



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>Blake Plateau South, East of Port Canaveral, Florida</p>
<p>Site Name</p>	<p>Blake Plateau South</p>
<p>Science Team Leads</p>	<p>Kimberly Galvez, University of Miami, Rosenstiel School of Marine and Atmospheric Science Stephanie Farrington, Florida Atlantic University. Harbor Branch Oceanographic Institute</p>
<p>Expedition Coordinator</p>	<p>Michael P. White, NOAA OER</p>
<p>ROV Dive Supervisor</p>	<p>Christopher Ritter, Global Foundation for Ocean Exploration</p>
<p>Mapping Lead</p>	<p>Shannon Hoy, NOAA OER</p>

ROV Dive Name

<p>Cruise</p>	<p>2019 Southeast U.S. Deep-sea Exploration</p>
<p>Dive Number</p>	<p>Dive 01</p>

Equipment Deployed

<p>ROV</p>	<p><i>Deep Discoverer</i></p>
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Scientists Involved (provide name, affiliation, email)

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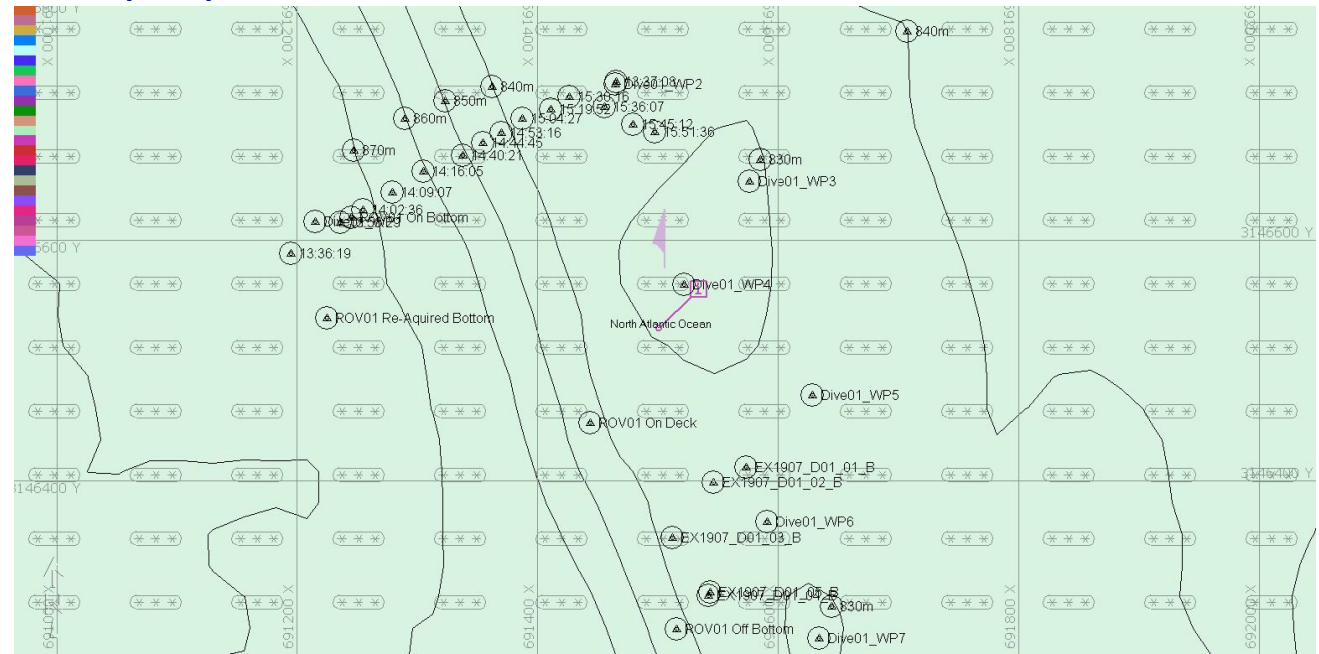


Dive Purpose	<p>This site was first mapped during EX-19-03 L1 earlier in 2019. Seafloor bathymetry revealed a series of mound features and larger north/south trending ridges/escarpments. Characterizing newly acquired multibeam bathymetry is a priority for OER and its partners. These type of seafloor features can provide suitable habitat for deep-sea coral and sponge communities and their associates. This location is just inside the HAPC and will help provide foundational data needed by the scientific community. It was proposed as a dive site on EX-19-03-L2 but was dropped after the community decided to dive further to the west.</p>
Dive Description	<p>The dive started at the base of a 60 m rise ridge. The ROV landed on a field of dead <i>Lophelia</i> coral rubble which continued throughout the dive, less a few areas of exposed sand waves. There were a few rat tails (<i>Macrouridae</i>) throughout the dive. As we traveled up slope the <i>Lophelia</i> rubble increased and the presence of a very common Comatulid crinoid increased and <i>Areosoma</i> was abundant. At the top ledge of the ridge was the presence of dead standing <i>Lophelia</i> as well as a few live colonies. We transected across the top of the ridge (~830 m) over a few mounds on the top. After some time we changed heading to head back down the top ledge to transect across the top rim where the sanding dead coral was most abundant.</p> <p>Along the top ridge we found an area with standing dead coral with a ghost net. There were ~5 <i>Zenometra columnaris</i> (crinoid) on the rope leading from the net. (C. Messing suggesting these <i>Z. columnaris</i> may be a new morph or subspecies because the color is usually purple and these specimens were more tan/cream colored asked to collect if seen again).</p> <p>5 main samples collected other species seen: Chaceon fenneri (mating pair) bamboo corals (few species) Black bellied rosefish Skates/Rays Chimaera Polymastia (POR) Neogastropod Sea Pen/Umbellula</p> <p>The geological aspects of the dive started with a coral rubble bottom over unconsolidated carbonate sediments. The majority of of coral debris was coated in a phosphorite crust. As the dive progressed upslope, larger and more dense dead coral frameworks were seen. In between the ridge crests, there were areas with no coral rubble and the loose sediments formed ripples indicative of current direction and intensity. Sediments in this region are composed of carbonate skeletal material, including foraminifera, coral fragments, sponge spicules, and pteropod shells. Large karst features were observed closer to the ridge crests, some with a more smooth slab texture while others (closer to the ridge crest) were more jagged.</p>

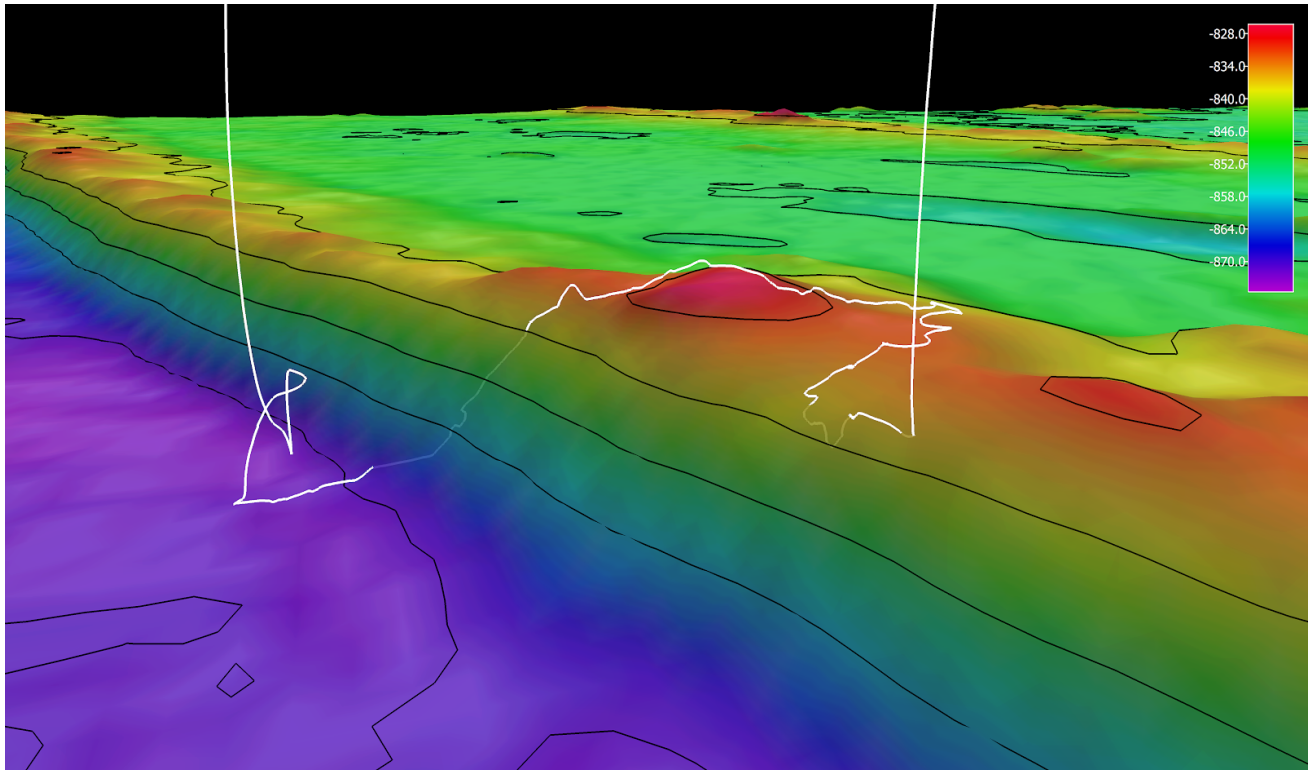


Notable Observations	Large ghost net.
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> X Corals and Sponges ✓ Chemosynthetic Community ✓ High biodiversity Community ✓ Active Seep or Vent ✓ Extinct Seep or Vent ✓ Hydrates
CMECS Feature Type	Flat, Slope
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&divId=1443

Close-up Map of Main Dive Site



Dive track as dove overlaid on bathymetry. 25x25 meter cell size, track 5 minute smoothed, contours 10 meters, depth in meters



Representative Photos of the Dive



Typical coral rubble bottom with a rare bioturbation/scour mark.



Goniaster cookie cutter/biscuit sea star on a small patch of soft bottom.





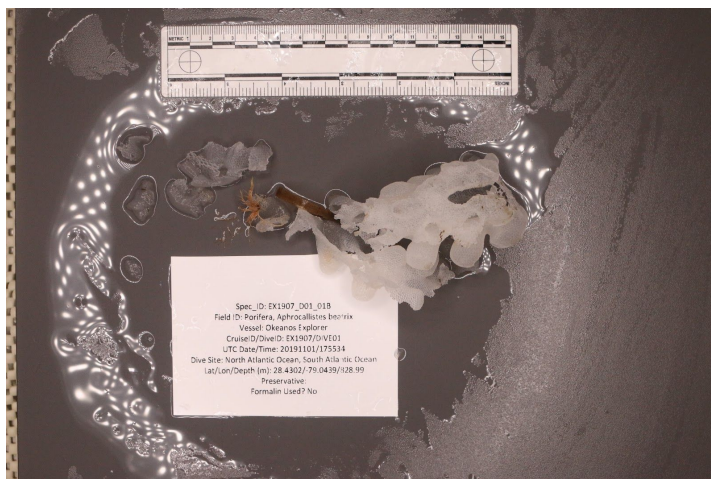
Aphrocallistes beatrix with longer protrusions growths along the base of the vase. This is an ASPIRE target species.



Ghost net along the top of the ridge with a *Chaceon fenneri* (golden crabs) mating pair



Samples Collected -



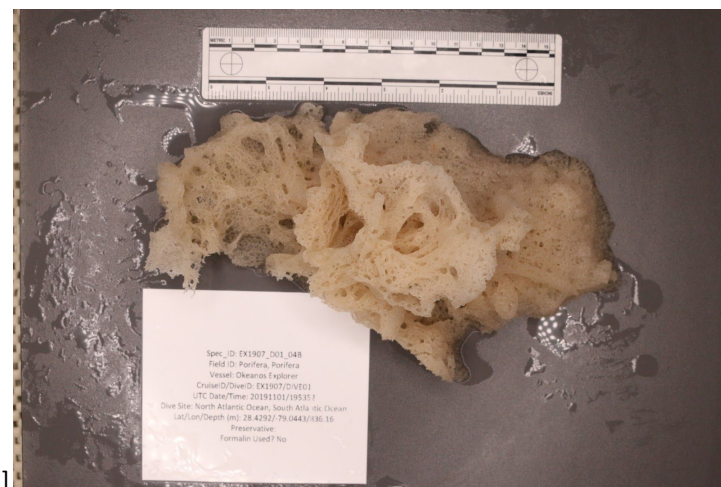
Sample ID	EX1907_D01_01B		
Date (UTC)	November 01, 2019		
Time (UTC)	17:50		
Depth (m)	829 m		
Temp. (°C)	6.576		
Field ID(s)	<i>Aphrocallistes beatrix</i>		
Associates	Associates Sample ID	Field Identification	Count
	DIVE01_SPEC01BIO_A01	Porifera	1
	DIVE01_SPEC01BIO_A02	Polychaeta	2
Comments	For ASPIRE Connectivity objective Suction Bucket 1. White 20 cm tall 2 tubes, meshy, with lobate protrusions		



Sample ID	EX1907_D01_02B		
Date (UTC)	November 01, 2019		
Time (UTC)	18:08		
Depth (m)	823 m		
Temp. (°C)	6.576		
Field ID(s)	Porifera		
Associates	Associates Sample ID	Field Identification	Count
	DIVE01_SPEC02BIO_A01	Primnoidae bushy	2
	DIVE01_SPEC02BIO_A02	Ophiothrix sp.	2
	DIVE01_SPEC02BIO_A03	Nidalia sp.	3
	DIVE01_SPEC02BIO_A04	bacterial	1
Comments	White fan sponge, about 10 cm wide and 20 cm tall, porous, A few epibionts, including 2 soft corals, primnoids. On coral rubble. Port Outside Biobox.		



Sample ID	EX1907_D01_03B		
Date (UTC)	November 01, 2019		
Time (UTC)	18:51		
Depth (m)	838 m		
Temp. (°C)	6.556		
Field ID(s)	Lophelia pertusa		
Associates	Associates Sample ID	Field Identification	Count
	DIVE01_SPEC03BIO_A01	Hydrozoa	1
	DIVE01_SPEC03BIO_A02	Ophiuroidea	5
	DIVE01_SPEC03BIO_A03	Annelida	1
Comments	Lophelia collection with green hydroid and with unidentified branching feathery white associate		



Sample ID	EX1907_D01_04B		
Date (UTC)	November 01, 2019		
Time (UTC)	19:47		
Depth (m)	836 m		
Temp. (°C)	6.663		
Field ID(s)	Porifera		
Associates			
	Associates Sample ID	Field Identification	Count
Comments	White fan sponge, porus		



Sample ID	EX1907_D01_05B		
Date (UTC)	November 01, 2019		
Time (UTC)	19:58		
Depth (m)	836 m		
Temp. (°C)	6.701		
Field ID(s)	Dead standing Lophleia pertusa coral		
Associates			
	Associates Sample ID	Field Identification	Count
	DIVE01_SPEC05BIO_A01	Gorgonacea	1
	DIVE01_SPEC05BIO_A02	Nidalia sp.	5
	DIVE01_SPEC05BIO_A03	Ophiothrix sp.	11
DIVE01_SPEC05BIO_A04	Hexactinellida	1	
Comments	Dead standing Lophleia pertusa coral with associates.		

Please direct inquiries to:

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**Ocean Exploration
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