indet). 10:25 ROV stops for imagery and pushcore sampling (2) until **END OF HD VIDEO AT 10:36.**

N.B. This transect encountered *Hoplostethus atlanticus* 08:23 once and a few juvenile of *Galeus melastomus* OTU1005 and *Synaphobranchus kaupii*. Elasmobranchia and Actinopterygii were found swimming on coral reef framework and reefs on boulders.

Physical Data			
Reef (types can be concurrent)	100% reef	<25% geogenic	
		<75% biogenic	<1% living
			<99% dead
Substrates	<ul style="list-style-type: none"> - Gravel - Coral gravel - Coral rubble - Coral framework - Boulders 		
Geomorphology/Features	Continental slope vertical wall		
Annex 1 Types	- Coral reef		

DIVE SUMMARY

	<ul style="list-style-type: none"> - Cobbles - Boulders - Bedrock
Pressures	Rope (08:14:29)

Biological Data

Number of Species

66

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
800	Porifera encrusting blue	Crust	R
7	Porifera encrusting sp2	Crust	R
305	Leiopathes sp	L	O
330	Phanopathes sp	L	R
249	Lepidion eques	L	R
1050	Paramuricea sp	L	O
991	Acanella arbuscula (firtree)	L	R
552	Polyacanthonotus rissoanus	L	R
1042	Parantipathes sp	L	R
563	Neocyttus helgae	L	R
284	Bathypathes sp (brown)	L	R
1198	Euplectella suberea	L	R
540	Chrysopathes sp Trissopathes sp	L	R
188	Araeosoma fenestratum	L	R
462	Chrysopathes sp Trissopathes sp	L	R
278	Anthomastus grandiflorus	L	R
307	Gorgonacea sp7 cflsidella	L	R
1193	Primnoidae sp (unbranching)	L	R
577	Coryphaenoides guentheri	L	R
651	Hoplostethus atlanticus	L	R
250	Lophelia pertusa	L	R
1084	Porifera spherical sp5	L	R
361	Stylaster sp1	L	R
254	Chaceon affinis	L	R
1137	cf Polymastia penicillus	L	R
561	Bathypathes sp 2	L	R
1005	Galeus melastomus	L	R
1160	Lepidion cf guentheri	L	R
654	Molva molva	L	R
349	Mora moro	L	R
214	Gorgonocephalus sp1	L	R
566	Coryphaenoides rupestris	L	R
20	Asciacea sp2 (clear)	L	R
606	Porifera lamellate sp9 (foliate)	L	R
TBC	Geodia atlantica	L	R
315	Koehlermetra porrecta	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
264	Aphrocallistes sp	M	R
1149	Zoanthidea sp	M	R

DIVE SUMMARY

283	Stichopathes cf gravieri	M	R
1084	cf Pheronema sp	M	R
285	Chyrostylidae sp	M	R
1126	Munnidopsis sp	M	R
1030	cf Polymastia boletiformis	M	R
211	Cidaris cidaris	M	R
131	Crinoidea sp1	M	R
251	Madrepora oculata	M	R
650	Asconema sp (porifera mass glob 14)	M	R
202	Phekallia ventilabrum	M	R
1049	cf Psolus sp	M	R
1162	Porifera vase (cf Aphrocallistes)	M	R
1059	Colossendeis sp (pair)	M	R
608	Acanthogorgia armata	M	R
440	Synaphobranchus kaupii	M	R
83	Porifera massive lobose sp6 (cfGeodia)	Mass	R
930	Actinopterygii sp3	S	R
6	Caryophyllia sp	S	R
194	Echinidae sp (pink)	S	R
234	Ceremaster Peltaster Plinthaster	S	R
56	Hydrozoa flat branched	S	R
2	Ceriantharia	S	R
263	Porania pulvillus (poss stormi)	S	R
335	Demophyllum sp1 cf dianthus	S	R
1076	Ophiuroidea sp (indet)	S	R
368	Pteropod sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> /Madrepora oculata reef (ICES subcategory)
M.AtMB.Co.MixCor.DisLo p	Discrete <i>Lophelia pertusa</i> colonies on Atlantic mid bathyal coarse sediment	Coral gardens (ICES/OSPAR), hard-bottom coral garden: gorgonian and black coral gardens (ICES subcategory)
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> /Madrepora oculata reef (ICES subcategory)
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR), hard-bottom coral garden: gorgonian and black coral

DIVE SUMMARY

		gardens (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Bi.CorRee.LopFra	
	250 Lophelia pertusa, 305 Leiopathes sp, 315 Koehlermetra porrecta	
2	M.AtMB.Bi.CorRee	
	305 Leiopathes sp, 315 Koehlermetra porrecta, 284 Bathypathes sp (brown)	
3	M.AtMB.Bi.CorRee.LopFra	
	250 Lophelia pertusa, 315 Koehlermetra porrecta	
4	M.AtMB.Bi.CorRee; M.AtMB.Ro.MixCor	
	305 Leiopathes sp, 315 Koehlermetra porrecta, 303 Phanopathes sp	
5	M.AtMB.Bi.CorRee.LopFra	
	315 Koehlermetra porrecta, 250 Lophelia pertusa	
6	M.AtMB.Bi.CorRee	
	250 Lophelia pertusa, 171 Mycale lingua, 305 Leiopathes sp	
7	M.AtMB.Bi.CorRee.LopFra	
	250 Lophelia pertusa, 305 Leiopathes sp, 264 Aphrocallistes sp, 540 Chrysopathes sp Trissopathes sp	
8	M.AtMB.Bi.CorRee.LopFra; M.AtMB.Co.MixCor.DisLop	
	250 Lophelia pertusa	

Conservation Targets

Listed Habitats Encountered

Name

Authority

DIVE SUMMARY

Deep sea sponge aggregations	ICES/OSPAR	
Coral gardens	ICES/OSPAR	
- hard-bottom coral garden: gorgonian and black coral gardens	ICES subcategory	
Cold water coral reefs:	ICES/OSPAR	
- <i>Lophelia pertusa/Madrepora oculata</i> reef	ICES subcategory	
Listed Species Encountered (Fish, Count)		
<i>Hoplostethus atlanticus</i> (Orange Roughy)	1	OSPAR/IUCN

Additional Comments		
n/a		

DIVE SUMMARY

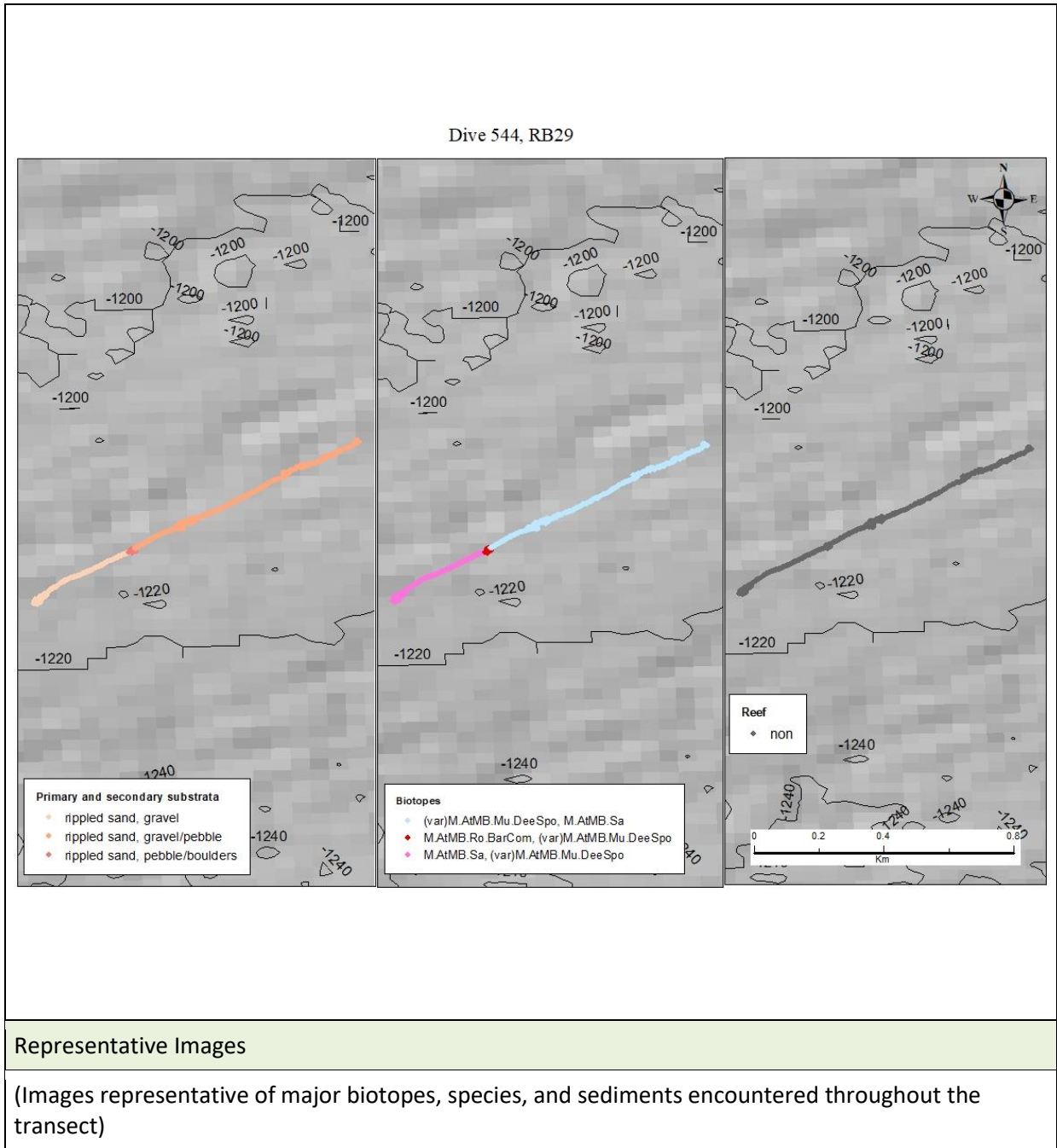
DIVE SUMMARY	
DIVE # 544	TRANSECT # RB29

	Start	End
Date & Time	08/07/2018 23:50:15	09/07/2018 01:55:30
Latitude/ Longitude	55.28501, -16.35925	55.28928, -16.35078
Depth	-1210m	-1200m
Images	IMG_1798-IMG_1855.JPG	
Samples	2 x pushcores; 1 x Polymastia sp; 1 x demospongiae; 1 x <i>Geodia cf baretii</i> ; 1 x demospongia; 1 x demospongia; 1 x demospongia; 1 x white spring OTU994; 1 x hexactinellid(glass vase); 1 x Polymastia sp.	

Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Scarce and sparse epifauna on sand/rippled sand/gravel (M.AtMB.Mx).

Top R. Sand/gravel/boulder hosting encrusted sponges and cirripedia on hard rock and *Polymastia* sp OTU1030 on sand (M.AtMB.Mx; M.AtMB.Ro.SpaEnc).

Bottom L. Sand/gravel on flat/gentle downhill hosting sparse epifauna including *Polymastia* sp OTU1030 and *Actinaria* sp20 OTU605 (M.AtMB.Mx).

Bottom R. Encrusted sponges and *Cirripedia* sp OTU82 dwelling on rock. Sparse epifauna on sand (M.AtMB.Mx; M.AtMB.Ro.SpaEnc).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 23:50 [1] Sand/ rippled sand/gravel/pebbles on flat/gently down hill. Vision obscured at times due to the suspended sediment/sand cloud, possible strong currents. Epifauna sparse, which includes gastropods and Polymastia sp. 23:50 – 00:02 ROV collects two pushcores and a Polymastia sp. 00:06-00:08 Sampling of Demospongia. 00:14 – 00:17 Vision obscured. 00:17-00:23 ROV stops for imagery and sampling of *Geodia cf baretii*. **00:36 [2]** Rippled sand/pebbles/boulders. Encrusted sponges co-dominant on boulders with barnacles. **00:37 [3]** Again sand/ rippled sand/gravel/pebbles on flat/gently downhill. 00:39-00:44 ROV stops for imagery and sampling of demospongia. Vision obscured at times. 00:48 ROV stops and starts again. 00:53- 01:00 ROV sampling Demospongia. 01:03-01:07 ROV stops for imagery of Demospongia and Polymastia sp and sampling of demospongia. **01:09 [4]** Rippled sand/gravel/boulders. Encrusted sponges and Cirripedia sp dominant on boulders. **01:12 [5]** Now again sand/ rippled sand/gravel/pebbles on flat/gently downhill. 01:17-01:19 ROV stops for imagery of rope. 01:22 Rajiformes sp1 OTU652. 01:24-01:29 ROV stops for imagery and sampling of white spring (poss OTU994). 01:40 Flat/plateau of gravel/mud/sparse cobbles. Sponges on cobbles. 01:41-01:46 ROV stops for imagery and sampling of Hexactinellid (glass vase). 01:47 ROV stops for imagery and sampling of Polymastia sp. **01:54 [6]** Again rippled sand/gravel/boulders. Encrusted sponges and Cirripedia sp dominant on boulders. **END OF HD VIDEO AT 01:55.**

Physical Data			
Reef (types can be concurrent)	0% reef	n/a	
		n/a	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Rippled sand - Gravel - Pebbles - Cobbles - Boulders 		
Geomorphology/Features	Flat/gentle continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble fields - Pebble/boulder fields 		
Pressures	1x rope (01:17:24)		

Biological Data	
Number of Species	33

DIVE SUMMARY

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
7	Porifera encrusting sp2	Crust	R
1174	cf Hymenaster (yellow)	L	R
994	Metallagorgia, Iridogorgia or Cirrhipathes?	L	R
1053	Porifera lamellate sp13	L	R
TBC	Hexactinellid (glass vase)	L	R
1074	Alepocephaliformes sp 1 (cfRouleina attrita)	L	R
1030	cf Polymastia boletiformis	M	O
446	Trachyrhyncus sp	M	R
249	Lepidion eques	M	R
440	Synaphobranchus kaupii	M	R
652	Rajiformes sp1 poss Neoraja caerulea	M	R
991	Acanella arbuscula (firtree)	M	R
198	Stichastrella rosea	M	R
132	Actinostolidae sp1	M	R
235	Bathynectes sp	M	R
113	Colus sp	S	R
	Demospongiae	S	R
263	Porania pulvillus (poss stormi)	S	R
205	Paguridae (Epizoanthus assoc)	S	R
317	Adamsia sp (PaguridaeAssoc)	S	R
1069	Ceriantharia	S	R
930	Actinopterygii sp3	S	R
1077	Caridea (indet)	S	R
1126	Munnidopsis sp	S	R
340	Ophiuroidea sp7 yellow	S	R
1076	Ophiuroidea sp (indet)	S	R
82	Cirripectida sp	S	R
605	Actiniaria sp20	S	R
194	Echinidae sp (pink)	S	R
340	Ochiuroidea sp 7 (red)	S	R

DIVE SUMMARY

6	Caryophyllia sp	S	R
601	Geodia cf baretta	S	R
Biotope List (Marine Habitat Classification for Britain & Ireland)			
Code	Name	Listed	
(var) M.AtMB.Mu.DeeSpo	(variant of) Deep sponge aggregation on Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES); deep sea sponge aggregations (ICES/OSPAR)	
M.AtMB.Sa	Atlantic mid bathyal sand	Mud and sand emergent fauna (ICES)	
M.AtMB.Ro.BarCom	Barnacle dominated community on Atlantic mid bathyal rock and other hard substrata		
Biotope progression per habitat transition (# species, dominant/characteristic species)			
1	M.AtMB.Sa; (var) M.AtMB.Mu.DeeSpo		
	1030 cf Polymastia boletiformis, 113 Colus sp		
2	M.AtMB.Ro.BarCom; (var) M.AtMB.Mu.DeeSpo		
	1030 cf Polymastia boletiformis, 113 Colus sp		
3	(var) M.AtMB.Mu.DeeSpo; M.AtMB.Sa		

DIVE SUMMARY

	1030 cf Polymastia boletiformis, 113 Colus sp
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Conservation Targets	
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Listed Habitats Encountered	
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Name	Authority
Mud and sand emergent fauna	ICES
Deep sea sponge aggregations	ICES/OSPAR

Listed Species Encountered (Fish, Count)	
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n/a		OSPAR/IUCN
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Additional Comments

n/a

DIVE SUMMARY

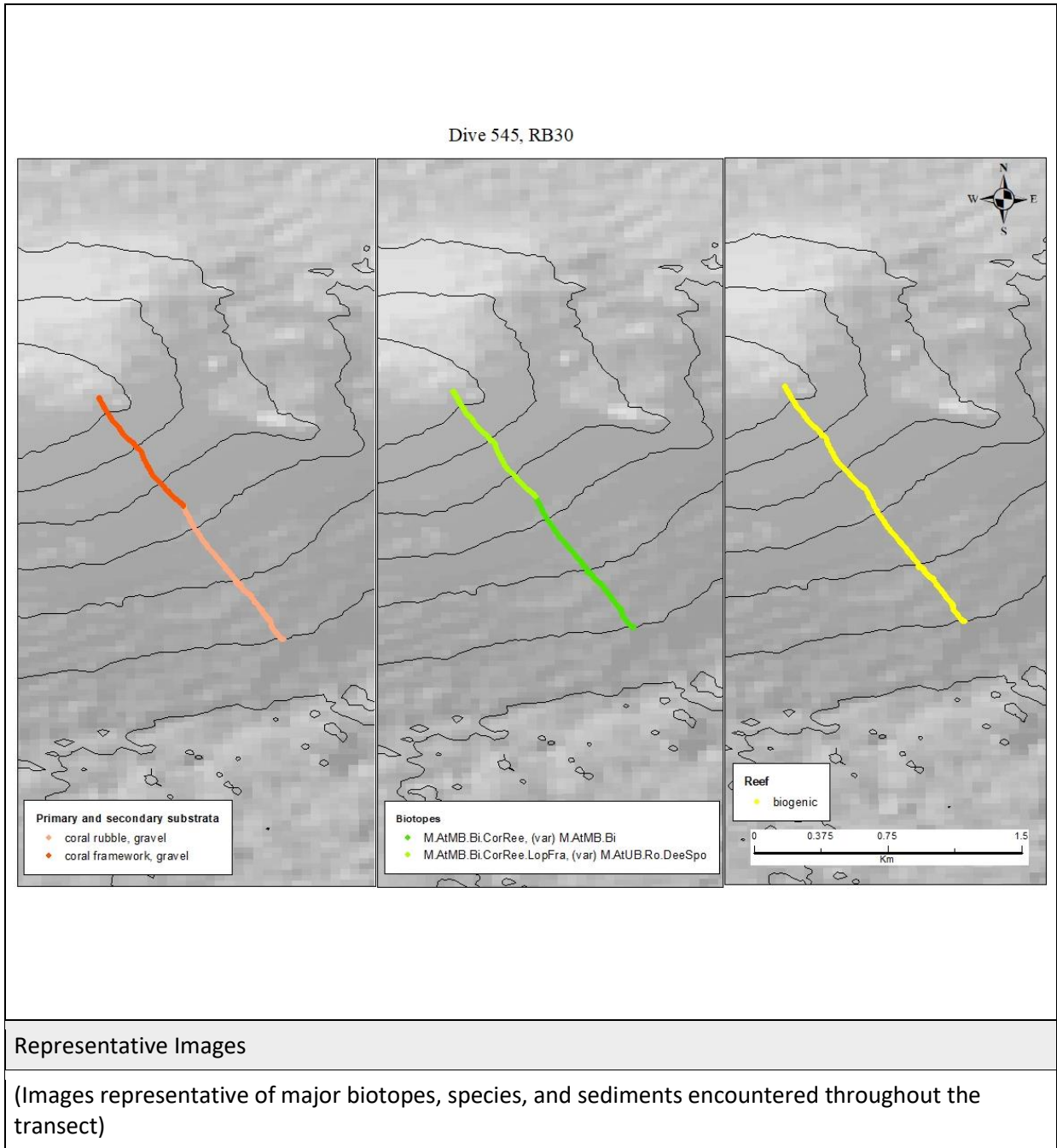
DIVE SUMMARY	
DIVE # 545	TRANSECT # RB30

	Start	End
Date & Time	09/07/2018 07:20:00	09/07/2018 09:13:00
Latitude/ Longitude	55.51963, -15.53165	55.54073, -15.54073
Depth	1094m	834m
Images	IMG_1856-IMG_2613.JPEG	
Samples	1 x pushcore 1 x <i>Lophelia pertusa</i> (including 1 x <i>Eunice norvegica</i>).	

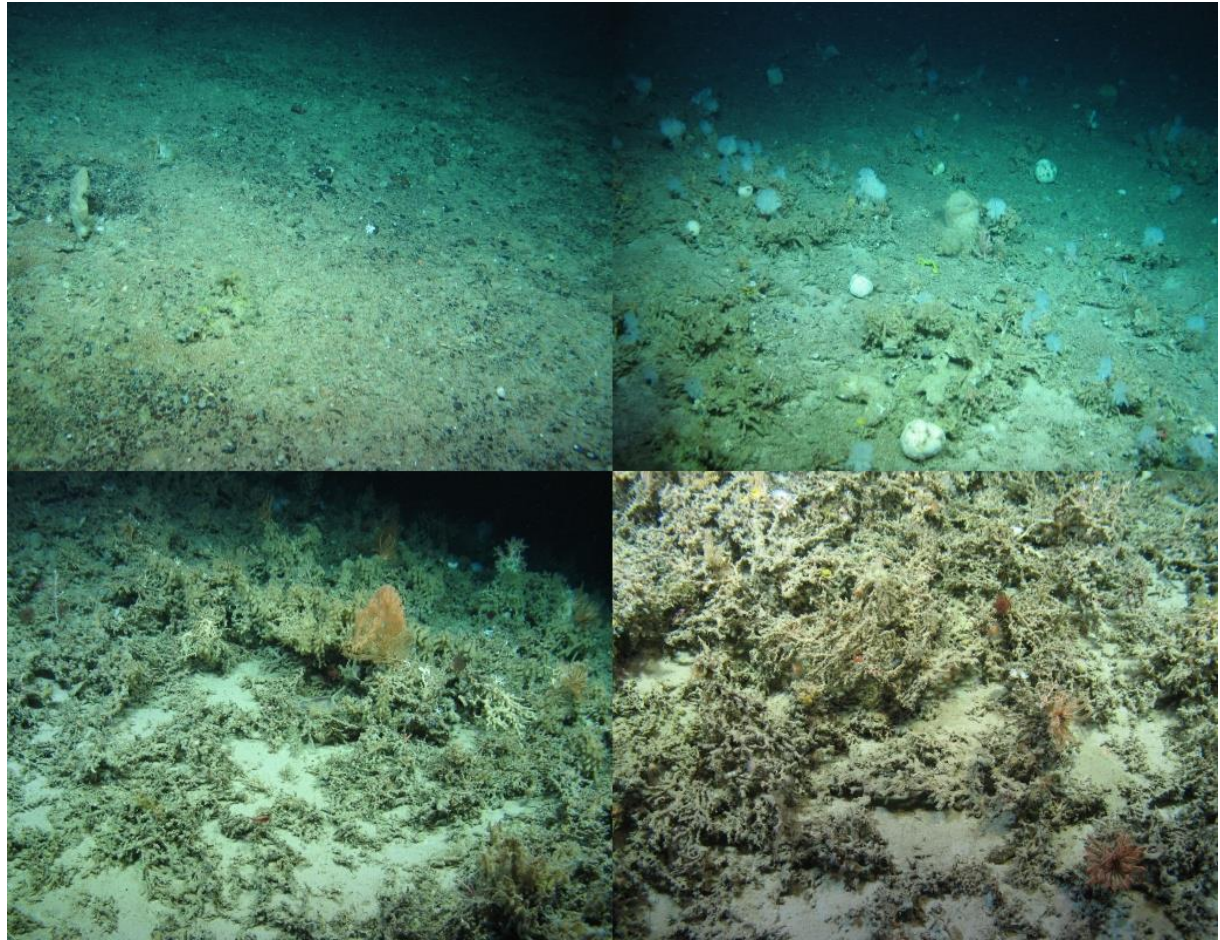
Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



DIVE SUMMARY



Top L. Lamellate sponges dominate on coral rubble and pebble fields (M.AtMB.Bi.CorRee; (var) M.AtMB.Bi).

Top R. This dive is dominated by *Aphrocallistes* sp. This picture is a good example of its abundance on coarse sediment (M.AtMB.Bi.CorRee; (var) M.AtMB.Bi).

Bottom L. On the second half of the transect, coral reef (*Lophelia pertusa*/*Madrepora oculata*) covered most of the sediment. In this picture, *Koehlermetra porrecta* is the dominant species on coral framework (M.AtMB.Bi.CorRee;).

Bottom R. Coral framework host many epifauna species, including *K.porrecta* OTU315 (M.AtMB.Bi.CorRee; M.AtMB.Co.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 07:20 [1] Barnacle gravel/gravel/ coral gravel /pebbles/cobbles with frequent encounters of *Aphrocallistes* sp and hydrozoans on uphill. 07:21-07:23 ROV samples 1 pushcore. 07:26 – 07:28 ROV stops for imagery. Encrusted and glass sponges on boulders. 07:46 – 07:49 ROV stops for imagery of demospongia (poss OTU657) and *Stylaster* sp1 on boulder. 07:54 [2] Now not cobbles/pebbles, predominantly covered in coral rubble/coral gravel/gravel/sparse boulders with many associated epifauna. Main dominant species include *Stylaster* sp1 and *Aphrocallistes* sp. 08:01 [3] Now cobbles and pebbles fields again, as well as coral rubble/coral gravel/boulders. In this part of the transect, dead sponge/sponge framework is a new substrata to record and host many associated species. *Aphrocallistes* sp and demospongia (yellow encrusted sponge) form dense aggregations. 08:04 Bedrock exposed. 08:19 [4] Here *Lophelia pertusa*/*Madrepora oculata* reef , with dominant *Aphrocallistes* sp, *Koehlermetra porrecta*, *Leiopathes* sp and *Acanella arbuscula* (firtree) on gentle uphill. Mosaic sediment at times, which is formed by gravel/sand and coral reef framework. Dominant *K.porrecta* is recorded at times. 08:30-08:31 ROV stops for imagery of *Lophelia pertusa* framework with *Acanella arbuscula*. 09:00 ROV stops for imagery and sampling of *L.pertusa* reef until **END OF HD VIDEO AT 09:13.**

Physical Data			
Reef (types can be concurrent)		0% geogenic	
	100% reef	100% biogenic	<50% living (corals and sponges)
			<50% dead
Substrates	<ul style="list-style-type: none"> - Coral framework - Gravel - Coral rubble 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble fields - <i>Lophelia pertusa</i> reef 		
Pressures	n/a		

Biological Data	
Number of Species	64
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1	Porifera encrusting sp1 white	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1038	Asconema sp	L	R
284	Bathypathes sp (brown)	L	R
280	Callogorgia verticillata	L	R
254	Chaceon affinis	L	R
566	Coryphaenoides rupestris	L	R
128	Cottunculus microps	L	R
649	Eknomisis sp	L	R
1005	Galeus melastomus	L	R
214	Gorgonocephalus sp1	L	R
305	Leiopathes sp	L	R
1160	Lepidion cf guentheri	L	R
249	Lepidion eques	L	R
557	Lepidisis sp	L	R
1172	Macrouridae sp (cfCoelorhynchus)	L	R
654	Molva molva	L	R
1194	Muusoctopus johnsonianus	L	R
563	Neocyttus helgae	L	R
202	Phakellia ventrilabrum	L	R
	Porifera cup	L	R
	Porifera cup	L	R
535	Porifera cup 2	L	R
1053	Porifera lamellate sp13	L	R
611	Rhabdodictyum cf delicatum (porif_mass_lob_sp21)	L	R
198	Stichastrella rosea	L	R
283	Stichopathes cf gravieri	L	R
657	Stryphnus fortis	L	R
991	Acanella arbuscula (firtree)	M	R
264	Aphrocallistes sp	M	F
20	Asciacea sp2 (clear)	M	R
234	Ceremaster Peltaster Plinthaster	M	R
1137	cf Polymastia penicillus	M	R
1008	Chrysogoriidae sp1	M	R
540	Chrysopathes sp Trissopathes sp	M	R
285	Chyrostylidae sp	M	R
211	Cidaris cidaris	M	R
1198	Euplectella suburea	M	R
973	Graneledone verrucosa	M	R
315	Koehlermetra porrecta	M	R
250	Lophelia pertusa	M	F
251	Madrepora oculata	M	F
1065	Paragorgia sp (deepPink)	M	R
330	Phanopathes sp	M	R
1128	Porifera globose (muddy)	M	R
380	Porifera massive globose sp9	M	R
361	Stylaster sp1	M	R
440	Synaphobranchus kaupii	M	R
1149	Zoanthidea sp	M	R
259	Zoarcidae sp1	M	R
83	Porifera massive lobose sp6 (cfGeodia)	Mass	R
605	Actiniaria sp20	S	R
930	Actinopterygii sp3	S	R
278	Anthomastus grandiflorus	S	R
1077	Caridea sp	S	R
6	Caryophyllia sp	S	O
2	Ceriantharia	S	R
208	Henricia sanguinolenta	S	R
339	Munida tenuimana	S	R
551	Ophiomusa lymani	S	R

DIVE SUMMARY

263	Porania pulvillus	S	R
105	Porifera encrusting sp18 cream	S	R
	Porifera lamellate?	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)		
Code	Name	Listed
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
(var) M.AtMB.Bi	(variant of) Atlantic mid bathyal biogenic structure	Deep sea sponge aggregations (ICES/OSPAR)

Biotope progression per habitat transition (# species, dominant/characteristic species)	
1	M.AtMB.Bi.CorRee; (var) M.AtMB.Bi 264 <i>Aphrocallistes</i> sp, 250 <i>Lophelia pertusa</i>
2	M.AtMB.Bi.CorRee.LopFra; (var) M.AtMB.Bi 250 <i>Lophelia pertusa</i> , 315 <i>Koehlermetra porrecta</i> , 305 <i>Leiopathes</i> sp

DIVE SUMMARY

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs: - <i>Lophelia pertusa/Madrepora oculata</i> reefs Deep sea sponge aggregations	ICES ICES subcategory ICES/OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> - Notable extensive Lophelia reefs. - Notable deep sea sponge aggregations throughout the dive (living and dead). - Obs log time stamp failed for the entire dive

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 546	TRANSECT # RB23

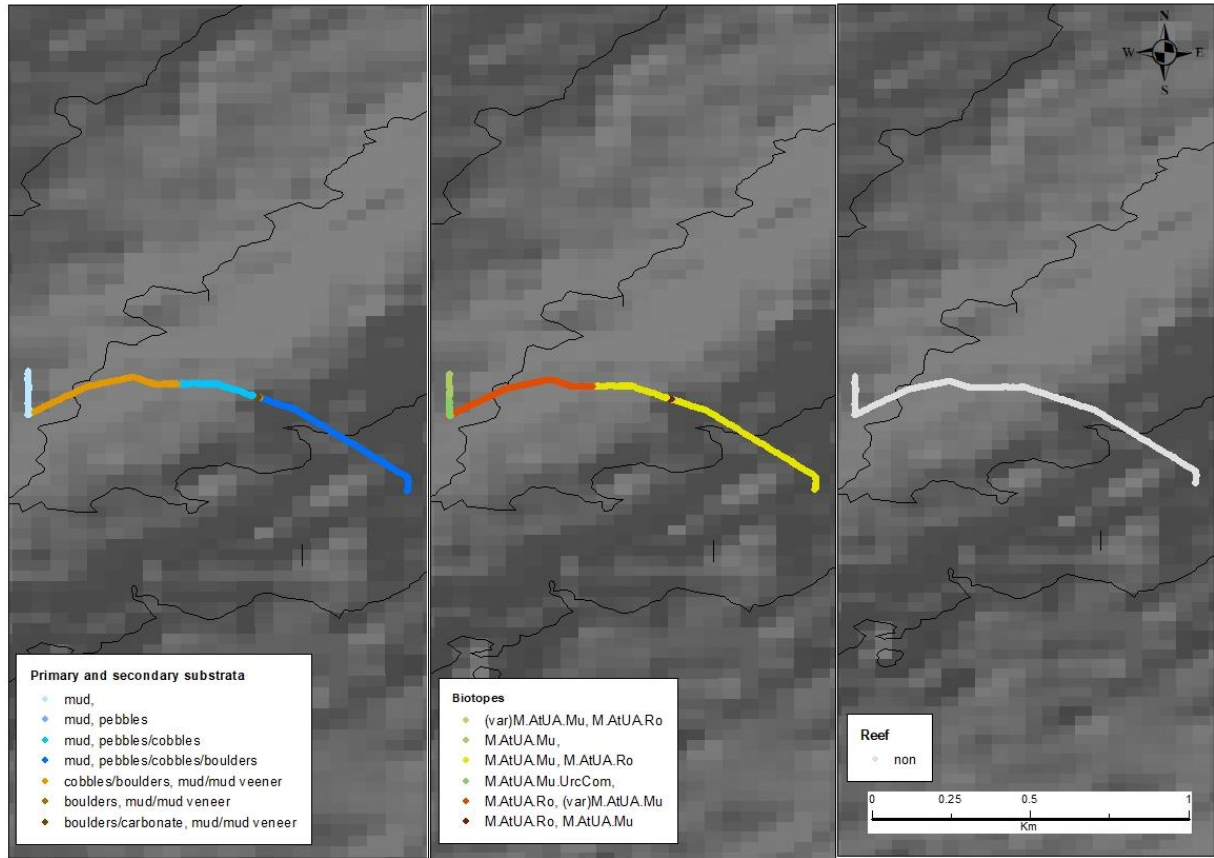
	Start (Sub)	End (Ship)
Date & Time	09/07/2018 14:29:13	09/07/2018 18:11:22
Latitude/ Longitude	55.40500867, -15.054502	55.40851, -15.06509
Depth	-2297m	-2262m
Images	IMG_2614-IMG_2974.JPG	
Samples	1 x anemone (video A_14:55:00) 1 x sponge (video A_15:45:00) 1 x sponge (poss cf_Pheronema) (video B_16:25:00) 1 x pushcore (video B_17:40:00)	

Location	RT23
Target Features	Rise, Depth
Depth Range	-2200, -2320

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

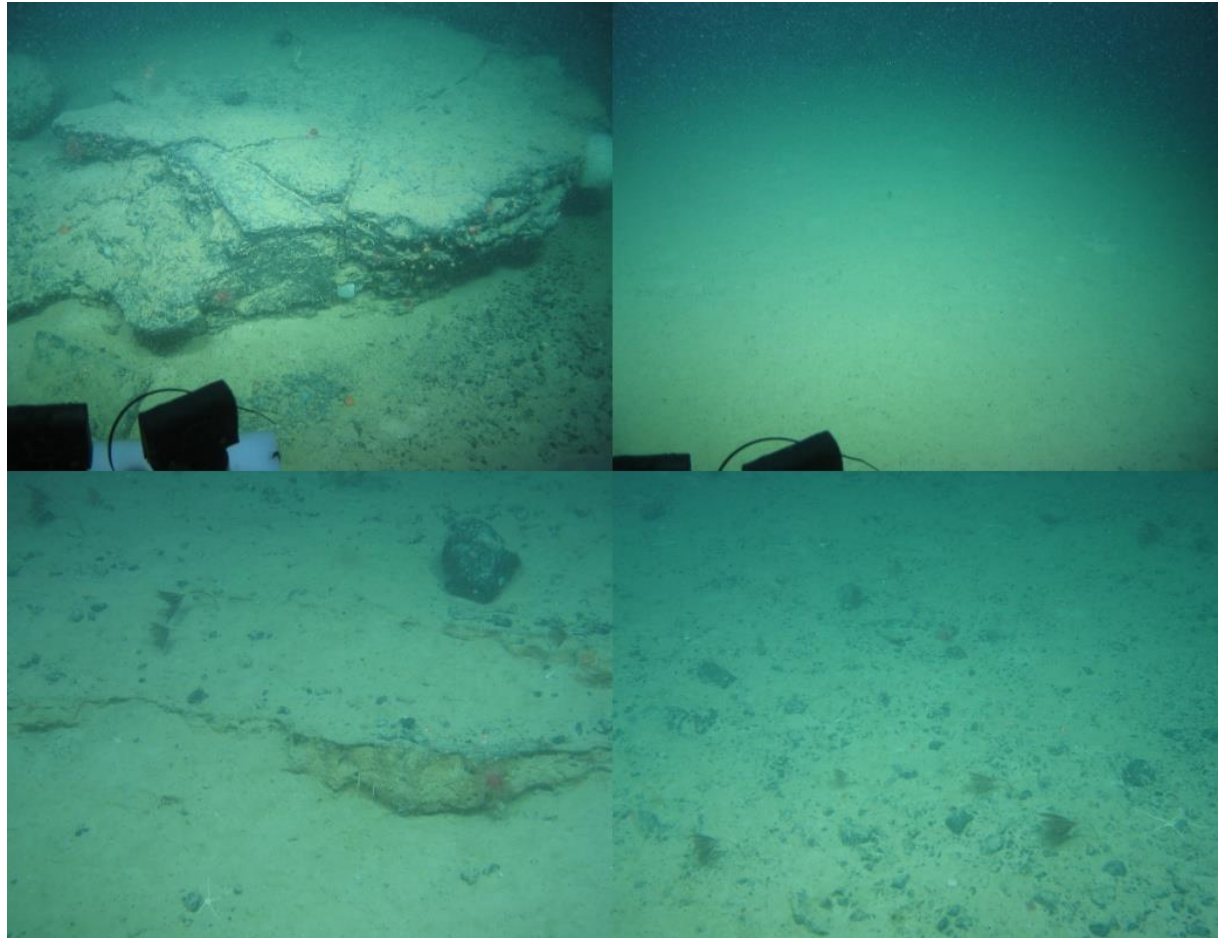
Dive 546, RB23



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mud veneered bedrock with encrusted sponges and sparse solitary scleractinian species OTU605. Poor vision throughout the dive. Muddy sediment is the dominant substrata for the first half of video A. (M.AtUA.Ro; M.AtUA.Mu)

Top R. 25-50% vision of video B is obscured throughout the entire dive (M.AtUA.Mu).

Bottom L. Bathycrinidae sp1 OTU1141 and *Ophiomusa lymani* OTU551 dominate this part of the transect. Muddy sediment and sparse cobbles (M.AtUA.Mu; M.AtUA.Ro).

Bottom R. Bathycrinidae sp1 OTU1141 aggregations on cobble/pebble fields (M.AtUA.Ro; M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO 'A' AT 13:43 Muddy sediment. Vision is obscured by suspended sediment until 14:29:14. [1] Muddy sediment with occasional boulders/cobbles with sparse epifauna, including holothuroidea and ophiuroidea. 14:34 ROV leaves the bottom and swims high from the bottom. Vision is poor. 14:36 Vision back to normal, although still suspended sediment. 14:39 ROV leaves the bottom again and hovers high. Vision obscured again. 14:41 Vision is back to normal. 14:42 ROV stops for imagery and sampling of anemone (unknown). 14:43 Mud cloud obscures vision. 15:11 Fishing net hosts Ophiuroidea sp 7 (red) OTU340. 15:14 [2] Boulders/cobbles/mud with sparse *Phakellia ventilabrum* and stalked crinoids. Boulders host crinoids stalked and anemones. 15:22 [3] mud flat/gentle uphill dominated by ophiuroids. 15:26 [4] Boulders and mud sediment. Sparse anemones and scleractinias dominate on hard rock; *Ophiomusa lymani* dominates on mud. 15:26 [5] Carbonate mounds/escarpment hosting many epifauna species, reaching gentle upslope of pebble/cobble field. 15:27 [6] ROV goes up a steep hill with mud, cobbles/pebble fields and occasional bouders. 15:40 ROV stops for imagery and sampling of unknown sponges until **END OF HD VIDEO 'A' AT 16:08.**

START OF HD VIDEO 'B' AT 16:10. [7] Muddy sediment with cobbles/boulders field on gentle uphill. Crinoids and *Ophiomusa lymani* are dominant species. 16:15 – 16:31 ROV stops for imagery and sampling of sponges (poss cf *Pheronema* sp OTU1084). 16:39 ROV goes backwards and goes 45° left and forward. Camera moves up and down erratically and then mud cloud. Vision is obscured. 16:40 Vision clear again and ROV moves slowly forward. 16:49 ROV stops for imagery of sponges. 16:51 ROV moves again. 16:52 ROV stops and moves again. Blue water for a few seconds. Then ROV descends to the bottom. 16:53 Vision clear again. **[8]** Boulders/cobbles and pebbles fields hosting Bathycrinidae sp1. 16:55 ROV stops again. 16:58 ROV circumnavigates a group of boulders. Then moves forward. **17:00 [9]** mud and occasional pebbles again. Epifauna sparse. Mainly stalked crinoids, a few soft corals and ophiuroids. ROV climbs a steep hill. Muddy/pebble sediment with occasional/frequent cobbles/boulders. 17:01 ROV moves fast, distant from the bottom. Vision blurred. 17:02 Vision back to normal. **17:03 [10]** Bedrock/boulders/mud hosting sparsely *Phakellia ventilabrum*, Brisingidae OTU274 and crinoids. **17:05 [11]** Muddy sediment again with sparse cobbles. 17:09 Vision blurred for few seconds. 17:10 – 17:44 Vision obscured due to mud cloud. 17:40-17:42 ROV sampled 1 pushcore. 17:53 ROV stops for imagery of mud cloud/biological debris (?). 17:56 Vision still blurred. 17:58 Vision clear again. 18:01 ROV stops for imagery of sea urchin (poss OTU559 or OTU1129). **END OF HD VIDEO 'B' AT 18:11.**

START VIDEO 'C' AT 18:15. Muddy sediment/sparse cobbles hosting sea urchin (dominant) and ophiuroids. 18:15 – 18:22 ROV stops for imagery. 18:25 Vision obscured for 30 sec. 18:28 Vision obscured. 18:42 Vision back to normal. ROV climbs a moderate steep hill. 18:47 Vision obscured. 18:48 Vision clear again. **END VIDEO 'C' AT 18:49.**

Physical Data			
Reef (types can be concurrent)	0 % reef	0% geogenic	
		0% biogenic	n/a
			n/a

DIVE SUMMARY

Substrates	<ul style="list-style-type: none"> - Mud - Mud veneer - Pebbles - Cobbles - Boulders
Geomorphology/Features	Continental slope
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble/boulder fields - Boulder/cobbles fields - Vertical carbonate
Pressures	1 x fishing net (15:11:48)

Biological Data

Number of Species 45

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting sp1 white	Crust	R
1031	Anachalypsicrinus nefertiti	L	R
594	Anthoptilum grandiflorum	L	R
1105	Coryphaenoides armatus	L	R
577	Coryphaenoides guentheri	L	R
973	Graneledone verrucosa	L	R
349	Mora moro	L	R
202	Phakellia ventilabrum	L	R
1020	Phycis blennoides	L	R
552	Polyacanthonotus rissoanus	L	R
1053	Porifera lamellate sp13	L	R
422	Porifera lamellate sp7	L	R
1090	Porifera tubular glassy (cfFarreidae)	L	R
440	Synaphobranchus kaupii	L	R
446	Trachyrhynchus sp	L	R
988	Zoroaster fulgens (robust)	L	R
554	Actinernus sp	M	R
930	Actinopterygii sp3	M	R
274	Aphrocallistes sp	M	R
1141	Bathyrinidae sp1	M	R
235	Bathynectes sp	M	R
1129	cf Echinus (deepPinkSpine)	M	R
274	Hymenodiscus coronata or Brisinga endecacnemos	M	R
536	Mesothuria intestinalis	M	R
551	Ophiomusa lymani	M	R
340	Ophiuroidea sp 7 (red)	M	R
1167	Peniagone sp	M	R
255	Phelliactis sp1	M	R
263	Porania pulvillus	M	R
1178	Porifera globose lobose (indetWhite)	M	R
573	Solaster endeca	M	R
261	Syngammina fragilissima	M	R
499	Actinauge richardi	S	R

DIVE SUMMARY

605	Actiniaria sp20	S	R
278	Anthomastus grandiflorus	S	R
1077	Caridea (indet)	S	R
584	Caryophyllia sp5 (bullseye)	S	R
1174	cf Hymenaster (yellow)	S	R
1084	cf Pheronema sp	S	R
113	Colus sp	S	R
131	Crinoidea sp1	S	R
559	Echinidae sp (white)	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1128	Porifera globose (muddy)	S	R
199	Velatida sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Carbonate mounds (OSPAR)
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
(var)M.AtUA.Mu	(variant of)Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Mu.UrcCom	Urchin dominated community on Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Mu; M.AtUA.Ro 1167 Peniagone sp, 551 Ophiomusa lymani
2	M.AtUA.Ro; M.AtUA.Mu 278 Anthomastus grandiflorus, 131 Crinoidea sp, 1178 Porifera globose lobose (indetWhite)
3	(var)M.AtUA.Mu; M.AtUA.Ro

DIVE SUMMARY

	1141 Bathycrinidae sp, 551 Ophiomusa lymani
4	M.AtUA.Ro; (var)M.AtUA.Mu
	274 Brisingidae, 605 Actiniaria sp20, 1141 Bathycrinidae sp
5	(var)M.AtUA.Mu; M.AtUA.Ro
	551 Ophiomusa lymani, 1141 Bathycrinidae sp, 1129 cf Echinus (deepPinkSpine)
6	M.AtUA.Ro; (var)M.AtUA.Mu
	1147 Bathycrinidae sp, 551 Ophiomusa lymani
7	M.AtUA.Mu.UrcCom
	1129 cf Echinus (deepPinkSpine)
8	M.AtUA.Mu
	551 Ophiomusa lymani, 1129 cf Echinus (deepPinkSpine)

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Carbonate mounds	OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments

DIVE SUMMARY

n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 547A	TRANSECT # PB01

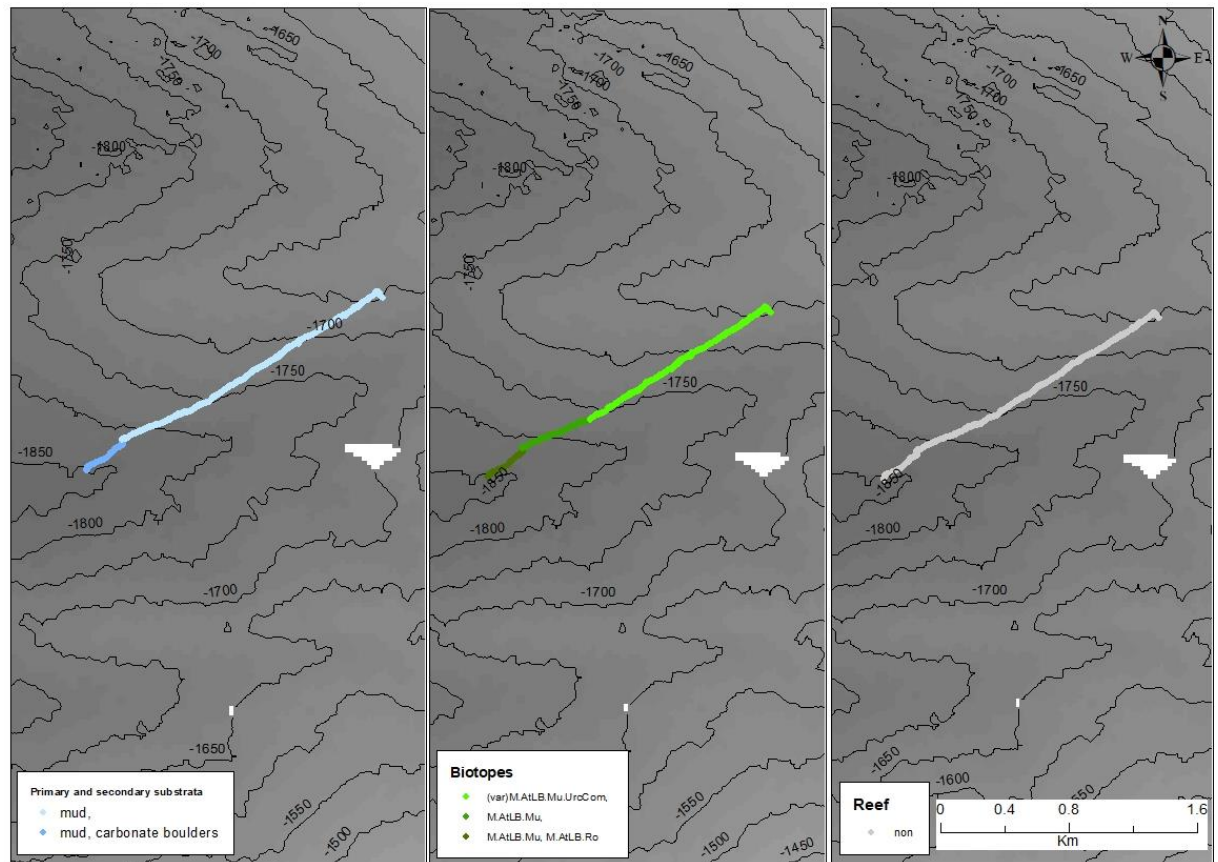
	Start	End
Date & Time	12/07/2018 14:18:00	12/07/2018 16:31:30
Latitude/ Longitude	53.32081767, -14.80210267	53.33012283, -14.7869515
Depth	-1846.9m	-1633.8m
Images	IMG_2901-IMG_3360.JPG	
Samples	2 x pushcores	

Location	PB1
Target Features	Canyon, Ridge
Depth Range	-1550, -1850

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

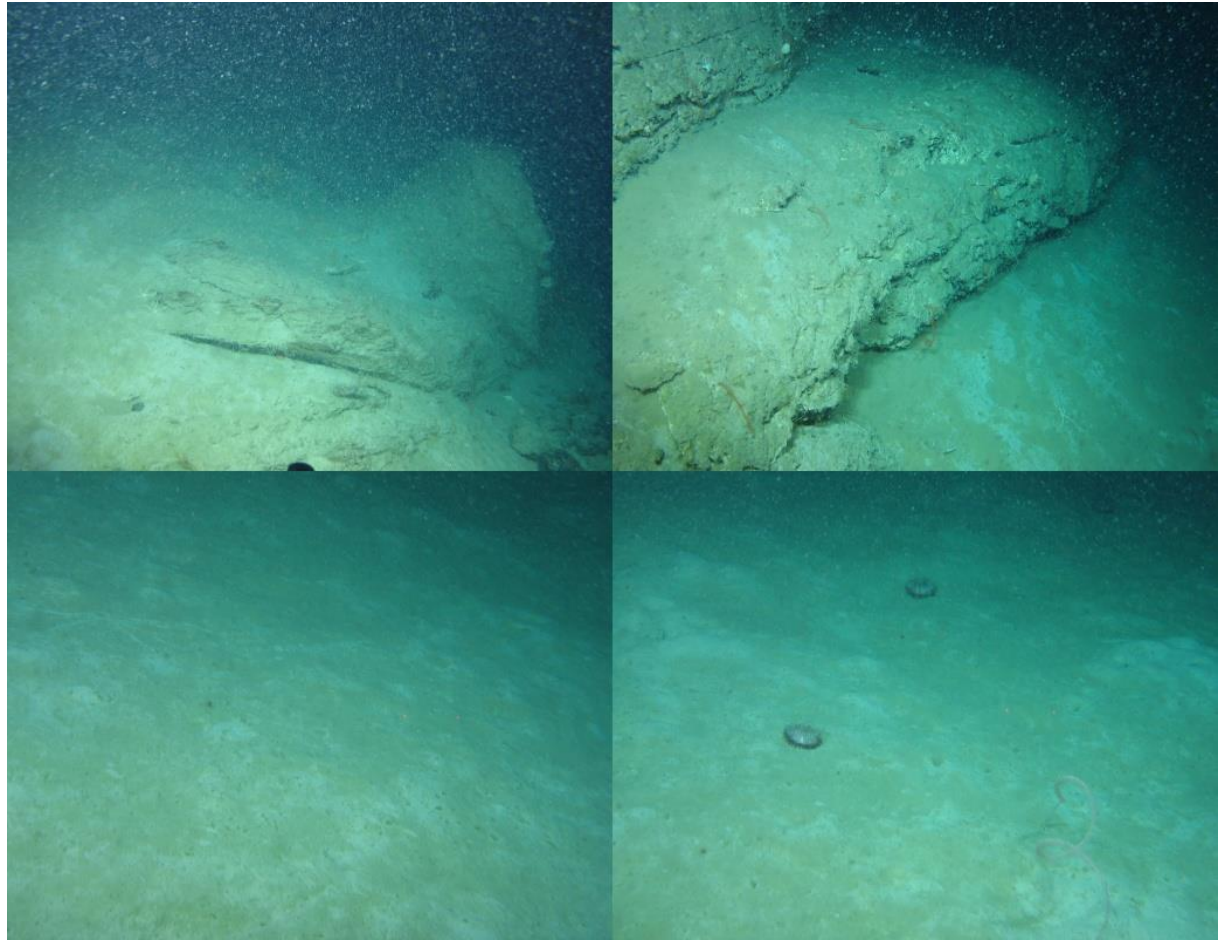
Dive 547, PB01



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Sea urchin (poss OTU1129) hanging on carbonate boulder right at the beginning of the transect. Throughout the dive, marine snow is present, which obscures vision and therefore increases the probability to misidentifying/dismiss species (M.AtLB.Mu; M.AtLB.Ro).

Top R. Carbonate escarpment hosts a colony of *Stichopathes sp* OTU560 hanging from the hard substrata as well as a few anemones (M.AtLB.Mu; M.AtLB.Ro).

Bottom L. Most of this transect is characterised by steep muddy slope with occasional *Ophiomusa lymani* OTU551 (M.AtLB.Mu).

Bottom R. From the bottom right of the image, *Phormosoma placenta* OTU555 and in the top centre *Radicipes sp* on muddy sediment (M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 14:18. Marine snow present throughout the entire dive. [1] Muddy sediment/carbonate boulders on steep uphill/vertical wall. 14:20 Blue water. 14:30 ROV causes mud cloud, it tries to escape it and swim upwards and then down to the bottom again. **14:32 [2]** Carbonate boulders. Stichopathes sp and *Ophiomusa lymani* are frequent. **14:34 [3]** Muddy steep hill. **14:37 [4]** Stichopathes sp dominant, *Paramuricea sp* frequently encountered on carbonate mounds. Escarpment. Carbonate bedrock/mound. 14:38 Vision obscured. ROV escapes mud cloud. Vision back to normal. **14:39 [5]** Muddy steep sediment. *Ophiomusa lymani* is frequent. 14:49 ROV stops for imagery of *Graneledone verrucosa* OTU973. 14:53 Vision obscured. Poor visibility until **15:18 [6]** ROV is climbing a steep muddy hill (nearly vertical). Sparse epifauna, with frequent encounters of *Phormosoma placenta* OTU555. 16:14 Large boulder with encrusted sponges. 16:20 ROV stops for imagery. 16:25 ROV samples 2 x pushcore. **END OF HD VIDEO AT 16:31.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Sparse pebbles - Carbonate boulders 		
Geomorphology/Features	Continental slope		
Annex 1 Types	- Sloping carbonate		
Pressures	n/a		

Biological Data	
Number of Species	44
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
328	Bathypathes sp1	L	R
1112	Bathysaurus ferox	L	R
984	cf Halcampoididae sp	L	R
577	Coryphaenoides guentheri	L	R
973	Graneledone verrucosa	L	R
1078	Ipnopidae sp	L	R
1012	Notacanthiformes sp1	L	R
551	Ophiomusa lymani	L	O
1050	Paramuricea sp	L	R
555	Phormosoma placenta	L	R
552	Polyacanthonotus rissoanus	L	R
1162	Porifera vase (cfAphrocallistes)	L	R
433	Pseudarchaster sp1	L	R
1044	Radicipes sp	L	R
1159	Rajiformes (indet)	L	R
611	Rhabdodictyum cf delicatum	L	R
560	Stichopathes sp	L	R
581	Umbellula sp	L	R
585	Acanella arbuscula (bushy)	M	R
554	Actinernus sp	M	R
4	Actinaria sp1	M	R
930	Actinopterygii sp3	M	R
146	Aphroditidae sp1	M	R
284	Bathypathes sp (brown)	M	R
584	Caryophyllia sp5 (bullseye)	M	R
1059	Colossendeis sp	M	R
1056	Flabellum sp	M	R
601	Geodia cf baretti (por m glob sp11)	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
1206	Mesothuria sp	M	R
255	Phelliactis sp1	M	R
83	Porifera massive lobose sp6 (cfGeodia)	Mass	R
605	Actinaria sp20	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
TBC	Euryalida	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
1008	Chrysogorgiidae sp1	S	R
131	Crinoidea sp1	S	R
205	Paguridae	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
(var)M.AtLB.Mu.UrcCom	(variant of) Urchin dominated community on Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Mu; M.AtLB.Ro	
	n/a	
2	M.AtLB.Mu	
	n/a	
3	(var)M.AtLB.Mu.UrcCom	
	555 <i>Phormosoma placenta</i>	

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Carbonate mounds	OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments

DIVE SUMMARY

n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 547B	TRANSECT # PB02

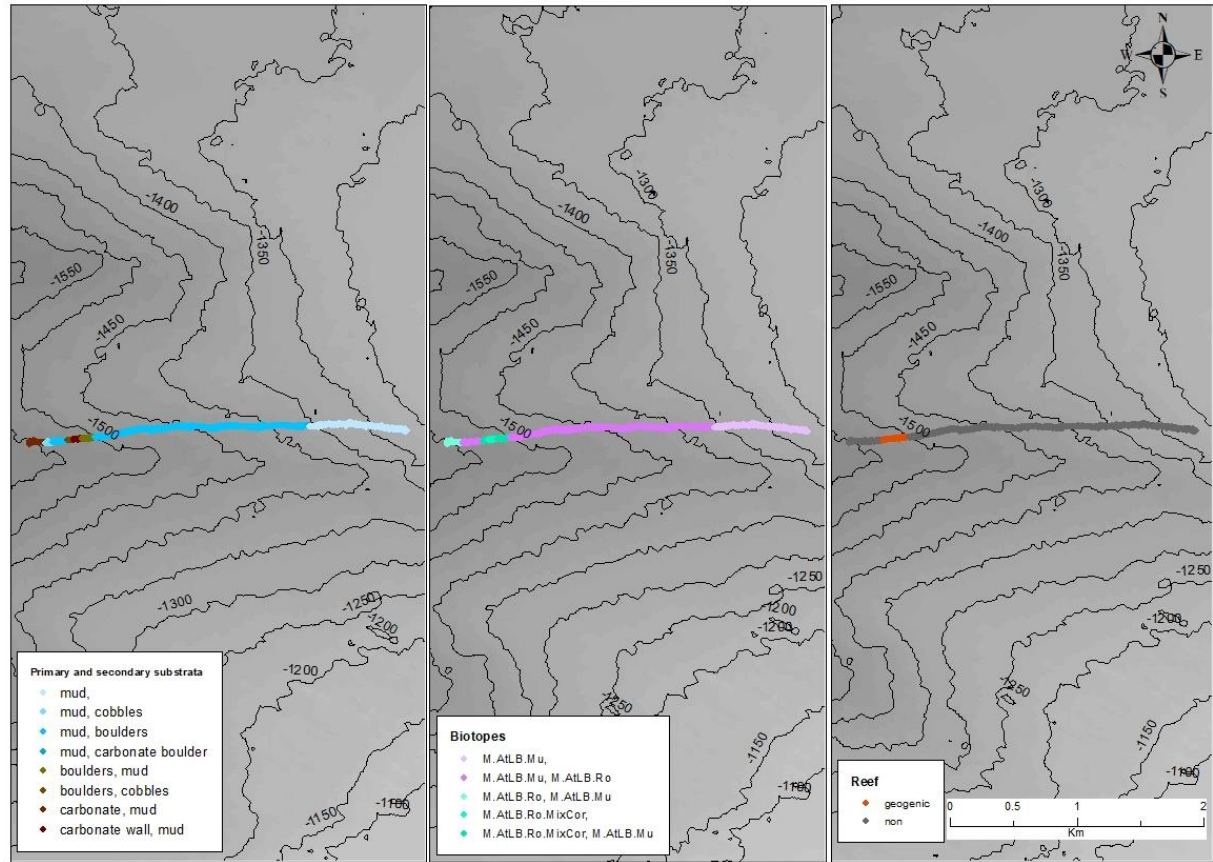
	Start	End
Date & Time	12/07/2018 18:09:31	12/07/2018 20:36:00
Latitude/ Longitude	53.3181123,-14.77022667	53.3189452, -14.74571867
Depth	-1541m	-1255m
Images	IMG_3361-IMG_3568.JPG	
Samples	1 x cf Thouarella sp OTU1086; 2 x pushcores (20:26:00).	

Location	PB2
Target Features	Canyon
Depth Range	1200m-1600m

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

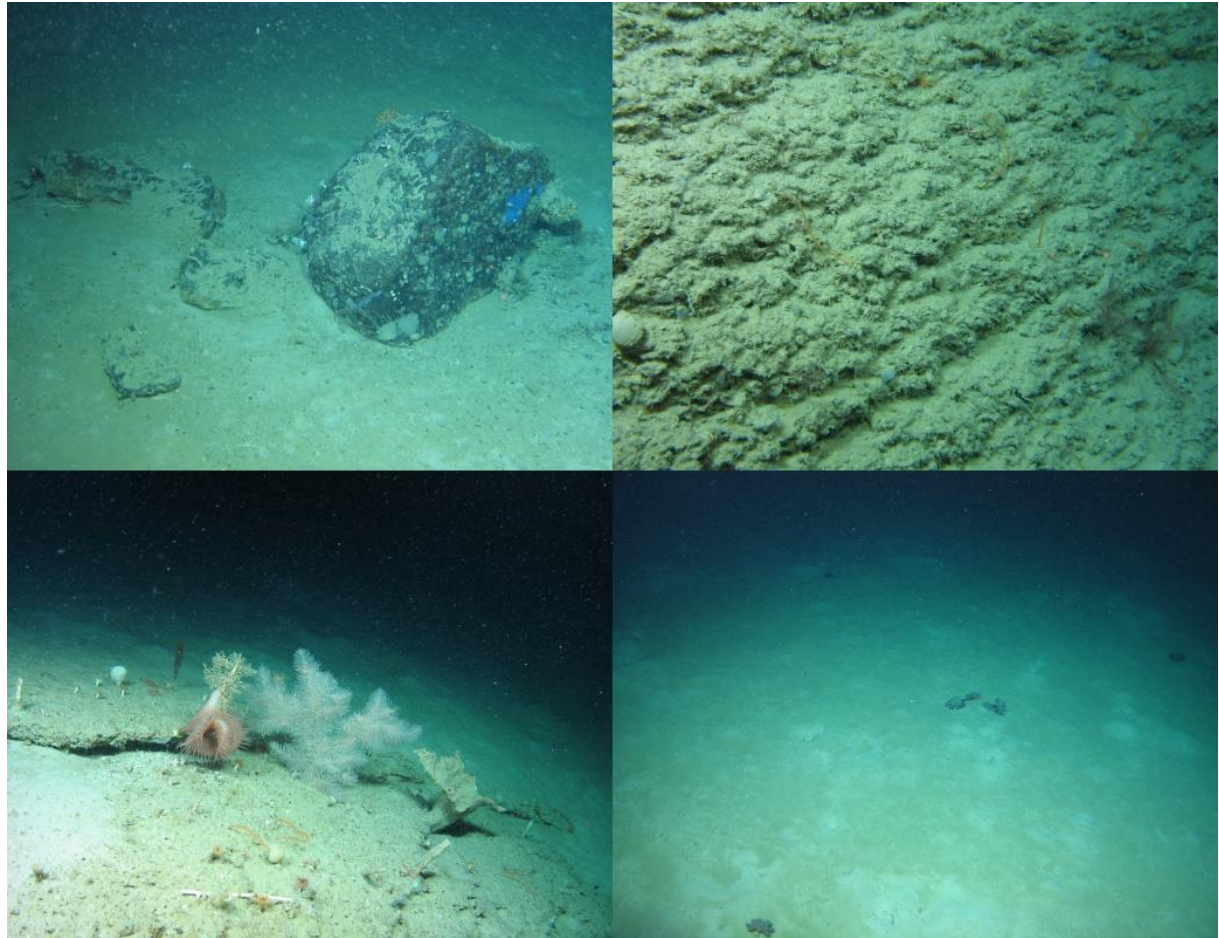
Dive 547, PB02



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Occasional boulders host encrusted sponges OTU800 and sparse colonies of *Solenosmilia variabilis* OTU700 (M.AtLB.Ro.MixCor; M.AtLB.Mu).

Top R. Mud veneered carbonate wall with colonies of *Stichopathes* sp OTU560 (M.AtLB.Mu).

Bottom L. Sparse corals dwelling on carbonate crust, including cf *Thourella* OTU1086 and *Actinoscyphiidae* sp1 (pink) OTU1047 (M.AtLB.Ro.MixCor; M.AtLB.Mu).

Bottom R. The entire transect is vastly covered in muddy sediment. Here *Epizoanthus* sp1 OTU317 with associated *Paguridae* OTU205 dominate on mud (M.AtLB.Ro.MixCor; M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 18:09. Predominantly mosaic substrata throughout the transect. Biotope changes from cobbles to carbonate vertical wall in short distance. [1] Carbonate/mud substrate on gentle/moderate up hill. Epifauna is sparse and none dominant species recorded. 18:14 [2] Carbonate boulders/cobbles/mud with a few isolated colonies of *Solenosmilia variabilis* on hard substrate. [3] Soon substrate changes again into muddy sediment. [4] And then boulders and cobbles become more spread. [5] Now the ROV climbs a vertical carbonate wall with *Stichopathes* sp as dominant. 18:28 [6] As the ROV reaches the summit, boulders are abundant with many and sparse epifauna present. 18:33 [7] boulders are less abundant, and now muddy sediment for a long part of the transect. 19:15 -19:17 ROV stops for imagery of cf *Halcampoididae* sp. 19:32 – 19:34 ROV stops for imagery of *Umbellula* sp1. 19:37-19:40 ROV stops for imagery and sampling of cf *Thouarella* sp OTU1086. [8] Here carbonate mound with *Caryophyllia* sp and *Stichopathes* sp. 19:50 Again muddy sediment until the end of the transect. Sparse epifauna with frequent encounters of *Epizoanthus* sp1, *Paguridae* (*Epizoanthus* Assoc) and *Pennatulacea* sp (cf *Kophobelemnidae*). 20:01 ROV causes mud cloud. Vision obscured for 30 secs. 20:04 Vision obscured at times. 20:12 ROV stops for imagery of three *Paguridae* (*Epizoanthus* sp1) and their interesting behavior. 20:24 ROV stops for imagery of elasmobranchia *Galeus melastomus*. 20:26 ROV stops for sampling 2 pushcores. **END OF HD VIDEO AT 20:36.**

Physical Data			
Reef (types can be concurrent)	20% reef	100% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Cobbles - Boulders - Carbonate - Carbonate boulders - Carbonate wall 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Boulder/cobble field - Sloping bedrock - Sloping carbonate - Broken carbonate - Vertical carbonate - Sloping rock - Broken rock - Mound summit/high slope areas 		
Pressures	n/a		

DIVE SUMMARY

Biological Data

Number of Species

79

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
52	Porifera encrusting sp14	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
554	Actinernus sp	L	R
930	Actinopterygii sp3	L	R
1074	Alepocephaliformes sp1 (cfRouleina attrita)	L	R
267	Bonellia viridis	L	R
274	Brisingidae	L	R
1111	Cataetyx laticeps	L	R
234	Ceremaster Peltaster Plinthaster	L	R
1174	cf Hymenaster (yellow)	L	R
1086	cf Thouarella sp	L	R
1008	Chrysogorgiidae sp1	L	R
1059	Colossendeis sp	L	R
566	Coryphaenoides rupestris	L	R
128	Cottunculus microps	L	R
1072	Crinoidea sp (10 arm)	L	R
TBC	Galeus sp	L	R
432	Holothyroidea cf Laetmogone (blue)	L	R
917	Hyalonema sp1	L	R
1125	Hygrosoma sp	L	R
1078	Ipnopidae sp	L	R
305	Leiopathes sp	L	R
1063	Neolithodes grimandii	L	R
551	Ophiomusa lymani	L	R
1065	Paragorgia sp (deepPink)	L	R
1050	Paramuricea sp	L	R
1042	Parantipathes sp	L	R
1083	Pennatulacea sp (thin)	L	R
442	Kophobelemnion stelliferum	L	O
436	Pentametrocrinus atlanticus	L	R
555	Phormosoma placenta	L	R
1044	Radicipes sp	L	R
560	Stichopathes sp	L	R
440	Synaphobranchus kaupii	L	R
446	Trachyrhynchus sp	L	R
581	Umbellula sp	L	R
585	Acanella arbuscula (bushy)	M	R
4	Actiniaria sp1	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
311	Anthothela grandiflora	M	R
146	Aphroditidae sp1	M	R
20	Asciacea sp2 (clear)	M	R
1186	Asteroidea (cf Spinulosida)	M	R
284	Bathypathes sp (brown)	M	R
984	cf Halcampoididae sp	M	R
1084	cf Pheronema sp (Rock_possAphorme_horrida)	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	R
317	Epizoanthus sp1(paguridaeAssoc)	M	O

DIVE SUMMARY

1179	Holothuroidea sp (pinkDeep)	M	R
1064	Isididae sp (fineBranching)	M	R
994	Metallorgorgia, Iridogorgia or Cirrhipathes?	M	R
563	Neocyttus helgae	M	R
340	Ophiuroidea sp7 (red)	M	R
1191	Pennatulacea sp (submergedAxis)	M	R
1178	Porifera globose lobose (indetWhite)	M	R
623	Porifera lamellate sp10(yellowSolenAssoc)	M	R
1162	Porifera vase (cfAphrocallistes)	M	R
1095	Sepiolidae sp1	M	R
700	Solenosmilia variabilis	M	R
605	Actiniaria sp20	S	R
278	Anthomastus grandiflorus	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R
584	Caryophyllia sp5 (bullseye)	S	R
2	Ceriantharia	S	O
1129	cf Echinus (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
TBC	Euryalida	S	R
208	Henricia sanguinolenta	S	R
628	Holothuroidea sp4 (cfAmperima)	S	R
339	Munida tenuimana	S	R
1102	Munnopsidae sp	S	R
551	Ophiomusa lymani	S	R
205	Paguridae	S	O
207	Pliobrothus sp	S	R
387	Porifera massive fig sp1	S	R
106	Serpulidae sp1	S	R
TBC	Solasteridae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Carbonate mounds (OSPAR)
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: black coral gardens (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Ro; M.AtLB.Mu
	n/a
2	M.AtLB.Mu; M.AtLB.Ro

DIVE SUMMARY

	700 Solenosmilia variabilis, 1050 Paramuricea sp
3	M.AtLB.Mu; M.AtLB.Ro.MixCor
	700 Solenosmilia variabilis, 6 Caryophyllia sp
4	M.AtLB.Ro.MixCor; M.AtLB.Mu
	560 Stichopathes sp, 6 Caryophyllia sp
5	M.AtLB.Ro.MixCor
	560 Stichopathes sp, 1042 Parantipathes sp
6	M.AtLB.Ro.MixCor; M.AtLB.Mu
	560 Stichopathes sp, 1042 Parantipathes sp
7	M.AtLB.Mu; M.AtLB.Ro
	4 Actinaria sp1, 551 Ophiomuseum lymani
8	M.AtLB.Ro; M.AtLB.Mu
	6 Caryophyllia sp, 560 Stichopathes sp
9	M.AtLB.Mu
	317 Epizoanthus sp1, 205 Paguridae (EpizoanthusAssoc), 1059 Pennatulacea sp (cfKophobelemnidae)

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Carbonate mounds	OSPAR
Mud and sand emergent fauna	ICES
Coral gardens:	ICES/OSPAR
- hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory

DIVE SUMMARY

Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 548	TRANSECT # PB03

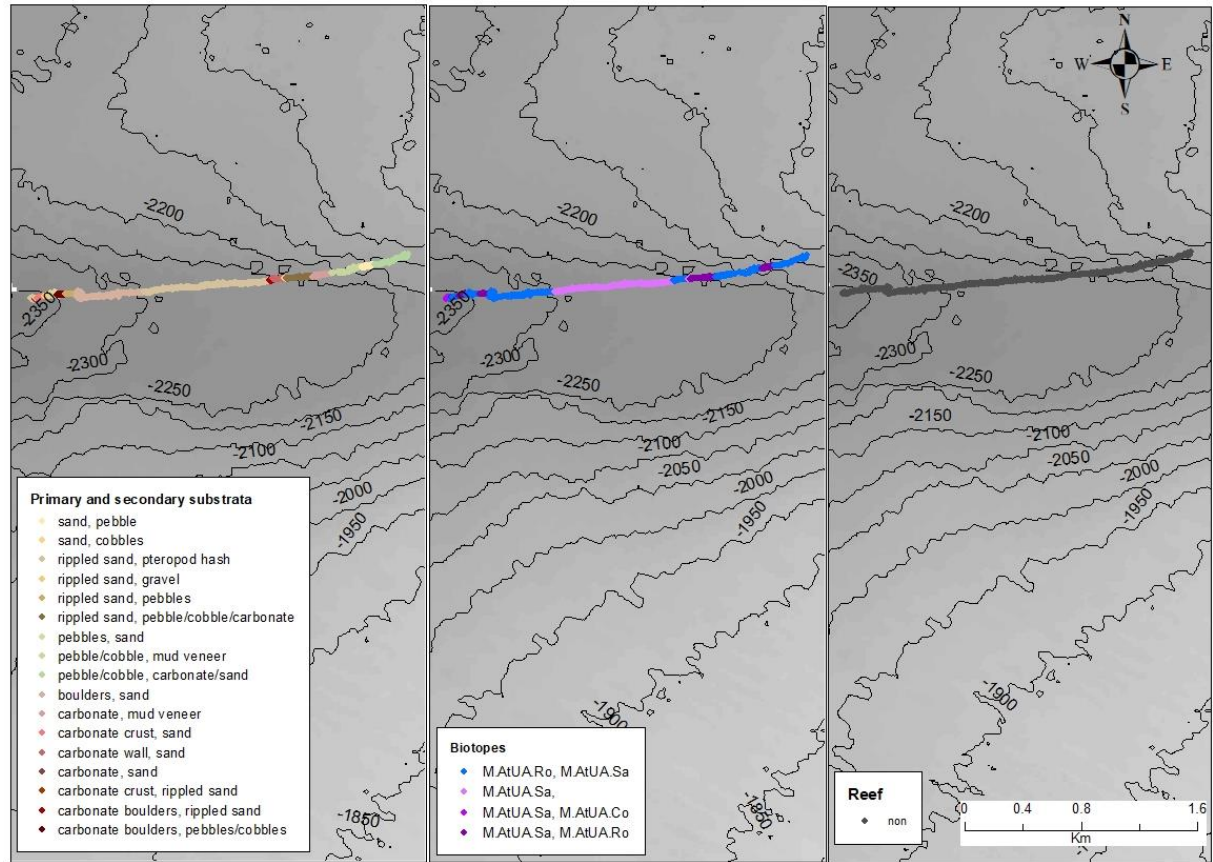
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Date & Time	13/07/2018 01:01:59	13/07/2018 03:02:35
Latitude/ Longitude	53.242406, -15.04198767	53.24351183, -15.027424
Depth	-2367.6m	-2233.6m
Images	IMG_3569-IMG_3758.JPG	
Samples	2 x pushcore 1 x Actiniaria sp18 (01:47:00)	

Location	PB3
Target Features	Ridge, wall
Depth Range	-1950,-2350

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

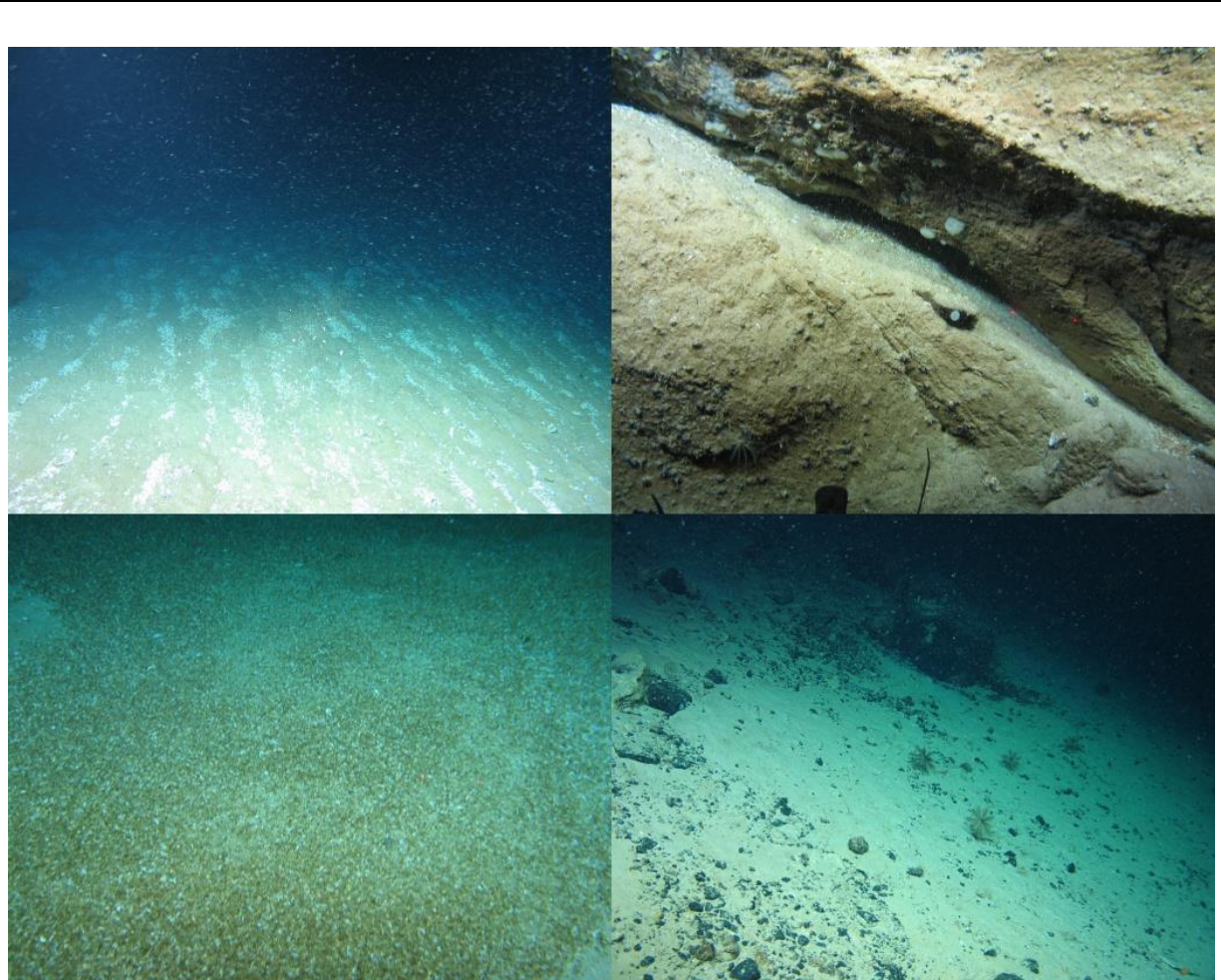
Dive 548, PB03



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Rippled sand on gentle slope. This is a typical biotope found in the first half of the transect, which includes rippled sand, pebbles and boulder with sparse epifauna (M.AtUA.Sa)

Top R. Glass sponges (poss OTU1075) and encrusted sponges OTU1 living on boulder (M.AtUA.Ro).

Bottom L. In the second half of the transect, sand/pteropod hash covered the sea floor. Sparse and scarce epifauna. Pelagic species such as *Lepidion eques* OTU1160 were encountered (M.AtUA.Sa; M.AtUA.Ro).

Bottom R. More rippled sand and occasional boulder/cobble/pebble fields hosting crinoidea aggregations OTU1141 (M.AtUA.Sa; M.AtUA.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO 'A' AT 01:01. The entire dive is set on moderate slope intersperse with carbonate vertical wall. 01:01-01:25 ROV stops for sampling a pushcore. [1] Rippled sand/pteropod hash on uphill slope with frequent pebbles and cobbles. Sparse epifauna, mainly Paguridae sp with Adamsia sp and Brisingidae. 01:29 [2] Now the ROV reached the bottom of carbonate vertical wall and slowly moves upwards. [3] Sediment predominantly sand and cobbles. [4] Broken carbonate rocks with inlets are frequent where mainly stalked crinoids dwell. From vertical wall to narrow sandy ledges are recorded in this part of the transect. 01:35 [5] The ROV reaches the top on the ledges where rippled sand sediment dominate. Sparse epifauna , including *Ophiomusa lymani*. 01:38 [6] Pebbles sediment on sand with stalked crinoids Bathycrinidae sp. 01:40 [7] Carbonate boulders and rocks from this point. Scarce and sparse epifauna, including Bathycrinidae sp and glass sponges.01:43 [8] now again rippled sand. 01:46 [9] now boulders/cobbles on rippled sand. 01:47-01:58 ROV stops for sampling of Actinaria sp. 02:03-02:05 ROV stops for imagery of Benthothuria sp. 02:19 [10] Sediment is now covered in pteropod hash and a few Galacantha sp is encountered. 02:55 [11] Now carbonate boulders on ripple sand and pebbles with crinoids and glass sponges. 02:57 [12] ROV climbs again a vertical carbonate wall with Bathycrinidae sp hanging from the wall. The peculiarity of the wall is the presence of crevices and small inlets. 02:59 [13] The ROV reaches the top of the wall. Again rippled sand on steep hill. 03:00 [14] Carbonate crust/cobbles/pebbles/rippled sand with abundant Bathycrinidae sp. END OF HD VIDEO 'A' AT 03:02.

START OF HD VIDEO 'B' AT 03:02. The second tape shows predominantly rippled sand and pebble/cobble fields. Throughout the dive, moderate slope intersperse with vertical walls. Vertical walls mainly characterized by carbonate. Bathycrinidae sp is the only dominant epibenthic species to record. END VIDEO AT 03:43.

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Sand - Pteropod hash - Rippled sand - Gravel - Pebbles - Cobbles - Boulders - Carbonate boulders - Carbonate crust - Carbonate wall 		
Geomorphology/Features	Ridge Wall		

DIVE SUMMARY

Annex 1 Types	<ul style="list-style-type: none"> - Broken carbonate - Sloping carbonate - Vertical carbonate - Cobbles/pebbles fields - Pebbles fields - Boulder fields
Pressures	1 x rope (01:46:47)

Biological Data

Number of Species

35

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
7	Porifera encrusting sp2	Crust	R
1101	Porifera lamellate (escarp)	Crust	R
582	Actiniaria sp18	L	R
1031	Anachalypsicrinus nefertiti	L	R
1045	Bathycrinidae sp2 cf Porphyrocrinus thalassae	L	R
1124	Benthothuria	L	R
274	Brisingidae	L	R
1059	Colossendeis sp	L	R
577	Coryphaenoides guentheri	L	R
572	Echinoidea sp5 (Echinothuroidea)	L	R
1113	Halosauridae sp1	L	R
1160	Lepidion cf guentheri	L	R
536	Mesothuria intestinalis	L	R
349	Mora moro	L	R
551	Ophiomusa lymani	L	R
552	Polyacanthonotus rissoanus	L	R
1075	Porifera cylindrical sp	L	R
422	Porifera lamellate sp7	L	R
581	Umbellula sp	L	R
4	Actiniaria sp18	M	R
278	Anthomastus grandiflorus	M	R
1141	Bathycrinidae sp	M	R
1041	Bathycrinidae sp1	M	R
1107	cf Anthoptilum sp	M	R

DIVE SUMMARY

1129	cf Echinus (deepPinkSpine)	M	R
646	Ophiuroidea sp (orangeDeep)	M	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
234	Ceremaster Peltaster Plinthaster	S	R
113	Colus sp	S	R
131	Crinoidea sp1	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1144	Galacantha sp	S	R
205	Paguridae	S	R
1167	Peniagone sp	S	R
1178	Porifera globose lobose (indetWhite)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Sa	Atlantic upper abyssal sand	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Carbonate mounds (OSPAR)
M.AtUA.Co	Atlantic upper abyssal coarse sediment	

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Sa; M.AtUA.Co
	n/a
2	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
3	M.AtUA.Sa; M.AtUA.Ro
	n/a
4	M.AtUA.Ro; M.AtUA.Sa

DIVE SUMMARY

	1141 Bathycrinidae sp
5	M.AtUA.Sa; M.AtUA.Ro
	1141 Bathycrinidae sp
6	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
7	M.AtUA.Ro; M.AtUA.Sa
	n/a
8	M.AtUA.Sa; M.AtUA.Ro
	n/a
9	M.AtUA.Ro; M.AtUA.Sa
	n/a
10	M.AtUA.Sa; M.AtUA.Ro
	n/a
11	M.AtUA.Ro; M.AtUA.Sa
	n/a
12	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
13	M.AtUA.Sa; M.AtUA.Ro
	n/a
14	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
15	M.AtUA.Sa; M.AtUA.Ro

DIVE SUMMARY

	1141 Bathycrinidae sp
16	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
17	M.AtUA.Ro; M.AtUA.Sa
	1141 Bathycrinidae sp
18	M.AtUA.Sa; M.AtUA.Ro
	1141 Bathycrinidae sp, 274 Brisingidae
19	M.AtUA.Ro; M.AtUA.Sa
	n/a

Conservation Targets

Listed Habitats Encountered

Name	Authority
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Mud and sand emergent fauna	ICES
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Carbonate mounds	OSPAR
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Listed Species Encountered (Fish, Count)

n/a	OSPAR/IUCN
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Additional Comments

n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 549	TRANSECT # PB05

	Start	End
Date & Time	Missing OFOPs	Missing OFOPs
Latitude/ Longitude	Missing OFOPs	Missing OFOPs
Depth	Missing OFOPs	Missing OFOPs
Images	IMG_3701-IMG_3992.JPG	
Samples	1 x Freyella? (check – poss new species) 1 x globose sponge	

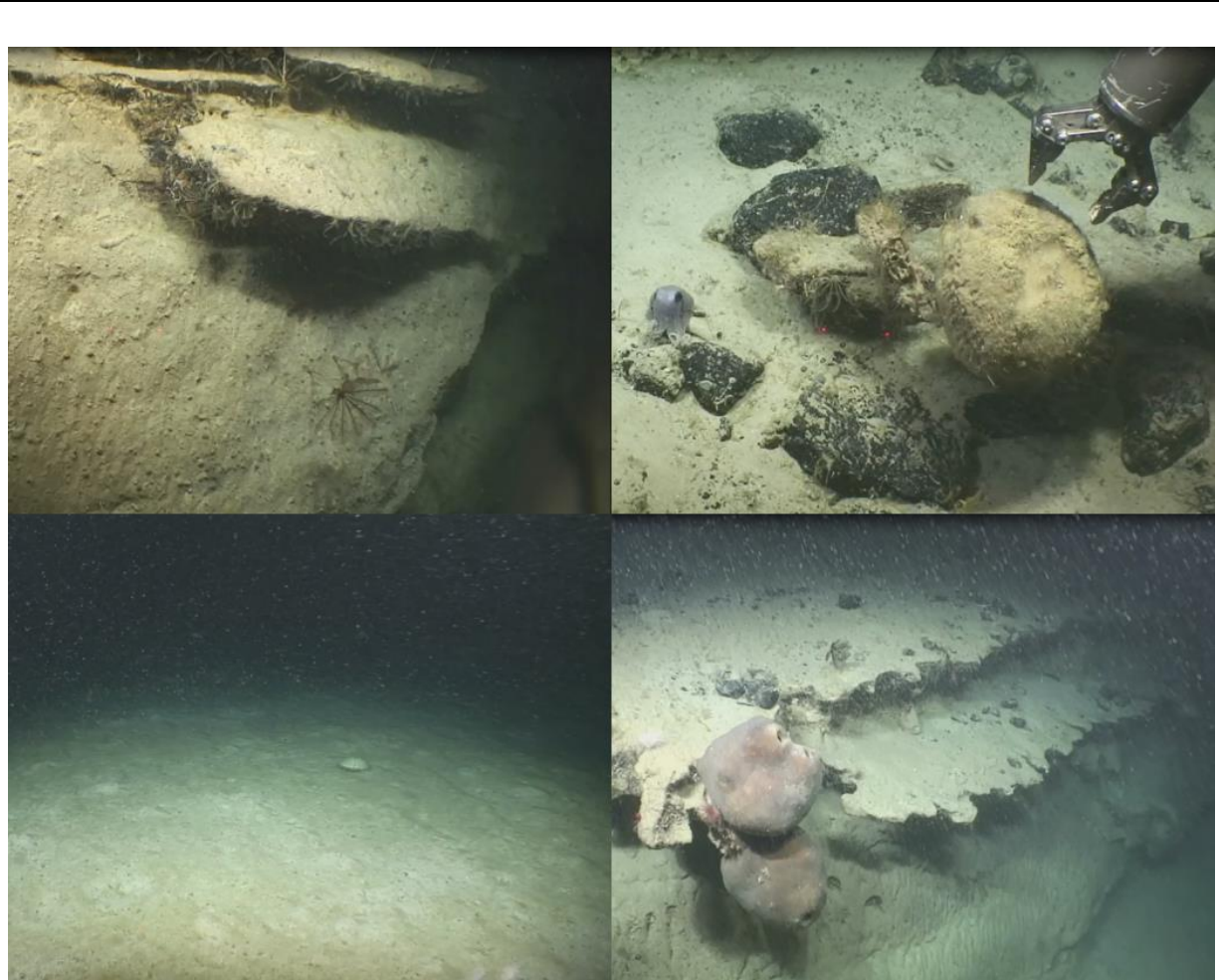
Location	PB5
Target Features	Deep Canyon Wall
Depth Range	-1850, -2250

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Bathycrinidae species OTU1141 and crinoidea species OTU131 on vertical wall. Feather stars and stalked crinoids are frequently encountered on this dive (M.AtUA.Ro).

Top R. ROV samples a globose sponge OTU1128 found on cobble. Meanwhile octopus *Graneledone verrucosa* OTU973 sits on a cobble on the right of the sponge (M.AtUA.Mu; M.AtUA.Ro).

Bottom L. Muddy sediment is recorded frequently in this transect (M.AtUA.Mu).

Bottom R. Large *Geodia cf baretii* OTU601 found on vertical carbonate wall (M.AtUA.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO A STARTS. 0m. Marine snow present throughout the transect. **[1]** Mud/rippled sediment on flat sea floor. Sparse epifauna. **5m [2]** Carbonate horizontal slope/ledges. **6m [3]** Mud/rippled sediment/gravel/pebble/cobble. 7m ROV stops for imagery of Bathyrcrinidae. 10m ROV stops for imagery and sampling of poss new species of Brisingidae. **30m [4]** sea urchin OTU1129 dominates on mud/rippled sediment. 43m Marine snow. 46m Boulders on slope. Sparse epifauna. **47m [5]** here muddy gentle upslope continues with sparse epifauna on occasional boulders, including Bathyrcrinidae sp. **01h08m [6]** here steep slope with pebble/cobble field/sparse boulders on muddy sediment. Sparse epifauna including crinoids OTU131. **01h18m [7]** Vertical wall with inlets. Feather stars OTU131 and stalked crinoids OTU1141 co-dominate on rock. 01h24m ROV stops for sampling of globose sponge OTU1128. 01h40m ROV stops for imagery of *Graneledone verrucosa* OTU973. **[8]** Here carbonate bedrock. Still cobbles present. Crinoids OTU131 and OTU1141 dominate. 01h45m **[9]** Vertical carbonate wall hosts sparse epifauna. 01h47m **[10]** Cobble fields on gentle/moderate slope with sparse epifauna including crinoids OTU131 and OTU1141. **VIDEO A ENDS.**

VIDEO B STARTS. 0m. Video B lasts 32m. **[11]** Boulders/cobbles/pebbles/mud with sparse epifauna, mainly crinoids. **VIDEO B ENDS.**

Physical Data	
Reef (types can be concurrent)	0% reef
	0% biogenic
	0% geogenic
	n/a
	n/a
Substrates	<ul style="list-style-type: none"> - Mud - Rippled mud - Pebble - Cobble - Boulder - Carbonate boulder - Carbonate bedrock
Geomorphology/Features	Slope Vertical wall
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble fields - Boulder - Bedrock - Horizontal/vertical carbonate
Pressures	n/a

DIVE SUMMARY

Biological Data			
Number of Species		47	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1141	Bathycrinidae sp	L	F
551	Ophiomusa lymani	L	R
552	Polyacanthonotus rissoanus	L	R
1067	Laucoraja sp	L	R
566	Coryphaenoides rupestris	L	R
581	Umbellula sp	L	R
1031	Anachalypsicrinus nefertiti	L	R
577	Coryphaenoides guentheri	L	R
274	Brisingidae	L	R
572	Echinoidea sp5	L	R
328	Bathypathes sp1	L	R
1128	Porifera globose (muddy)	L	R
1156	Porifera lamellate (bubbles)	L	R
973	Graneledone verrucosa	L	R
601	Geodia cf baretti	L	R
576	Porifera massive lobose sp1	L	R
1111	Cataetyx laticeps	L	R
347	Pheronema carpenteri	L	R
432	Holothuroidea cf Laetmogonoe	M	R
261	Syringamina fragilissima	M	R
1010	Porifera lamellate sp12	M	R
1110	Hymenaster cf pellucidus	M	R
278	Anthomastus grandiflorus	M	R
1144	Galacantha	M	R
554	Actinernus sp	M	R
1191	Pennatulacea sp (submergedAxis)	M	R
1056	Flabellum sp	M	R
585	Acanella arbuscula (bushy)	M	R

DIVE SUMMARY

1041	Bathycrinidae sp1	M	R
1115	Pterasteridae sp	M	R
132	Actinostolidae sp1	M	R
605	Actiniaria sp20	S	R
131	Crinoidea sp1	S	F
1066	Adamsia sp (PaguridaeAssoc)	S	R
205	Paguridae	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1069	Ceriantharia sp	S	R
1114	Pennatulacea (indet)	S	R
593	Coelorhynchus labiatus	S	R
1138	Eucaridae sp2 (redDeep)	S	R
1049	cf Psolus sp	S	R
106	Serpulidae sp1	S	R
6	Caryophyllia sp	S	R
1036	Ophiuroidea sp11	S	R
339	Munida tenuimana	S	R
950	Rhodaliidae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Carbonate mounds (OSPAR)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Mu
	1141 Bathycrinidae sp
2	M.AtUA.Ro
	1141 Bathycrinidae sp
3	M.AtUA.Mu; M.AtUA.Ro

DIVE SUMMARY

	1141 Bathycrinidae sp
4	M.AtUA.Mu; M.AtUA.Ro
	1129 cf Echinus (deepPinkSpine)
5	M.AtUA.Mu; M.AtUA.Ro
	1141 Bathycrinidae sp
6	M.AtUA.Ro; M.AtUA.Mu
	131 Crinoidea sp1
7	M.AtUA.Ro
	131 Crinoidea sp1, 1141 Bathycrinidae sp
8	M.AtUA.Ro; M.AtUA.Mu
	131 Crinoidea sp1, 1141 Bathycrinidae sp
9	M.AtUA.Ro
	131 Crinoidea sp1, 601 Geodia cf baretta
10	M.AtUA.Mu; M.AtUA.Ro
	131 Crinoidea sp1, 1141 Bathycrinidae sp
11	M.AtUA.Mu; M.AtUA.Ro
	131 Crinoidea sp1, 1141 Bathycrinidae sp

Conservation Targets	
Listed Habitats Encountered	
Name	Authority

DIVE SUMMARY

Mud and sand emergent fauna Carbonate mounds	ICES OSPAR
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> • New biotope: upper abyssal with crinoids on rock? TBC • No OFOPs data provided.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 550	TRANSECT # PB07

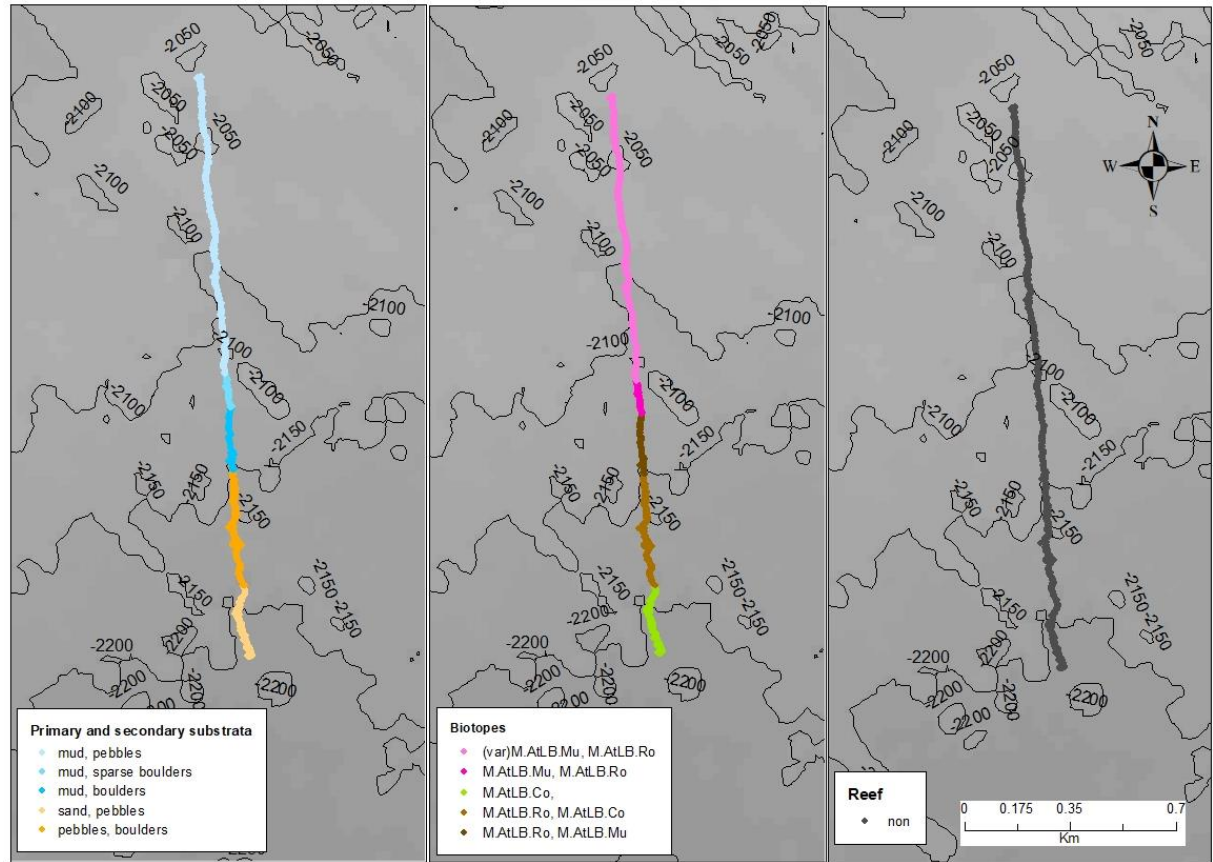
	Start	End
Date & Time	13/07/2018 17:25:21	13/07/2018 19:37:49
Latitude/ Longitude	52.874258, -15.26401817	52.8909712, -15.26549433
Depth	-2194.8	-2036.6
Images	IMG_3993-IMG_4581.JPG	
Samples	1 x pushcore (17:25:00); 1 x Echinoidea sp5 (Echinothuroidea) (18:00:00).	

Location	PB7
Target Features	Deep Rise
Depth Range	-1900,-2150

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

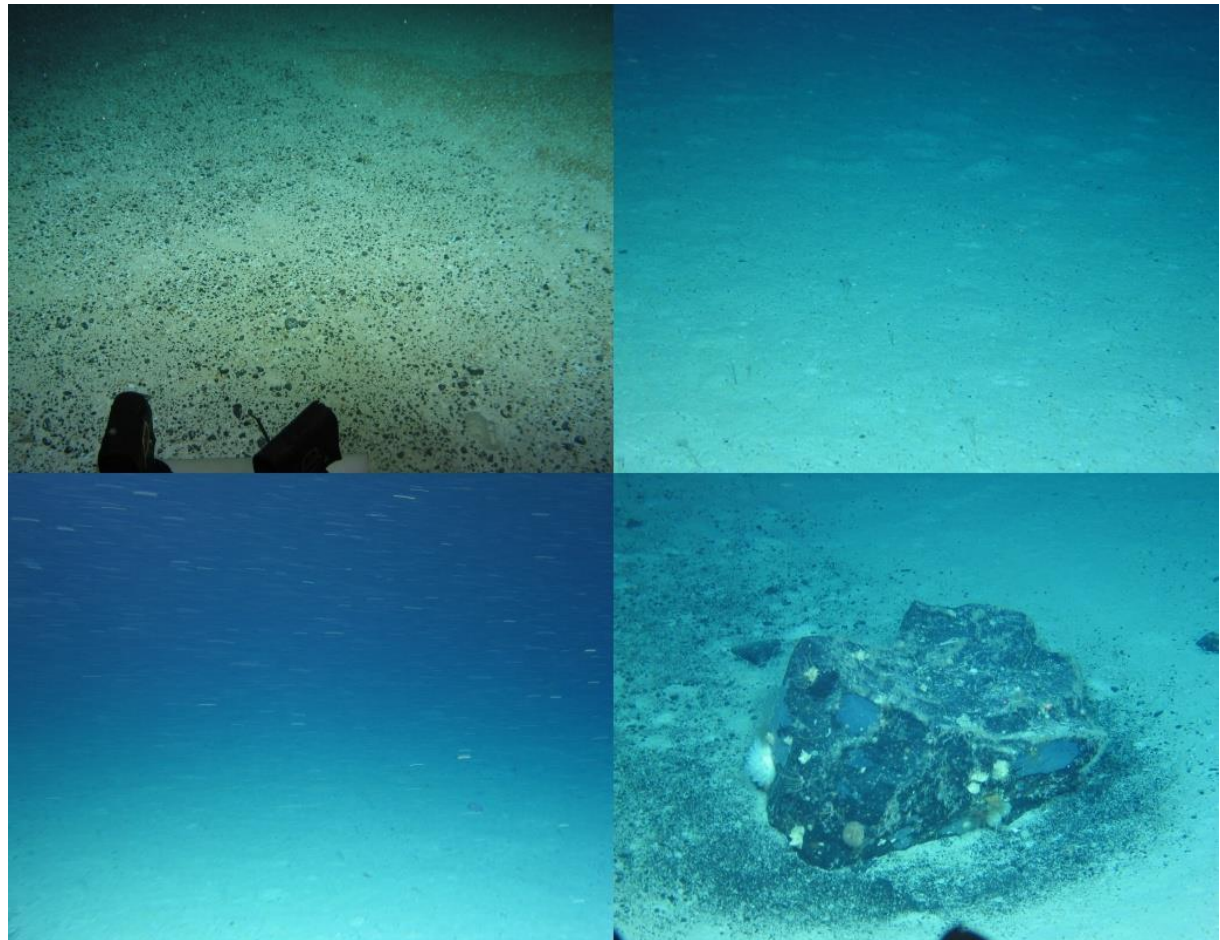
Dive 550, PB07



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Pebble fields on gentle up slope with sparse/rare epifauna (M.AtLB.Ro; M.AtLB.Mu).

Top R. Typical biotope recorded in this transect. Muddy sediment on slope with rare epifauna (M.AtLB.Mu).

Bottom L. Muddy sediment on slope with rare epifauna. Marine snow present throughout the dive (M.AtLB.Mu).

Bottom R. Occasional boulders on muddy sediment hosting encrusted sponges OTU800 and OUT1 (M.AtLB.Ro; M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 17:25. [1] Sand/pebbles/possible pteropod hash with sparse epifauna, which include crustaceans and sea urchins. 17:25-17:32 ROV samples a pushcore. 17:50 [2] Pebbles/sand/occasional boulders. Encrusted sponges and glass sponges living on hard substrata. 17:59-18:14 ROV stops for sampling of Echinoidea sp5 (Echinothuroidea). Vision obscured for a few seconds. 18:22 Vision obscured/too bright. 18:23 Vision back to normal. 18:26-18:36 [3] Boulders are frequent. 18:40 [4] Mud/boulders. *Geodia cf baretii* is the dominant species on boulders. 18:42 [5] Now mud and pebbles are the substrata with sparse epifauna. Dominant species is *Democrinus* sp OTU1103. 18:49 [6] Boulders and muddy sediment with sparse Echinoidea sp5, *Geodia cf baretii* and encrusted sponges. 18:51 Again muddy sediment and pebbles with dominant *Democrinus* sp. 18:55 Muddy sediment and occasional boulders with encrusted sponges and *Geodia cf baretii*. 19:02 ROV stops for imagery of substrate. Vision obscured/mud cloud. 19:03 Vision clear. 19:04 ROV stops for imagery of crinoids and mud cloud. 19:06 ROV moves again. 19:34 ROV stops for imagery of encrusted sponges, *Geodia cf baretii* and other sponge species living on boulder until **END OF HD VIDEO AT 19:37.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Sand - Pebbles - Boulders 		
Geomorphology/Features	Rise		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble fields - Pebble/boulder fields - Boulder fields 		
Pressures	n/a		

Biological Data	
Number of Species	41
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting sp1 white	Crust	R
1074	Alepocephaliformes sp1 (cfRouleina attrita)	L	R
1141	Bathycrinidae sp	L	R
274	Brisingidae	L	R
572	Echinoidea sp5 (Echinothuroidea)	L	R
432	Holothuroidea cf Laetmogone (purple)	L	R
349	Mora moro	L	R
1012	Notacanthiformes sp1	L	R
552	Polyacanthonotus rissoanus	L	R
535	Porifera cup 2	L	R
422	Porifera lamellate sp7	L	R
554	Actinernus sp	M	R
1031	Anachalypsicrinus nefertiti	M	R
278	Anthomastus grandiflorus	M	R
1041	Bathycrinidae sp1	M	R
1030	cf Polymastia boletiformis	M	R
1008	Chrysogorgiidae sp1	M	R
577	Coryphaenoides guentheri	M	R
1103	Democrinus sp	M	R
1106	Eucarida sp	M	R
1144	Galacantha sp	M	R
601	Geodia cf baretii (Por m glob sp11)	M	R
536	Mesothuria intestinalis	M	R
551	Ophiomusa lymani	M	R
1046	Pennatula aculeata	M	R
1178	Porifera globose lobose (indetWhite)	M	R
81	Porifera lamellate lobose	M	R
1061	Solasteridae sp (7arm)	M	R
581	Umbellula sp	M	R
605	Actinaria sp20	S	R
264	Aphrocallistes sp	S	R
1186	Asteroidea (cfSpinulosida)	S	R
1077	Caridea (indet)	S	R
1129	cf Echinus (deepPinkSpine)	S	R
113	Colus sp	S	R

DIVE SUMMARY

131	Crinoidea sp1	S	R
1154	Henricia sp (deep)	S	R
1036	Ophiuroidea sp11	S	R
1191	Pennatulacea sp (submergedAxis)	S	R
433	Pseudarchaster sp1	S	R
106	Serpulidae sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Co	Atlantic lower bathyal coarse sediment	
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Deep sea sponge aggregations (ICES/OSPAR)
(var)M.AtLB.Mu	(variant of) Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Co
	1144 Galacantha sp, 572 Echinoidea sp5 (Echinothuroidea)
2	M.AtLB.Ro; M.AtLB.Co
	1 Encrusted sponges OTU1
3	M.AtLB.Ro; M.AtLB.Mu

DIVE SUMMARY

	1 Encrusted sponges OTU1
4	M.AtLB.Mu; M.AtLB.Ro
	601 Geodia cf baretii
5	(var)M.AtLB.Mu; M.AtLB.Ro
	1103 Democrinus sp

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Deep sea sponge aggregations	ICES/OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 551	TRANSECT # PB08

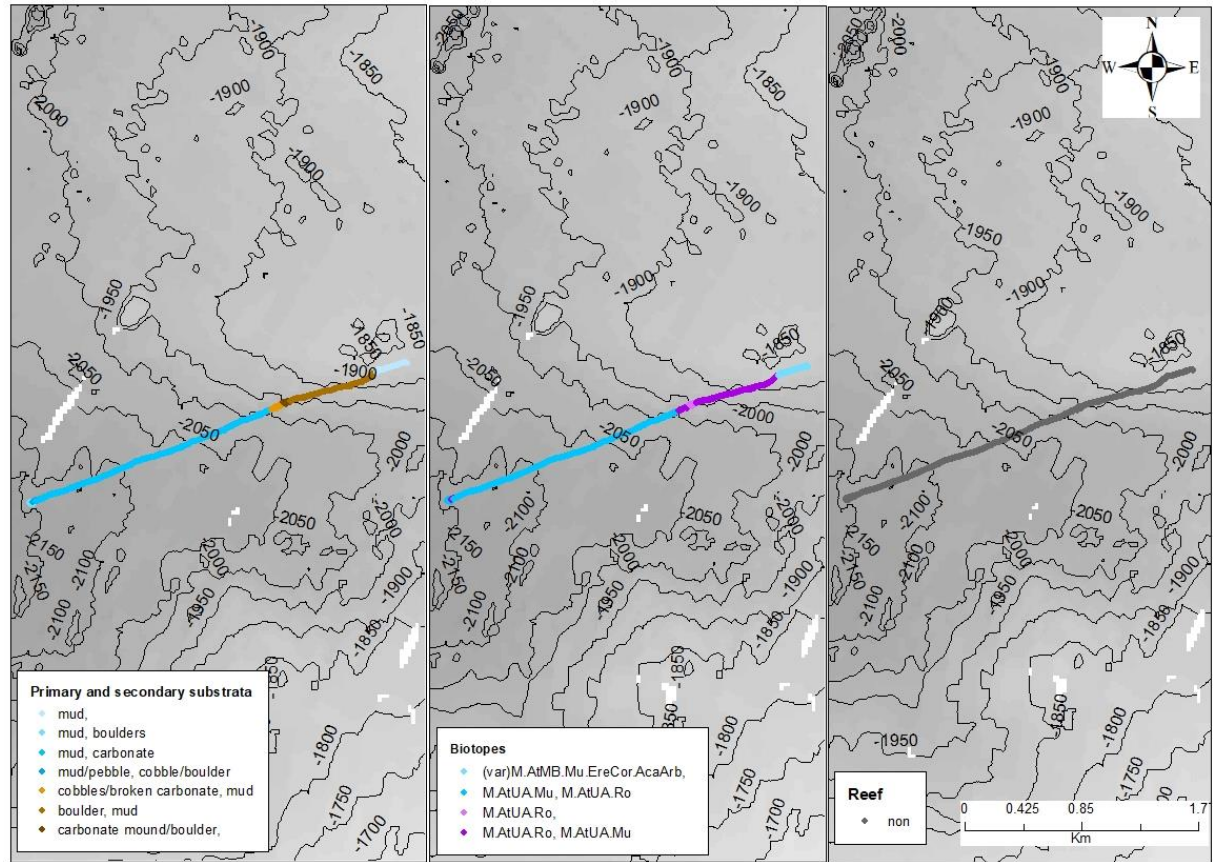
	Start	End
Date & Time	14/07/2018 00:30:00	14/07/2018 02:29:49
Latitude/ Longitude	52.735923, -15.19641033	52.744268, -15.17381633
Depth	-2118.5	-1853.5
Images	IMG_4582-IMG_4629.JPG	
Samples	2 x pushcores	

Location	PB08
Target Features	Ridge, Wall
Depth Range	-1900, -2150

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

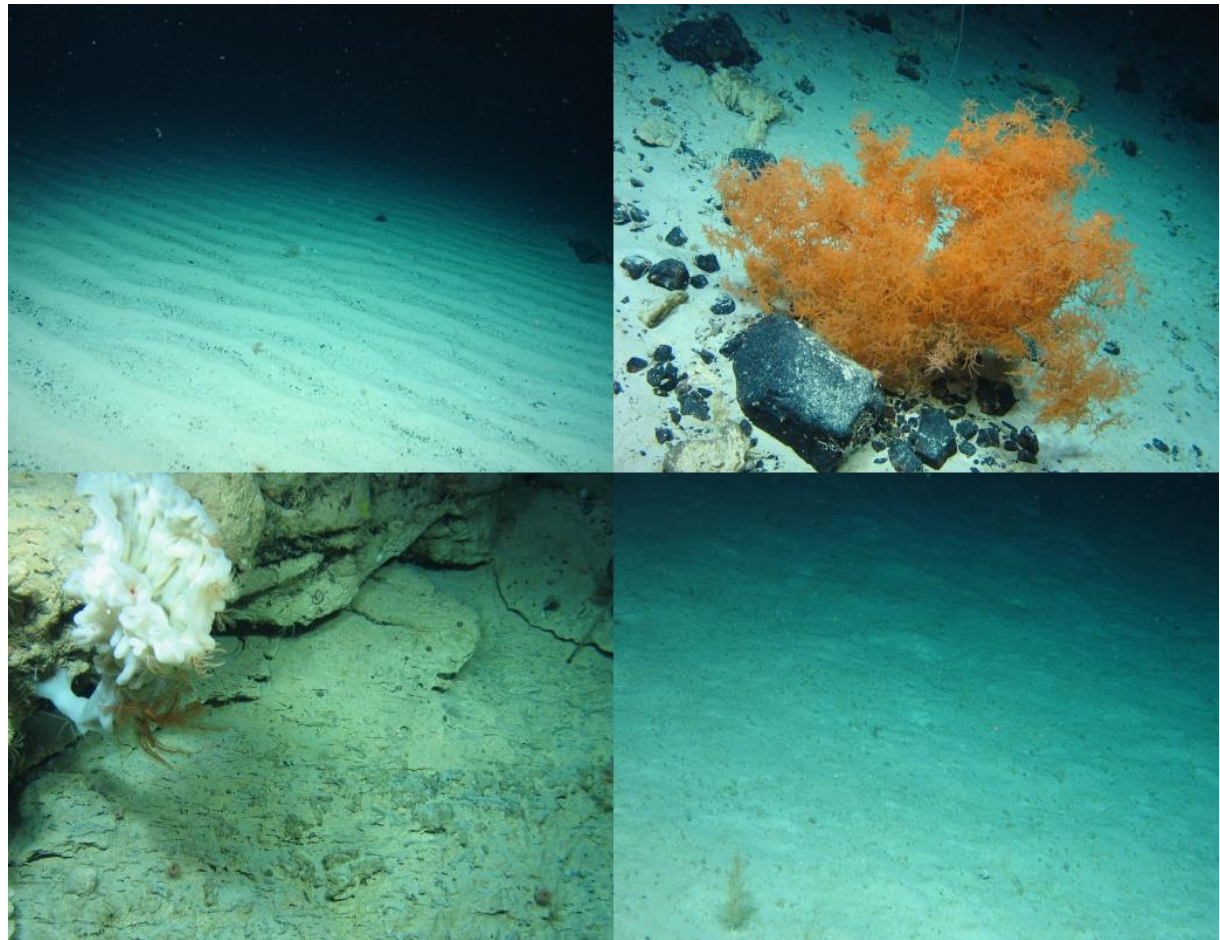
Dive 551, PB08



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Rippled sand on gentle slope with sparse epifauna including cf *Anthoptilum* OTU1107 (M.AtUA.Mu).

Top R. *Leiopathes* sp OTU305 on boulders/cobbles (M.AtUA.Ro; M.AtUA.Mu).

Bottom L. Porifera vase (cf *Aphrocallistes* sp) OTU1162 dwells on carbonate boulders (M.AtUA.Ro; M.AtUA.Mu).

Bottom R. Muddy sediment on gentle slope with occasional *Acanella arbuscula* OTU585 (M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 00:30. [1] Muddy sediment on flat/gentle slope with occasional boulders. Sparse epifauna. 00:30-00:40 ROV stops for sampling two pushcores. 00:40 ROV leaves the seafloor. 00:42 **[2]** Mud/pebbles/cobbles/boulders with *Geodia cf baretii* living on boulders. 00:43 **[3]** Now muddy sediment with frequent Echinoidea sp5 (Echinothuroidea) and Hygrosoma sp.00:47 Carbonate boulder with inlets. 01:02 ROV stops for imagery of pteropod hash (?). 01:11 vision obscured/mud cloud. 01:21 ROV stops for imagery of *Syringamina fragilissima* OTU261. 01:39 ROV stops for imagery of muddy sediment and sponge. 01:44 ROV stops for imagery of *Actinopterygii sp.* 01:50 **[4]** here cobbles/broken carbonate/mud with sparse epifauna, including *Leiopathes sp* OTU305 and *Telopathes sp2* OTU1181. 01:53 ROV goes up hill. **[5]**Here predominantly carbonate mound/carbonate bedrock with sparse epifauna, including antipathes. 01:55 **[6]** boulders/mud down slope hosts sparse epifauna including *Acanella arbuscula* and *Syringamina fragilissima*. 01:56 Blue water for a few seconds.01:59 Fields of *S. fragilissima*. 02:01 Mud cloud. 02:10 Mud cloud. 02:18 **[7]** Here Mud slope. *Acanella arbuscula* dominates. 02:20 mud cloud. 02:21 Vision clear again. **END OF HD VIDEO AT 02:29.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Mud/pebble - Cobbles/broken carbonate - Carbonate mound/boulder - Boulder 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble/boulder - Sloping carbonate - Cobble/broken carbonate - Carbonate - Boulders 		
Pressures	n/a		

Biological Data	
Number of Species	78
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat)	

DIVE SUMMARY

transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
52	Porifera encrusting sp14	Crust	R
582	Actiniaria sp18	L	R
	Actinopterygii (?)	L	R
1074	Alepocephaliformes sp1 (cfRouleina attrita)	L	R
1045	Bathycrinidae sp2 cf Porphyrocrinus thalassae	L	R
574	cf Benthogone sp (white)	L	R
1086	cf Thouarella sp	L	R
462	Chrysopathes sp Trissopathes sp	L	R
1009	Notacanthidae sp1(possNotacanthus cheminizii)	L	R
1105	Coryphaenoides armatus	L	R
577	Coryphaenoides guentheri	L	R
566	Coryphaenoides ruspestris	L	R
1103	Democrinus sp	L	O
973	Graneledone verrucosa	L	R
1113	Halosauridae sp	L	R
1039	Hydrolagus cf affinis poss pallidus	L	R
305	Leiopathes sp	L	R
557	Lepidisis sp	L	R
349	Mora moro	L	R
1012	Notacanthiformes sp1	L	R
1065	Paragorgia sp (deepPink)	L	R
1050	Paramuricea sp	L	R
1042	Parantipathes sp	L	R
442	Kophobelemnion stelliferum	L	R
202	Phakellia ventilabrum	L	R
1020	Phycis blennoides	L	R
1075	Porifera cylindrical sp	L	R
1156	Porifera lamellate (bubbles)	L	R
648	Porifera massive globose ps13	L	R
1162	Porifera vase (cfAphrocallistes)	L	R
433	Pseudarchaster sp1	L	R
1044	Radicipes sp	L	R
611	Rhabdodictyum cf delicatum (porif mass lob sp21)	L	R
560	Stichopathes sp	L	R
1181	Telopathes sp2 (red)	L	R
581	Umbellula sp	L	R
585	Acanella arbuscula (bushy)	M	R
930	Actinopterygii sp3	M	R
132	Actinostolidae sp1	M	R
278	Anthomastus grandiflorus	M	R
284	Bathypathes sp (brown)	M	R
328	Bathypathes sp1	M	R
1107	cf Anthoptilum sp	M	R
1059	Colossendeis sp	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	O
1198	Euplectella suburea	M	R
601	Geodia cf baretii (Por m glob sp11)	M	R
628	Holothuroidea sp4 (cfAmperima)	M	R
1125	Hygrosoma sp	M	R
274	Brisingidae	M	R
551	Ophiomusa lymani	M	R
1046	Pennatulaculeata	M	R
1191	Pennatulacea sp (submergedAxis)	M	R

DIVE SUMMARY

555	Phormosoma placenta	M	R
81	Porifera lamellate lobose	M	R
1118	Sagartidae sp (wide oral disc)	M	R
261	Syringammia fragilissima	M	O
4	Actinaria sp1	S	R
605	Actinaria sp20	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
TBC	Euryalida	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia sp	S	O
1129	cf Echinus (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
1008	Chrysogorgiidae sp1	S	R
113	Colus sp	S	R
131	Crinoidea sp1	S	R
1056	Flabellum sp	S	R
1144	Galacantha sp	S	R
1154	Henricia sp (deep)	S	R
1036	Ophiuroidea sp11	S	R
205	Paguridae	S	R
347	Pheronema carpenteri	S	R
263	Porania pulvillus	S	R
75	Porifera encrusting globose sp2	S	R
950	Rhodaliidae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
(var)M.AtMB.Mu.EreCor. AcaArb	(variant of) Acanella arbuscula assemblage on Atlantic mid bathyal mud	Coral gardens (ICES/OSPAR); soft-bottom coral gardens: soft-bottom gorgonian and black coral garden (ICES subcategory)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Mu; M.AtUA.Ro
	555 Phormosoma placenta, 572 Echinoidea sp5 (Echinothuroidea)
2	M.AtUA.Ro; M.AtUA.Mu
	555 Phormosoma placenta, 572 Echinoidea sp5 (Echinothuroidea), 601 Geodia cf baretti

DIVE SUMMARY

3	M.AtUA.Mu; M.AtUA.Ro
	572 Echinoidea sp5 (Echinothuroidea), 1125 Hygrosoma sp, 261 Syringamina fragilissima
4	M.AtUA.Ro; M.AtUA.Mu
	305 Leiopathes sp, 1181 Telopathes sp2
5	M.AtUA.Ro
	305 Leiopathes sp, 1181 Telopathes sp2, 284 Bathypathes sp (brown)
6	M.AtUA.Ro; (var)M.AtMB.Mu.EreCor.AcaArb
	585 Acanella arbuscula, 261 Syringamina fragilissima
7	(var)M.AtMB.Mu.EreCor.AcaArb
	585 Acanella arbuscula

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Coral gardens:	ICES/OSPAR	
- soft-bottom coral gardens: soft-bottom gorgonian and black coral garden	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 552	TRANSECT # PB09

	Start	End
Date & Time	14/07/2018 10:13:58	14/07/2018 12:14:48
Latitude/ Longitude	52.29465917, -15.446672	52.30349367, -15.4374055
Depth	-2672.3	-2445.7
Images	IMG_4630-IMG_4804.JPG	
Samples	2 x pushcores (10:13 – 10:25)	

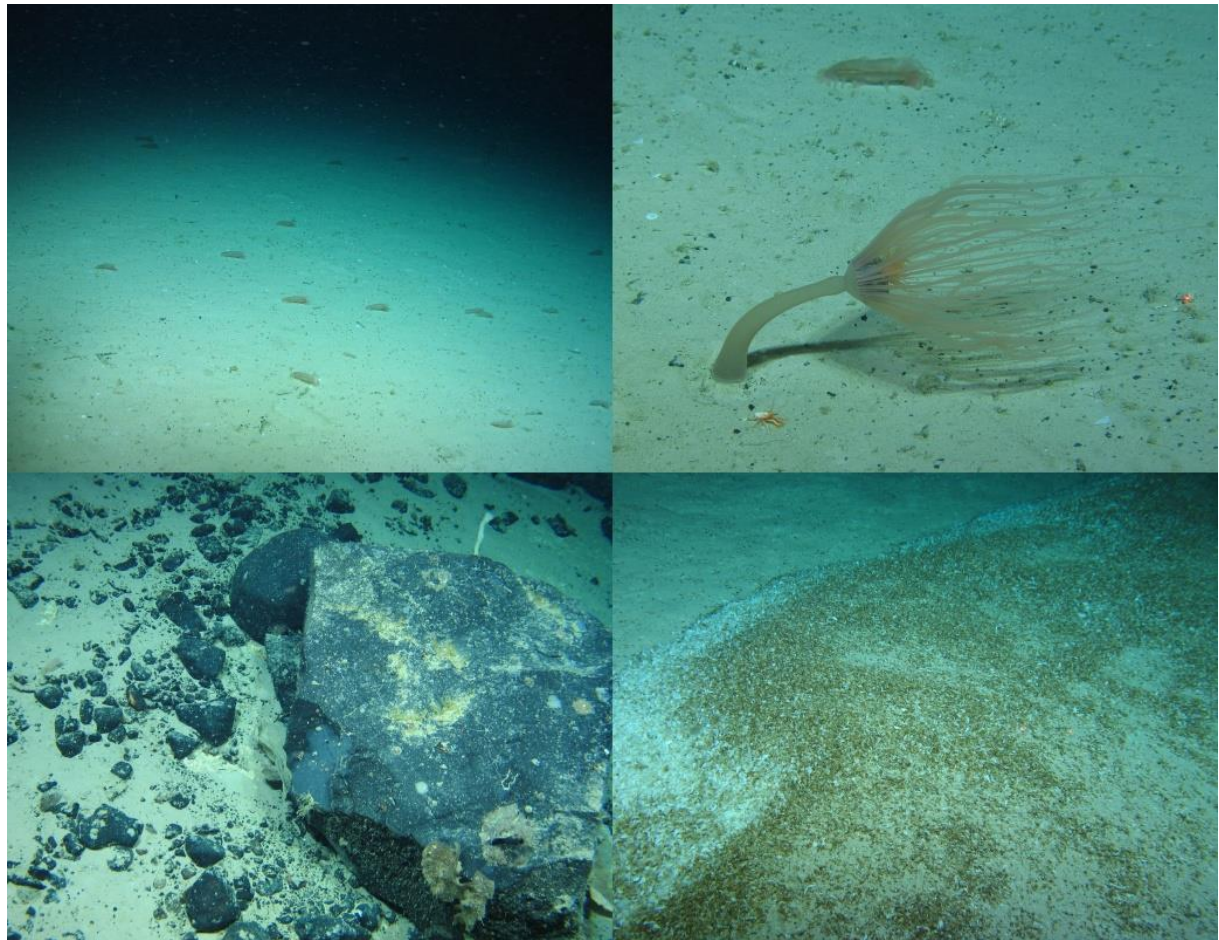
Location	PB9
Target Features	Very Deep wall, Ridge, Canyon
Depth Range	-2350, -2650

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Peniagone sp OTU1167 on muddy slope (M.AtUA.Mu.HolCom, M.AtUA.Ro).

Top R. Zoomed-in imagery of Corymorpha sp2 OTU1204 on muddy sediment co-dwelling with Peniagone sp OTU1167 (M.AtUA.Mu).

Bottom L. Boulder/cobble/pebble fields on slope hosting encrusted sponges OUT1 (M.AtUA.Ro, M.AtUA.Mu).

Bottom R. Sand/pteropod hash observed occasionally in this transect (M.AtUA.Sa, M.AtUA.Co).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 10:13. 10:13-10:25 ROV samples 2 pushcores. Muddy/pebbles sediment on flat/gentle upslope. Marine snow/suspended sediment present. Holothuroid Peniagone sp OTU1167 is dominant species. 10:28 ROV moves erratically up and down, vision is poor. 10:35 ROV stops for imagery of unknown anemone. Vision obscured/mud cloud. 10:44 Mud and sand sediment with Peniagone sp as dominant. Throughout the entire transect, the ROV climbs a moderate steep slope. 10:45 ROV touches the seafloor causing mud cloud. Vision obscured. 10: 47 Vision back to normal. Rippled sand and occasional gravel. Peniagone sp dominant. 10:50 Now carbonate crust and boulders covered in mud with sparse Brisingidae and glass sponges. 10:54 Cobbles muddy sediment. 10:55 Carbonate crust/boulder with inlets covered in muddy sediment with sparse epifauna. 10:56 Now muddy sediment/pebbles and cobbles with occasional epifauna, including Pennatulacea species. 10:59 Again carbonate mound/pebbles/mud sediment. Sparse epifauna. 11:04 Muddy/pebbles sediment. 11:18 Now sand/mud/gravel sediment with occasional epifauna. 12:14 ROV goes backwards until **END OF HD VIDEO AT 12:14.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Rippled Sand - Gravel - Mud/pebbles - Cobbles - Cobbles/boulders - Boulder - Carbonate crust - Carbonate mound 		
Geomorphology/Features	Ridge, Wall		
Annex 1 Types	<ul style="list-style-type: none"> - Cobble fields - Cobble/boulder fields - Pebble fields - Pebble/boulder fields - Sloping carbonate 		
Pressures	n/a		

Biological Data

DIVE SUMMARY

Number of Species	37
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Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting white	Crust	R
582	Actiniaria sp18	L	R
1112	Bathysaurus ferox	L	R
274	Brisingidae	L	R
1060	cf Halipteris sp	L	R
1008	Chrysogorgiidae sp1	L	R
285	Chyrostylidae (indet)	L	R
1201	Colossendeis sp2	L	R
1103	Democrinus sp	L	R
TBC	Forcipulatida	L	R
622	Halipteris cf finmarchica	L	R
557	Lepidisis sp	L	R
551	Ophiomusa lymani	L	R
552	Polyacanthonotus rissoanus	L	R
433	Pseudarchaster sp1	L	R
581	Umbellula sp	L	R
1031	Anachalypsicrinus nefertiti	M	R
278	Anthomastus grandiflorus	M	R
1141	Bathycrinidae sp	M	R
120	Corymorphidae sp	M	R
577	Coryphaenoides guentheri	M	R
1094	Echinothuroidea sp (purple)	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
536	Mesothuria intestinalis	M	R
1156	Porifera lamellate (bubbles)	M	R
81	Porifera lamellate lobose	M	R
1115	Pterasteridae sp	M	R
585	Acanella arbuscula (bushy)	S	R
1077	Caridea (indet)	S	R
584	Caryophyllia sp5 (bullseye)	S	R
1107	cf anthoptilum sp	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1144	Galacantha sp	S	R
1076	Ophiuroidea sp (indet)	S	R
1167	Peniagone sp	S	R
1191	Pennatulacea sp (submergedAxis)	S	R
950	Rhodaliidae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	

DIVE SUMMARY

(var)M.AtUA.Mu.HolCom	(variant of) Holothurian dominated community on Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Sa	Atlantic upper abyssal sand	Mud and sand emergent fauna (ICES)
M.AtUA.Co	Atlantic upper abyssal coarse sediment	
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	(var)M.AtUA.Mu.HolCom, M.AtUA.Ro	
	1167 Peniagone sp	
2	M.AtUA.Sa, M.AtUA.Co	
	1167 Peniagone sp	
3	M.AtUA.Ro, M.AtUA.Mu	
	274 Brisingidae, 1167 Peniagone sp	
4	M.AtUA.Ro, M.AtUA.Mu	
	n/a	
5	M.AtUA.Ro, M.AtUA.Mu	
	1167 Peniagone sp, 274 Brisingidae	
6	M.AtUA.Mu, M.AtUA.Ro	
	1167 Peniagone sp, 1141 Bathycrinidae sp, 274 Brisingidae	
7	M.AtUA.Ro, M.AtUA.Mu	
	1141 Bathycrinidae sp, 1167 Peniagone sp, 274 Brisingidae	
8	M.AtUA.Sa, M.AtUA.Ro	

DIVE SUMMARY

	1141 Bathycrinidae sp, 622 Halipteris cf finmarchica
9	M.AtUA.Mu
	1103 Democrinus sp, 1167 Peniagone sp
10	M.AtUA.Mu, M.AtUA.Ro
	1103 Democrinus sp, 1167 Peniagone sp, 274 Brisingidae

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

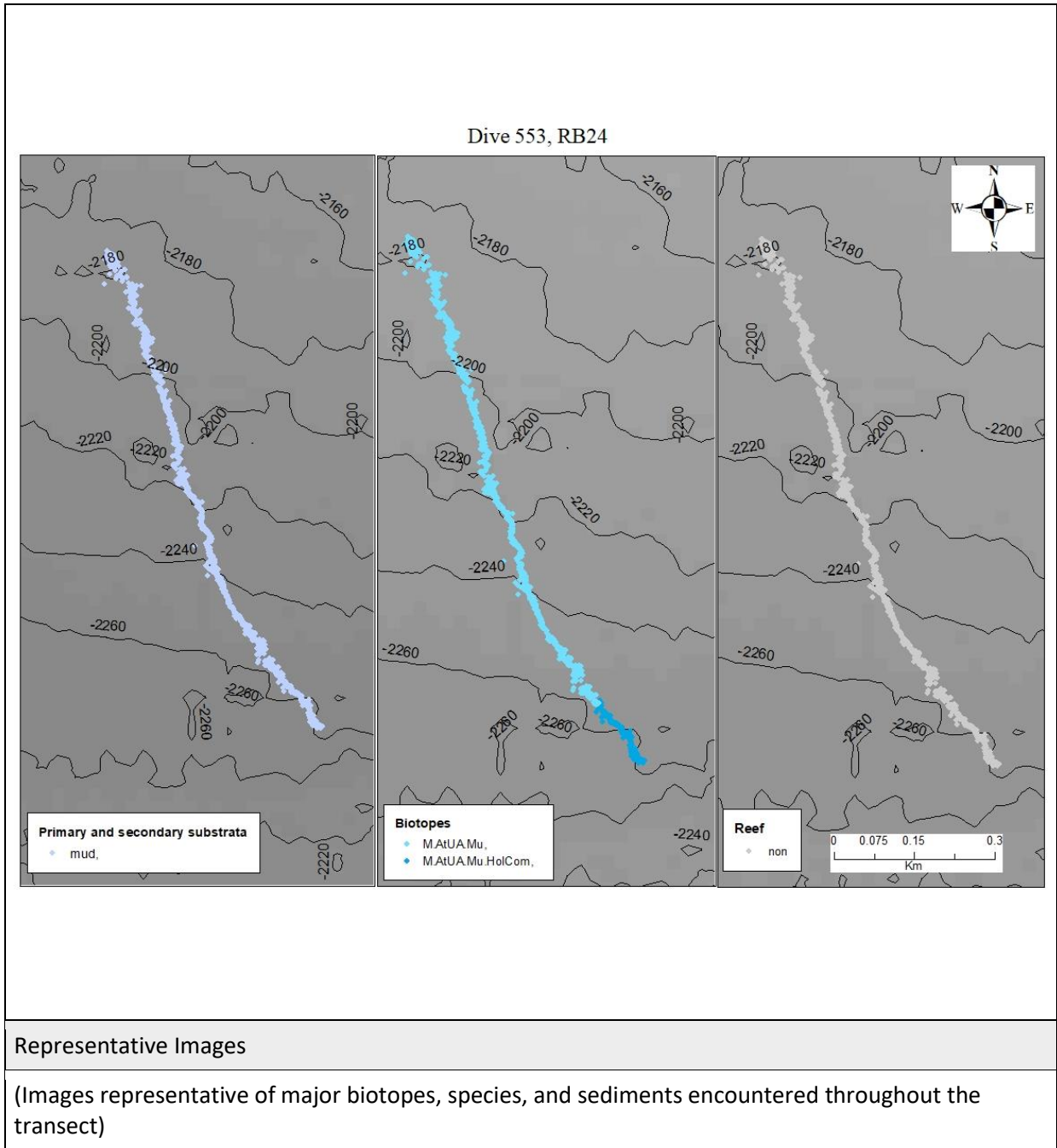
DIVE SUMMARY	
DIVE # 553	TRANSECT # PB24

	Start	End
Date & Time	14/07/2018 18:24:15	14/07/2018 20:01:06
Latitude/ Longitude	52.00729683, -15.139399	52.01604117, -15.14318
Depth	-2251.5	-2174.6
Images	IMG_4878-IMG_IMG_4805.JPG	
Samples	1 x pushcore (19:55:00)	

Location	PB24, Porcupine Bank
Target Features	NPWS selected
Depth Range	-1850, -2200

Maps of Dive
OFOP BMP and/or GIS Maps

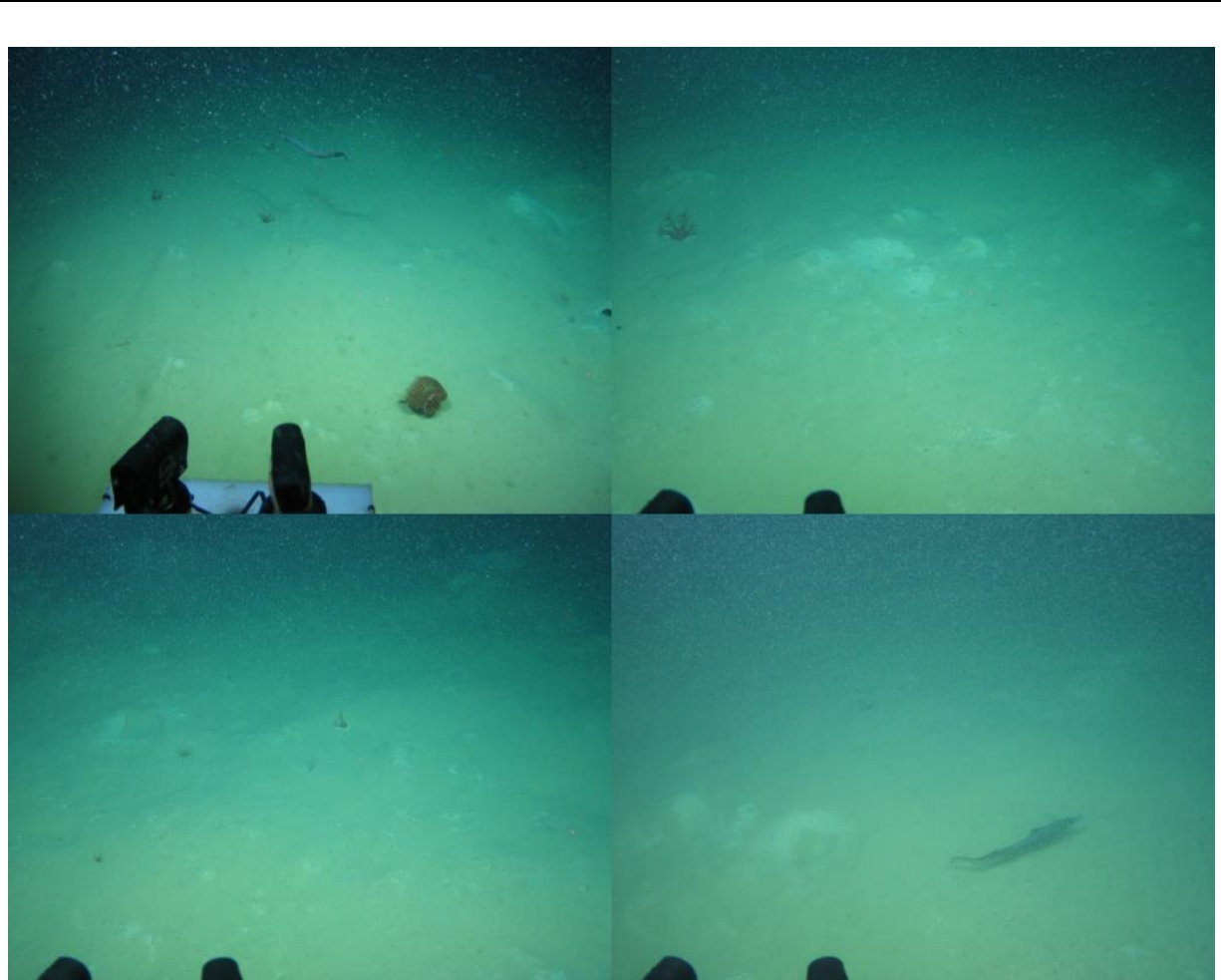
DIVE SUMMARY



Representative Images

(Images representative of major biotores, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Anthoptilum sp OTU1120 on muddy slope with occasional *Anthomastus grandiflorus* OTU278 (M.AtUA.Mu).

Top R. *Anthomastus grandiflorus* OTU278 on muddy moderate upslope (M.AtUA.Mu).

Bottom L. Pennatulacea (indet) OTU1114 and Ceriantharia OTU2 co-dwell on muddy sediment (M.AtUA.Mu).

Bottom R. Suspended sediment was present throughout the transect, at times vision was obscured or poor. Halosauridae sp OTU1113 captured in this picture (M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 18:24. The whole transect is set on muddy sediment on gentle upslope and moderate upslope. No hard substrata encountered. [1] Muddy sediment with dominant *Peniagone* sp until 18:34 [2] *Anthomastus grandiflorus* and *Peniagone* sp co-dominate. 18:50 [3] Now Pennatulacea (indet) and *Anthomastus grandiflorus* co-dominate. 19:11 Mud cloud/vision obscured. 19:54 ROV stops for sampling 1 pushcore until **END OF HD VIDEO AT 20:01.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	- Mud		
Geomorphology/Features	Slope		
Annex 1 Types	n/a		
Pressures	1 x plastic bag (18:27:30)		

Biological Data	
Number of Species	28
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
654	Molva molva	L	R
1074	Alepocephaliformes sp1 (cfRouleina attrita)	L	R
1060	cf Halipteris sp	L	R
433	Pseudarchaster sp1 (giant)	L	R
581	Umbellula sp	L	R
1113	Halosauridae sp	L	R
552	Polyacanthonotus rissoanus	L	R
1159	Rajuformes (indet)	L	R
349	Mora moro	L	R
258	Brosme brosmo	L	R
1108	Distichoptilum gracile	L	R
577	Coryphaenoides guentheri	M	R
278	Anthomastus grandiflorus	M	R
551	Ophiomusa lymani	M	R
1106	Eucarida sp	M	R
254	Chaceon affinis	M	R
235	Bathynectes sp	M	R
984	cf Halcampoididae sp	M	R
1103	Democrinus sp	M	R
555	Phormosoma placenta	M	R
585	Acanella arbuscula (bushy)	M	R
1167	Peniagone sp	S	R
1191	Pennatulacea sp (submergedAxis)	S	R
1077	Caridea (indet)	S	R
2	Ceriantharia	S	R
1114	Pennatulacea (indet)	S	R
1144	Galacantha sp	S	R
1129	cf Echinus (deepPinkSpine)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu.HolCom	Holothurian dominated community on Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)

DIVE SUMMARY

M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu.HolCom	
	1167 Peniagone sp	
2	M.AtUA.Mu	
	278 Anthomastus grandiflorus, 1167 Peniagone sp	
3	M.AtUA.Mu	
	1114 Pennatulacea (indet), 278 Anthomastus grandiflorus	

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> Plastic bag on the sea floor.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 554	TRANSECT # PB11

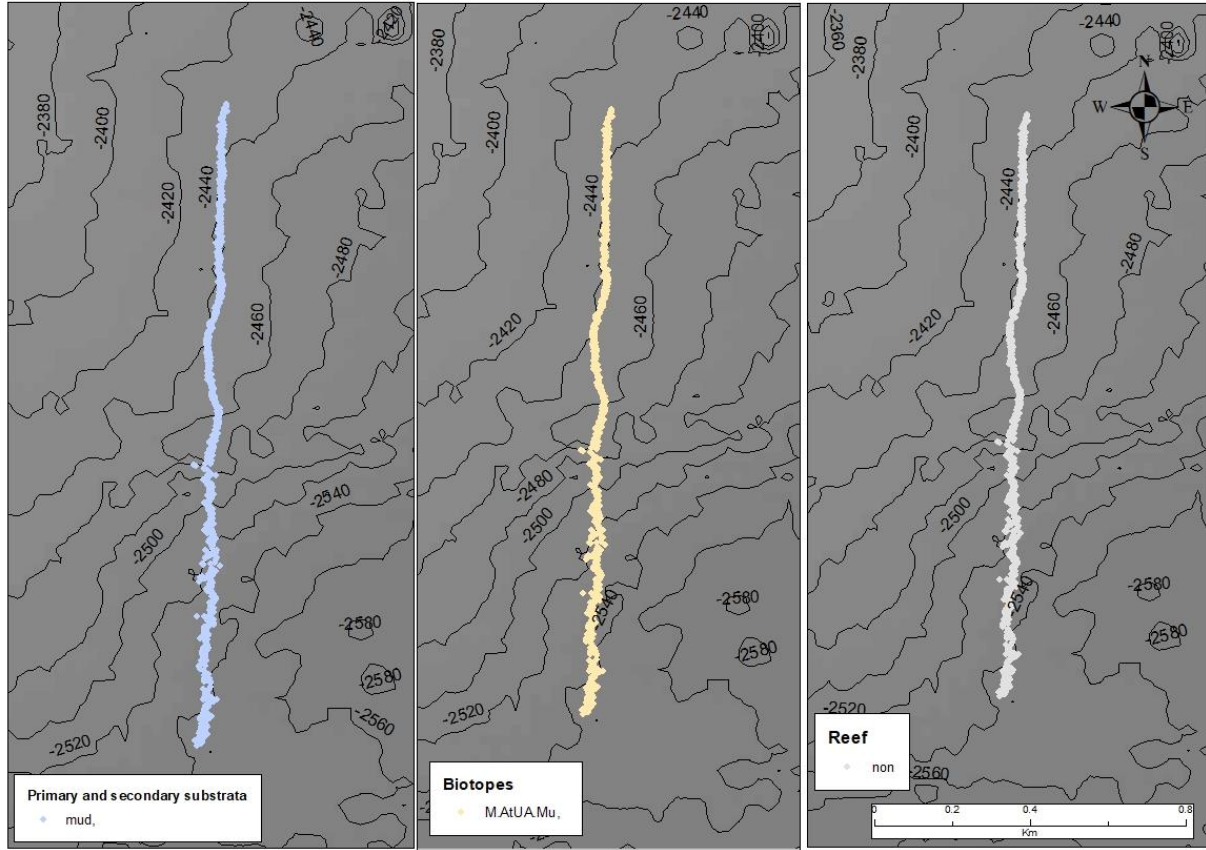
	Start	End
Date & Time	15/07/2018 02:25:04	15/07/2018 04:21:01
Latitude/ Longitude	51.8391233,-15.29072433	51.8524983, -15.29012533
Depth	-2531.6	-2417.3
Images	IMG_4879-IMG_5446.JPG	
Samples	2 x scleractinians (02:32:00)	

Location	PB11
Target Features	Straddles SAC, depth, mound wall
Depth Range	-2360, -2540

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Dive 554, PB11



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Scleractinians on muddy sediment. ROV stops for sampling scleractinians (M.AtUA.Mu).

Top R. Caryophyllia sp5 (bullseye) OTU584 seafloor on muddy sediment (M.AtUA.Mu).

Bottom L. *Coryphaenoides rupestris* OTU566 swimming on muddy sediment (M.AtUA.Mu).

Bottom R. Muddy sediment with rare/sparse epifauna with elliptical marks (poss fauna marks) (M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 02:25. Muddy sediment on gentle/moderate slope throughout the entire dive. Sparse and rare epifauna, including many species of Actinopterygii and a few isolated scleractinians. Therefore, the dive is characterized by a single type of sediment and infauna are likely to dominate, however the latter is far from video analysis possibilities. 02:25 ROV samples 2 pushcores. 02:32-02:47 ROV stops for sampling of 2 scleractinians. 02:56 ROV stops for imagery. Vision obscured/mud cloud. 03:33 Possible trawling marks. **END OF HD VIDEO AT 04:21.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	- Mud		
Geomorphology/Features	Slope		
Annex 1 Types	n/a		
Pressures	n/a		

Biological Data	
Number of Species	18
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1060	cf Halipteris sp	L	R
249	Lepidion eques	L	R
1067	Laucoraja sp	L	R
1111	Cataetyx laticeps	L	R
TBC	Actinopterygii	L	R
566	Coryphaenoides rupestris	L	R
577	Coryphaenoides guentheri	M	R
1063	Neolithodes grimaldii	M	R
551	Ophiomusa lymani	M	R
299	Pterasteridae sp	M	R
6	Caryophyllia sp	S	R
1130	Scleractinia sp (mudButterfly)	S	R
1144	Galacantha sp	S	R
2	Ceriantharia	S	R
1056	Flabellum sp	S	R
1106	Eucarida sp	S	R
584	Caryophyllia sp5 (bullseye)	S	R
950	Rhodaliidae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Mu
	n/a

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

DIVE SUMMARY

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 555	TRANSECT # PB25

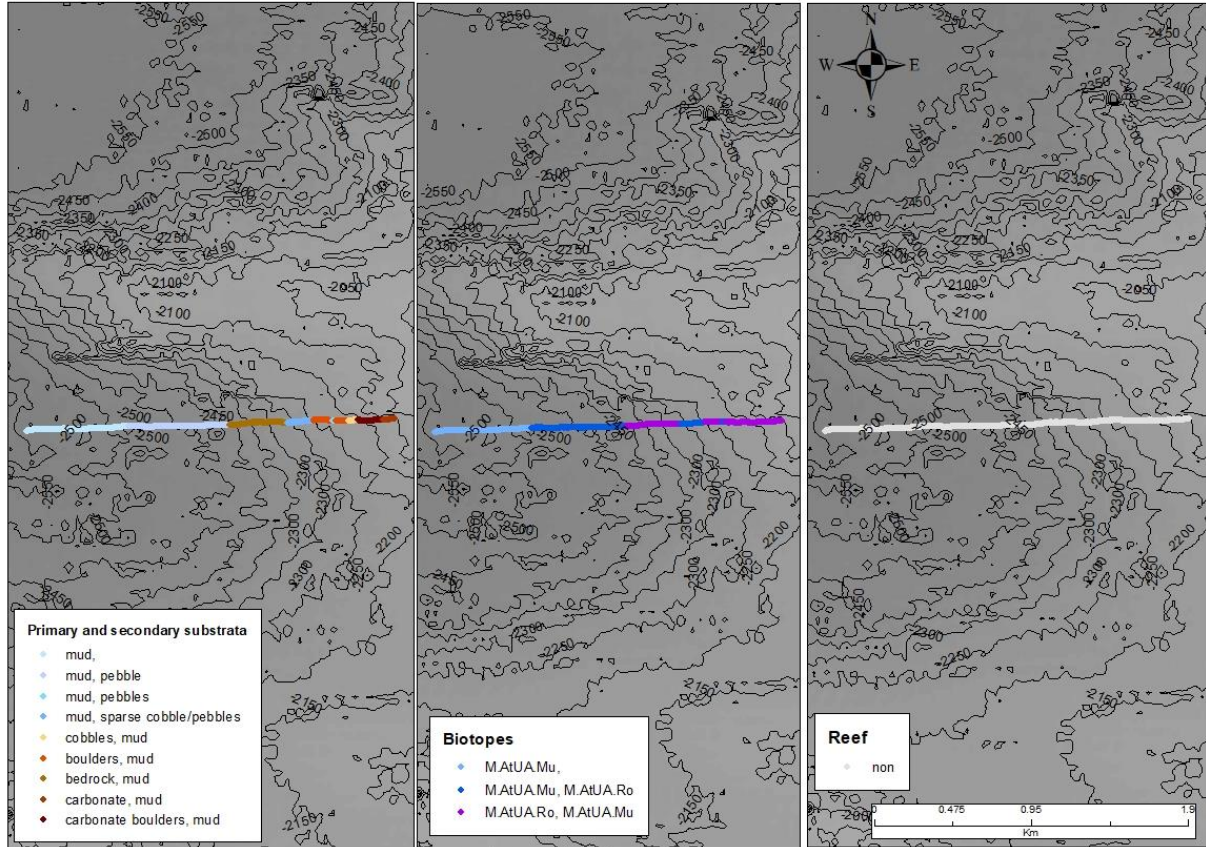
	Start	End
Date & Time	15/07/2018 09:47:36	15/07/2018 12:18:15
Latitude/ Longitude	51.8014027, -15.2187033	51.8022761, -15.19848867
Depth	-2536.468	-2010.03
Images	IMG_5447-IMG_5974.JPG	
Samples	n/a	

Location	PB25
Target Features	NPWS selected
Depth Range	-1700, -2500

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

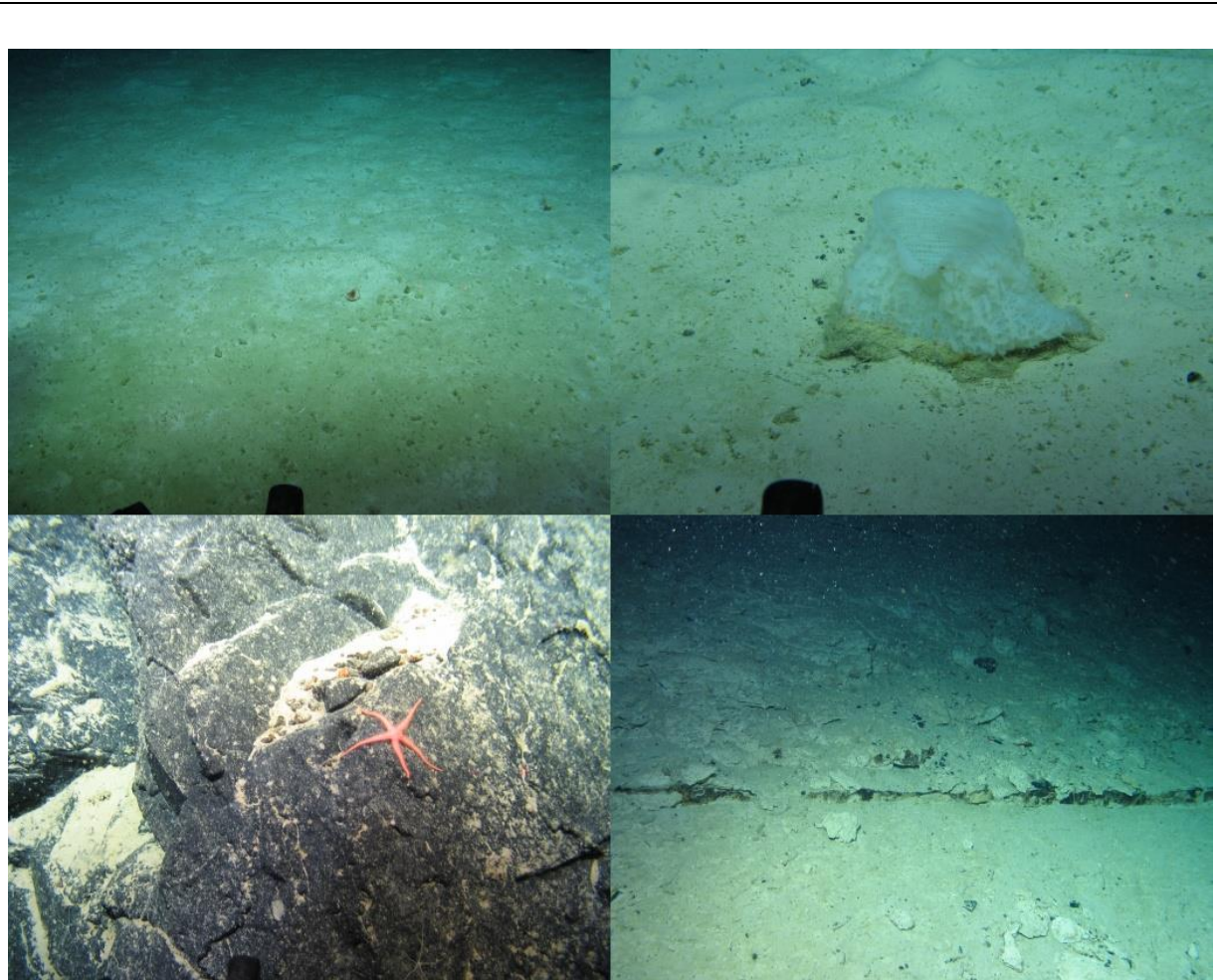
Dive 555, PB25



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Scleractinian on muddy sediment (M.AtUA.Mu).

Top R. *Geodia atlantica* OTU1205 (TBC) living on muddy sediment (M.AtUA.Mu).

Bottom L. *Stichastrella rosea* OTU198 dwelling on mud veneered bedrock (M.AtUA.Ro; M.AtUA.Mu).

Bottom R. Carbonate bedrock and occasional pebbles with scarce epifauna (M.AtUA.Ro; M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO 'A' STARTS AT 09:47. Marine snow present throughout the entire transect. [1] Muddy sediment on gentle upslope. Various species of isolated scleractinian present. Sparse epifauna. Throughout the dive,. 09:56 ROV stops for imagery of echinodermata. 09:57 Mud Cloud/vision obscured. 10:00 ROV stops for imagery of anemone and dead sponge. 10:02 a few inlets on muddy sediment, possible fauna burrow. [2] 10:12 muddy sediment with dominant white echiuroidea (OTU1129). [3] 10:13 Now muddy/pebbles field with sparse epifauna. 10:16 ROV stops for imagery of *Distichoptilum gracile* with associated ophiuroid. 10:19 Here a large species of dead sponge. 10:22 ROV stops for imagery of unknown porifera vase (poss glass sponge). [4] 10:36 Now mosaic substrata, including exposed bedrock with patches of muddy sediment on steep wall. Bathyrcrinidae OTU1141 dominates on hard substrate, ophiuroidea OTU1076 on muddy sediment. [5] 10:41 Bedrock/cobbles/pebbles/mud on steep wall with crinoids and ophiuroids co-dominate. [6] 10:45 Bedrock and mud on vertical wall where crinoids and ophiuroids continue to dominate. 11:28 ROV stops of imagery of anemone OTU900. [7] 11:32 Here mud/sparse pebble/cobbles field with sparse Bathyrcrinidae. 11:34 ROV stops for imagery of corallimorphidae OTU43 and *Democrinus* OTU1103. [8] 11:43 boulders/cobbles/mud mosaic biotope with dominant crinoids and anemones. [9] 11:48 Mud/pebbles fields with sparse epifauna. [10] 11:49 Boulders/cobbles/mud with Bathypathes and crinoids. [11] 11:52 Here cobbles/mud with ophiuroids. [12] 11:54 Carbonate boulders/cobbles/mud. 11:57 Poor vision/suspended sediment/marine snow. [13] 12:05 Carbonate slope with stalked crinoids and antipatherians. 12:10 [14] Now carbonate vertical wall with inlets. Bathyrcrinidae and Stichopathes sp overhanging until **VIDEO 'A' ENDS AT 12:14.**

VIDEO 'B' STARTS AT 12:16. Carbonate bedrock/terrace with sparse cobbles. Stichopathes sp and *Anthomastus grandiflorus* co-dominate. 12:17 Thick marine snow. **VIDEO 'B' ENDS AT 12:18.**

N.B. In this dive, large fish species (up to a 1 m in length – ID to be confirmed) observed.

N.B. Unknown species of fluffy tufts are present as well as 'fairy rings' on the sea floor

Physical Data		
Reef (types can be concurrent)	0% reef	0% geogenic
		0% biogenic
		n/a
		n/a
Substrates	<ul style="list-style-type: none"> - Mud - Sparse cobble/pebbles - Pebbles - Cobbles - Boulders - Carbonate - Carbonate boulders - Bedrock/cobbles - Bedrock 	

DIVE SUMMARY

Geomorphology/Features	Slope Terrace Vertical wall Wall
Annex 1 Types	<ul style="list-style-type: none"> - Pebble field - Pebble/cobble fields - Cobble fields - Boulder field - Sloping carbonate - Sloping rock - Sloping rock, cobble fields - Vertical rock wall - Vertical/horizontal ledges (carbonate)
Pressures	n/a

Biological Data

Number of Species

75

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting sp1 white	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
TBC	Asteroidea sp	L	R
1141	Bathyrinidae sp	L	R
328	Bathypathes sp1	L	R
274	Brisingiidae	L	R
289	cf Clavulariidae sp	L	R
1108	Distichoptilum gracile	L	R
TBC	Geodia atlantica	L	R
1166	Guttigadus latifrons	L	R
1160	Lepidion cf guentheri	L	R
1003	Nezumia aequalis	L	R
552	Polyacanthonotus rissoanus	L	R
573	Solaster endeca	L	R
547	Stauropathes arctica	L	R
560	Stichopathes sp	L	R
900	Actiniaria sp21	M	R
278	Anthomastus grandiflorus	M	R
TBC	Asteroidea sp	M	R
1041	Bathyrinidae sp1	M	R
1045	Bathyrinidae sp2 cf Porphyrocinus thalassae	M	R
432	Benthogone sp	M	R
267	Bonellia viridis	M	R

DIVE SUMMARY

1008	Chrysogorgiidae sp1	M	R
1059	Colossendeis sp	M	R
1103	Democrinus sp	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	R
TBC	Forcipulatida	M	R
601	Geodia cf baretti	M	R
432	Holothuroidea cf Laetmogone (pinkWhite)	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
TBC	Holothuroidea sp	M	R
1190	Holothuroidea sp (muddy)	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
536	Mesothuria intestinalis	M	R
1153	Oneirophanta mutabilis	M	R
551	Ophiomusa lymani	M	F
1076	Ophiuroidea sp (indet)	M	R
1075	Porifera cylindrical sp	M	R
433	Pseudarchaster sp1	M	R
299	Pterasteridae sp	M	R
1148	Serpulidae sp (black)	M	R
1061	Solasteridae sp 1	M	R
581	Umbellula sp	M	R
1156	Porifera lamellate (bubbles)	Mass	R
585	Acanella arbuscula (bushy)	S	R
605	Actinaria sp20	S	R
907	Actinaria sp24	S	R
1066	Adamia sp (PaguridaeAssoc)	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R
584	Caryophyllia sp5 (bullseye)	S	O
2	Ceriantharia	S	R
1129	cf Echinus (deepPinkSpine)	S	F
43	Corallimorphidae sp2	S	R
577	Coryphaenoides guentheri	S	R
131	Crinoidea sp1	S	R
194	Echinidae sp (pink)	S	R
1106	Eucarida sp	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1056	Flabellum sp	S	O
1144	Galacantha sp	S	R
1154	Henricia sp (deep)	S	R
56	Hydrozoa flat branched	S	R
621	Hypsogastropoda	S	R
277	Margarites sp1	S	R
1036	Ophiuroidea sp11	S	R
1191	Pennatulacea sp (submergedAxis)	S	R
442	Kophobelemnon stelliferum	S	R
33	Polyplacophora sp	S	R
106	Serpulidae sp1	S	R
TBC	Solasteridae sp (white)	S	R
198	Sticharella rosea	S	R
261	Syringammina fragilissima	S	R

DIVE SUMMARY

Biotope List (Marine Habitat Classification for Britain & Ireland)		
Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Carbonate mounds (OSPAR)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu	
	Scleractinia	
2	M.AtUA.Mu	
	1129 cf Echinus sp	
3	M.AtUA.Mu; M.AtUA.Ro	
	551 Ophiomusa lymani	
4	M.AtUA.Ro; M.AtUA.Mu	
	1141 Bathycrinidae, 1076 Ophiuroidea (indet)	
5	M.AtUA.Ro; M.AtUA.Mu	
	1141 Bathycrinidae, 1076 Ophiuroidea (indet)	
6	M.AtUA.Ro; M.AtUA.Mu	
	1141 Bathycrinidae, 1076 Ophiuroidea (indet)	
7	M.AtUA.Mu; M.AtUA.Ro	
	1141 Bathycrinidae	
8	M.AtUA.Ro; M.AtUA.Mu	
	1141 Bathycrinidae, 605 Actiniaria sp20	
9	M.AtUA.Mu; M.AtUA.Ro	

DIVE SUMMARY

	n/a
10	M.AtUA.Ro; M.AtUA.Mu
	1076 Ophiuroidea (indet)
11	M.AtUA.Ro; M.AtUA.Mu
	1076 Ophiuroidea (indet)
12	M.AtUA.Ro; M.AtUA.Mu
	n/a

Conservation Targets

Listed Habitats Encountered

Name

Authority

Mud and sand emergent fauna

ICES

Carbonate mounds

OSPAR

Listed Species Encountered (Fish, Count)

n/a

OSPAR/IUCN

Additional Comments

n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 556	TRANSECT # PB14

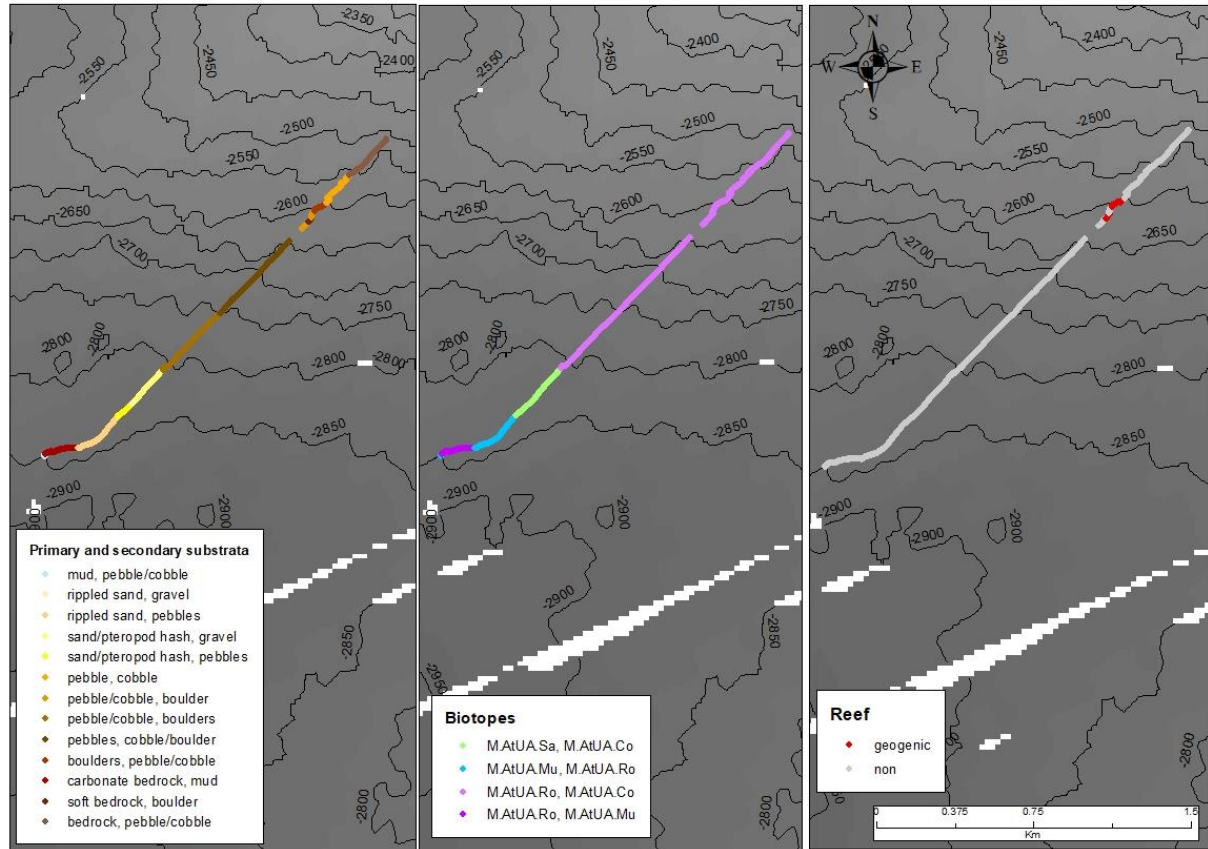
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Date & Time	15/07/2018 19:22:41	15/07/2018 17:28:18
Latitude/ Longitude	51.6511964, -15.2696297	51.6554385,-15.26562313
Depth	-2617.007	-2490.805
Images	IMG_5975-IMG_6444.JPG	
Samples	n/a	

Location	PB14
Target Features	Very deep rise
Depth Range	-2100, -2800

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

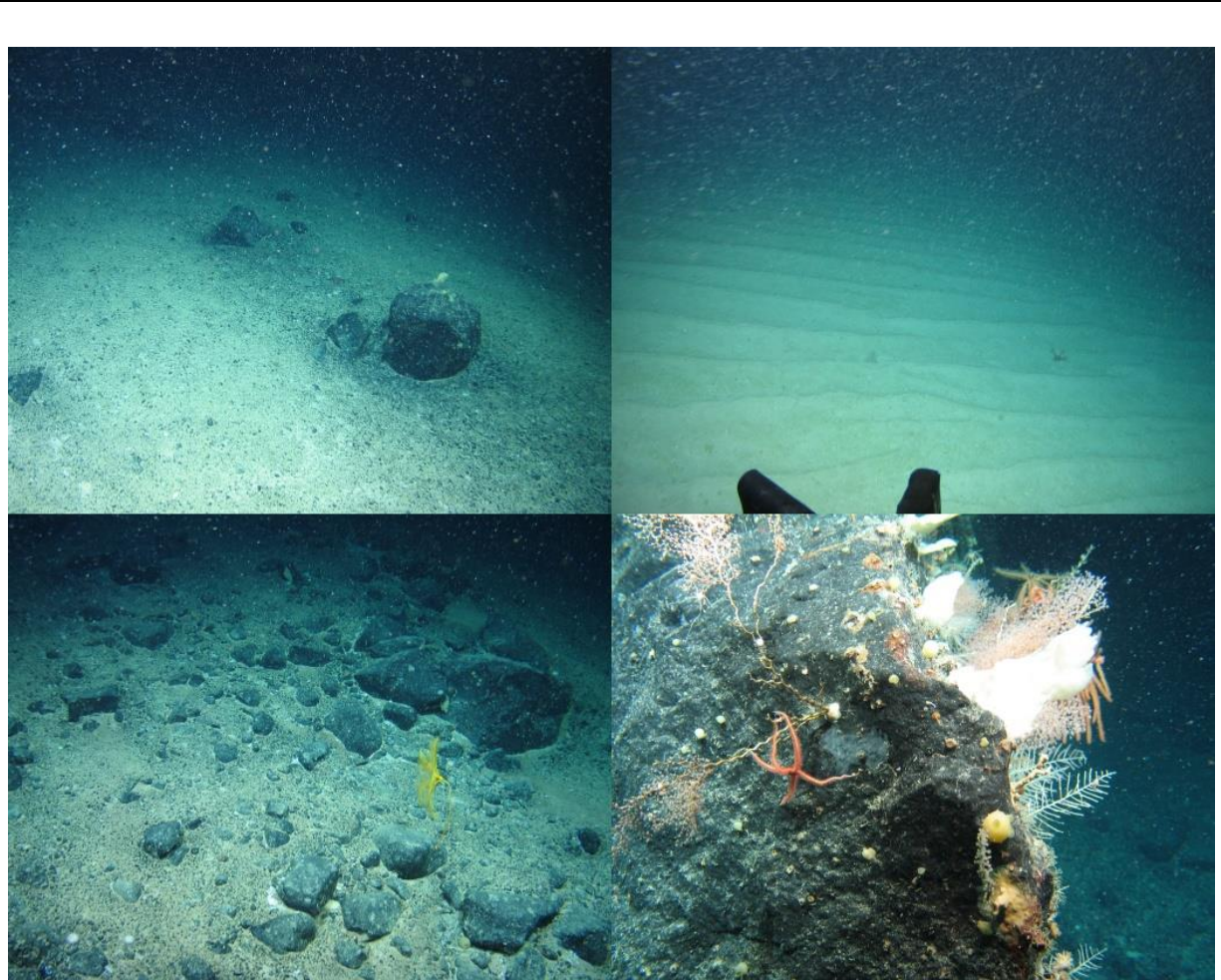
Dive 556, PB14



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Boulders on pebble/cobble fields with sparse epifauna including encrusted sponges (M.AtUA.Ro; M.AtUA.Mu).

Top R. Rippled sand with occasional *Anthomastus grandifloras* OTU278 (M.AtUA.Sa).

Bottom L. *Anachalypsicrinus nefertiti* OTU1031 anchored to boulder on gentle upslope and surrounded by cf *Echinus* (deepPinkSpine) OTU1129 on gravel/cobbles (M.AtUA.Ro).

Bottom R. Epifaunally diverse shot found on boulder. Species comprise Chrysogorgiidae sp OTU1008, Hydrozoa flat branched OTU56 and poss new yellow sponge/tunicate species (TBC) (M.AtUA.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO 'A' START AT 17:25. Thick marine snow throughout the whole transect. [1] Muddy/sperse pebbles/cobbles with Brisingidae. Mainly sparse epifauna. 17:30 [2] Here carbonate horizontal ledges/carbonate slope on gentle slope; though mud/cobble/pebble continue. 17:35 [3] Here rippled sand start to predominate on steep uphill. 17:46 Pebble fields become more frequent. 17:47 [4] Sand mixed with pteropod hash is abundant. 17:54 [5] Now rippled sand/gravel sediment. 17:55 [6] Sand/pteropod hash frequently recorded with occasional cobbles/boulders. 18:10 [7] Sand/pteropod hash/pebble/cobble/boulder. Sparse epifauna including glass sponges, starfish and Chrysogorgiidae sp1. 18:11-18:15 ROV stops for imagery of Chrysogorgiidae sp1 OTU1008. 18:43 [8] Gravel/pebble/cobbles with dominant sea urchin OTU1129 and frequent stalked crinoids OTU1031. 19:06 Exposed rock crust. 19:10-19:12 ROV stops for imagery of Isididae sp OTU1064. 19:21 Now soft bedrock exposed/pebbles/cobbles with dominant stalked crinoids OTU1031. **VIDEO 'A' ENDS AT 19:22.**

VIDEO 'B' STARTS AT 19:24. [9] Stalked crinoids, feather stars and Brisingidae OTU274 dwelling on pebble/cobble/boulder up slope. Marine snow is present in this dive. 19:26 ROV approaches the edge of this flat/gentle slope where geomorphological features include exposed soft boulders and vertical edges, as well as dense cobble/boulder fields. Brisingidae OTU274 is frequent. 19:27 [10] Vertical soft boulders/bedrock surrounded by pebble/cobble fields. Brisingidae and *Koehlermetra porrecta* are occasionally/frequently encountered. 19:29 ROV is moving 45 degrees to the left, leaving the edge of the bedrock and going upslope. [11] Pebble/cobble/boulder continue in this part of the transect. *Ophiomusa lymani* OTU551 is dominant. 19:31 [12] ROV reaches the edge of the slope with soft corals and stalked crinoids hanging from the edge. Then the ROV descends on a lower level where sediments are predominantly pebble/cobble/boulder. On boulders, encrusting sponges, Chrysogorgiidae sp1 and hydrozoa co-dominate. 19:34-19:39 ROV stops for imagery of Chrysogorgiidae sp1 and encrusting sponges. 19:41 [13] Dense pebble/cobble fields with dominant *A.nefertiti*. 19:44-19:52 ROV stops for imagery of Stauropathes sp. 20:07 [14] Soft bedrock exposed with pebble/cobble fields. *A.nefertiti* and *K.porrecta* co-dominate. 20:21 Fishing rope on the seafloor. 20:24 ROV samples one pushcore until **VIDEO 'B' ENDS AT 20:28.**

Physical Data		
Reef (types can be concurrent)	<15% reef	100% geogenic
		0% biogenic
		n/a
Substrates	<ul style="list-style-type: none"> - Mud - Rippled sand - Sand/pteropod hash - Gravel - Pebble - Pebble/cobble - Cobble/boulder - Boulders - Carbonate bedrock 	

DIVE SUMMARY

Geomorphology/Features	Continental slope
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble field - Pebble/cobble/boulder field - Horizontal ledges (carbonate)
Pressures	1 x fishing rope (20:21)

Biological Data

Number of Species

45

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting sp1 white	Crust	R
105	Porifera encrusting sp18 cream	Crust	R
274	Brisingidae	L	F
1008	Chrysogorgiidae sp1	L	O
TBC	Crinoidea	L	R
1160	Lepidion cf guentheri	L	R
1012	Notacanthiformes sp1	L	R
1020	Phycis bienoides	L	R
422	Porifera lamellate sp7	L	R
554	Actinernus sp	M	R
1031	Anachalypsicrinus nefertiti	M	R
278	Anthomastus grandiflorus	M	R
1173	Asteroidea (cfCeramaster Hymenaster redPink)	M	R
235	Bathynectes sp	M	R
284	Bathypathes sp (brown)	M	R
328	Bathypathes sp1	M	R
1200	cf Chrysogorgiidae	M	R
577	Coryphaenoides guentheri	M	R
1094	Echinothuroidea sp (purple)	M	R
1138	Eucaridea sp2 (redDeep)	M	R
1179	Holothuroidea sp (pinkDeep)	M	R
56	Hydrozoa flat branched	M	R
1064	Isididae sp (fineBranching)	M	R
315	Koehlermetra porrecta	M	R
536	Mesothuria intestinalis	M	R
349	Mora moro	M	R
551	Ophiomusa lymani	M	R
1075	Porifera cylindrical sp	M	R
1156	Porifera lamellate (bubbles)	M	R
433	Pseudarchaster sp1	M	R
1115	Pterasteridae sp	M	R
204	Reteporella sp1	M	R
547	Stauropathes arctica	M	R
1208	Stauropathes sp2	M	R
1212	Stylocordyla borealis	M	R
581	Umbellula sp	M	R
1090	Porifera tubular glassy (cfFarreidae)	Mass	R
605	Actinaria sp20	S	R
1186	Asteroidea (cf Spinulosida)	S	R
6	Caryophyllia	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1144	Galacantha sp	S	R
628	Holothuroidea sp4 (cf Amperima)	S	R
1003	Nezumia aequalis	S	R
81	Porifera lamellate lobose	S	R

DIVE SUMMARY

Biotope List (Marine Habitat Classification for Britain & Ireland)		
Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)
M.AtUA.Co	Atlantic upper abyssal coarse sediment	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu; M.AtUA.Ro	
	274 Brisingidae	
2	M.AtUA.Ro; M.AtUA.Mu	
	274 Brisingidae, 1064 Isididae (fineBranching)	
3	M.AtUA.Mu; M.AtUA.Ro	
	278 Anthomastus grandiflorus	
4	M.AtUA.Sa; M.AtUA.Co	
	278 Anthomastus grandiflorus, 628 Holothuroidea sp4 (cf Amperima)	
5	M.AtUA.Sa; M.AtUA.Co	
	278 Anthomastus grandiflorus	
6	M.AtUA.Sa; M.AtUA.Co	
	551 Ophiomusa lymani	
7	M.AtUA.Ro; M.AtUA.Co	

DIVE SUMMARY

	1008 Chrysogorgiidae sp1, 274 Brisingidae, 1129 cf Echinus sp (deepPinkSpine)
8	M.AtUA.Ro; M.AtUA.Co
	274 Brisingidae, 1031 Anachalypsicrinus nefertiti
9	M.AtUA.Ro; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti, 274 Brisingidae, 315 Koehlermetra porrecta
10	M.AtUA.Ro; M.AtUA.Co
	274 Brisingidae, 315 Koehlermetra porrecta
11	M.AtUA.Ro; M.AtUA.Co
	551 Ophiomusa lymani
12	M.AtUA.Ro; M.AtUA.Co
	1008 Chrysogorgiidae sp1, 1031 Anachalypsicrinus nefertiti, 56 Hydrozoa flat branched
13	M.AtUA.Ro; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti
14	M.AtUA.Ro; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti, 315 Koehlermetra porrecta

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Coral gardens	ICES/OSPAR
- hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory
Listed Species Encountered (Fish, Count)	

DIVE SUMMARY

n/a		OSPAR/IUCN
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Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 557	TRANSECT # PB17

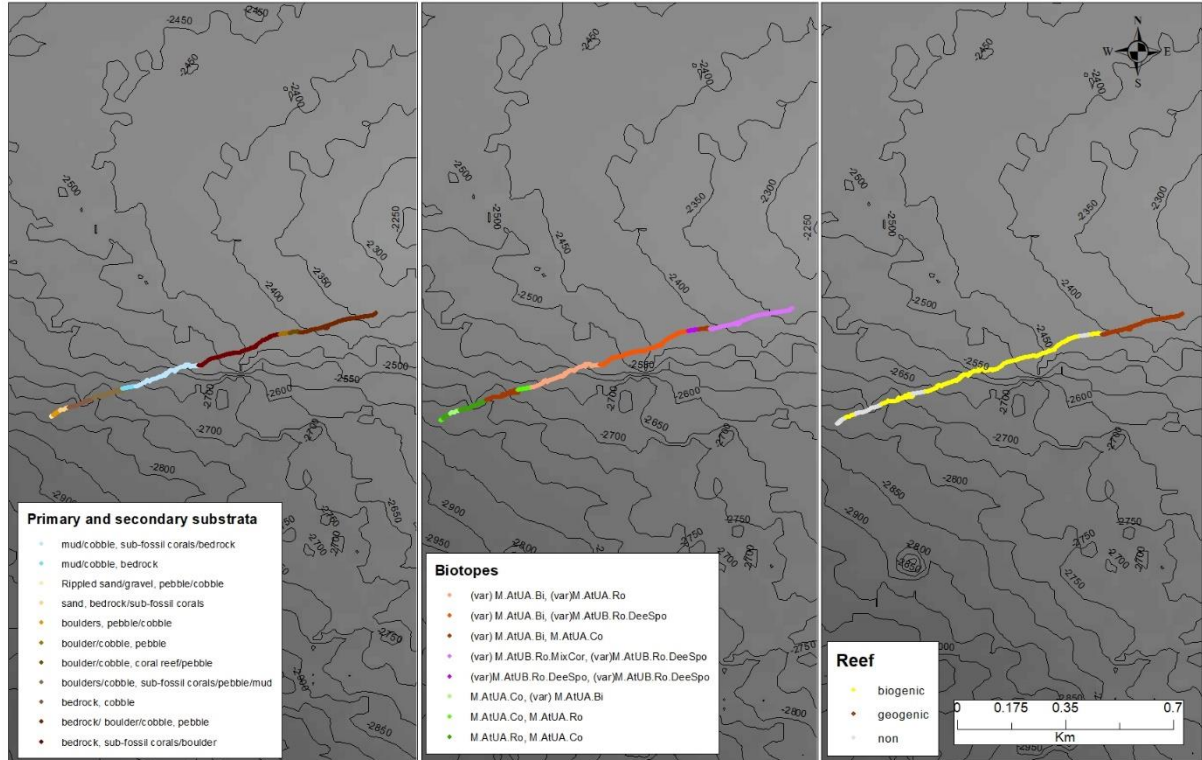
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Date & Time	16/07/2018 03:21:00	16/07/2018 06:17:05
Latitude/ Longitude	51.3485698, -15.2526512	51.3517769, -15.24259475
Depth	-2758.734	-2339.609
Images	IMG_6401-IMG_7574.JPG	
Samples	1 x sub-fossil corals	

Location	PB17
Target Features	Deep Canyon
Depth Range	-2200, -2700

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

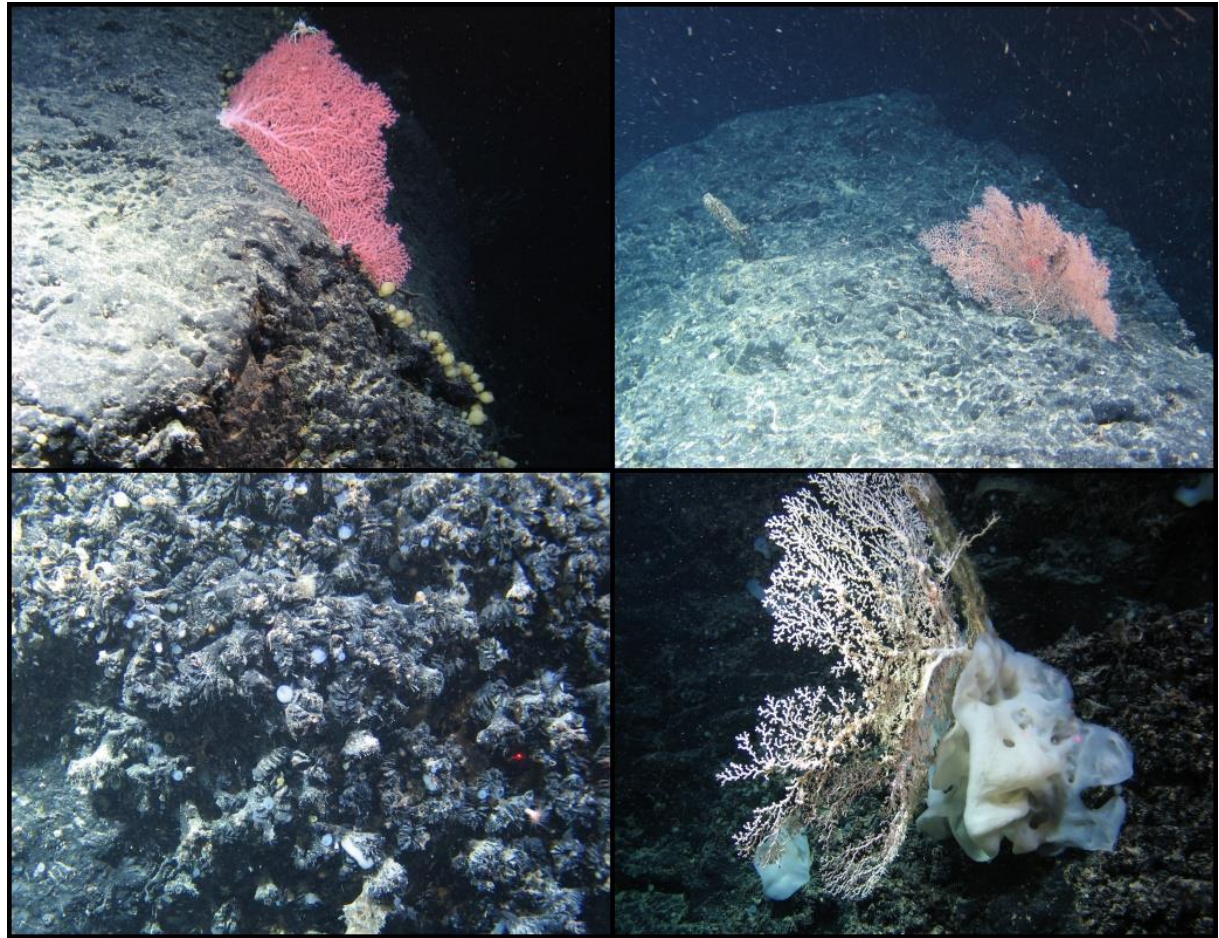
Dive 557, PB17



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. (Video A) *Corallium* sp OTU1202 and new sponge/tunicate species on mud veneered bedrock (M.AtUA.Ro).

Top R. New species of *cf* Chrysogorgiidae OTU1200 living on bedrock (M.AtUA.Ro).

Bottom L. (Video A) Peculiar record of sub-fossil solitary scleractinians on bedrock with glass sponge (poss OTU422) (M.AtUA.Ro).

Bottom R. (Video B) Epifaunally diverse spot with *Corallium* sp OTU1202 and *Asconema* sp OTU650 dwelling on sub-fossil corals ((var) M.AtUA.Bi).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO 'A' STARTS AT 03:21. Rippled sand/gravel/pebble/cobble sediments on moderate upslope where ROV samples two pushcores. 03:30 Large boulder with several species of epifauna, including *Bathypathes* sp, *Chrysogorgiidae* sp1 OTU1008 and glass sponges OTU650. 03:35 Mosaic sediment (sand and bedrock). 03:39 From this point, the bedrock is covered in sub-fossil *Caryophyllia* sp OTU6. 03:41 ROV is climbing a steep hill. Muddy sediment/pebble/cobbles with sparse epifauna including *Ophiomusa lymani* OTU551, small crabs (<10 cm wide) and sea urchins OTU1129. 03:46 boulders/cobble/pebble/mud on very steep slope. *Paragorgia*, anemones and encrusting sponges on hard substrate. 04:02 N.B. black and white coral framework, completely intact, lying on sea floor between boulders. 04:03 Steep vertical bedrock with sub-fossil solitary scleractinians and hanging *Paragorgia* individuals. 04:08 ROV reaches the vertical bedrock summit and hovers for imagery on sub-fossil scleractinians and sponges. 04:10 ROV descends on the ground. Here mosaic substrata including mud/cobbles/bedrock with sparse epifauna, mainly *Brisingidae* and *crinoidea* sp1 OTU131 on hard substrata. 04:16 ROV is climbing up a steep slope, mainly bedrock/cobbles/mud. *Crinoidea* sp1 on hard substrate. 04:19 ROV stops for imagery of two species of sponges. 04:25 ROV reaches the top of the steep slope and now another steep ground starts. Mosaic sediment of coral rubble/cobble/boulders. 04:26 ROV stops imagery of soft coral OTU1086. 04:37 ROV stops for imagery of antipatharian. 04:40 now bedrock/mud. Black coral bed. 04:41 Now again steep bedrock with sub-fossil scleractinians. *Chrysogorgiidae* sp1 OTU1008, *Phakellia ventilabrum* OTU202 and *Anachalypsicrinus nefertiti* OTU1031 co-dominate. 04:48-05:01 ROV stops for imagery and sampling of sub-fossil scleractinians. 05:01 ROV reaches the bedrock's summit and moves slowly. Here bedrock/cobble/gravel/mud. No scleractinians. 05:04 Black coral rubble/gravel/mud. 05:05 ROV climbs a steep bedrock covered in sub-fossil scleractinians and frequent glass sponges OTU650 encountered. 05:11-05:12 ROV stops for imagery of *Asconema* sp OTU650. 05:17 Very steep bedrock. Glass sponges and encrusted sponges dominate on hard substrata. 05:18 ROV stops for imagery of octopus. **VIDEO 'A' ENDS AT 05:22.**

VIDEO 'A' STARTS AT 05:24. ROV moves from one steep bedrock to the next. Steep bedrock, encrusted sponges, *A. nefertiti* and *Crinoidea* sp1 co-dominate. 05:28 ROV climbs steep bedrock. It reaches the top and still bedrock/boulder/cobbles with yellow encrusted sponges OTU58, *P. ventilabrum* and *A. nefertiti*. 05:31 Black coral rubble bed/pebbles. *A. nefertiti* and *Asconema* sp OTU650 co-dominate. 05:38 Dense boulder/cobble/pebble fields with many epifauna including *A. nefertiti*, unknown stalked sponges and yellow sponges. 05:39-05:43 ROV stops for imagery and sampling of stalked sponge. Sampling failed. 06:05 Vision obscured/mud cloud. 06:07 Sponge aggregations OTU422. 06:13 Pebble/cobble fields with occasional boulders/larger rocks. *A. nefertiti* and glass sponges co-dominate. 06:15 Large boulders/cobbles with many epifauna on hard substrata, mainly *A. nefertiti* and glass sponges OTU422. **VIDEO 'B' ENDS AT 06:17.**

Physical Data			
Reef (types can be concurrent)	85% reef	<15% geogenic	
		<85% biogenic	100% dead
			0% living

DIVE SUMMARY

Substrates	<ul style="list-style-type: none"> - Sand - Rippled sand/gravel - Mud/cobble - Pebble - Pebble/mud - Pebble/cobble - Coral rubble - Sub-fossil corals - Cobble/gravel/mud - Boulders/cobble - Boulder - Bedrock
Geomorphology/Features	<p>Wall</p> <p>Slope</p>
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Pebble/cobble fields - Pebble/cobble/boulder fields - Cobble/boulder fields - Boulder/bedrock - Bedrock fields - Vertical/sloping bedrock
Pressures	n/a

Biological Data	
Number of Species	53
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting sp1	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1031	Anachalypsicrinus nefertiti	L	O
284	Bathypathes sp (brown)	L	R
328	Bathypathes sp1	L	R
1008	Chrysogorgiidae sp1	L	F
1202	Corallium	L	R
249	Lepidion eques	L	R
557	Lepidisis sp	L	R
1065	Paragorgia (twiggy)(possSwiftia)	L	R
204	Reteporella	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1010	Porifera lamellate sp12 (prev_sp10)	L	R
422	Porifera lamellate sp7	L	R
TBC	Porifera vase	L	R
611	Rhabdodictyum cf delicatum (Porif mass lob sp21)	L	R
1043	Telopathes sp	L	R
554	Actinernus sp	M	R
478	Actiniaria sp13	M	R
650	Asconema sp (Porifera mass glob 14)	M	O
1041	Bathycrinidae sp1	M	R
280	Callogorgia verticillata	M	R
1086	cfThouarella sp	M	O
577	Coryphaenoides guentheri	M	R
TBC	Crinoidea	M	R
973	Graneledone verrucosa	M	R
1166	Guttigadus latifrons	M	R
1179	Holothuroidea sp (pinkDeep)	M	R
274	Hymenodiscus coronata or Brisinga endecacnemus	M	R
1194	Muusoctopus johnsonianus	M	R
1003	Nezumia aequalis	M	R
551	Ophiomusa lymani	M	R
1065	Paragorgia sp (deepPink)	M	R
202	Phakellia ventilabrum	M	R
TBC	Porifera	M	R
81	Porifera lamellate lobose	M	R
TBC	Stalked porifera	M	R
1208	Stauropathes sp2	M	R
1212	Stylocordyla borealis	M	R
605	Actiniaria sp20	S	R
132	Actinostolidae sp1	S	R
278	Anthomastus grandiflorus	S	R
6	Caryophyllia sp	S	F
1129	cf Echinus (deepPinkSpine)	S	R
285	Chyrostylidae sp	S	R
131	Crinoidea sp1	S	R
TBC	Encrusted sponges	S	R
TBC	Euryalida	S	R
601	Geodia cf baretti	S	R
1154	Henricia sp (deep)	S	R
1121	Majoidea sp	S	R
1076	Ophiuroidea sp (indet)	S	R
299	Pterasteridae sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

DIVE SUMMARY

Code	Name	Listed
M.AtUA.Co	Atlantic upper abyssal coarse sediment	
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	
(var) M.AtUA.Bi	(variant of) Atlantic upper abyssal biogenic structure	Cold-water coral reefs (ICES)
(var) M.AtUB.Ro.DeepSpo	(variant of) Deep sponge aggregation on Atlantic upper bathyal rock and other hard substrata	Deep sea sponge aggregations (ICES/OSPAR)
(var) M.AtUA.Ro	(stalked crinoids, sponges and corals on) Atlantic upper abyssal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Co; M.AtUA.Ro 328 Bathypathes sp1, 1008 Chrysogorgiidae sp1, 650 Asconema sp	
2	M.AtUA.Ro; M.AtUA.Co 328 Bathypathes sp1, 1008 Chrysogorgiidae sp1, 650 Asconema sp	
3	M.AtUA.Co; M.AtUA.Bi 328 Bathypathes sp1, 1008 Chrysogorgiidae sp1, 650 Asconema sp	
4	M.AtUA.Ro; M.AtUA.Co 551 Ophiomuseum lymani, 1129 cf Echinus sp, stalked sponge	
5	(var) M.AtUA.Bi; M.AtUA.Co 1065 Paragorgia, 131 Crinoidea sp1, 1 Porifera encrusting white	
6	M.AtUA.Co; M.AtUA.Ro	

DIVE SUMMARY

	274 Hymenodiscus coronata, 131 Crinoidea sp1
7	(var) M.AtUA.Bi; M.AtUA.Co
	1008 Chrysogorgiidae sp1, 202 Phakellia ventilabrum, 1031 Anachalypsicrinus nefertiti, 274 Hymenodiscus coronata, 131 Crinoidea sp1
8	(var) M.AtUA.Bi; (var) M.AtUB.Ro.DeeSpo
	1 Porifera encrusting white, 1031 Anachalypsicrinus nefertiti, 131 Crinoidea sp1
9	(var) M.AtUB.Ro.DeeSpo; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti, unknown stalked sponge, 58 Porifera encrusting sp15 yellow
10	(var) M.AtUA.Bi; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti, unknown stalked sponge, 58 Porifera encrusting sp15 yellow
11	(var) M.AtUA.Ro; (var) M.AtUB.Ro.DeeSpo
	1031 Anachalypsicrinus nefertiti, unknown stalked sponge, 58 Porifera encrusting sp15 yellow

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs	ICES	
Coral gardens:	ICES/OSPAR	
- Hard bottom coral gardens	ICES subcategory	
Deep-sea sponge aggregations	ICES/OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments

DIVE SUMMARY

- Sub-fossil solitary scleractinians on bedrock, which is a potential new habitat to add to the biotope classification.
- Black coral bed extending consistently across a wide patch.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 558	TRANSECT # PB27

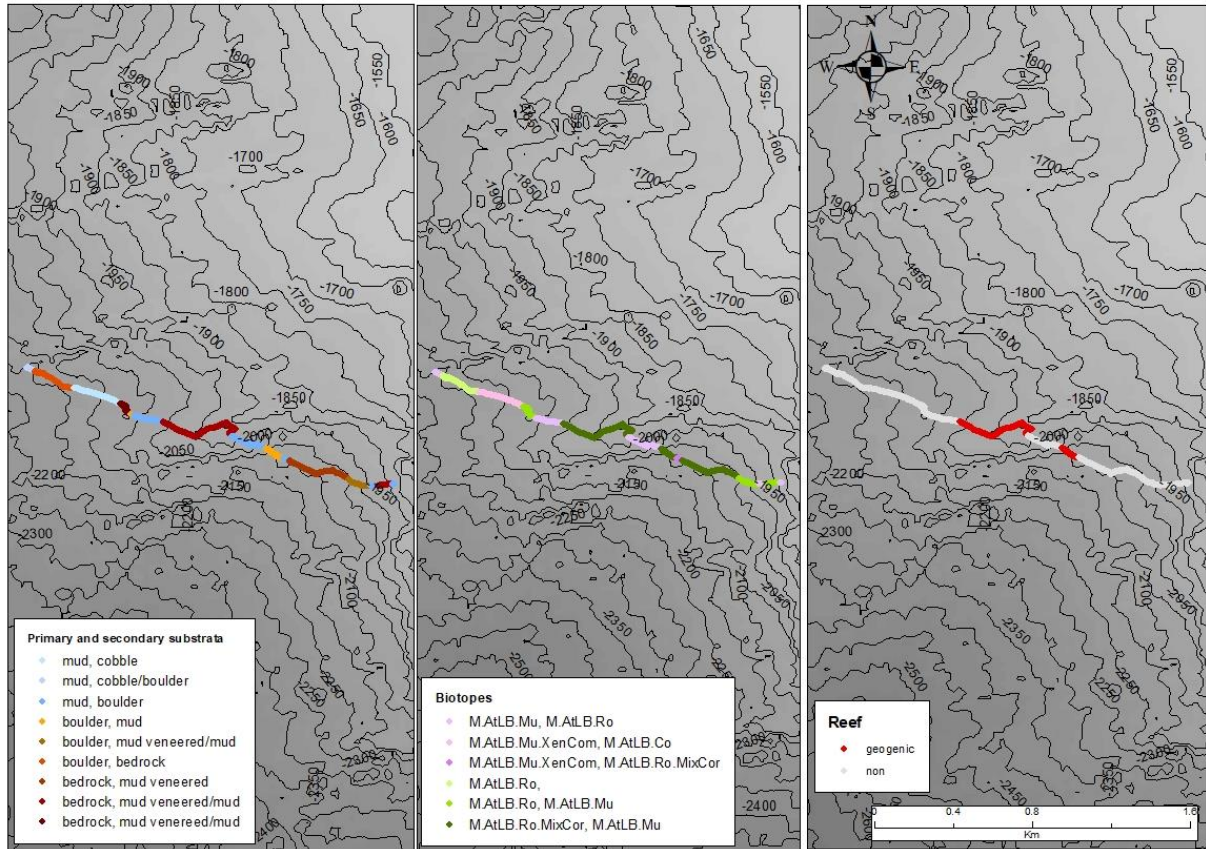
	Start	End
Date & Time	16/07/2018 11:23:38	16/07/2018 14:28:40
Latitude/ Longitude	51.1431664,-15.06253702	51.1379462, -15.04592033
Depth	-2113.27	-1791.306
Images	IMG_7578-IMG_7639.JPG	
Samples	1xLollipop sponge (13:24) 1xbivalve	

Location	PB27
Target Features	Deep Water, Midway, NPWS selected
Depth Range	-1500, -2100

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

Dive 558, PB27



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. (video A) Steep cliff of mud veneered bedrock. Sparse epifauna (M.AtLB.Ro ; M.AtLB.Mu).

Top R. Epifaunally diverse boulder with *Leiopathes* sp OTU305, *Anachalypsicrinus nefertiti* OTU1031 and *Bathypathes* sp OTU328 co-habiting (M.AtLB.Ro.MixCor).

Bottom L. (video A) Snapshot of bacterial mat sample covering the bedrock with *Bathypathes* sp and *Leiopathes* sp (M.AtLB.Ro).

Bottom R. (video B) Epifaunally diverse and rich bedrock biotope, which includes *Porifera* tubular glassy (cfFarreidae) OTU1090, *Crinoidea* sp1 OTU131 and *Stichopathes* sp OTU560. Abundant ophiuroids OTU1076 colonising the bedrock (M.AtLB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO 'A' STARTS AT 11:23. [1] Muddy sediment/cobbles/boulders, *A. nefertiti* and glass sponge OTU1010 living on rock on very steep slope. 11:25 Fairy rings on ground. 11:26 [2] Very steep boulders. Stalked crinoids OTU1045 and OTU1031 co-dominate. 11:27 ROV descends along the ridge. 11:28 While the ROV descends, camera shows water column. 11:29 Now vision back to the seafloor. ROV moves slowly while it continues to descend. 11:39 Water vision again. 11:42 ROV at the bottom. Vision normal again. 11:47 Water column again. 11:49 Vision back to normal. 11:49 [3] muddy sediment with foraminifera fields. 11:50 [4] here large boulders with *A. nefertiti* dominant. 11:50 water vision again while ROV moves down slope. 11:52 [5] Muddy sediment with sparse epifauna including *Ceriantharia* sp OTU1069 and *Phormosoma placenta* OTU555. 12:00 ROV stops for imagery of *Pheronema carpenteri* OTU347. 12:06 [6] Now boulder/mud. *A. nefertiti* and glass sponge OTU1010 co-dominate. 12:17 Boulder covered in ophiuroids. 12:20 ROV stops for imagery of *P. carpenteri*. 12:36 water vision again. 12:37 vision back to the seafloor. 12:44 water vision again. 13:01 camera back to the seafloor. 13:02 [7] Muddy sediment/boulders. Hard substrate dominated by *Leiopathes* sp and *Bathypathes* sp. 13:06 Marine snow vision again. 13:11 vision normal again. [8] Large boulder where *A. nefertiti* and glass sponges co-dominate. 13:13 No hard substrata from here. [9] Muddy sediment with foraminifera. 13:24-13:30 ROV stops for imagery and sampling of Lollipop sponge (unknown species). 13:36 [10] vertical wall/bedrock with Crinoidea sp1 and *Democrinus* sp OTU1103. 13:37 Here striking encounter of Hydrozoa or Bacteria grown or covering over fossilized coral. **VIDEO 'B' ENDS AT 13:41.**

VIDEO 'B' STARTS AT 13:43. [11] Epifaunally diverse including glass sponges OTU576, *A. nefertiti* and feather stars OTU131. Mosaic sediment including mud and bedrock. 13:49 [12] Now *Leiopathes* sp, *A. nefertiti* and crinoids co-dominate on large boulder/bedrock. 13:51 ROV stops for imagery of octopus. 13:59 Juvenile sponge aggregation (unknown species). 13:59 [13] Mosaic again, mud and bedrock on very steep/vertical wall. 14:02 ROV stops for imagery and sampling of bivalve. 14:09 [14] Here vertical wall, muddy sediment with abundant boulders. *Leiopathes* and *A. nefertiti* on hard substrate. 14:16 Now ROV climbs n epifaunally diverse steep slope/vertical wall, including sponges, crinoids and soft corals. Bacterial mat on bedrock is present. 14:26 ROV reaches the top of the bedrock where hard substrate is covered in mud. **VIDEO 'B' ENDS AT 14:28.**

N.B. Small *Polyacanthonotus rissoanus* recorded by *A. nefertiti* field.

Physical Data			
Reef (types can be concurrent)	25% reef	100% geogenic	
		0% biogenic	n/a
		n/a	
Substrates	<ul style="list-style-type: none"> - Mud - Mud veneered - Cobble - Cobble/boulder - Boulder 		

DIVE SUMMARY

	- Bedrock
Geomorphology/Features	Slope Steep slope Vertical wall
Annex 1 Types	- Cobble fields - Cobble/boulder - Boulder - Boulder/bedrock - Bedrock
Pressures	n/a

Biological Data

Number of Species

64

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1031	Anachalypsicrinus nefertiti	L	O
20	Asciacea sp2 (clear)	L	R
1045	Bathycrinidae sp2 cf Porphyrocinus thalassae	L	R
1111	Cataetyx laticeps	L	R
TBC	Cephalopoda	L	R
1059	Colossendeis sp	L	R
1105	Coryphaenoides armatus	L	R
601	Geodia cf baretii	L	R
1039	Hydrolagus cf affinis	L	R
305	Leiopathes sp	L	O
557	Lepidisis sp	L	R
536	Mesothuria intestinalis	L	R
551	Ophiomusa lymani	L	R
1161	Parantipathes sp (branching)	L	R
552	Polyacanthonotus rissoanus	L	R
1075	Porifera cylindrical sp	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1010	Porifera lamellate sp12 (prev sp10)	L	R
1090	Porifera tubular glassy (cfFarreidae)	L	R
TBC	stalked sponge	L	R
440	Synaphobranchus kaupii	L	R
1181	Telopathes sp2 (red)	L	R
581	Umbellula sp	L	R
1062	Acesta excavata	M	R
554	Actinernus sp	M	R
930	Actinopterygii sp3	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
188	Aerosoma fenestratum	M	R
264	Aphrocallistes sp	M	R
284	Bathypathes sp (brown)	M	R

DIVE SUMMARY

328	Bathypathes sp1	M	O
1084	cf Pheronema sp (RockpossAphorme horrida)	M	R
1030	cf Polymastia boletiformis	M	R
1008	Chrysogorgiidae sp1	M	R
577	Coryphaenoides guentheri	M	R
1103	Democrinus sp	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	R
1005	Galeus melastomus	M	R
1179	Holothuroidea sp (pinkDeep)	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
347	Pheronema carpenteri	M	R
555	Phormosoma placenta	M	R
263	Porania pulvillus	M	R
1128	Porifera globose (muddy)	M	R
299	Pterasteridae sp	M	R
TBC	stalked sponge	M	R
547	Stauropathes arctica	M	R
560	Stichopathes sp	M	R
261	Syringammina fragilissima	M	R
576	Porifera massive lobose sp18(cfFarrea sp)	Mass	R
132	Actinostolidae sp1	S	R
278	Anthomastus grandiflorus	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1049	cf Psolus sp	S	R
285	Chyrostylidae sp	S	R
131	Crinoidea sp1	S	O
1018	Epigonus telescopus	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1154	Henricia sp (deep)	S	R
1076	Ophiuroidea sp (indet)	S	R
1030	poss cf Polymastia boletiformis	S	R
573	Solaster endeca	S	R
259	Zoarcidae sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Mu.XenCom	Xenophyophore dominated community on Atlantic lower bathyal mud	
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard bottom gorgonian and black coral gardens (ICES subcategory)

DIVE SUMMARY

M.AtLB.Co	Atlantic lower bathyal coarse sediment	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Mu; M.AtLB.Ro	1010 Porifera lamellate sp12 (prev sp10), 1031 Anachalypsicrinus nefertiti
2	M.AtLB.Ro	1045 Bathyrcrinidae sp2 cf Porphyrocrinus thalassae, 1031 Anachalypsicrinus nefertiti
3	M.AtLB.Mu.XenCom; M.AtLB.Co	261 Syringamina fragilissima
4	M.AtLB.Ro; M.AtLB.Mu	1031 Anachalypsicrinus nefertiti
5	M.AtLB.Ro ; M.AtLB.Mu	1069 Ceriantharia, 555 Phormosoma placenta
6	M.AtLB.Mu; M.AtLB.Ro	1069 Ceriantharia
7	M.AtLB.Ro.MixCor; M.AtLB.Mu	1031 Anachalypsicrinus nefertiti, 305 Leiopathes sp
8	M.AtLB.Mu; M.AtLB.Ro	1069 Ceriantharia
9	M.AtLB.Ro; M.AtLB.Mu	305 Leiopathes sp, 284 Bathypathes sp (brown)
10	M.AtLB.Mu.XenCom; M.AtLB.Ro.MixCor	261 Syringamina fragilissima

DIVE SUMMARY

11	M.AtLB.Ro.MixCor; M.AtLB.Mu
	1031 Anachalypsicrinus nefertiti, 305 Leiopathes sp, 1046 Bathycrinidae sp2 cf Porphyrocrinus thalassae
12	M.AtLB.Ro; M.AtLB.Mu
	1031 Anachalypsicrinus nefertiti, 131 Crinoidea sp1, 305 Leiopathes sp
13	M.AtLB.Mu; M.AtLB.Ro
	305 Leiopathes sp, 1031 Anachalypsicrinus nefertiti
14	M.AtLB.Ro; M.AtLB.Mu
	305 Leiopathes sp, 1031 Anachalypsicrinus nefertiti, 1076 Ophiuroidea sp (indet)
15	M.AtLB.Mu; M.AtLB.Ro
	1069 Ceriantharia, 6 Caryophyllia

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Coral gardens:	ICES/OSPAR
- hard-bottom coral garden: hard bottom gorgonian and black coral gardens	ICES subcategory
Deep-sea sponge aggregations	
Mud and sand emergent fauna	ICES/OSPAR
	ICES
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments

DIVE SUMMARY

- Peculiar record of Hydrozoa or bacteria covering the bedrock. Video A/start from 13:37.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 559	TRANSECT # PB19

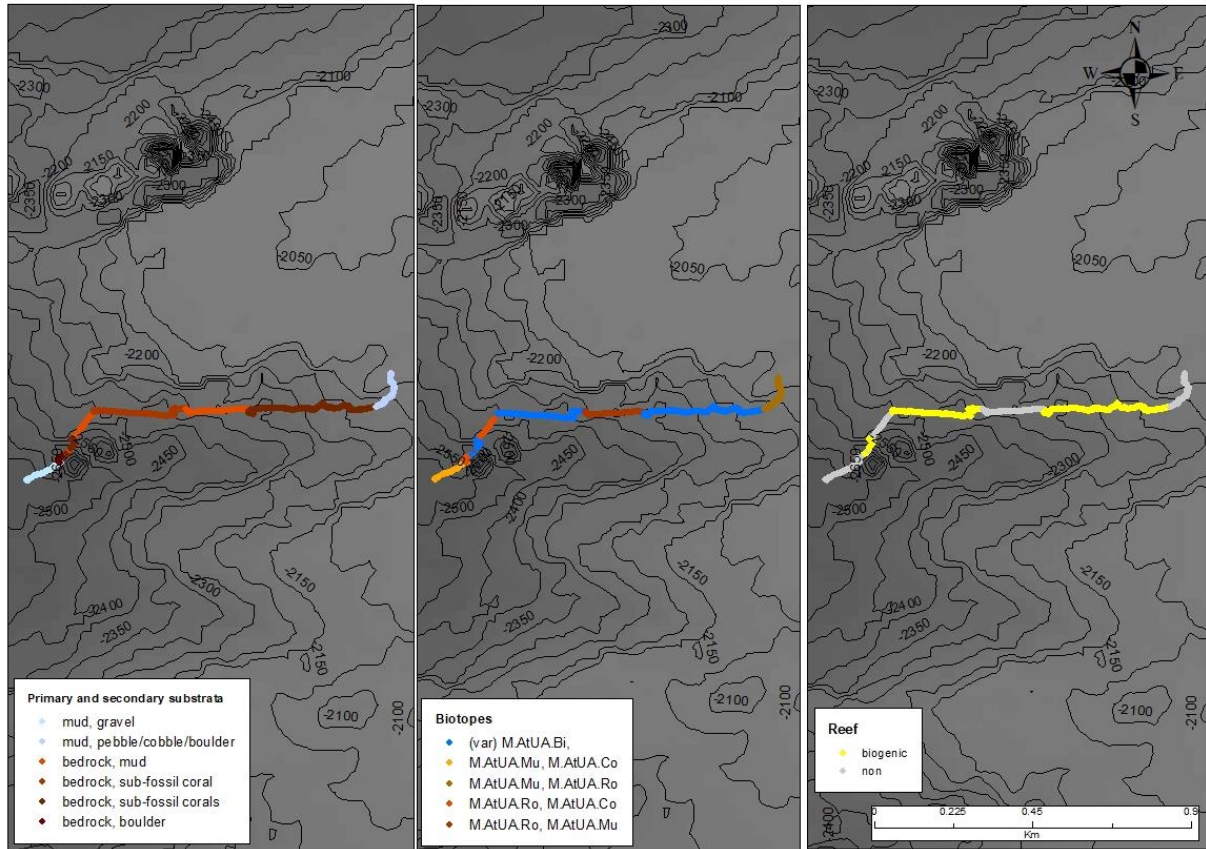
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Depth	-2584.249	-2068.659
Images	IMG_7640-IMG_8216.JPG	
Samples	1 x sub-fossil corals	

Location	PB19
Target Features	Canyon Wall
Depth Range	-2100, -2600m

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

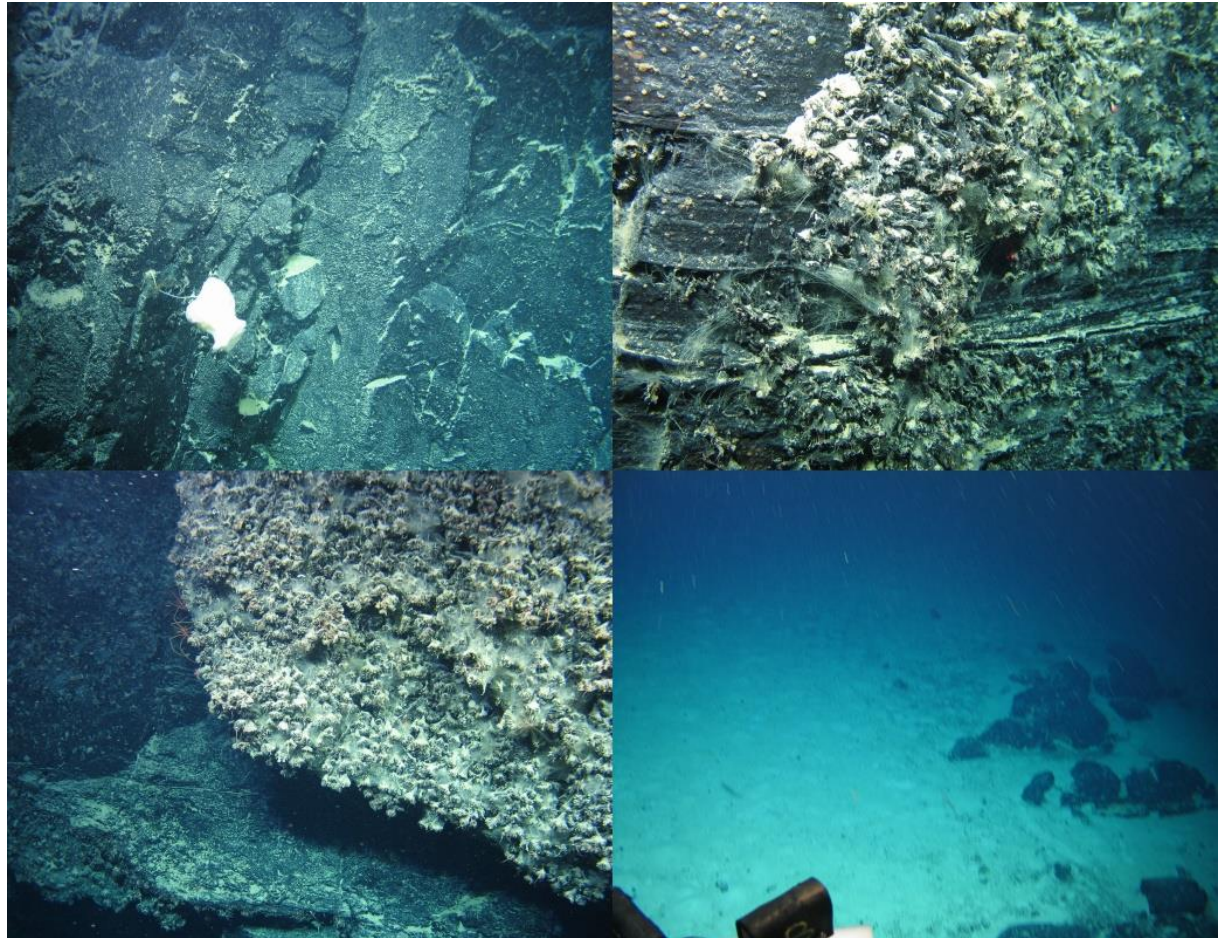
Dive 559, PB19



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Stalked sponge (MissingOTU) on vertical wall (M.AtUA.Ro).

Top R. Closed-up of sub-fossil corals on bedrock intertwined with bacterial mat. This is a potential new substrate/biotope (M.AtUA.Ro).

Bottom L. Example of closed-up of sub-fossil corals on bedrock covered in bacterial mat (M.AtUA.Ro).

Bottom R. Muddy sediment with occasional boulders. Sparse epifauna (M.AtUA.Mu; M.AtUA.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO 'A' STARTS AT 21:13. [1] Muddy steep/vertical wall. 21:14 Mud cloud/vision obscured. 21:16 Vision reacquired. 21:21 Fairy rings. 21:23 [2] Bedrock/vertical wall colonized by predominantly stalked sponges (unknown species) and *Anachalypsicrinus nefertiti* OTU1031. 21:26 [3] Bedrock and mud mosaicked substrata on steep/vertical ground. Stalked sponges and *A.nefertiti* still co-dominate. 21:33 Fossilized corals on bedrock. 21:37 ROV stops for imagery of bacterial mat covering fossilized corals and Bathycinidae sp2 OTU284. 21:44 ROV stops for imagery of new species of sea anemone known as *Relicanthus* sp. 21:49 Closed-up images of sub-fossil corals intertwined with bacterial mat. 21:53 ROV stops for imagery of *Actinernus* sp OTU449. 21:55 [4] Very steep bedrock covered in fossilized corals and bacterial mat. 22:00 ROV [5] moves forward from tall and vertical isolated boulders to muddy steep hill with scattered large boulders. Sparse epifauna on soft sediment, stalked crinoids OTU284 and OTU1031 on rock. 22:08 ROV moves upwards along steep bedrock. Exposed rock interspersed with mud patches. 22:13 Vertical rock walls with dense fossilized coral reefs. 22:39 Closed-up shots of sub-fossil corals. 22:41-23:02 ROV stops for imagery and sampling of fossilized corals. 23:10 ROV camera tilted to water column for a few seconds. 23:16 [6] Steep/vertical wall. Boulder/cobble fields/coral rubble/mud mosaicked. Stalked crinoids OTU284, OTU1031 and annelid OTU106 on rock. **VIDEO 'A' ENDS AT 23:29.**

VIDEO 'B' STARTS AT 23:30. The second taped video shows very similar/nearly identical features of the first tape. Therefore, steep bedrock/mud mosaicked throughout the whole transect. [7] In this transect, dense coral rubble/sub-fossil coral rubble are recorded scattered within rocks. 23:35 ROV stops for imagery and sampling of serpulidae. 00:46 [8] Muddy sediment/gravel/pebbles mosaicked sediments. *Ophiomusa lymani* OTU551 and *Syringamina fragilissima* OTU261 co-dominate. **VIDEO 'B' ENDS AT 00:54.**

Physical Data									
Reef (types can be concurrent)	<table border="1"> <tr> <td></td> <td>0% geogenic</td> </tr> <tr> <td><65% reef</td> <td> <table border="1"> <tr> <td>100% biogenic</td> <td>0% living</td> </tr> <tr> <td></td> <td>100% dead</td> </tr> </table> </td> </tr> </table>		0% geogenic	<65% reef	<table border="1"> <tr> <td>100% biogenic</td> <td>0% living</td> </tr> <tr> <td></td> <td>100% dead</td> </tr> </table>	100% biogenic	0% living		100% dead
	0% geogenic								
<65% reef	<table border="1"> <tr> <td>100% biogenic</td> <td>0% living</td> </tr> <tr> <td></td> <td>100% dead</td> </tr> </table>	100% biogenic	0% living		100% dead				
100% biogenic	0% living								
	100% dead								
Substrates	<ul style="list-style-type: none"> - Mud - Coral rubble - Gravel - Pebbles - Boulder - Bedrock 								
Geomorphology/Features	<p>Slope</p> <p>Vertical wall</p>								
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Pebble fields - Cobble fields - Boulder/bedrock 								

DIVE SUMMARY

	<ul style="list-style-type: none"> - Bedrock/coral rubble - Bedrock/sloping bedrock - Bedrock
Pressures	n/a

Biological Data

Number of Species 40

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
1	Porifera encrusting sp1	Crust	R
577	Coryphaenoides guentheri	L	R
1031	Anachalypsicrinus nefertiti	L	R
TBC	Stalked sponge	L	R
274	Brisingidae	L	R
249	Lepidion eques	L	R
551	Ophiomusa lymani	L	R
557	Lepidisis sp	L	R
1045	Bathycrinidae sp2 cf Porphyrocinus thalassae	L	R
284	Bathypathes sp (brown)	L	R
1207	Relicanthus sp	L	R
1051	Porifera massive globose sp15(solenoReef)	L	R
1043	Telopathes sp	L	R
536	Mesothuria intestinalis	L	R
1141	Bathycrinidae sp	L	R
1206	Mesothuria sp	L	R
349	Mora moro	L	R
1039	Hydrolagus cf affinis	L	R
552	Polyacanthonotus rissoanus	L	R
1012	Notacanthiformes sp1	L	R
261	Syringammina fragilissima	L	R
1179	Holothuroidea sp (pinkDeep)	M	R
174	Gaidropsarus argentatus	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
131	Crinoidea sp1	M	R
1153	Oneirophanta mutabilis	M	R
1144	Galacantha sp	M	R
278	Anthomastus grandiflorus	M	R
554	Actinernus sp	M	R
106	Serpulidae sp1	M	R
1030	cf Polymastia boletiformis	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	R
581	Umbellula sp	M	R
6	Caryophyllia sp	S	R
1076	Ophiuroidea sp (indet)	S	R
1129	cf Echinus (deepPinkSpine)	S	R
259	Zoarcidae sp1	S	R
1115	Pterasteridae sp	S	R
1056	Flabellum sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

DIVE SUMMARY

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Co	Atlantic upper abyssal coarse sediment	
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	
(var) M.AtUA.Bi	(variant of) Atlantic upper abyssal biogenic structure	Cold water coral reefs (ICES/OSPAR)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu; M.AtUA.Co	
	1031 Anachalypsicrinus nefertiti	
2	M.AtUA.Ro; M.AtUA.Co	
	Stalked sponge (CheckName), 1031 Anachalypsicrinus nefertiti	
3	(var) M.AtUA.Bi	
	Stalked sponge (CheckName), 1031 Anachalypsicrinus nefertiti	
4	M.AtUA.Ro; M.AtUA.Co	
	284 Bathycrinidae sp2, 1031 Anachalypsicrinus nefertiti	
5	(var) M.AtUA.Bi	
	284 Bathycrinidae sp2, 1031 Anachalypsicrinus nefertiti	
6	M.AtUA.Ro; M.AtUA.Co	
	284 Bathycrinidae sp2, 1031 Anachalypsicrinus nefertiti, 106 Serpulidae sp1	
7	(var) M.AtUA.Bi	
	284 Bathycrinidae sp2,106 Serpulidae sp1	

DIVE SUMMARY

8	M.AtUA.Mu; M.AtUA.Co
	551 Ophiomusa lymani, 261 Syringamina fragilissima
9	(var) M.AtUA.Bi
	284 Bathyrcrinidae sp2, 1031 Anachalypsicrinus nefertiti, 106 Serpulidae sp1
10	M.AtUA.Mu; M.AtUA.Ro
	261 Syringamina fragilissima, 551 Ophiomusa lymani

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Cold water coral reefs	ICES/OSPAR
Deep-sea sponge aggregations:	ICES
- hard-bottom sponge aggregations	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> • Porifera massive globose sp15 usually recorded on <i>Solenosmilia variabilis</i> reefs. This sponge is present in this transect living on sub-fossil corals. • Sub-fossil corals present in video A and B.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 560	TRANSECT # PB18

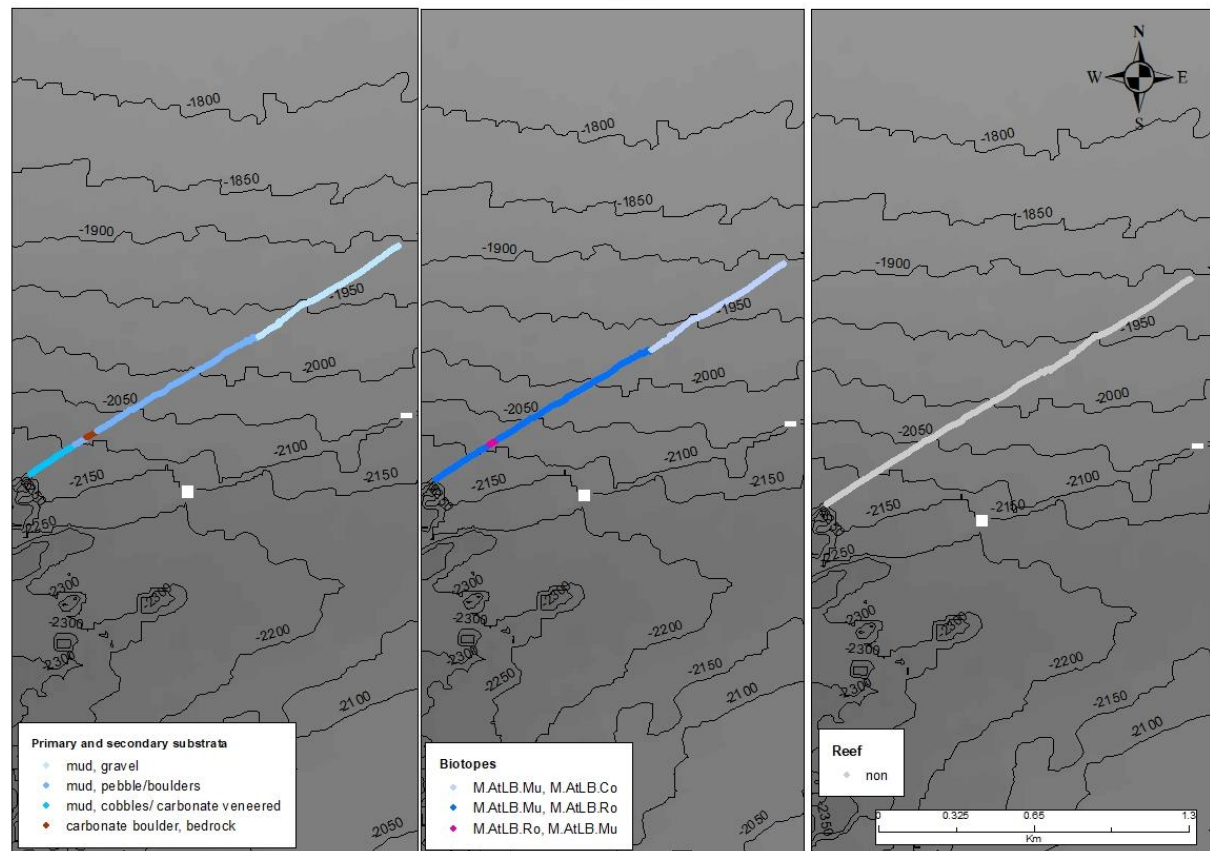
	Start	End
Date & Time	17/07/2018 05:43:02	17/07/2018 07:31:26
Latitude/ Longitude	50.5904851,-14.51904215	50.5989346, -14.50538526
Depth	-2140.435	-1917.136
Images	IMG_8217-IMG_8476.JPG	
Samples	1 x <i>Stauropathes arctica</i> OTU547 (06:43) 2 x pushcores (including 1 x <i>Syringammina fragilissima</i> OUT261)	

Location	PB18
Target Features	Ridge
Depth Range	-1800, -2100

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

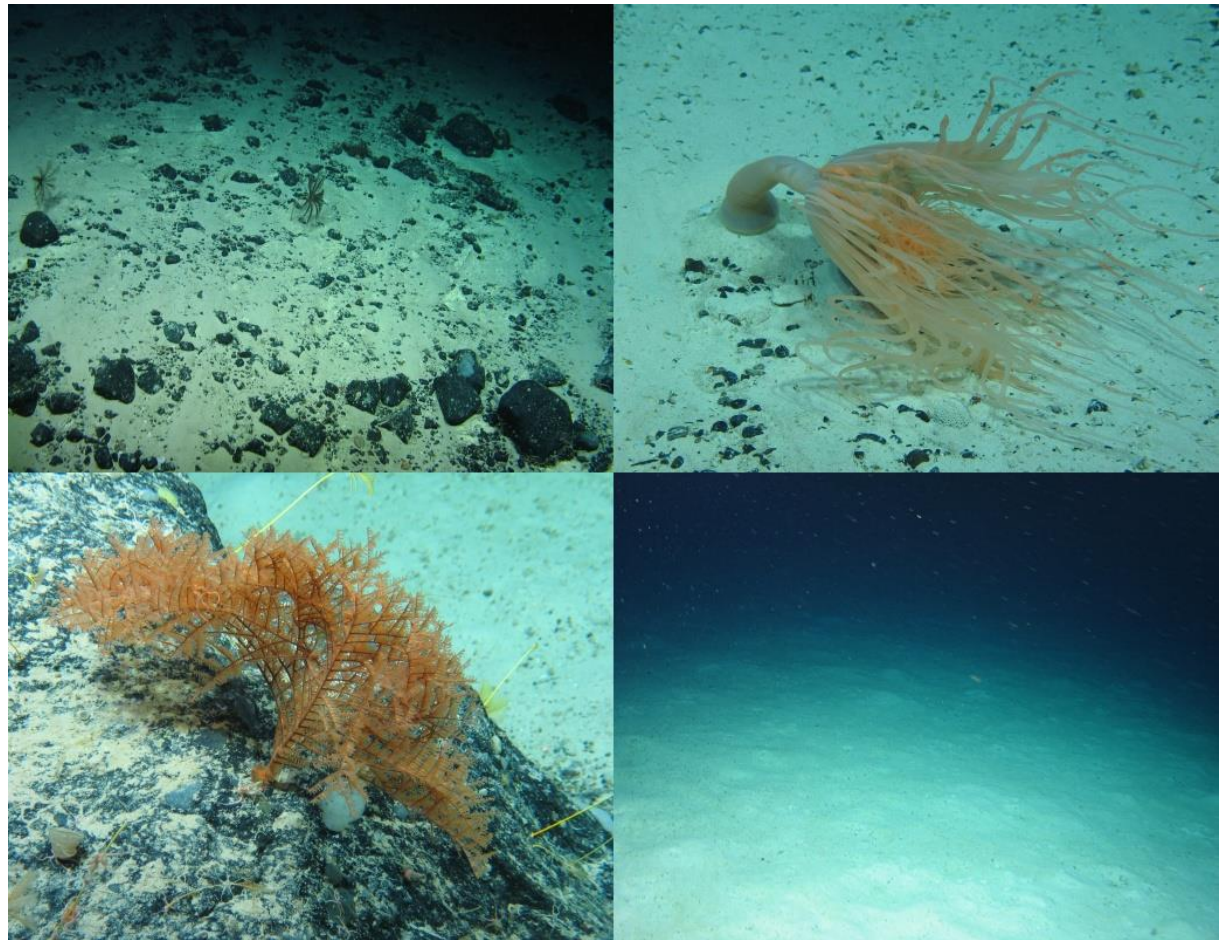
Dive 560, PB18



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Muddy sediment and scattered cobbles/boulders. Sparse epifauna includes Bathycrinidae sp OTU1041 (M.AtLB.Mu; M.AtLB.Ro).

Top R. Zoomed-in shot of *Corymorpha* sp OTU1204 on muddy sediment (M.AtLB.Ro; M.AtLB.Mu).

Bottom L. ROV samples *Stauropathes arctica* OTU547 anchored on boulder. Co-dwellers in this shot are *Anachalypsicrinus nefertiti* OTU1031 (M.AtLB.Ro; M.AtLB.Mu).

Bottom R. Muddy sediment on gentle slope with sparse epifauna (M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 05:43. [1] Sparse epifauna on mud and cobble fields mosaicked sediment. Occasional boulders. 05:55 ROV stops for imagery of sea cucumber OTU432. 05:58 ROV stops for imagery of Corymorphidae sp. **[2]** Muddy sediment and pebble fields with occasional boulders. Encrusting sponges OTU1 and solitary scleractinians OTU6 on rock.**06:00 [3]** Carbonate boulder/bedrock. Stalked crinoids OTU1041 dominates on carbonate. **06:02 [4]** Again muddy sediment and pebbles with scattered boulder/cobbles. Anemones OTU605 and scleractinians OTU6 on rock substrata. *Ophiomusa lymani* OTU551 on soft sediment. 06:06 ROV stops for imagery of unknown object. 06:10 ROV stops for imagery of boulder with *Geodia cf baretii* OTU601. 06:32 Fairy rings recorded in this dive. 06:43 ROV stops for imagery and sampling of *Stauropathes arctica* OTU547. **06:44 [5]** Here muddy sediment and gravel. Scattered encounters of *Syringamina fragilissima* OTU261. 06:50 ROV stops for sampling two pushcores. **END OF HD VIDEO AT 07:31.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Gravel - Pebble/boulder - Cobbles - Carbonate veneered - Carbonate boulder - Bedrock 		
Geomorphology/Features	Slope		
Annex 1 Types	<ul style="list-style-type: none"> - Sloping carbonate - Pebble/boulder fields - Cobble fields 		
Pressures	n/a		

Biological Data	
Number of Species	46
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
52	Porifera encrusting sp14	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1	Porifera encrusting white	Crust	R
1031	Anachalypsicrinus nefertiti	L	R
1141	Bathyrinidae sp	L	R
328	Bathypathes sp1	L	R
328	Bathypathes sp1	L	R
274	Brisingidae	L	R
1204	Corymorphidae sp	L	R
572	Echinoidea sp5 (Echinothuroidea)	L	R
317	Epizoanthus sp1(paguridaeAssoc)	L	R
601	Geodia cf baretii	L	R
1194	Muusoctopus johnsonianus	L	R
383	Myxine glutinosa	L	R
1003	Nezumia aequalis	L	R
552	Polyacanthonotus rissoanus	L	R
446	Trachyrhynchus sp	L	R
585	Acanella arbuscula (bushy)	M	R
278	Anthomastus grandiflorus	M	R
146	Aphroditidae sp1	M	R
1171	Asteroidea sp (pinkDeepSed)	M	R
574	cf Benthogone sp (white)	M	R
984	cf Halcampoididae sp	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
1125	Hygrosoma sp	M	R
1078	Ipopidae sp	M	R
536	Mesothuria intestinalis	M	R
551	Ophiomusa lymani	M	R
555	Phormosoma placenta	M	R
547	Stauropathes arctica	M	R
261	Syringamina fragilissima	M	R
611	Rhabdodictyum cf delicatum	Mass	R
605	Actinaria sp20	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1129	cf Echinus (deepPinkSpine)	S	R
131	Crinoidea sp1	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1154	Henricia sp (deep)	S	R
621	Hypsogastropoda	S	R
1076	Ophiuroidea sp indet	S	R
1036	Ophiuroidea sp11	S	R
205	Paguridae	S	R
442	Kophobelemnon stelliferum	S	R
106	Serpulidae sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
M.AtLB.Co	Atlantic lower bathyal coarse sediment	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Mu; M.AtLB.Ro	
	1 Porifera encrusting white, 1041 Bathyrcrinidae sp	
2	M.AtLB.Mu; M.AtLB.Ro	
	1 Porifera encrusting white, 6 Caryophyllia sp	
3	M.AtLB.Ro; M.AtLB.Mu	
	1041 Bathyrcrinidae sp	
4	M.AtLB.Mu; M.AtLB.Ro	
	605 Actiniaria sp20, 6 Caryophyllia sp, 551 Ophiomuseum lymani	
5	M.AtLB.Mu; M.AtLB.Co	
	261 Syringamina fragilissima	

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Listed Species Encountered (Fish, Count)	

DIVE SUMMARY

n/a		OSPAR/IUCN
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Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 561	TRANSECT # PB20

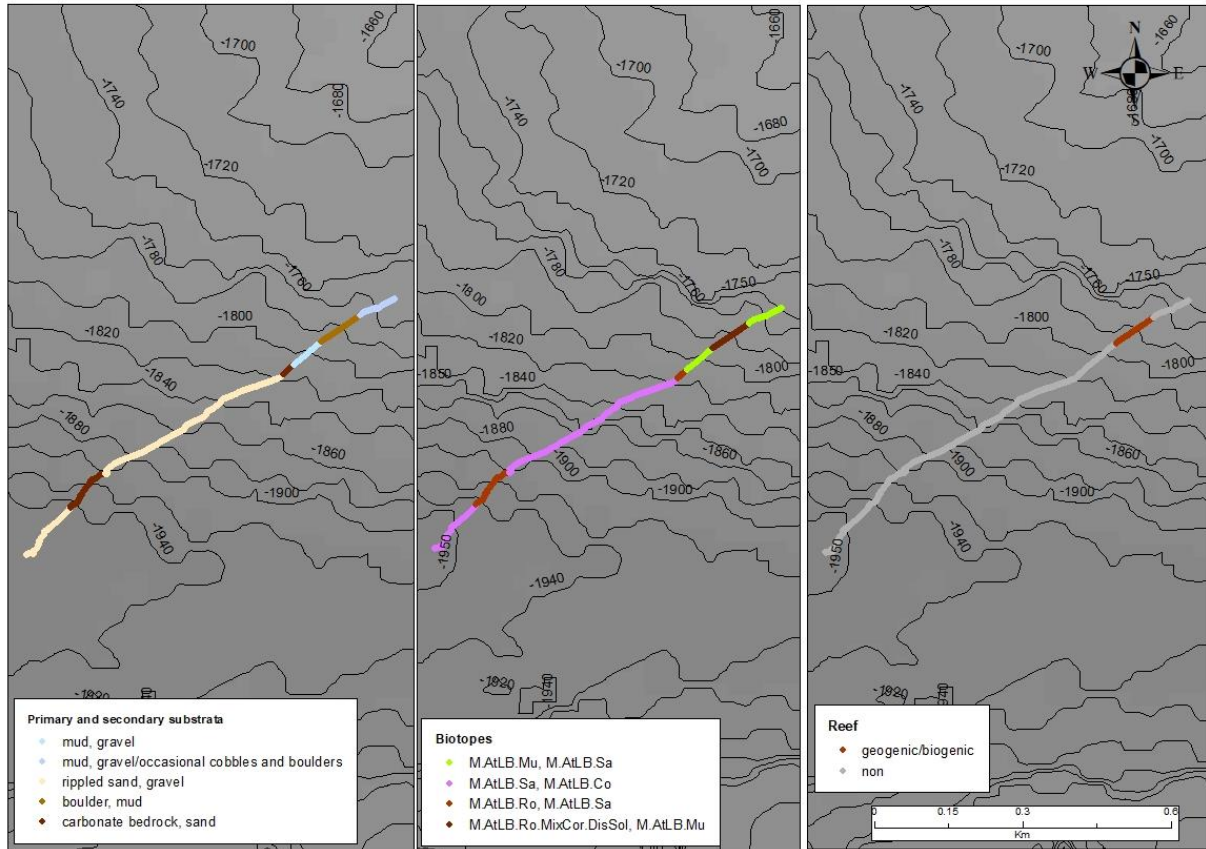
	Start	End
Date & Time	17/07/2018 12:49:00	17/07/2018 14:00:36
Latitude/ Longitude	50.8713846,-14.75613712	50.8762945, -14.74888312
Depth	-1947.611	-1720.934
Images	IMG_8217-IMG_8476.JPG	
Samples	2 x pushcores (12:50)	

Location	PB20
Target Features	Canyon
Depth Range	-1600, -1950

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

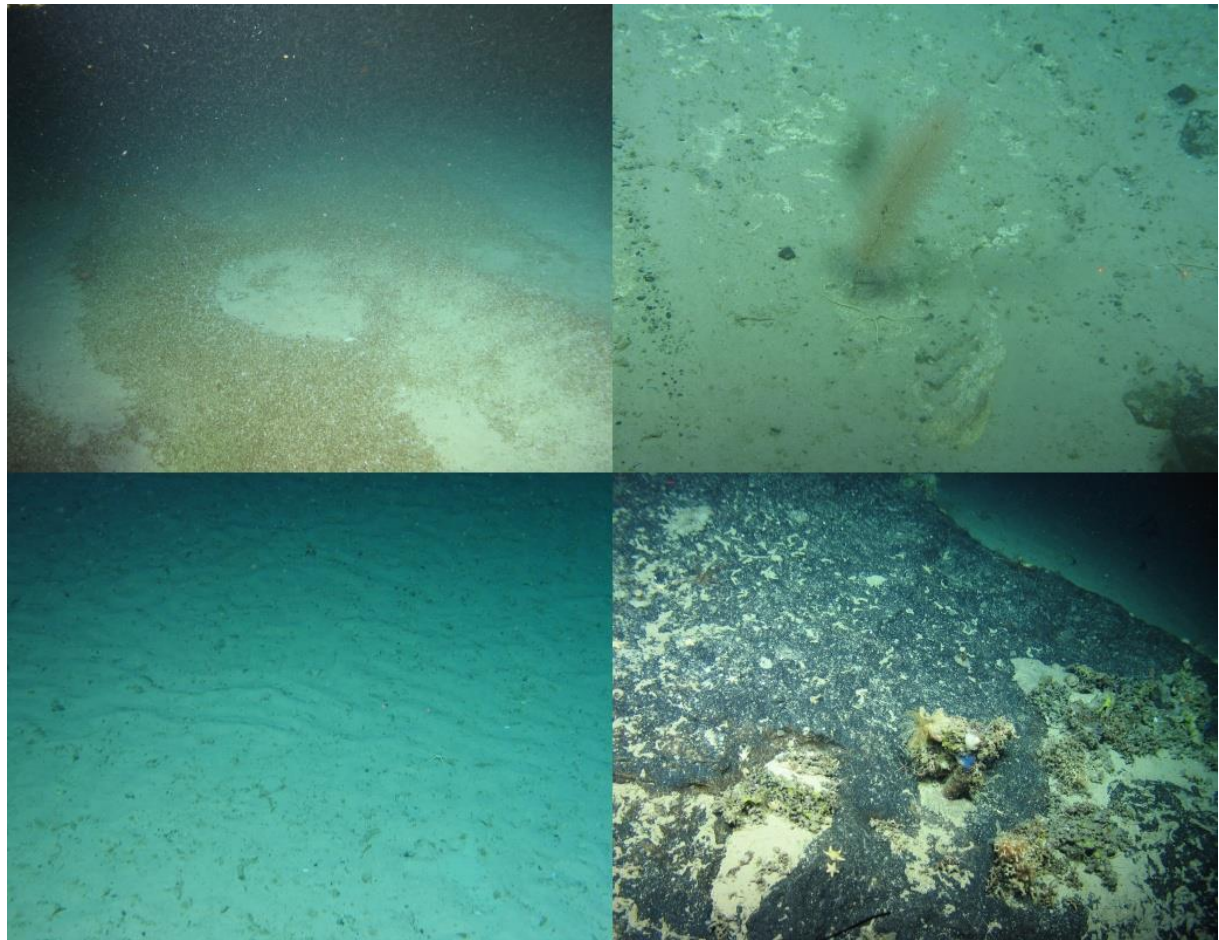
Dive 561, PB20



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Sand sediment encountered at the beginning of the transect with sparse epifauna (M.AtLB.Sa).

Top R. Chrysogorgiidae sp, cf Echinus OTU1129 and *Ophiomusa lymani* OTU551 on mud/cobbles mosaicked sediment (M.AtLB.Sa).

Bottom L. Sand/mud sediment with *Ophiomusa lymani* OTU551 (M.AtLB.Sa; M.AtLB.Co).

Bottom R. *Solenosmilia variabilis* OTU700 colonies on boulder with encrusted blue sponge OTU800 (M.AtLB.Ro.MixCor; M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 12:49. [1] Epifaunally sparse rippled sand sea floor. 12:50 ROV still at the bottom sampling 2 pushcores. **12:50** Sand and gravel. Sparse epifauna. 12:58 Mud cloud/vision obscured briefly. 13:05 Infrequent carbonate cobbles/small boulders. **13:02 [2]** *Ophiomusa lymani* OTU55 on rippled sand and gravel sediment. **13:07 [3]** Here Chrysogorgiidae sp OTU1008 frequently encountered on carbonate bedrock, and *O.lymani* on sand. 13:08 ROV moves forward and upwards. Here vertical carbonate wall with inlets. Chrysogorgiidae sp and *O.lymani* co-dominate. **13:18 [4]** ROV reaches the summit of the carbonate wall where sediment becomes rippled sand and gravel on gentle upslope. Here *S.fragilissima* OTU261 and *O.lymani* co-dominate. Scattered boulders host Caryophyllia OTU6 and encrusting sponges OTU1. 13:19 ROV stops for imagery of possible jellyfish (to be confirmed). **13:39 [5]** Here sloping carbonate bedrock with sparse sponges. **13:40 [6]** Now muddy sediment with frequent *O.lymani* and sea urchins OTU1129. Fluffy matter on sand. **13:42 [7]** Sand sediment with scattered pebbles/cobbles on gently upslope. Frequent encounters of *Geodia cf baretii* OTU601 on rock. **13:49 [8]** *Solenosmilia variabilis* colonies on boulder. Mostly dead reef. Yellow encrusting sponge sp15 OTU58 on bedrock. 13:52 ROV stops for imagery of *S.variabilis* colonies on boulder. **13:53 [9]** Muddy sediment with fluffy matter and scattered cobbles. **END OF HD VIDEO AT 14:00.**

Physical Data			
Reef (types can be concurrent)	<15% reef	<50% geogenic	
		<50% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Rippled sand - Sand - Gravel - Pebble/cobble - Cobble - Boulder - Carbonate bedrock 		
Geomorphology/Features	Slope Vertical wall		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble field - Cobble fields - Sloping carbonate - Vertical carbonate 		
Pressures	n/a		

DIVE SUMMARY

Biological Data			
Number of Species		36	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
328	Bathypathes sp1	L	R
653	Chimaera opalescens	L	R
1083	Pennatula inflata	L	R
436	Pentametrocrinus atlanticus	L	R
552	Polyacanthonotus rissoanus	L	R
585	Acanella arbuscula (bushy)	M	R
132	Actinostolidae sp1	M	R
1008	Chrysogorgiidae sp1	M	R
577	Coryphaenoides guentheri	M	R
601	Geodia cf baretti	M	R
56	Hydrozoa flat branched	M	R
536	Mesothuria intestinalis	M	R
551	Ophiomusa lymani	M	O
1050	Paramuricea sp	M	R
1191	Pennatulacea sp (submergedAxis)	M	R
1128	Porifera globose (muddy)	M	R
573	Solaster endeca	M	R
700	Solenosmilia virialibis	M	R
440	Synaphobranchus kaupii	M	R
261	Syringammina fragilissima	M	R
83	Porifera massive lobose sp6	Mass	R
605	Actiniaria sp20	S	R
930	Actinopterygii sp3	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
278	Anthomastus grandiflorus	S	R
TBC	Euryalida	S	R
6	Caryophyllia	S	R
2	Ceriantharia	S	R
1129	cf Echinus (deepPinkSpine)	S	O
1138	Eucaridea sp2 (redDeep)	S	R
621	Hypsogastropoda	S	R
205	Paguridae	S	R
TBC	Solasteridae sp (white)	S	R
198	Stichastrella rosea	S	R
Biotope List (Marine Habitat Classification for Britain & Ireland)			
Code	Name	Listed	
M.AtLB.Sa	Atlantic lower bathyal sand	Mud and sand emergent fauna (ICES)	

DIVE SUMMARY

M.AtLB.Co	Atlantic lower bathyal coarse sediment	
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	
M.AtLB.Ro.MixCor.DisSol	Discrete Solenosmilia variabilis colonies on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); Hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Sa; M.AtLB.Co	
	n/a	
2	M.AtLB.Sa; M.AtLB.Co	
	551 Ophiomusa lymani	
3	M.AtLB.Ro; M.AtLB.Sa	
	1008 Chrysogorgiidae sp, 551 Ophiomusa lymani	
4	M.AtLB.Sa; M.AtLB.Co	
	261 Syringamina fragilissima, 551 Ophiomusa lymani	
5	M.AtLB.Ro; M.AtLB.Sa	
	601 Geodia cf baretti	
6	M.AtLB.Mu; M.AtLB.Sa	
	551 Ophiomusa lymani, 1129 cf Echinus sp	
7	M.AtLB.Ro.MixCor.DisSol; M.AtLB.Mu	
	551 Ophiomusa lymani, 1129 cf Echinus sp, 700 Solenosmilia variabilis	
8	M.AtLB.Mu; M.AtLB.Sa	

DIVE SUMMARY

551 Ophiomusa lymani, 1129 cf Echinus sp

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Coral gardens:	ICES/OSPAR	
- Hard-bottom coral garden: colonial scleractinians on rocky outcrops	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 562	TRANSECT # PB33

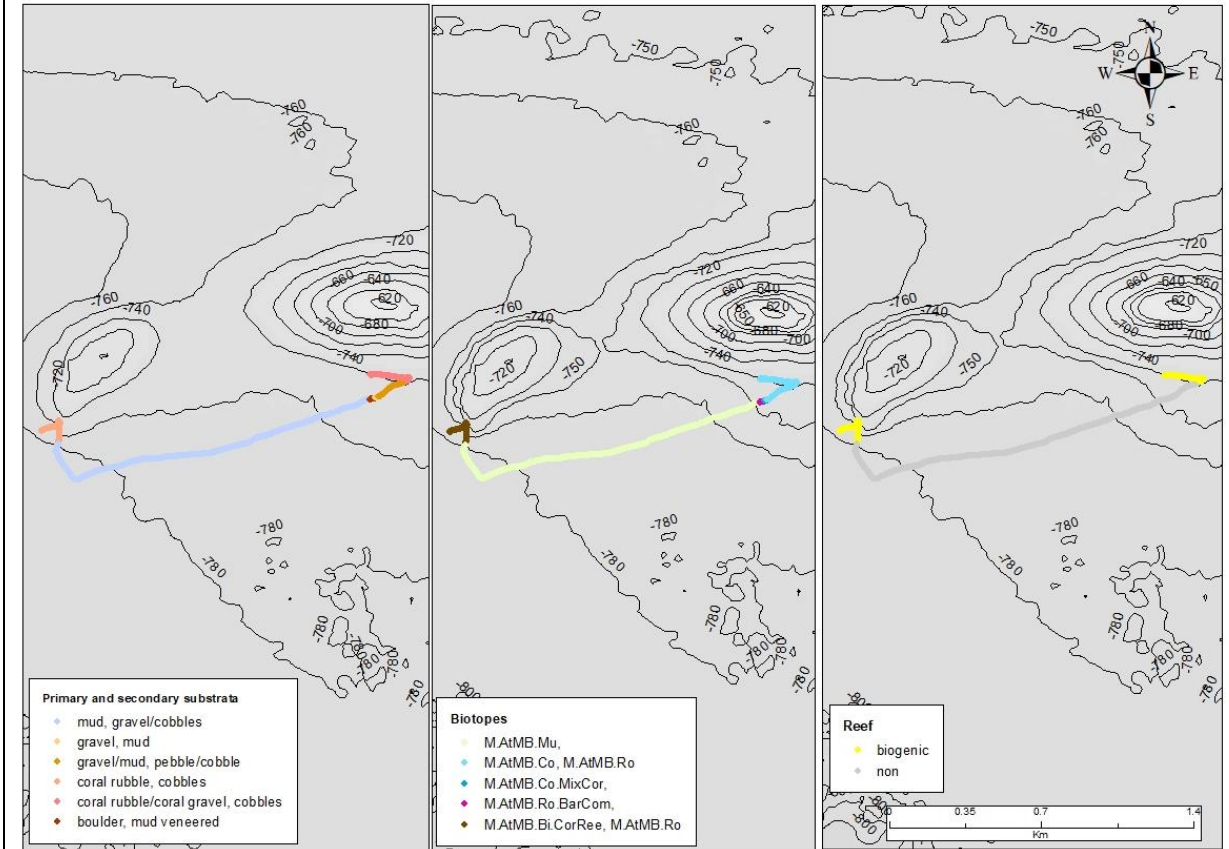
	Start	End
Date & Time	17/07/2018 17:51:00	17/07/2018 19:46:44
Latitude/ Longitude	51.0935747,-14.59747154	51.0958844, -14.5840282
Depth	-767.748	-739.398
Images	IMG_8488-IMG_IMG_9133.JPG	
Samples	1 x pushcore	

Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

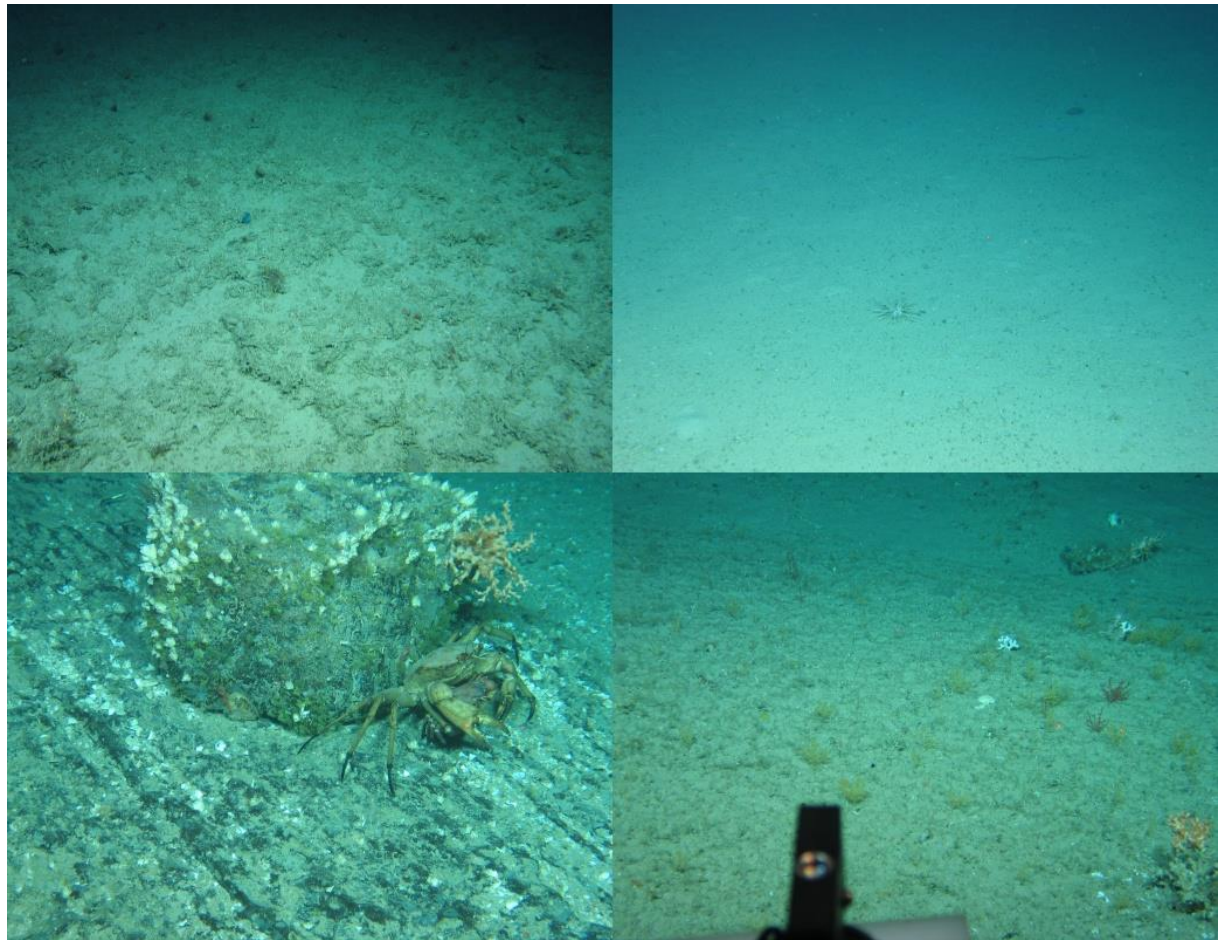
Dive 562, PB33



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Coral rubble on muddy flat/gentle down slope. *Madrepora oculata* OTU251 on cobble (M.AtMB.Bi.CorRee.LopFra; M.AtMB.Ro).

Top R. Muddy sediment on gentle upslope with frequent encounters of *C. cidaris* OTU211 (M.AtMB.Mu).

Bottom L. Couple of *Chaceon affinis* OTU254 breeding on boulder. Dense colony of Cirripedia OTU82 on rock (M.AtMB.Co; M.AtMB.Ro).

Bottom R. *Madrepora oculata* on cobble surrounded by dead structure coral rubble. This sediment hosts many epifauna, including *Pliobrothus* sp OTU207, unknown anthozoa red OTU1215 and unknown anthozoa yellow OTU1028 (M.AtMB.Co.MixCor; M.AtMB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 17:51. [1] Coral rubble on muddy sediment with isolated colonies of *Madrepora oculata* OTU251 on cobbles. Alcyonacea sp3 OTU343 and Ceriantharia OTU1069 frequently encountered on coral rubble. 18:07 ROV tilts camera to the water column. Vision of sea floor suspended. 18:08 Vision back to normal. 18:11 vision obscured. Adjusting camera zooming. **18:12 [2]** Here muddy sediment/gravel with scattered cobbles. Sea urchin OTU211 on muddy sediment. 18:30 Sea urchin OTU1129 bed on muddy flat/gentle upslope. 18:54 Encounter listed IUCN species Orange roughy. 19:19 Organic material/debris on muddy upslope. **19:22 [3]** Gravel/muddy/scattered boulders. *Pliobrothus* sp OTU207, and *Holothuroidea* sp (pinkDeep) OTU1179 co-dominate. 19:41 ROV stops for imagery on seabed and sampling one pushcore. **END OF HD VIDEO AT 19:46.**

Physical Data	
Reef (types can be concurrent)	0% geogenic
	<40% reef
	100% biogenic
	n/a
	n/a
Substrates	<ul style="list-style-type: none"> - Mud - Mud veneered - Gravel/mud - Coral rubble - Coral gravel - Pebble/cobble - Cobbles - Gravel/cobbles - Boulders
Geomorphology/Features	Slope
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Cobble fields - Boulders
Pressures	1 x fishing net/line (18:51)

Biological Data	
Number of Species	42
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting white	Crust	R
278	Anthomastus grandiflorus	Crust	R
800	Porifera encrusting blue	Crust	R
250	Lophelia pertusa	L	R
211	Cidaris cidaris	L	O
1005	Galeus melastomus	L	R
188	Araeosoma fenestratum	L	R
433	Pseudarchaster sp1	L	R
1020	Phycis blennoides	L	R
1012	Notacanthiformes sp1	L	R
273	Lophius piscatorius	L	R
349	Mora moro	L	R
1017	Teuthida sp1	L	R
254	Chaceon affinis	L	R
1139	Deania sp	L	R
251	Madrepora oculata	M	O
1016	Trichiurus lepturus	M	R
235	Bathynectes sp	M	R
458	Pachycerianthus multiplacatus	M	R
249	Lepidion eques	M	R
343	Alcyonacea sp3	M	O
227	Helicolenus dactylopterus	M	R
1179	Holothuroidea sp (pinkDeep)	M	O
234	Ceremaster Peltaster Plinthaster	M	R
266	Parastichopus tremulus	M	R
440	Synaphobranchus kaupii	M	R
113	Colus sp2	M	R
317	Epizoanthus sp1 (paguridaeAssoc)	M	R
432	Holothuroidea cf Laetmogone (purple)	M	R
1138	Eucaridea sp2 (redDeep)	M	R
207	Pliobrothus sp	M	R
930	Actinopterygii sp3	M	R
651	Hoplostethus atlanticus	M	R
1028	Unknown anthozoa (yellow)	M	R
1215	Unknown anthozoa (red)	M	R
2	Ceriantharia	M	R
6	Caryophyllia	S	R

DIVE SUMMARY

4	Actiniaria sp1	S	R
1129	cf Echinus (deepPinkSpine)	S	R
205	Paguridae	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
82	Cirripectida sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold-water coral reefs (ICES); <i>Lophelia pertusa/Madrepora oculata</i> reefs (ICES subcategory).
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Ro.BarCom	Barnacle dominated community on Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Co	Atlantic mid bathyal coarse sediment	
M.AtMB.Co.MixCor	Mixed cold water coral community on Atlantic mid bathyal coarse sediment	Coral gardens (ICES/OSPAR); soft bottom coral garden: soft-bottom gorgonian and black coral gardens (ICES subcategory)

DIVE SUMMARY

Biotope progression per habitat transition (# species, dominant/characteristic species)	
1	M.AtMB.Bi.CorRee; M.AtMB.Ro 250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 343 Alcyonacea, 1069 Ceriantharia
2	M.AtMB.Mu 211 <i>Cidaris cidaris</i>
3	M.AtMB.Ro.BarCom 82 Cirripedia, 250 <i>Lophelia pertusa</i>
4	M.AtMB.Co.MixCor 1028 Unknown anthozoa (yellow), 1215 unknown anthozoa (red), 207 <i>Pliobrothus</i> sp
5	M.AtMB.Co; M.AtMB.Ro 207 <i>Pliobrothus</i> sp, 1179 Holothuroidea sp (pinkDeep)
6	M.AtMB.Co; M.AtMB.Ro 207 <i>Pliobrothus</i> sp, 1179 Holothuroidea sp (pinkDeep)

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Cold water coral reefs	ICES	
- <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs	ICES subcategory	
Coral gardens:	ICES/OSPAR	
- soft bottom coral garden: soft-bottom gorgonian and black coral gardens	ICES subcategory	
Listed Species Encountered (Fish, Count)		
• <i>Hoplostethus atlanticus</i> (Orange Roughy)	1	IUCN

DIVE SUMMARY

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 563	TRANSECT # PB34

	Start	End
Date & Time	18/07/2018 00:46:00	18/07/2018 01:50:07
Latitude/ Longitude	50.910325,-14.90109959	50.9144665, -14.90096816
Depth	-2923.041	-2790.27
Images	IMG_9135-IMG_9146.JPG	
Samples	2 x pushcores	

Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Dive 563, PB34



Representative Images

(Images representative of major biotores, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. ROV samples two pushcores of mud sediment (M.AtUA.Mu).

Top R. Zoomed image of organic matter/debris found on muddy sea floor (M.AtUA.Mu).

Bottom L. Organic matter/debris found on mud slope (M.AtUA.Mu).

Bottom R. Organic matter/debris found on mud slope (M.AtUA.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS. 0m. Video starts when ROV is at the bottom. Vision is obscured/mud cloud until 8m. 11m ROV samples 2 pushcores and checks for white balance. 17m ROV is still in the same location. Here muddy sediment on gentle upslope. ROV zooms in on organic matter/debris. 20m Organic matter is widespread on the sea floor with thick marine snow. 56m ROV moves upwards towards the surface. 01h04m Video lost. **VIDEO ENDS.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	Mud		
Geomorphology/Features	Slope		
Annex 1 Types	n/a		
Pressures	n/a		

Biological Data	
Number of Species	3
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
577	Coryphaenoides guentheri	L	R
621	Hypsogastropoda	S	R
1106	Eucarida sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtUA.Mu
	n/a

Conservation Targets

Listed Habitats Encountered

Name	Authority
Mud and sand emergent fauna	ICES

Listed Species Encountered (Fish, Count)

n/a	OSPAR/IUCN
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DIVE SUMMARY

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 564	TRANSECT # PB16

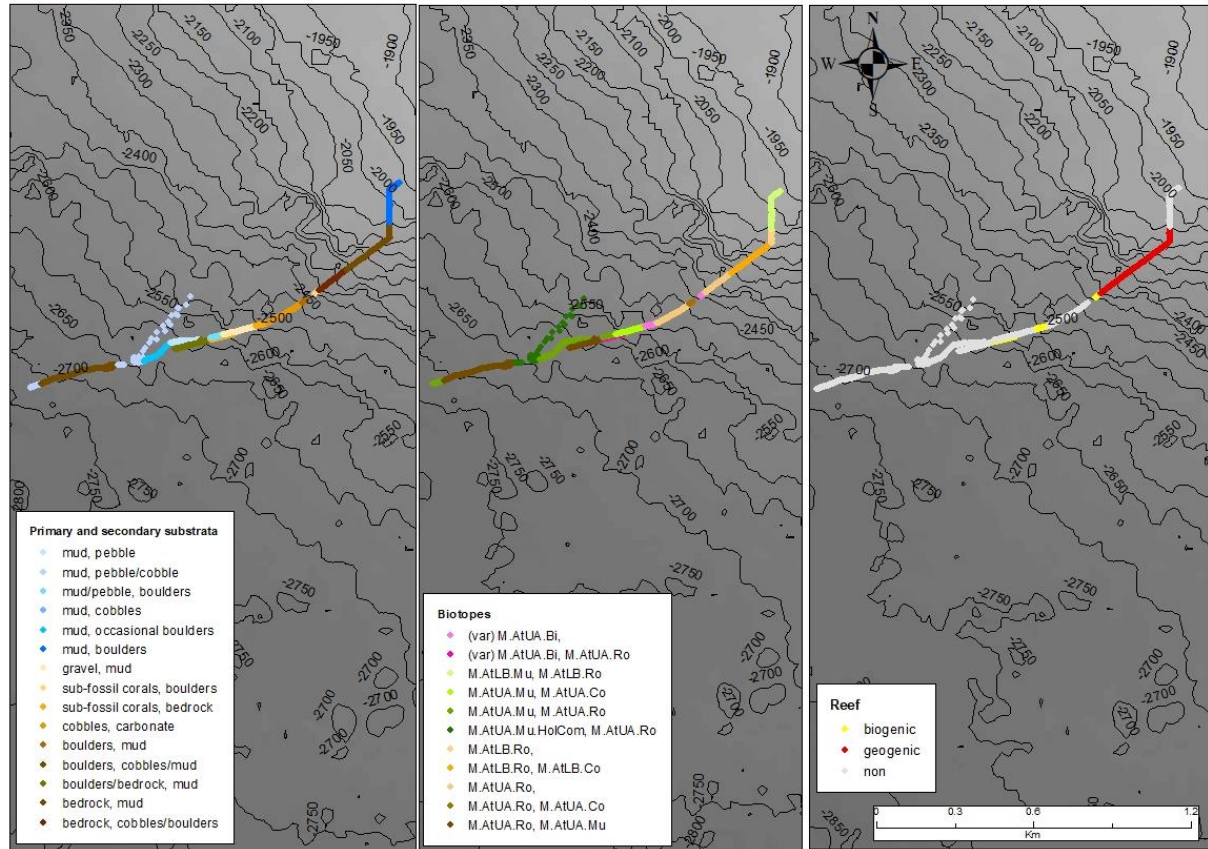
	Start	End
Date & Time	18/07/2018 09:48:00	18/07/2018 13:05:37
Latitude/ Longitude	51.4104071,-15.18430682	51.4173542, -15.17177683
Depth	-2719.853	Missing
Images	IMG_9149-IMG_9779.JPG	
Samples	1 x <i>Acanella arbuscula</i>	

Location	PB16
Target Features	Deep Canyon Rise
Depth Range	-1800, -2700

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

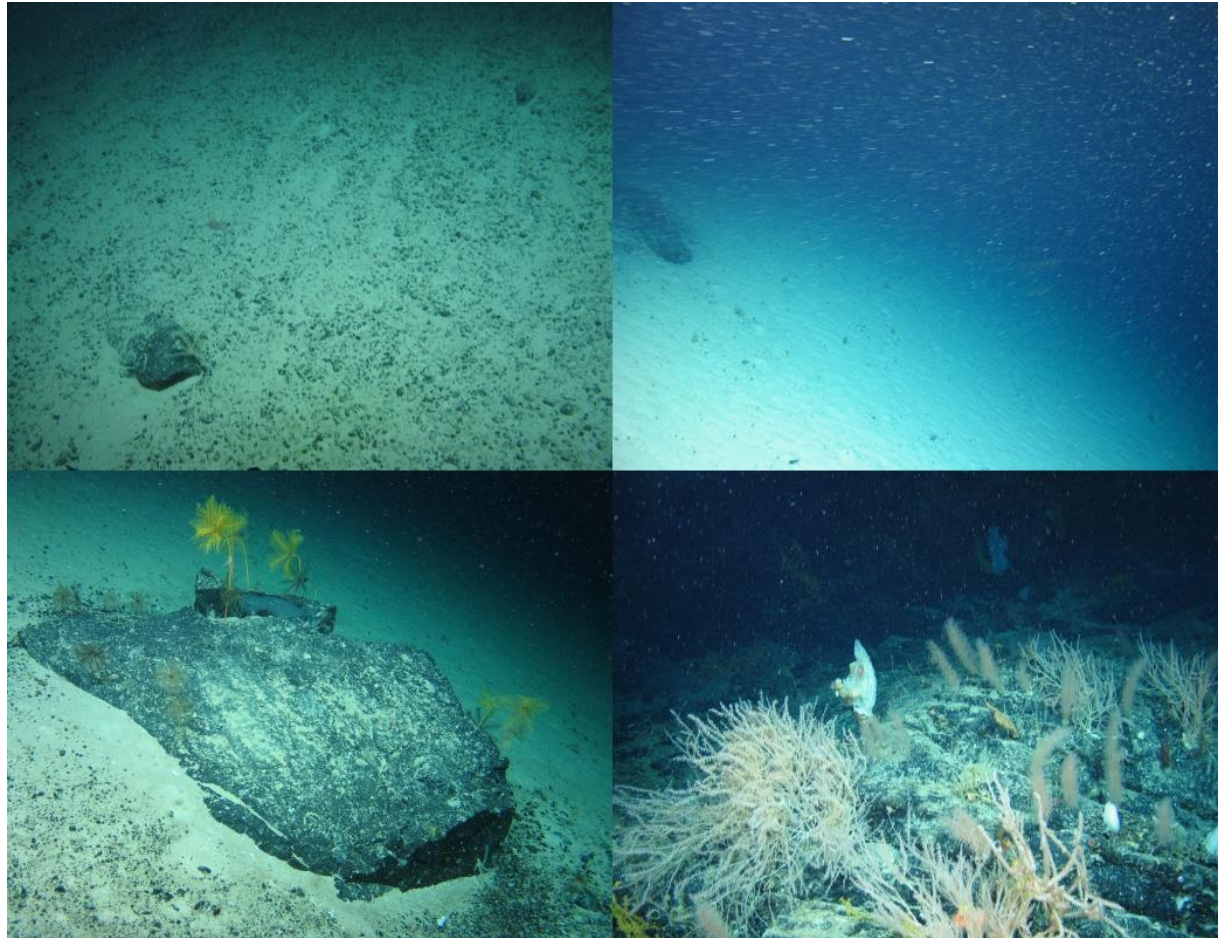
Dive 564, PB16



Representative Images

(Images representative of major biotoypes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Pebble/cobble fields on moderate/steep slope with sparse epifauna (M.AtUA.Ro; M.AtUA.Mu).

Top R. Mud with occasional cobble/boulder with sparse epifauna (M.AtUA.Mu; M.AtUA.Ro).

Bottom L. Closed-up image of *Anachalypsicrinus nefertiti* OTU1031 on boulder (M.AtUA.Ro).

Bottom R. Coral gardens of pink *Keratoisis* sp (fineBranching) OTU1157, *Chrysogorgiidae* sp OTU1008 and *Phakellia ventilabrum* OTU202 abundant on bedrock (M.AtLB.Ro.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO A STARTS. 0m. [1] Pebble fields on muddy slope. **[2] 3m** Vertical/very steep bedrock intersperse with mud. 1167 *Peniagone* sp, 551 *Ophiomusa lymani*, 6 Caryophyllia co-dominate. **[3]** 26m Holothurians OTU1167 on muddy slope. **[4]** 31m Boulder on muddy slope. *Anachalypsicrinus nefertiti* OTU1031 and Bathycrinidae sp OTU1141 co-dominate. ROV stops for imagery of stalked crinoids on boulder. **[5]** 38m muddy upslope where *Peniagone* sp is frequently encountered. **[6]** 44m Dense pebble/cobble fields on gentle upslope. **[7]** 45m now pebble/cobble fields are sparse. Muddy sediment predominate. *Peniagone* sp dominates. **[8]** 47m Boulders on moderate upslope host sparse epifauna including stalked sponge and stalked crinoids. From this point, muddy sediment and pebble/cobble/boulder sediment intersperse until the end. 01h04m ROV stops for imagery of sub-fossil corals and corallium species. 01h31m Here sub-fossil coral recorded again on vertical wall.
VIDEO A ENDS.

VIDEO B STARTS. 0m [9] Vertical wall hosts many epifauna including Bathypathes and stalked crinoids. 22m Water column. 24m **[10]** Here bedrock hosts a large colony of *A.nefertiti* OTU1031. 28m **[11]** Here cobble/pebble field. *A.nefertiti* is frequently encountered. 32m **[12]** Vertical wall hosts *A.nefertiti*. 39m **[13]** Now this is geogenic garden hosts a plethora of epifauna, including *Keratoisis* sp (fineBranching) OTU1157 and lamellate sponge OTU1151. 54m Here muddy upslope hosts sparse epifauna including *Acanella arbuscula* OTU585. 56m Occasional boulder/bedrock encountered. 01h05m ROV stops for imagery and sampling of *Acanella arbuscula*.**VIDEO B ENDS. 01h13.**

Physical Data		
Reef (types can be concurrent)	35% reef	<75% geogenic
		<25% biogenic
		n/a
		n/a
Substrates	<ul style="list-style-type: none"> - Mud - Gravel - Mud/pebble - Cobbles - Coral rubble - Sub-fossil corals - Occasional boulders - Boulders - Boulders/bedrock - Bedrock - Carbonate 	
Geomorphology/Features	Slope Steep slope Steep slope/vertical wall Vertical wall	

DIVE SUMMARY

Annex 1 Types	<ul style="list-style-type: none"> - Pebble fields - Pebble fields/boulder - Pebble/cobble fields - Pebble/cobble fields/vertical rock walls - Vertical rock walls - Coral reef/cobbles/boulders - Coral reef/boulders - Cobble fields/sloping carbonate - Cobble fields/boulders - Cobble fields - Boulders/bedrock - Boulders - Bedrock/boulders/vertical rock walls - Bedrock/boulders - Bedrock
Pressures	n/a

Biological Data

Number of Species

81

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
1	Porifera encrusting white	Crust	R
1031	Anachalypsicrinus nefertiti	L	O
328	Bathypathes sp1	L	R
289	cf Clavulariidae sp	L	R
653	Chimaera opalescens	L	R
1201	Colossendeis sp2	L	R
1202	Corallium sp1	L	R
1105	Coryphaenoides armatus	L	R
572	Echinoidea sp5 (Echinothuroidea)	L	R
622	Halopteris cf finmarchica	L	R
1157	Keratoisis sp (fineBranching)	L	O
305	Leiopathes sp	L	R
612	Leiopathes sp (dense)	L	R
1160	Lepidion cf guentheri	L	R
557	Lepidisis sp	L	R
1009	Notacanthidae sp1	L	R
1012	Notacanthiformes sp1	L	R
1065	Paragorgia (twiggy) (possSwiftia)	L	R
1042	Parantipathes sp	L	R
1046	Pennatula aculeata	L	R
1020	Phycis blennoides	L	R
TBC	Porifera flower	L	R
1151	Porifera lamellate (hexactinosida)	L	R
648	Porifera massive globose sp13	L	R

DIVE SUMMARY

1044	Radicipes sp	L	R
611	Rhabdodictyum cf delicatum	L	R
573	Solaster endeca (white?)	L	R
TBC	Stalked sponge	L	R
581	Umbellula sp	L	R
585	Acanella arbuscula (bushy)	M	R
278	Anthomastus grandiflorus	M	R
1141	Bathyrinidae sp	M	O
274	Brisingidae	M	R
234	Ceremaster Peltaster Plinthaster	M	R
1030	cf Polymastia boletiformis	M	R
1008	Chrysogorgiidae sp1	M	R
1203	Corallium sp2	M	R
1122	Elpidiidae (indet)	M	R
601	Geodia cf baretii	M	R
1166	Guttigadus latifrons	M	R
1190	Holothuroidea sp (muddy)	M	R
315	Koehlermetra porrecta	M	R
536	Mesothuria intestinalis	M	R
1206	Mesothuria sp1	M	R
551	Ophiomusa lymani	M	R
1050	Paramuricea sp	M	R
1161	Parantipathes sp (branching)	M	R
1191	Pennatulacea sp (submergedAxis)	M	R
1210	Pentametrocrinus sp (yellow)	M	R
422	Porifera lamellate sp7	M	R
547	Stauropathes arctica	M	R
560	Stichopathes sp	M	R
440	Synaphobranchus kaupii	M	R
1149	Zoanthidea sp	M	R
4	Actinaria sp1	S	R
605	Actinaria sp20	S	R
930	Actinopterygii sp3	S	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
TBC	Forcipulatida	S	R
299	Pterasteridae sp	S	R
TBC	Euryalida	S	R
6	Caryophyllia	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
131	Crinoidea sp1	S	R
1144	Galacantha sp	S	R
903	Hydrozoa sp3	S	R
TBC	Solasteridae sp (white)	S	R
339	Munida tenuimana	S	R
1153	Oneirophanta mutabilis	S	R
1076	Ophiuroidea sp indet	S	R
205	Paguridae	S	R
1167	Peniagone sp	S	R
1114	Pennatulacea (indet)	S	R
TBC	pink Holothurodea	S	R
TBC	Porifera small globose	S	R
1090	Porifera tubular glassy (cfFarreidae)	S	R
433	Pseudarchaster sp1	S	R
106	Serpulidae sp1	S	R
261	Syngammina fragilissima	S	R

DIVE SUMMARY

Biotope List (Marine Habitat Classification for Britain & Ireland)		
Code	Name	Listed
M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	Deep-sea sponge aggregations (ICES/OSPAR); hard-bottom sponge aggregations (ICES subcategory).
M.AtUA.Mu.HolCom	Holothurian dominated community on Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Co	Atlantic upper abyssal coarse sediment	Coral gardens (ICES/OSPAR).
M.AtLB.Co	Atlantic lower bathyal coarse sediment	Coral gardens (ICES/OSPAR).
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Deep-sea sponge aggregations (ICES/OSPAR); hard-bottom sponge aggregations (ICES subcategory)
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
(var) M.AtUA.Bi	(variant of) Atlantic upper abyssal biogenic structure	Cold water coral reefs (ICES/OSPAR)

DIVE SUMMARY

Biotope progression per habitat transition (# species, dominant/characteristic species)	
1	M.AtUA.Mu; M.AtUA.Ro
	1167 Peniagone sp, 551 Ophiomusa lymani, 6 Caryophyllia
2	M.AtUA.Ro; M.AtUA.Mu
	Check Sponges, 131 Crinoidea sp1
3	M.AtUA.Mu.HolCom; M.AtUA.Ro
	1167 Peniagone sp
4	M.AtUA.Mu; M.AtUA.Ro
	1031 Anachalypsicrinus nefertiti, 1141 Bathyrcrinidae sp
5	M.AtUA.Mu; M.AtUA.Ro
	1167 Peniagone sp
6	M.AtUA.Ro; M.AtUA.Mu
	1031 Anachalypsicrinus nefertiti
7	M.AtUA.Mu; M.AtUA.Ro
	n/a
8	(var) M.AtUA.Bi; M.AtUA.Ro
	Check stalked sponge, 1141 Bathyrcrinidae sp, 1031 Anachalypsicrinus nefertiti
9	M.AtUA.Mu; M.AtUA.Ro
	1031 Anachalypsicrinus nefertiti, 1141 Bathyrcrinidae sp, 1129 cf Echinus sp
10	M.AtUA.Mu; M.AtUA.Co
	1031 Anachalypsicrinus nefertiti, 1141 Bathyrcrinidae sp
11	(var) M.AtUA.Bi; M.AtUA.Ro
	131 Crinoidea sp1, 274 Brisigidae, 1031 Anachalypsicrinus nefertiti, 1141 Bathyrcrinidae

DIVE SUMMARY

	sp
12	(var) M.AtUA.Bi; M.AtUA.Ro
	131 Crinoidea sp1, 1129 cf Echinus sp
13	M.AtUA.Ro; M.AtLB.Co
	1008 Chrysogorgiidae sp1, 131 Crinoidea sp1, 328 Bathypathes sp1
14	(var) M.AtUA.Bi
	324 Bathypathes sp, 131 Crinoidea sp1, 1031 Anachalypsicrinus nefertiti
15	M.AtLB.Ro
	1008 Chrysogorgiidae sp, 324 Bathypathes sp, 131 Crinoidea sp1, 1031 Anachalypsicrinus nefertiti
16	M.AtLB.Ro; M.AtLB.Co
	648 Porifera massive globose sp13, 1031 Anachalypsicrinus nefertiti, 612 Leiopathes sp
17	M.AtLB.Ro
	6 Caryophyllia, 1157 Keratoisis sp (fineBranching), 422 Porifera lamellate sp7
18	M.AtLB.Mu; M.AtLB.Ro
	585 Acanella arbuscula, 422 Porifera lamellate sp7, 1031 Anachalypsicrinus nefertiti
19	M.AtLB.Mu; M.AtLB.Ro
	131 Crinoidea sp1, 585 Acanella arbuscula

Conservation Targets

Listed Habitats Encountered

Name

Authority

DIVE SUMMARY

<p>Mud and sand emergent fauna</p> <p>Deep-sea sponge aggregations</p> <ul style="list-style-type: none"> - hard-bottom sponge aggregations <p>Coral gardens</p> <ul style="list-style-type: none"> - hard-bottom coral garden: hard-bottom gorgonian and black coral gardens 	<p>ICES</p> <p>ICES/OSPAR</p> <p>ICES subcategory</p> <p>ICES/OSPAR</p> <p>ICES subcategory</p>
<p>Listed Species Encountered (Fish, Count)</p>	
<p>n/a</p>	<p>OSPAR/IUCN</p>

<p>Additional Comments</p>
<ul style="list-style-type: none"> • Notable sub-fossil corals (poss scleractinians) on vertical wall. Possible new biotope.

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 565	TRANSECT # PB13

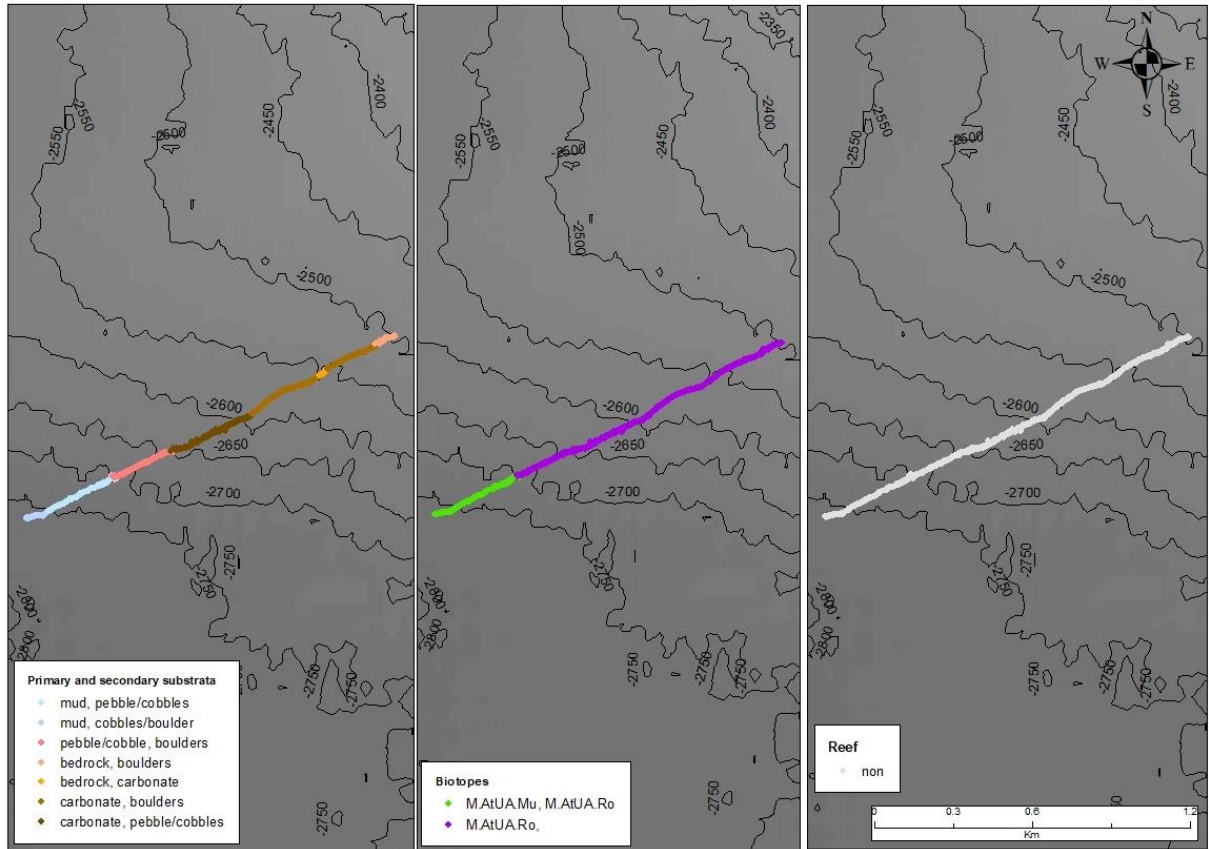
	Start	End
Date & Time	18/07/2018 22:28:00	19/07/2018 00:33:34
Latitude/ Longitude	51.694355, -15.31579383	51.7004833, -15.30342267
Depth	- 2765.53	- 2459.113
Images	IMG_0001-IMG_9899.JPG	
Samples	1 x pushcore	

Location	PB13
Target Features	Very Deep Ridge
Depth Range	-2200, -2700

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

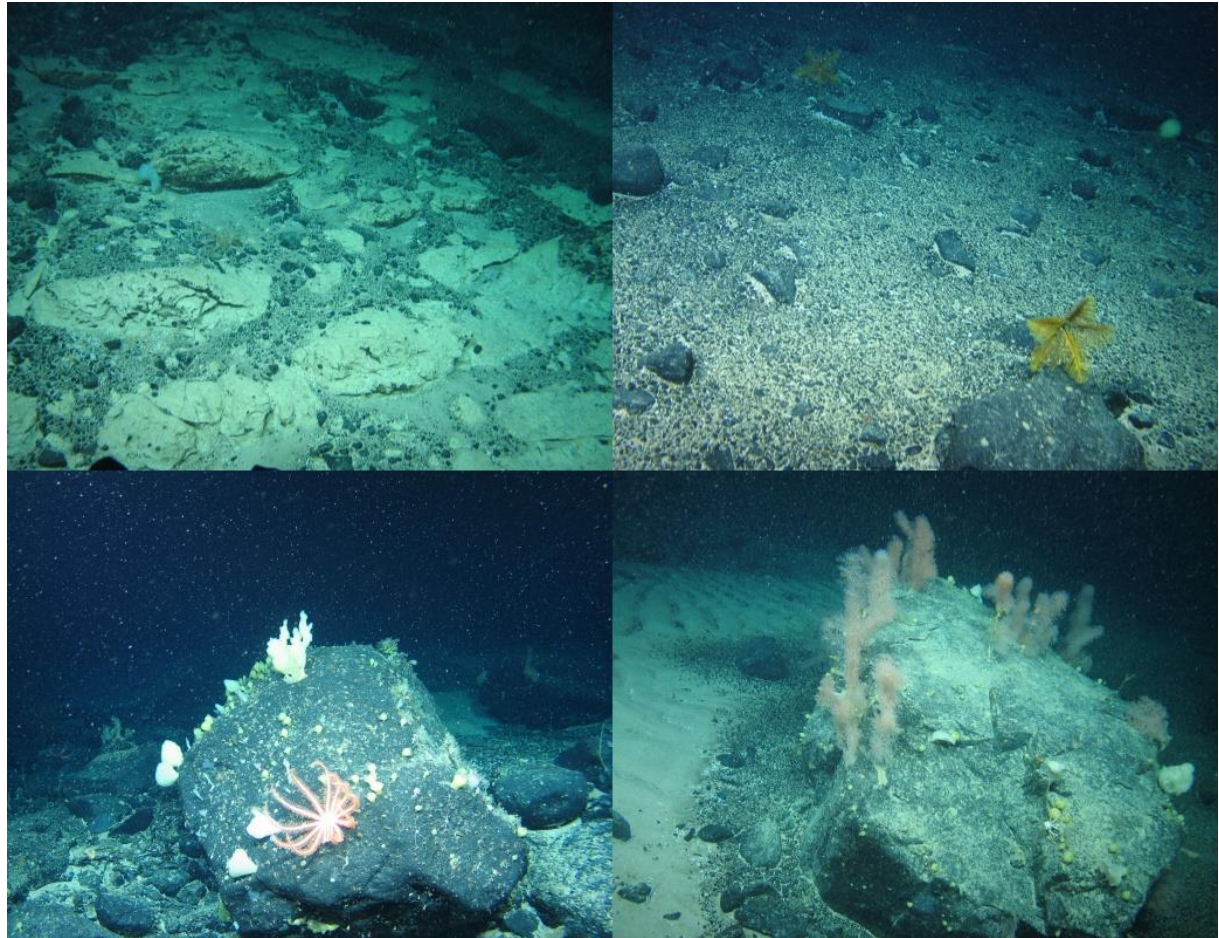
Dive 565, PB13



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Mosaicked substrata of carbonate and cobble/pebbles on moderate slope with sparse epifauna (M.AtUA.Ro).

Top R. Occasional *Anachalypsicrinus nefertiti* OTU1031 living on cobble/pebble fields (M.AtUA.Ro).

Bottom L. Yellow sponges (awaiting OTU), Brisingidae OTU274 and lamellate sponges OTU1151 on boulder (M.AtUA.Ro).

Bottom R. Chrysorgorgiidae species OTU1108 and yellow sponge (unknown species) on boulder surrounded by muddy sediment (M.AtUA.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS AT 22:28. 0m ROV samples 1 pushcore. Rippled mud/pebble and cobble fields on gentle upslope. Many epifauna species including Chrysogorgiidae sp1 and 274 Brisingidae. 35m ROV stops for imagery of Stauropathes sp. 49m dense pebble/cobble fields host *Anachalypsicrinus nefertiti* OTU1031. 01h25m here substrate is made of bedrock/carbonate/cobbles. 01h57m ROV moves slowly to sample images of Corallium sp. 02h02m ROV stops for imagery of yellow sponges (unknown species). **VIDEO ENDS AT 00:33.**

Physical Data			
Reef (types can be concurrent)	0% reef	0% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Pebble/cobbles - Cobble/boulder - Boulders - Carbonate - Bedrock 		
Geomorphology/Features	Slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble fields - Pebble/cobble/boulder fields - Sloping carbonate/pebble/cobble fields - Carbonate/boulder - Bedrock/boulder 		
Pressures	n/a		

Biological Data	
Number of Species	45
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
58	Porifera encrusting sp15 yellow	Crust	R
1	Porifera encrusting sp1 white	Crust	R
1012	Notacanthiformes sp1	L	R
274	Brisingidae	L	R
1015	Stauropathes sp1	L	R
1210	Pentometrocinidae	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1159	Rajiformes (indet)	L	R
577	Coryphaenoides guentheri	L	R
1141	Bathyrinidae sp	L	R
581	Umbellula sp	L	R
1063	Neolithodes grimaldii	L	R
1065	Paragorgia (twiggy)(possSwiftia)	L	R
1128	Porifera globose (muddy)	L	R
535	Porifera cup 2	L	R
1202	Corallium sp1	L	R
1203	Corallium sp2	L	R
1008	Chrysogorgiidae sp	M	R
1132	Porifera lamellate lobose	M	R
1031	Anachalypsicrinus nefertiti	M	R
131	Crinoidea sp1	M	R
612	Leiopathe sp	M	R
437	Leptometra celtica	M	R
547	Stauropathes arctica	M	R
1200	cf Chrysogorgiidae	M	R
137	Porifera massive globose sp6	M	R
1064	Isididae sp (fineBranching)	M	R
650	Asconema sp (Porifera mass glob 14)	M	R
536	Mesothuria intestinalis	M	R
1207	Relicanthus sp1	M	R
315	Koehlermetra porrecta	M	R
1129	cf Echinus sp	S	R
TBC	Porifera sprouts shape	S	R
1138	Eucarida sp2 (redDeep)	S	R
278	Anthomastus grandiflorus	S	R
605	Actinaria sp20	S	R
299	Pterasteridae sp	S	R
TBC	Sponge yellow sprouts	S	R
1121	Majoidea sp	S	R
1211	cf Hansenothuria sp	S	R
1076	Ophiuroidea sp (indet)	S	R
2	Ceriantharia	S	R
1154	Henricia sp (deep)	S	R
109	Actinaria sp4	S	R
TBC	Solasteridae sp (white)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtUA.Mu	Atlantic upper abyssal mud	Mud and sand emergent fauna (ICES)
M.AtUA.Ro	Atlantic upper abyssal rock and other hard substrata	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUA.Mu; M.AtUA.Ro	
	1008 Chrysogorgiidae sp1, yellow sponge, 274 Brisingidae	
2	M.AtUA.Mu; M.AtUA.Ro	
	315 Koehlermetra porrecta, 278 Anthomastus grandiflorus, 1031 Anachalypsicrinus nefertiti	
3	M.AtUA.Ro	
	315 Koehlermetra porrecta, yellow sponge, 1031 Anachalypsicrinus nefertiti	
4	M.AtUA.Ro	
	131 Crinoidea sp1	
5	M.AtUA.Ro	
	315 Koehlermetra porrecta, 1031 Anachalypsicrinus nefertiti	
6	M.AtUA.Ro	
	1031 Anachalypsicrinus nefertiti, 274 Brisingella coronata, 1151 Porifera lamellate (hexactinosida)	
7	M.AtUA.Ro	
	1031 Anachalypsicrinus nefertiti, 1151 Porifera lamellate (hexactinosida), 315 Koehlermetra porrecta	
8	M.AtUA.Ro	
	1202 Corallium sp1, 1151 Porifera lamellate (hexactinosida)	

DIVE SUMMARY

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna	ICES	
Deep-sea sponge aggregations	ICES/OSPAR	
Carbonate mound	OSPAR	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 566	TRANSECT # PB35

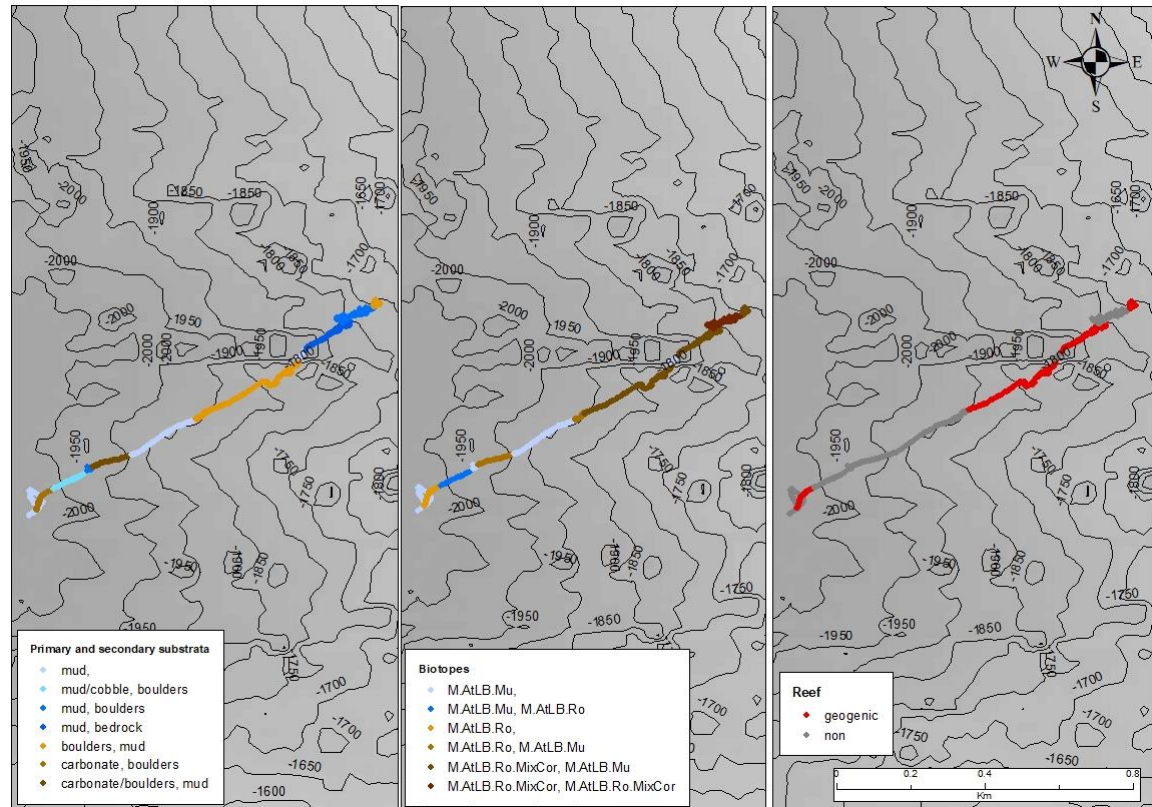
	Start	End
Date & Time	19/07/2018 05:33:00	19/07/2018 08:57:10
Latitude/ Longitude	51.86156,-15.120181	51.8665723, -15.11178733
Depth	-2008.131	-1671.35
Images	IMG_0101-IMG_0675.JPG	
Samples	2 x pushcore 1 x cf Halcampsoididae sp 1 x <i>Stauropathes arctica</i> OTU547 1 x sponge 1 x <i>Telopathes</i> sp2 OTU1181	

Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

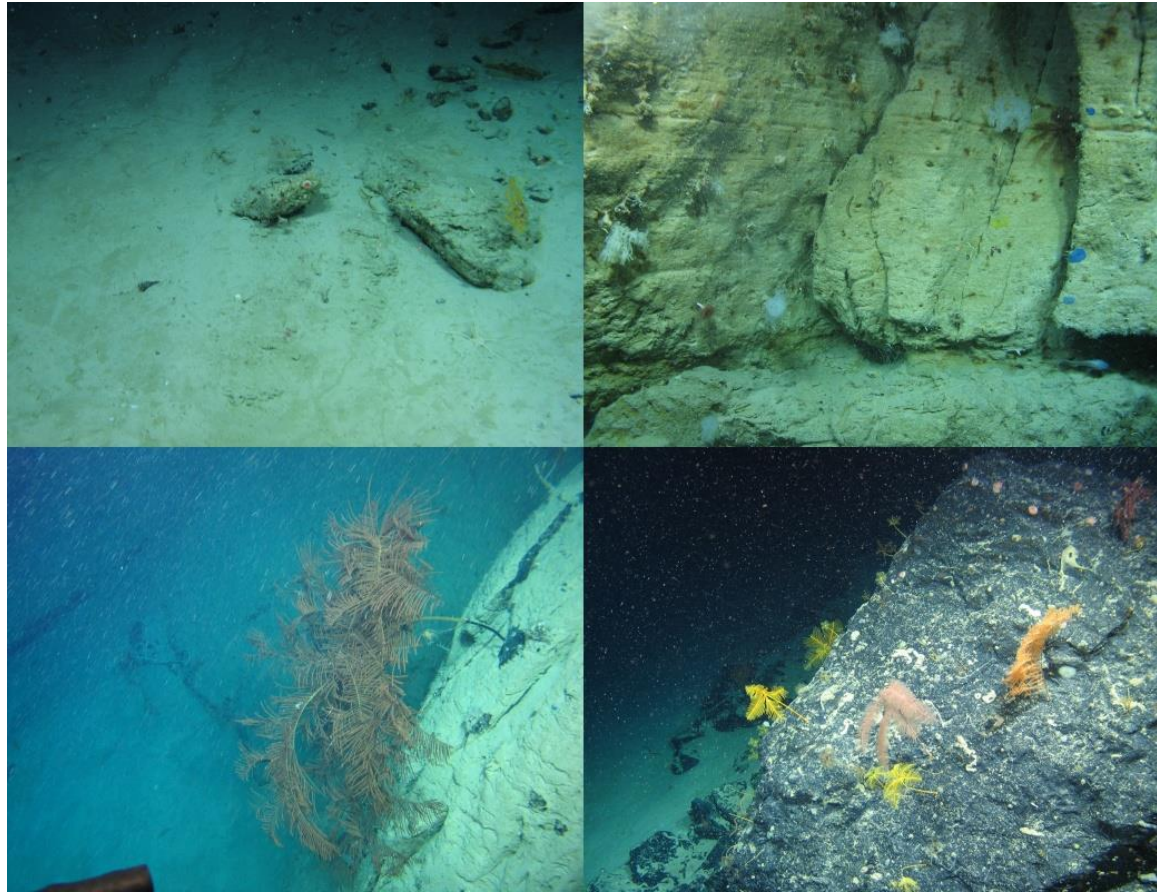
Dive 566, PB35



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. *Paramuricea* sp OTU1050 living on carbonate boulder. Substrata include muddy sediment and pebbles (M.AtLB.Mu; M.AtLB.Ro).

Top R. Vertical carbonate wall host many lobose sponges, including *Asconema* OTU650 (M.AtLB.Ro).

Bottom L. Closed-up of large *Telopathes* sp2 (red) OTU1181 on rock (M.AtLB.Ro.MixCor).

Bottom R. *Anachalypsicrinus nefertiti* OTU1031, *Chrysogoriidae* sp OTU1008 and *Stauropathes arctica* OTU547 (M.AtLB.Ro; M.AtLB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS AT 05:33. 0m Mud moderate/steep slope with sparse epifauna, including *Distichoptilum gracile* OTU1108 and *Phormosoma placenta* OTU555. 11m occasional cobble/boulder/carbonate boulders on muddy upslope. 12m sloping carbonate. 13m Peculiar encounter of possible sub-fossil serpulidae sp and sub-fossil scleractinians on vertical/sloping carbonate. 17m Here mud/pebble and cobble fields. *Anachalypsicrinus nefertiti* OTU1031 and Chrysogorgiidae sp OTU1008 on boulder. 24m Steep mud slope. 27m carbonate/sloping wall. 28m closed-up images of *Telopathes* sp2 OTU1181. 33m ROV moves slowly to capture images of *Colossendeis* sp2 OTU1201. 38m ROV stops for imagery and sampling of cf Halcampoididae sp OTU984 (sampling failed). 42m Mud cloud/vision obscured. 46m Mud sediment with occasional boulders. Sparse epifauna including *Leiopathes* sp OTU305. cf Halcampoididae sp OTU984 dominates on mud. 49m Mud cloud/vision obscured. 50m Second attempt to sample cf Halcampoididae sp OTU984 (sampling failed). 56m ROV stops for imagery and sampling of cf Halcampoididae sp OTU984. 01h07m steep muddy slope with sea pens OTU1008 and sea urchins OTU555. 01h14m boulders on slope. 01h20m ROV stops for imagery of *A.nefertiti*, *Stauropathes arctica* OTU547 and *Asconema* OTU650. 01h22m ROV samples *Stauropathes arctica* OTU547 and *Telopathes* sp2 OTU1181. 01h45m Muddy slope. 01h51m ROV moves upwards along a very steep slope. Here bedrock begins where many epifauna species co-dominate, including sponges and stalked crinoids. **VIDEO ENDS AT 08:57.**

Physical Data			
Reef (types can be concurrent)	40% reef	100% geogenic	
		0% biogenic	n/a
			n/a
Substrates	<ul style="list-style-type: none"> - Mud - Mud/cobble - Coral rubble - Carbonate - Boulders - Bedrock 		
Geomorphology/Features	Slope Steep slope Vertical wall		
Annex 1 Types	<ul style="list-style-type: none"> - Cobble/boulders - Sloping carbonate/boulders - Sloping/vertical carbonate - Boulders - Bedrock 		
Pressures	n/a		

DIVE SUMMARY

Biological Data			
Number of Species		77	
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)			
O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1031	Anachalypsicrinus nefertiti	L	O
188	Araeosoma fenestratum	L	R
1141	Bathycrinidae sp	L	R
1041	Bathycrinidae sp1	L	R
284	Bathypathes sp (brown)	L	R
1111	Cataetyx laticeps	L	R
1142	cf Farreidae	L	O
577	Coryphaenoides guentheri	L	R
566	Coryphaenoides rupestris	L	R
1072	Crinoidea sp	L	R
1108	Distichoptilum gracile	L	R
1166	Guttigadus latifrons	L	R
1039	Hydrolagus cf affinis	L	R
1157	Keratoisis sp (fineBranching)	L	O
305	Leiopathes sp	L	O
1160	Lepidion cf guentheri	L	R
557	Lepidisis sp	L	R
1012	Notacanthiformes sp1	L	R
551	Ophiomusa lymani	L	R
1050	Paramuricea sp	L	R
1042	Parantipathes sp	L	R
1161	Parantipathes sp (branching)	L	R
552	Polyacanthonotus rissoanus	L	R
535	Porifera cup 2	L	R
1075	Porifera cylindrical sp	L	R
1128	Porifera globose (muddy)	L	R
1151	Porifera lamellate (hexactinosida)	L	R
1162	Porifera vase (cf Aphrocallystes)	L	R
560	Stichopathes sp	L	R
440	Synaphobranchus kaupii	L	R
1181	Telopathes sp2 (red)	L	O
581	Umbellula sp	L	R
1117	white spring	L	R
293	Zoantharia sp6	L	R
1062	Acesta excavate	M	R
554	Actinernus sp	M	R
1099	Actiniaria sp30	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
132	Actinostolidae sp1	M	R
650	Asconema sp (Porifera mass glob 14)	M	R
984	cf Halcampoididae sp	M	R
1174	cf Hymenaster	M	R
1008	Chrysogorgiidae sp1	M	R
1059	Colossendeis sp	M	R

DIVE SUMMARY

1201	Colossendeis sp2	M	R
39	Corallimorphidae sp1	M	R
572	Echinoidea sp5 (Echinothuroidea)	M	R
601	Geodia cf baretii	M	O
432	Holothuroidea cf Laetmogone (purple)	M	R
1179	Holothuroidea sp (pinkDeep)	M	R
1206	Mesothuria sp1	M	R
563	Neocyttus helgae	M	R
1191	Pennatulacea sp (submergedAxis)	M	R
555	Phormosoma placenta	M	R
1090	Porifera tubular glassy (cfFarreidae)	M	R
433	Pseudarchaster sp1	M	R
700	Solenosmilia variabilis	M	R
547	Stauropathes arctica	M	R
259	Zoarcidae sp1	M	R
585	Acanella arbuscula (bushy)	S	R
605	Actinaria sp20	S	R
278	Anthomastus grandoflorus	S	R
311	Anthothelia grandiflora	S	R
TBC	Euryalida	S	R
274	Brisingidae	S	R
6	Caryophyllia sp	S	R
2	Ceriantharia	S	R
1129	cf Echinus sp	S	R
1049	cf Psolus sp	S	R
1138	Eucaridea sp2 (redDeep)	S	R
1154	Henricia sp (deep)	S	R
TBC	Solasteridae sp (white)	S	R
263	Porania pulvillus (poss_stormi)	S	R
106	Serpulidae sp1	S	R
1149	Zoanthidea sp	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Deep-sea sponge aggregations (ICES/OSPAR)
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtLB.Mu
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DIVE SUMMARY

	1108 Distichoptilum gracile, 555 Phormosoma placenta
2	M.AtLB.Ro
	800 Porifera encrusting blue, 6 Caryophyllia, 380 Porifera massive globose
3	M.AtLB.Mu; M.AtLB.Ro
	1031 Anachalypsicrinus nefertiti, 560 Stichopathes sp, 1050 Paramuricea sp
4	M.AtLB.Mu
	1108 Distichoptilum gracile, 1069 Ceriantharia
5	M.AtLB.Ro.MixCor
	547 Stauropathes arctica, 284 Bathypathes sp (brown)
6	M.AtLB.Mu
	1108 Distichoptilum gracile
7	M.AtLB.Ro; M.AtLB.Mu
	547 Stauropathes arctica, 551 Ophiomuseum lymani
8	M.AtLB.Ro.MixCor; M.AtLB.Mu
	547 Stauropathes arctica, 6 Caryophyllia
9	M.AtLB.Ro.MixCor; M.AtLB.Mu
	305 Leiopathes sp, 1031 Anachalypsicrinus nefertiti
10	M.AtLB.Mu
	1069 Ceriantharia
11	M.AtLB.Ro.MixCor
	305 Leiopathes sp, 1031 Anachalypsicrinus nefertiti, 1141 Bathyrcrinidae sp
12	M.AtLB.Ro.MixCor; M.AtLB.Mu

DIVE SUMMARY

	1157 Keratoisis sp, 560 Stichopathes sp, 1149 Zoanthidae sp
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Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Deep-sea sponge aggregations	ICES/OSPAR
Coral gardens	ICES/OSPAR
- hard-bottom coral garden: hard-bottom gorgonian and black coral gardens	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

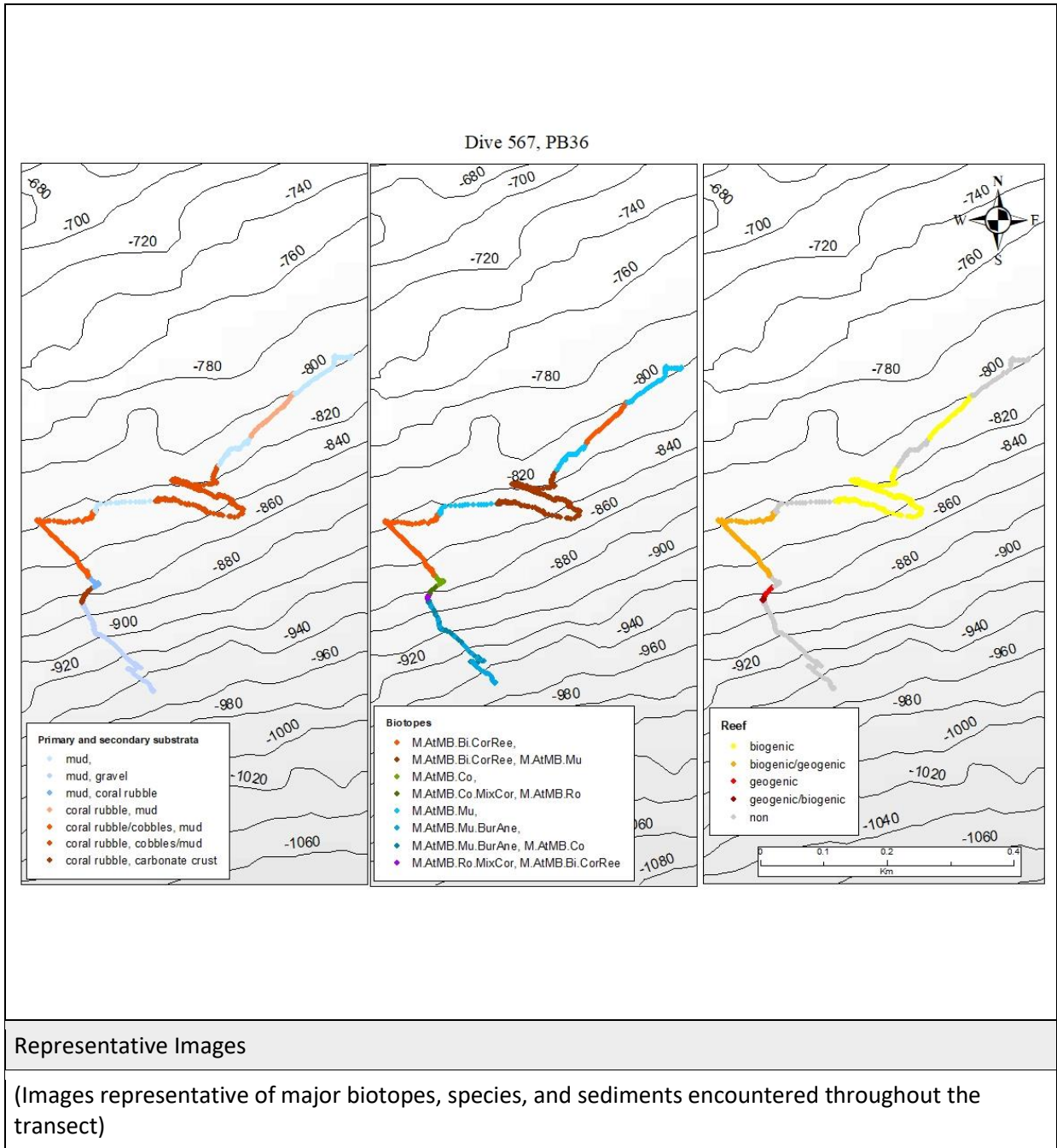
DIVE SUMMARY	
DIVE # 567	TRANSECT # PB36

	Start	End
Date & Time	19/07/2018 12:31:47	19/07/2018 14:11:41
Latitude/ Longitude	51.862089, -15.03030933	51.8667517, -15.02753583
Depth	-945.23	-793.11
Images	IMG_0676-IMG_IMG_0708.JPG	
Samples	2 x pushcores	

Location	n/a
Target Features	n/a
Depth Range	n/a

Maps of Dive
OFOP BMP and/or GIS Maps

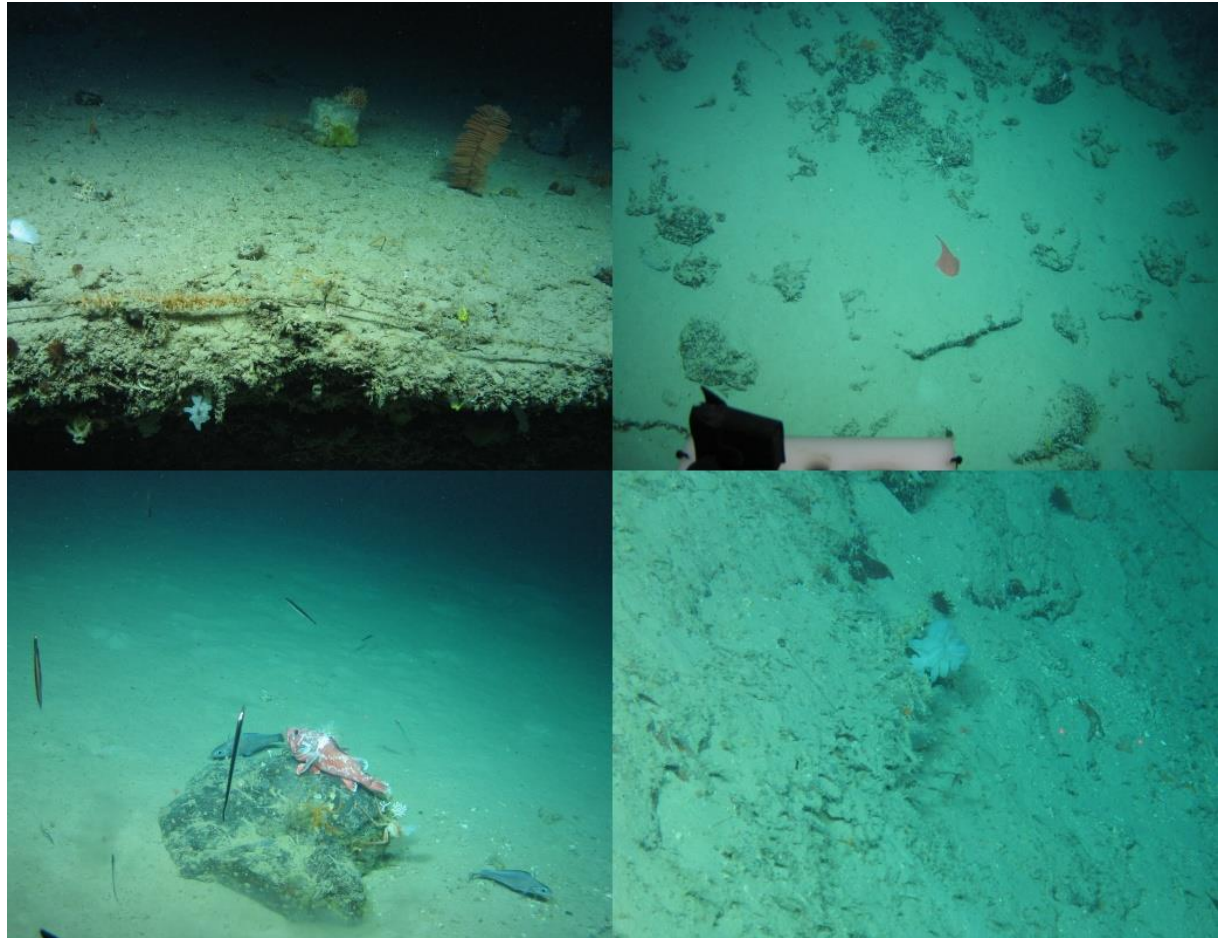
DIVE SUMMARY



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Escarpment host many epifauna species including *Bathypathes* sp OTU284, *Aphrocallistes* sp OTU264 and *Stichopathes* sp OTU283 colonising a fishing rope (M.AtMB.Ro.MixCor; M.AtMB.Co).

Top R. *Chaunax pictus* MissingOTU found on steep muddy slope surrounded by sparse *Lophelia pertusa* OTU250 colonies on cobbles.

Bottom L. *Trachyscorpia cristulata* OTU1216 hovering on boulder with *Paramola cuvieri* OTU304 and *Stichopathes* OTU283 (M.AtMB.Mu).

Bottom R. *L.pertusa* OTU250 rubble on steep slope with occasional *Aphrocallistes* sp OTU264 (M.AtMB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 12:19. ROV is at the bottom and samples 2 pushcores. 12:27 ROV collects imagery of *Flabellum* sp. Here muddy upslope with sparse epifauna. 12:28 ROV collects imagery of marine debris/organic matter. 12:32 Here it collects imagery of hydrozoan OTU120. 12:36 Now occasional cobble and gravel/rubble. Sparse species of hexacorallia such as *Lophelia pertusa* and *Leiopathes* sp OTU305 on boulders. 12:36 ROV stops for imagery of epifauna living on boulder. 12:42 Here *Bonellia viridis* dominate on moderate muddy slope. 12:44 Coral rubble intersperse with mud. 12:50 Fishing rope. 12:50 Substrata changes into bedrock crust where many epifauna dwell including scleractinians and zoantharians. 12:58 Here mud and coral rubble intersperse with occasional bedrock. *Leiopathes* sp and *Stichopathes* sp are encountered. 13:00 Slope becomes steeper and steeper with sparse epifauna, including *Leiopathes* sp and sponges. 13:03 Here mud is back as primary substrate. 13:09 Occasional cobble/boulders. 13:12 ROV stops imagery of new species of Lophiidae (poss. *Chaunax pictus*). 13:16 Here water column images. 13:17 Back to the sea floor. Sparse *Leiopathes* and *Stichopathes* on mud/coral rubble. 13:19 Here ROV stops for imagery of muddy/coral rubble sediment. 13:24 ROV goes down slope. Here mud is dominated by *Bonellia viridis* with occasional cobbles. 13:31 Now ROV goes up slope. 13:32 Bedrock crust with scleractinians on crusts' edge. 13:33 Mud cloud/vision is poor. 13:35 Vision obscured. 13:36 Very steep slope with crust and coral rubble. 13:40 Again water column. 13:43 Back to the sea floor. ROV climbs a vertical wall/very steep slope. 13:45 Here predominantly muddy slope with occasional boulders. **END OF HD VIDEO AT 14:11.**

Physical Data			
Reef (types can be concurrent)		<25% geogenic	
	50% reef	<75% biogenic	<1% living
			<99% dead
Substrates	<ul style="list-style-type: none"> - Mud - Gravel - Coral rubble/cobbles - Cobble/boulders - Coral rubble/mud - Carbonate crust - Carbonate - Boulders - Bedrock 		
Geomorphology/Features	Continental slope		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Boulders - Bedrock - Sloping carbonate - Coral reef/boulder - Cobble/boulder fields 		

DIVE SUMMARY

	- Vertical carbonate
Pressures	1 x fishing rope (12:50)

Biological Data

Number of Species 48

Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1	Porifera encrusting sp1 white	Crust	R
440	Synaphobranchus kaupii	L	R
1017	Teuthida sp1	L	R
267	Bonellia viridis	L	R
1187	Antipathes dichotoma	L	R
1072	Crinoidea sp	L	R
249	Lepidion eques	L	R
305	Leiopathes sp	L	R
250	Lophelia pertusa	L	R
283	Stichopathes cf gravieri	L	R
1166	Guttigadus latifrons	L	R
540	Chrysopathes sp Trissopathes sp	L	R
433	Pseudarchaster sp1	L	R
188	Araeosoma fenestratum	L	R
284	Bathypathes sp (brown)	L	R
TBC	Trichiuridae	L	R
1042	Parantipathes sp	L	R
1020	Phycis blennoides	L	R
349	Mora moro	L	R
654	Molva molva	L	R
973	Graneledone verrucosa	L	R
930	Actinopterygii sp3	L	R
1157	Keratosis sp (fineBranching)	L	R
1050	Paramuricea sp	L	R
TBC	Helicolenus dactylopterus	L	R
304	Paramola cuvieri	L	R
TBC	Chaunax pictus	L	R
328	Bathypathes sp1	M	R
285	Chyrostylidae sp	M	R
264	Aphrocallistes sp	M	R
339	Munida tenuimana	M	R
234	Ceremaster Peltaster Plinthaster	M	R
20	Asciacea sp2 (clear)	M	R
43	Corallimorphidae sp2	M	R
1022	Gersemia sp3	M	R
591	Asciacea sp2	M	R
1056	Flabellum sp	S	R
120	Corymorphidae sp	S	R
2	Ceriantharia	S	R
278	Anthomastus grandiflorus	S	R
650	Actinaria sp20	S	R
207	Pliobrothus sp	S	R
1154	Henricia sp (deep)	S	R
4	Actinaria sp1	S	R
211	Cidaris cidaris	S	R
204	Reteporella sp1	S	R
621	Hypsogastropoda	S	R

DIVE SUMMARY

Biotope List (Marine Habitat Classification for Britain & Ireland)		
Code	Name	Listed
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reef (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reef (ICES)
M.AtMB.Co	Atlantic mid bathyal coarse sediment	
M.AtMB.Co.MixCor	Mixed cold water coral community on Atlantic mid bathyal coarse sediment	Coral gardens (ICES/OSPAR); hard-bottom coral garden (ICES subcategory).
M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Mu.BurAne	Burrowing anemone field in Atlantic mid bathyal mud	Anemone aggregations (ICES)
(var)M.AtMB.Mu	(variant of) Atlantic mid bathyal mud	
M.AtMB.Ro	Atlantic mid bathyal rock	
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Mu.BurAne	
		1069 Ceriantharia
2	M.AtMB.Ro.MixCor; M.AtMB.Co	
		250 <i>Lophelia pertusa</i> , 305 <i>Leiopathes</i> sp, 1187 <i>Antipathes dichotoma</i> , 1069 <i>Ceriantharia</i> , 1042 <i>Parantipathes</i> sp
3	M.AtMB.Co.Mixcor; M.AtMB.Ro	
		1187 <i>Anthipathes dichotoma</i> , 283 <i>Stichopathes cf gravieri</i>
4	M.AtMB.Co	

DIVE SUMMARY

	264 Aphrocallistes sp, 305 Leiopathes sp
5	M.AtMB.Bi.CorRee
	250 Lophelia pertusa, 1187 Antipathes dichotoma, 267 Bonellia viridis
6	M.AtMB.Mu
	n/a
7	M.AtMB.Co.MixCor; M.AtMB.Mu
	305 Leiopathes sp, 284 Bathypathes sp, 264 Aphrocallistes sp
8	(var)M.AtMB.Mu
	267 Bonellia viridis
9	M.AtMB.Bi.CorRee
	264 Aphrocallistes sp, 305 Leiopathes sp, 250 Lophelia pertusa
10	(var)M.AtMB.Mu
	267 Bonellia viridis

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Mud and sand emergent fauna	ICES
Anemone aggregations	ICES/ICES subcategory
Cold water coral reef:	ICES/OSPAR
- <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reef	ICES subcategory
Coral gardens	ICES/OSPAR
- hard-bottom coral garden: hard-bottom gorgonian and black coral garden	ICES subcategory
Deep-sea sponge aggregations	ICES/OSPAR

DIVE SUMMARY

Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 568	TRANSECT # PB31

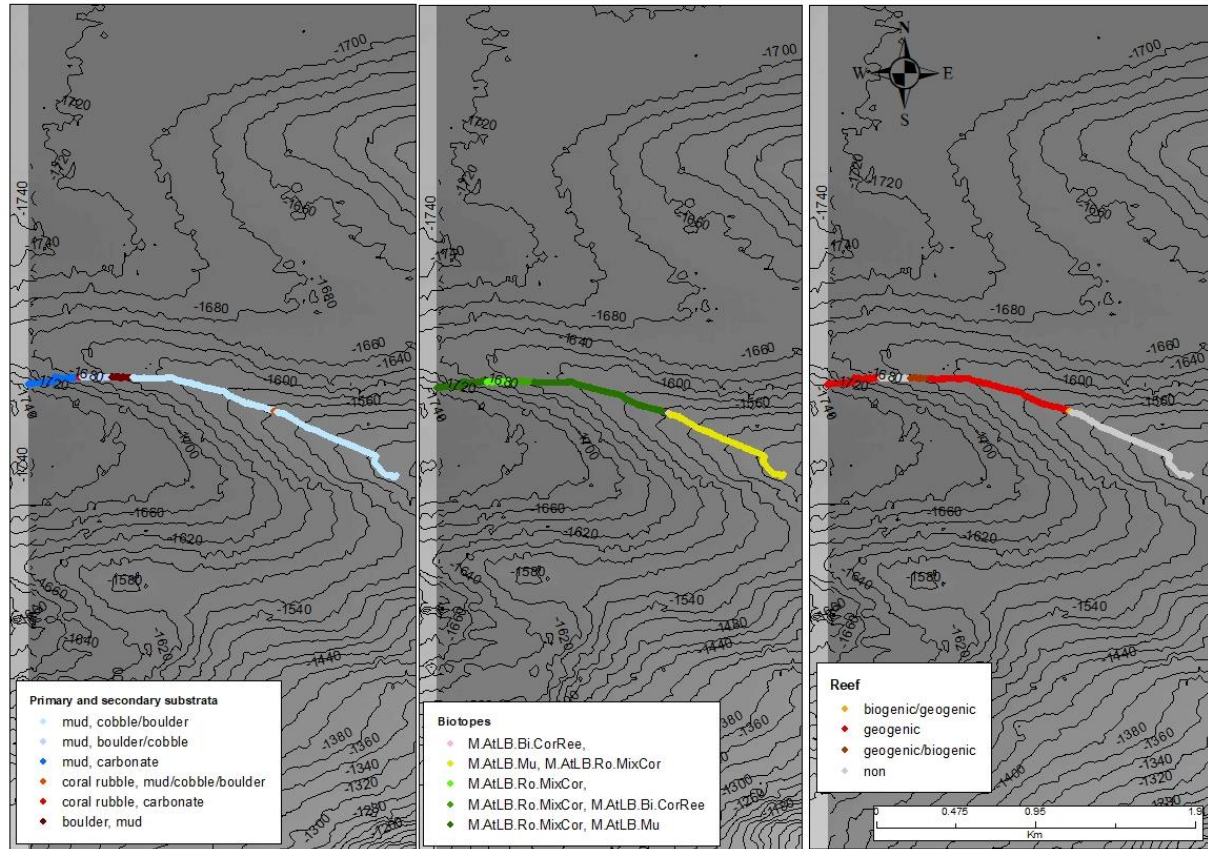
	Start	End
Date & Time	19/07/2018 17:50:00	19/07/2018 20:35:05
Latitude/ Longitude	52.0468707, -15.0001205	52.0419305, -14.98075217
Depth	-1724.538	-1456.617
Images	IMG_0709-IMG_1370.JPG	
Samples	2 x pushcores 1 x yellow demospongiae	

Location	PB31
Target Features	Canyon wall, deep, NPWS selected
Depth Range	-1400, -1700

Maps of Dive
OFOF BMP and/or GIS Maps

DIVE SUMMARY

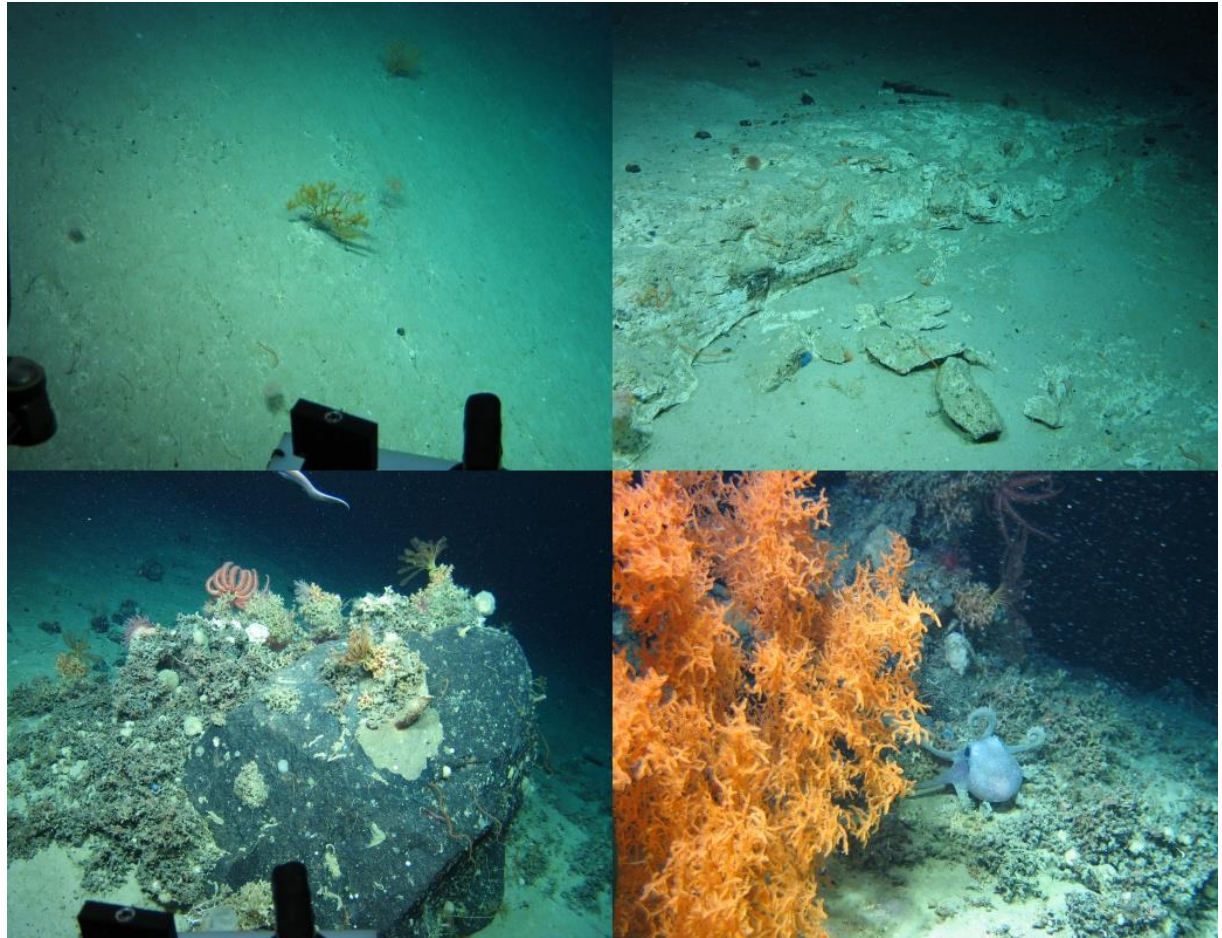
Dive 568, PB31



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Occasional *Paramuricea* sp OTU1050 aggregations on muddy sediment (M.AtLB.Mu).

Top R. *Stichopathes* sp OTU283 living on carbonate crust (M.AtLB.Ro.MixCor).

Bottom L. *Solenosmilia variabilis* OTU700 colonies living on boulder (M.AtLB.Ro.MixCor).

Bottom R. *Solenosmilia variabilis* reefs on boulders hosting *Leiopathes* sp OTU305, *Brisingidae* OTU274 and *Graneledone verrucosa* OTU973 (M.AtLB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF HD VIDEO AT 17:50. Muddy sediment/carbonate wall. Stichopathes sp OUT283, Paramuricea sp OTU1050 and Eknomisis sp OTU649 dominate on wall. 17:58 ROV climbs a steep wall/mound. 18:12 ROV stops for imagery of *Disctichoptilum gracile* OTU1108. **18:20** *Solenosmilia variabilis* colonies on boulder/cobble sediment/mud. Sponge aggregations on coral. ROV stops for imagery of coral colony. **18:27** Now mud steep slope with occasional cobbles. Paramuricea sp OTU1050, Radicipes sp OTU1044 and *Ophiomusa lymani* OTU551 co-dominate. 18:30 ROV stops for imagery of Eknomisis sp OTU649. **18:36** Mud with scattered cobbles/boulders/coral reef host Leiopathes sp OTU305, sponges, Brisingidae OTU274. 18:48 ROV stops for imagery of coral colony. 19:21 ROV stops for imagery and sampling of encrusting yellow sponge OTU58. 19:50 Here gentle down slope. 19:59 ROV stops for imagery of Paragorgia sp and Jasonisis sp OTU1070 on boulder. 20:12 Fishing rope on the sea floor. 20:28 Fishing net on the sea floor. 20:36 ROV stops for imagery of Jasonisis sp OTU1070. **END OF VIDEO AT 20:39.**

Physical Data									
Reef (types can be concurrent)	<table border="1"> <tr> <td><25% reef</td> <td><95% geogenic</td> </tr> <tr> <td></td> <td> <table border="1"> <tr> <td><5% biogenic</td> <td><5% living</td> </tr> <tr> <td></td> <td><95% dead</td> </tr> </table> </td> </tr> </table>	<25% reef	<95% geogenic		<table border="1"> <tr> <td><5% biogenic</td> <td><5% living</td> </tr> <tr> <td></td> <td><95% dead</td> </tr> </table>	<5% biogenic	<5% living		<95% dead
<25% reef	<95% geogenic								
	<table border="1"> <tr> <td><5% biogenic</td> <td><5% living</td> </tr> <tr> <td></td> <td><95% dead</td> </tr> </table>	<5% biogenic	<5% living		<95% dead				
<5% biogenic	<5% living								
	<95% dead								
Substrates	<ul style="list-style-type: none"> - Mud - Coral reef - Cobbles - Cobble/boulder - Boulder/cobble - Carbonate 								
Geomorphology/Features	Slope Steep slope Wall								
Annex 1 Types	<ul style="list-style-type: none"> - Cobble - Coral reef - Boulder/cobble - Sloping/vertical carbonate 								
Pressures	1 x fishing rope (20:17) 1 x large fishing net (20:28)								

Biological Data

DIVE SUMMARY

Number of Species	67
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Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1	Porifera encrusting white	Crust	R
58	Porifera encrusting sp yellow	Crust	R
551	Ophiomusa lymani	L	O
552	Polyacanthonotus rissoanus	L	R
1020	Phycis blennoides	L	R
649	Eknomisis sp	L	R
440	Synaphobranchus kaupii	L	R
566	Coryphaenoides ruspestris	L	R
1050	Paramuricea sp	L	F
1003	Nezumia aequalis	L	R
700	Solenosmilia variabilis	L	R
557	Lepidisis sp	L	R
1160	Lepidion cf guentheri	L	R
973	Graneledone verrucosa	L	R
305	Leiopathes sp	L	R
611	Rhabdodictyum cf delicatum	L	R
569	Squaliformes	L	R
1070	Jasonisis sp (pinkSolenAssoc)	L	F
293	Zoantharia sp6	L	R
1038	Asconema sp	L	R
535	Porifera cup 2	L	R
1039	Hydrolagus cf affinisb	L	R
TBC	Hyalonema sp	L	R
1080	Pseudoanthomastus sp	L	R
1151	Porifera lamellate (hexactinosida)	L	R
TBC	yellow coral	L	R
1065	Paragorgia sp (deepPink)	L	R
1059	Colossendeis sp	L	R
653	Chimera opalescens	L	R
622	Hallipteris cf finmarchica	L	R
1108	Distichoptilum gracile	L	R
1045	Bathycrinidae sp2	L	R
1111	Cataetyx laticeps	L	R
283	Stichopathes sp	M	R
585	Acanella arbuscula	M	R
1008	Chrysogorgiidae sp	M	R
547	Stauropathes arctica	M	R
TBC	Euryalida	M	R
563	Neocyttus helgae	M	R
1044	Radicipes sp	M	R
573	Solaster endeca	M	R
436	Pentametrocrinus atlanticus	M	R
1030	cf Polymastia boletiformis	M	R
278	Anthomastus grandiflorus	M	R
284	Bathypathes sp (brown)	M	R
267	Bonellia viridis	M	R
422	Porifera lamellate sp7	M	R
264	Aphrocallistes sp	M	R
217	Actiniaria sp6	M	R
315	Koehlermetra porrecta	M	R

DIVE SUMMARY

274	Brisingidae	M	R
604	Porifera massive lobose sp20	M	R
1047	Actinoscyphiidae sp1 (pink)	M	R
1083	Pennatula inflata	M	R
446	Trachyrhynchus sp	M	R
285	Chyrostylidae sp	M	R
1066	Adamsia sp (PaguridaeAssoc)	S	R
205	Paguridae	S	R
605	Actinaria sp20	S	R
200	Munida sarsi	S	R
1042	Parantipathes sp	S	R
106	Serpulidae sp	S	R
581	Umbellula	S	R
2	Ceriantharia	S	R
311	Anthothela grandiflora	S	R
6	Caryophyllia	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtLB.Ro.MixCor	Mixed cold water coral community on Atlantic lower bathyal rock and other hard substrata	Coral garden (ICES/OSPAR); hard-bottom coral garden: hard-bottom colonial scleractinians on rocky outcrops (ICES subcategory); hard-bottom coral garden: hard-bottom gorgonian and black coral gardens (ICES subcategory).
M.AtLB.Mu	Atlantic lower bathyal mud	Mud and sand emergent fauna (ICES)
M.AtLB.Ro	Atlantic lower bathyal rock and other hard substrata	Coral garden (ICES/OSPAR); hard-bottom coral garden: hard-bottom colonial scleractinians on rocky outcrops (ICES subcategory)

DIVE SUMMARY

M.AtLB.Bi.CorRee	Atlantic lower bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES); <i>Solenosmilia variabilis</i> reefs (ICES subcategory).
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtLB.Ro.MixCor; M.AtLB.Mu	283 Stichopathes sp, 1050 Paramuricea, 649 Eknomisis sp
2	M.AtLB.Ro.MixCor; M.AtLB.Mu	283 Stichopathes sp, 1050 Paramuricea, 649 Eknomisis sp
3	M.AtLB.Ro.MixCor	700 Solenosmilia variabilis, 283 Stichopathes sp, 315 Koehlermetra porrecta
4	M.AtLB.Ro.MixCor; M.AtLB.Bi.CorRee	700 Solenosmilia variabilis, 305 Leiopathes sp
5	M.AtLB.Ro.MixCor; M.AtLB.Mu	649 Eknomisis sp, 1050 Paramuricea sp
6	M.AtLB.Bi.CorRee	700 Solenosmilia variabilis, 649 Eknomisis sp, 315 Koehlermetra porrecta
7	M.AtLB.Mu; M.AtLB.Ro.MixCor	305 Leiopathes sp, 1070 Jasonisis sp, 274 Brisingidae

Conservation Targets	
Listed Habitats Encountered	
Name	Authority

DIVE SUMMARY

<p>Coral garden:</p> <ul style="list-style-type: none"> - hard-bottom coral garden: hard-bottom colonial scleractinians on rocky outcrops - hard-bottom coral garden: hard-bottom gorgonian and black coral gardens <p>Mud and sand emergent fauna</p> <p>Cold water coral reefs</p> <ul style="list-style-type: none"> - <i>Solenosmilia variabilis</i> reefs 	<p>ICES/OSPAR</p> <p>ICES subcategory</p> <p>ICES subcategory</p> <p>ICES</p> <p>ICES/OSPAR</p> <p>ICES subcategory</p>
<p>Listed Species Encountered (Fish, Count)</p>	
<p>n/a</p>	<p>OSPAR/IUCN</p>

<p>Additional Comments</p>
<p>n/a</p>

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 569	TRANSECT # PB10

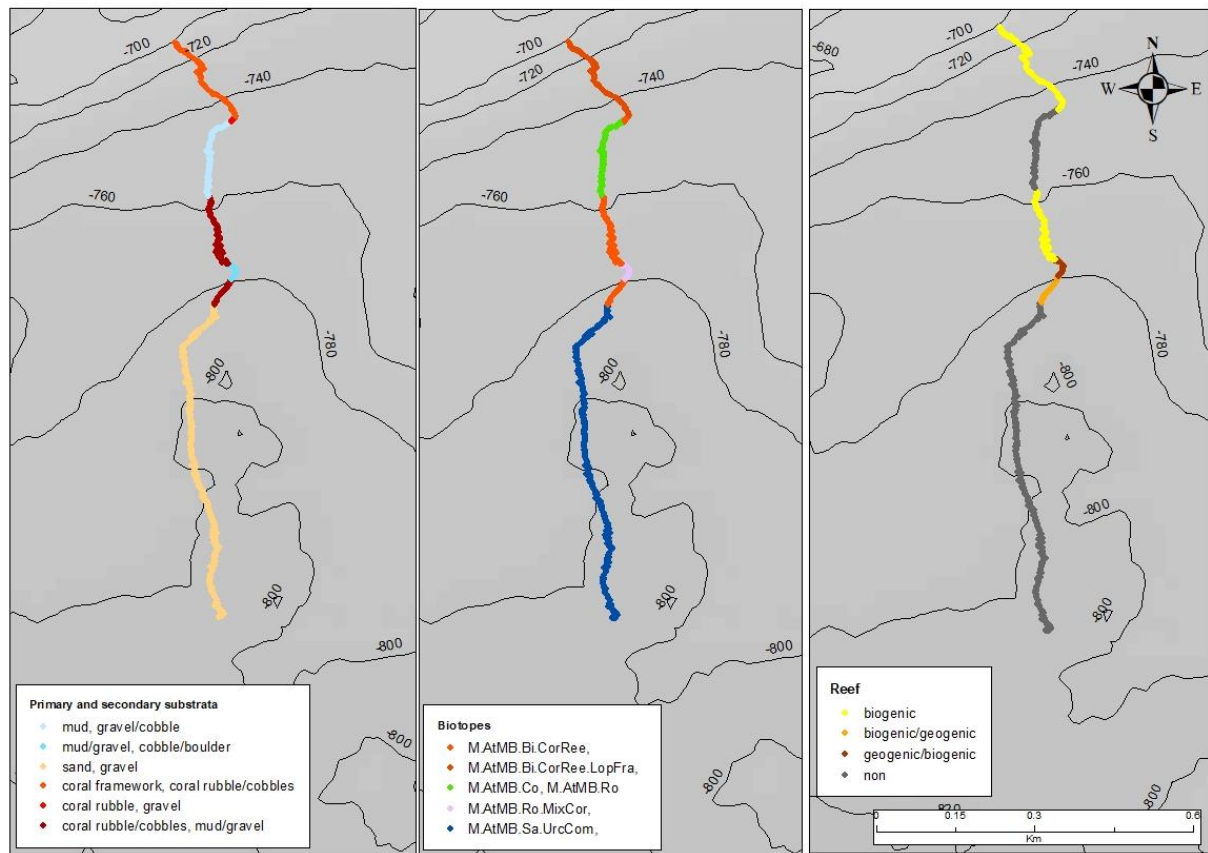
	Start	End
Date & Time	20/07/2018 00:32:00	20/07/2018 02:32:49
Latitude/ Longitude	52.2284902, -14.8547575	52.239048, -14.856671
Depth	-794.32	-664.18
Images	IMG_1371-IMG_1393.JPG	
Samples	n/a	

Location	PB10
Target Features	SAC Boundary, Wall, Ridge
Depth Range	-660, -800

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

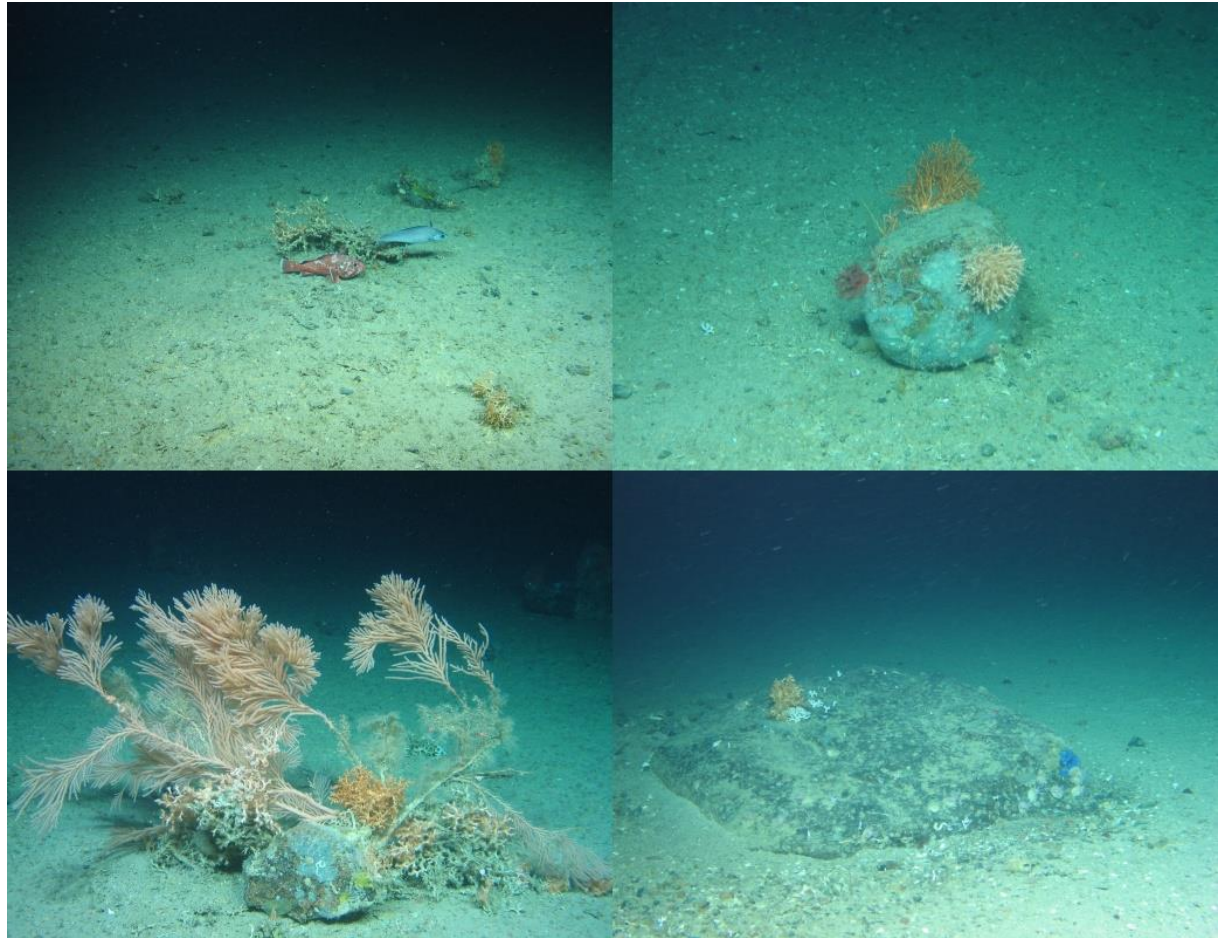
Dive 569, PB10



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. *Lophelia pertusa* OTU250 rubble on slope with *Lepidion eques* OTU249 and *Trachiscoropia cristulata* OTU1216 (M.AtMB.Bi.CorRee).

Top R. Colonies of *L.pertusa* OTU250 co-dwelling with encrusted sponge OUT1 on cobble, surrounded by *L.pertusa* rubble (M.AtMB.Bi.CorRee).

Bottom L. *Callogorgia verticillata* OTU280 and *L.pertusa/Madrepora oculata* colonies on cobble (M.AtMB.Co.MixCor).

Bottom R. *L.pertusa* rubble and colonies on boulder (M.AtMB.Ro.MixCor).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS AT 00:32. ROV is on the seafloor. It samples two pushcores. Mud gentle upslope where *Cidaris cidaris* OTU211 dominates. 00:44 Here a dense colony of small (<5 cm wide) brown anemones covers the muddy slope. 00:55 Now mud becomes rippled. Brown anemones still present. 01:04 Now gravel/mud sediment begins, hosting sparse epifauna. 01:25 Here isolated colonies of *Lophelia pertusa* on coarse sediment (25-50% living). 01:25 Mud cloud/vision obscured briefly. 01:34 ROV stops for imagery of *Callogorgia verticillata* OTU280 living on coral. 01:37 Occasional cobbles/boulders encountered hosting *L.pertusa* colonies. 01:45 ROV moves slowly to sample imagery of *Pachycerianthus multiplacatus* OTU458 and reef on cobble. 01:52 ROV stops again for imagery of many epifauna species on cobble, including cf *Psolus* sp OTU1049. 01:57 Now imagery of scleractinian *Flabellum* sp OTU1056. 02:06 Again here imagery of epifauna on rocky outcrop. 02:08 Now cobbles/boulders become more sparse. 02:15 Here ROV stops for imagery of dead *L.pertusa* reef/framework with a couple of crustaceans *Bathynectes* sp OTU235. 02:20 Here steep slope hosts mostly dead coral reefs (<1% living) on coarse sediment. 02:28 Many epifauna species living on *L.pertusa* reefs. 25-50% living corals host anemones and sea urchins. **VIDEO ENDS AT 02:32.**

Physical Data			
Reef (types can be concurrent)	55% reef	10% geogenic	
		90% biogenic	<10% living
			<90% dead
Substrates	<ul style="list-style-type: none"> - Mud - Mud/gravel - Gravel - Sand - Coral rubble - Coral rubble/cobbles - Coral framework - Boulders 		
Geomorphology/Features	Slope		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Boulder 		
Pressures	n/a		

Biological Data	
Number of Species	45
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat)	

DIVE SUMMARY

transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1	Porifera encrusting sp1 white	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1097	Aphanopus carbo	L	R
188	Araeosoma fenestratum	L	R
284	Bathypathes sp (brown)	L	R
280	Callogorgia verticillata	L	R
254	Chaceon affinis	L	R
211	Cidaris cidaris	L	O
577	Coryphaenoides guentheri	L	R
227	Helicolenus dactylopterus	L	R
1024	Hydrolagus mirabilis	L	R
249	Lepidion eques	L	R
250	Lophelia pertusa	L	R
654	Molva molva	L	R
349	Mora moro	L	R
1050	Paramuricea sp	L	R
1020	Phycis blennoides	L	R
440	Synphobranchus kaupii	L	R
1216	Trachiscoropia cristulata	L	R
278	Anthomastus grandiflorus	M	R
1187	Antipathes dichotoma	M	R
264	Aphrocallistes sp	M	R
20	Ascidacea sp2 (clear)	M	R
234	Ceremaster Peltaster Plinthaster	M	R
56	Hydrozoa flat branched	M	R
251	Madrepora oculata	M	R
536	Mesothuria intestinalis	M	R
458	Pachycerianthus multiplacatus	M	R
304	Paramola cuvieri	M	R
255	Phelliactis sp1	M	R
207	Pliobrothus sp	M	R
198	Stichastrella rosea	M	R
261	Syringammina fragilissima	M	R
TBC	Trichiuridae	M	R
4	Actinaria sp1	S	R
109	Actinaria sp4	S	R
591	Ascidacea sp2	S	R
6	Caryophyllia	S	R
2	Ceriantharia	S	R
1049	cf Psolus sp	S	R
113	Colus sp	S	R
1056	Flabellum sp	S	R
621	Hypsogastropoda	S	R
277	Margarites sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtMB.Sa.UrcCom	Urchin dominated community on Atlantic mid bathyal sand	Mud and sand emergent fauna (ICES)
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> (ICES subcategory)
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reef (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Co	Atlantic mid bathyal coarse sediment	
M.AtMB.Ro.MixCor	Mixed cold water coral community on Atlantic mid bathyal rock and other hard substrata	Coral garden (ICES/OSPAR); hard-bottom gorgonian and black coral gardens (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Sa.UrcCom	
	211 <i>Cidaris cidaris</i>	
2	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 207 <i>Pliobrothus</i> sp, 1049 cf <i>Psolus</i> sp, 211 <i>Cidaris cidaris</i>	
3	M.AtMB.Ro.MixCor	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 207 <i>Pliobrothus</i> sp, 1049 cf <i>Psolus</i> sp, 211 <i>Cidaris cidaris</i>	
4	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 211 <i>Cidaris cidaris</i> , 1069 <i>Ceriantharia</i> , 458	

DIVE SUMMARY

	Pachycerianthus multiplacatus
5	M.AtMB.Co; M.AtMB.Ro
	188 Araeosoma fenestratum, 211 Cidaris cidaris, 207 Pliobrothus sp
6	M.AtMB.Bi.CorRee
	250 Lophelia pertusa, 251 Madrepora oculata, 211 Cidaris cidaris, 1069 Ceriantharia, 458 Pachycerianthus multiplacatus
7	M.AtMB.Bi.CorRee.LopFra
	250 Lophelia pertusa, 251 Madrepora oculata, 207 Pliobrothus sp, 1049 cf Psolus sp, 211 Cidaris cidaris

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Cold water coral reefs	ICES
- <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs	ICES subcategory
Mud and sand emergent fauna	ICES
Coral garden	ICES/OSPAR
- hard-bottom gorgonian and black coral gardens	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments
n/a

DIVE SUMMARY

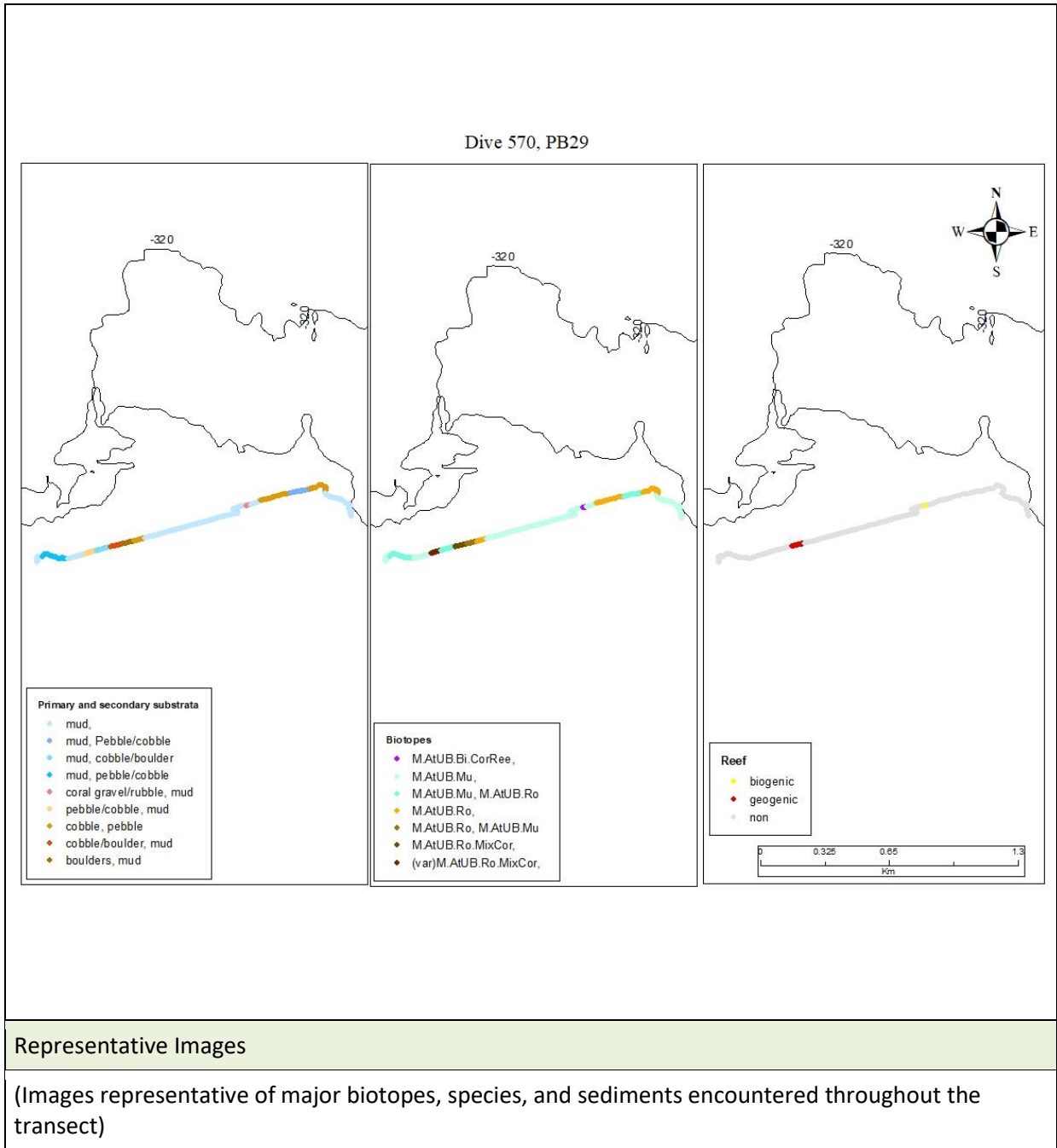
DIVE SUMMARY	
DIVE # 570	TRANSECT # PB29

	Start	End
Date & Time	20/07/2018 06:14:01	20/07/2018 07:57:19
Latitude/ Longitude	51.998844, -14.49308417	52.00091817, -14.4790275
Depth	-325.47	- 312.71
Images	IMG_0676-IMG_IMG_1031.JPG	
Samples	2 x pushcores	

Location	PB29
Target Features	Mounds, NPWS selected
Depth Range	-290, -330

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



DIVE SUMMARY



Top L. Aggregation dead coral reef structure with *Micromesistius poutassou* OTU439 swimming around it (M.AtUB.Mu).

Top R. *Phelliactis* sp OTU255 on cobble surrounded by muddy sediment (M.AtUB.Mu; M.AtUB.Ro).

Bottom L. *Micromesistius poutassou* OTU439 was the most abundant pelagic species recorded in this dive. However, poor vision throughout the transect (M.AtUB.Ro; M.AtUB.Mu).

Bottom R. *Micromesistius poutassou* OTU439 was the most abundant pelagic species recorded in this dive (M.AtUB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

VIDEO STARTS AT 06:14. Mud cloud/vision obscured throughout the whole transect. Muddy gentle upslope. 06:18 Occasional pebbles/cobbles/boulders with sparse epifauna. 06:19 Now large boulder/bedrock showing one side of the rock with many anemones (poss *Pachygerianthus multiplacatus*). Here dead coral structure at the bottom of the bedrock. 06:20 Fish *Micromesistius poutassou* OTU439 spotted frequently. 06:20 Cobbles/boulder fields. Sparse epifauna, mainly *P. multiplacatus*. 06:25 Here down slope dominated by bedrock and mud sediment with sparse epifauna. 06:31 Mud cloud/vision obscured. 06:33 ROV stops to sample two pushcores. 06:40 Now gentle/moderate upslope. Predominantly muddy sediment. 06:44 A shoal of *M. poutassou* swimming near the bottom. Still mud upslope. 07:13 Mud cloud/vision obscured. 07:22 Vision back to normal. 07:27 cobble/boulder fields. 07:30 Now muddy again. *M. poutassou* are still abundant. 07:35 Mud intersperse with pebble/cobble fields. 07:50 Massive aggregation of coral structure. 07:53 Cobble/boulder host *Phelliactis* sp OTU255. 07:56 A shoal of *M. poutassou* still present. **VIDEO ENDS AT 07:57.**

Physical Data			
Reef (types can be concurrent)	<10% reef	<75% geogenic	
		<25% biogenic	0% living
			100% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral gravel/rubble - Pebble/cobble - Cobble - Boulders 		
Geomorphology/Features	Slope		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Pebble/cobble fields - Cobble/boulder fields - Boulders 		
Pressures	n/a		

Biological Data	
Number of Species	24
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
577	<i>Coryphaenoides guentheri</i>	L	R
1005	<i>Galeus melastomus</i>	L	R
227	<i>Helicolenus dactylopterus</i>	L	R
441	<i>Lepidorhombus boscii</i>	L	R
250	<i>Lophelia pertusa</i>	L	R
TBC	Lotidae	L	R
439	<i>Micromesistius poutassou</i>	L	F
1003	<i>Nezumia aequalis</i>	L	R
1000	octopus	L	R
266	<i>Parastichopus tremulus</i>	L	R
1020	<i>Phycis blennoides</i>	L	R
554	<i>Actinernus</i> sp	M	R
12	<i>Bolocera tuediae</i>	M	R
211	<i>Cidaris cidaris</i>	M	R
621	Hypsogastropoda	M	R
442	<i>Kophobelemnion stelliferum</i>	M	R
458	<i>Pachycerianthus multiplacatus</i>	M	R
255	<i>Phelliactis</i> sp	M	F
347	<i>Pheronema carpenteri</i>	M	R
434	<i>Protoptilum</i> sp	M	R
198	<i>Stichastrella rosea</i>	M	R
6	Caryophyllia	S	R
200	<i>Munida sarsi</i>	S	R
106	Serpulidae sp1	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUB.Mu	Atlantic upper bathyal mud	Mud and sand emergent fauna (ICES)
M.AtUB.Ro	Atlantic upper bathyal rock and other hard substrata	
M.AtUB.Bi.CorRee	Atlantic upper bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
(var)M.AtUB.Ro.MixCor	(variant of) Mixed cold water coral community on Atlantic upper bathyal rock and other hard substrata	Anemone aggregations (ICES)

DIVE SUMMARY

M.AtUB.Ro.MixCor	Mixed cold water coral community on Atlantic upper bathyal rock and other hard substrata	Coral gardens (ICES/OSPAR); hard-bottom coral garden: colonial scleractinians on rocky outcrops (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUB.Mu	
	458 Pachycerianthus multiplacatus, 255 Phelliactis sp	
2	M.AtUB.Mu; M.AtUB.Ro	
	458 Pachycerianthus multiplacatus, 255 Phelliactis sp	
3	M.AtUB.Mu	
	458 Pachycerianthus multiplacatus	
4	(var)M.AtUB.Ro.MixCor	
	255 Phelliactis sp	
5	M.AtUB.Mu; M.AtUB.Ro	
	n/a	
6	M.AtUB.Ro.MixCor	
	255 Phelliactis sp, 6 Caryophyllia sp	
7	M.AtUB.Ro; M.AtUB.Mu	
	255 Phelliactis sp, 6 Caryophyllia sp	
8	M.AtUB.Ro	
	255 Phelliactis sp	
9	M.AtUB.Mu	
	n/a	

DIVE SUMMARY

10	M.AtUB.Bi.CorRee
	255 Phelliactis sp
11	M.AtUB.Mu; M.AtUB.Ro
	255 Phelliactis sp
12	M.AtUB.Ro
	n/a
13	M.AtUB.Mu; M.AtUB.Ro
	n/a
14	M.AtUB.Ro
	n/a
15	M.AtUB.Mu
	n/a

Conservation Targets	
Listed Habitats Encountered	
Name	Authority
Anemone aggregations	ICES
Mud and sand emergent fauna	ICES
Coral gardens:	ICES/OSPAR
- hard-bottom coral garden: colonial scleractinians on rocky outcrops	ICES subcategory
Listed Species Encountered (Fish, Count)	
n/a	OSPAR/IUCN

Additional Comments

DIVE SUMMARY

- Large population of *Micromesistius poutassou* in this transect.

DIVE SUMMARY

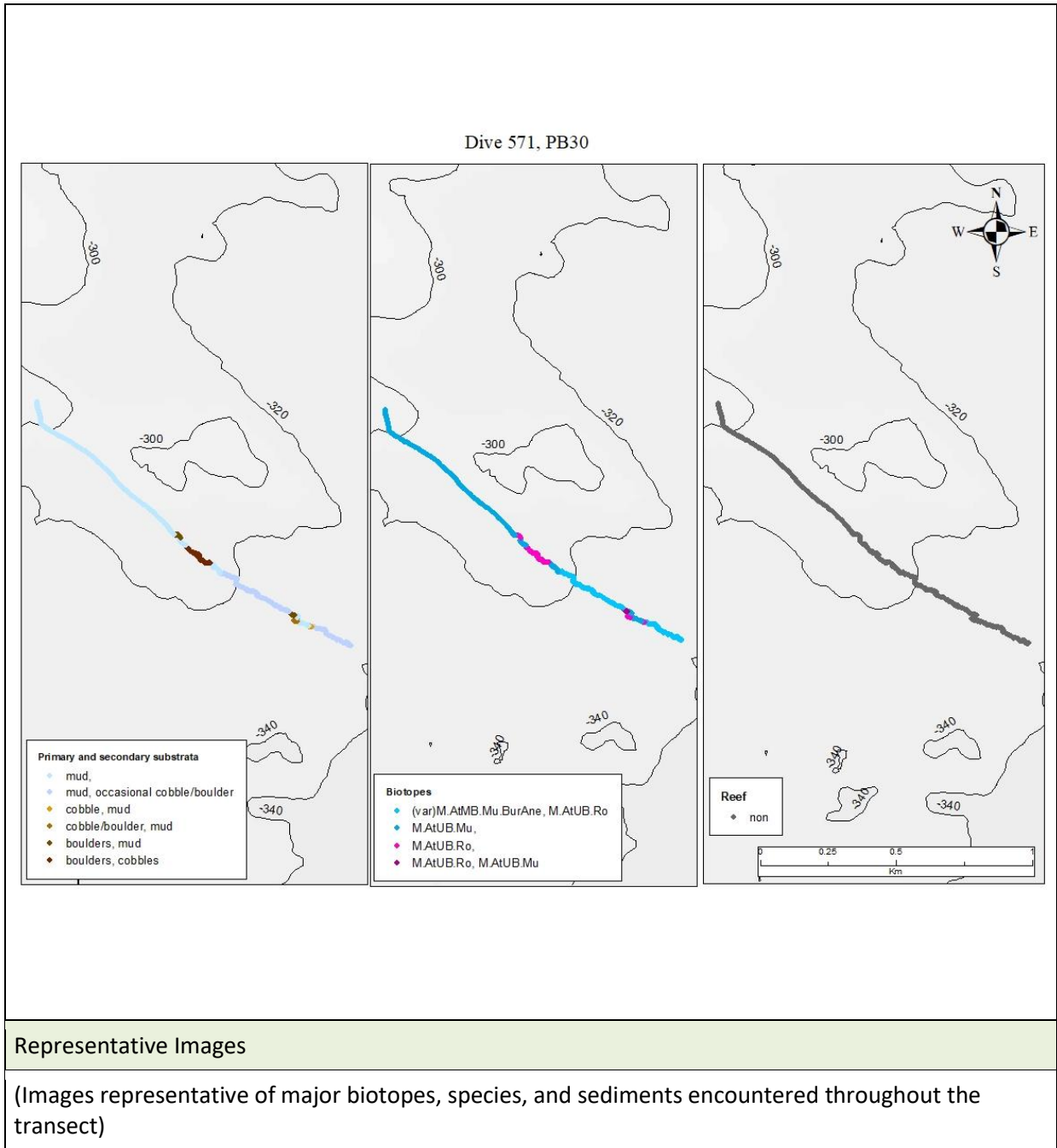
DIVE SUMMARY	
DIVE # 571	TRANSECT # PB30

	Start	End
Date & Time	20/07/2018 10:25:00	20/07/2018 11:55:46
Latitude/ Longitude	52.049907, -14.29137267	52.05935983, -14.3021365
Depth	-340.013	-300.94
Images	IMG_1001-IMG_1368.JPG	
Samples	1 x pushcore	

Location	PB30
Target Features	Mounds, NPWS selected
Depth Range	-290, -335

Maps of Dive
OFOP BMP and/or GIS Maps

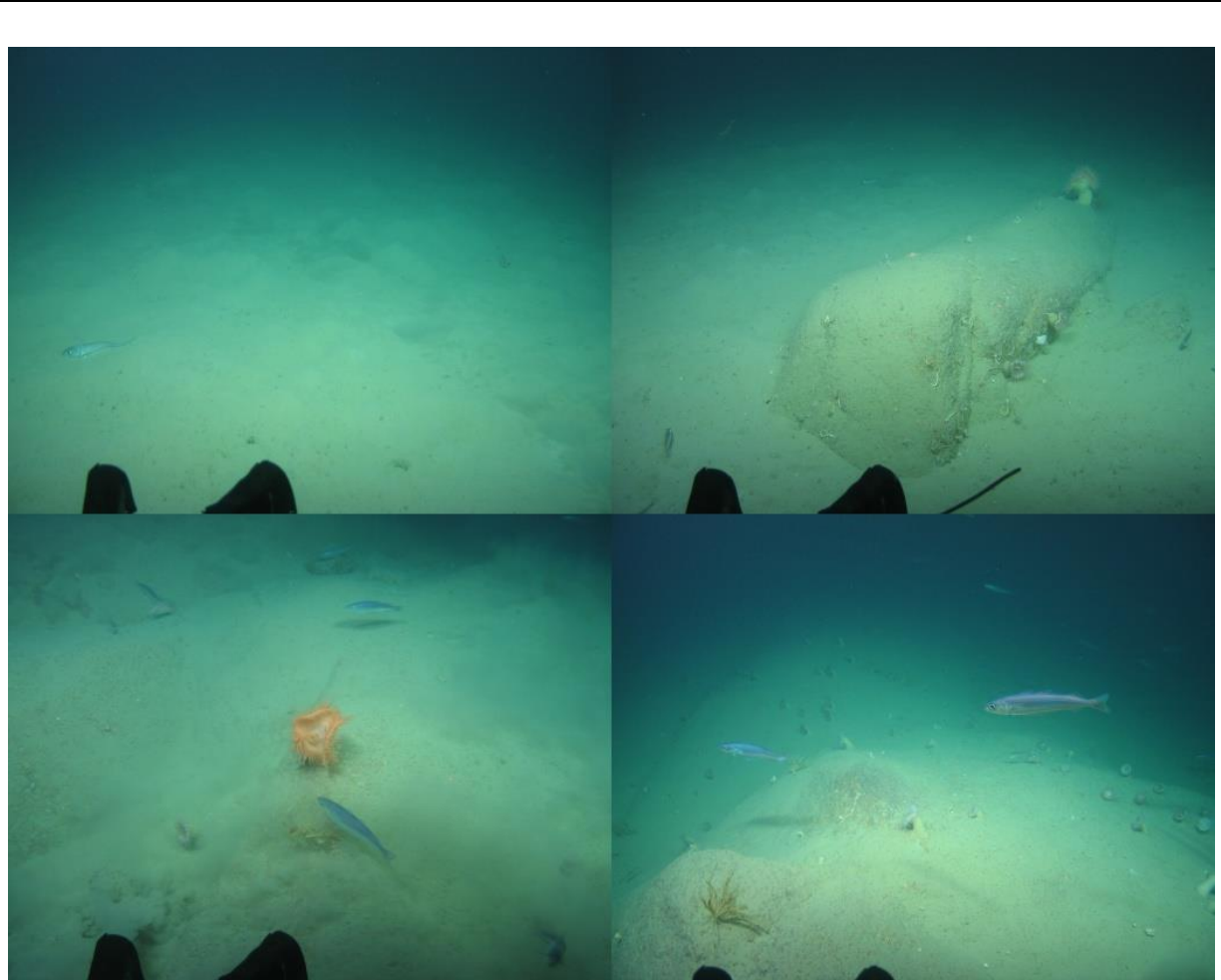
DIVE SUMMARY



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Sparse epifauna recorded. Muddy sediment is the most abundant substrata in this transect (M.AtUB.Mu).

Top R. Mud veneered carbonate boulder on muddy slope hosting *Phelliactis* sp OTU255 and *Actinauge richardi* OTU499 (M.AtUB.Ro; M.AtUB.Mu).

Bottom L. *Phelliactis* sp OTU255 on muddy slope (M.AtUB.Mu).

Bottom R. *A.richardi* fields on muddy slope (M.AtUB.Mu).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF VIDEO AT 10:25. Mud cloud as soon as the video starts. **[1]** Muddy sediment with occasional cobbles/boulder on up slope. *Pachycerianthus multiplacatus* OTU266 dominate. **10:34 [2]** Cobbles on mud down slope. Crustaceans are frequent among rocks. **10:35 [3]** Again mud slope. **10:38 [4]** Cobbles/boulders on mud slope. *P. multiplacatus* OTU266 dominate. In some rocks, *Phelliactis* sp OTU255 dominate. **10:40 [5]** Mud sediment. **10:41[6]** Large boulders host *Phelliactis* sp, *Porania pulvillus* OTU263 and *Parastichopus tremulus* OTU266. **10:43 [7]** Mud sediment on slope. 10:45 Occasional cobble/boulders. 10:50 Boulders on up slope host serpulidae sp and *P. multiplacatus*. 10:55 Mud cloud. 10:56 ROV stops for imagery of cf *Clavulariidae* sp OTU289. 10:59 Here dense colony of *Actinauge richardi* OTU499 on large boulders. **11:01 [8]** Mud sediment again. **11:04 [9]** Again colony of *A. richardi* on boulders and cobbles. 11:07 Large boulders/bedrock. *A. richardi* dominate. **11:10 [10]** Mud slope. **11:12 [11]** Boulders host *A. richardi*. **11:13 [12]** From this point a plethora of *Micromesistius poutassou* OTU439 persist throughout the rest of the dive. At time vision is obscured due to mud cloud flared by fish. **END OF VIDEO AT 11:55.**

Physical Data		
Reef (types can be concurrent)	0% reef	0% geogenic
		0% biogenic
		n/a
Substrates	<ul style="list-style-type: none"> - Mud - Occasional cobble/boulder - Cobble - Cobble/boulder - Boulders 	
Geomorphology/Features	Slope	
Annex 1 Types	<ul style="list-style-type: none"> - Occasional cobble/boulder - Cobble - Cobble/boulder - Boulder 	
Pressures	n/a	

Biological Data	
Number of Species	32
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
TBC	Pollachius virens	L	R
TBC	Actinopterygii	L	R
188	Araeosoma fenestratum	L	R
12	Bolocera tuediae	L	R
TBC	cephalopoda	L	R
73	Cephalopoda sp	L	R
289	cf Clavulariidae sp	L	R
211	Cidaris cidaris	L	R
1005	Galeus melastomus	L	R
227	Helicolenus dactylopterus	L	R
1172	Macrouridae sp (cfCoelorhynchus)	L	R
536	Mesothuria intestinalis	L	R
441	Lepidorhombus boschii	L	R
439	Micromesistius poutassou	L	F
349	Mora moro	L	R
266	Parastichopus tremulus	L	R
1020	Phycis blennoides	L	R
198	Stichastrella rosea	L	R
499	Actinauge richardi	M	R
388	Ceremaster Peltaster Plinthaster sp2	M	R
1188	cfArgentina sp	M	R
601	Geodia cf baretii	M	R
621	Hypsogastropoda	M	R
315	Koehlermetra porrecta	M	R
437	Leptometra celtica	M	R
443	Nephrops norvegicus	M	R
458	Pachycerianthus multiplacatus	M	F
255	Phelliactis sp	M	R
263	Porania pulvillus	M	R
433	Pseudarchaster sp1	M	R
106	Serpulidae sp1	M	R
584	Caryophyllia sp5 (bullseye)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUB.Mu	Atlantic upper bathyal mud	Mud and sand emergent fauna (ICES)
(var)M.AtMB.Mu.BurAne	(variant of)Burrowing anemone field in Atlantic mid bathyal mud	Anemone aggregations (ICES); mud and sand emergent fauna (ICES)
M.AtUB.Ro	Atlantic upper bathyal rock and other hard substrata	Anemone aggregations (ICES)

Biotope progression per habitat transition (# species, dominant/characteristic species)

DIVE SUMMARY

1	(var)M.AtMB.Mu.BurAne; M.AtUB.Ro
	266 Pachycerianthus multiplacatus
2	M.AtUB.Ro
	n/a
3	M.AtUB.Mu
	n/a
4	M.AtUB.Ro
	266 Pachycerianthus multiplacatus
5	M.AtUB.Mu
	n/a
6	M.AtUB.Ro; M.AtUB.Mu
	255 Phelliactis sp, 263 Porania pulvillus, 266 Parastichopus tremulus
7	(var)M.AtMB.Mu.BurAne; M.AtUB.Ro
	266 Pachycerianthus multiplacatus
8	M.AtUB.Mu
	n/a
9	M.AtUB.Ro
	499 Actinauge richardi
10	M.AtUB.Mu
	n/a
11	M.AtUB.Ro
	499 Actinauge richardi

DIVE SUMMARY

12	M.AtUB.Mu
	439 <i>Micromesistius poutassou</i>

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Anemone aggregations	ICES	
Mud and sand emergent fauna	ICES	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> - Possible new biotope code for anemone aggregations on boulders

DIVE SUMMARY

DIVE SUMMARY	
DIVE # 572	TRANSECT # PB32

	Start	End
Date & Time	20/07/2018 18:15:00	20/07/2018 20:08:00
Latitude/ Longitude	52.2813953, -13.0932655	52.2934773, -13.08142333
Depth	-657.104	-569.751
Images	IMG_1001-IMG-1457.JPG	
Samples	n/a	

Location	PB32
Target Features	Mounds, NPWS
Depth Range	-630, -700

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY

Representative Images
(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Biogenic reef *Lophelia pertusa* OTU250 rubble on slope (M.AtUB.Bi.CorRee).

Top R. Biogenic reef Zoanthidae sp2 OTU1217 on slope. This is a potential new biotope ((var) M.AtUB.Bi.CorRee).

Bottom L. Mix of Zoanthidae sp2 and *L.pertusa* reef on gentle slope ((var) M.AtUB.Bi.CorRee).

Bottom R. Biogenic reef of Zoanthidae sp2 and *L.pertusa* ((var) M.AtUB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF VIDEO AT 18:15. Mud up slope. Vision is poor. Fields of *Syringamina fragilissima* OTU261. 18:32 ROV stops for imagery of Alcyonacea sp2 OTU140. 18:44- 18:55 Organic debris on sea floor. **18:49** Steep hill. Mud with scattered cobbles. **19:38** Dead structure, similar to dead coral structure on steep mud hill. Sparse epifauna include Ceriatharia OTU1069. **19:40** Living coral reef (poss Zoanthidae sp2 OTU1217). Species encountered include *Cidaris cidaris* OTU211, *Munida sarsi* OTU200. 19:41 ROV climbs a steep hill/vertical wall. Here the site is dominated by extended coral reef (poss Zoanthidae sp2). The reef is living (<50%) and dead. 19:44 Mud cloud. **19:50** Here *Lophelia pertusa* reef on boulder. Epifauna include sea urchin OTU445 and isolated scleractinians OTU6. 19:52 ROV stops for imagery of reef. **19:55** Here colony of Zoanthidae sp2 OTU1217 extend where <75% is living. **20:00** *L.pertusa/M.oculata* reef (25-50% living) on large cobble/boulder. **20:03** Again *Zoanthidae* sp2 colony extends. **END OF VIDEO AT 20:09.**

Physical Data			
Reef (types can be concurrent)	<25% reef	0% geogenic	
		100% biogenic	<50% living
			<50% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral gravel - Coral reef - Occasional cobbles - Cobbles - Cobble/boulder - Boulder 		
Geomorphology/Features	Slope Slope/vertical wall Steep slope Vertical wall		
Annex 1 Types	<ul style="list-style-type: none"> - Cobble/vertical wall - Coral reef - Coral reef/boulder - Coral reef/occasional cobble 		
Pressures	n/a		

Biological Data

DIVE SUMMARY

Number of Species	37
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Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
1	Porifera encrusting white	Crust	R
1025	Beryx decadactylus	L	R
254	Chaceon affinis	L	R
211	Cidaris cidaris	L	R
1009	Notacanthidae sp1(possNotacanthus cheminizii)	L	R
973	Graneledone verrucosa	L	R
227	Helicolenus dactylopterus	L	R
249	Lepidion eques	L	R
250	Lophelia pertusa	L	F
273	Lophius piscatorius	L	R
251	Madrepora oculata	L	F
654	Molva molva	L	R
304	Paramola cuvieri	L	R
266	Parastichopus tremulus	L	R
1020	Phycis blennoides	L	R
1071	Pseudotriakidae microdon	L	R
569	Squaliformes	L	R
1217	Zoanthidae	L	F
140	Alcyonacea sp2	M	R
311	Anthothelia grandiflora	M	R
235	Bathynectes sp	M	R
73	Cephalopoda sp	M	R
445	Echinus sp1	M	R
56	Hydrozoa flat branched	M	R
315	Koehlermetra porrecta	M	O
200	Munida sarsi	M	R
458	Pachycerianthus multiplacatus	M	R
263	Porania pulvillus	M	R
440	Synaphobranchus kaupii	M	R
261	Syringammina fragilissima	M	R
446	Trachyrhynchus sp	M	R
TBC	Trichiuridae	M	R
6	Caryophyllia sp	S	O
2	Ceriantharia	S	R
1129	cf Echinus (deepPink)	S	R
335	Desmophyllum sp1	S	O
1138	Eucaridea sp2 (redDeep)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtUB.Mu	Atlantic upper bathyal mud	Mud and sand emergent fauna (ICES)

DIVE SUMMARY

M.AtUB.Ro	Atlantic upper bathyal rock and other hard substrata	
M.AtUB.Co	Atlantic upper bathyal coarse sediment	
(var) M.AtUB.Bi.CorRee	(variant of) Atlantic upper bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR)
M.AtUB.Bi.CorRee	Atlantic upper bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES/OSPAR); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reef (ICES subcategory).
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtUB.Mu	
	261 Syringamina fragilissima	
2	M.AtUB.Mu; M.AtUB.Ro	
	n/a	
3	M.AtUB.Co; M.AtUB.Ro	
	1069 Ceriantharia	
4	(var) M.AtUB.Bi.CorRee	
	1217 Zoanthidae sp, 211 Cidaris cidaris, 200 Munida sarsi	
5	(var) M.AtUB.Bi.CorRee; M.AtUB.Bi.CorRee	
	1217 Zoanthidae sp, 250 Lophelia pertusa	

Conservation Targets

DIVE SUMMARY

Listed Habitats Encountered		
Name	Authority	
Mud and sand emergent fauna (ICES)	ICES	
Cold water coral reefs:	ICES/OSPAR	
- <i>Lophelia pertusa/Madrepora oculata</i> reef	ICES subcategory	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
- Possible new biotope of Zoanthidae sp2 on upper bathyal

DIVE SUMMARY

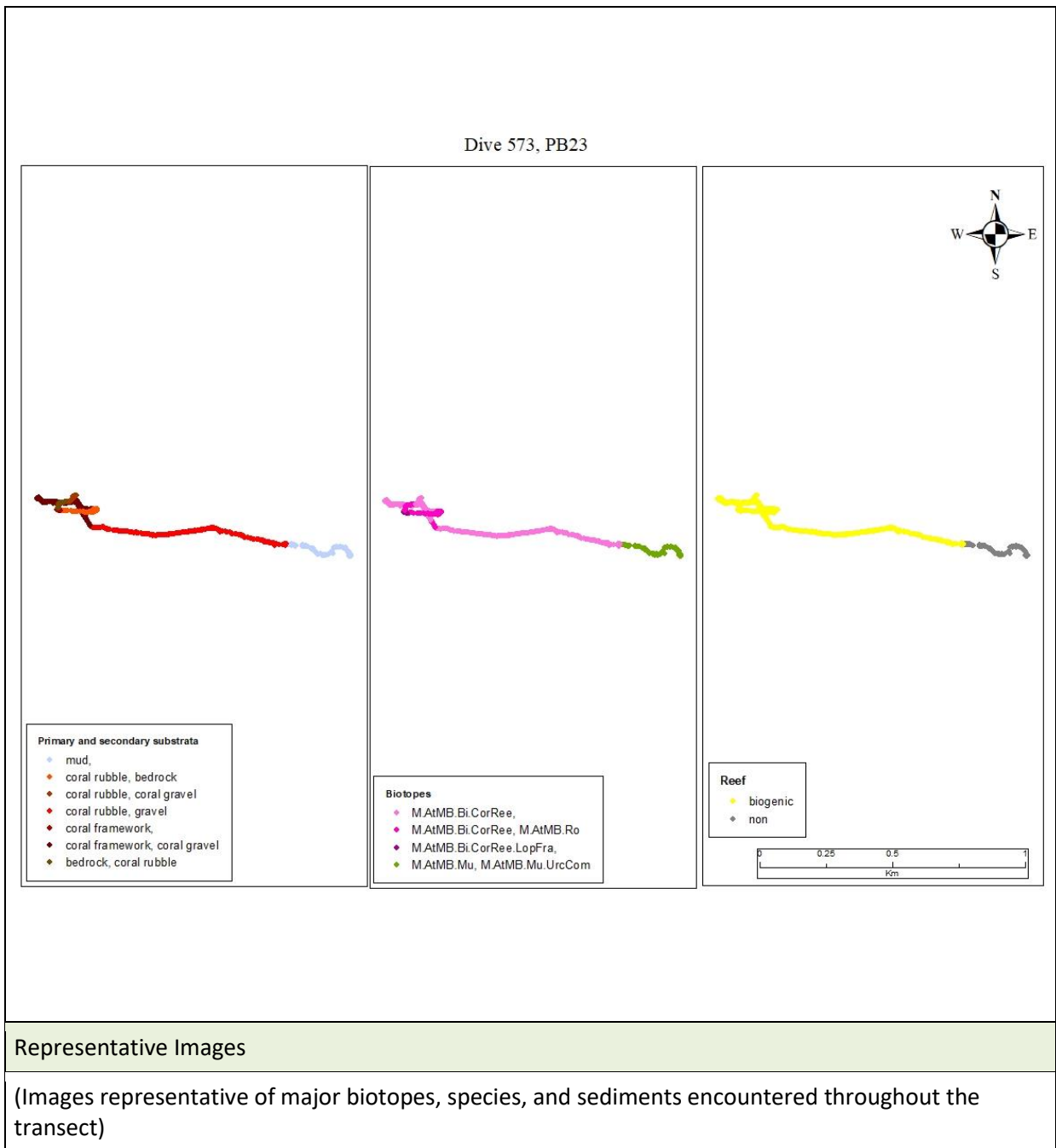
DIVE SUMMARY	
DIVE # 573	TRANSECT # PB23

	Start	End
Date & Time	20/07/2018 23:00:00	21/07/2018 01:00:56
Latitude/ Longitude	52.225477, -12.81529717	52.227065, -12.823309
Depth	-739.153	-588.88
Images	IMG_1458-IMG_1641.JPG	
Samples	2 x pushcores	

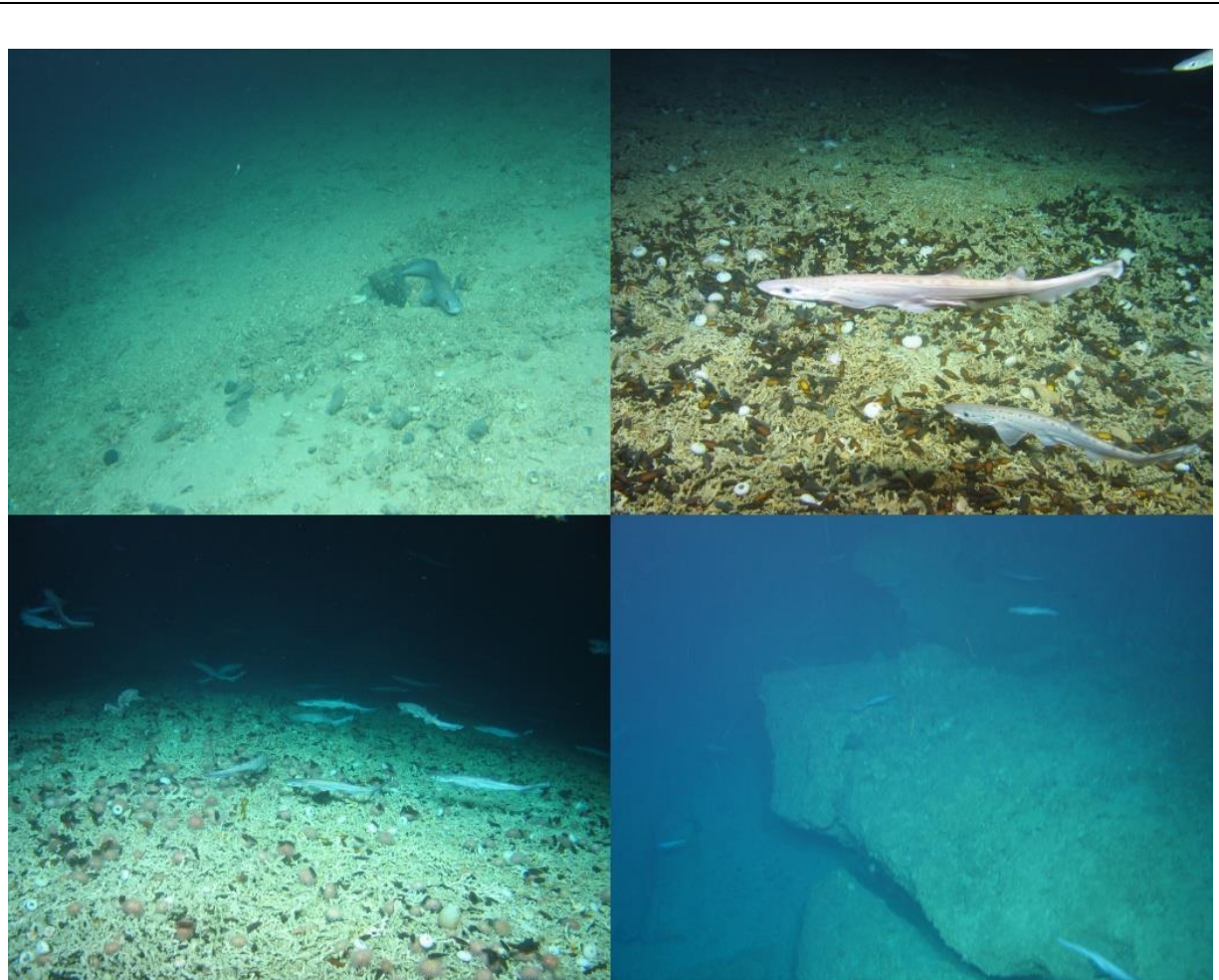
Location	PB23
Target Features	SAC, Ridge
Depth Range	-640, -740

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



DIVE SUMMARY



Top L. Sea urchins OTU194 and OTU1119 found on *Lophelia pertusa* rubble (M.AtMB.Bi.CorRee).

Top R. Notable evidence of shark egg cases on coral gravel. *Galeus melastomus* OTU1005 swimming around this nursery ground (M.AtMB.Bi.CorRee.LopFra).

Bottom L. Notable evidence of shark egg cases on coral gravel. *Galeus melastomus* OTU1005 swimming around this nursery ground (M.AtMB.Bi.CorRee.LopFra).

Bottom R. *Galeus melastomus* OTU1005 individuals swimming around carbonate cobbles/boulders. Some coral framework found around rocks (M.AtMB.Ro).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF VIDEO AT 23:00. [1] Muddy slope with scattered gastropods. ROV stops for sampling two pushcores. 23:25 ROV stops, goes backwards, then forwards. It zoomed in and then moves slowly forward. 23:27 **[2]** Steep hill hosts coral gravel/mud sediments. Dark sea urchins OTU1119 dominate. 23:28 ROV moves slowly up hill. 23:52 **[3]** Now coral framework/coral gravel on steep hill. Sea urchin dominates on coral gravel. *Galeus malestomus* becomes frequent. 23:55 **[4]** Cobble/boulder on steep hill. Coral framework/coral gravel. Shoal of *Galeus melastomus* OTU1005. 23:59 **[5]** Nursery ground of *G.melastomus* OUT1005. 00:18 ROV stops for imagery of dead *G.melastomus* OTU1005 on the sea floor. Crustaceans OTU200, amphipods and other scavenger eat the rest of the carcass' flash. 00:33 **[6]** ROV climbs steep hill. Still coral framework and *G.melastomus* swimming around. 00:34 Some egg cases. 00:37 **[7]** Bedrock with crevices in the rock. Coral framework still present. Pink sea urchins dominate. The ROV moves forward and upwards. 00:43 ROV stops for imagery of octopus. 00:44 **[8]** ROV reaches a flat/gentle upslope with coral framework and plenty of shark egg case. 00:48 **[9]** Coral framework and bedrock substrata. *G.melastomus* still present. 00:50 ROV stops for imagery of *Paramola cuvieri* OTU304 found among cobbles. **END OF VIDEO AT 01:00.**

Physical Data			
Reef (types can be concurrent)	<90% reef	0% geogenic	
		100% biogenic	1% living
			99% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral gravel - Coral framework - Cobble/boulder - Bedrock 		
Geomorphology/Features	Slope Steep hill		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Coral reef/bedrock 		
Pressures	n/a		

Biological Data	
Number of Species	33
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
235	Bathynectes sp	L	R
1048	Centrophorus squamosus	L	R
TBC	Cephalopoda sp	L	R
1188	cfArgentina sp	L	R
265	Chimaera monstrosa	L	R
1005	Galeus melastomus	L	F
227	Helicolenus dactylopterus	L	R
249	Lepidion eques	L	R
654	Molva molva	L	R
1194	Muusoctopus johnsonianus	L	R
TBC	Oxynotus paradoxus	L	R
304	Paramola cuvieri	L	R
1020	Phycis blennoides	L	R
458	Plachycerianthus multiplacatus	L	R
1115	Pterasteridae sp	L	R
198	Stichastrella rosea	L	R
1017	Teuthida sp1	L	R
446	Trachyrhynchus sp	L	R
2	Ceriantharia	M	R
211	Cidaris cidaris	M	R
1119	Echinidae sp (dark)	M	F
1121	Majoidea sp	M	R
1003	Nezumia aequalis	M	R
263	Porania pulvillus	M	R
440	Synaphobranchus kaupii	M	R
1068	Velatida sp2	M	R
250	Lophelia pertusa	M	O
82	Cirripedia sp	S	R
194	Echinidae sp (pink)	S	O
621	Hypsogastropoda	S	R
200	Munida sarsi	S	R
205	Paguridae	S	R
TBC	Trichiuridae	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Mu.UrcCom	Urchin dominated community on Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES)

DIVE SUMMARY

		subcategory)
M.AtMB.Ro	Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Mu; M.AtMB.Mu.UrcCom	
	194 Echinidae sp (pink), 1119 Echinidae sp (dark), 188 Araeosoma fenestratum	
2	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 194 Echinidae sp (pink), 1119 Echinidae sp (dark), 188 Araeosoma fenestratum	
3	M.AtMB.Bi.CorRee; M.AtMB.Ro	
	250 <i>Lophelia pertusa</i> , 119 Echinidae (dark), 194 Echinidae sp (pink), 1005 Galeus melastomus	
4	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 1119 Echinidae (dark), 194 Echinidae sp (pink), 1005 Galeus melastomus	
5	M.AtMB.Bi.CorRee; M.AtMB.Ro	
	250 <i>Lophelia pertusa</i> , 1119 Echinidae (dark), 194 Echinidae sp (pink), 1005 Galeus melastomus	
6	M.AtMB.Bi.CorRee.LopFra	
	250 <i>Lophelia pertusa</i> , 1005 Galeus melastomus	

DIVE SUMMARY

7	M.AtMB.Bi.CorRee; M.AtMB.Ro
	250 <i>Lophelia pertusa</i>
8	M.AtMB.Bi.CorRee
	250 <i>Lophelia pertusa</i> , 1005 <i>Galeus melastomus</i>

Conservation Targets		
Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs:	ICES	
- <i>Lophelia pertusa/ Madrepora oculata</i> reefs	ICES subcategory	
Mud and sand emergent fauna	ICES	
Listed Species Encountered (Fish, Count)		
- <i>Centrophorus squamosus</i>	1	OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> Notable record of shark egg cases on <i>Lophelia pertusa</i> reef. The record starts from 29:59 to 00:33. <i>Galeus melastomus</i> is present, and is likely the source of the egg cases, but this should be confirmed.

DIVE SUMMARY

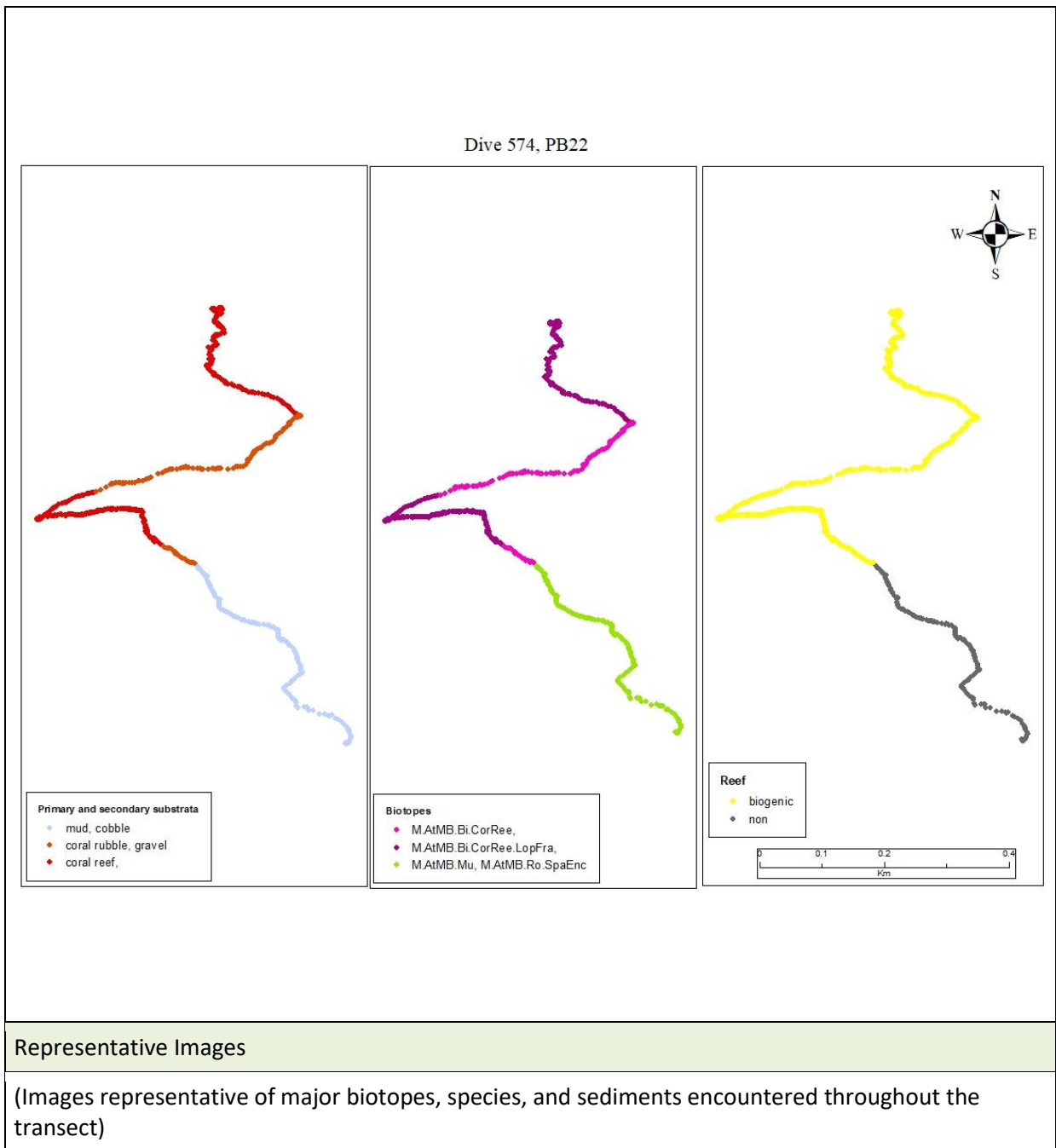
DIVE SUMMARY	
DIVE # 574	TRANSECT # PB22

	Start	End
Date & Time	21/07/2018 03:32:00	21/07/2018 05:10:06
Latitude/ Longitude	52.159268, -12.76267483	52.16543967, -12.7645945
Depth	-866.199	-691.96
Images	IMG_1642-IMG_2401.JPG	
Samples	2 x pushcores 1 x <i>Lophelia pertusa</i>	

Location	PB22
Target Features	SAC, Mound, Ridge
Depth Range	-740, -860

Maps of Dive
OFOF BMP and/or GIS Maps

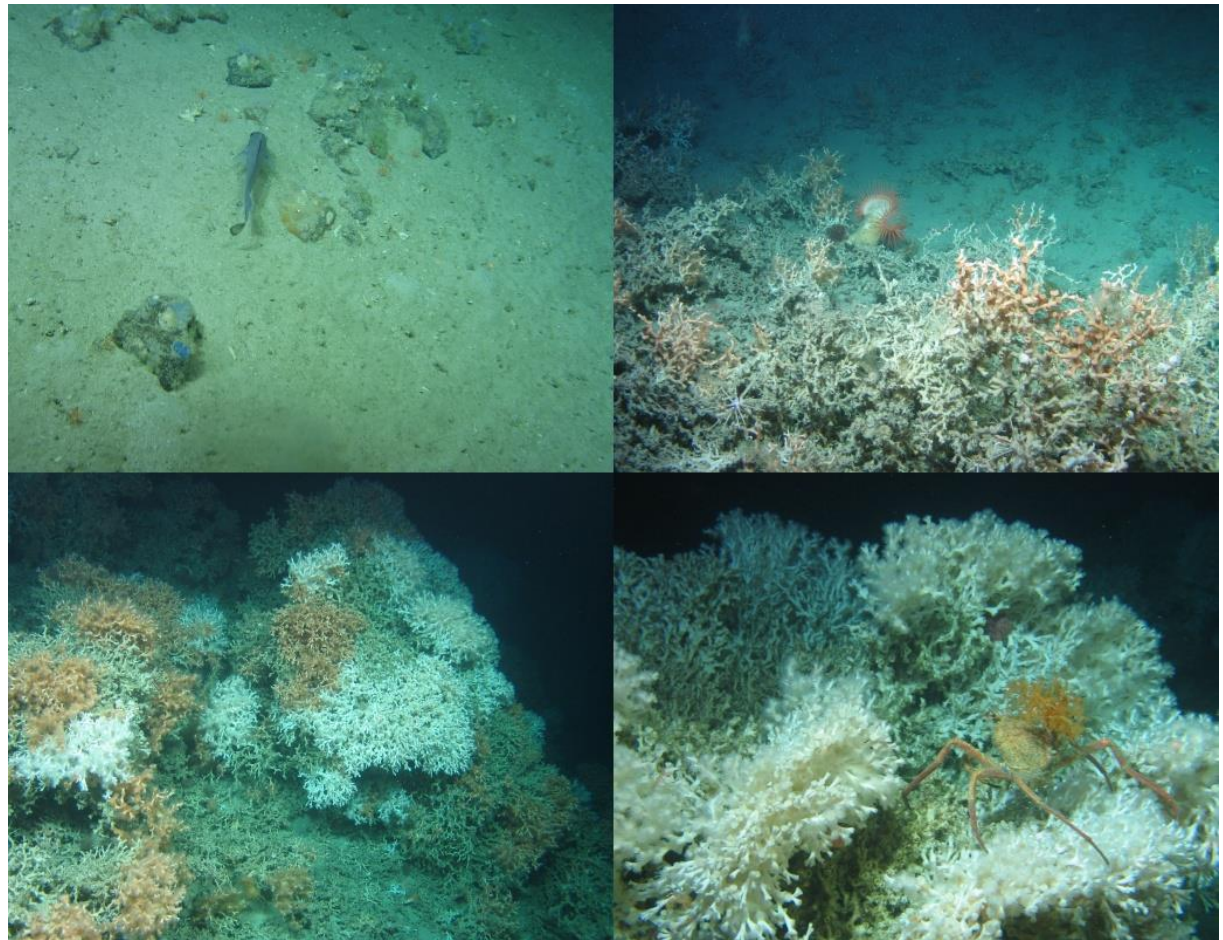
DIVE SUMMARY



Representative Images

(Images representative of major biotopes, species, and sediments encountered throughout the transect)

DIVE SUMMARY



Top L. Sparse epifauna on steep muddy slope with anemones and encrusted sponges found on rocks (M.AtMB.Mu; M.AtMB.Ro.SpaEnc).

Top R. *Lophelia pertusa*/*Madrepora oculata* reef and coral framework, with both living and dead individuals. *Phelliactis* sp OTU255 living on coral reef (M.AtMB.Bi.CorRee; M.AtMB.Co).

Bottom L. Healthy dense *Lophelia pertusa*/*Madrepora oculata* reef (50% living, 50%dead) (M.AtMB.Bi.CorRee).

Bottom R. Again healthy dense *L.pertusa*/*M.oculata* reef hosting *Paramola cuvieri* OTU304 (M.AtMB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF VIDEO AT 03:32. ROV stops for sampling two pushcores. 03:47 Mud cloud. Steep muddy slope with scattered small cobbles. Cf *Psolus* sp OTU1049. 03:50 Mud/gravel/coral gravel/scattered cobbles. 03:57 Marine snow. Scattered *Lophelia pertusa* reefs (50% living, 50% dead). 04:00 *L.pertusa* reefs become dense. *Stichopathes cf gravieri* OTU198, *Leiopathes* sp OTU305 and *Ceriantharia* OTU1069. 04:20 ROV reaches the top of the hill and then soon after descends the hill where coral reefs extend further (both living and dead). 04:24 ROV's camera tilts to water column. 04:25 Back to the sea floor vision where coral gardens persist. 04:30 Now coral reef is scattered. ROV goes down slope where sediments include mud/coral gravel. 04:35 [5] ROV goes up on mud/pebbles/cobbles on steep hill. *Cidaris cidaris* OTU211. 04:40 Mud/gravel/cobbles. 04:43 Now ROV going up hill. Sediments include coral gravel/mud. 04:44 *L.pertusa* (living/dead) reef is dense and at least 1 m tall. 05:03 Mud cloud. ROV stops for sampling *L.pertusa* coral. **END OF VIDEO AT 05:10.**

Physical Data			
Reef (types can be concurrent)	<75% reef	0% geogenic	
		100% biogenic	<50% living
			<50% dead
Substrates	<ul style="list-style-type: none"> - Mud - Mud/gravel - Gravel - Mud/pebble - Coral reef - Cobble 		
Geomorphology/Features	Slope Steep slope		
Annex 1 Types	<ul style="list-style-type: none"> - Pebble/cobble fields - Coral reef - Cobble fields - Cobble 		
Pressures	n/a		

Biological Data	
Number of Species	41
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1025	Beryx decadactylus	L	R
211	Cidaris cidaris	L	R
317	Epizoanthus sp1(paguridaeAssoc)	L	R
1005	Galeus melastomus	L	R
227	Helicolenus dactylopterus	L	R
432	Holothuroidea cf Laetmogone (pinkWhite)	L	R
250	Lophelia pertusa	L	R
251	Madrepora oculata	L	R
349	Mora moro	L	R
1003	Nezumia aequalis	L	R
TBC	Oxynotus paradoxus	L	R
304	Paramola cuvieri	L	R
1020	Phycis blennoides	L	R
198	Stichastrella rosea	L	R
446	Trachyrhynchus sp	L	R
343	Alcyonacea sp3	M	R
1187	Antipathes dichotoma	M	R
264	Aphrocallistes sp	M	R
235	Bathynectes sp	M	R
267	Bonellia viridis	M	R
2	Ceriantharia	M	R
1172	Macrouridae sp (cfCoelorhynchus)	M	R
307	Gorgonacea sp7 cflsidella	M	R
249	Lepidion eques	M	R
458	Pachycerianthus multiplacatus	M	R
266	Parastichopus tremulus	M	R
255	Phelliactis sp1	M	R
263	Porania pulvillus	M	R
283	Stichopathes cf gravieri	M	R
440	Synaphobranchus kaupii	M	R
4	Actiniaria sp1	S	R
605	Actiniaria sp20	S	R
20	Ascidacea sp2 (clear)	S	R
1077	Caridea (indet)	S	R
6	Caryophyllia sp	S	R
1129	cf Echinus (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
56	Hydrozoa flat branched	S	R
305	Leiopathes sp	S	R
205	Paguridae	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)

DIVE SUMMARY

M.AtMB.Ro.SpaEnc	Sparse encrusting community on Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
M.AtMB.Bi.CorRee.LopFra	Mixed coral assemblage on Atlantic mid bathyal <i>Lophelia pertusa</i> reef framework (biogenic structure)	Cold water coral reefs (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)
Biotope progression per habitat transition (# species, dominant/characteristic species)		
1	M.AtMB.Mu; M.AtMB.Ro.SpaEnc	
	458 <i>Pachycerianthus multiplacatus</i> , 211 <i>Cidaris cidaris</i>	
2	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i>	
3	M.AtMB.Bi.CorRee.LopFra	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 198 <i>Stichopathes cf gravieri</i> , 305 <i>Leiopathes sp</i> , 1069 <i>Ceriantharia</i>	
4	M.AtMB.Bi.CorRee	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i> , 198 <i>Stichopathes cf gravieri</i> , 305 <i>Leiopathes sp</i> , 1069 <i>Ceriantharia</i>	
5	M.AtMB.Bi.CorRee.LopFra	
	250 <i>Lophelia pertusa</i> , 251 <i>Madrepora oculata</i>	

Conservation Targets

DIVE SUMMARY

Listed Habitats Encountered		
Name	Authority	
Cold water coral reefs: - <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> Mud and sand emergent fauna	ICES	ICES subcategory
	ICES	
Listed Species Encountered (Fish, Count)		
n/a		OSPAR/IUCN

Additional Comments
<ul style="list-style-type: none"> • Healthy <i>Lophelia pertusa</i>/<i>Madrepora oculata</i> reefs

DIVE SUMMARY

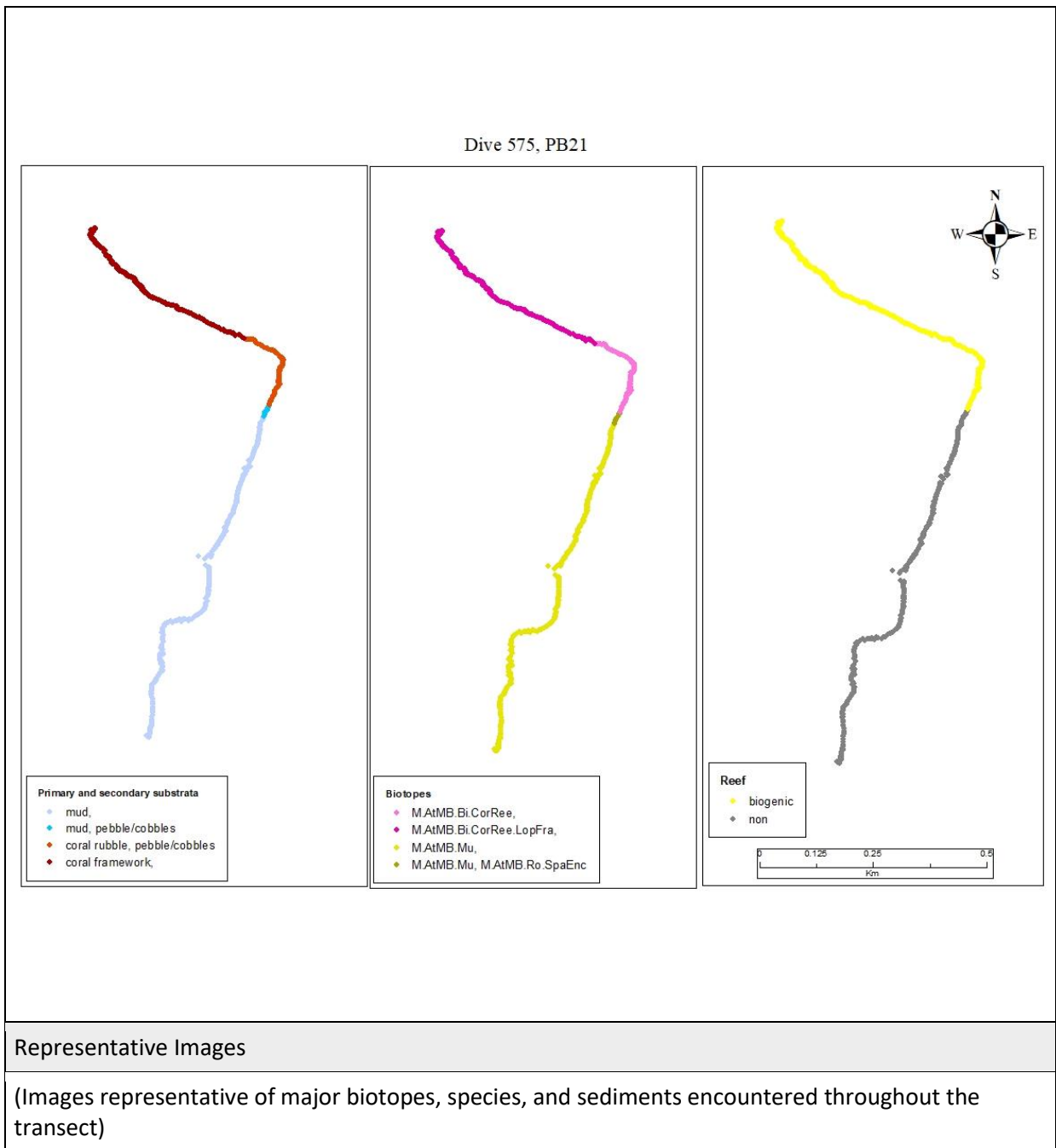
DIVE SUMMARY	
DIVE # 575	TRANSECT # PB21

	Start	End
Date & Time	21/07/2018 07:56:00	21/07/2018 09:57:40
Latitude/ Longitude	52.215018, -12.57516767	52.225789, -12.57734367
Depth	-824.02	-659.23
Images	IMG_2402-IMG_3162.JPG	
Samples	2 x pushcores	

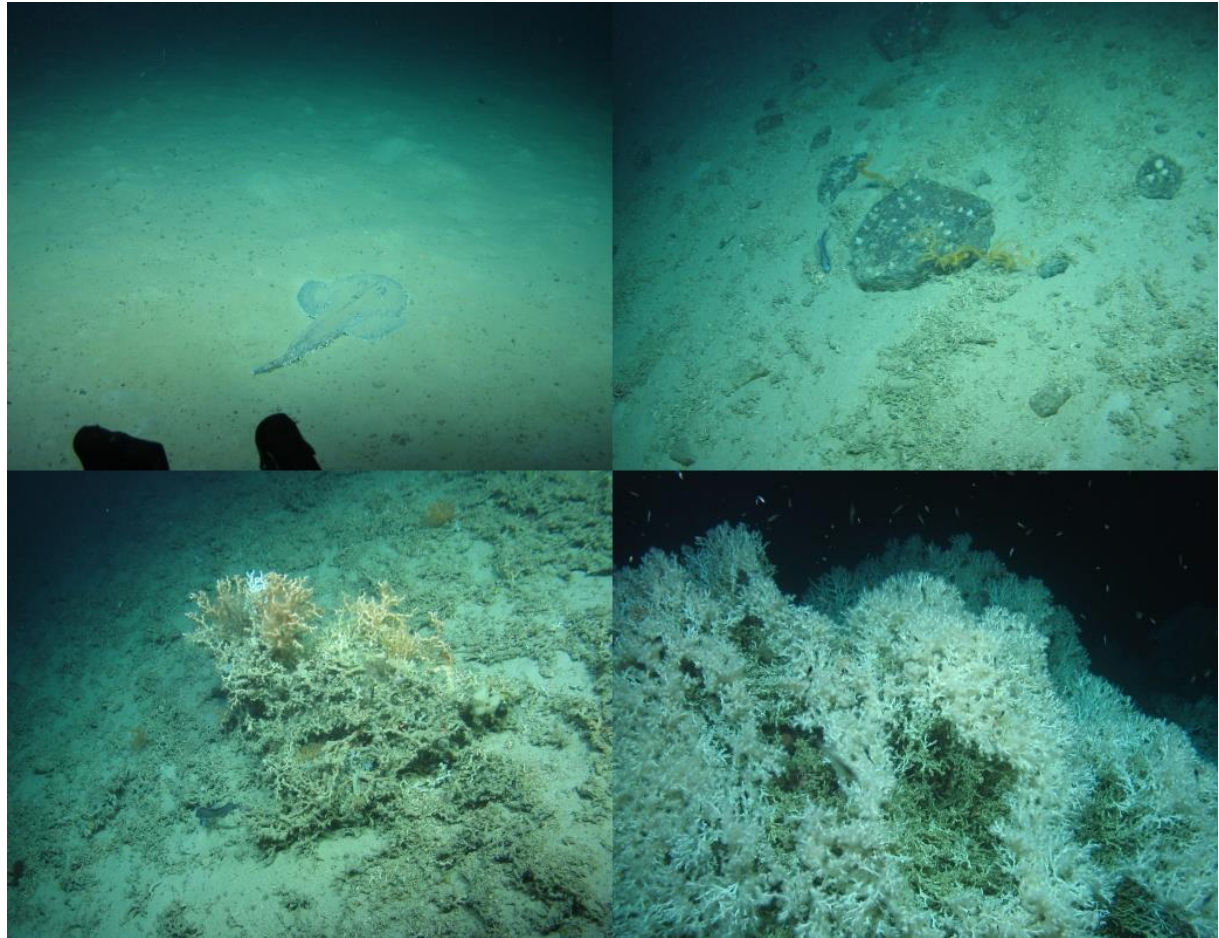
Location	PB21
Target Features	SAC, Mound
Depth Range	-650, -850

Maps of Dive
OFOP BMP and/or GIS Maps

DIVE SUMMARY



DIVE SUMMARY



Top L. *Lophius piscatorius* OTU273 on muddy sediment (M.AtMB.Mu).

Top R. *Lophelia pertusa*/*Madrepora oculata* rubble on steep slope hosting *Antipathes dichotoma* OTU1187 (M.AtMB.Bi.CorRee).

Bottom L. *Lophelia pertusa*/*Madrepora oculata* on steep slope (M.AtMB.Bi.CorRee).

Bottom R. Possible ancient and well-established coral reef of *Lophelia pertusa*/*Madrepora oculata* scleractinian (M.AtMB.Bi.CorRee).

Summary Description (habitat transitions noted)

DIVE SUMMARY

START OF VIDEO AT 07:56. [1] Mud flat/gentle slope. Sea urchin OTU1119 dominates. Present species include *Cidaris cidaris* OTU211 and *Kophobelemnon stelliferum* OTU442. ROV stops for sampling 2 pushcores. Here shoal of fish swims in front of the ROV in a tornado-shape (unknown species). **08:54 [2]** Mud/pebble/cobbles on steep hill. Cf *Psolus* sp OTU1049 is dominant on cobbles. **09:09 [3]** *Lophelia pertusa* reef/framework on steep slope. Mostly dead. *Leiopathes* sp OTU305 dominates. **09:34 [4]** Dense *L.pertusa/M.oculata* reef. *Caryophyllia* sp OTU6 frequently encountered in this part of the transect. 09:36 ROV reaches the mound summit. **[5]** Here coral reef is dense and well established. ROV moves slowly, possibly for imagery of *L.pertusa* reef. 09:49 ROV approaches to descend the hill on the other side. **[6]** Here coral reef still present. *Leiopathes* sp OTU305 dominate. **END OF VIDEO AT 09:57.**

Physical Data			
Reef (types can be concurrent)	65% reef	0% geogenic	
		100% biogenic	25-50% living
			50-75% dead
Substrates	<ul style="list-style-type: none"> - Mud - Coral reef - Coral framework - Pebble/cobbles 		
Geomorphology/Features	Slope Steep slope		
Annex 1 Types	<ul style="list-style-type: none"> - Coral reef - Coral reef/summit - Pebble/cobble fields 		
Pressures	n/a		

Biological Data	
Number of Species	61
Summary Species List (Operational Taxonomic Unit, Name, Size, SACFOR, presence per habitat transition)	

DIVE SUMMARY

O.T.U	Species/Taxonomic ID	Size/Growth	SACFOR
800	Porifera encrusting blue	Crust	R
1	Porifera encrusting sp white	Crust	R
58	Porifera encrusting sp15 yellow	Crust	R
1187	Antipathes dichotoma	L	R
650	Asconema sp (Porifera mass glob 14)	L	R
267	Bonellia viridis	L	R
211	Cidaris cidaris	L	F
1119	Echiniidae sp (dark)	L	R
317	Epizoanthus sp1 (paguridaeAssoc)	L	R
1005	Galeus melastomus	L	R
973	Graneledone verrucosa	L	R
432	Holothuroidea cf Laetmogone (purple)	L	R
1024	Hydrolagus mirabilis	L	R
1067	Laucoraja sp	L	R
249	Lepidion eques	L	R
250	Lophelia pertusa	L	O
273	Lophius piscatorius	L	R
251	Madrepora oculata	L	R
1003	Nezumia aequalis	L	R
TBC	Oxynotus paradoxus	L	R
458	Pachycentarius multiplacatus	L	R
304	Paramola cuvieri	L	R
266	Parastichopus tremulus	L	R
1020	Phycis blennoides	L	R
1192	Plexauridae sp (deep)	L	R
1115	Pterasteridae sp	L	R
1118	Sagartidae sp (wide oral disc)	L	R
198	Stichastrella rosea	L	R
283	Stichopathes cf gravieri	L	O
657	Stryphnus fortis	L	R
1216	Trachiscorpia cristulata	L	R
608	Acanthargorgia cf armata	M	R
930	Actinopterygii sp3	M	R
235	Bathynectes sp	M	R
12	Bolocera tuediae	M	R
274	Brisingidae	M	R
234	Ceremaster Peltaster Plinthaster	M	R
2	Ceriantharia	M	R
285	Chyrostylidae sp	M	R
227	Helicolenus dactylopterus	M	R
315	Koehlermetra porrecta	M	R
442	Kophobelemnnon stelliferum	M	R
200	Munida sarsi	M	R
255	Phelliactis sp	M	R
440	Synaphobranchus kaupii	M	R
1017	Teuthida sp1	M	R
TBC	Trichiuridae	M	R
4	Actiniaria sp1	S	R
605	Actiniaria sp20	S	R
264	Aphrocallistes sp	S	R
591	Ascidacea sp2	S	R
6	Caryophyllia sp	S	R
289	cf Clavulariidae sp	S	R
1129	cf Echinus sp (deepPinkSpine)	S	R
1049	cf Psolus sp	S	R
43	Corallimorphidae sp2	S	R
307	Gorgonacea sp7 cfsidella	S	R
305	Leiopathes sp	S	R
349	Mora moro	S	R
205	Paguridae	S	R
1028	Unknown anthozoa (yellow)	S	R

Biotope List (Marine Habitat Classification for Britain & Ireland)

Code	Name	Listed
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DIVE SUMMARY

M.AtMB.Mu	Atlantic mid bathyal mud	Mud and sand emergent fauna (ICES)
M.AtMB.Ro.SpaEnc	Sparse encrusting community on Atlantic mid bathyal rock and other hard substrata	
M.AtMB.Bi.CorRee	Atlantic mid bathyal cold water coral reef (biogenic structure)	Cold water coral reefs (ICES); <i>Lophelia pertusa</i> / <i>Madrepora oculata</i> reefs (ICES subcategory)

Biotope progression per habitat transition (# species, dominant/characteristic species)

1	M.AtMB.Mu	1119 Echinidae sp (dark), 211 Cidaris cidaris, 442 Kophobelemnion stelliferum
2	M.AtMB.Mu; M.AtMB.Ro.SpaEnc	1049 cf Psolus sp
3	M.AtMB.Bi.CorRee	250 Lophelia pertusa, 251 Madrepora oculata, 305 Leiopathes sp
4	M.AtMB.Bi.CorRee	250 Lophelia pertusa, 251 Madrepora oculata, 305 Leiopathes sp, 6 Caryophyllia
5	M.AtMB.Bi.CorRee	250 Lophelia pertusa, 251 Madrepora oculata

Conservation Targets

Listed Habitats Encountered

Name	Authority
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DIVE SUMMARY

<p>Cold water coral reefs: - <i>Lophelia pertusa/Madrepora oculata</i> reefs Mud and sand emergent fauna</p>	<p>ICES ICES subcategory ICES</p>
<p>Listed Species Encountered (Fish, Count)</p>	
<p>n/a</p>	<p>OSPAR/IUCN</p>

<p>Additional Comments</p>
<ul style="list-style-type: none"> • Dense <i>Lophelia pertusa/Madrepora oculata</i> reefs.