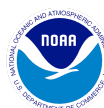


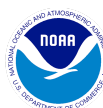
## Okeanos Explorer ROV Dive Summary

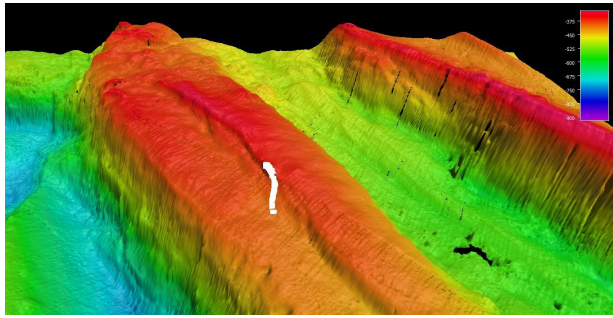
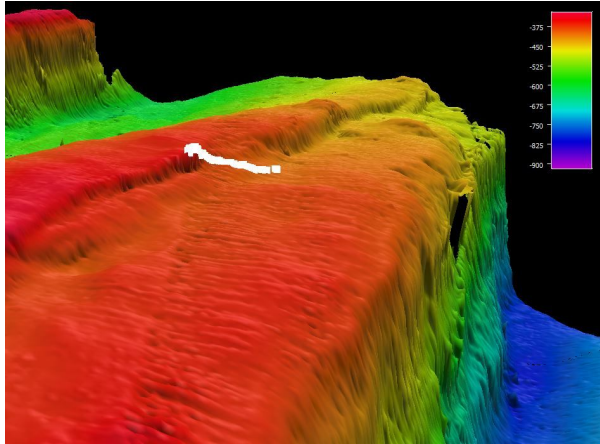

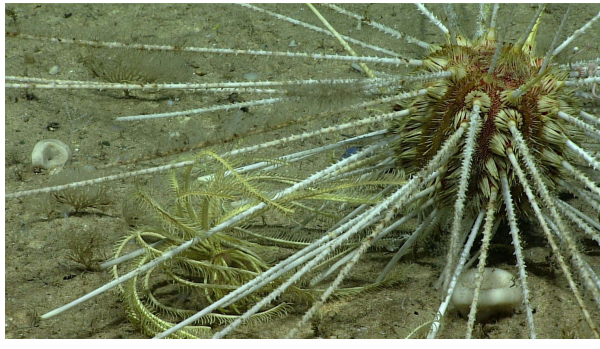
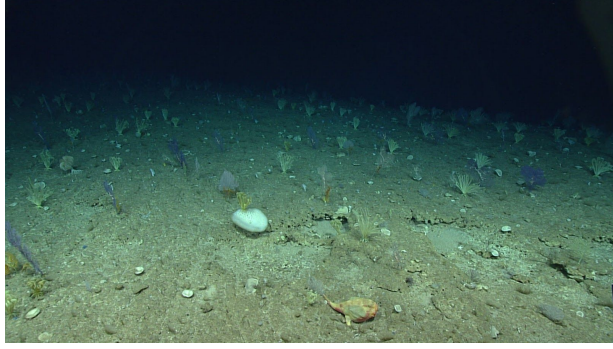

Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	Desecheo Ridge
Science Team Leads	Stacey Williams (ISER) Steven Auscavitch (Temple)
Expedition Coordinator	Daniel Wagner (NOAA-OER)
ROV Dive Supervisor	Chris Ritter (GFOE)
Mapping Lead	Derek Sowers (NOAA-OER)
ROV Dive Name	
Cruise	EX1811
Dive Number	DIVE18
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	Midway through the dive, the ship had trouble holding station, and as a result the ROVs were temporarily pulled off the bottom until the ship could find a heading that allowed it to hold station. The ROVs were put back on bottom and the remainder of the dive went smoothly.																																																														
ROV Dive Summary Data (from processed ROV data)	In Water:	2018-11-18T15:30:25.288562 18°, 23.809' N ; 67°, 39.368' W																																																													
	On Bottom:	2018-11-18T16:23:05.154552 18°, 23.818' N ; 67°, 39.301' W																																																													
	Off Bottom:	2018-11-18T20:08:44.496789 18°, 23.719' N ; 67°, 39.208' W																																																													
	Out Water:	2018-11-18T20:38:29.123218 18°, 23.609' N ; 67°, 39.255' W																																																													
	Dive duration:	5:8:3																																																													
	Bottom Time:	3:45:39																																																													
	Max. depth:	367.0 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>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>Charles Messing</td> <td>Nova Southeastern University</td> <td>messingc@nova.edu</td> </tr> <tr> <td>Christopher Mah</td> <td>National Museum of Natural History</td> <td>brisinga@gmail.com</td> </tr> <tr> <td>Colleen Peters</td> <td>URI-ISC</td> <td>innerspacecenter@googlegroups.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>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>Mashkooor Malik</td> <td>NOAA/OER</td> <td>mashkooor.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>Michelle Schärer</td> <td>HJR Reefscaping</td> <td>michelle.scharer@upr.edu</td> </tr> <tr> <td>Nelson Crespo</td> <td>Fishermen</td> <td>rcfunion@yahoo.com</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>Tina Molodtsova</td> <td>P.P. Shirshov Institute of Oceanology</td> <td>tina@ocean.ru</td> </tr> </tbody> </table>			Name	Affiliation	Email	Andrew Shuler	NOAA/CSS	andrew.shuler@noaa.gov	Asako Matsumoto	Chiba Institute of Technology	amatsu@gorgonian.jp	Charles Messing	Nova Southeastern University	messingc@nova.edu	Christopher Mah	National Museum of Natural History	brisinga@gmail.com	Colleen Peters	URI-ISC	innerspacecenter@googlegroups.com	Daniel Wagner	NOAA/OER	daniel.wagner@noaa.gov	Debi Blaney	NOAA/OER	debi.blaney@noaa.gov	Graciela Garcia-Moliner	Caribbean Fishery Management Council	graciela_cfmc@yahoo.com	Kate Overly	NOAA/NMFS	katherine.overly@noaa.gov	Mashkooor Malik	NOAA/OER	mashkooor.malik@noaa.gov	Megan Cromwell	NOAA/NCEI	megan.cromwell@noaa.gov	Megan McCuller	North Carolina Museum of Natural Sciences	megan.mcculler@naturalsciences.org	Michelle Schärer	HJR Reefscaping	michelle.scharer@upr.edu	Nelson Crespo	Fishermen	rcfunion@yahoo.com	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	Tina Molodtsova	P.P. Shirshov Institute of Oceanology	tina@ocean.ru
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Dive Purpose	This dive targeted potential habitats of deep-sea fish, including snappers and groupers. The depth profile and topography fell in the habitat preferences of commercially important deep-sea fishes as reported by the local fishing community. The dive also sought to characterize the habitats of deep-sea corals, sponges, and other demersal fish communities. Further, the dive targeted a range of different slope types to evaluate the influence of topography on deep-sea fish and benthic communities.																																																														





<p style="text-align: center;">Dive Description</p>	<p>This dive began on a 350 m depth submarine ridge in the Mona Passage, due west of Desecheo Island. Soon after our initial touchdown on bottom, we had to pull the ROVs off bottom for a bit because <i>Sargassum</i> was clogging the ship's thrusters. There was a second descent and the ROV was on the bottom for about 1 ½ hours. The organisms in highest abundance on this ridge were crinoids, sponges, and branching octocorals.</p> <p>Deep-sea corals, in addition to being abundant, were more diverse than at other sites in this depth range. Antipatharians (<i>Stichopathes</i>, <i>Bathypathes</i> sp., <i>Elatopathes</i> sp., <i>Stylopathes</i> sp.) and Primnoid octocorals (<i>Paracalyptrophora duplex</i>, <i>Acanthoprimnoa</i> sp., <i>Plumarella</i> sp., <i>Callogorgia</i> sp.) were the most species-rich taxa with four represented species for each group. <i>Chrysogorgia</i> colonies were common through the entire dive with many small black colonies seen on both sloped and flat hard bottom. The most dense deepwater coral communities occurred at the topographic high point of the ridge (~350 m), where we encountered an abundance of mixed-species assemblages, including two Plexaurids (<i>Paramuricea</i> sp. and cf. <i>Scleracis?</i>), <i>Acanthogorgia aspera</i>, <i>Nicella</i> sp., stylasterids, and cup coral species.</p> <p>The sponge cover was very high, especially on the edge of the ridge and on top of the ridge. A foliose cream-colored sponge was the most common, and we secured a sample. We did see the other table-top forming sponge at this site. Encrusting sponges were common on the face of the ridge and on top. These encrusting species were usually small. Small brown bryozoans were extremely abundant on the top of the ridge crest. We also saw an anemone, slitshell gastropod, and <i>Heterocarpus</i> sp. shrimp.</p> <p>The fish richness was low, with only seven species identified during the dive. The most abundant fish on the dive was the queen snapper, <i>Etelis oculata</i>. There was one individual recorded right at the beginning of the dive at 367 m. We saw possibly six queens on the second decent, all larger than 25 cm in length. They were located at the base of the ridge like feature at 357 m. The other fish spotted on the dive were <i>Chaunax</i> sp., <i>Polylepion</i> sp., <i>Antigonia capros</i>, <i>Aulopus filamentosus</i>, <i>Ositichtys trachypoma</i>, and an unknown smaller fish that looked like a wrasse and had distinct white line running dorsally. Ross Robertson later identified this fish as <i>Plectranthias garrupellus</i>. Fishing gear (line and weights) were widespread at this site.</p> <p>The fields of crinoids were very impressive. There were many <i>Crinometra</i> sp. along the edges of the ridge and on top. We collected one <i>Crinometra</i> sp. at the very end of the dive as it was considered characteristic of this site and needed for taxonomic identification. There were a lot of <i>Endoxocrinus</i> sp., and the swimming crinoid, <i>Stylmetra spinifera</i>. We collected <i>S. spinifera</i> as an associate on a <i>Paracalyptrophora</i> sp. sea fan. Also, <i>Holopus rangii</i> were very common at this site. There were tiny sea stars at this site resembling <i>Linckia</i> sp. stars. There were quite a few cidarid urchins, <i>Stylocidaris</i> sp., <i>Histocidaris</i> sp. and <i>Cidaris rugosa</i>. We saw a <i>Histocidaris</i> sp. eating a <i>Crinometra</i> sp. crinoid. It had it pinned down and was eating one of the arms, a new behavior observed in this species of urchin. There were also <i>Araeosoma</i> sp. pancake urchins on flat portions of the seabed.</p>
<p style="text-align: center;">Notable Observations</p>	<p>High-density, high-diversity coral community. Dense crinoid beds. Queen snapper aggregation at landing.</p>
<p style="text-align: center;">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 checked="" 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>Queen snapper were observed several times over the course of the dive track. Fishing gear and weights were also frequently observed here, often on rocky ledges and along the ridge crest among deep-water corals habitat.</p>	<p>An additional record of histocidarid urchin predation on crinoids, <i>Crinometra</i> sp., was observed at this site. In this instance, the urchin spines were observed to pin down the target from moving while grazing on the arm tips of the crinoid.</p>
	
<p>Deep-sea corals along the ridge crest occurred in high density and high diversity through the second half of the dive. These communities included primarily gorgonian octocorals and black corals.</p>	<p>Near the off-bottom point, dense beds of <i>Crinometra</i> sp. crinoids were observed. These were the dominant echinoderm species recorded at this site.</p>

## Samples Collected

Sample ID	EX1811_D18_01B	 <p style="font-size: small; text-align: center;">                     Spec ID: EX1811_D18_01B                      Field ID: , sponge- foliose fans                      Vessel: Okeanos Explorer                      CruiseID/DiveID: EX1811/DIVE18                      UTC Date/Time: 20181118/190304                      Dive Site: Atlantic Ocean, Desecheo Ridge                      Lat/Lon/Depth(m): 18.3955/-67.6539/352.05                      Preservative: ETOH                 </p>
Date (UTC)	20181118	
Time (UTC)	190304	
Depth (m)	352.053	
Temp. (°C)	16.227	
Field ID(s)	Porifera	
Commensals	No commensals	
Comments		

Sample ID	EX1811_D18_02B	 <p style="font-size: small; text-align: left;">                     Spec ID: EX1811_D18_02B                      Field ID: , Primnoid with hydromedusa and larva traps                      Vessels:                      Okeanos Explorer                      CruiseID/DiveID: EX1811/DIVE18                      UTC Date/Time: 20181118/191136                      Dive Site: Atlantic Ocean, Desecheo Ridge                      Lat/Lon/Depth(m): 18.3955/-67.6539/352.05                      Preservative: ETOH                 </p>
Date (UTC)	20181118	
Time (UTC)	191136	
Depth (m)	352.066	
Temp. (°C)	15.903	
Field ID(s)	Primnoid	

Commensals	Commensal Sample ID	Field Identification	Count
	EX1811_D18_02B_A01	Squat lobster	1
	EX1811_D18_02B_A02	Crinoid	1
	EX1811_D18_02B_A03	Squat lobster	1
Comments			

Sample ID	EX1811_D18_03B		
Date (UTC)	20181118		
Time (UTC)	200318		
Depth (m)	349.076		
Temp. (°C)	15.57		
Field ID(s)	<i>Crinometra</i> sp.		
Commensals	Commensal Sample ID	Field Identification	Count
	EX1811_D18_03B_A01	Brittle Star	1
Comments			



**Please direct inquiries to:**

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