OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	USGS Hazard 5		
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	DIVE15
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: 2013-08-16T12:24:46.248000 39°, 51.638' N ; 070°, 03.429' W Out Water at: 2013-08-16T20:39:08.327000 39°, 52.293' N ; 070°, 03.143' W Off Bottom at: 2013-08-16T20:11:47.258000 39°, 52.331' N ; 070°, 02.827' W On Bottom at: 2013-08-16T12:59:49.297000 39°, 51.633' N ; 070°, 03.748' W Dive duration: 8:14:22 Bottom Time: 7:11:57 Max. depth: 899.3 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 Eleanor Bors, WHOI, ekbors@gmail.com Jamie Austin, UT, jamie@ig.utexas.edu Jason Chaytor, USGS, jchaytor@usgs.gov Kelly McCulloch, WHOI, mcculloc@uoregon.edu Kelly Williams, WHOI, williamsk@allegheny.edu		

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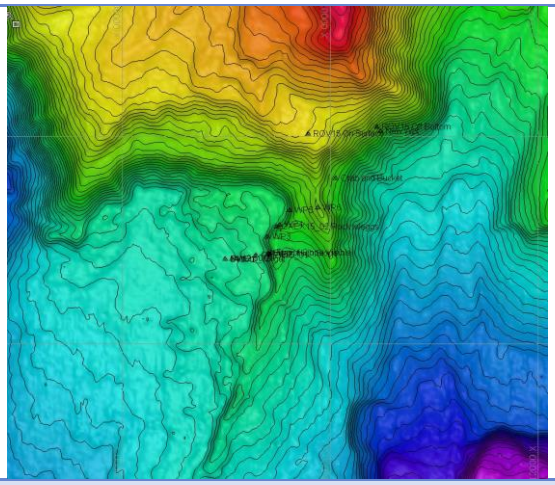
Purpose of the Dive

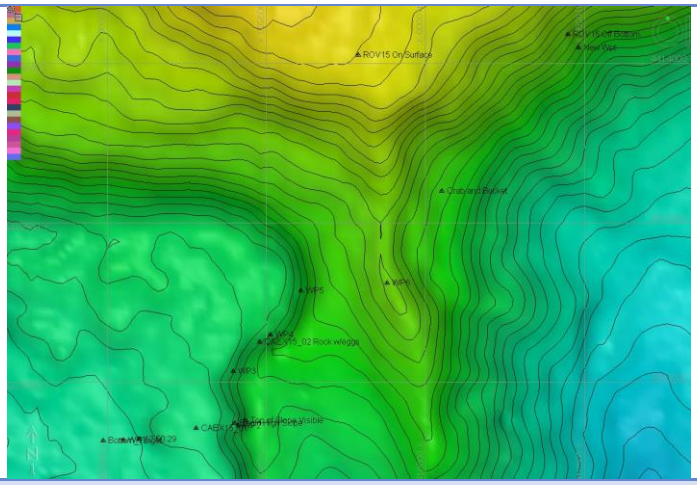
The purpose of this proposed dive is to investigate small, potentially recent, landslide debris deposits and scarps within a larger landslide scar on the upper continental slope. The scientific rationale for this site is: 1) to determine if these small landslide debris features are relatively young and if they pose a hazard in terms of tsunami generation; 2) evaluate the long term stability of landslide scars and test hypotheses about their evolution, 3) attempt to develop a means of using biologic activity on the scarps and deposits as a means of determining relative ages of the features and the response of bottom communities to catastrophic events.

Description of the Dive:

Today we had a relatively shallow dive at a landslide debris field between Alvin and Nantucket Canyons. The ROV was on bottom, ready to explore, at 1304 UTC at a depth of 896 m. The dive started along a smooth sedimented seafloor that transitioned to hummocky terrain. Several burrows of different sizes were observed throughout the dive, some occupied by red crabs, others by squat lobsters. The 1st large rock was observed at 885 m. The landslide debris area was heavily sedimented, possibly an indication that the landslide had occurred long ago in geological time scales. The ROV transited up a sedimented slope throughout the rest of the dive. Once the ROV reached the top of the ridge at 778 m, it then moved to the final waypoint target, in search of possible coral habitat. Based on the coral habitat suitability model, this waypoint represented a transitional area between little to no likelihood of coral presence to low to medium likelihood of finding coral. On the soft sediment terrain and in the water column, we observed several fish species, including: *Stomias*, *Cyclothone*, possibly two types of eelpouts, witch flounder, black dogfish, catshark (*Apristurus*), longfin hake, rattails, synaphobranchid eels, duck-bill eels, green eye, gempylids, *Antimora*, skate, and two other eel types. Several fish parasites were observed, including copepods infesting synaphobranchid eels and an isopod attached to a rattail. At least four different kinds of squid were noted: *Chiroteuthis*, *Illex*, *Brachioteuthis*, and *Mastigoteuthis*. Several predation events occurred, including a squid eating fish, fish eating something unidentifiable, and crab eating a benthic ctenophore. There were a few items of trash identified, two pieces of monofilament, and an object resembling a 5 gallon bucket, with a flytrap anemone attached to one side. Very few boulders were noted on the dive; the surfaces were populated by flytrap anemones, serpulid polychaetes, white sponges, and *Cottunculus* was observed resting at the base of these hard substrates. The boulders appeared rounded, worn, with potentially a manganese iron crust, likely glacial erratics. One of the boulders had a large egg mass on the surface. However, there were some boulders that we were unable to characterize due to limited time. In addition, we saw a large egg case (~10 cm across) on the seafloor. Before leaving the bottom, a large shark, identified as a Greenland Shark, was observed in the Seirios HD view. D2 was able to capture this on video. What a way to end a fabulous cruise! The ROV left bottom at 2011 UTC from a depth of 783 m.

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





Representative Photos of the Dive

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