

OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Heezen Canyon Deep			
ROV Lead/Expedition Coordinator	David Lovalvo/ Brian Kennedy			
Science Team Leads	Amanda Demopoulos Martha Nizinski			
General Area Descriptor	Northwest Atlantic Ocean; Northeast U.S. Canyons			
ROV Dive Name	Cruise Season	Leg	Dive Number	
	EX1304	2	DIVE07	
Equipment Deployed	ROV:	Deep Discoverer		
	Camera Platform:	Seirios		
ROV Measurements	<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	
Equipment Malfunctions				
ROV Dive Summary (From processed ROV data)	In Water at:	2013-08-07T12:35:16.589000 41°, 01.635' N ; 066°, 19.889' W		
	Out Water at:	2013-08-07T20:35:13.420000 41°, 01.877' N ; 066°, 19.383' W		
	Off Bottom at:	2013-08-07T19:37:16.554000 41°, 01.891' N ; 066°, 19.785' W		
	On Bottom at:	2013-08-07T13:30:36.578000 41°, 01.879' N ; 066°, 19.678' W		
	Dive duration:	7:59:56		
	Bottom Time:	6:6:39		
	Max. depth:	1723.4 m		
Special Notes				
Scientists Involved <i>(please provide name / location / affiliation / email)</i>	Primary			
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Purpose of the Dive

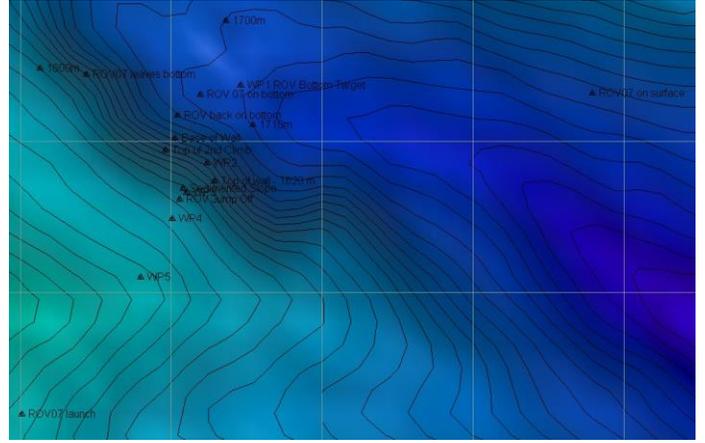
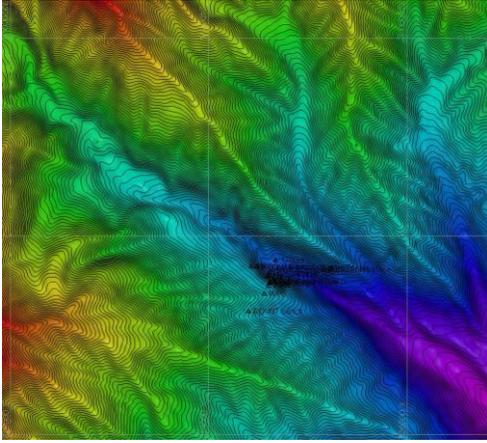
The purpose of the dive was to characterize 1) the submarine canyon geomorphology and benthic habitats, including possible coral and sponge communities at a depth of ~1400-1700 m on the southwestern wall of Heezen Canyon and 2) groundtruth a model of predicted deep-sea coral occurrence.

Description of the Dive:

Today's dive was along a deep section on the southwestern flank of Heezen Canyon. The ROV was on bottom at 1710 m 1349 UTC. For the initial part of the dive, the seafloor was composed of soft sediment with scattered rocks of various sizes and colors. Mudstone slabs, glacial erratics (igneous rock) and granite were among the rocks observed at the base of the slope. One large block was likely dislodged from close by, given that it was relatively intact with little debris nearby. Several fauna were attached to the rocks, including anemones, brisingid seastars, white holothurians, and *Anthomastus*, including several small recruits. On the sediment surface, several xenophyophores, ophiuroids, few sea pens, sea urchins, and a pycnogonid were present. The fish observed during the dive included *Antimora*, chimaera (ratfish), *Hydrolagus* (Chimaeridae), skate, halosaurs (*Aldrovandia*), synphobranchids eels, grenadier, codling, flatfish, *Gaidropsarus*, and mid-water *Cyclothone*. Trash was noted throughout the dive, particularly at the base of the main wall, including line and plastic material. As the ROV ascended the rock wall, the rock face was extensively fractured and had several horizontal striations with multiple holes. The dive track moved upslope along very steep features, sometimes > 90°. The ROV continued upslope to the top of the steepest feature, transited shortly on a long sediment ledge, then was redirected downslope to the steepest feature in the area. The sedimented ledges that were present at the base and top of the slope were often colonized by *Paramuricea*, pale ophiuroids, and xenophyophores. As the ROV transited up slope a second time, and moved laterally to the northwest, a few encrusting fauna dominated the rock assemblages, including brisingid sea stars, cup corals (cf. *Desmophyllum*), sponges, and anemones. Abundances of these taxa were patchy throughout, with some rock surfaces heavily encrusted and others fairly depauperate. Other corals observed in low abundance including *Bathypathes*-related and *Stichopathes* (black corals), *Acanella* (bamboo, 1 with roots visible), *Umbellula* (sea pen), *Acanthogorgia*, and *Radicipes* (octocorals), *Solenosmilia* (colonial hard coral), *Clavularia* (stoloniferous octocoral). On two occasions, a zoanthid mat carpeting rock surfaces was noted living adjacent to cup corals and anemones. A few other sea star species were observed clinging to the rock faces and laying on the sediment surface. Other notable observations during the dive included active predation when a squid was seen eating a fish, chaetonatha (arrow worms) floating in the water column, caprellid amphipods, a purple and pink polychaete laying on the sediment surface, and the retracting proboscis of an echiuran. Periodically the ROV came upon rock faces that appeared recently exposed, with a smooth surface. In addition, there was evidence of high current flow in certain areas where ripple bed forms were clearly visible in the sediment surface. The dive ended at 1937 UTC at a depth of 1621m.

Overall Map of ROV Dive Area

Close-up Map of Main Dive Site



Representative Photos of the Dive



Please direct inquiries to:

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