



# Okeanos Explorer ROV Dive Summary

## Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>U.S. Southeast, Blake Escarpment</p>
<p>Site Name</p>	<p>Blake Escarpment Mid</p>
<p>Science Team Leads</p>	<p>Amy Wagner (CSUS) and Alexis Weinnig (Temple)</p>
<p>Expedition Coordinator</p>	<p>Kasey Cantwell (NOAA-OER)</p>
<p>ROV Dive Supervisor</p>	<p>Chris Ritter (GFOE)</p>
<p>Mapping Lead</p>	<p>Shannon Hoy (NOAA-OER)</p>

## ROV Dive Name

<p>Cruise</p>	<p>EX1903L2</p>
<p>Dive Number</p>	<p>Dive 09</p>



## Scientists Involved (provide name, affiliation, email)

First Name	Last Name	Affiliation	Email
Steve	Ross	rosss@uncw.edu	UNC-W
Adrienne	Copeland	adrienne.copeland@noaa.gov	NOAA OER
Cristina	Cedeño-Posso	cristina.cedeno@invemar.org.co; cristina.cedeno@hotmail.com	Invemar, Colombia
Elizabeth	Fraser	gugliottief@gmail.com	NOAA NCCOS
Mary	Wicksten	m-wicksten@tamu.edu	Texas A&M University
Mike	Ford	michael.ford@noaa.gov	NOAA
Kenneth	Sulak	jumpingsturgeon@yahoo.com	U.S. Geological Survey (Emeritus)
Christopher	Mah	brisinga@gmail.com	Dept. of Invertebrate Zoology, NMNH Smithsonian
Kelley	Brumley	kbrumley@fugro.com	Fugro
Scott	France	france@louisiana.edu	University of Louisiana at Lafayette
Michael	Vecchione	vecchiom@si.edu	NOAA National Systematics Lab
Robert	Carney	rcarne1@lsu.edu	LSU, Oceanography, emeritus
Tara	Harmer Luke	luket@stockton.edu; tara.luke@stockton.edu	Stockton University
Alexis	Weinnig	aweinnig@temple.edu	Temple University
Amy	Wagner	amy.wagner@csus.edu; amywagner98@gmail.com	California State University, Sacramento
Danielle	Power	danielle.l.power@noaa.gov	NOAA Ship Okeanos Explorer
J	Dunn	christopher.dunn@noaa.gov	NOAA OER
Kevin	Jerram	kjerram@ccom.unh.edu	UNH
Shannon	Hoy	shannon.hoy@noaa.gov	NOAA OER

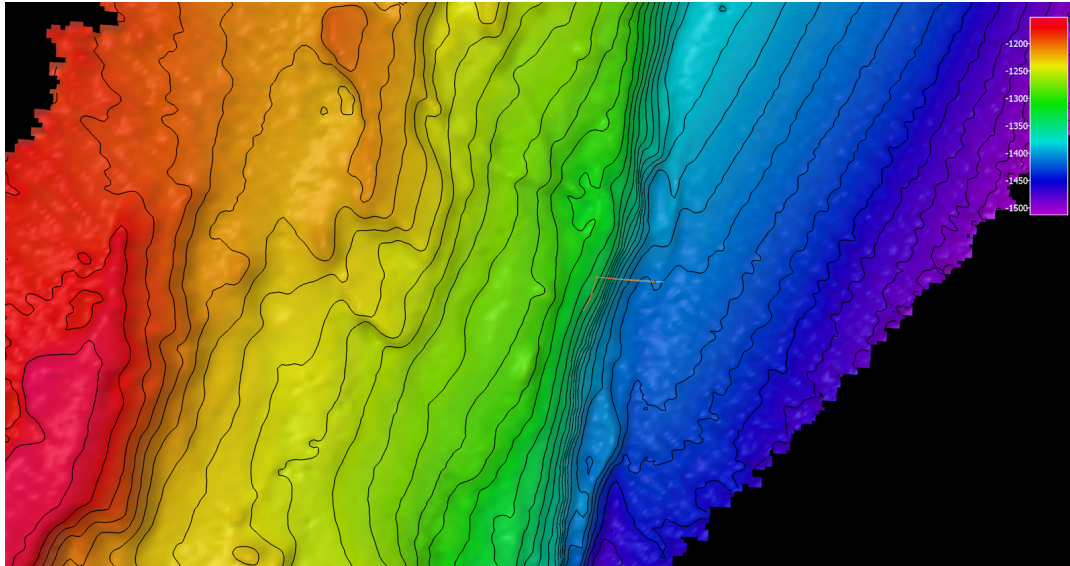
Dive Purpose	The primary objective of this dive is to explore and characterize the habitat of deep-water coral, sponges, and associated fauna that inhabit an escarpment on the Blake Plateau. Also, gather data and samples from the midwater above the dive target. This dive will provide a survey of a deeper 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.
--------------	--



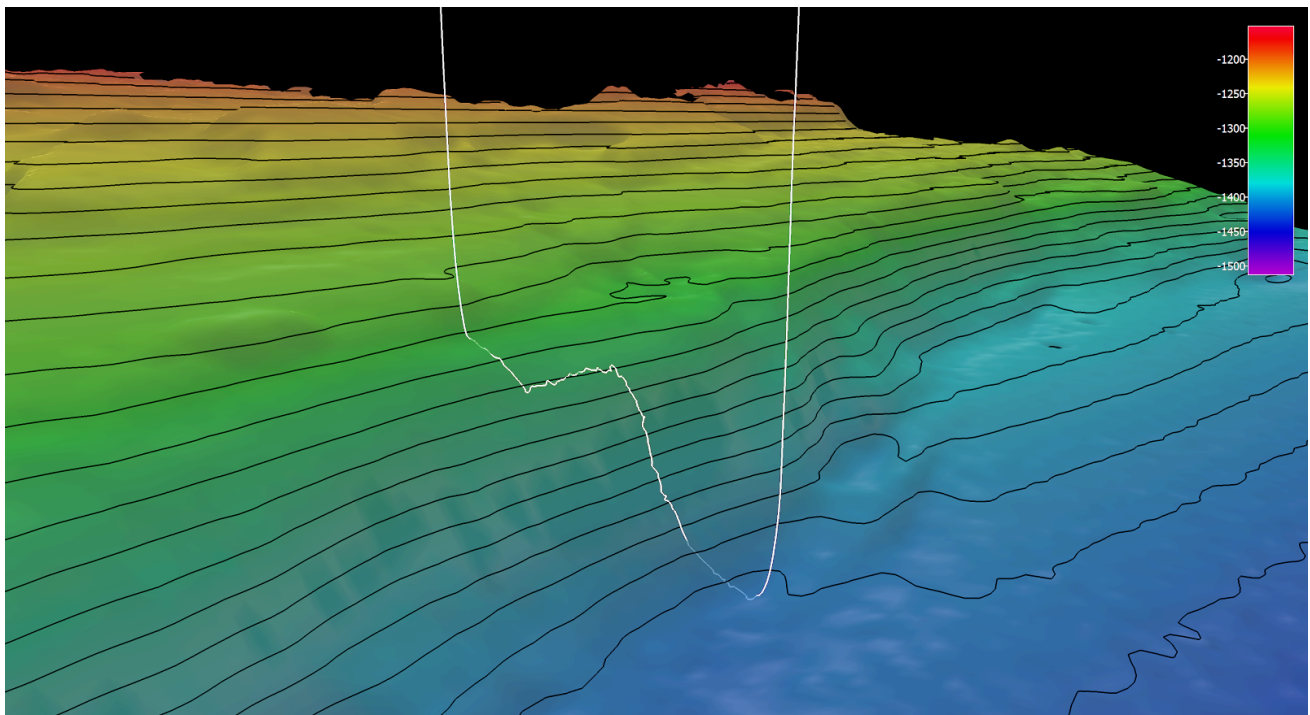
Dive Description	<p>This site was mapped in 2018 by the Okeanos Explorer and there was a number of south/southeastern facing scarp features along the Blake Escarpment. The ROV reached the bottom at 13:22 UTC and 1,418 meters. The ROV reached the bottom off of the feature and it was mostly soft sediment 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.</p> <p>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 <i>Serrivomer</i> 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.</p>
Notable Observations	
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> <li>✓ Corals and Sponges</li> <li>✓ Chemosynthetic Community</li> <li>✓ High biodiversity Community</li> <li>✓ Active Seep or Vent</li> <li>✓ Extinct Seep or Vent</li> <li>✓ Hydrates</li> </ul>
Feature Type	Scarp/Wall, Ridge
SeaTube (science annotation program) Link	<a href="https://data.oceannetworks.ca/SeaTubeV2?resourceTypeld=1000&amp;resourceId=23621&amp;diveld=1423">https://data.oceannetworks.ca/SeaTubeV2?resourceTypeld=1000&amp;resourceId=23621&amp;diveld=1423</a>



## Overall Map of the ROV Dive Area



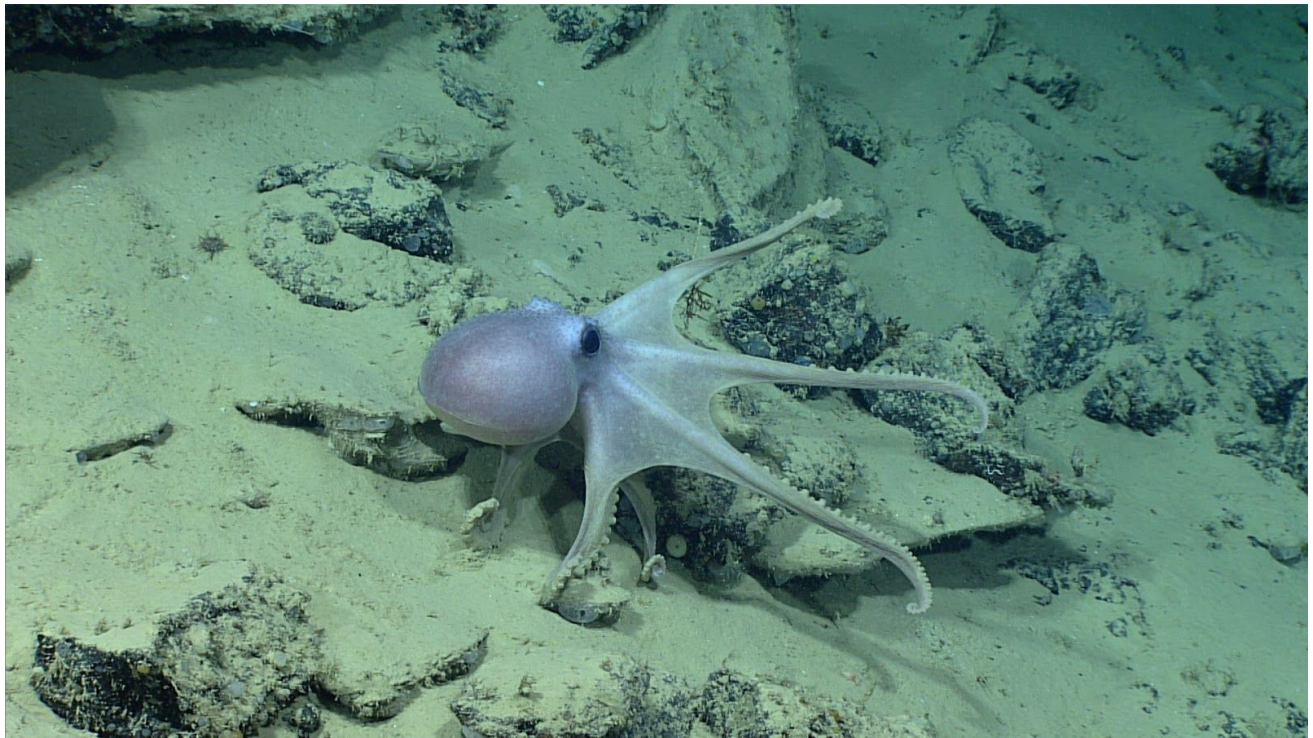
## Close-up Map of Main Dive Site



## Representative Photos of the Dive

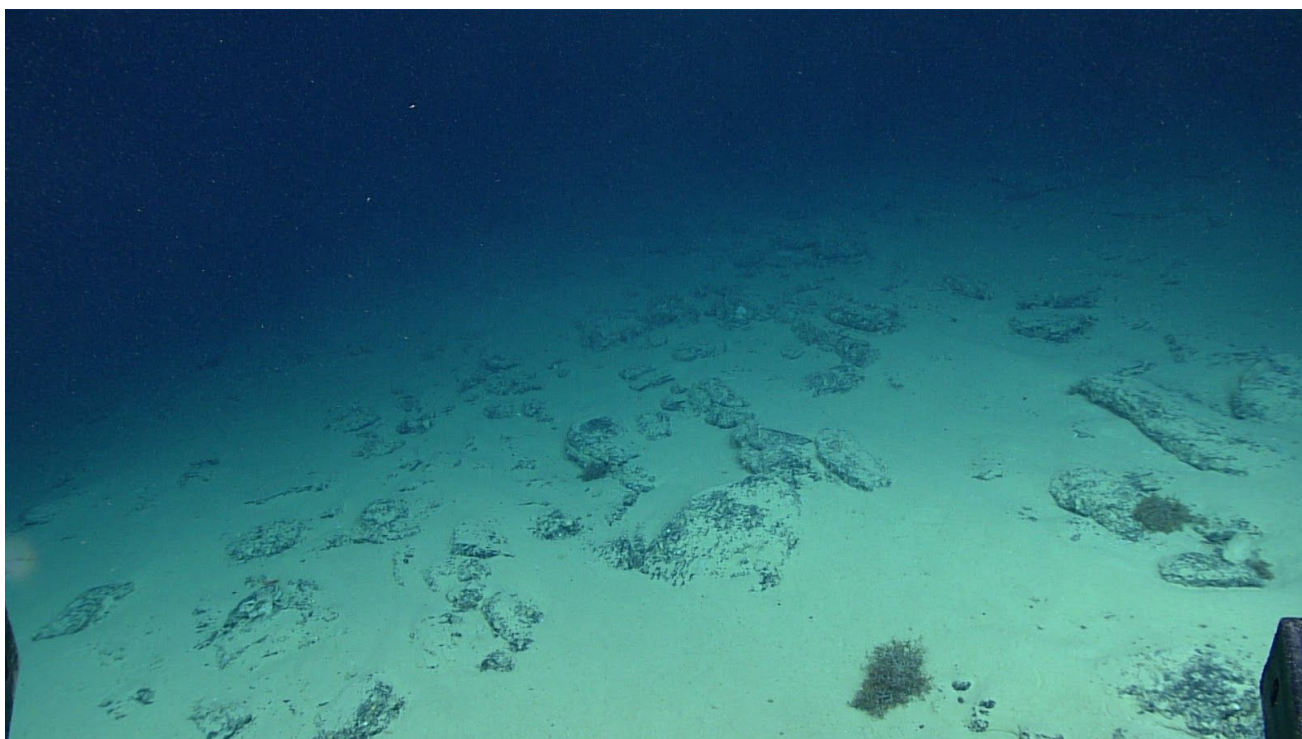


Sea pen observed in the soft sediment

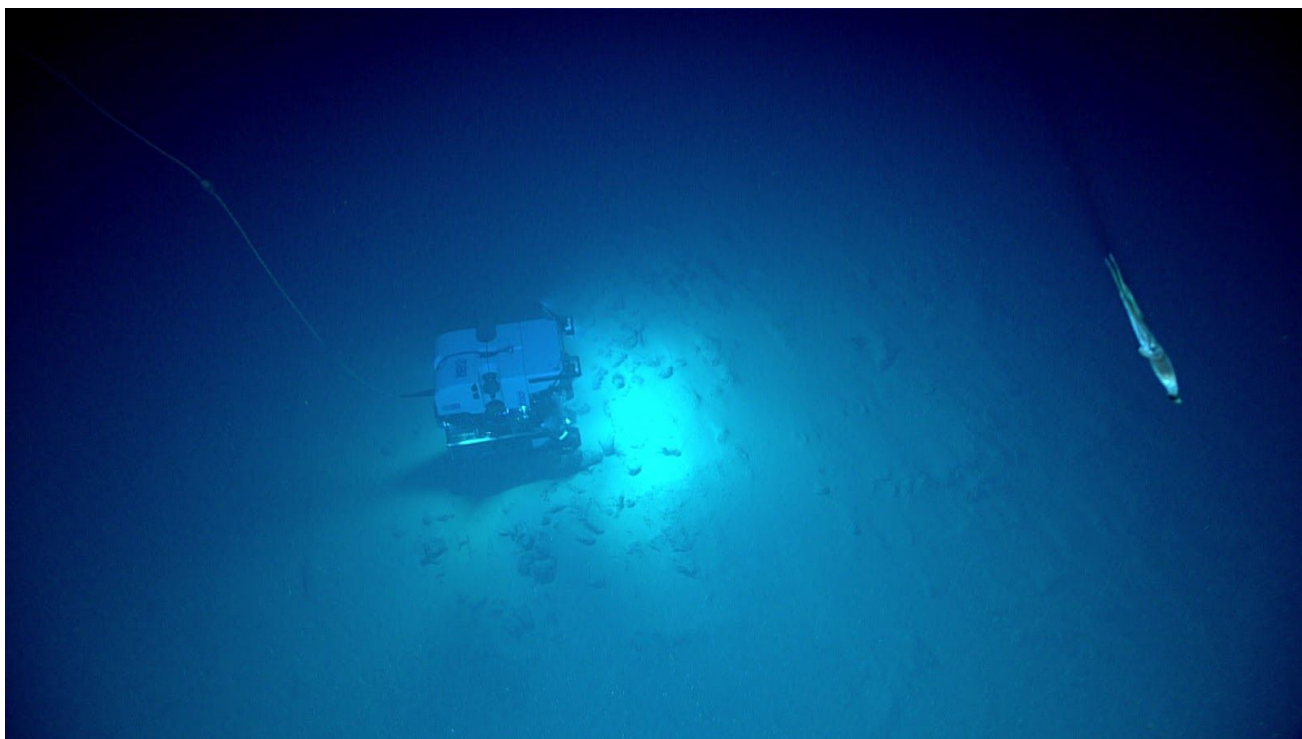


Warty octopus observed crawling along the rocks on the steepest slope of the feature





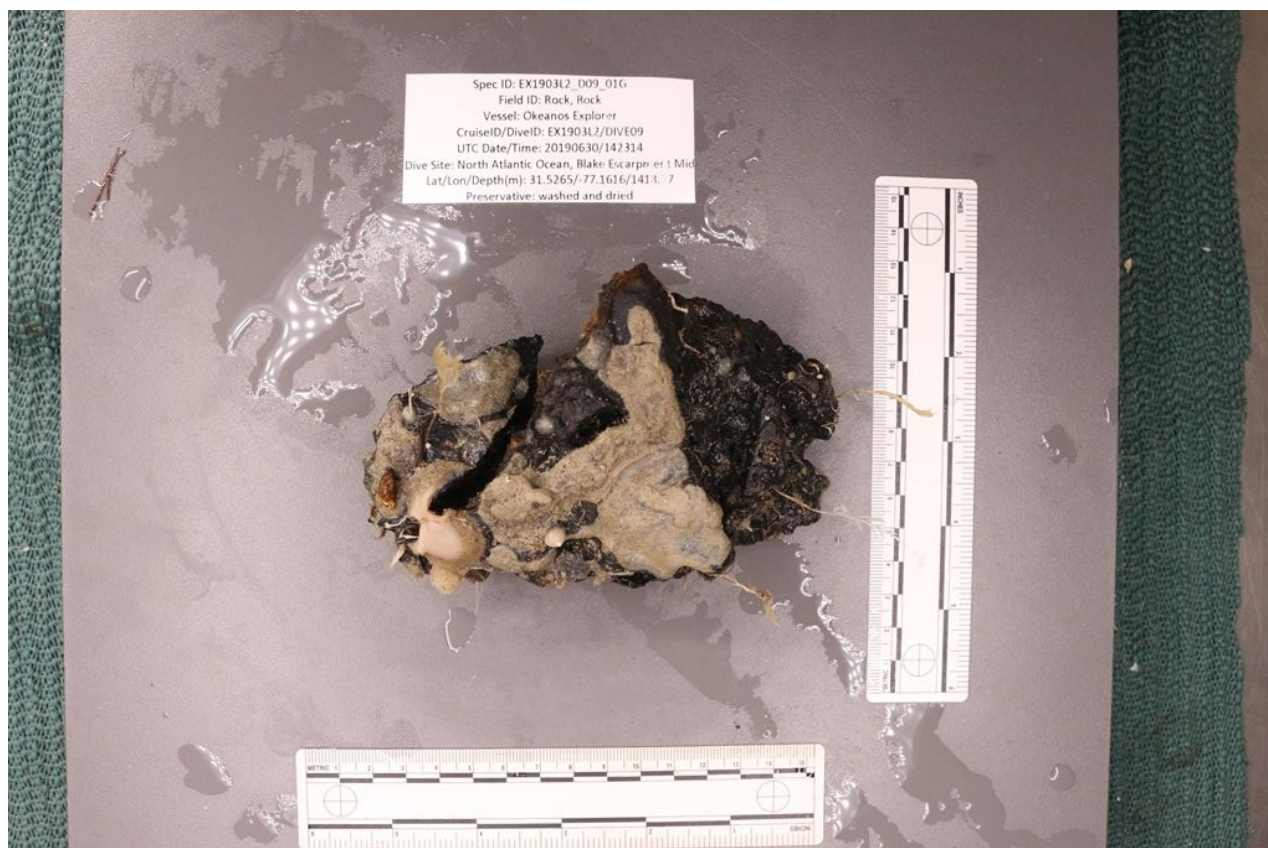
Representative photo of the site - relatively flat with high sedimentation on rock outcrops



D2 on sedimented seafloor at the divesite



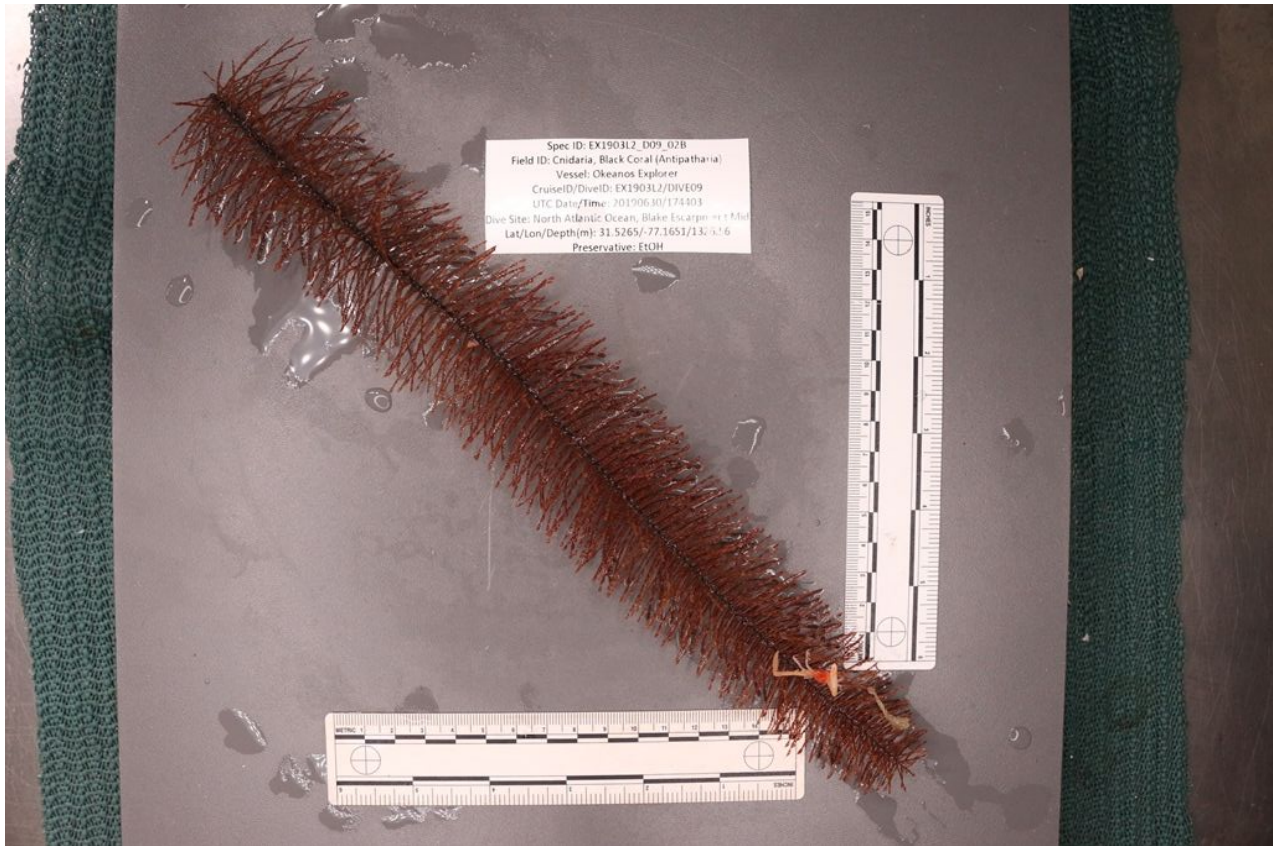
## Samples Collected



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		

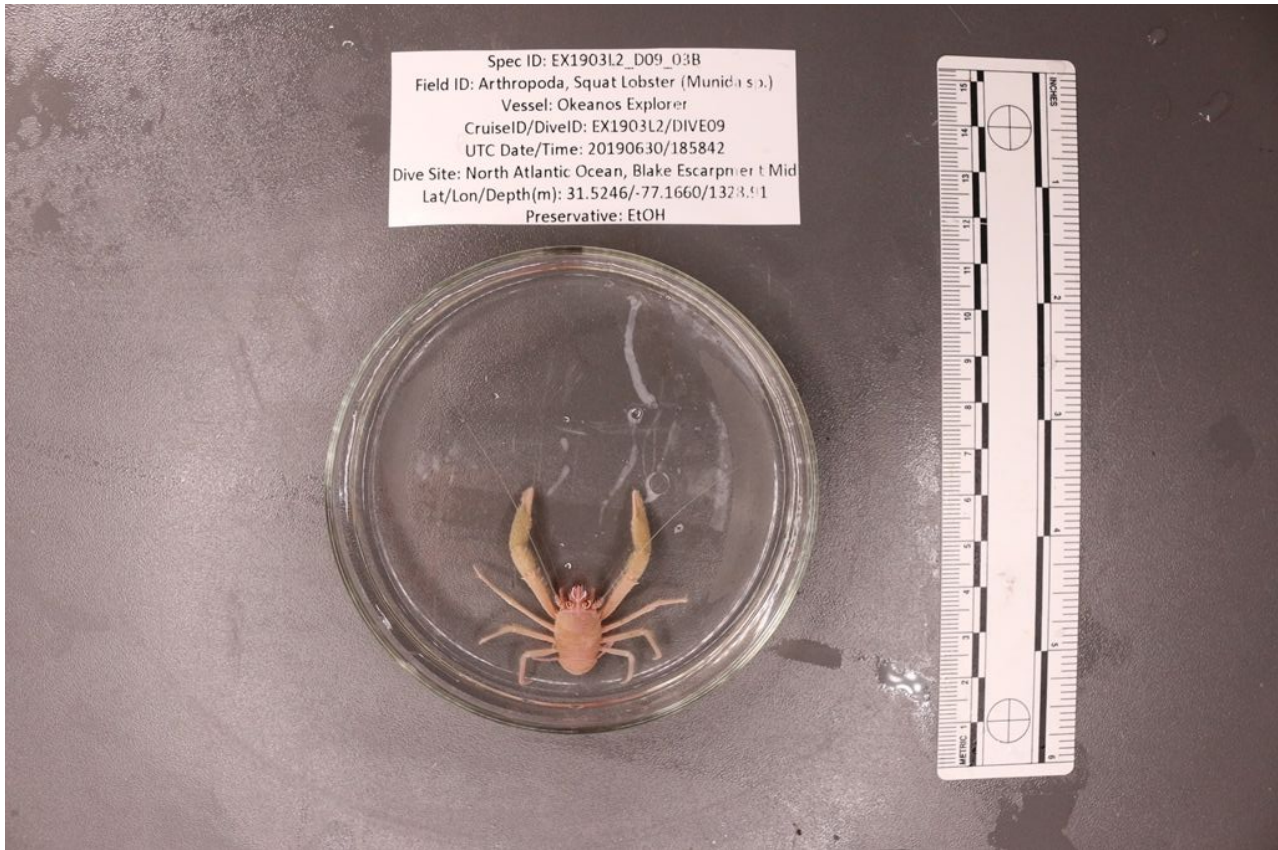






Sample ID	EX1903L2_D09_02B	
Date (UTC)	20190630	
Time (UTC)	174403	
Depth (m)	1326.6	
Temp. (°C)	4.084	
Field ID(s)	Antipatharia	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D09_02B_A01	Uroptychus squat lobster
Comments		



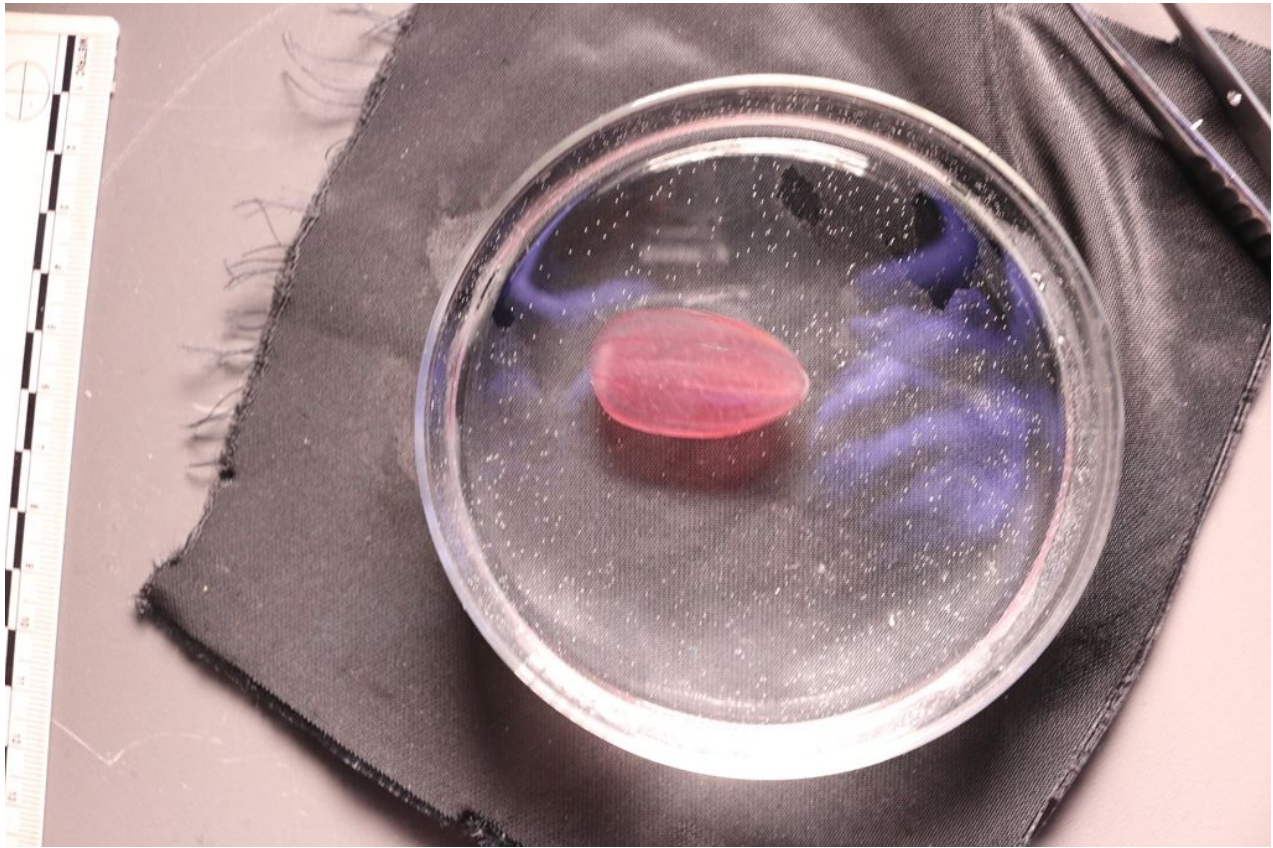


Sample ID	EX1903L2_D09	
Date (UTC)	20190630	
Time (UTC)	185842	
Depth (m)	1328.9	
Temp. (°C)	4.092	
Field ID(s)	Squat Lobster ( <i>Munida sp.</i> )	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D09_03B_A01	Sand/ microfossils
Comments		





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		
	Associates Sample ID	Field Identification
	No associates	
Comments		



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	<table border="1"> <thead> <tr> <th>Associates Sample ID</th> <th>Field Identification</th> </tr> </thead> <tbody> <tr> <td>No associates</td> <td></td> </tr> </tbody> </table>		Associates Sample ID	Field Identification	No associates	
	Associates Sample ID	Field Identification				
	No associates					
Comments						

**Please direct inquiries to:**

NOAA Office of Ocean Exploration & Research  
 1315 East-West Highway (SSMC3 10th Floor)  
 Silver Spring, MD 20910  
 (301) 734-1014