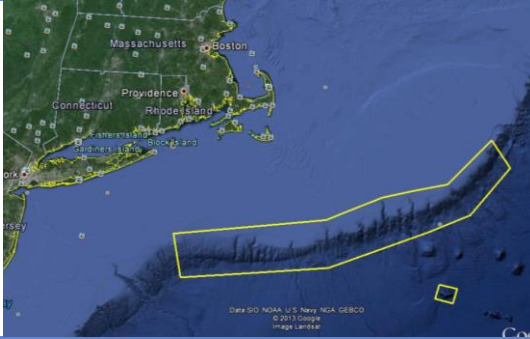


# OKEANOS EXPLORER ROV DIVE SUMMARY

<b>Site Name</b>	Hydrographer Mid 1			
<b>ROV Lead/Expedition Coordinator</b>	Brian Bingham/ Kelley Elliott			
<b>Science Team Leads</b>	Tim Shank (Shore) Andrea Quattrini (Ship)			
<b>General Area Descriptor</b>	Northwest Atlantic Ocean; Northeast U.S. Canyons			
<b>ROV Dive Name</b>	Cruise Season	Leg	Dive Number	
	EX1304	1	DIVE05	
<b>Equipment Deployed</b>	ROV:	Deepwater 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:	2013-07-13T12:37:20.708000 40°, 00.020' N ; 069°, 01.281' W		
	Out Water at:	2013-07-13T20:16:13.667000 39°, 59.900' N ; 069°, 01.587' W		
	Off Bottom at:	2013-07-13T19:27:22.417000 40°, 00.035' N ; 069°, 01.653' W		
	On Bottom at:	2013-07-13T13:42:31.323000 39°, 59.941' N ; 069°, 01.404' W		
	Dive duration:	7:38:52		
	Bottom Time:	5:44:51		
	Max. depth:	1422.7 m		
<b>Special Notes</b>				
<b>Scientists Involved</b> <i>(please provide name / location / affiliation / email)</i>	<b>Primary</b>			
	Tim Shank, Woods Hole (shore-based science team lead), WHOI, <a href="mailto:tshank@whoi.edu">tshank@whoi.edu</a> Andrea Quattrini, EX (onboard science team lead), Temple, <a href="mailto:Andrea.Quattrini@temple.edu">Andrea.Quattrini@temple.edu</a> Brendan Roark, EX, TAMU, <a href="mailto:broark@geos.tamu.edu">broark@geos.tamu.edu</a> Taylor Heyl, Woods Hole, MA; WHOI, <a href="mailto:theyl@whoi.edu">theyl@whoi.edu</a> Peter Etnoyer, Charleston, NOAA, <a href="mailto:Peter.Etnoyer@noaa.gov">Peter.Etnoyer@noaa.gov</a> Santiago Herrera Woods Hole, MA; WHOI, <a href="mailto:sherrera@whoi.edu">sherrera@whoi.edu</a> Scott France, Lafayette, LA, U. Louisiana at Lafayette, <a href="mailto:france@louisiana.edu">france@louisiana.edu</a> Bob Carney, Baton Rouge, LA; LSU, <a href="mailto:rcarne1@lsu.edu">rcarne1@lsu.edu</a> Jason Chaytor, Inner Space Center, USGS at Woods Hole, <a href="mailto:jchaytor@usgs.gov">jchaytor@usgs.gov</a> AJ Turner, Charleston, NOAA, <a href="mailto:aj.turner@noaa.gov">aj.turner@noaa.gov</a> Amanda Demopoulos, Gainesville, FL; USGS SE Ecological Science Center, <a href="mailto:ademopoulos@usgs.gov">ademopoulos@usgs.gov</a> Brian Kinlan, Silver Spring, MD; NOAA NCCOS, <a href="mailto:brian.kinlan@noaa.gov">brian.kinlan@noaa.gov</a>			

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**Passive**

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**Purpose of the Dive**

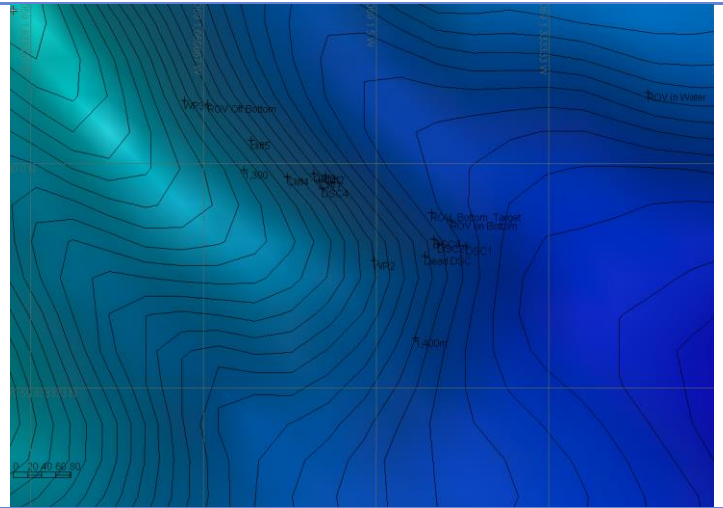
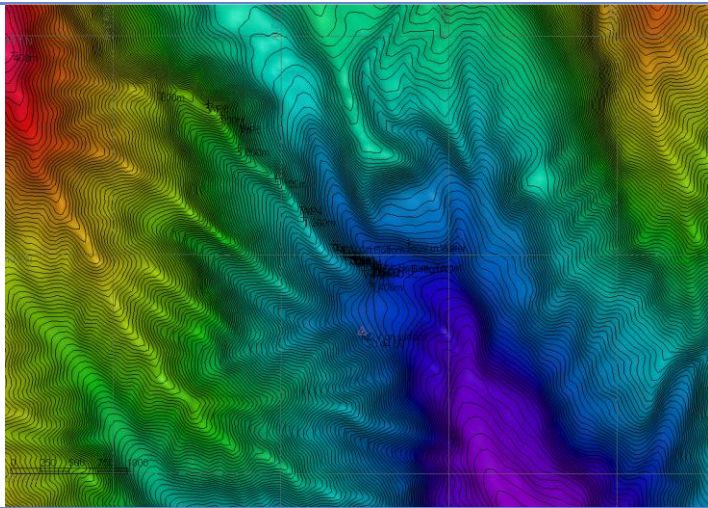
The purpose of the dive was to explore for deep-sea corals (DSC), DSC associates, and other deep-water benthic and mobile fauna such as sponges, fishes and crabs. This was considered a mid-depth dive (~1500-900 m). An additional goal of this dive was to groundtruth a model that predicted the occurrence of DSC associated with slopes >36 degrees.

**Description of the Dive:**

The ROV D2 was launched at 12:31 UTC and reached bottom at 13:26 UTC at a depth of 1418 m. The bottom consisted of large, detached angular sedimentary (compacted mud) blocks. Sediment draping the rocks was highly bioturbated, suggesting that the sediments had been there for quite some time. Almost immediately upon beginning the move to the first waypoint, the ROV crossed one dead and one live *Paramuricea* that had been detached from the substrate and were lying on the seafloor, overgrown with *Anthothela*. Upon taking closer images of the seafloor, small sizes of both *Paramuricea* and bubblegum coral, *Paragorgia arborea*, were noticed. These small-sized (~2-5 cm tall) individuals, indicative of new recruits, were seen throughout the deeper portion of the dive. Additional corals observed in this area included *Acanella*, *Keratoisis*, and a black coral, *Parantipathes*. Numerous octopods were observed under the ledges of the rock blocks. At 14:55 UTC, the ROV left a depth of ~1420 m and began to transit up a steep sediment covered slope towards waypoint 2. Of note, a lithodid spider crab, white octopus (*Muusoctopus johnsoniana*), a comatulid crinoid, and rat-tail (*Macrourus berglax*) missing part of its tail were observed. What appeared to be a helium balloon wrapped around a dead coral skeleton was observed at 15:10 UTC. At 15:14 UTC (DPL target DSC 2) a vertical cliff face at a depth of 1376 m was observed and covered in several of different species of DSC including *Acanella*, *Parantipathes*, *Keratoisis*, *Anthomastus*, *Acanthogorgia*, *Paragorgia arborea*, *Clavularia rudis* and *Desmophyllum*. At 17:09 UTC, the ROV continued to transit over blocky rock outcrops with extensive bioerosion, likely sedimentary mudstone, and extensive coral gardens until ~17:27 when a more sedimented slope was crossed. At a time of 17:39 UTC and a depth of 1352 m, the ROV began making its final transit to waypoint 3, continuing to move over a sedimented slope with numerous burrows. Numerous xenophyophores were seen in this sedimented area. Near the end of the dive, at time 18:05 another large vertical wall was seen; both octocorals, cup corals and what appeared to be *Solenosmilia variabilis* were observed in this area. In addition, numerous columnar structures within the wall face and dislodged at the bottom were observed and a small slope failure at 18:10. During this dive, the ROV also filmed an octopus guarding eggs in a burrow (~18:31 UTC). At the very end of the dive, a fathead fish (*Cottunculus thomsonii*) was observed. In total, at least 12 species of DSC were observed throughout this dive. Numerous species of associates (shrimps, squat lobsters, isopods, amphipods) were observed on the coral colonies. Of note, each *Parantipathes* had two galatheid squat lobster associates, whereas ophiuroid brittle stars were on the larger *Paramuricea* colonies. In addition, there was a strong current out of the north-west throughout the dive. The ROV left the bottom at 19:37 UTC and a depth of 1299 m.

Overall Map of ROV Dive Area

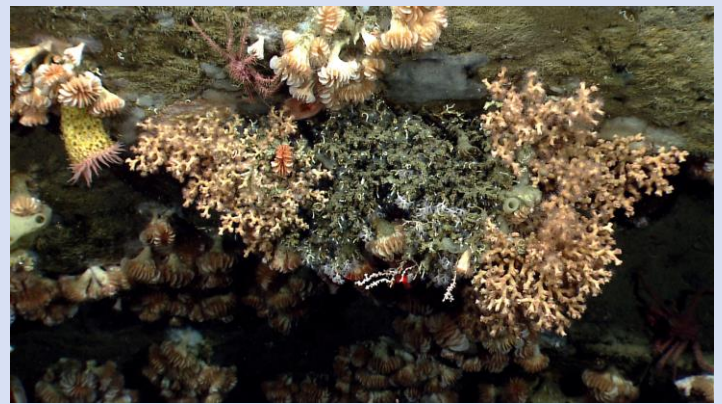
Close-up Map of Main Dive Site



**Representative Photos of the Dive**



A recently settled coral (likely *Paragorgia arborea*) at 1420 m.  
Size estimate ~2-3 cm.



Deep-sea coral community at 1340 m depth including cup corals (*Desmophyllum*) and likely *Solenosmilia variabilis* (branching stony coral). Also in image include a lithodid spider crab and an anemone.

**Please direct inquiries to:**

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