OKEANOS EXPLORER ROV DIVE FORM

Site Name	DeSoto Canyon Dragon Head							
ROV Lead/Expedition Coordinator	Dave Lovalvo/Jeremy Potter							
General Area Descriptor	~250nm northwest of Tampa, Florida							
UTC Date & Time	Deployment	3/28/2012 12:24 PM						
	Recovery	3/28/2012 20:16 PM						
Bottom Time [HH:MM]	7:92							
Landing Time & Location	UTC Time	12:54			Depth [m]	475		
	Latitude	29	º	28.22	′	N		
	Longitude	86	º	51.350	′	W		
Off Bottom Time & Location	UTC Time	20:16			Depth [m]	382		
	Latitude	29	º	28.628	′	N		
	Longitude	86	º	51.211	′	W		
ROV Dive Name	Cruise Season	Leg	Dive Number					
	EX1202	LEG02	ROV8					
Equipment Deployed	ROV:	Little Hercules						
	Camera Platfom:	Seirios Camera Platform						
ROV Measurements	☒ CTD	☒ Depth	☒ Altitude					
	☒ Scanning Sonar	☒ USBL Position	☒ Heading					
	☒ Pitch	☒ Roll	☒ HD Camera					
	☒ Low Res Cam 1	☒ Low Res Cam 2						
Equipment Malfunctions	None							
Special Notes	Click here to enter text.							
Scientists Involved *(please provide name / location / affiliation / email)*	Tim Shank (on-board Science Lead), EX, WHOI, tshank@whoi.edu Pen-Yuan Hsing, PSU, penyuan.hsing@psu.edu Eleanor Bors, WHOI, WHOI, ekbors@gmail.com Catriona Munro, WHOI, WHOI, cmunro@whoi.edu							

Purpose of the Dive: The DeSoto Canyon region is characterized by flat sedimented area at its uppermost tip. Our bathymetric data showed a single, 600 m long, 100 tall, mound here with strong backscatter signal suggesting hard grounds. Today's dive will explore this hill, characterize its geology and fauna, and to ground truth the bathymetric and backscatter data.

Description of the Dive:

The ROV reached bottom just south of the hill as planned, and we proceeded north to go upslope.

At 10:05 EDT, we came upon the first coral area, mostly white octocorals (possibly Plexaurids) and about 10-20 cm tall. The seafloor has more hard edges here. There were also multiple seruplids, sponges, and blackbellied rosefish. After departing this area, we noted more anemones along the way (such as Venus fly traps anemones), hake and codling fish, sea urchins, and another octocoral with a squat lobster.

The edge of the hill was reached at about 10:15 EDT (29º28.395”N, 86º51.244”W, depth 446 m), and we started transiting up slope. During this process we encountered more Plexauridae octocorals, sponges (some identified as Hexactinellid), shrimps, Scorpaenidae and hatchet fish (Polypnius clarus), squat lobsters (E. picta) and assorted white anemones. It was noted that the white vase sponges we saw were Aphrocallistes beatrix, common in the straits of Florida with potent anti-pancreatic cancer compounds. This area is similar to what we have seen at Viosca Knoll sites at this depth. We imaged a red/pick looking coral on the slope (10:32 EDT, depth 428m), which could be Chelidonisis.

Between about 10:45-10:50 EDT (29º28.41”N 86º51.24”C, depth 426.7m), we witnessed a very rare anenome predation event when it ate a hatchet fish. This was in an area characterized by small rubble across the seabed, with a high density of anenomes, white octocorals, sponges (possibly Aphrocallistes), crinoids, sea stars (including a big red one at 10:58 EDT), and sea urchins (possible Cideroid). We imaged an urchin (could be Echinus) at 11:12 EDT (29º28.43”N, 86º51.24”W, depth 408 m).

The entire slope is comprised of blocky rubble rocks, usually not more than 15-20 cm in diameter. Some looked like coral rubble. We encountered the highest density of anemones of the cruise so far, and they were usually growing on the rubble. Also, the rocky bottom is often covered by a fuzzy material, possibly forams.

We made the first Lophelia coral sighting at 11:27 EDT (29º28.45”N 86º51.25”W, depth 395m), and imaged it extensively. Soon after we imaged multiple brittle stars on Plexauridae octocoral colonies. A virtual target D8-01 was dropped in this area.

The coral rubble became quite dense near 29º28.492”N 86º51.267”W (11:39 EDT) at about 380m. It seems that the top of the hill is where coral rubble is most dense. Perhaps there were many live corals here in the past. As we moved north along the top ridge, and mound crests, we noted a high density of sea urchins, anemones, sponges (such as lollipop or ping pong sponges), more hake and hatchet fish, crabs, sea stars, and several ophiuroids. The top of this hill is about 370-380 m deep. At 11:49 EDT, we encountered a school of Hoplosthetus fish and dropped a virtual target "D8-02 fish habitat". Several more Lophelia coral colonies were noted along the way and imaged. It was at the top when we noticed a strong water current coming from the east. At 12:29 EDT we witnessed a jellyfish being eaten by a crab. The next Lophelia patch was found at 12:36 EDT (virtual target "D8-04 Lophelia", 29º28.56"N 86º51.26"W, depth 373 m), another hatchet fish was consued by an anemone here.

At about 12:55 EDT we made the decision to make a 150 m transit due west, to chase a strong backscatter target off the hill. Due to the strong current from the east, the transit took only 15 minutes. Once there at 13:20 EDT (29º28.599"N 86º51.332"W, depth 442 m), we made our way back east and up the slope. The west, leeward side of the hill has noticeably lower density of fauna, such as anemones and sponges. There were no Lophelia patches in the area observed, but coral rubble was roughly consistent in density compared to the top of the hill. As we moved up the hill, fauna density increase accordingly.

At 14:06 EDT we reached the top of the hill again (29º28.57"N 86º51.26"W, depth 373 m), and imaged a white sponge with tubes along its rim, and a the first catshark of the dive. Afterwards, we explored the eastern edge of the top, looking for more Lophelia patches, heading north.

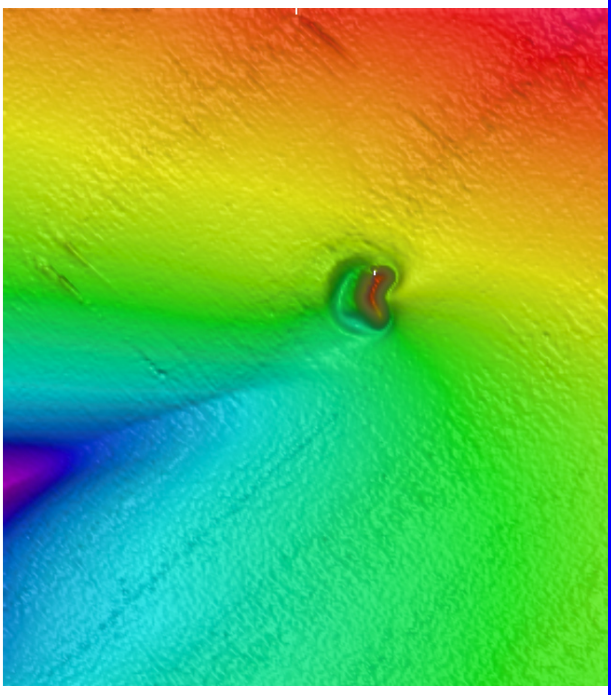
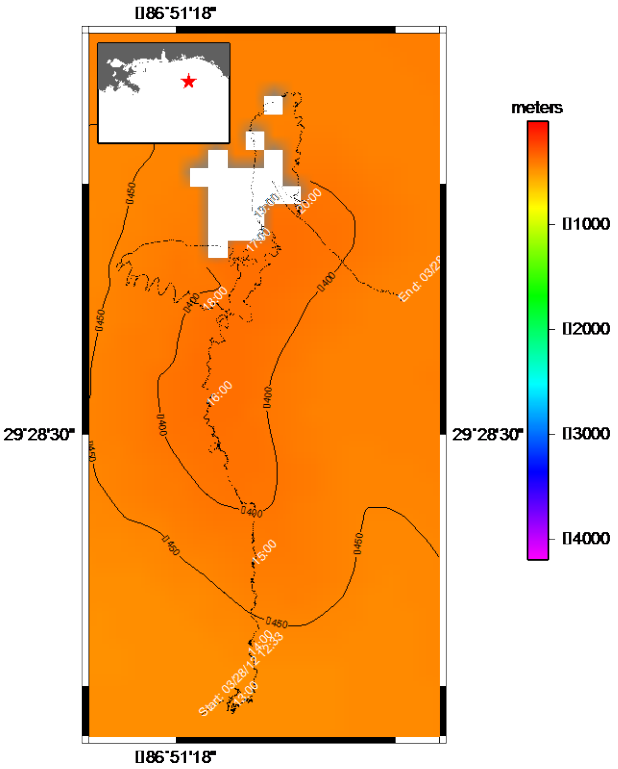
The first patch during this transit was D8-05 (29º28.57"N, 86º51.25"W) at 14:20 EDT. Another catshark was here, too. Afterwards, we intensively imaged a ping pong sponge at "D8-06 ping pong sponge" (29º28.59"N, 86º51.24"W), with Caprellid amphipods on it. Soon after that we reached the north tip of the ridge, characterised by a patch (perhaps 5 x 5 m) of yellow encrusting sponges (virtual target "D8-07 yellow encrusting sponge", 29º28.62"N, 86º51.23"W). At this point (14:52 EDT) we made another transit, 120 m due north, so that we can work our way upslope again.

This area (120 m north of the hill) has substantially less coral rubble, with lots of sedimentation. Anemones were still abundant, and were all pointed east toward the incoming current. Multiple predation events by hake fish on shrimp was also observed. At 15:33 EDT we imaged a white possible Bathypathes coral (virtual target "D8-08 Bathypathes? (sp?)" 29º28.68"N, 86º51.21"W, depth 427 m).

As we headed south and closer to the hill, coral rubble density increased again. Two major observations here included D8-08, a white Bathypathes coral, and D8-09, a white Leiopathes coral with an adjacent scallop. They were both firsts for the dive.

The dive ended at about 16:15 EDT, after 15 minutes of NOAA imaging of anemones.

The water temperature was consistent through the dive at about 9.3-9.4ºC. The last virtual target was D8-09.

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

Representative Photos of the Dive	
	
EX1202L2_IMG_20120328T145022Z_ROVHD_FSH_ACN.jpg (cropped from original) Predation event involving anemone consuming hatchet fish. We saw at least two such events during the dive.	EX1202L2_IMG_20120328T152720Z_ROVHD_CORL.jpg (cropped from original) Lophelia coral (white), among anemones and ping pong sponges.

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