



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>U.S. and Canadian Atlantic Continental Margin</p>
<p>Site Name</p>	<p>Oceanographer Canyon</p>
<p>Science Team Leads</p>	<p>Meagan Putts (UH) Jeff Obelcz (USNRL)</p>
<p>Expedition Coordinator</p>	<p>Daniel Wagner (NOAA-OER)</p>
<p>ROV Dive Supervisor</p>	<p>Sean Kennison (GFOE)</p>
<p>Mapping Lead</p>	<p>Michael White (NOAA-OER)</p>

ROV Dive Name

<p>Cruise</p>	<p>EX1905L2</p>
<p>Dive Number</p>	<p>DIVE07</p>

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	Low visibility on the seafloor made it difficult to view <i>D2</i> from <i>Seirios</i> , so the the team proceeded with the dive lights on <i>Seirios</i> off in order to bring out <i>D2</i> ..		
ROV Dive Summary Data (from Processed ROV)	In Water: 2019-09-04T17:16:08.750654 40°, 23.953' N ; 68°, 7.839' W On Bottom: 2019-09-04T18:06:32.202610 40°, 23.861' N ; 68°, 7.939' W Off Bottom: 2019-09-04T20:00:38.707406 40°, 23.845' N ; 68°, 7.841' W Out Water: 2019-09-04T20:35:32.511490 40°, 23.697' N ; 68°, 7.853' W Dive duration: 3:19:23 Bottom Time: 1:54:6 Max. depth: 600.0 m		
Special Notes	This dive was shorter than usual, as the ship's engineers worked on the stern thruster in the morning, so the deployment of the ROV was delayed until the early afternoon.		

Scientists Involved

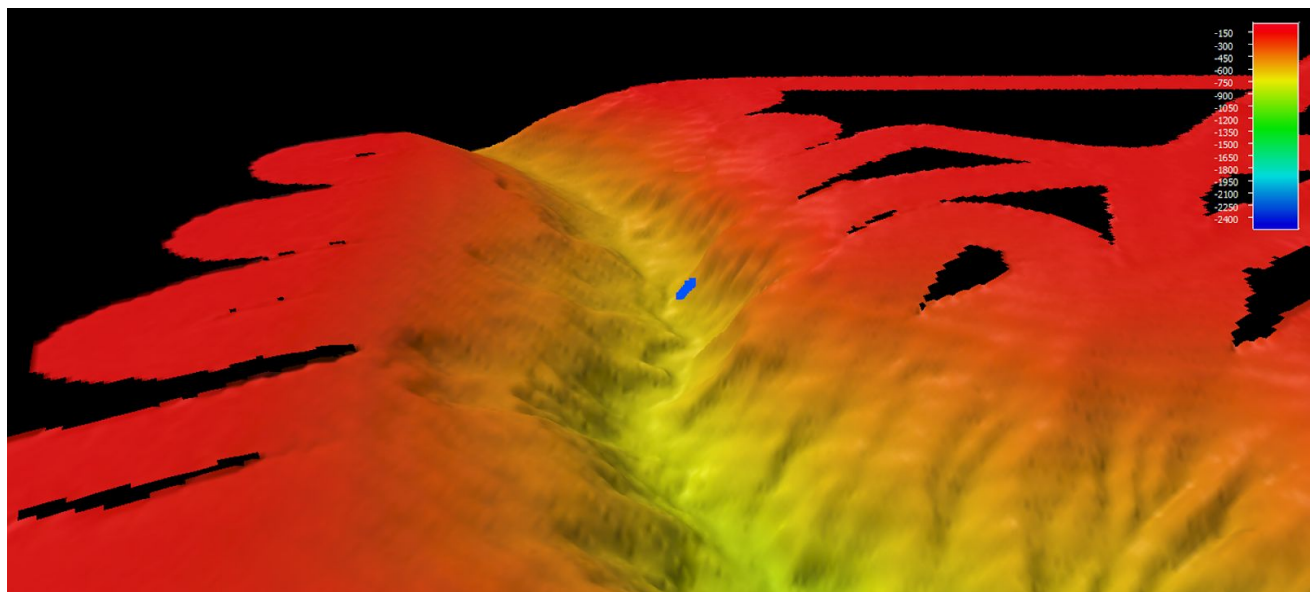
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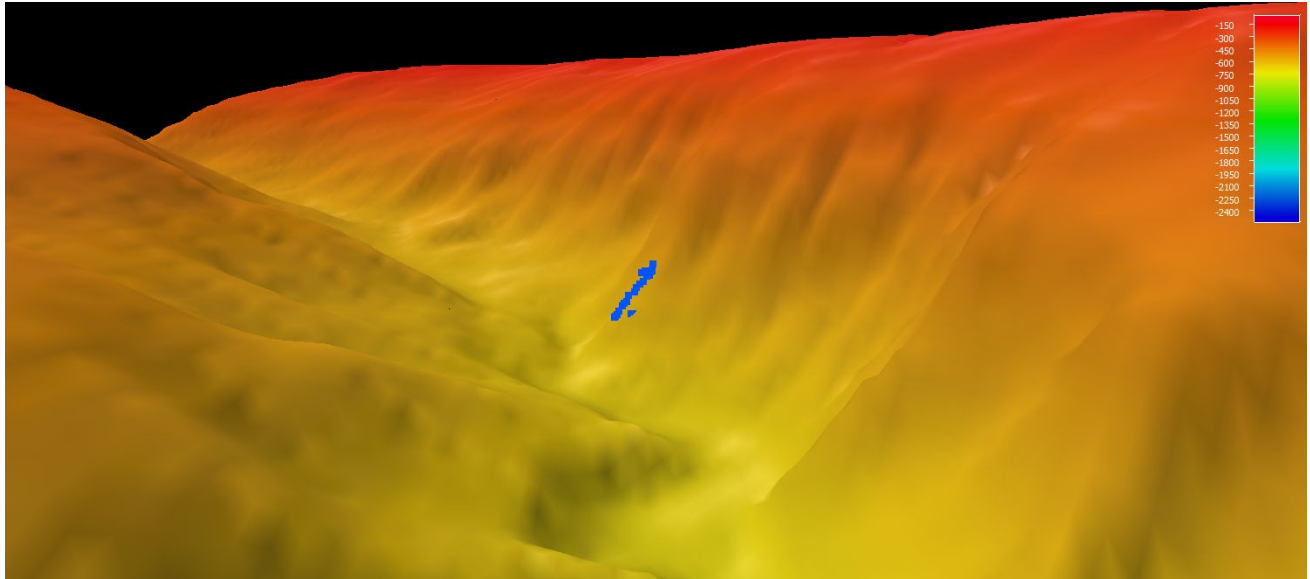
Dive Purpose and Description

Dive Purpose	This site was located within the canyons unit of the Northeast Canyons and Seamounts Marine National Monument. Previous dives within Oceanographer Canyon documented dense deep-sea coral communities, and the dive location was predicted to be highly suitable for coral habitat. This dive also sought to expand knowledge on coral distribution within the canyon.
Dive Description	This dive was relatively short in duration, approximately 2 hours of bottom time, due to a late start. For the first time in the expedition, bottom substrate upon landing was not fine grained sediment, instead composed of a poorly sorted mix of hemipelagic drupe, sand, and cobble to boulder sized clasts. The current was relatively strong throughout the entire dive (estimated at 30-50 cm/s), which hindered ROV positioning and resulted in poor visibility due to suspended sediment. Bottom fauna was dominated by striped shrimp (<i>Plesionika</i> sp.), monkfish (<i>Lophius americanus</i>), deep-sea red crabs (<i>Chaceon quinquidens</i>) and shortfin squid (<i>Illex illecebrosus</i>). The area was notable for the abundance of hard substrate, but relative scarcity of live corals and sponges; evidence of dead or dying coral was prevalent in the canyon axis and lower canyon walls. Live primnoid coral colonies and some encrusting demosponges were observed approximately 50 m off the floor of the canyon. The only sample collected on this dive was a consolidated clay clast from a distinctively pyramid-shaped structure, which appeared to be from a partially dewatered clay layer eroded by canyon currents and debris flows.
Notable Observations	<ul style="list-style-type: none"> - Strong (30-50 cm/s) currents and high turbidity - Presence of primnoid coral on canyon walls, but not in canyon axis or lower canyon walls
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> ✓ Corals and Sponges <input type="checkbox"/> Chemosynthetic Community ✓ 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



Representative Photos of the Dive



The ROV landing site with a short-finned squid (*Illex illecebrosus*) resting on the seabed. The dominant substrate was poorly sorted gravel.



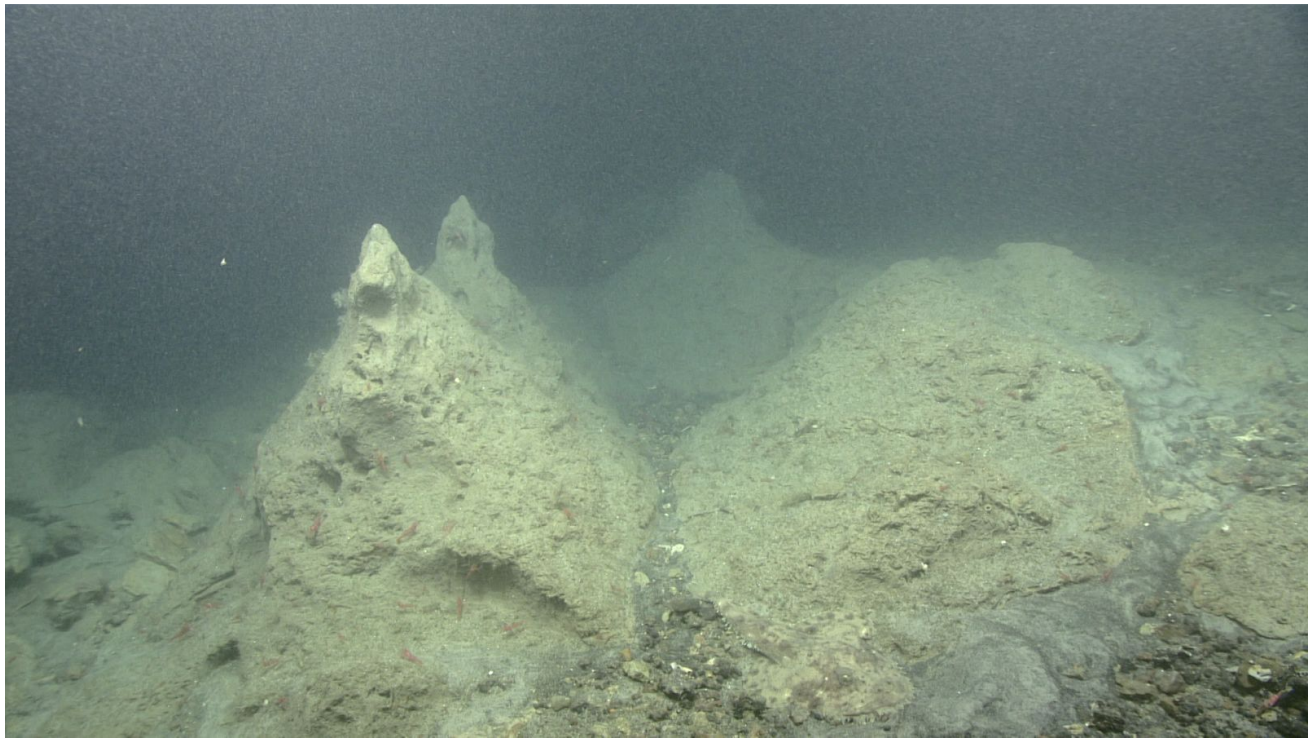


Considerable water turbidity was present throughout the dive on Oceanographer Canyon. Some corals and sponges were observed on the most prominent features, like these primnoid corals.



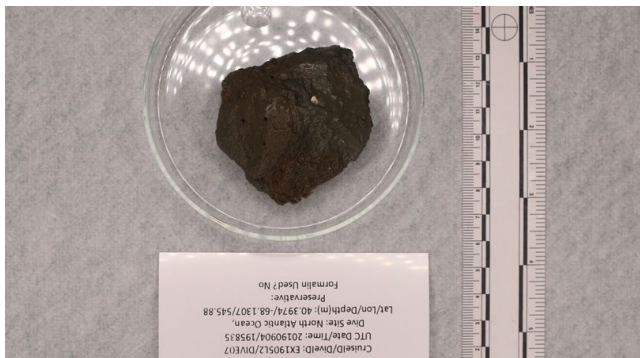
An interesting color morph of the sea star, *Chondraster grandis*. These sea stars, which are usually a rare sight, are particularly abundant in the northeast Atlantic canyons. Sediment ripples can also be seen to upper right.





Pyramids-like structures on the seafloor of Oceanographer Canyon. These were composed of consolidated clay and were highly friable.

Samples Collected



Sample ID	EX1905L2_D07_01G
Date (UTC)	20190904
Time (UTC)	195835
Latitude	40.39740
Longitude	-68.13070
Depth (m)	545.9
Temp. (°C)	6.815
Field ID(s)	Consolidated clay
Commensals	No commensals
Comments	N/A



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