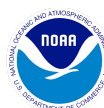




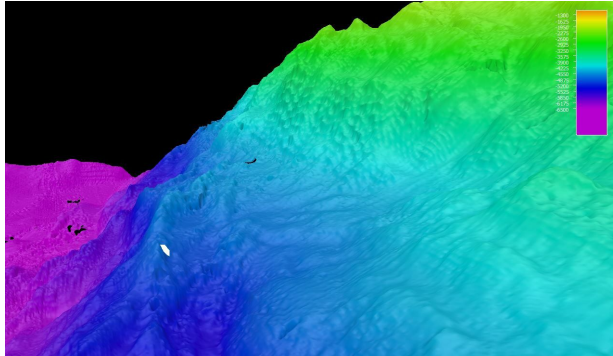
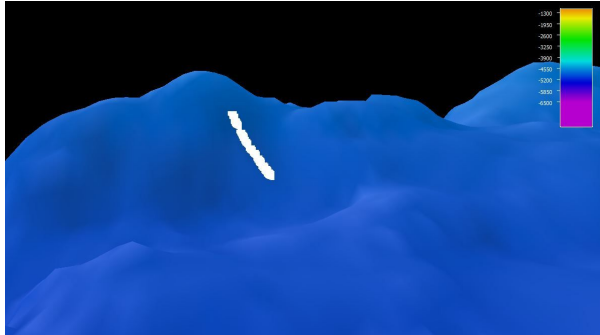




## Okeanos Explorer ROV Dive Summary

Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	Mona Seamount
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	DIVE19
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	None																																																																																
ROV Dive Summary Data (from processed ROV data)	In Water:	2018-11-19T12:23:42.510783 19°, 16.692' N ; 67°, 41.201' W																																																																															
	On Bottom:	2018-11-19T15:20:26.233199 19°, 16.686' N ; 67°, 41.041' W																																																																															
	Off Bottom:	2018-11-19T17:52:48.952520 19°, 16.759' N ; 67°, 41.039' W																																																																															
	Out Water:	2018-11-19T20:45:51.230493 19°, 16.736' N ; 67°, 40.756' W																																																																															
	Dive duration:	8:22:8																																																																															
	Bottom Time:	2:32:22																																																																															
	Max. depth:	4998.0 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>Amanda Demopoulos</td> <td>US Geological Survey</td> <td>ademopoulos@usgs.gov</td> </tr> <tr> <td>Andrew Shuler</td> <td>NOAA/CSS</td> <td>andrew.shuler@noaa.gov</td> </tr> <tr> <td>Asako Matsumoto</td> <td>Chiba Institute of Technology</td> <td>amatsu@gorgonian.jp</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>Graciela Garcia-Moliner</td> <td>Caribbean Fishery Management Council</td> <td>graciela_cfm@yahoo.com</td> </tr> <tr> <td>Jason Chaytor</td> <td>US Geological Survey</td> <td>jchaytor@usgs.gov</td> </tr> <tr> <td>Kate Rose</td> <td>NOAA/NCEI</td> <td>kate.rose@noaa.gov</td> </tr> <tr> <td>Kenneth Sulak</td> <td>US Geological Survey</td> <td>jumpingsturgeon@yahoo.com</td> </tr> <tr> <td>Mary Wicksten</td> <td>Texas A&amp;M University</td> <td>m-wicksten@tamu.edu</td> </tr> <tr> <td>Mashkoor Malik</td> <td>NOAA/OER</td> <td>mashkoor.malik@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 and Smithsonian</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>barrettmh@g.cofc.edu</td> </tr> <tr> <td>Ricardo Lugo</td> <td>Boqueron Fishermen Association</td> <td>ricardo.juan.lugo@gmail.com</td> </tr> <tr> <td>Robert Stern</td> <td>University of Texas at Dallas</td> <td>rjstern@utdallas.edu</td> </tr> <tr> <td>Santiago Herrera</td> <td>Lehigh University</td> <td>sherrera@alum.mit.edu</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> <tr> <td>Tim Shank</td> <td>Woods Hole Oceanographic Institution</td> <td>tshank@whoi.edu</td> </tr> <tr> <td>Tina Molodtsova</td> <td>P.P. Shirshov Institute of Oceanology</td> <td>tina@ocean.ru</td> </tr> </tbody> </table>			Name	Affiliation	Email	Amanda Demopoulos	US Geological Survey	ademopoulos@usgs.gov	Andrew Shuler	NOAA/CSS	andrew.shuler@noaa.gov	Asako Matsumoto	Chiba Institute of Technology	amatsu@gorgonian.jp	Daniel Wagner	NOAA/OER	daniel.wagner@noaa.gov	Debi Blaney	NOAA/OER	debi.blaney@noaa.gov	Graciela Garcia-Moliner	Caribbean Fishery Management Council	graciela_cfm@yahoo.com	Jason Chaytor	US Geological Survey	jchaytor@usgs.gov	Kate Rose	NOAA/NCEI	kate.rose@noaa.gov	Kenneth Sulak	US Geological Survey	jumpingsturgeon@yahoo.com	Mary Wicksten	Texas A&M University	m-wicksten@tamu.edu	Mashkoor Malik	NOAA/OER	mashkoor.malik@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 and Smithsonian	vecchiom@si.edu	Michelle Schärer	HJR Reefscaping	michelle.scharer@upr.edu	Nolan Barrett	Medical University of South Carolina	barrettmh@g.cofc.edu	Ricardo Lugo	Boqueron Fishermen Association	ricardo.juan.lugo@gmail.com	Robert Stern	University of Texas at Dallas	rjstern@utdallas.edu	Santiago Herrera	Lehigh University	sherrera@alum.mit.edu	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	Tim Shank	Woods Hole Oceanographic Institution	tshank@whoi.edu	Tina Molodtsova	P.P. Shirshov Institute of Oceanology	tina@ocean.ru
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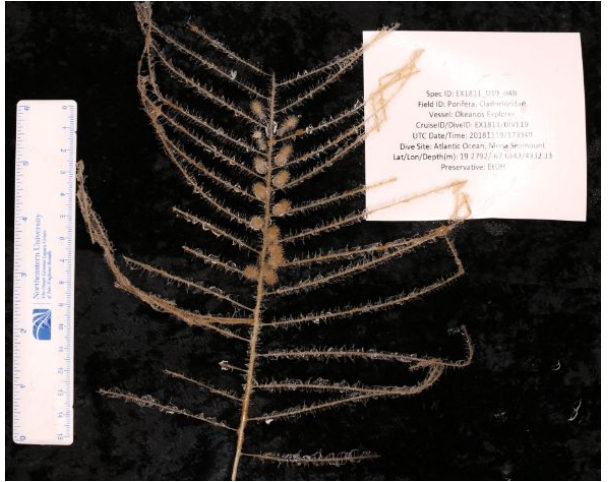


<p>Dive Purpose</p>	<p>The purpose of the dive was exploratory with objectives to characterize seafloor faunal communities, both on hard and soft bottom habitats. Hardbottom faunal communities, including deep-sea coral and sponges, were anticipated on steep sloped terrain. The dive also sought to identify deep-sea fishes, as well as the geology of Mona Seamount.</p>
<p>Dive Description</p>	<p>We began the dive on a flat area of a ridge on the north slope of Mona Seamount. Thick soft sediment dominated the first half hour of the dive with occasional patches of cobble and boulder sized rock. There were also several tracks of irregular sea urchins and other <i>lebensspuren</i>. Currents throughout the dive were slight and ran downslope. Despite the depth, significant rafts of <i>Sargassum</i>, blades of <i>Thalassia</i> seagrass, and wood material were commonly observed throughout both rocky and soft bottom on this dive.</p> <p>Rocky outcrops displayed linear features initially thought to be bedding planes. These layers ran in and N-S orientation upslope. Jason Chaytor (USGS) noted that these were very similar to rock formations (limestone) observed on the south side of Mona Seamount in previous expeditions. We followed these rocky outcrops to a minimum depth on bottom of 4,922 m. Some rocky outcrops, typically composed of cracked angular rock, were observed to be relatively fresh surfaces. Their white-tan coloration contrasted the dark colored surrounding material encrusted with FeMn.</p> <p>Two coral species were present on this dive, one sea pen and one black coral. Two colonies of the same species of <i>Umbellula</i> sp. (with 4-polyp colonies) were observed in soft sediments and one individual of the black coral <i>Abyssopathes</i> cf. <i>lyra</i> was seen on cobble-sized boulders well-set into the sedimented slope. The latter colony was sampled for confirmation of identification. Three individuals of the ophidiform, <i>Leucicorus atlanticus</i> Nielsen, 1975, were observed, typically at the bottom of rocky terrain. We observed at least two species of sponges, both Cladorhizids. The first was tentatively identified as <i>Asbestopluma</i> sp., and the other, an unknown Cladorhizid, was sampled.</p> <p>Other invertebrates were surprisingly diverse at this site and included Munnopsid isopods (cf. <i>Storthyngula</i> sp., one possibly carrying an egg mass), tube-dwelling anemones, other anemones, polynoid worms, <i>Munidopsis</i> sp. squat lobsters, a Bathycrinid stalked crinoid (<i>Discolocrinus iselini</i>), echiurans, a Rhodaliid siphonophore, and foraminifera (Xenophyphores and arborescent forams).</p>
<p>Notable Observations</p>	<p>Unknown cladorhizid sponge; <i>Abyssopathes</i> sp. black coral, few ophidiform fishes, striking rock outcroppings</p>
<p>Community Presence/Absence (community is defined as more than two species)</p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Corals and Sponges</li> <li><input type="checkbox"/> Chemosynthetic Community</li> <li><input type="checkbox"/> High biodiversity Community</li> <li><input type="checkbox"/> Active Seep or Vent</li> <li><input type="checkbox"/> Extinct Seep or Vent</li> <li><input type="checkbox"/> Hydrates</li> </ul>

Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
	
Representative Photos of the Dive	
	
<p>Ophidiform <i>Leucicorus atlanticus</i> was observed on three occasions drifting on the downslope side of rock outcrops. Two of these individuals were found to have distended guts suggesting recent feeding or carrying eggs.</p>	<p>Geological bedforms were observed over the steep rocky slope portion of the dive. These formations were often cracked and full of loose debris. Rock surfaces were often FeMn encrusted with exceptions where fresher surfaces were exposed.</p>
	
<p>One of the two species of coral observed on this dive, <i>Abyssopathes lyra</i>. This cosmopolitan genus is among the deepest-dwelling corals known to occur. Only one individual was encountered on this dive.</p>	<p>Cladorhizid sponges were the only poriferans present at this site. At least two species were observed. One of the most unusual forms, pictured here, was collected.</p>

## Samples Collected

Sample ID	EX1811_D19_01G		
Date (UTC)	20181119		
Time (UTC)	154044		
Depth (m)	4992.988		
Temp. (°C)	2.189		
Field ID(s)	Rock with forams and worm		
Commensals	Commensal Sample ID	Field Identification	Count
	EX1811_D19_01G_A01	Serpulidae	1
Comments			
Sample ID	EX1811_D19_02B		
Date (UTC)	20181119		
Time (UTC)	164139		
Depth (m)	4965.573		
Temp. (°C)	2.232		
Field ID(s)	<i>Abyssopathes lyra</i>		
Commensals	No commensals		
Comments			

Sample ID	EX1811_D19_03G	
Date (UTC)	20181119	
Time (UTC)	165221	
Depth (m)	4959.725	
Temp. (°C)	2.23	
Field ID(s)	Rock	
Commensals	No commensals	
Comments		
Sample ID	EX1811_D19_04B	
Date (UTC)	20181119	
Time (UTC)	173949	
Depth (m)	4932.134	
Temp. (°C)	2.227	
Field ID(s)	Cladorhizidae	
Commensals	No commensals	
Comments		

**Please direct inquiries to:**

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 1315 East-West Highway (SSMC3 10th Floor)  
 Silver Spring, MD 20910  
 (301) 734-1014

