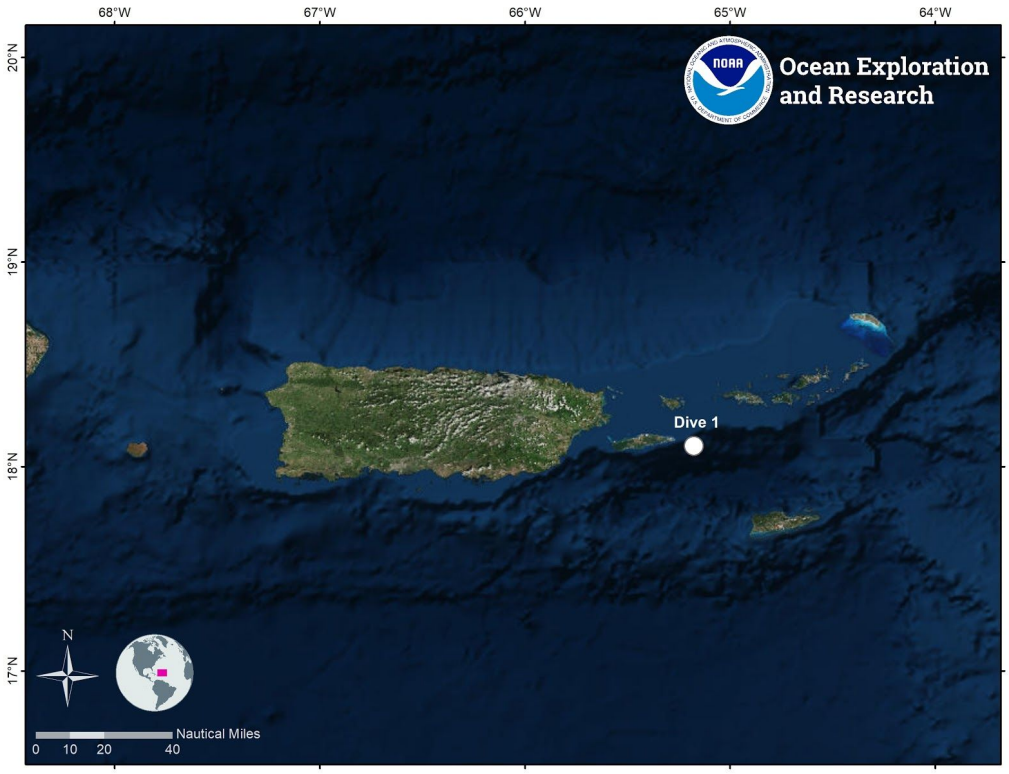
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information	
General Location Map	
General Area Descriptor	U.S. Caribbean Sea
Site Name	East of Vieques Island
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	DIVE01
Equipment Deployed	
ROV	*Deep Discoverer*
Camera Platform	*Seirios*

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	The science chatroom did not display ROV navigation and environmental data during the dive. This data also had to be manually imported into SeaTubeV2 after the dive.		

ROV Dive Summary Data (from processed ROV data)

In Water:	2018-10-31T17:42:31.246011 18°, 7.597' N ; 65°, 9.789' W
On Bottom:	2018-10-31T18:00:27.230319 18°, 7.637' N ; 65°, 9.777' W
Off Bottom:	2018-10-31T20:12:10.744620 18°, 7.557' N ; 65°, 9.873' W
Out Water:	2018-10-31T20:34:37.439001 18°, 7.761' N ; 65°, 9.683' W
Dive duration:	2:52:6
Bottom Time:	2:11:43
Max. depth:	283.0 m

Special Notes: Dive 01 was a short dive as a USBL calibration was performed in the morning prior to the dive.

Scientists Involved (provide name, affiliation, email)

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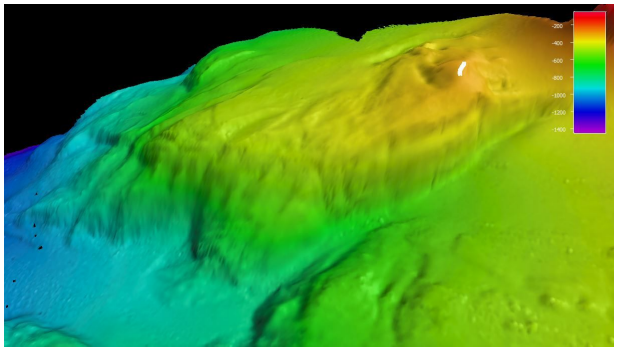
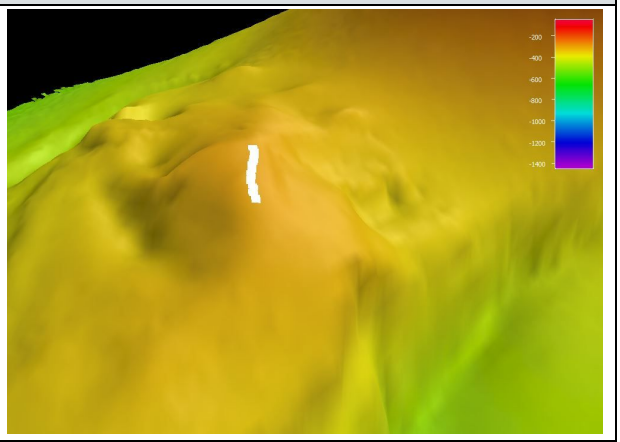
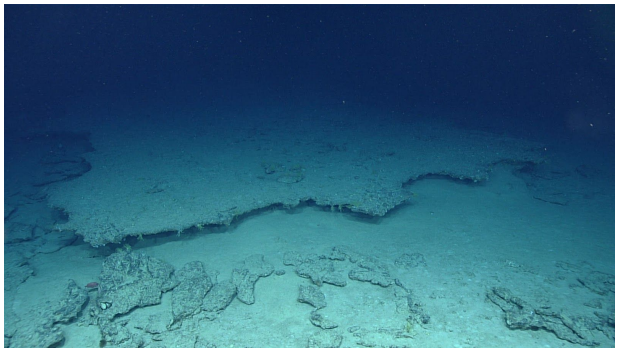
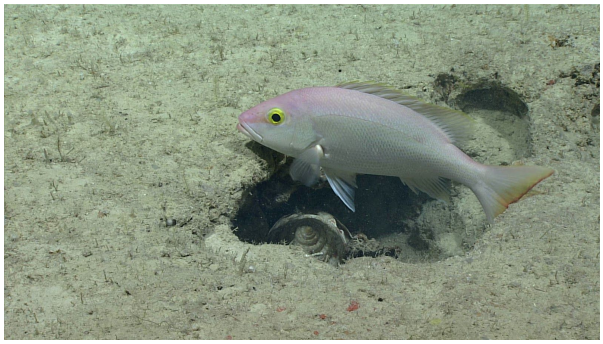
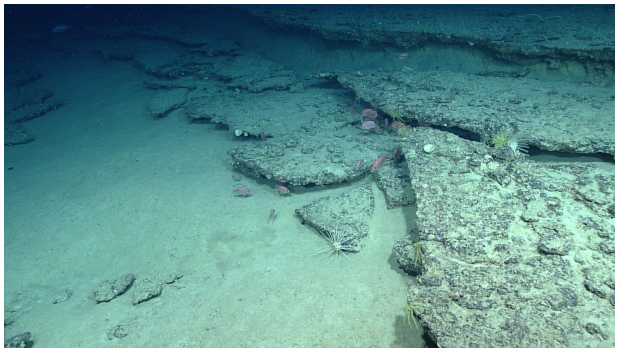
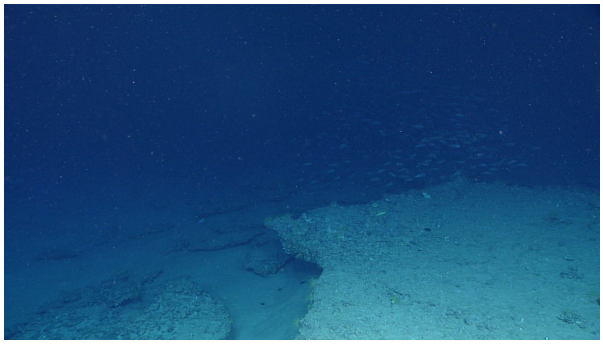
Dive Purpose	The purpose of the dive was exploratory with an emphasis on identifying occurences of deepwater fish species, as well as their habitat preferences along the dive track. The dive survey was designed to traverse a variety of slopes, ultimately ending on a local topographic high. The targeted depth range lied within the known depth range for commercially important snapper species in the area. The dive also targeted deep-sea coral and sponge communities.
Dive Description	The first dive of EX1811 occurred on a local topographic high to the east of Vieques Island. Vehicles reached bottom at 18:01 UTC at a depth of 275 m. On descent, a couple of groupers were swimming above the seafloor, but quickly fled as the ROV approached. Substrate on landing was relatively hard and lightly sedimented. The substrate was largely unchanged through the dive with occasional isolated cobble-sized stones, carbonate outcroppings and ledges. The entirety of the dive was spent traversing the seafloor to the southwest since the on-bottom location was far to the northeast of the intended target. Around 18:45 UTC we came across one of the more substantial rocky outcroppings with deepwater snappers, corals and sponges. These formations were occasionally associated with schooling snappers, moray eels, and occasional misty groupers. The seafloor was scattered with many yellow comatulid crinoids and stalked species. There were many brittle stars (multiple species) and two species of sea urchins (pancake and cidarids with white long spines). There was a small sea star that wasn't well imaged attached to a black coral branch. Two large slitshell gastropods were observed with the larger of the two (~10 cm in shell diameter) occurring near the off-bottom location. Notable crustaceans included squat lobsters (Galatheidae), decorator crabs, and coral-associated shrimp. Two octopods were observed hiding in or near burrows in the sediment. Silk snappers (*Lutjanus vivanus*) were the most abundant fish. At one point a large school was observed at the edge of a rock outcrop. This was a multi-species school, mainly comprised of silk snappers and one large vermillion snapper. The dive also documented four misty groupers, many small schools of bigeye soldierfish, boarfish (*Antigonia* sp.), and very shy longtail jewelfish. Four green moray eels were also spotted along the dive. Most fish were observed next to rocky outcrops or in crevices in the seafloor. Fish were observed many times using these outcrops as shelter. Marine debris was not common, but one glass bottle on the seafloor was observed. *Sargassum* phytodetritus was also seen throughout the dive. Deep-sea corals and sponges were regularly observed, but were not abundant. The most common coral species were black coral whips (*Stichopathes* spp.) and solitary cup corals (Scleractinia). One species of colonial deepwater coral was seen, *Madracis* cf. *myriaster*, on an outcrop lip. This colony was small (<20 cm in total height), but at least one other colony was observed nearby. At least three genera of octocorals were observed, *Chrysogorgia* sp. , a white *Nicella* sp., and a yellow Plexaurid (?*Paramuricea* sp.). Several small (<5 cm) black coral colonies were observed on close zooms, but a firm identification could not be reached. One *Bathypathes*-like black coral was also seen on two occasions. Small stylasterids (<5 cm in height) were commonly observed during tight zooms of rocky hard-bottom, but were unidentifiable. Three morphologies of sponges were observed but not identified; one demosponge, one hexactinellid sponge and one unknown.
Notable Observations	Multi-species schools of snappers (including silk and vermillion), as well as large misty groupers (>80 cm) associated with rocky ledges and outcroppings.
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	
	
Rocky carbonate crust with attached coral and sponge fauna along the edges. Rubble provided habitat for other fishes and invertebrate fauna.	Silk snapper using depressions in the seafloor for refuge. Such depressions in the rock were common.
	
Rocky ledge community including fishes, bigeye soldierfish and silk snappers.	Large mixed species school of snappers associated with rocky ledges.

Samples Collected

No samples were collected on this dive

Please direct inquiries to:

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