OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Nygren/Heezen Intercanyon		
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	DIVE10
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 2
Equipment Malfunctions			
ROV Dive Summary (From processed ROV data)	In Water at: 2013-08-11T12:26:17.763000 40°, 51.807' N ; 066°, 32.484' W Out Water at: 2013-08-11T20:35:52.952000 40°, 52.089' N ; 066°, 32.284' W Off Bottom at: 2013-08-11T20:18:04.825000 40°, 52.187' N ; 066°, 32.293' W On Bottom at: 2013-08-11T13:04:37.836000 40°, 51.745' N ; 066°, 32.666' W Dive duration: 8:9:35 Bottom Time: 7:13:26 Max. depth: 824.3 m		
Special Notes			
Scientists Involved *(please provide name / location / affiliation / email)*	**Primary** Amanda Demopoulos (Science Lead), USGS, ademopoulos@usgs.gov Amy Baco-Taylor, FSU, abacotaylor@fsu.edu Andrea Quattrini, Temple, andrea.quattrini@temple.edu Brian Kennedy, NOAA OER, Brian.Kennedy@noaa.gov		

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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 and 2) groundtruth a model of predicted deep-sea coral occurrence. The New England and Mid-Atlantic Fisheries Management Councils are particularly interested in intercanyons to provide more information on depth boundaries for deep-sea coral protection.

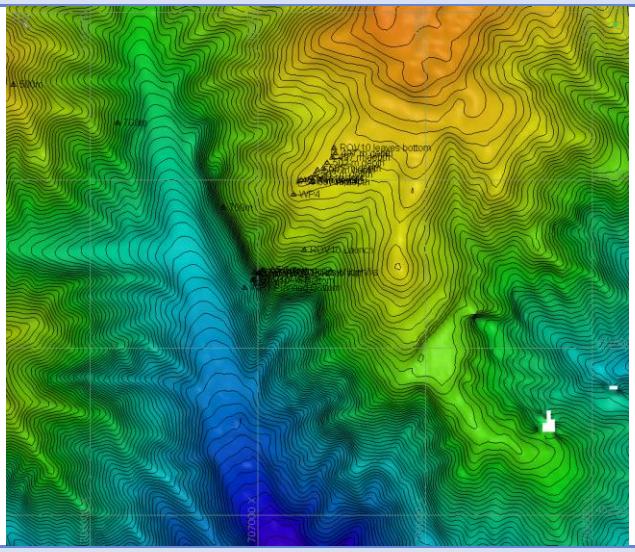
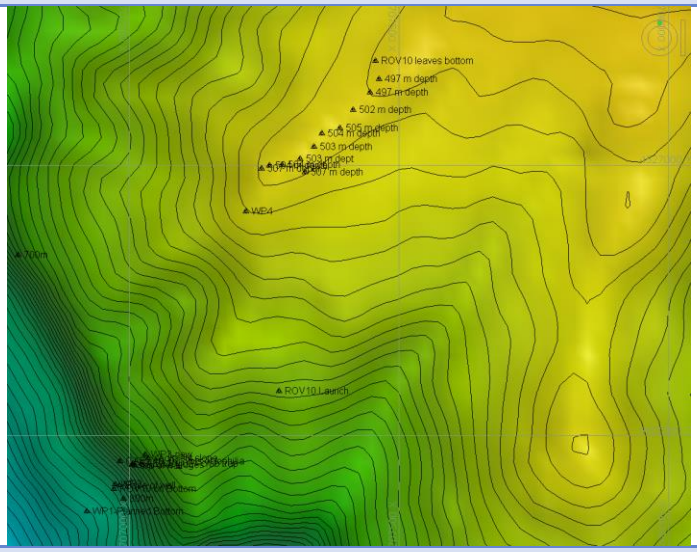
Description of the Dive:

Dive # 10 was along the northeastern wall of an intercanyon between Heezen and Nygren Canyon. ROV was on bottom at 1304 UTC at 822 m depth. The dive track traversed several transition zones, allowing us to examine a suite of habitat types and diverse geological features. Specifically, the track initially transitioned from soft sediment over rocky ledges to sediment with coral rubble, then a steep slope with variegated wall structure. The wall was composed of thinly layered bedding planes, with ledges populated with various fauna, including sponges, cup corals, octocorals, colonial scleractinians, bivalves, seastars, fish, anemones, zoanthids, shrimp, and a few urchins. Iron-stained sediment was present in a few areas, sometimes associated with a yellow-white film covering the red discolored sediment, possibly microbial in origin. The ROV reached the top of the steep slope at 689 m, and the substrate changed to a sediment field with scattered rocks of various sizes. These rocks consisted of talus type and glacial erratics (rounded stones), many with well-developed current moats or depressions around their perimeter. A majority of the rocks from 500-689 m were colonized by encrusting sponges and anemones; many also had small colonies of *Acanthogorgia*. Additionally, several mobile fauna, including squat lobsters, red crabs, and a variety of fishes, were observed in association with these rocks. Cancer crabs also were observed along the sediment plane at the top of the slope.

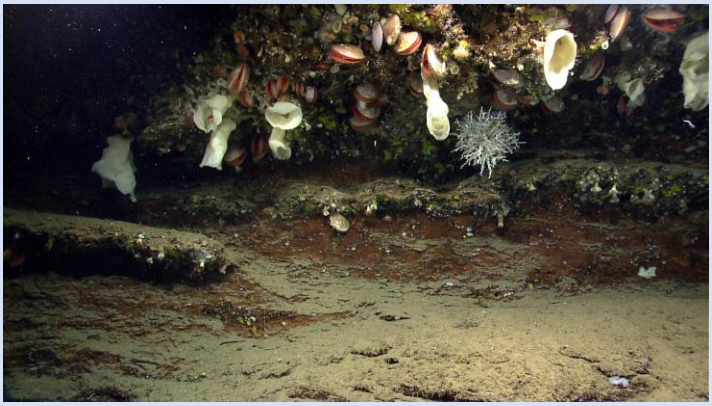
Throughout the dive, several fish species were observed, including rattails, *Antimora*, black dogfish, catshark, witch flounder, longfin hake, *Sebastes*, eelpout, ophidids (in cracks in wall), tonguefish, two different skates, fathead, barracudina, and black belly rose fish. At least 15 species of corals were documented during the dive, including cup corals (*Javania* and/or *Desmophyllum*), *Acanella*, *Acanthogorgia*, *Anthothela*, *Lophelia pertusa*, *Primnoa*, *Solenosmilia*?,

unknown white octocoral, *Paragorgia*, *Clavularia*, white stoloniferous octocoral, *Paramuricea* (yellow), *Paramuricea* cf. *placomus* (purple), and an unknown soft coral.

Highlights from today's dive were the large *Lophelia pertusa* colonies, additional examples of predation, a new soft coral observation, and several small colonies of *Acanthogorgia* on rocks scattered around 500 m. One crab trap was observed near the top of the slope, 696 m, with corals and seastars attached to the base of the trap. Two *Paramuricea* colonies were knocked over nearby. Fish appeared abundant and diverse, mostly present in sedimented areas, some near boulders, and others within concavities in the rock wall. Swarms of amphipods, many ctenophores, and multiple salp chains were present in the water column as the ROV traversed the sedimented plain at the top of the slope. The ROV was off bottom at 2015UTC at 498 m.

Overall Map of ROV Dive Area	**Close-up Map of Main Dive Site**
	

Representative Photos of the Dive

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