



Okeanos Explorer ROV Dive Summary

Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	Punta Yeguas
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	DIVE06
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 was a slippage in the port lower swing arm of <i>D2</i> once stowed before recovery, but this did not affect dive operations.		
ROV Dive Summary Data (from processed ROV data)	In Water:	2018-11-06T12:21:27.738704 18°, 0.843' N ; 65°, 44.015' W	
	On Bottom:	2018-11-06T12:59:06.727145 18°, 0.835' N ; 65°, 43.860' W	
	Off Bottom:	2018-11-06T20:09:15.603581 18°, 1.195' N ; 65°, 43.929' W	
	Out Water:	2018-11-06T20:39:31.933231 18°, 1.28' N ; 65°, 43.728' W	
	Dive duration:	8:18:4	
	Bottom Time:	7:10:8	
	Max. depth:	877.0 m	
Special Notes	N/A		
Scientists Involved (provide name, affiliation, email)	Name	Affiliation	Email
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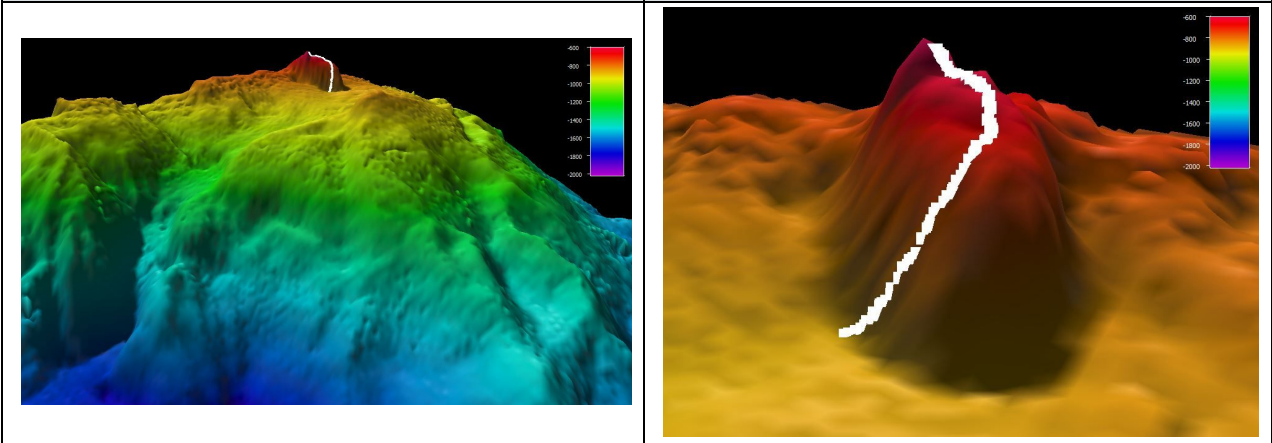


Dive Purpose	<p>The purpose of the dive was exploratory with an emphasis on identifying occurrences of deepwater fish species, corals and sponges, as well as their habitat preferences along the dive track. This dive took place in the Inés María Mendoza Nature Reserve, also known as Punta Yeguas. The dive track was designed to traverse a 200 m tall mound, starting at a steep slope towards the northeast.</p>
Dive Description	<p>The diversity of fish at this site was the highest from any other site surveyed so far on this expedition. We observed at least 19 fish species. The dive began in a flat area dominated by soft sediment and then transitioned to a steep hardground with intermittent flat sedimented plateaus. A gulper shark (<i>Centrophorus</i> sp.) immediately passed by us when we reached the seafloor. We saw two additional sharks later in the dive, a bluntnose shark (<i>Hexanchus griseus</i>) and a catshark. The climb up the wall was steep at times but the substrate leveled in a more soft sediment environment. The most abundant fish species were congrid eels and halosaurs. The other fish identified during this dive were <i>Neoscolepus marolepidotus</i>, <i>Lophiodes beroe</i>, <i>Diplacanthopoma</i> sp., <i>Aldrovandia</i> sp., <i>Bathypeterois viridensis</i>, <i>Synagrops bellus</i>, <i>Nezumia</i> sp., <i>Gonostoma</i> sp., <i>Xeniphophorum</i> sp., <i>Chaunax</i> sp., <i>Grammicolepis brachiusculus</i>, <i>Polymixia</i> sp., and <i>Perostedion antillarum</i>. There were two unknown fish species observed, an unknown shiny green fish and another shiny fish that was slender and had a large underjaw.</p> <p>There was an abundance of swimming sea cucumbers (<i>Enypniastes?</i> sp.) in the water column as well as near the seafloor. There was another species of holothurian observed. The 7/8-arm sea star (<i>Solaster</i> sp.) was common at the beginning of the dive and we also saw a possible goniastrid, bringsid star, and a slime star (Pterastridae) during the dive. There was an unusual cidarid urchin with a red body and white spines. We saw an all-white cidarid and a red fire urchin (<i>Aerosoma</i> sp.). There was a pale to white brittle star common along the seafloor that had long arms (<i>Ophocamistrix</i> sp.). We also saw the same crinoid that was collected on Dive 05, but it was much bigger. Everything was larger at this site. It could be due to the availability of food, since it is so close to shore. There were quite a bit of crinoids and stalked crinoids throughout the dive.</p> <p>The diversity of sponge species and morphotypes was high. The demosponges were diverse with a lot of encrusting types along the rock faces, and lobate-massive types in the flatter areas. We did a collection, what we think might be <i>Geodia</i> sp. sponge. There were also a lot of large basketball looking sponges and big white ball with spikes (possibly <i>Polymastes</i> sp. that look like pom pom anemones). However, the glass sponges were more abundant (<i>Heteroscleromorpha</i> sp.). There were quite a few Euplectilid sponges in the beginning of the dive. The most abundant glass sponge was the stalked-glass sponge. At one point during the dive in the flat sediment dominated habitat, there were just dead sponge stalks covered by zoanths. We collected a stalked sponge (maybe Hyalonemtidae) with zoanths attached to the stalk. We also saw more carnivorous sponges of the family Claderizidae. However these had a different morphology (cf. <i>Asbestopluma</i>). They had these small white ball things located in the center of the colony and many times there were small worms colonizing the base.</p> <p>Deep-sea corals were exceptionally well-represented at this site compared to other sites visited on this expedition. The black corals <i>Stichopathes</i> spp. were most common, while other antipatharians including <i>Tanacetipathes?</i> sp., <i>Chrysopathes</i> spp. and <i>Antipathes</i> sp. were also present. This site had the highest diversity of colonial scleractinians seen thus far, including <i>Solenosmilia variabilis</i>, <i>Madrepora oculata</i>, <i>Enallopsammia rostrata</i>, as well as numerous cup corals.</p> <p>Among observed Primnoidae were <i>Candidella imbricata</i> and an unknown primnoid (cf. <i>Narella</i> sp.) seen on the steepest portion of the dive. Chrysogorgiids of an unknown species (likely <i>Chrysogorgia</i> sp.) were also seen toward the end of the dive. Mushroom corals were observed</p>

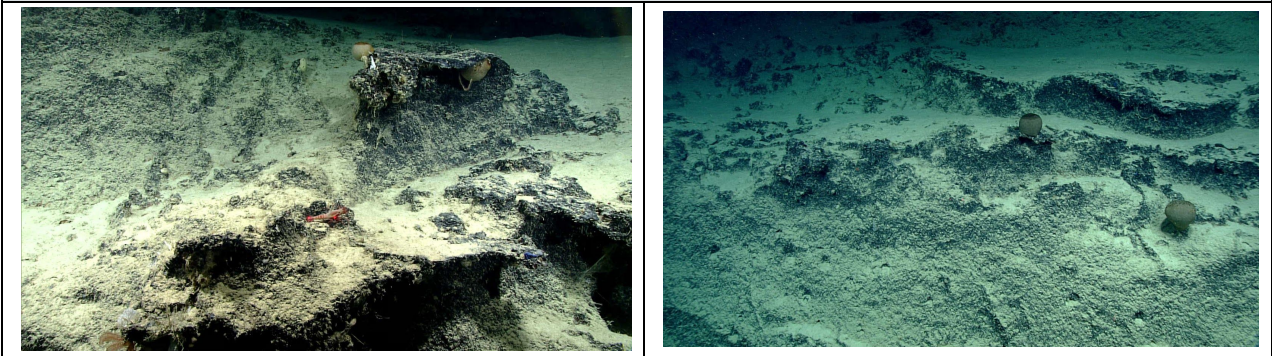


	on top of the ridge portion of the dive and were likely in the genus <i>Anthomastus</i> or <i>Pseudoanthomastus</i> . Stylasterids were common and were represented by <i>Crypthelia</i> sp. and <i>Stylaster</i> sp. colonies. One plexaurid was observed with brown tissue and white polyps. This coral remains unidentified. Few isidids were observed with the exception of one S1 clade unbranched bamboo coral with yellow discolorations at its base.
Notable Observations	A large number of Munnopsid isopods were observed at the beginning of the dive. Also, there were some really large shrimp (<i>Aristeus antillensis</i> ?, >30 cm) and two different types of large crabs (<i>Rochina crassa</i> and possible <i>Eumunida</i> sp.). The colonial tunicate that we observed and collected yesterday (2,000 m) was also observed today at 818 m. There was a lot of trash including corn-meal sacks and old plastic egg cartons (used as fishing pods) at the beginning of the dive. There was also a lot of seagrass and <i>Sargassum</i> scattered along the seafloor.
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

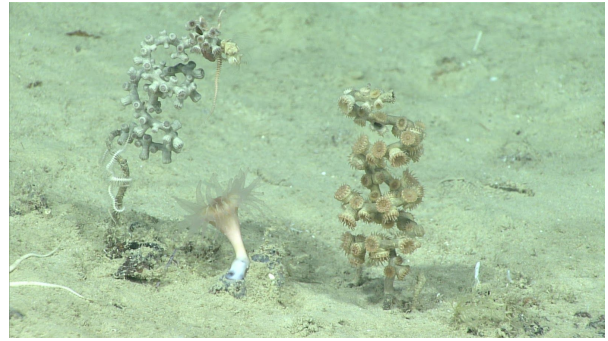
Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
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Representative Photos of the Dive



Rocky outcrops were dominated by sponges and benthic invertebrate fauna. Occasional corals, stony and soft, were most common on this type of seafloor.	Steep slopes were characterized by sponges and occasional attached corals.
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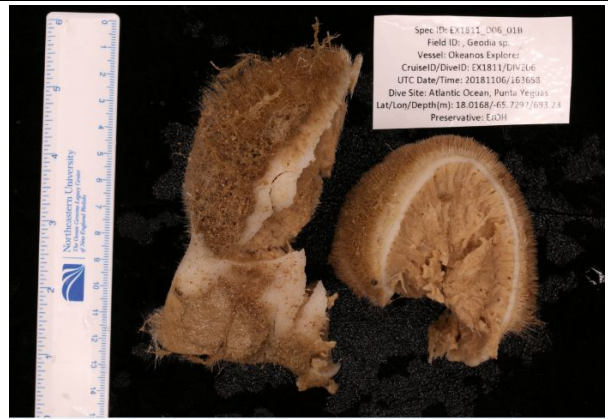


Stalked sponges like this *Hyalonematid* dominated the benthic fauna in the second half of the dive. Stalks were usually covered in zoanthids.

Enigmatic spiral-shaped worm tubes were abundant on a knoll and always covered in zoanthids, shown here next to an unidentified cup coral.

Samples Collected


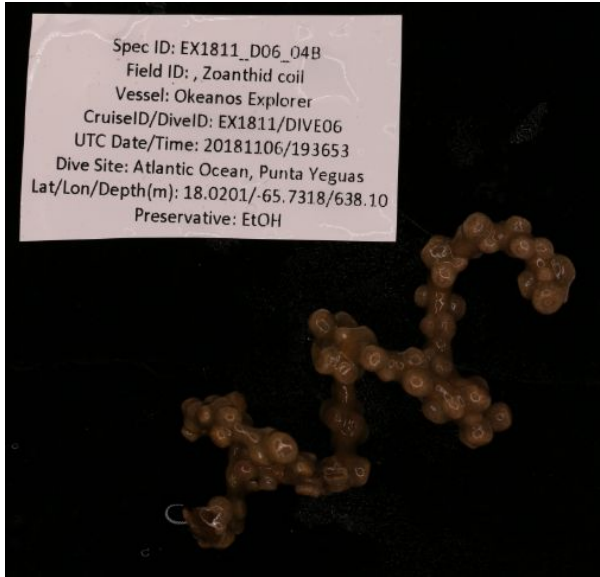
Sample ID	EX1811_D06_01B
Date (UTC)	20181106
Time (UTC)	163658
Depth (m)	693.232
Temp. (°C)	8.266
Field ID(s)	<i>Geodia</i> sp.
Commensals	No commensals
Comments	



Sample ID	EX1811_D06_02B
Date (UTC)	20181106
Time (UTC)	181821
Depth (m)	649.389
Temp. (°C)	9.143
Field ID(s)	Hyalonematidae



Commensals	Commensal Sample ID	Field Identification	Count
	EX1811_D06_02B_A01	Zoantharia	~
	EX1811_D06_02B_A02	Squat Lobster	1

Comments		
Sample ID	EX1811_D06_03B	
Date (UTC)	20181106	
Time (UTC)	183528	
Depth (m)	648.869	
Temp. (°C)	9.212	
Field ID(s)	Scleractinia	
Commensals	No commensals	
Comments		
Sample ID	EX1811_D06_04B	
Date (UTC)	20181106	
Time (UTC)	193653	
Depth (m)	638.101	
Temp. (°C)	9.923	
Field ID(s)	Zoanthid coil	
Commensals	No commensals	
Comments		



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