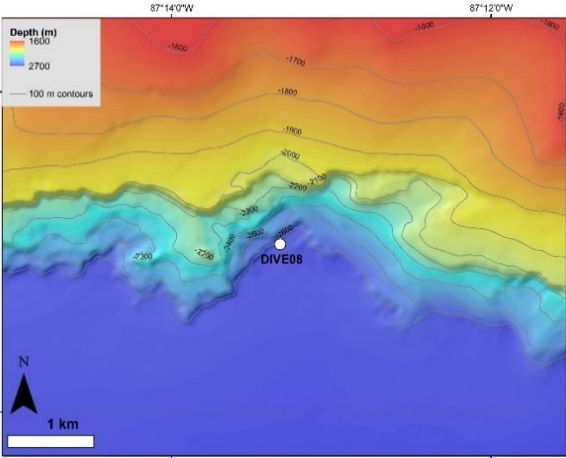
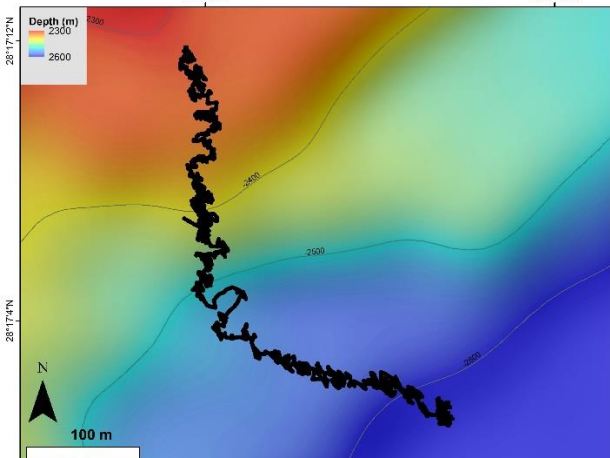


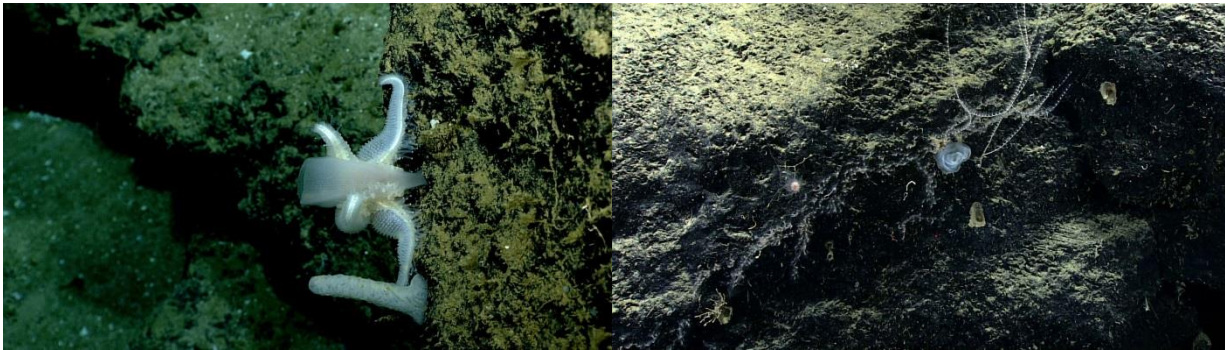
Okeanos Explorer ROV Dive Summary

Dive Information	
General Location Map	
General Area Descriptor	Gulf of Mexico
Site Name	Northern West Florida Escarpment, DeSoto Canyon region
Science Team Leads	Daniel Wagner (Biology) Adam Skarke (Geology)
Expedition Coordinator	Nikolai Pawlenko
ROV Dive Supervisor	Karl McLetchie
Mapping Lead	Mike White
ROV Dive Name	
Cruise	EX1803
Dive Number	DIVE08
Equipment Deployed	
ROV	Deep Discoverer
Camera Platform	Seirios

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Purpose of the Dive	<p>The purpose of Dive 8 was to survey the biology and geology of the northern end of the West Florida Escarpment in the De Soto Canyon region. This area is currently being considered for expansion of the Flower Garden Banks National Marine Sanctuary (FGBNMS) under alternative 5. Specifically, Dive 8 sought to explore the escarpment feature at depths between 2200-2600 m for hard-bottom communities, particularly deep-sea corals, sponges, and associated fauna. There have been five previous scientific dives in this general area, all of which documented extensive and diverse deep-sea coral communities. To date, these are the deepest high-density communities known in the Gulf of Mexico. Additionally, these previous dives also documented seeps and chemosynthetic communities in the area. However, all of these previous dives were conducted over 7 km away from the Dive 8 site. Therefore, Dive 8 surveyed a previously unexplored section of the escarpment, and also sought to collect scientific information that could help evaluate the proposal for the expansion of FGBNMS.</p>			
Description of the Dive	<p>The ROV acquired bottom on a steep, rocky area at a depth of 2618 m at 14:58 UTC. Multiple large rocks that did not have any encrusting fauna on them, as well as an unidentified cusk-eel and a squat lobster were recorded near the landing spot. Dense aggregations of pteropod shells were seen in multiple depressions near the rocks. After reaching the seafloor, the ROV immediately sampled a carbonate rock and then proceeded upslope to the north. As the ROV climbed the escarpment wall, the seafloor was initially characterized by blocks of weathered subangular carbonate rock that ranged in size from cobble to large boulders. The rock exhibited a dark gray/brown color indicative of surface oxidation. Later, as the ROV gained elevation, the seafloor transitioned to continuous exposed carbonate rock outcrop with slopes that approached vertical. Numerous corals, sponges, and crinoids were attached to rock outcrops. At 16:05 UTC, an isolated section of thinly bedded carbonate rock was observed in contrast to massive rock bedding above and below. The ROV reached a terrace with relatively gentle slopes and a blanket of sediment cover at 17:02 UTC. In some locations the sediment exhibited bedforms indicating sufficient current velocity to mobilize fine seafloor sediment particles. As the ROV move upwards from the terrace the escarpment once</p>			

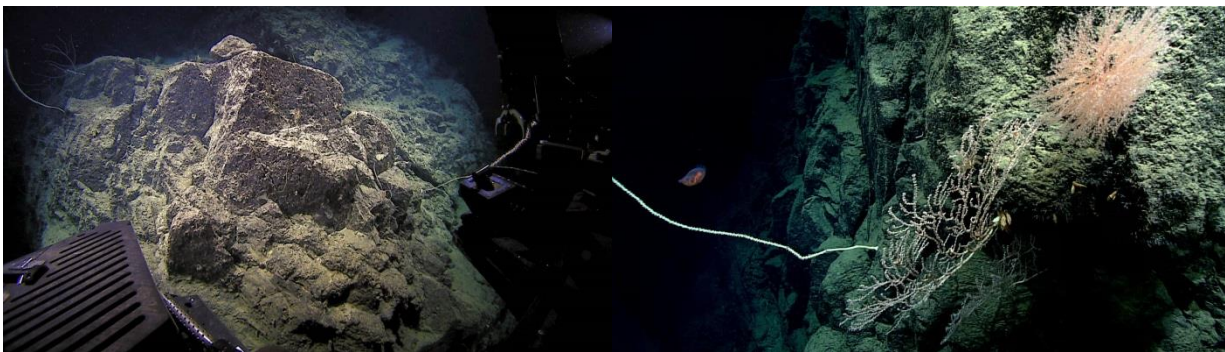


	<p>again exhibited near vertical massively bedded carbonate rock walls with a single section of thinly bedded rock observed at approximately 18:36 UTC. At 19:36 UTC the ROV reached a second terrace with sediment cover. A highly friable white colored rock was observed beneath a fractured tan colored rock crust. In some areas it appeared that dissolution of the white rock resulted in collapse of the overlying crust. Aggregations of pteropod shells were observed on sediment and rock surfaces throughout the dive.</p> <p>The most commonly observed animals were bamboo corals (<i>Jasonisis</i> sp., <i>Keratoisis</i> sp., <i>Eknomisis</i> sp., and unidentified unbranched Isididae), black corals (<i>Bathypathes</i> spp., <i>Stichopathes</i> sp., <i>Heteropathes</i> cf. <i>americana</i>, <i>Stauropathes</i> sp.), and plexaurid corals (<i>Paramuricea biscaya</i>). Other animals observed included bubblegum corals (<i>Sibogagorgia cauliflora</i>), chrysogorgid corals (<i>Iridogorgia magnispinalis</i>, <i>Iridogorgia splendens</i>, <i>Chrysogorgia</i> sp.), mushroom corals (<i>Anthomastus</i> sp.), cup corals (<i>Caryophyllia</i> sp.) unidentified stoloniferan octocorals, seastars (<i>Cerriaster</i> sp., <i>Pythonaster</i> sp., unidentified Goniasteridae, unidentified Pterasteridae), hexactinellid sponges (various unidentified species and <i>Hyalonema</i> sp.), a venus-fly trap anemone (Hormathiidae), shrimp (<i>Nematocarcinus ensifer</i>, Mysidae), stalked and unstalked crinoids, and the empty shells of two Argonaut mollusks. Fish observed during the dive included cusk-eels (<i>Bassozetus</i> sp. and <i>Acanthonus armatus</i>), and halosaurs (<i>Aldrovandia gracilis</i> and <i>Aldrovandia oleosa</i>).</p> <p>The ROV left the bottom at 20:14 UTC at a final depth of 2315 m.</p>	
<p>Notable Observations</p>	<p>Diverse and dense communities of deep-sea corals were seen on rocky outcrops. These are the deepest (2600 m) high-density communities known in the Gulf of Mexico.</p>	
<p>Community Presence/ Absence (community is defined as more than two species)</p>	<p><input checked="" type="checkbox"/> Corals and Sponges Present</p> <p><input type="checkbox"/> Chemosynthetic Community Present</p> <p><input checked="" type="checkbox"/> High biodiversity Community Present</p>	<p><input type="checkbox"/> Active Seep or Vent</p> <p><input type="checkbox"/> Extinct Seep or Vent</p> <p><input type="checkbox"/> Hydrates Present</p>
<p>Overall Map of the ROV Dive Area</p>		<p>Close-up Map of Main Dive Site</p>
		
<p>Representative Photos of the Dive</p>		



Seastar feeding on glass sponge.

Bamboo coral next to glass sponge.



Sparse corals on exposed rock.

Unbranched bamboo coral, next to *Paramuricea* sp. and *Chrysogorgia* sp. colonies.

Samples Collected

Sample

Sample ID	EX1803_20180425T151142_D2_DIVE08_SPEC01GEO
Date (UTC)	20180425
Time (UTC)	151142
Depth (m)	2631.99
Temperature (°C)	4.33
Field ID(s)	Carbonate rock




Comments	Weight 8.57kg		
	Commensal ID	Field Identification	Notes
	EX1803_20180425T151142_D2_DIVE08_SPEC01GEO_A01	Polychaeta A	N = 7

	EX1803_20180425T151142_D2_DIVE08_SPEC01GEO_A02	Polychaeta B	N = 3
	EX1803_20180425T151142_D2_DIVE08_SPEC01GEO_A03	Hexactinellida	N = 5
Polychaeta A and Polychaeta B are different species			

Comments

Sample


Sample ID	EX1803_20180425T164442_D2_DIVE08_SPEC02BIO	
Date (UTC)	20180425	
Time (UTC)	164442	
Depth (m)	2549.85	
Temperature (°C)	4.32	
Field ID(s)	<i>Circeaster</i> sp.	

Comments: This specimen only had 4 arms

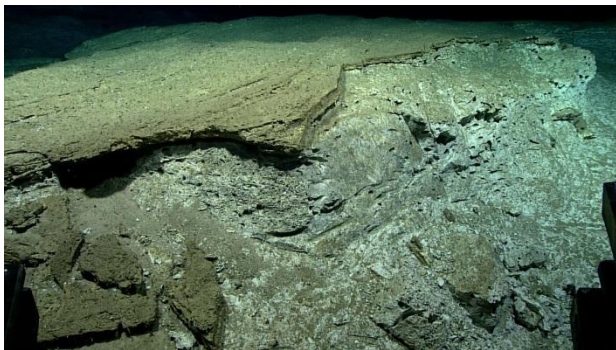
Commensal ID	Field Identification	Notes
none		

Comments

Sample

Sample ID	EX1803_20180425T192206_D2_DIVE08_SPEC03BIO	
Date (UTC)	20180425	
Time (UTC)	192206	
Depth (m)	2325.24	
Temperature (°C)	4.31	



Field ID(s)	<i>Bathypathes</i> sp.		
Commensals	<i>This collection may be a substantial range expansion for this genus</i>		
	Commensal ID	Field Identification	Notes
	none		
Comments			
Sample			
Sample ID	EX1803_20180425T200600_D2_DIVE08_SPE04GEO		
Date (UTC)	20180425		
Time (UTC)	200600		
Depth (m)	2322.78		
Temperature (°C)	4.30812		
Field ID(s)	Carbonate mud		
Commensals			
	Commensal ID	Field Identification	Notes
	none		
Comments			

Please direct inquiries to:

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