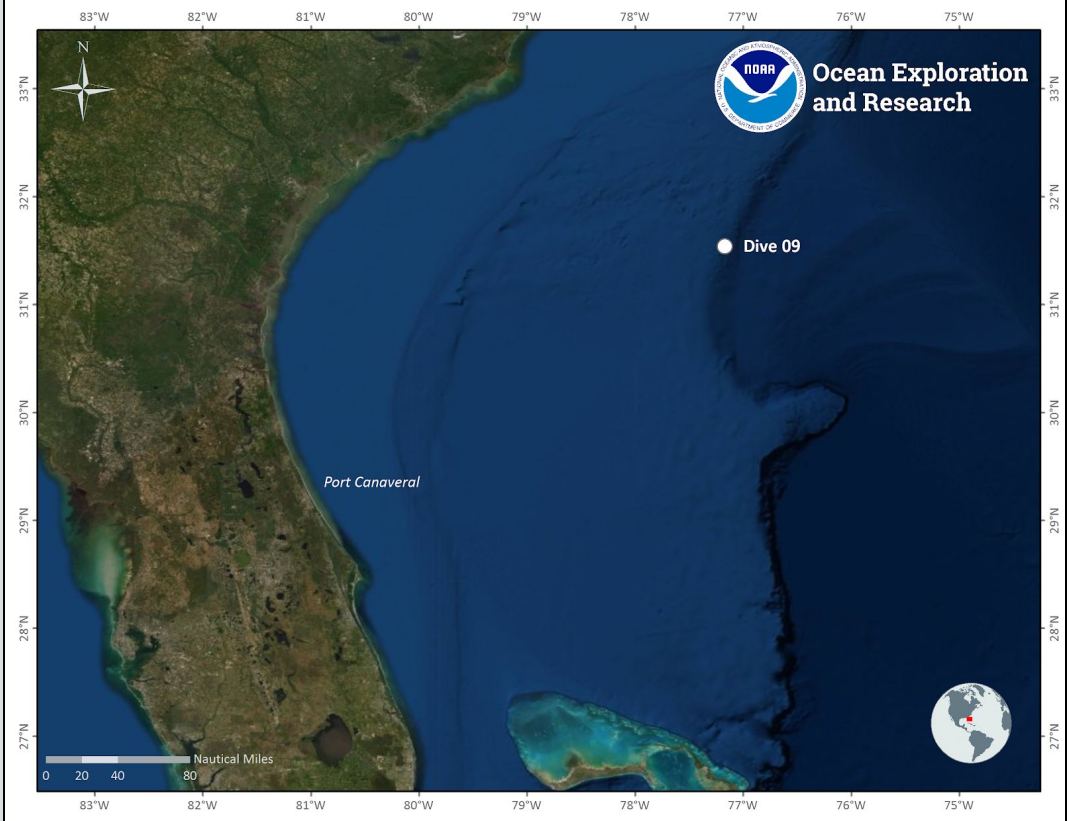
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information

General Location Map	
General Area Descriptor	U.S. Southeast, Blake Escarpment
Site Name	Blake Escarpment Mid
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 09

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_DIVE09 ^^ In Water: 2019-06-30T12:31:47.872459 31°, 31.73' N ; 77°, 9.291' W On Bottom: 2019-06-30T13:22:05.333473 31°, 31.584' N ; 77°, 9.621' W Off Bottom: 2019-06-30T19:48:54.349688 31°, 31.488' N ; 77°, 10.056' W Out Water: 2019-06-30T22:33:04.003412 31°, 31.533' N ; 77°, 10.279' W Dive duration: 10:1:16 Bottom Time: 6:26:49 Max. depth: 1426.0 m		
Special Notes			

Scientists Involved (provide name, affiliation, email)

First Name	Last Name	Affiliation	Email
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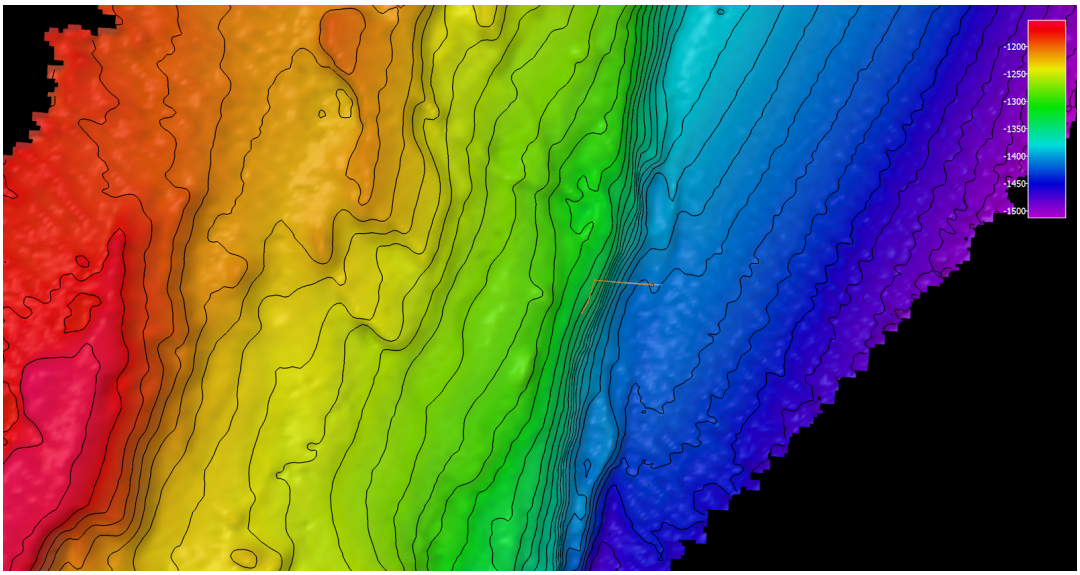
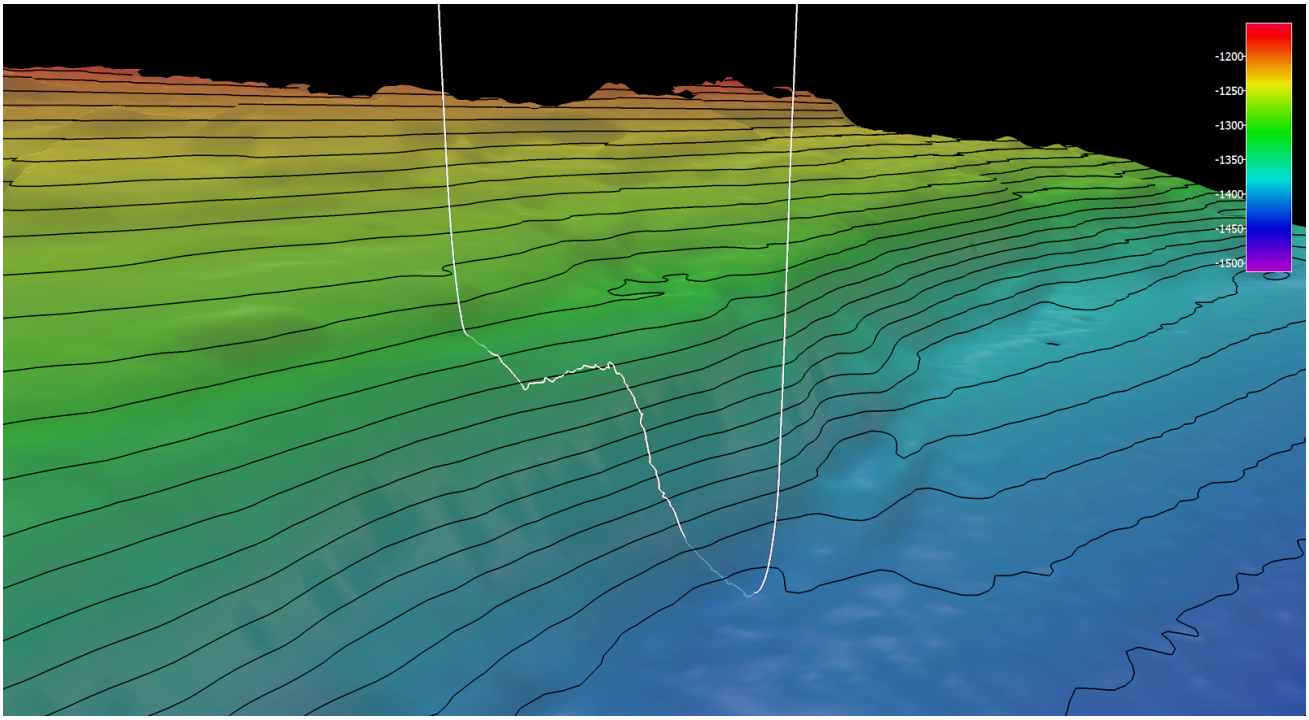
Dive Purpose	The primary objective of this dive is to explore and characterize the habitat of deep-water coral, sponges, and associated fauna that inhabit an escarpment on the Blake Plateau. Also, gather data and samples from the midwater above the dive target. This dive will provide a survey of a deeper escarpment (1,400-1,300 meters) than the previous scarps during this expeditions. We will then perform midwater transects above the dive site to gain insight into the communities of this vast and understudied pelagic habitat.

Dive Description	This site was mapped in 2018 by the Okeanos Explorer and there was a number of south/southeastern facing scarp features along the Blake Escarpment. The ROV reached the bottom at 13:22 UTC and 1,418 meters. The ROV reached the bottom off of the feature and it was mostly soft sediment with a few rocks present. On our way towards the feature we observed a number of benthic organisms living on the sediment and rocks including sea cucumbers, sea stars, brachiopods, sponges, black corals, and a few sea pens. We also observed a number of fish throughout the dive. We moved up the scarp (1,420 - 1,330 meters) and across the ridge of the scarp during our ~750 meter dive track. There was roughly 30 meters during the ascent when the slope was quite drastic and estimated to be about 45 degrees by one of the ROV pilots. In the region with the highest slope we observed more exposed rock ledges, some which looked to be the ferromanganese crusts (like observed on the rest of the dive) and some that appeared to be exposed carbonate. Once we reached the top of the ledge that we were climbing we continued south on the contour and then continued west further on to the feature. Throughout the dive the terrain was heavily sedimented and only small portions of rock outcrops were present. We think it is potentially due to this high rate of sedimentation that we did not observe a high diversity or abundance of deep-sea corals or sponges. Also, this was a deeper depth than we normally find many of the cold-water scleractinian corals. We did observe small patches of Sollenosamilia and a number of different black coral species. We also documented two cephalopods on the benthos during this dive, an octopus and a bobtail squid. After the benthic portion of the dive we proceeded up into the water column and conducted three mid-water transects at 1000, 700, and 500 meters. Several different taxa of siphonophores were encountered across all the transects. Mesopelagic fishes were abundant in these transects as well. Eels from the genus *Serrivomer* were seen in the 700 meter transect. The same transect offered encounters with several euphausiids. We sampled a bright red cydippid ctenophore at 1000m and a Halicreatid medusa at the same depth. Another medusa, most likely a Halicreatid, was collected at 698 m.
Notable Observations	
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	Scarp/Wall, Ridge
SeaTube (science annotation program) Link	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&diveId=1423

Overall Map of the ROV Dive Area

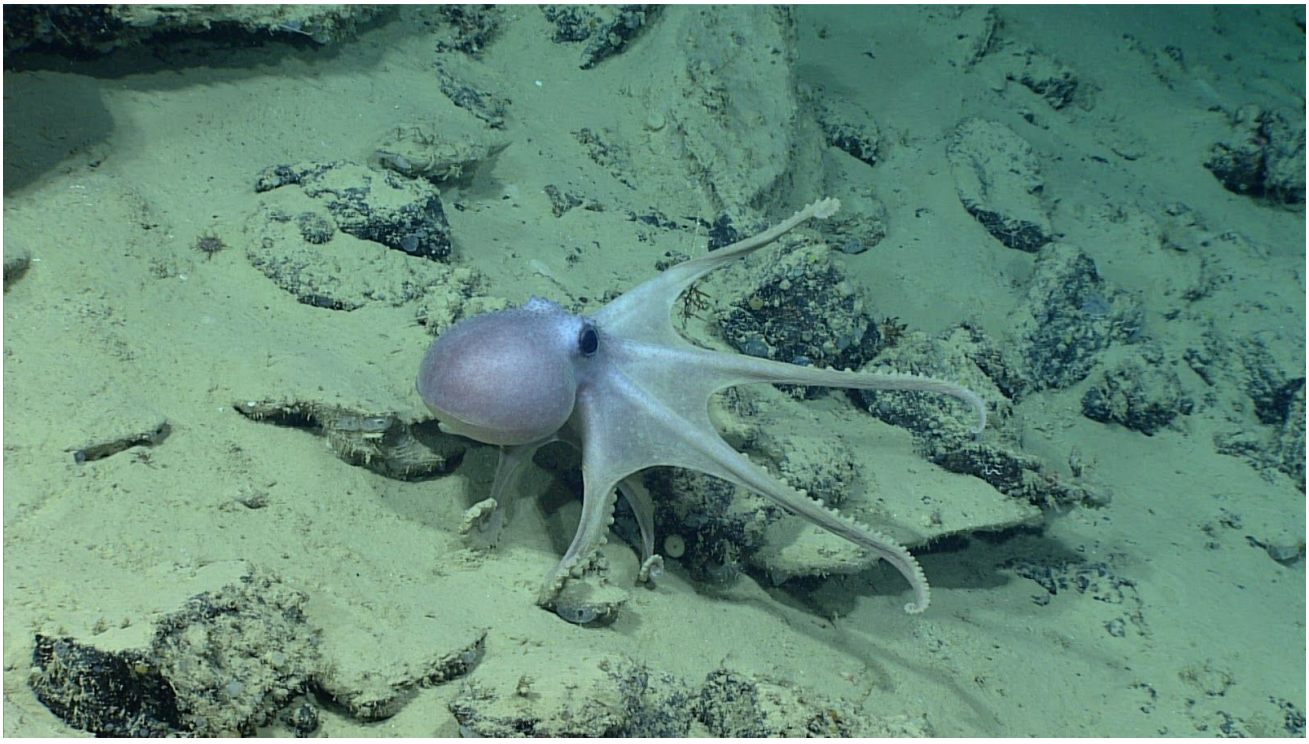


Close-up Map of Main Dive Site

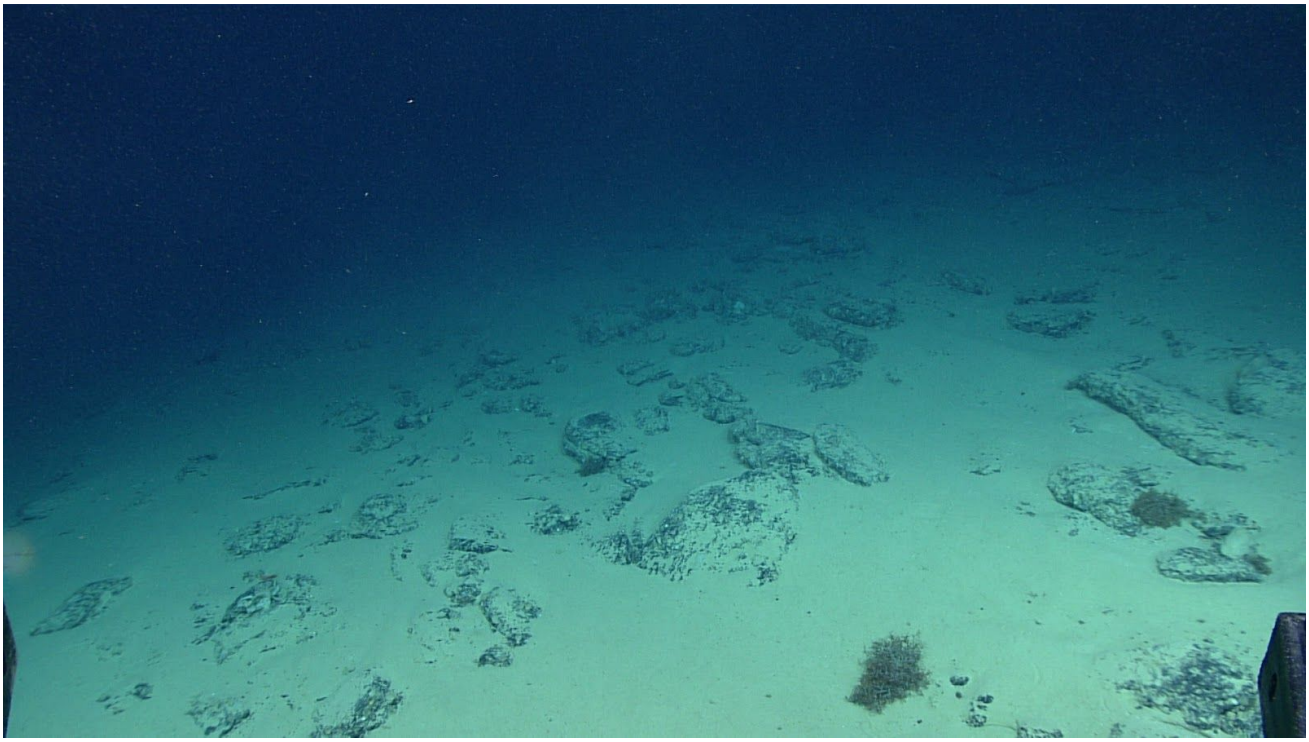


Representative Photos of the Dive

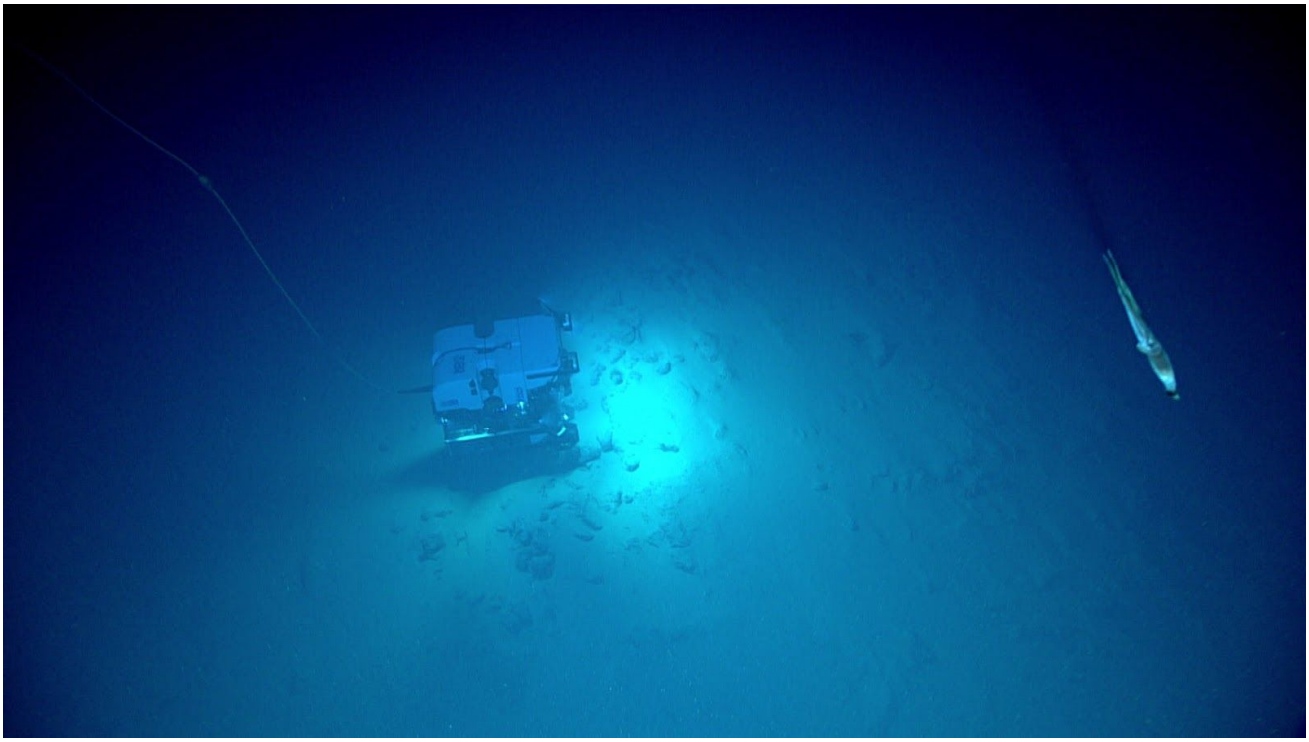
Sea pen observed in the soft sediment



Warty octopus observed crawling along the rocks on the steepest slope of the feature

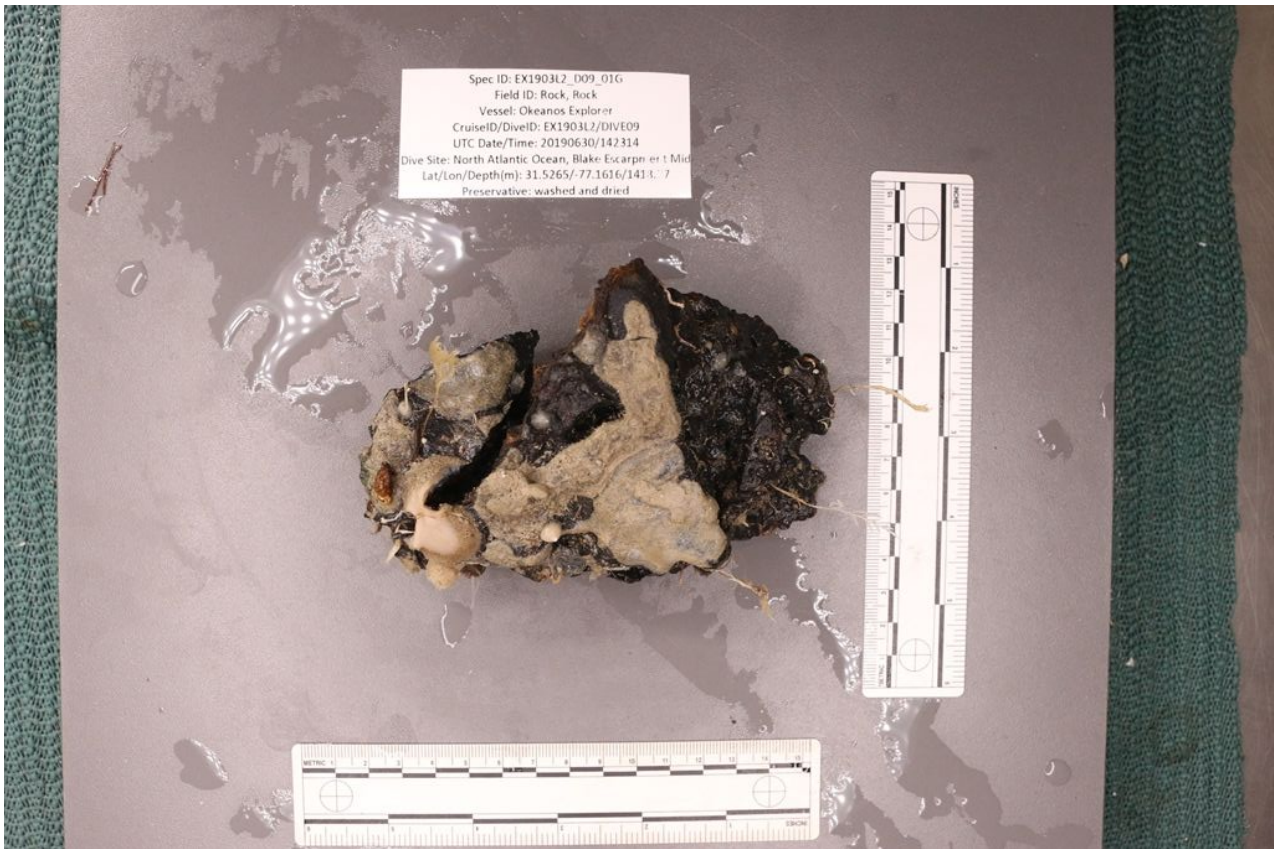


Representative photo of the site - relatively flat with high sedimentation on rock outcrops



D2 on sedimented seafloor at the divesite

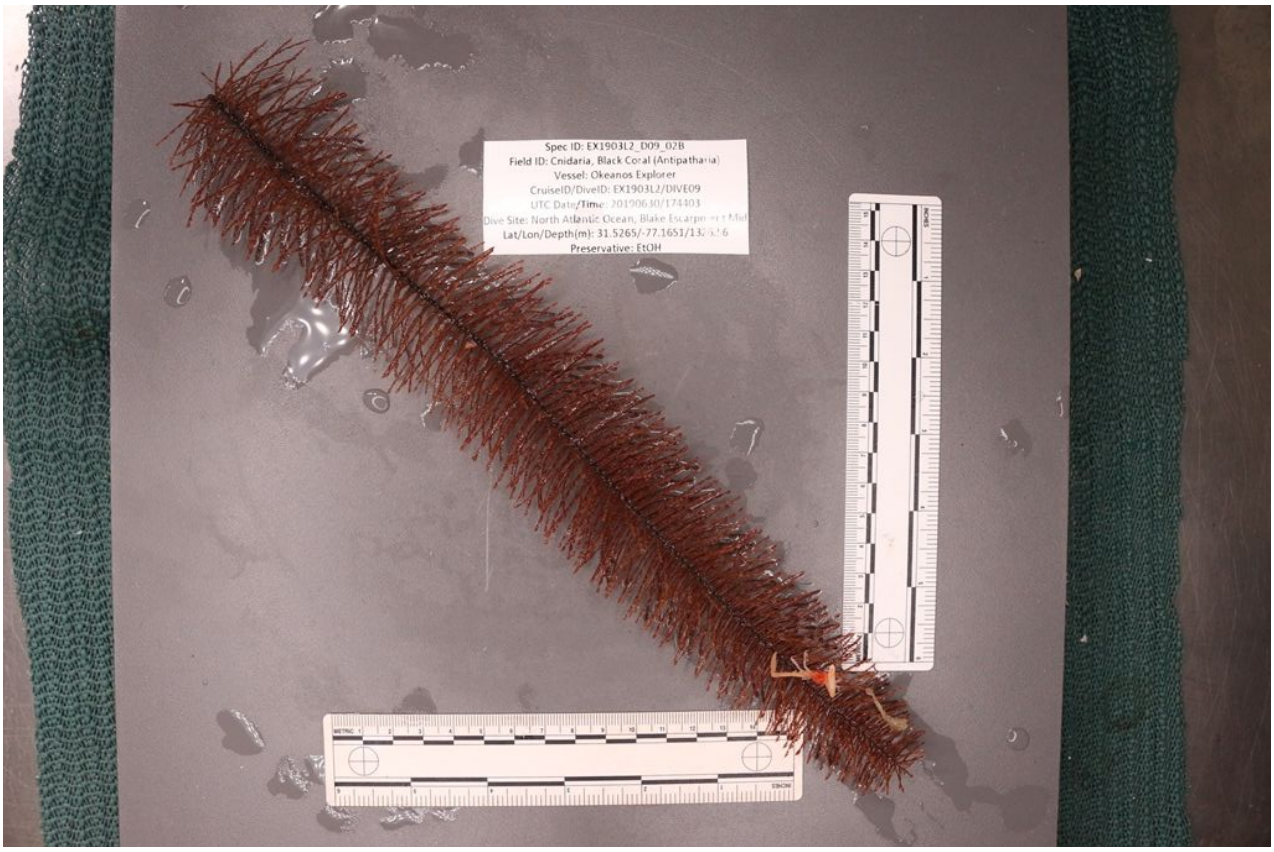
Samples Collected



Sample ID	EX1903L2_D09_01G
Date (UTC)	20190630
Time (UTC)	142314
Depth (m)	1418.8
Temp. (°C)	4.059
Field ID(s)	Rock
Associates	

Associates Sample ID	Field Identification
EX1903L2_D09_01G_A01	Porifera
EX1903L2_D09_01G_A02	Porifera
EX1903L2_D09_01G_A03	Hydrozoa
EX1903L2_D09_01G_A04	Brachiopoda
EX1903L2_D09_01G_A05	Bryozoa? (Unknown)

Comments	



Sample ID	EX1903L2_D09_02B
Date (UTC)	20190630
Time (UTC)	174403
Depth (m)	1326.6
Temp. (°C)	4.084
Field ID(s)	Antipatharia
Associates	

Associates Sample ID	Field Identification
EX1903L2_D09_02B_A01	Uroptychus squat lobster

Comments	

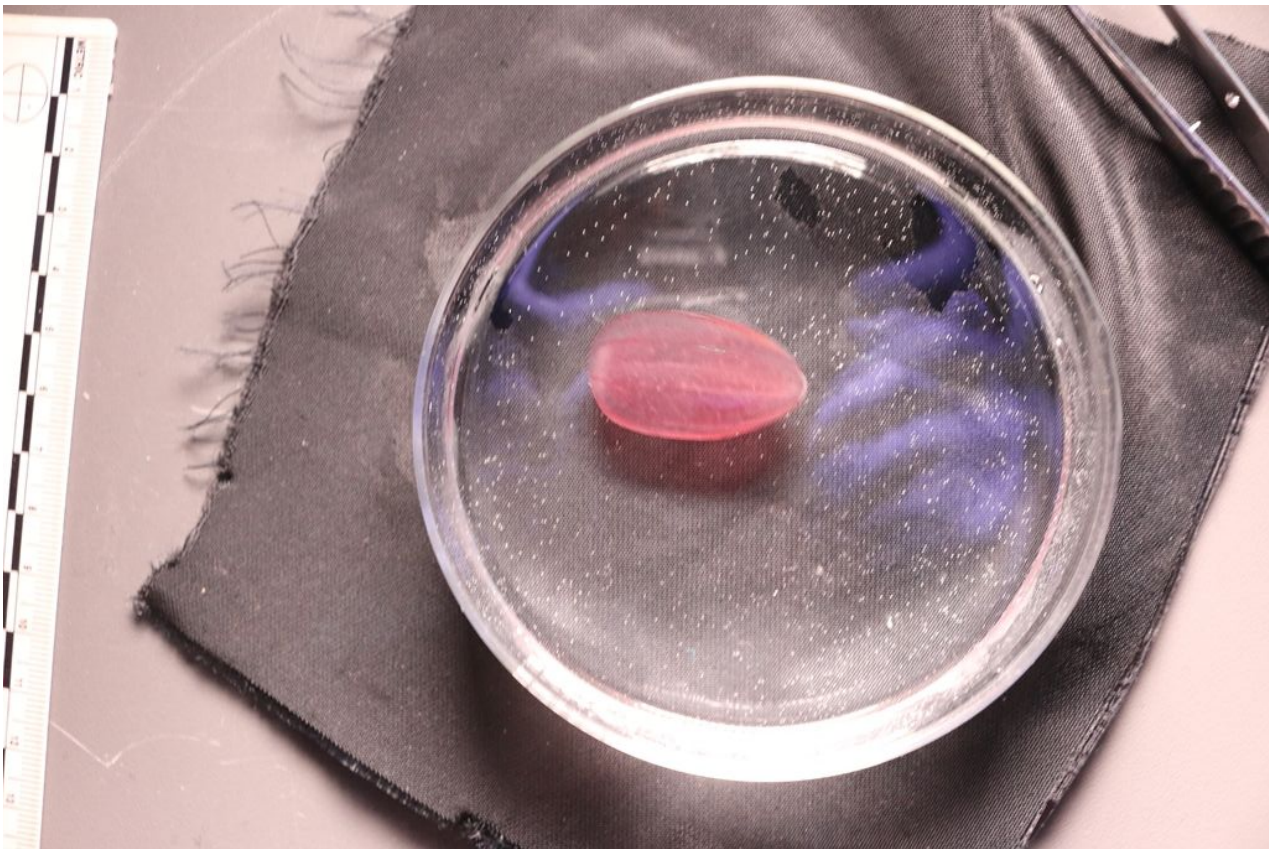
Sample ID	EX1903L2_D09
Date (UTC)	20190630
Time (UTC)	185842
Depth (m)	1328.9
Temp. (°C)	4.092
Field ID(s)	Squat Lobster (*Munida sp.*)
Associates	

Associates Sample ID	Field Identification
EX1903L2_D09_03B_A01	Sand/ microfossils

Comments	

Sample ID	EX1903L2_D09_04B
Date (UTC)	20190630
Time (UTC)	201543
Depth (m)	999.1
Temp. (°C)	4.461
Field ID(s)	Hydrozoa, Medusa Jellyfish
Associates	
Comments	

Associates Sample ID	Field Identification
No associates	



Sample ID	EX1903L2_D09_05B
Date (UTC)	20190630
Time (UTC)	202653
Depth (m)	990.8
Temp. (˚C)	4.464
Field ID(s)	Ctenophore
Associates	

Associates Sample ID	Field Identification
No associates	

Comments	

Sample ID	EX1903L2_D09_06B
Date (UTC)	20190630
Time (UTC)	210413
Depth (m)	698.3
Temp. (°C)	13.385
Field ID(s)	Hydrozoa
Associates	Associates Sample ID: No associates; Field Identification:
Comments	

Please direct inquiries to:

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