

Okeanos Explorer ROV Dive Summary

Dive Information			
General Location	<p style="text-align: center;">Gulf of Mexico 2017</p>		
	General Area Descriptor	Gulf of Mexico	
	Site Name	KC 560	
	Science Team Leads	Diva Amon and Charles Messing	
	Expedition Coordinator	Brian Kennedy	
	ROV Dive Supervisor	Dan Rogers	
	Mapping Lead	Mike White	
ROV Dive Name			
Cruise	EX1711		
Leg	-		
Dive Number	DIVE11		
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

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	Tom Bjerstedt Bjerstedt	BOEM	Unavailable
Purpose of the Dive	The dive site was a BOEM seismic anomaly suspected to be a mud volcano with hydrocarbon seepage. The primary objective for this dive was to acquire baseline information on the distribution and abundance of benthic fauna, in particular chemosynthetic habitats. This will aid in gaining insight into the diversity, biogeography, and connectivity of these communities. Improving the geological understanding of the composition and origin of the area was also of importance		
Description of the Dive	The ROVs touched down close to a brine river with reduced sediment, bacterial mats, <i>Bathymodiolus</i> sp., <i>Lamellibrachia</i> sp., Chaetopteridae sp., <i>Alvinocaris muricola</i> , <i>Munidopsis</i> sp., Polynoidae sp., anemones, hydroids, amphipods, and unknown, rapidly undulating polychaetes projecting from tubes. A <i>Cataetyx laticeps</i> was spotted in an excavated pit. Nearby authigenic carbonates and asphalt mounds supported <i>Lamellibrachia</i> sp. bushes, octocorals (Plexauridae sp., Isididae sp., <i>Clavularia rudis</i>) and their commensals (ophiuroids, Antedonidae sp. crinoids, Scalpellidae sp., and		



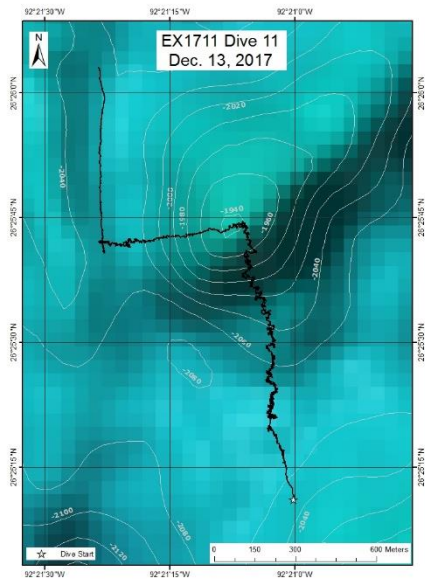
squat lobsters). Farreidae sp. sponges and Ceriantharia sp. were also observed on these outcrops.

Thereafter, geologically active areas were much less common, although areas that did not appear to be chemosynthetic were sometimes inhabited by *Siboglinum* sp. Sedimented areas were interspersed with carbonate outcrops that hosted Isididae sp., *Acanthogorgia* sp., Plexauridae sp., Chrysogorgiidae sp., *Clavularia rudis*, Stolonifera sp., Brisingidae sp., encrusting Demospongiae sp., Euplectellidae sp. and Geodiidae sp. Continuing up sedimented slopes, we observed a high diversity of holothurians (*Benthoodytes abyssicola*, *Eynpniastes eximia*, *Benthothuria funebris*, *Benthoodytes typica*) and fishes (*Aldrovandia affinis*, *Diplacanthopoma* sp., *Coryphaenoides mexicanus*, *Bathysaurus mollis*, *Ipnops meadi*, *Cataetx laticeps*). Additionally, many *Lepidisis caryophyllia* were observed growing directly in sediment, as well as many echiuran feeding traces.

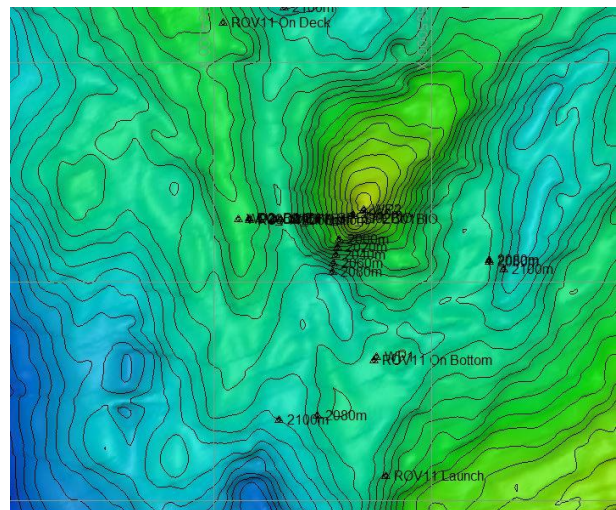
The slope became steeper (60° gradient roughly) and culminated in a sedimented local high. Moving up the slope, carbonate outcrops hosted *Paramuricea* sp. with commensal ophiuroids and squat lobsters, Zoanthidea sp., Euplectellidae sp., *Chaceon quinquedens*, Ceriantharia sp., and Cirripedia sp. The ROV then traverses quickly downslope to an unexplored sedimented trough and then up a second local high with more *Lepidisis caryophyllia*.

Notable observations included a swimming munnopsid isopod that was carrying a large piece of sargassum, a Euplectellidae sp. that hosted at least five commensal polychaetes and amphipods inside, a swimming Polynoidae, a plastic sheet, and two very active small brachiopods.

Overall Map of the ROV Dive Area



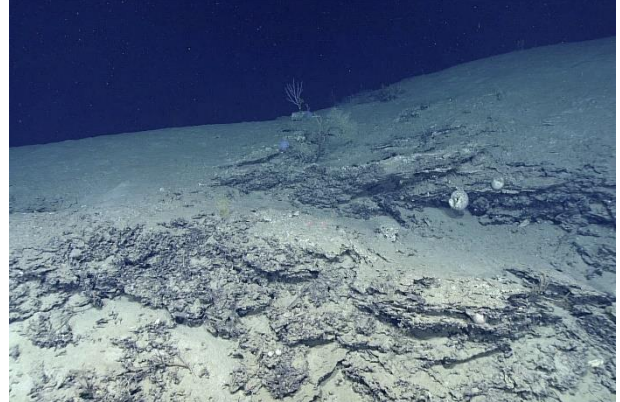
Close-up Map of Main Dive Site



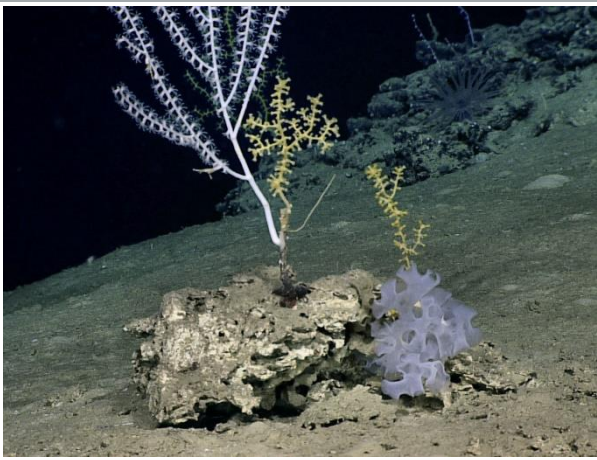
Representative Photos of the Dive



A viviparous bythitid (*Cataetyx laticeps*) and chemosynthetic *Lamellibrachia* sp. tube worms at a cold seep characterized by interconnected “rivulets” of anoxic sediment with white bacterial mats. Depth: 2,070 m.



Layered carbonate and asphalt outcrop with spherical demosponge (?Geodiidae) and octocorals on the distant horizon. Depth: 2,064 m.



White isidid, yellow ?*Acanthogorgia* sp. octocorals, and *Farrea* sp. hexactinellid on an isolated carbonate cobble. The ?*Acanthogorgia* sp. at center and isidid are both growing on the broken axis of a dead octocoral. Depth: 2,064 m.





A long-legged, swimming *Munnopsis* sp. isopod carrying a dead sprig of *Sargassum* brown algae. Depth: 1,921 m.

Samples Collected

Sample

Sample ID	EX1711_20171213T203651_D2_DIVE11_SPEC01BIO
Date (UTC)	20171213
Time (UTC)	203651
Depth (m)	2056.57
Temperature (°C)	4.27

Field ID(s)	Isididae	
Commensal ID and Field Identification	None	
Comments		
Sample		
Sample ID	EX1711_20171213T213200_D2_DIVE11_SPEC02BIO	
Date (UTC)	20171213	
Time (UTC)	213200	
Depth (m)	2033.33	
Temperature (°C)	4.28	
Field ID(s)	Porifera	
Commensal ID and Field Identification	Sediment	
Comments		

Please direct inquiries to:

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