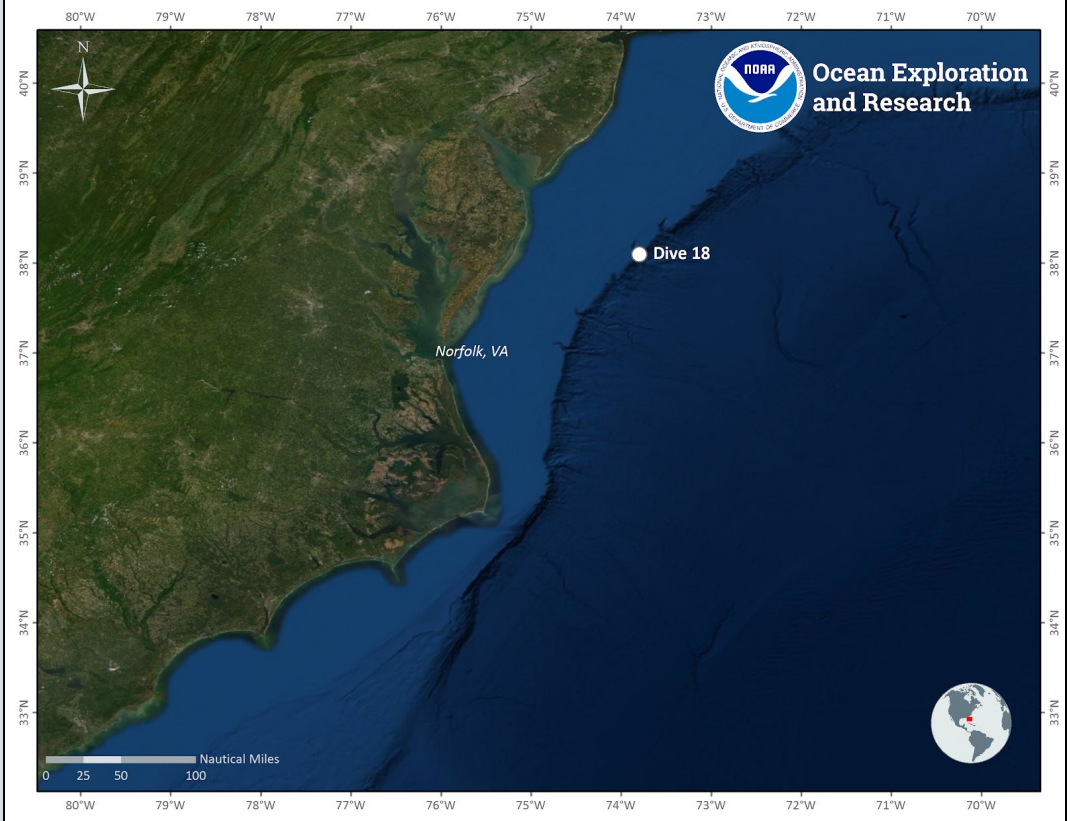
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information

General Location Map	
General Area Descriptor	U.S. Mid-Atlantic, Frank R. Lautenberg Deep Sea Coral Protection Area
Site Name	Baltimore Canyon
Science Team Leads	Amy Wagner (CSUS) and Alexis Weinnig (Temple)
Expedition Coordinator	Kasey Cantwell (NOAA-OER)
ROV Dive Supervisor	Chris Ritter (GFOE)
Mapping Lead	Shannon Hoy (NOAA-OER)

ROV Dive Name

Cruise	EX1903L2
Dive Number	Dive 18

Equipment Deployed

ROV	*Deep Discoverer*		
Camera Platform	*Seirios*		
ROV Measurements	✔CTD	✔Depth	✔Altitude
	✔Scanning Sonar	✔USBL Position	✔Heading
	✔Pitch	✔Roll	✔HD Camera 1
	✔HD Camera 2	✔Low Res Cam 1	✔Low Res Cam 2
	✔Low Res Cam 3	✔Low Res Cam 4	✔Low Res Cam 5
Equipment Malfunctions			
ROV Dive Summary Data (from Processed ROV)	Dive Summary: EX1903L2_DIVE18 ^^ In Water: 2019-07-10T12:21:11.063350 38°, 7.577' N ; 73°, 50.873' W On Bottom: 2019-07-10T13:19:06.791292 38°, 7.497' N ; 73°, 50.779' W Off Bottom: 2019-07-10T20:11:14.778873 38°, 7.229' N ; 73°, 50.964' W Out Water: 2019-07-10T20:40:18.301188 38°, 7.128' N ; 73°, 50.773' W Dive duration: 8:19:7 Bottom Time: 6:52:7 Max. depth: 770.0 m		
Special Notes			

Scientists Involved (provide name, affiliation, email)

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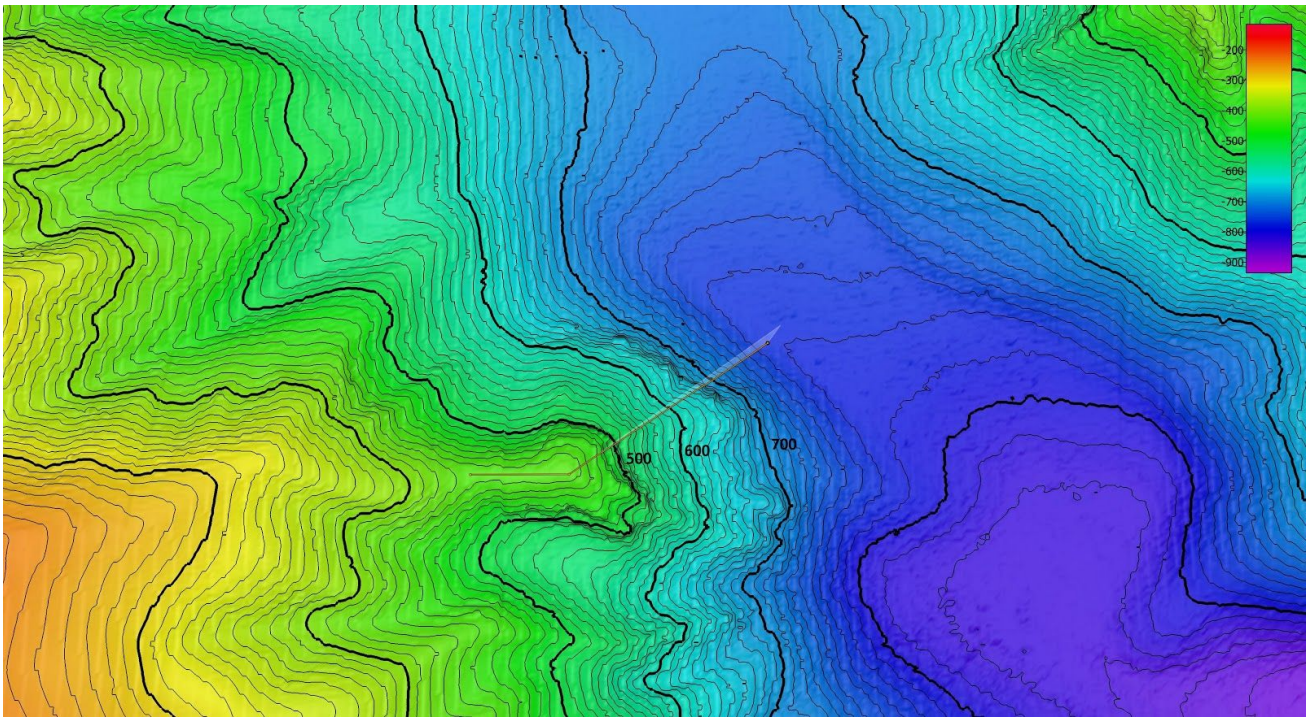
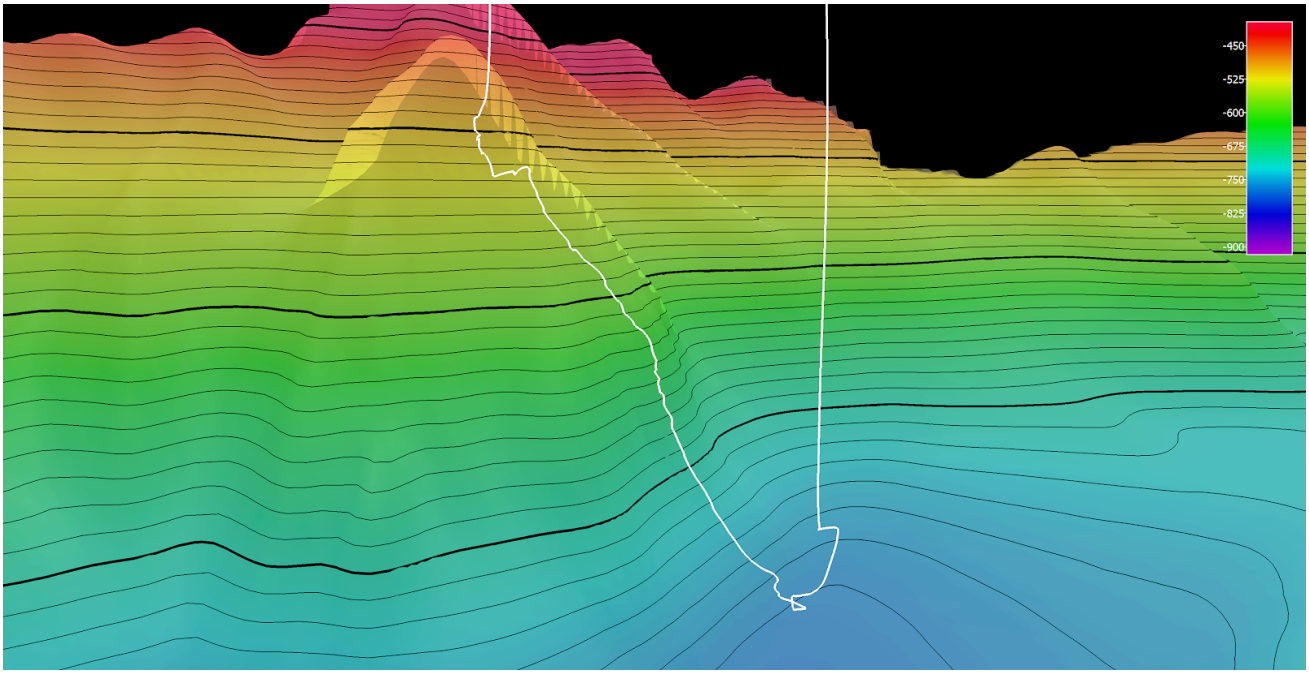
Dive Purpose	The primary objective of this dive is to explore and characterize a mid-Atlantic canyon wall with a relatively steep slope that has the potential to be suitable habitat for deep-water coral, sponges, and associated fauna.

Dive Description	Today (7/10/19) turned out to be Paragorgia Fest 2019. We explored a north facing wall of Baltimore Canyon. We started the dive at approximately 760 meters and worked our way up to 494 meters by the end of the dive. There was a relatively dense nepheloid layer through the majority of the dive, however, it did not impede operations. At the base of the canyon wall and up to about 531 meters the seafloor was relatively sedimented with scattered rock debris and many burrow holes in the face of the wall. In this area we observed numerous *Chaceon* red crabs of various sizes, some in mating pairs, copious brittle star arms extending from the below shallow layer of sediment, Munida squat lobsters, fly trap anemones, and >10 skates on the seafloor. As we continued up the slope and we observed larger rock outcrops and overhangs that were home to a high density of *Paragoriga sp.* colonies, some of which were over two meters in size. Alongside the *Paragorgia sp.* colonies we also observed *Anthethela sp*. and *Primnoa resedaeformis* colonies, as well as a few different species of sea stars (*Poraniomorpha hispdia* and *Porania pulvillus*).The densely packed coral colonies were also covered with shrimp (pandalids, possibly *Heterocarpus sp.*) and we also observed skate or shark eggs attached to *Paragorgia.* We suction sampled two of the shrimps, collected a piece of Paragorgia (with two shrimp associates still attached), and two bonus shrimp swam into the biobox of their own volition (so a total of 6 shrimp samples!).
Notable Observations	A high number of skate sightings - BIG *Paragorgia* colonies
Community Presence/ Absence (community is defined as more than two species)	✔ Corals and Sponges ✔ Chemosynthetic Community ✔ High biodiversity Community ✔ Active Seep or Vent ✔ Extinct Seep or Vent ✔ Hydrates
Feature Type	Submarine Canyon, Scarp/wall
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&diveId=1513

Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



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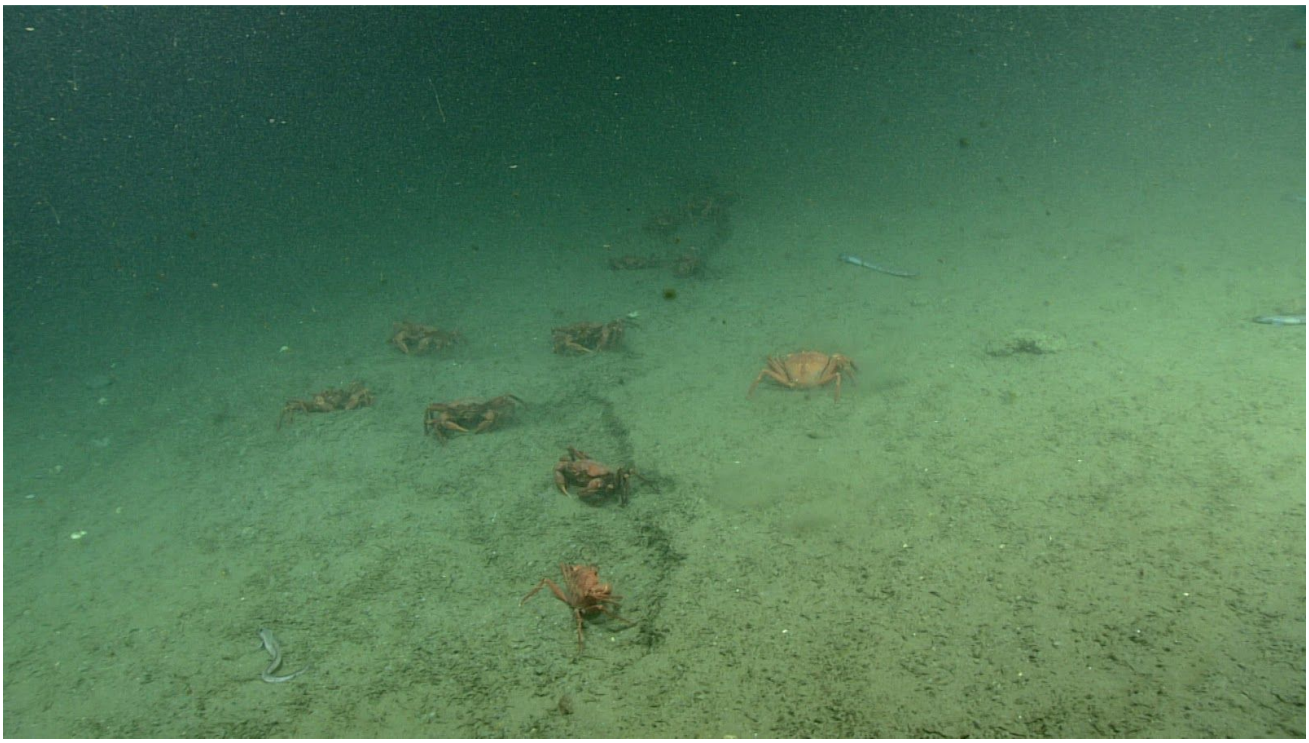
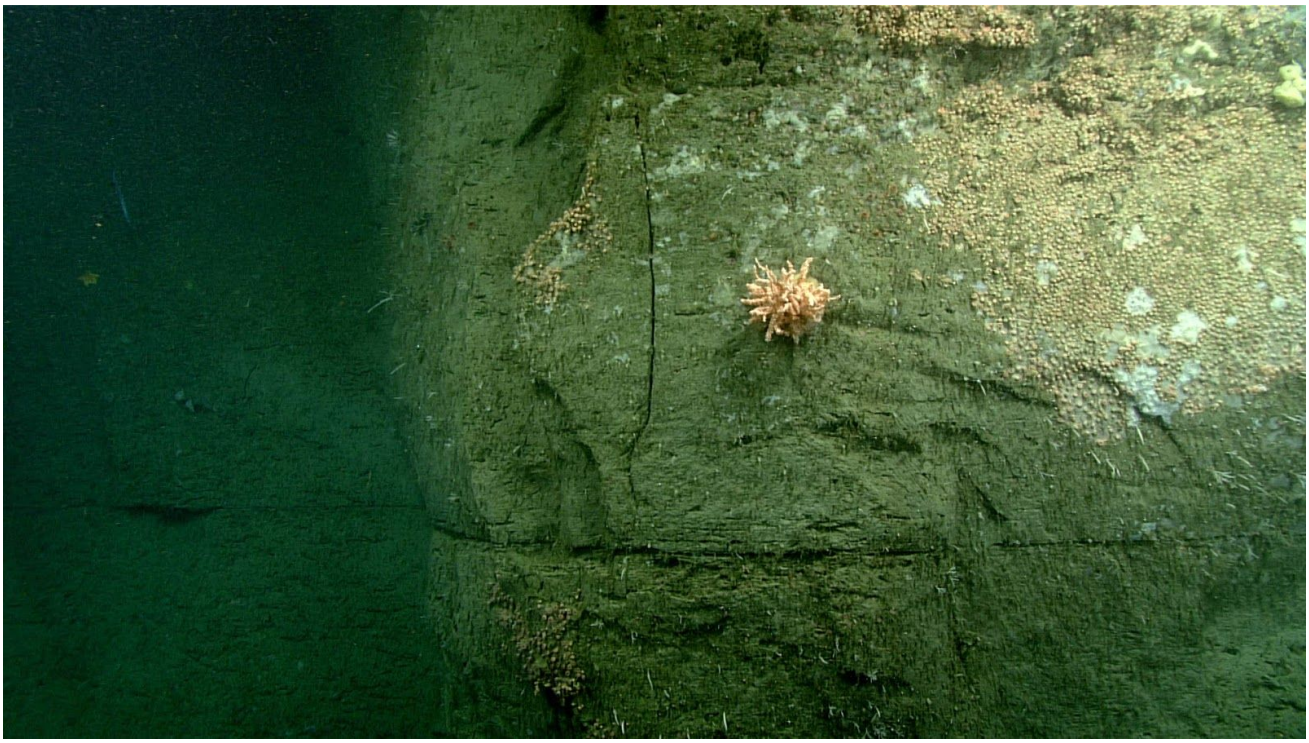
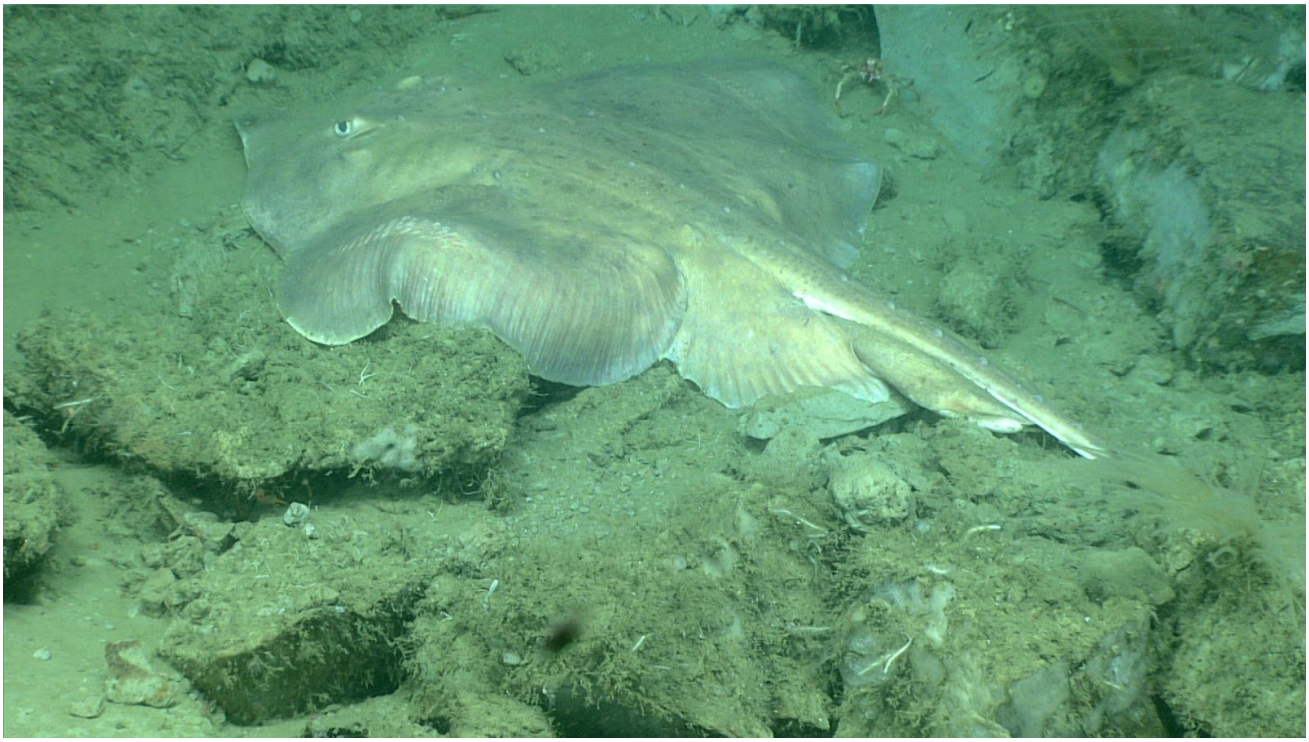
Representative Photos of the Dive



Chaceon red crabs on the sedimented slope during the first half of the dive



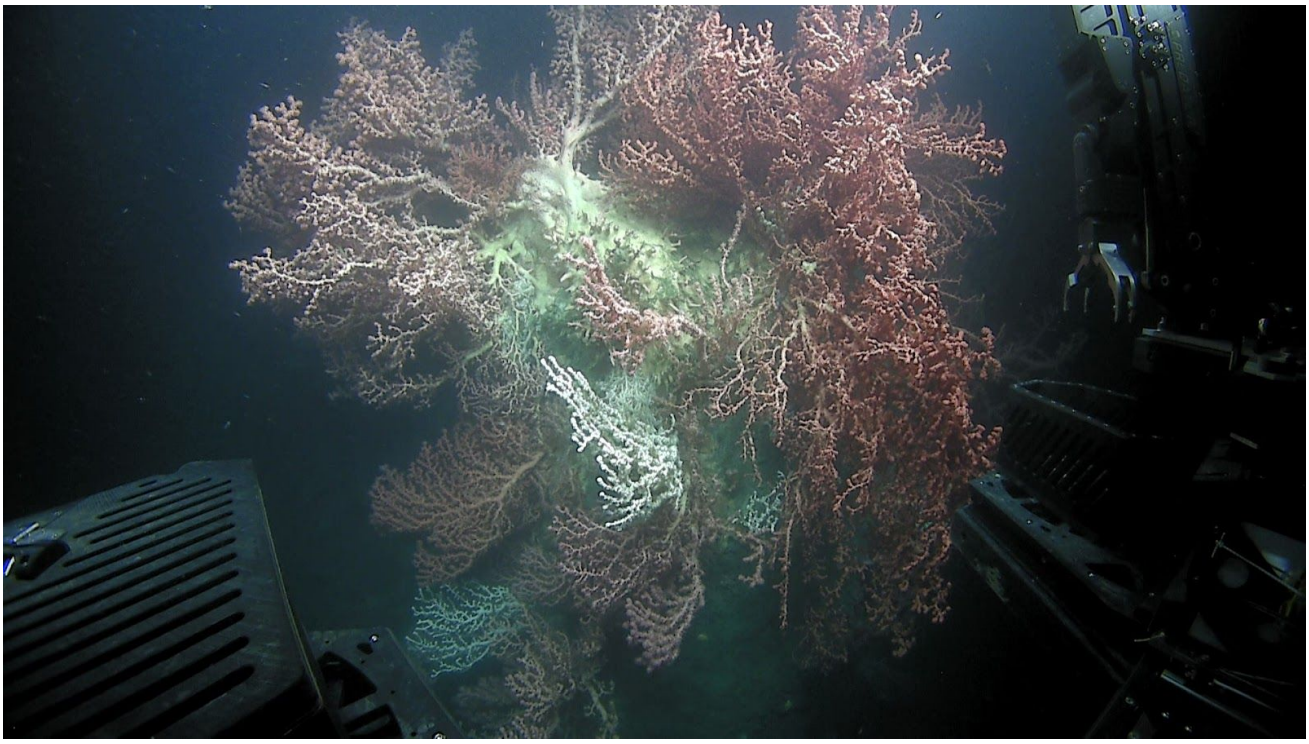
First sightings of a steep wall face, enhabitated by zooanthids and an *Anthothella sp*.



One of the many rays/skates seen throughout the dive. Also observed numerous ray/skate/shark egg casings on he seafloor and attached to *Paragorgia* branches.

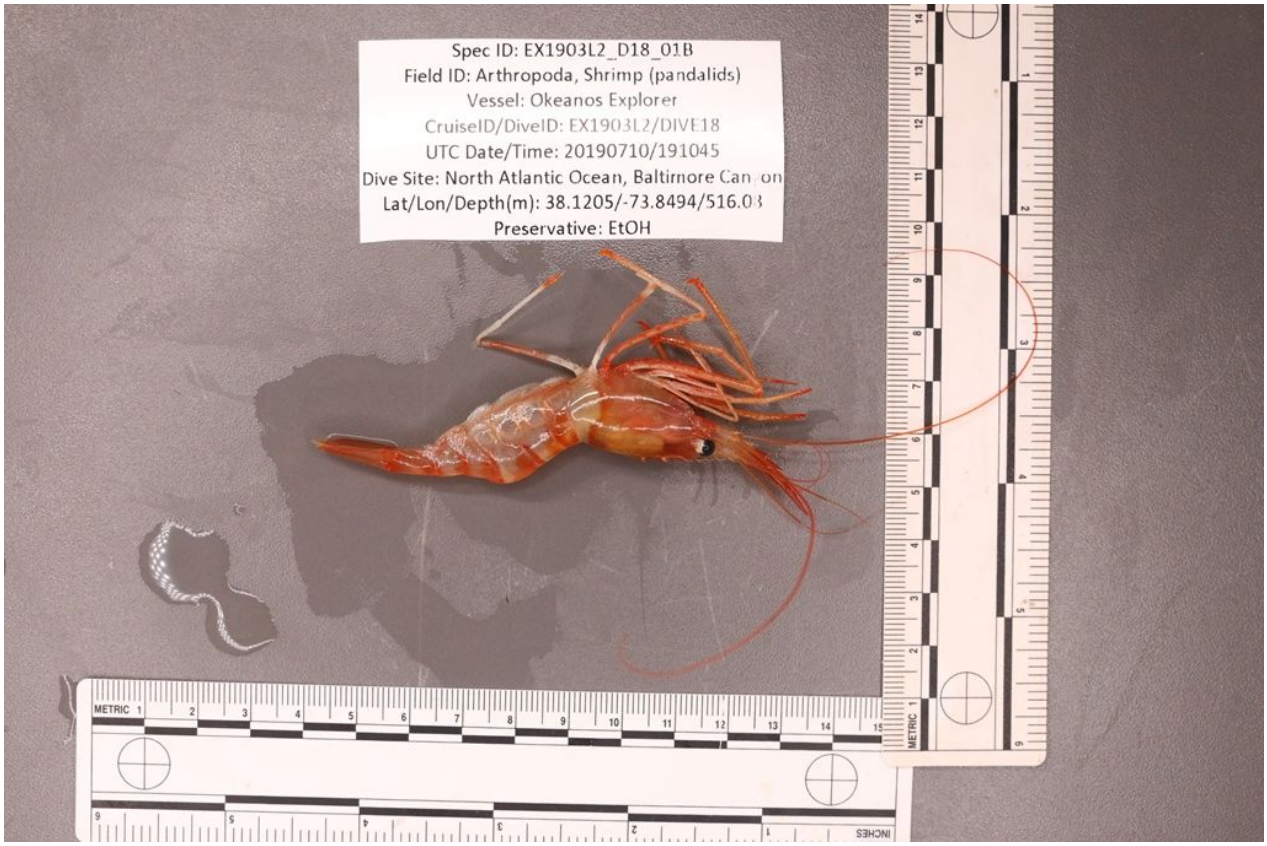
Close up of Paragorgia sp. with shrimp (pandalids, possibly *Heterocarpus sp.*), squat lobster (*Eumunida picta*), and a shark/ray/skate egg case attached.

Clusters of *Paragorgia* and *Primnoa resedaeformis* colonies on a ledge as the dive continued up slope



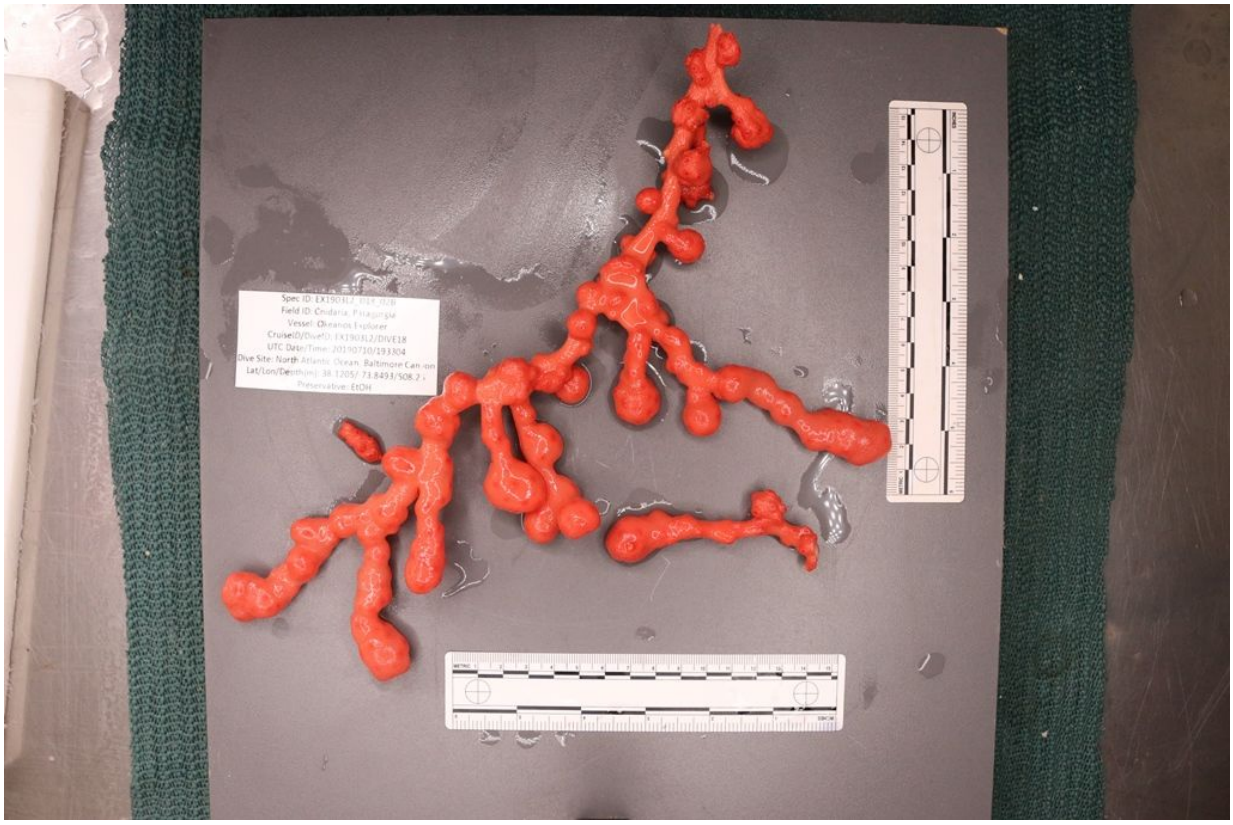
Wide angle camera view of dense *Paragorgia* colonies (some very large) on a rock ledge right before assent at the end of the dive

Samples Collected



Sample ID	EX1903L2_D18_01B
Date (UTC)	20190710
Time (UTC)	191045
Depth (m)	516.1
Temp. (°C)	5.907
Field ID(s)	Shrimp, Pandalidae
Associates	
Comments	

Associates Sample ID	Field Identification
EX1903L2_D18_01B_A01	Shrimp, Pandalidae
EX1903L2_D18_01B_A02	Amphipoda



Sample ID	EX1903L2_D18_02B
Date (UTC)	20190710
Time (UTC)	193304
Depth (m)	508.2
Temp. (°C)	6.432
Field ID(s)	Paragorgia
Associates	

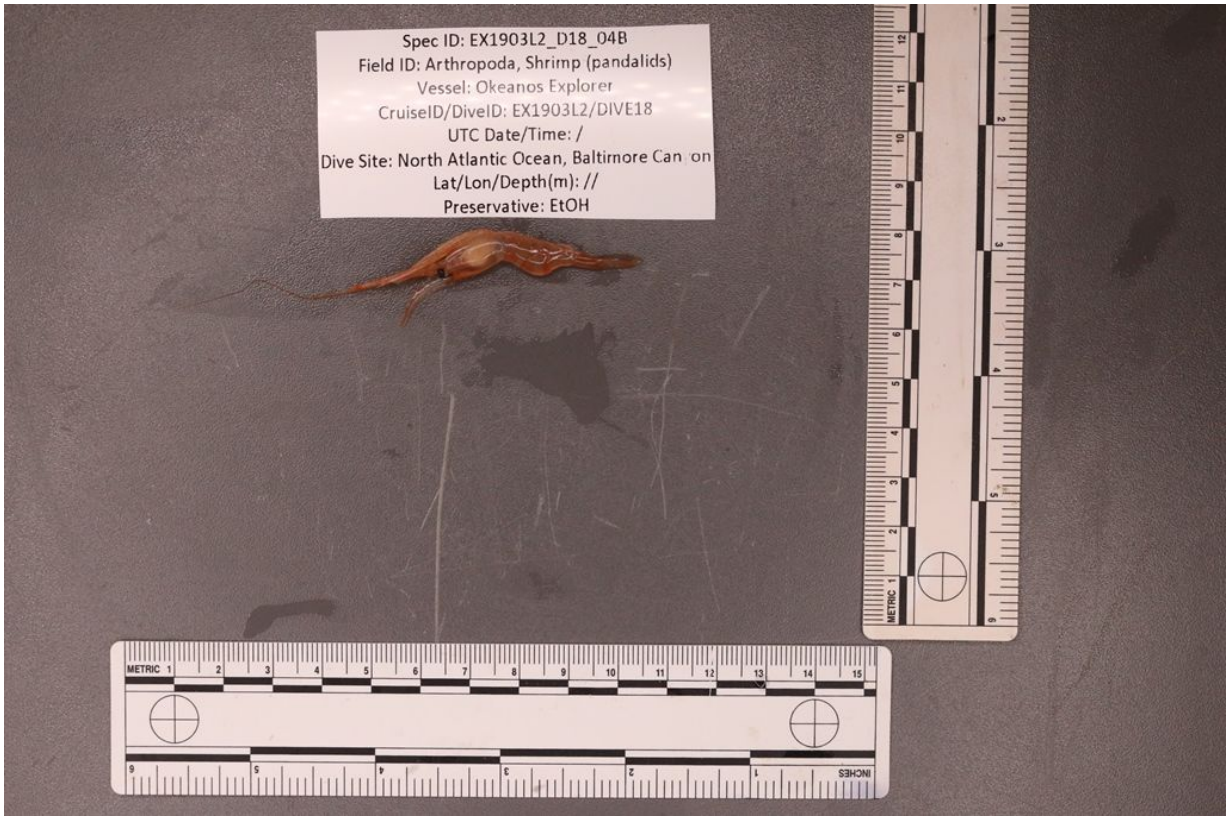
Associates Sample ID	Field Identification
EX1903L2_D18_02B_A01	Shrimp, Pandalidae
EX1903L2_D18_02B_A02	Shrimp, Pandalidae

Comments	

Sample ID	EX1903L2_D18_03G
Date (UTC)	20190710
Time (UTC)	195200
Depth (m)	507.1
Temp. (°C)	6.596
Field ID(s)	Rock
Associates	

Associates Sample ID	Field Identification
EX1903L2_D18_03G_A01	Porifera
EX1903L2_D18_03G_A02	Hydrozoa
EX1903L2_D18_03G_A03	Tubeworm (Annelida)
EX1903L2_D18_03G_A04	Porifera

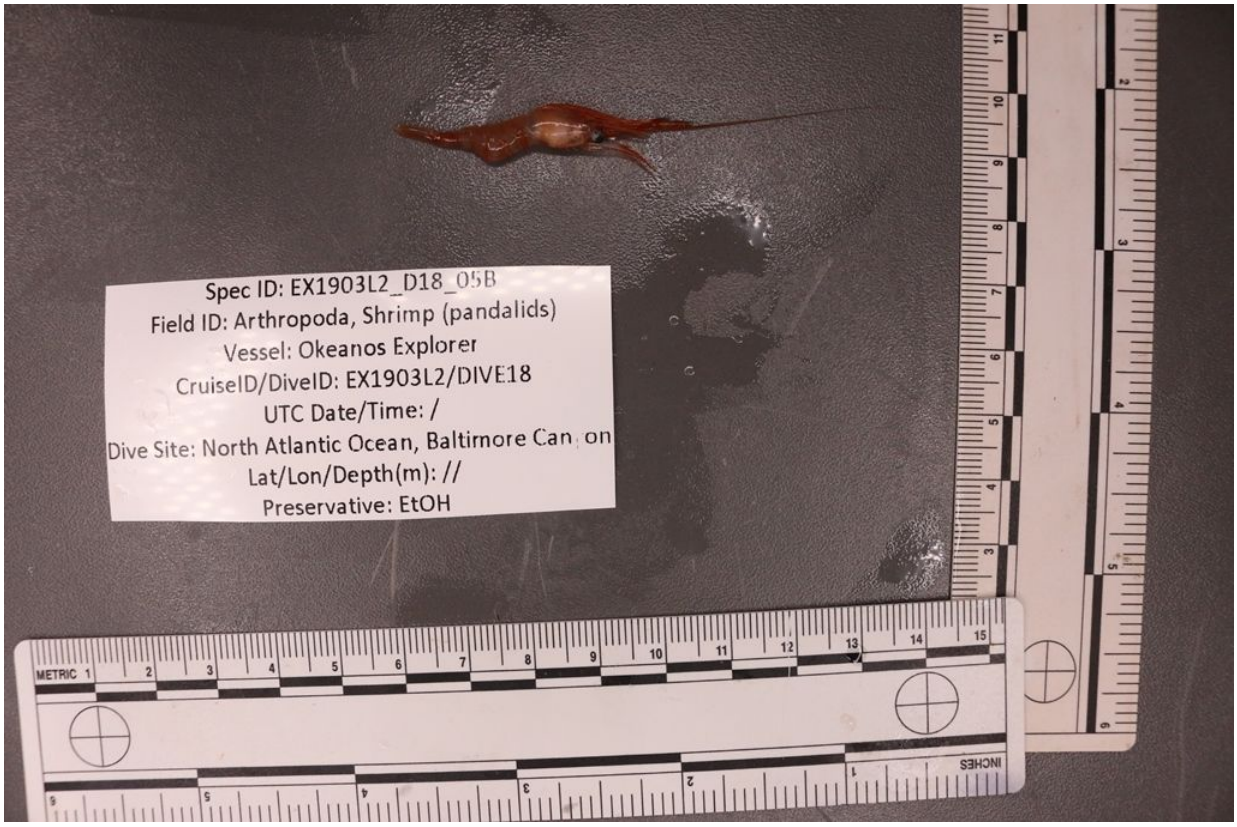
Comments	



Sample ID	EX1903L2_D18_04B
Date (UTC)	20190710
Time (UTC)	could not be ascertained as this was an unintentional sample
Depth (m)	NA
Temp. (°C)	NA
Field ID(s)	Shrimp, Pandalidae
Associates	

Associates Sample ID	Field Identification
No associates	

Comments	Unintentional Sample



Sample ID	EX1903L2_D18_05B
Date (UTC)	20190710
Time (UTC)	could not be ascertained as this was an unintentional sample
Depth (m)	NA
Temp. (°C)	NA
Field ID(s)	Shrimp, Pandalidae
Associates	

Associates Sample ID	Field Identification
No associates	

Comments	Unintentional Sample

Please direct inquiries to:

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