



Okeanos Explorer ROV Dive Summary

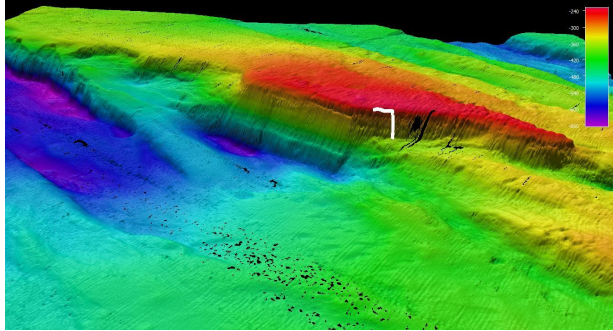
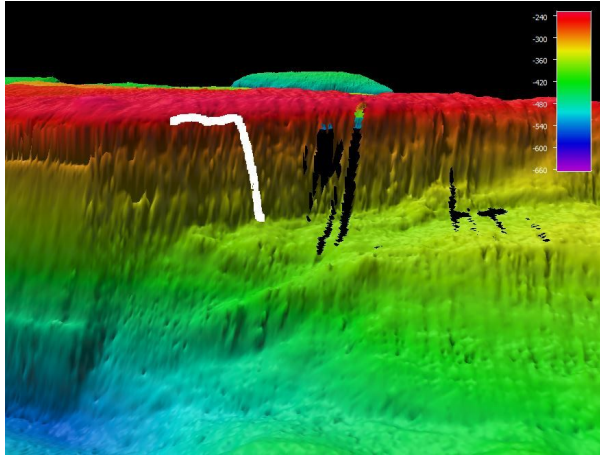
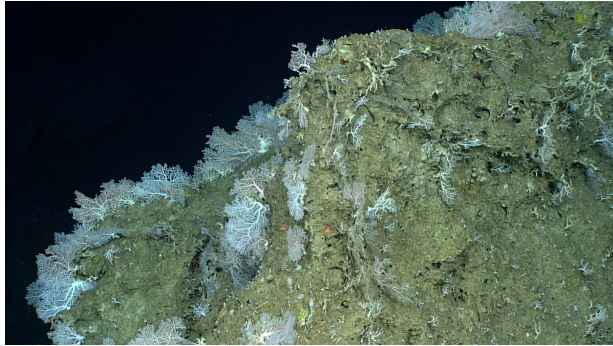
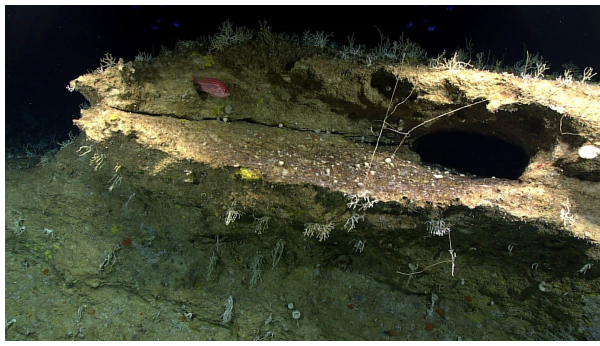


Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	Pichincho Wall East
Science Team Leads	Stacey Williams (ISER) Steven Auscavitch (Temple)
Expedition Coordinator	Daniel Wagner (NOAA-OER)
ROV Dive Supervisor	Chris Ritter (GFOE)
Mapping Lead	Derek Sowers (NOAA-OER)
ROV Dive Name	
Cruise	EX1811
Dive Number	DIVE15
Equipment Deployed	
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>

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	There were no issues with the ROVs, but the ADCP display, an important tool for assessing ship's speed through the water, did not work for ~15 minutes during recovery.																																																					
ROV Dive Summary Data (from processed ROV data)	In Water:	2018-11-15T12:34:22.605756 18°, 22.28' N ; 67°, 45.169' W																																																				
	On Bottom:	2018-11-15T13:57:51.695400 18°, 22.203' N ; 67°, 45.293' W																																																				
	Off Bottom:	2018-11-15T19:31:01.979099 18°, 22.281' N ; 67°, 45.454' W																																																				
	Out Water:	2018-11-15T20:46:47.671171 18°, 21.44' N ; 67°, 44.906' W																																																				
	Dive duration:	8:12:25																																																				
	Bottom Time:	5:33:10																																																				
	Max. depth:	366.0 m																																																				
Special Notes	N/A																																																					
Scientists Involved (provide name, affiliation, email)	<table border="1"> <thead> <tr> <th>Name</th> <th>Affiliation</th> <th>Email</th> </tr> </thead> <tbody> <tr> <td>Aurea Rodriguez</td> <td>University of Puerto Rico at Mayagüez</td> <td>auryro@gmail.com</td> </tr> <tr> <td>Daniel Wagner</td> <td>NOAA/OER</td> <td>daniel.wagner@noaa.gov</td> </tr> <tr> <td>Debi Blaney</td> <td>NOAA/OER</td> <td>debi.blaney@noaa.gov</td> </tr> <tr> <td>Enrique Salgado</td> <td>NOAA/CSS</td> <td>enrique.salgado@noaa.gov</td> </tr> <tr> <td>Graciela Garcia-Moliner</td> <td>Caribbean Fishery Management Council</td> <td>graciela_cfmc@yahoo.com</td> </tr> <tr> <td>Kate Overly</td> <td>NOAA/NMFS</td> <td>katherine.overly@noaa.gov</td> </tr> <tr> <td>Megan Cromwell</td> <td>NOAA/NCEI</td> <td>megan.cromwell@noaa.gov</td> </tr> <tr> <td>Megan McCuller</td> <td>North Carolina Museum of Natural Sciences</td> <td>megan.mcculler@naturalsciences.org</td> </tr> <tr> <td>Michael Vecchione</td> <td>NOAA/NMFS</td> <td>vecchiom@si.edu</td> </tr> <tr> <td>Michelle Schärer</td> <td>HJR Reefscaping</td> <td>michelle.scharer@upr.edu</td> </tr> <tr> <td>Nolan Barrett</td> <td>Medical University of South Carolina</td> <td>barrettnh@g.cofc.edu</td> </tr> <tr> <td>Rachel Bassett</td> <td>NOAA/NCCOS</td> <td>rachel.bassett@noaa.gov</td> </tr> <tr> <td>Scott France</td> <td>University of Louisiana at Lafayette</td> <td>france@louisiana.edu</td> </tr> <tr> <td>Stacey Williams</td> <td>Institute for Socio-Ecological Research</td> <td>stcmwilliams@gmail.com</td> </tr> <tr> <td>Steven Auscavitch</td> <td>Temple University</td> <td>steven.auscavitch@temple.edu</td> </tr> <tr> <td>Tara Harmer Luke</td> <td>Stockton University</td> <td>luket@stockton.edu</td> </tr> </tbody> </table>			Name	Affiliation	Email	Aurea Rodriguez	University of Puerto Rico at Mayagüez	auryro@gmail.com	Daniel Wagner	NOAA/OER	daniel.wagner@noaa.gov	Debi Blaney	NOAA/OER	debi.blaney@noaa.gov	Enrique Salgado	NOAA/CSS	enrique.salgado@noaa.gov	Graciela Garcia-Moliner	Caribbean Fishery Management Council	graciela_cfmc@yahoo.com	Kate Overly	NOAA/NMFS	katherine.overly@noaa.gov	Megan Cromwell	NOAA/NCEI	megan.cromwell@noaa.gov	Megan McCuller	North Carolina Museum of Natural Sciences	megan.mcculler@naturalsciences.org	Michael Vecchione	NOAA/NMFS	vecchiom@si.edu	Michelle Schärer	HJR Reefscaping	michelle.scharer@upr.edu	Nolan Barrett	Medical University of South Carolina	barrettnh@g.cofc.edu	Rachel Bassett	NOAA/NCCOS	rachel.bassett@noaa.gov	Scott France	University of Louisiana at Lafayette	france@louisiana.edu	Stacey Williams	Institute for Socio-Ecological Research	stcmwilliams@gmail.com	Steven Auscavitch	Temple University	steven.auscavitch@temple.edu	Tara Harmer Luke	Stockton University	luket@stockton.edu
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Dive Purpose	This dive targeted potential habitats of deep-sea fish species, including snappers and groupers. The depth profile and topography, fell in the habitat preferences of commercially important deepwater fishes as reported by the local fishing community. The dive also sought to characterize the habitats of deep-sea corals, sponges, mobile invertebrates and other demersal fish communities.																																																					
Dive Description	Structural relief at this site was very impressive, often composed of fallen carbonate ledges and overhangs. Overhangs, crevices and large boulder-like features were frequent spots for fish and other organisms to take refuge in. On descent, we saw a big school of snappers, maybe queen or silks hovering at a depth of about 200 m. The diversity of corals, sponges and fishes at this site was likely the highest of all sites thus far on this expedition. The bigeye																																																					



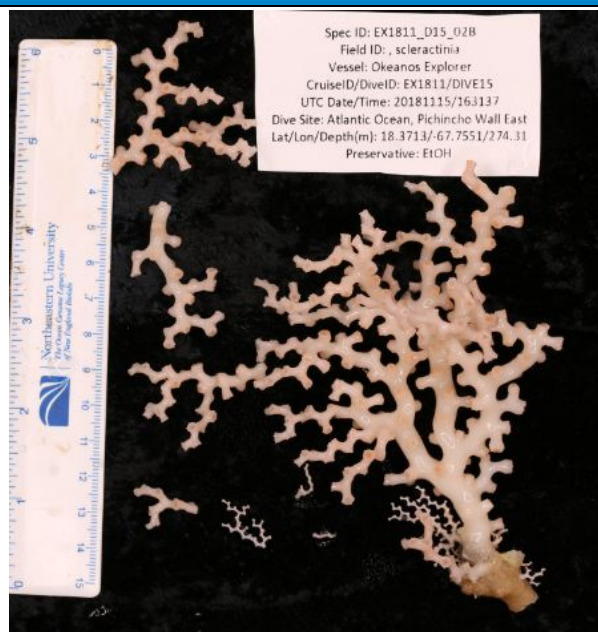
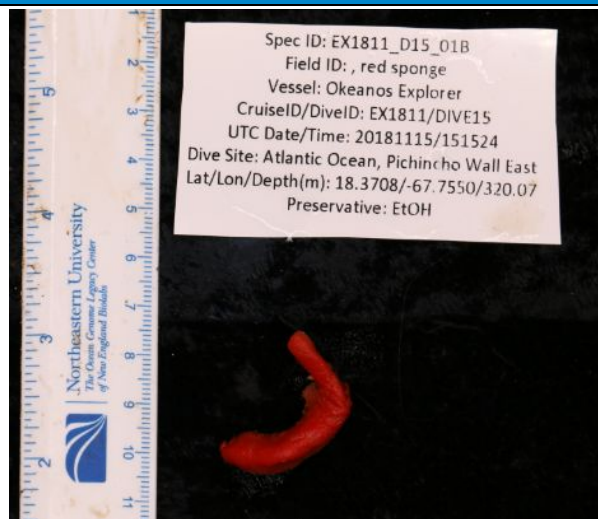
	<p>soldierfish (<i>Ositchtys trachypoma</i>) was the most abundant fish and was observed throughout the dive from 365 m to 250 m. At least one misty grouper (<i>Hyporthodus mystacinus</i>) was observed right in the beginning of the dive and the same individual may have been sighted several times later during the dive. Silk snappers (<i>Lutjanus vivanus</i>) were the second most abundant fish during the dive. We also saw yellowfin flagfish (<i>Aulopus filametosus</i>), blackfin snapper (<i>Lutjanus buccanella</i>), ?<i>Epigonus</i> or <i>Serranus notospilus</i>, <i>Cookeolus japonicus</i> or <i>Priacanthus</i>, rough-tongue bass (<i>Pronotogrammus martinicensis</i>), small fish with forked caudal fin (maybe <i>Choranthias</i> sp.), boarfish (<i>Antigonia capros</i>), <i>Polylepion</i> sp, and queen snapper (<i>Etelis oculatus</i>). One of the most striking observations was a translucent egg case of a catshark and a small catshark embryo attached to an ellisellid whip coral. We were able to observe that the catshark was still connected to the yolk sac and actively swimming inside.</p> <p>Sponge diversity and abundance was high at this site. We observed mostly encrusting species and demosponges. We did see many Corallistidae sponges and the small, yet unidentified, cotton ball-sized sponges. We collected an encrusting red sponge thought to be growing over a corallistid structure. There were a couple of new encrusting sponges observed at this site, like a bright blue encrusting sponge (black and red).</p> <p>Deep-sea corals were notably diverse at this location in addition to being locally abundant. Stylasterids were small (<5 cm), but were the most numerically abundant organism on the dive. Some stylasterid fans (<i>Crypthelia</i> sp., <i>Stylaster</i> sp., possibly <i>S. erubescens</i>), particularly on ledges and overhangs, reached 30 cm or more in height and width. The diversity of stylasterids was difficult to identify visually, but estimates exceed 6 different colony morphologies based on what we could discern by eye. Orange-colored <i>Distichopora</i> sp. colonies were also seen at this site. Within the stylasterid communities, we also observed other live scleractinian corals, including dense clusters of <i>Madracis</i> cf. <i>myriaster</i> and <i>Madrepora</i> sp. colonies. One <i>Madrepora</i> cluster was sampled to determine a species-level identification.</p> <p>Soft corals were also well represented with plexaurids being the most common and speciose group (<i>Thesea</i> sp., cf. <i>Paracis</i> sp., <i>Paramuricea</i> sp.). We also observed ellisellid whips in abundance toward the end of the dive. Small true soft corals, possibly <i>Scleronephtha</i> sp., were occasionally observed. Scattered throughout the dive we also observed thin black coral stalks, which were always unbranched (likely <i>Stylopathes</i> sp. or <i>Parantipathes</i> sp.).</p> <p>Sea stars were more abundant than any other echinoderm group. We saw <i>Linckia</i> sp. and the goniasterid <i>Plinthaster dentatus</i> on the faces of the ledges. There was a darker color sea star spotted during the dive, but this may have been a more heavily pigmented <i>Linckia</i> sp. individual. We also saw a couple of <i>Calocidaris micans</i> urchins during the dive. One looked like it was eating or propped on a sponge. We did not observe any crinoids or sea cucumbers.</p> <p>There were four squids observed right at the beginning of the dive. They were identified as <i>Doryteuthis</i> sp. by Michael Vecchione and Roger Hanlon. We saw a lot of crabs (<i>Mithrax</i> sp.) during this dive, more so than any other dive. We also spotted a couple of dead slitshell gastropods and a couple of unidentified brown-colored corallimorpharians or anemones.</p>
Notable Observations	Dense stylasterid and stony corals on overhangs and ledges. Catshark embryo on Ellisellid coral.
Community Presence/Absence (community is defined as more than two species)	<input checked="" type="checkbox"/> Corals and Sponges <input type="checkbox"/> Chemosynthetic Community <input checked="" type="checkbox"/> High biodiversity Community <input type="checkbox"/> Active Seep or Vent <input type="checkbox"/> Extinct Seep or Vent <input type="checkbox"/> Hydrates



Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
	
Representative Photos of the Dive	
	
<p>Stony corals (<i>Madrepora</i> sp.) and stylasterid hydricorals (<i>Stylaster</i> spp. and <i>Distichopora</i> sp.) were the dominant attached fauna on block and boulder substrate. Vertical surfaces and edges were preferred settlement surfaces.</p>	<p>Karstic terrain dominated the seafloor geomorphology. Many overhangs were observed with dense attached faunal communities. Fishes often inhabited caverns under overhangs.</p>
	
<p>One of the highlights for the dive included a translucent occupied shark egg case. This case was attached to an Ellisellid ocot coral whip. These egg cases are rare to find since they are usually dark to opaque and often without embryos inside.</p>	<p>Deep-water fishes, most actively fished by the local fishing community, were constantly observed throughout the dive track. Larger-bodied groupers and snappers were occasionally observed closer to the vehicle. Fishes often maintained their distance just out of the lights of the vehicle or withdrawn to caves or ledges.</p>

Samples Collected

Sample ID	EX1811_D15_01B							
Date (UTC)	20181115							
Time (UTC)	151524							
Depth (m)	320.072							
Temp. (°C)	16.813							
Field ID(s)	Porifera							
Commensals	No commensals							
Comments								
Sample ID	EX1811_D15_02B							
Date (UTC)	20181115							
Time (UTC)	163137							
Depth (m)	274.305							
Temp. (°C)	17.986							
Field ID(s)	scleractinia							
Commensals	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Commensal Sample ID</th> <th style="width: 40%;">Field Identification</th> <th style="width: 30%;">Count</th> </tr> </thead> <tbody> <tr> <td>EX1811_D15_02B_A01</td> <td>Stylasteridae</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>		Commensal Sample ID	Field Identification	Count	EX1811_D15_02B_A01	Stylasteridae	1
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EX1811_D15_02B_A01	Stylasteridae	1						
Comments								



Please direct inquiries to:

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