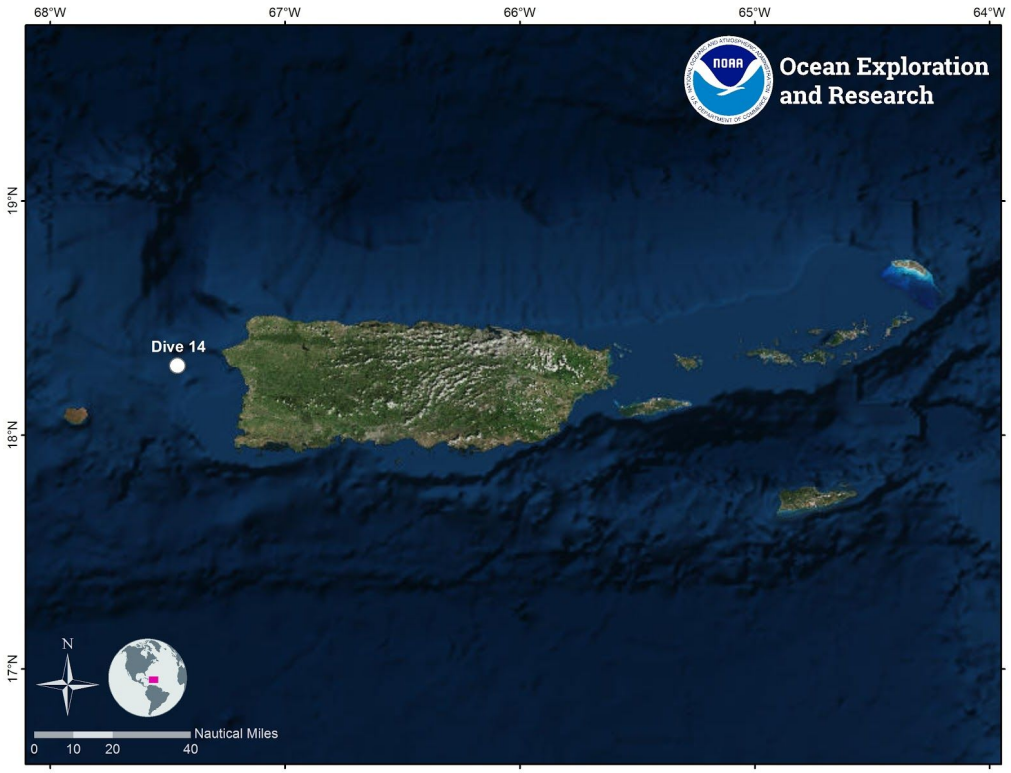
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	North of Bajo de Sico
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	DIVE14
Equipment Deployed	
ROV	*Deep Discoverer*
Camera Platform	*Seirios*

<table>
<tr><td rowspan="5">ROV Measurements</td><td>✓ CTD</td><td>✓ Depth</td><td>✓ Altitude</td></tr>
<tr><td>✓ Scanning Sonar</td><td>✓ USBL Position</td><td>✓ Heading</td></tr>
<tr><td>✓ Pitch</td><td>✓ Roll</td><td>✓ HD Camera 1</td></tr>
<tr><td>✓ HD Camera 2</td><td>✓ Low Res Cam 1</td><td>✓ Low Res Cam 2</td></tr>
<tr><td>✓ Low Res Cam 3</td><td>✓ Low Res Cam 4</td><td>✓ Low Res Cam 5</td></tr>
<tr><td>Equipment Malfunctions</td><td colspan="3">Immediately after D2 was deployed, the pilot had trouble locking it into auto heading. The ROV stayed near the surface for an extended time until the issue was solved, at which time the ROV descended to the seafloor to commence the dive.</td></tr>
<tr><td>ROV Dive Summary Data (from processed ROV data)</td><td colspan="3">In Water: 2018-11-14T16:33:41.427034
18°, 17.097' N ; 67°, 27.854' W

On Bottom: 2018-11-14T18:56:43.127663
18°, 17.378' N ; 67°, 27.589' W

Off Bottom: 2018-11-14T21:58:41.001773
18°, 17.589' N ; 67°, 27.661' W

Out Water: 2018-11-14T22:31:28.550295
18°, 17.925' N ; 67°, 27.278' W

Dive duration: 5:57:47

Bottom Time: 3:1:57

Max. depth: 398.0 m</td></tr>
<tr><td>Special Notes</td><td colspan="3">The ROV dive was shorter than usual today as sea conditions delayed launching, followed by an issue with the ROV software controls near the surface.</td></tr>
<tr><td>Scientists Involved (provide name, affiliation, email)</td><td colspan="3">
<table>
<tr><th>Name</th><th>Affiliation</th><th>Email</th></tr>
<tr><td>Aurea Rodriguez</td><td>University of Puerto Rico at Mayagüez</td><td>auryro@gmail.com</td></tr>
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<tr><td>Steven Auscavitch</td><td>Temple University</td><td>steven.auscavitch@temple.edu</td></tr>
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</table>
</td></tr>
<tr><td>Dive Purpose</td><td colspan="3">This dive explored a submarine bank north of Bajo de Sico in the Mona Passage. The purpose of this dive was to make observations of potential habitats and occurences of deepwater fish species, including snappers and groupers. The depth profile and topography fell in the habitat preferences of commercially important fishes as reported by the local fishing community. This dive further sought to characterize the habitats of deep-sea corals, sponges, mobile invertebrates, and other demersal fish communities.</td></tr>
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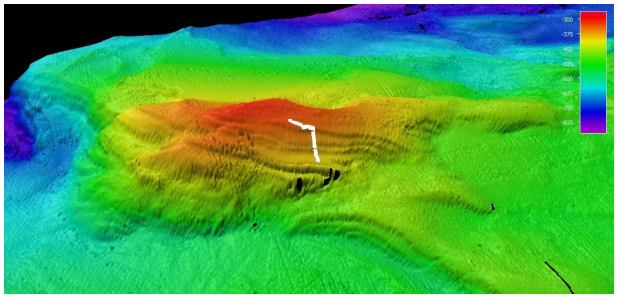
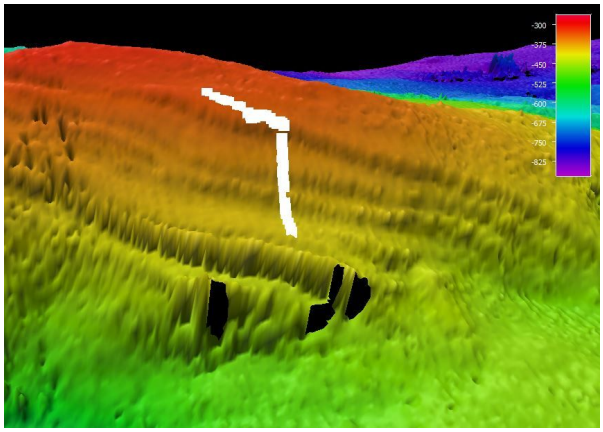
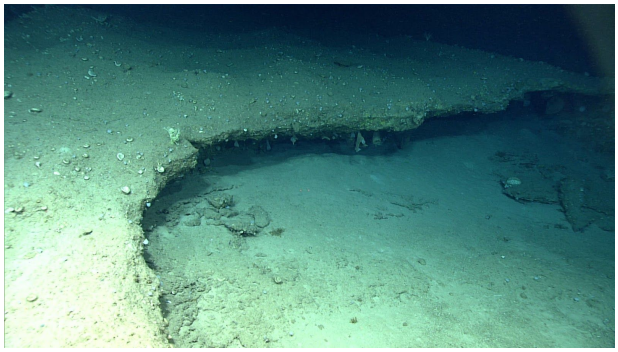
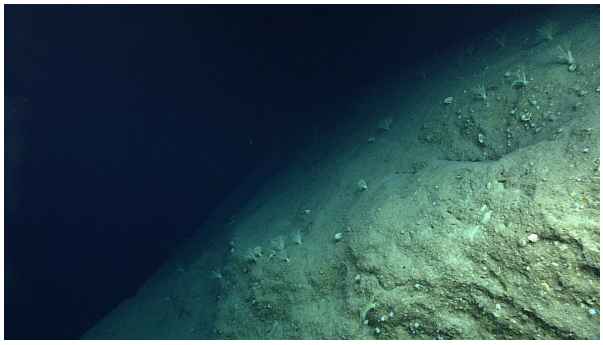
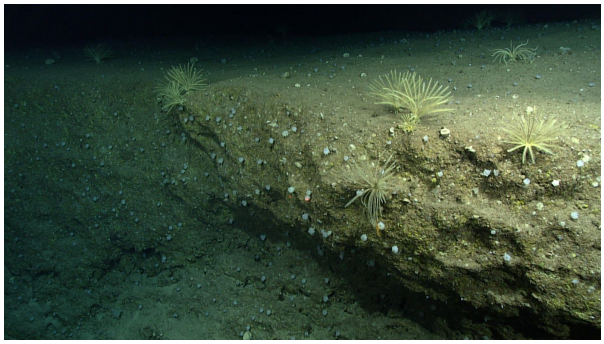
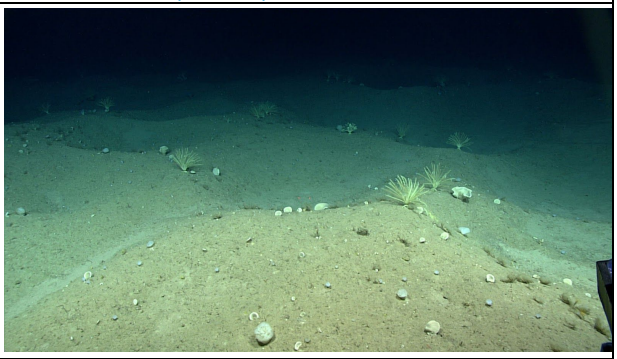
Dive Description	The dive started on a flat hard substrate that was covered by a thin veneer of sediment. The substrate was broken in a stepwise fashion with sand channels and drifts dividing the steps. The substrate was rather smooth and there were ripples in the sand, indicating that this site experiences high currents. The main benthic fauna at this site were sponges and echinoderms. Tiny white, cotton ball-looking sponges were were scattered all over the seafloor. There were also table-top white sponges that were common throughout the dive. It is unclear if these are glass or demosponges. Yellow encrusting sponges were common along the wall faces, and other encrusting sponges (orange and blue) were in high abundance. Overall, the sponge abundance and diversity was high. Possible, Corallistidae and Petrosiidae (one looked to be encrusting), and *Farrea* sp. were present in high quantities. Deep-sea corals were poorly represented at this site with only four coral species observed from the Primnoidae, Nepthiidae, Antipatharia, and Scleractinia. Near the ROV landing spot on the seafloor, we observed small primnoid fans (likely *Plumarella* sp.), as well grey black coral whips (*Stichopathes* sp.), but neither of these were present later in the dive on top of the feature. Several species of 2-3 cm tall cup corals were quite common when zooming close to the substrate at most locations of the dive, but were unidentifiable from video. One nepthiid, similar to one observed off Caja de Muertos Island, was observed on an overhang in the vicinity of the crest of this mound. This site had the most crinoids when comparing to other dives on this expedition. These crinoids were different in that they had many more arms from what we have been seeing so far. We saw a lot of *Holopus* sp. crinoids. They were often at the edge of the ledges. We saw three types of sea stars, *Tamaria* sp., *Plinthaster* or *Peltaster* sp. (white small cookie star), and *Plinthaster dentatus* eating a sponge. We also saw two species of sea cucumbers, a pink one that looks like a sea pig, and another one that we haven't seen before (cream background with darker marks or spots) which looks like a shallow-water species. We identified three species of sea urchins (*Calocidaris* sp*., Histocidaris* sp., and *Areosoma* sp.). Fish richness was low with only seven species observed. We did see a new fish for this expedition, yellowfin flagfish (*Aulopus filametosus*). Fishers mentioned catching this fish while targeting queen snappers and groupers. The other fish species observed during the dive were boarfish (*Antigonia capros*), orange roughy (*Hoplostethus atlanticus*), *Polylepion* sp., greeneye (*Chlorophthalmus agassizi*), *Epigonus sp.* and queen snapper (*Etelis oculatus*). The queen snapper was relatively small (~ 25 cm) and was sighted at 345 m. It was swimming down slope from the shallow ledges to the deep. Small fishes like the deep-sea cardinalfishes, *Epigonus* sp*.,* were observed under the ledges. These may be prey fish for the queen snapper. A fisher stated that snappers do not like to go around boarfish because boarfish will not let the queen snappers feed. We also some shrimp, but not as many as yesterday's dive at the north Mona Escarpment. We saw a *Heterocarpus* sp. shrimp. We also saw some fishing line and weights (rebars) at this site. There was an interesting anemone that was seen two times but unidentified. Small cracks and crevices in this area were often filled with small squat lobsters and crabs.
Notable Observations	Aggregations of yellow crinoids near edges of walls.
Community Presence/ Absence (*community is defined as more than two species*)	✓ Corals and Sponges ❑ Chemosynthetic Community ✓ High biodiversity Community ❑ Active Seep or Vent ❑ Extinct Seep or Vent ❑ Hydrates

Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
	
Representative Photos of the Dive	
	
Overhangs and erosional features were common attachment points of sessile fauna. These features were also the primary refuge for fish species we observed on this dive.	The upper ridge was found to drop off rapidly as we travelled along the crest. This habitat was expected to be ideal for deep-sea fishes, like queen snapper. One small individual (~25 cm) was observed on this dive.
	
Overhangs along the ledges of the step-wise slope were heavily encrusted with sponges, stylasterids, and *Crinometra* sp. feather stars.	Summit microtopography was found to be irregular and hummocky. These pits and channels were approximately 20-30 cm deep. Seafloor on these mounds and channels was hardpan or rocky bottom, only with soft sediments or shell material gathered in the center of the pits.
Samples Collected	
No samples were collected	

Please direct inquiries to:

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