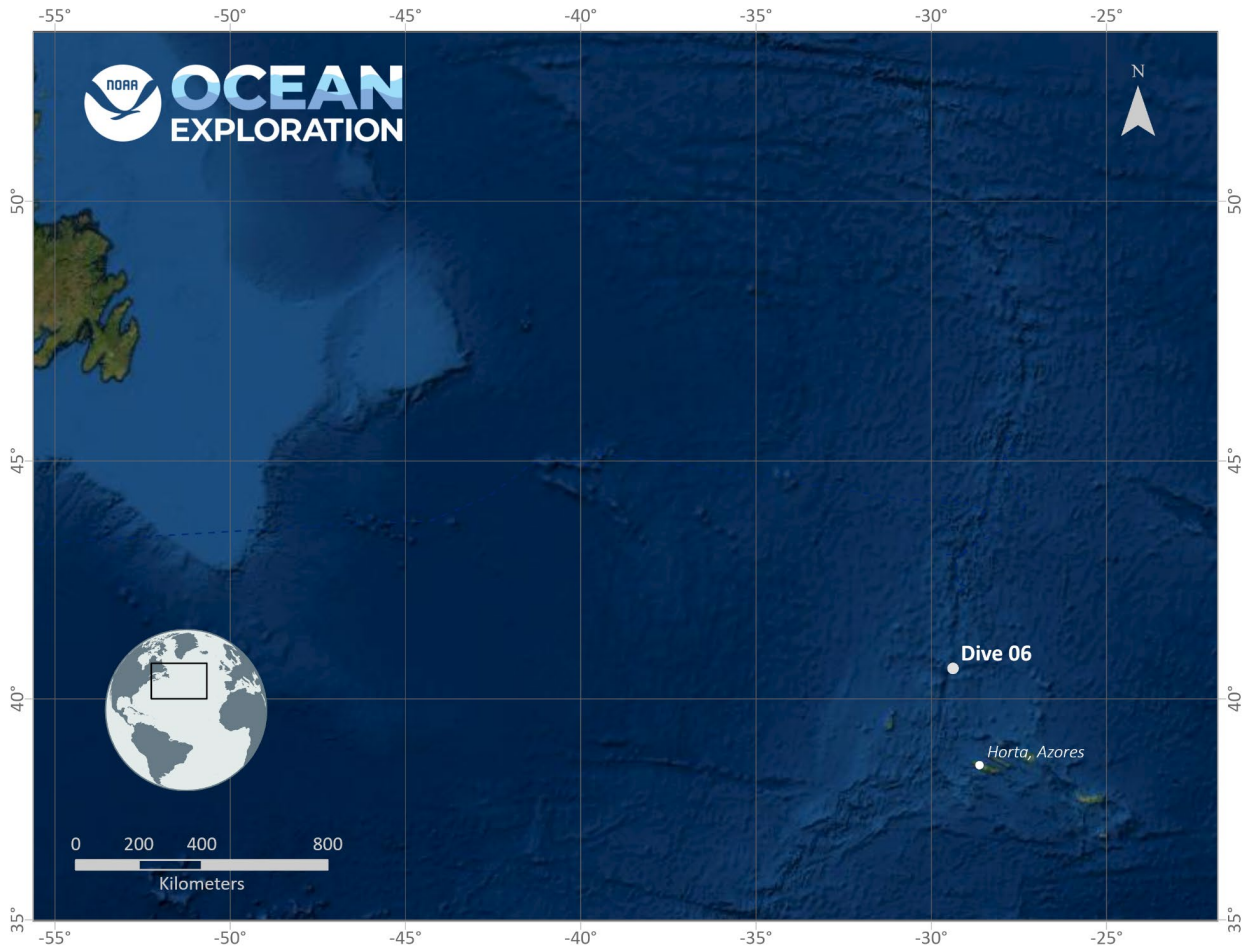


ROV Dive Summary, EX-22-05, Dive 06, July 25, 2022

General Location Map



Dive Information

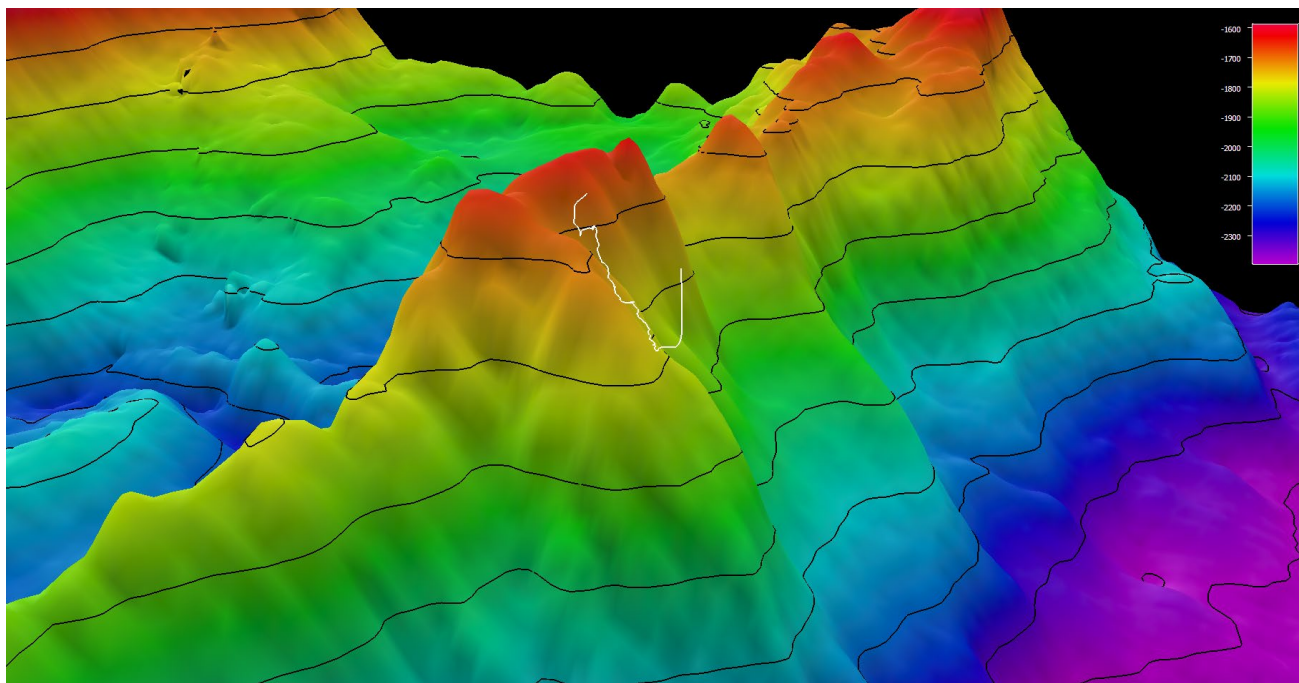
Site Name	Kurchatov Ridge
General Area Descriptor	Ridge-parallel normal fault north of Kurchatov Fracture Zone, Mid-Atlantic Ridge
Science Team Leads	Dr. Scott France (Biology), Dr. Ashton Flinders (Geology)
Expedition Coordinator	Dr. Derek Sowers

Dive Description	<p>Biology</p> <p>Arrived on bottom at 1760 m amidst a diverse assemblage of corals and sponges, including multiple species of black corals and octocorals (bamboo corals, bubblegum corals, plexaurid seafans, mushroom corals, <i>Iridogorgia</i>, <i>Chrysogorgia</i>, <i>Metallogorgia</i>, primnoid corals), stony corals (<i>Solenosmilia variabilis</i>, <i>Enallopsammia</i>, cup corals) and associated fauna, e.g. predatory seastars, chirostylid squat lobsters, stalked barnacles, bryozoans, crinoids, ophiuroids, pycnogonid seastars, and urchins. Sessile fauna were growing from dense rubble comprising dead scleractinian skeleton. The community were in patches, but the patches were regular throughout the dive transect. Notable observations included unfamiliar tunicates, several individuals of a stalked crinoid species whose stalks were overgrown by a colonial hydroid, yellow plexaurid seafans with blue polyps, and an urchin feeding on a <i>Leiopathes</i> black coral.</p> <p>Fish highlights include a rarely observed species of synphobranchid eel, <i>Atractodenchelys phrix</i>, possibly the first ever imaged <i>in situ</i>; false boarfish (oreo), <i>Neocyttus helgae</i>; codling (<i>Laemonema</i> sp.); and chimaera (<i>Hydrolagus</i> sp.).</p> <p>Geology</p> <p>Very sheer face of brecciated pillow basalt, with significant talus, light sediment cover, occasional intact pillow basalts. Pervasive, possibly encrusted, or partially mineralized coral skeletons. Transitioned to one of three local bathymetric highs of the ridge ascent. The ridges tend to be heavily covered in sessile benthic organisms (corals, sponges) on one side, and barren on the other - but both mainly intact fragmented pillow flows. These ridges are separated by talus chutes of large (boulder size and larger) fragmented pillow rubble. On the second bathymetric high (platform) we observed more in place pillow basalts.</p>
Notable Observations	<p>A rarely observed species of synphobranchid eel, <i>Atractodenchelys phrix</i>, possibly the first ever imaged <i>in situ</i></p> <p>Several individuals of a stalked crinoid species whose stalks were covered by a colonial hydroid</p> <p>An urchin feeding on a <i>Leiopathes</i> black coral</p>
Community and habitat observations	<p>Corals and Sponges - Present</p> <p>Chemosynthetic Community - Absent</p> <p>High biodiversity Community - Present</p> <p>Active Seep or Vent - Absent</p> <p>Extinct Seep or Vent - Absent</p> <p>Hydrates - Absent</p>
CMECS Feature Type(s)	Ridge / Slope
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2613

Equipment Deployed

ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational.
Equipment Malfunctions	

Close-up Map of Main Dive Site



Smoothed ROV dive track in white on 25x25 cell size bathymetry, 3x vertical exaggeration, depth in meters, 10 meter contours

Representative Photos of the Dive



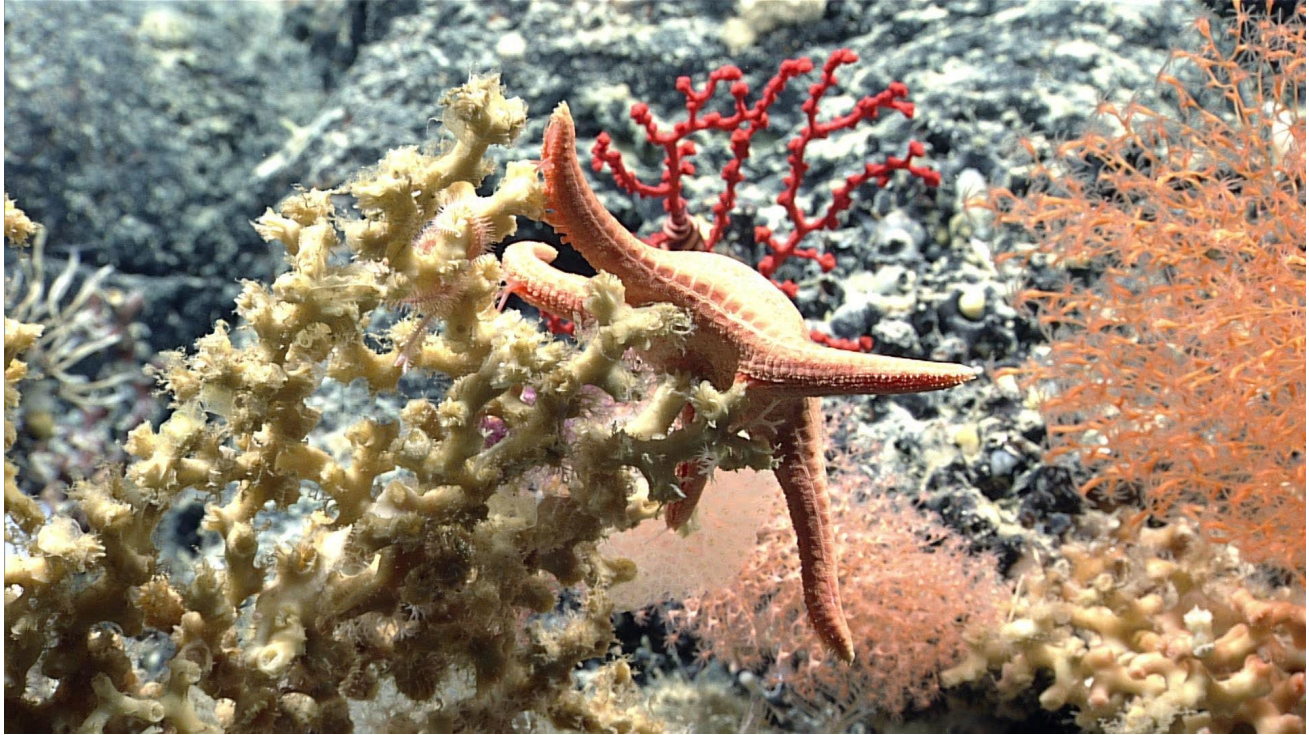
Highly fragmented/sheared in place pillows and rubble.



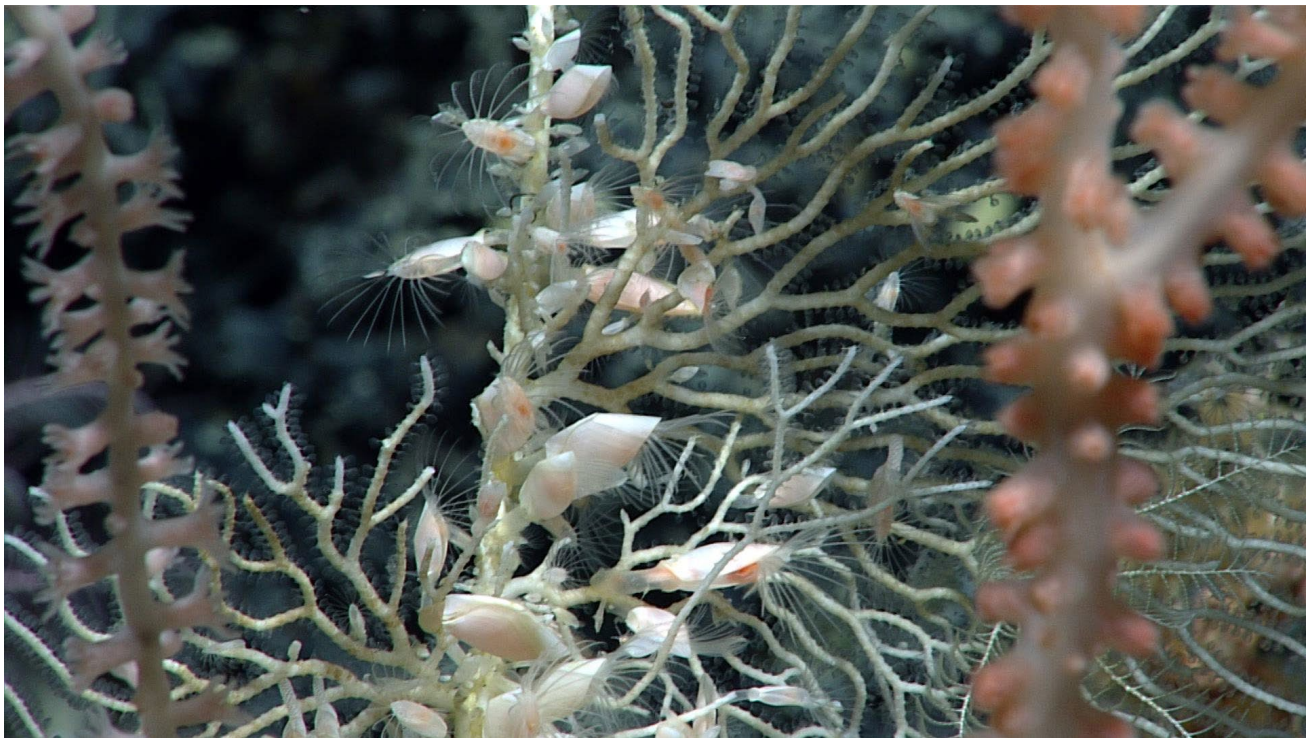
An example of the diversity of corals and sponges growing atop scleractinian coral skeletons.



Stalked crinoid with stalk overgrown by a colonial hydroid.



A seastar feeding on *Solenosmilia variabilis* amidst *Paragorgia* bubblegum coral and *Acanella* bamboo coral colonies.



Bryozoans and barnacles growing epibiotically on foundation corals.



A sea urchin feeding on a *Leiopathes* black coral.

Samples Collected -



Spec_ID: EX2205_D06_03B Formalin Used? No
 Field ID: Researcher's Sub-Division
 Vessel: Okeanos Explorer - Ship Deep Discoverer
 CruiseID/Depth: EX2205/1754.5
 UTC Date/Time: 20220725/12:18:28
 Dive Site: North Atlantic Ocean, Azores/Ridge
 Lat/Long/Depth (m): 40.6624/29.3848/1754.46
 Box/Container: Port Outboard Bio Box
 Preservative:

Sample ID	EX2205_D06_03B
Date (UTC)	20220725
Time (UTC)	12:18:28
Depth (m)	1754.5
Latitude (decimal degrees)	40.662
Longitude (decimal degrees)	-29.385

Temp. (°C)	4.115
Field ID(s)	Plexauridae
Comments	

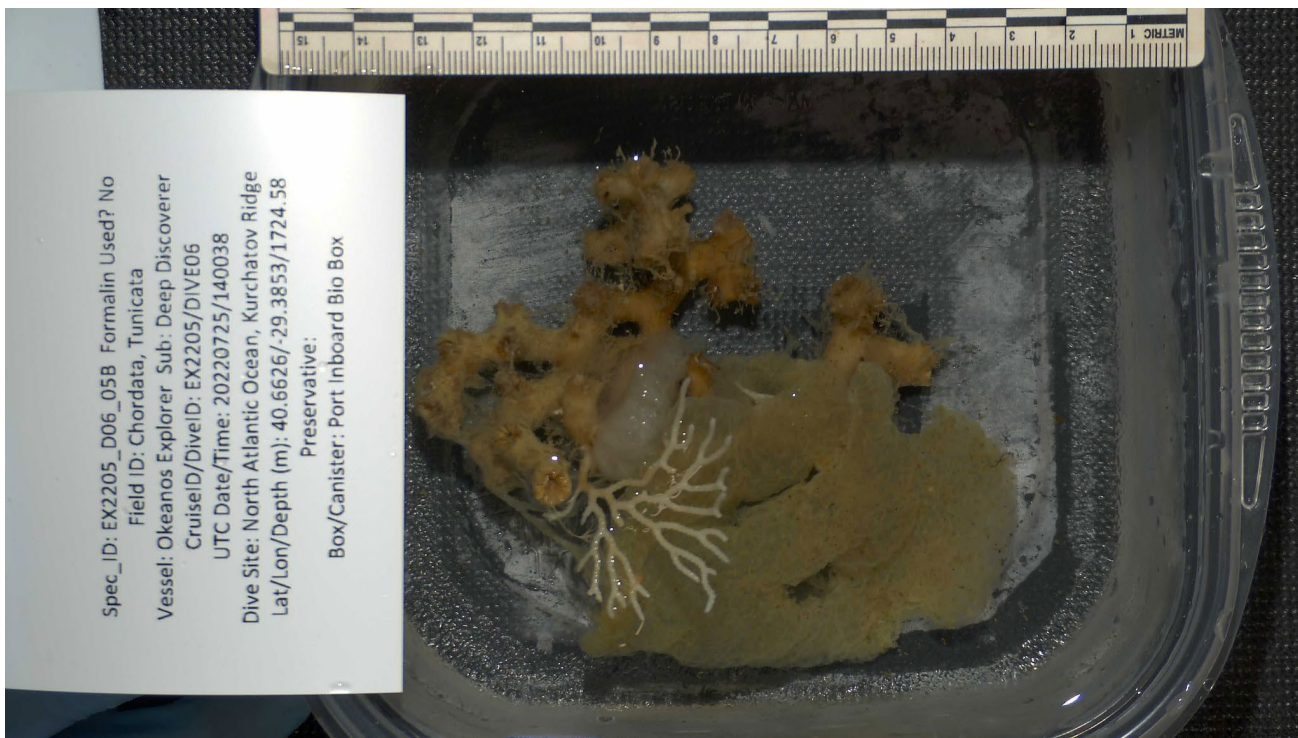
Associates Sample ID	Field Identification	Count
EX2205_D06_03B_A01	Thecostraca	1
EX2205_D06_03B_A02	Hydroida	1



Sample ID	EX2205_D06_04G
Date (UTC)	20220725

Time (UTC)	13:04:50
Depth (m)	1739.1
Latitude (decimal degrees)	40.6625
Longitude (decimal degrees)	-29.3848
Temp. (°C)	4.15
Field ID(s)	Pillow fragment
Comments	Pillow fragment, basalt, not in place but likely from nearby. Heavily weathered and broken into pieces.

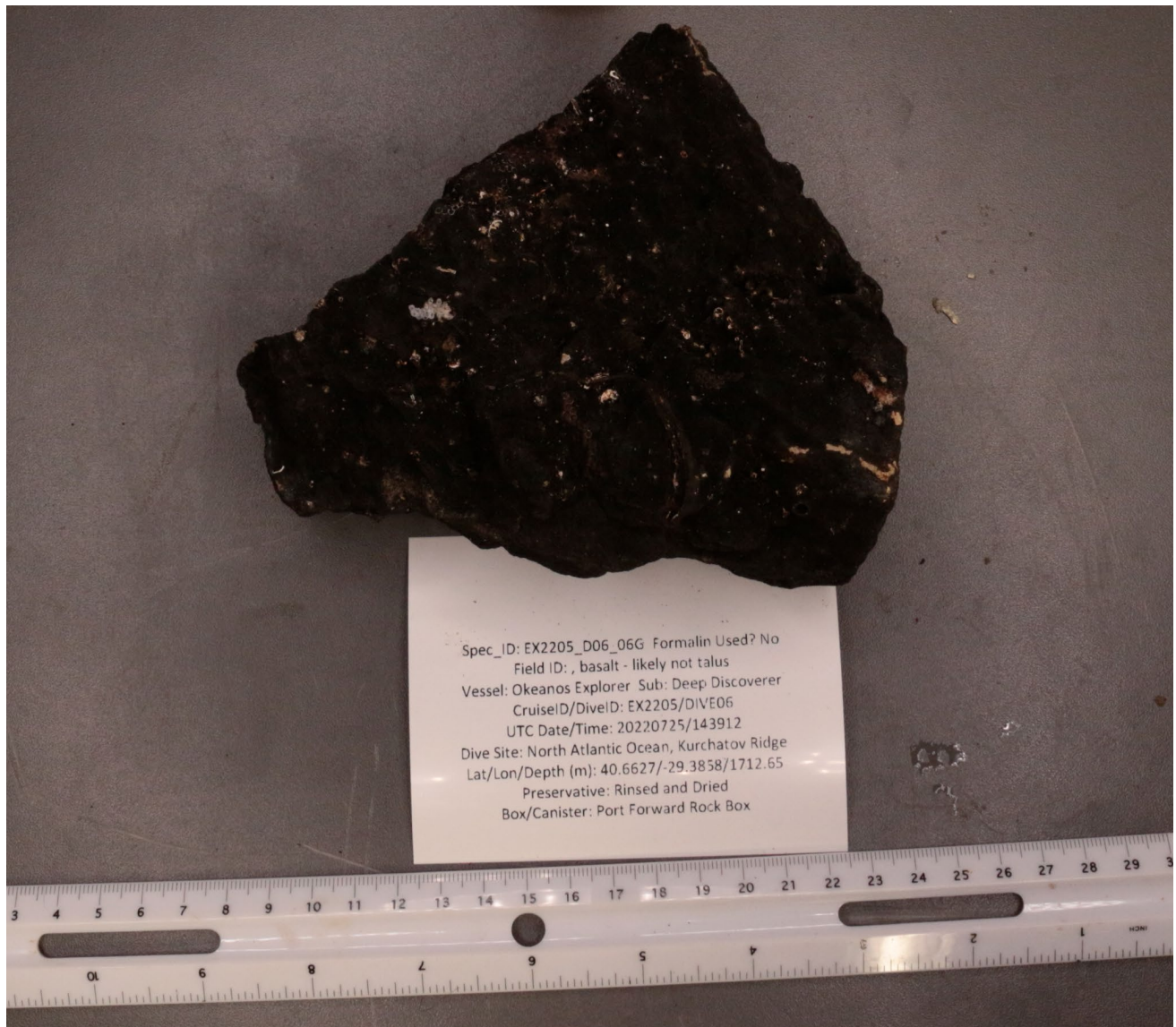
Associates Sample ID	Field Identification	Count
EX2205_D06_04G_A01	Unknown	1



Sample ID	EX2205_D06_05B
Date (UTC)	20220725
Time (UTC)	14:00:38
Depth (m)	1724.6
Latitude (decimal degrees)	40.663
Longitude (decimal degrees)	-29.385
Temp. (°C)	4.139

Field ID(s)	Tunicata
Comments	

Associates Sample ID	Field Identification	Count
EX2205_D06_05B_A01	Bryozoa	1
EX2205_D06_05B_A02	Caprellidea	1
EX2205_D06_05B_A03	Porifera	1
EX2205_D06_05B_A04	Crinoidea	1
EX2205_D06_05B_A05	Polychaeta	1
EX2205_D06_05B_A06	Octocorallia	1



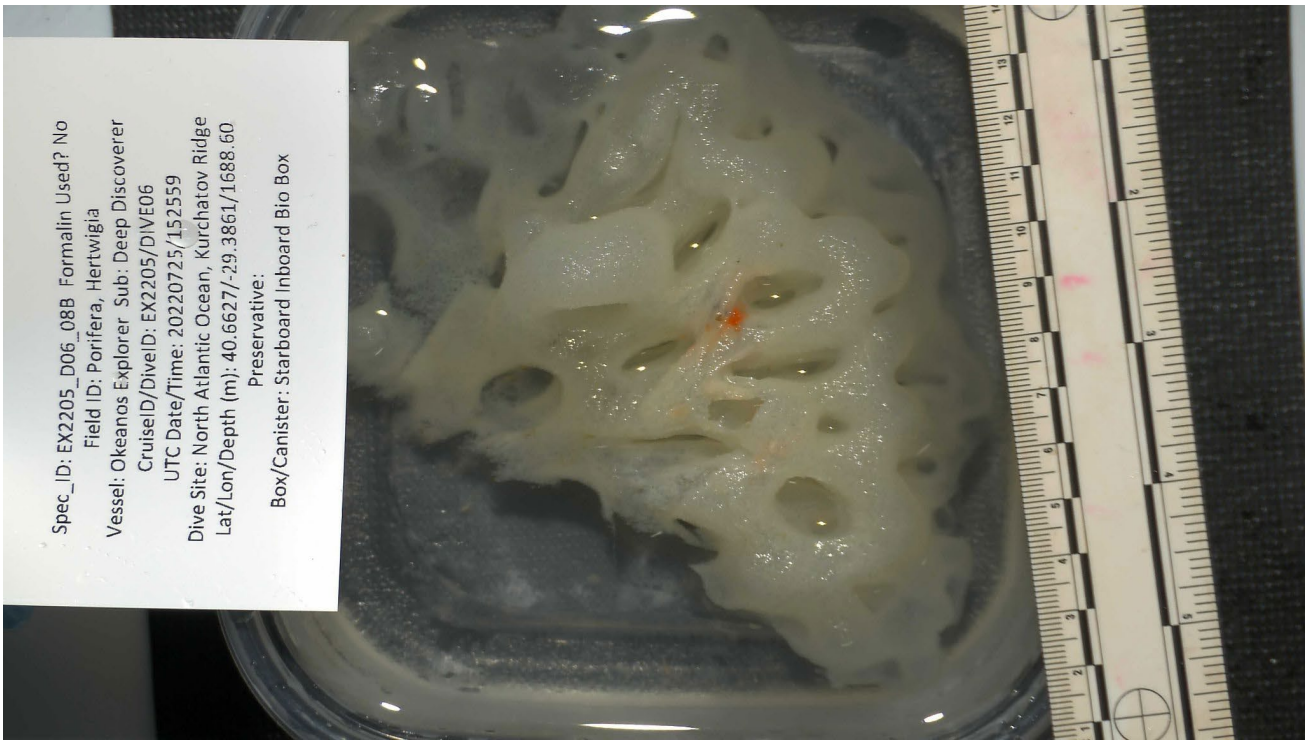
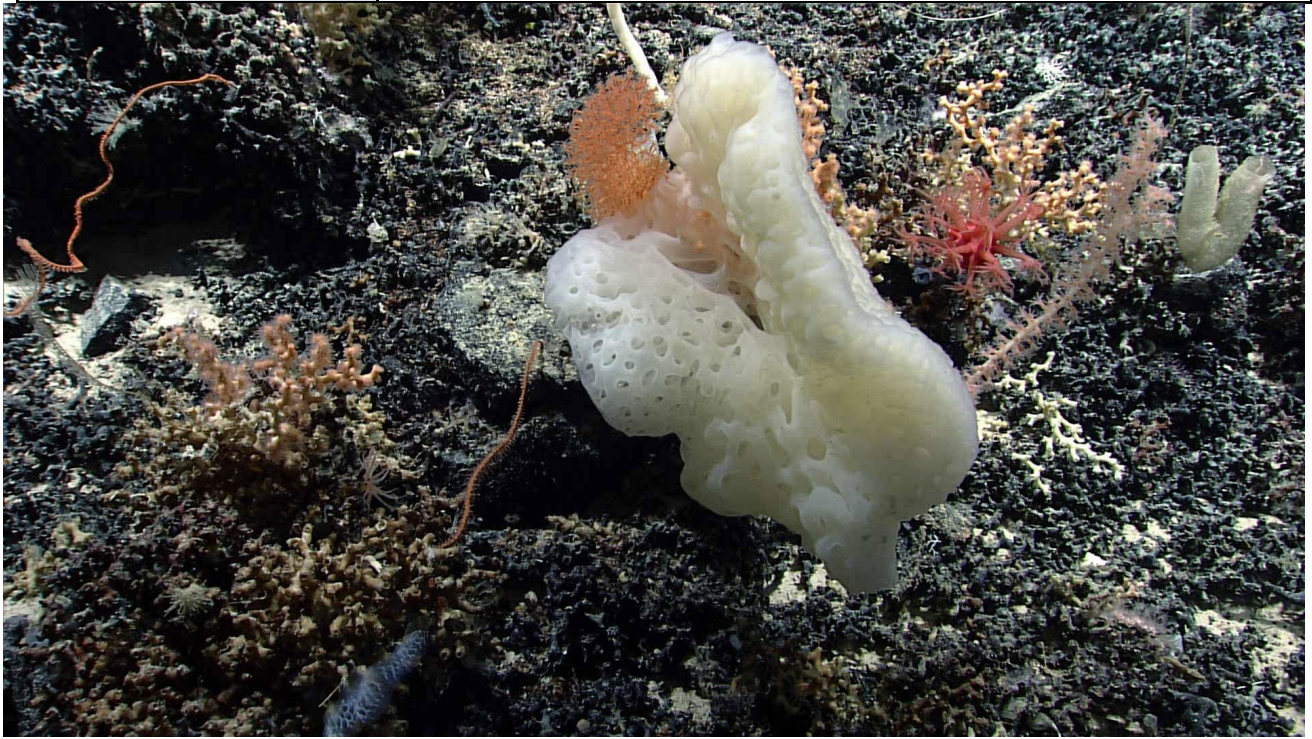
Sample ID	EX2205_D06_06G
Date (UTC)	20220725
Time (UTC)	14:39:12
Depth (m)	1712.6
Latitude (decimal degrees)	40.6627
Longitude (decimal degrees)	-29.3858
Temp. (°C)	4.15
Field ID(s)	basalt - likely not talus
Comments	Pillow rind, basalt, 11x15 cm, ~2-5cm of light ferromanganese crust.

Associates Sample ID	Field Identification	Count



Sample ID	EX2205_D06_07B
Date (UTC)	20220725
Time (UTC)	15:03:23
Depth (m)	1700.2
Latitude (decimal degrees)	40.663
Longitude (decimal degrees)	-29.386
Temp. (°C)	4.144

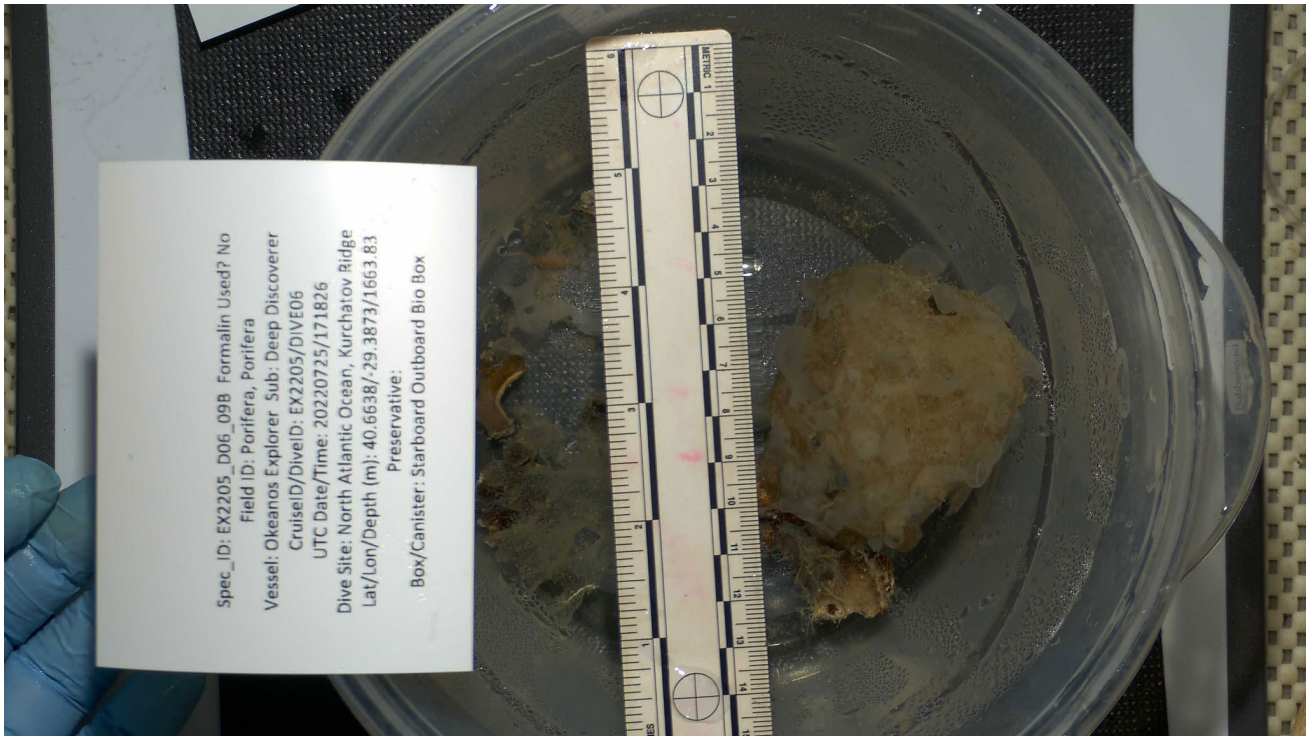
Field ID(s)	Placogorgia
Comments	



Sample ID	EX2205_D06_08B
Date (UTC)	20220725
Time (UTC)	15:25:59
Depth (m)	1688.6

Latitude (decimal degrees)	40.663
Longitude (decimal degrees)	-29.386
Temp. (°C)	4.134
Field ID(s)	Hertwigia
Comments	

Associates Sample ID	Field Identification	Count
EX2205_D06_08B_A01	Amphipoda	3
EX2205_D06_08B_A02	Polychaeta	3



Sample ID	EX2205_D06_09B
Date (UTC)	20220725
Time (UTC)	17:18:26
Depth (m)	1663.8
Latitude (decimal degrees)	40.664
Longitude (decimal degrees)	-29.387
Temp. (°C)	4.169

Field ID(s)	Porifera
Comments	

Associates Sample ID	Field Identification	Count
EX2205_D06_09B_A02	Porifera	1
EX2205_D06_09B_A03	Polychaeta	2
EX2205_D06_09B_A04	Polychaeta	1
EX2205_D06_09B_A05	Amphipoda	1
EX2205_D06_09B_A06	Serpulidae	1
EX2205_D06_09B_A07	Porifera	1
EX2205_D06_09B_A08	Asbestopluma	2

Niskin Sampling Summary

Sample ID	EX2205_D06_01W
Date (UTC)	20220725
Time (UTC)	10:58:49
Depth (m)	580.4
Latitude (decimal degrees)	40.6626
Longitude (decimal degrees)	-29.3812
Bottle number	Niskin Bottle 1
Temperature (°C)	11.77
Dissolved Oxygen (ml/L)	5.82
Treatment	eDNA

Sample ID	EX2205_D06_02W
Date (UTC)	20220725
Time (UTC)	11:46:57
Depth (m)	1760.8

Latitude (decimal degrees)	40.6625
Longitude (decimal degrees)	-29.3846
Bottle number	Niskin Bottle 2
Temperature (°C)	4.11
Dissolved Oxygen (ml/L)	8.13
Treatment	eDNA

Sample ID	EX2205_D06_10W
Date (UTC)	20220725
Time (UTC)	17:26:15
Depth (m)	1653.1
Latitude (decimal degrees)	40.6639
Longitude (decimal degrees)	-29.3875
Bottle number	Niskin Bottle 3
Temperature (°C)	4.15
Dissolved Oxygen (ml/L)	8.07
Treatment	eDNA

Sample ID	EX2205_D06_11W
Date (UTC)	20220725
Time (UTC)	17:33:28
Depth (m)	1645.0
Latitude (decimal degrees)	40.6639
Longitude (decimal degrees)	-29.3874
Bottle number	Niskin Bottle 4
Temperature (°C)	4.19
Dissolved Oxygen (ml/L)	8.03
Treatment	eDNA

Sample ID	EX2205_D06_12W
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Date (UTC)	20220725
Time (UTC)	18:16:07
Depth (m)	539.7
Latitude (decimal degrees)	40.6618
Longitude (decimal degrees)	-29.3902
Bottle number	Niskin Bottle 5
Temperature (°C)	11.61
Dissolved Oxygen (ml/L)	6.71
Treatment	eDNA

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