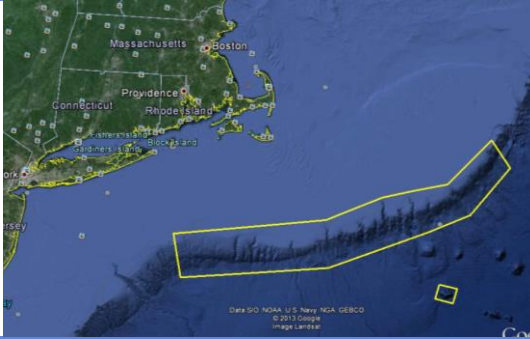


# OKEANOS EXPLORER ROV DIVE SUMMARY

<b>Site Name</b>	Heezen Canyon Shallow			
<b>ROV Lead/Expedition Coordinator</b>	David Lovalvo/ Brian Kennedy			
<b>Science Team Leads</b>	Amanda Demopoulos Martha Nizinski			
<b>General Area Descriptor</b>	Northwest Atlantic Ocean; Northeast U.S. Canyons			
<b>ROV Dive Name</b>	Cruise Season	Leg	Dive Number	
	EX1304	2	DIVE09	
<b>Equipment Deployed</b>	ROV:	Deep Discoverer		
	Camera Platform:	Seirios		
<b>ROV Measurements</b>	<input checked="" type="checkbox"/> CTD	<input checked="" type="checkbox"/> Depth	<input checked="" type="checkbox"/> Altitude	
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> USBL Position	<input checked="" type="checkbox"/> Heading	
	<input checked="" type="checkbox"/> Pitch	<input checked="" type="checkbox"/> Roll	<input checked="" type="checkbox"/> HD Camera 1	
	<input checked="" type="checkbox"/> HD Camera 2	<input checked="" type="checkbox"/> Low Res Cam 1	<input checked="" type="checkbox"/> Low Res Cam 2	
	<input checked="" type="checkbox"/> Low Res Cam 3	<input checked="" type="checkbox"/> Low Res Cam 4	<input checked="" type="checkbox"/> Low Res Cam 2	
<b>Equipment Malfunctions</b>				
<b>ROV Dive Summary (From processed ROV data)</b>	In Water at:	2013-08-09T12:29:27.833000 41°, 03.915' N ; 066°, 23.450' W		
	Out Water at:	2013-08-09T20:42:55.839000 41°, 03.834' N ; 066°, 23.378' W		
	Off Bottom at:	2013-08-09T19:40:55.862000 41°, 03.952' N ; 066°, 23.403' W		
	On Bottom at:	2013-08-09T13:05:13.020000 41°, 03.871' N ; 066°, 23.297' W		
	Dive duration:	8:13:28		
	Bottom Time:	6:35:42		
	Max. depth:	925.9 m		
<b>Special Notes</b>				
<b>Scientists Involved</b> <i>(please provide name / location / affiliation / email)</i>	<b>Primary</b>			
	Adam Skarke, NOAA OER, <a href="mailto:Adam.Skarke@noaa.gov">Adam.Skarke@noaa.gov</a>			
	Amanda Demopoulos, (Science Lead), USGS, <a href="mailto:ademopoulos@usgs.gov">ademopoulos@usgs.gov</a>			
	Brian Kennedy, NOAA OER, <a href="mailto:Brian.Kennedy@noaa.gov">Brian.Kennedy@noaa.gov</a>			
	Jamie Austin, UTIG, <a href="mailto:jamie@ig.utexas.edu">jamie@ig.utexas.edu</a>			
	Jason Chaytor, USGS, <a href="mailto:jchaytor@usgs.gov">jchaytor@usgs.gov</a>			
Katherine Coykendall, USGS, <a href="mailto:dcoykendall@usgs.gov">dcoykendall@usgs.gov</a>				
Les Watling, UH, <a href="mailto:watling@hawaii.edu">watling@hawaii.edu</a>				
Martha Nizinski (Science Lead), NOAA NMFS, <a href="mailto:nizinski@si.edu">nizinski@si.edu</a>				

Michael Vecchione, NOAA NMFS, [VecchioneM@si.edu](mailto:VecchioneM@si.edu)  
 Peter Auster, UCONN, [peter.auster@uconn.edu](mailto:peter.auster@uconn.edu)  
 Rhian Waller, U of Maine, [rhian.waller@maine.edu](mailto:rhian.waller@maine.edu)  
 Robert Carney, LSU, [rcarne1@lsu.edu](mailto:rcarne1@lsu.edu)  
 Santiago Herrera, WHOI, [sherrera@whoi.edu](mailto:sherrera@whoi.edu)  
 Taylor Heyl, WHOI, [theyl@whoi.edu](mailto:theyl@whoi.edu)  
 Tim Shank, WHOI, [tshank@whoi.edu](mailto:tshank@whoi.edu)

**Passive**

Brian Kennedy, NOAA OER, [Brian.Kennedy@noaa.gov](mailto:Brian.Kennedy@noaa.gov)  
 Erick Geiger, URI, [egeiger@udel.edu](mailto:egeiger@udel.edu)  
 Kelly Williams, WHOI, [williamsk@allegheny.edu](mailto:williamsk@allegheny.edu)  
 Kerry McCulloch, WHOI, [mcculloch@uoregon.edu](mailto:mcculloch@uoregon.edu)  
 Nicole Morgan, FSU, [nbmorgan11@yahoo.com](mailto:nbmorgan11@yahoo.com)

**Purpose of the Dive**

The purpose of the dive was to characterize 1) the submarine canyon geomorphology and benthic habitats, including possible coral and sponge communities at a depth of ~1400-1700 m on the southwestern wall of Heezen Canyon and 2) groundtruth a model of predicted deep-sea coral occurrence.

**Description of the Dive:**

Dive # 9 was a shallow dive along the southwestern wall of Heezen Canyon. The ROV was on bottom at 1315 UTC at a depth of 924 m. The dive track started at an area with soft sediment and small rocks. The ROV transited up slope along a steep wall to the top, then along soft sediment and back down the northern part of a steep slope. The 1<sup>st</sup> rock feature was minimally encrusted by fauna, including sponges and anemones. At least 13 species of corals were observed either attached to the vertical face or on small rocks at the top of the slope, including: *Anthomastus*, unknown bamboo, *Acanella*, 2 species of cup corals, *Lophelia pertusa*, *Solenosmilia*, *Paramuricea*, *Primnoa*, *Paragorgia*, *Acanthogorgia*, *Anthothela* and *Clavularia*. Shark egg cases were observed attached to *Paramuricea*, *Paragorgia*, and possibly bamboo coral. Fish species included *Rhinochimaera*, black dogfish, witch flounder, *Sebastes*, black belly rosefish, synaphobranchids, ophidids, long fin hake, offshore hake, eelpout, hatchetfish (midwater), and myctophids (midwater).

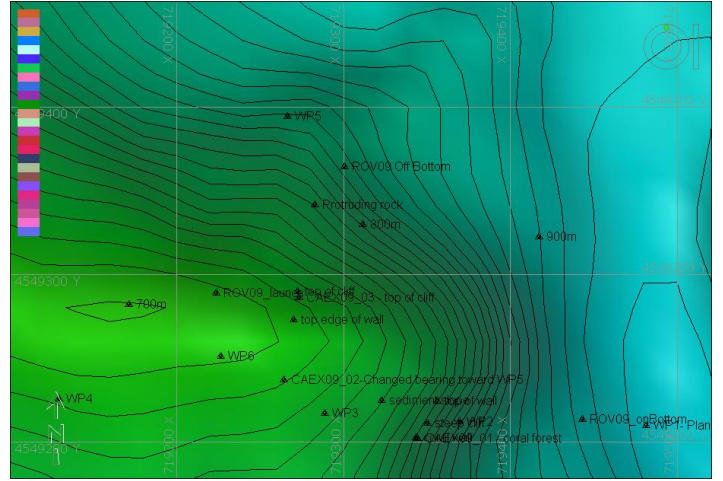
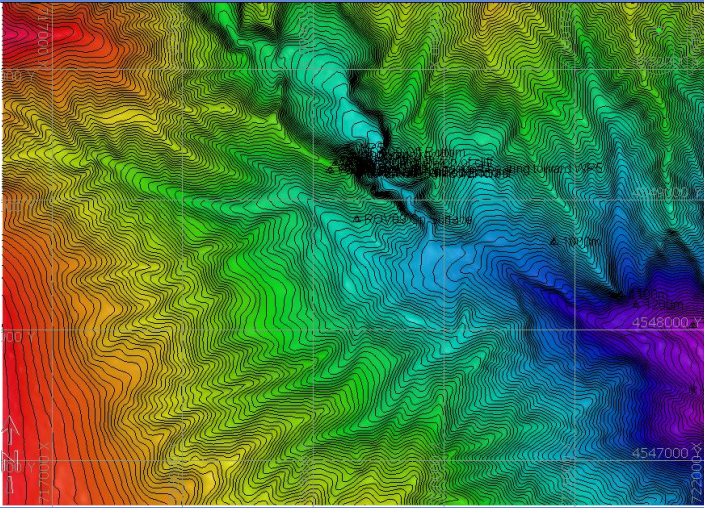
The steep slope was characterized by large rocks composed of mudstone or siltstone with cracks with either a thin sediment drape or clean surface. Along the steep wall, chutes from possible turbidity flows were observed. Also, the geology of the dive track consisted of well exposed, but highly eroded (possibly Oligocene/Eocene age) outcrops, complex failure and sediment transport/canyon cutting morphologies. All providing clues to the possible relationship between lithology, sediment stability, and associated sessile and encrusting organisms. The sediment laden top was interspersed with various sized rocks, usually populated with small colonies of *Acanthogorgia*, with shrimp associates, and sponges.

Highlights of the dive included the enormous *Paragorgia*, *Primnoa*, and *Paramuricea* colonies that were attached to the vertical face. Other corals were interspersed among these > 2m colonies, including very large cup corals attached to the underside of ledges. Predation was also observed, including an eel eating a shrimp, a small fish (possibly midwater) attached to a solitary hydroid, and a fish escaping an octocoral. ROV was off bottom at 2006 UTC at a depth of 742 m.

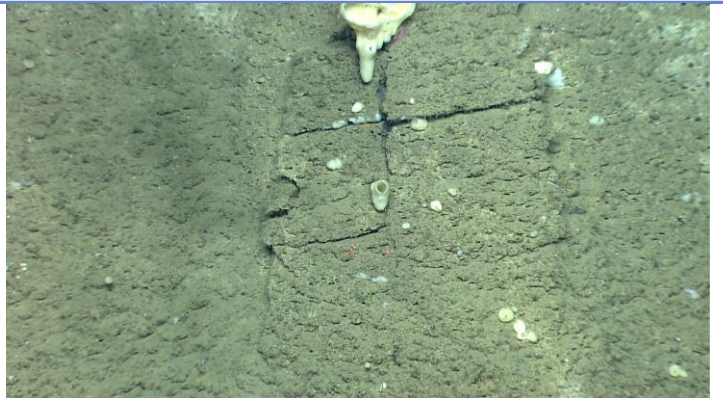
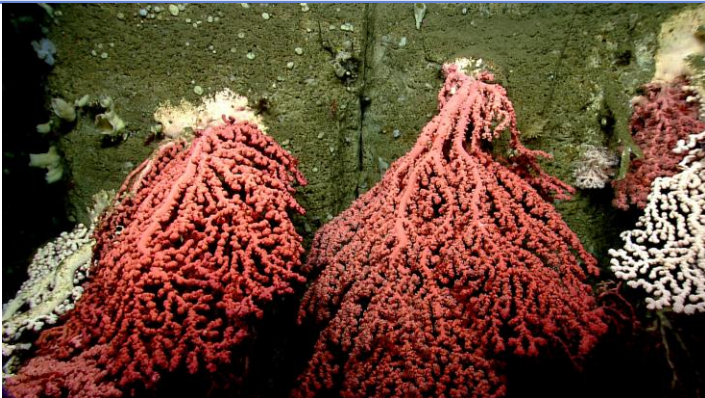
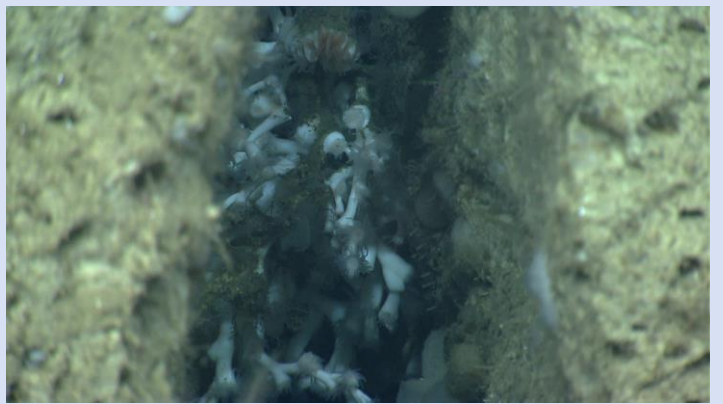
**Overall Map of ROV Dive Area**

**Close-up Map of Main Dive Site**





**Representative Photos of the Dive**



**Please direct inquiries to:**

NOAA Office of Ocean Exploration & Research  
 1315 East-West Highway (SSMC3 10<sup>th</sup> Floor)  
 Silver Spring, MD 20910  
 (301) 734-1014