

Okeanos Explorer ROV Dive Summary

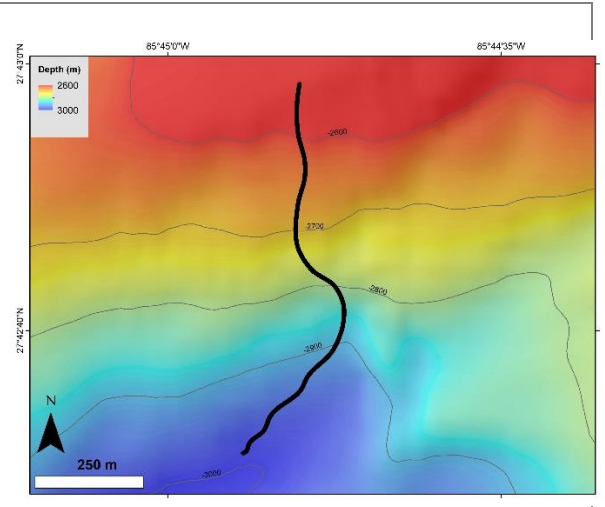
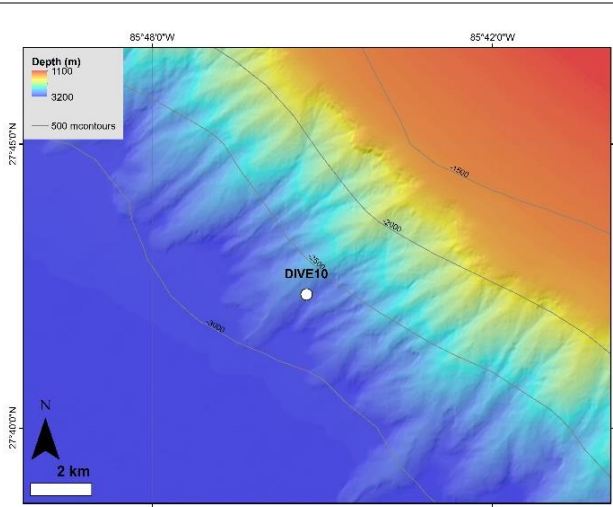
Dive Information	
General Location Map	
General Area Descriptor	Gulf of Mexico
Site Name	North West Florida Escarpment, DeSoto Canyon region (DC862)
Science Team Leads	Daniel Wagner (Biology) Adam Skarke (Geology)
Expedition Coordinator	Nikolai Pawlenko
ROV Dive Supervisor	Karl McLetchie
Mapping Lead	Mike White
ROV Dive Name	
Cruise	EX1803
Dive Number	DIVE10
Equipment Deployed	
ROV	Deep Discoverer
Camera	Seirios

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	Emily	Crum	NOAA/OER	emily.crum@noaa.gov
Purpose of the Dive	<p>The purpose of Dive 10 was to survey the biology and geology of the bend in the West Florida Escarpment. This area is completely unexplored, with the closest historical dive being conducted close to 39 km away. Additionally, this dive will targeted deeper depths (2400-2800 m), which have been particularly poorly explored in the Gulf of Mexico. Of the 118 scientific submersible dives that have targeted the West Florida Escarpment since 1986, only 5 (4%) have targeted depths deeper than 2400 m. Thus, Dive 10 not only explored a geographically poorly explored area of the Gulf of Mexico, but also a deeper depth range that has only marginally been explored.</p>			

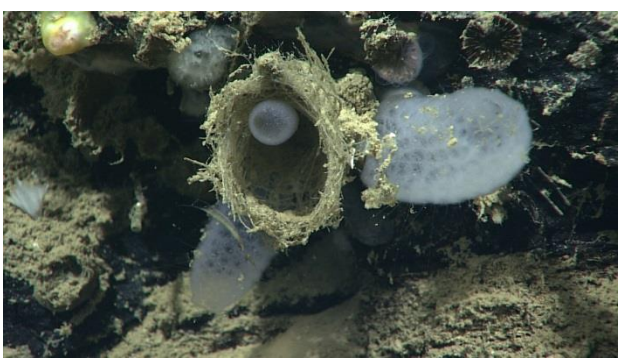


Description of the Dive	<p>The ROV acquired bottom on a sediment covered slope at a depth of 3010 m at 15:12 UTC. As the ROV began to move upslope thinly bedded carbonate rock was observed intermittently suggesting a very thin sediment cover. Numerous species of sea star were observed at the beginning of the dive. At 15:51 sediment cover transitioned to outcrops of massive carbonate rock colored black by FeMn oxidation. After unsuccessful attempt to sample a white carbonate rock, a coral was sampled at 16:40 UTC. As the ROV continued upslope, multiple outcrops of carbonate rock were observed with most sessile organisms attaching to the underside of ledges. Gradually the outcrops of massive hard oxidized carbonate rock transitioned into tan thinly bedded carbonate rocks interspersed with very weak white carbonate rock that appeared to be subject to substantial dissolution and bioerosion by boring and burrowing organisms. As the ROV move further up the escarpment the bed transitioned into mostly heavily weathered weak white carbonate rock and sediment. At approximately 19:30 the ROV began to follow a sediment covered ridge upslope. Low relied rock outcrops were observed on either side of the ridge. Isolated corals and sponges were observed on the ridge crest. At 21:13 UTC a se star was sampled and at 21:55 UTS a rock with attached glass sponge and anemone was sampled. The ROV left bottom at 22:03 UTC.</p> <p>The most commonly observed animals were sea cucumbers (<i>Benthoodytes</i> sp.), long-legged shrimp (<i>Nematocarcinus ensifer</i>), and glass sponges (<i>Hyalonema</i> sp., Euplectellidae). Other species observed included tubeworms (Sabellidae), sea stars (<i>Sibogaster</i> sp., <i>Hymenaster</i> sp., <i>Ampheraster alaminos</i>), shrimp (<i>Cerataspis</i> sp., Mysidae), sea pens (<i>Umbellula</i> sp.), tube-dwelling anemones (Ceriantharians), anemones (Hormethiidae, unidentified Actinaria), squat lobsters (<i>Galacantha</i> sp., Munidopsidae), a predatory tunicate (<i>Megalodicopia</i> sp.), sea cucumbers (Deimatidae, <i>Pseudostichopus</i> sp.), bamboo corals (<i>Keratoisis</i> sp.), scleractinian cup corals (<i>Caryophyllia</i> sp.), chrysogorgid corals (<i>Iridogorgia magnispiralis</i>), and a single primnoid coral (unbranched <i>Candidella</i> sp.). The only fish observed during the dive were tripod fishes (<i>Ipnops murrayi</i>, <i>Bathytyphlops</i> sp.), and an unidentified cusk-eel (Ophidiidae).</p>	
Notable Observations	[Can include number of communities, notable collections or observations, high density communities, etc.]	
Community Presence/Absence (community is defined as more than two species)	<input checked="" type="checkbox"/> Corals and Sponges Present <input type="checkbox"/> Chemosynthetic Community Present <input type="checkbox"/> High biodiversity Community Present	<input type="checkbox"/> Active Seep or Vent <input type="checkbox"/> Extinct Seep or Vent <input type="checkbox"/> Hydrates Present
Overall Map of the ROV Dive Area		Close-up Map of Main Dive Site





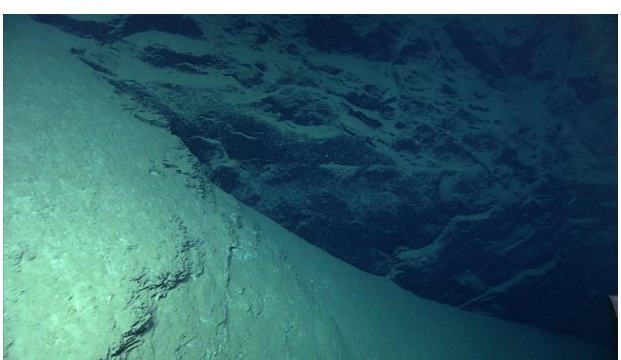
Representative Photos of the Dive



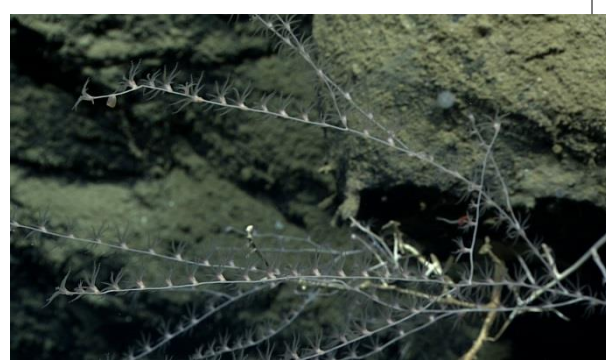
Glass sponges.



Benthydites sp. Sea cucumber on soft sediments.



Large rock outcrop above sediment cover.



Bamboo coral *Keratoisis* sp. Growing on exposed rock.


Samples Collected

Sample													
Sample ID	EX1803_20180427T164514_D2_DIVE10_SPE C01BIO												
Date (UTC)	20180427												
Time (UTC)	164514												
Depth (m)	2945.86												
Temperature (°C)	4.36												
Field ID(s)	<i>Umbellula</i> sp.												
Commensals	<table border="1"> <thead> <tr> <th>Commensal ID</th> <th>Field Identification</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>none</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Commensal ID	Field Identification	Notes	none								
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	none												
Comments													



Sample													
Sample ID	EX1803_20180427T211239_D2_DIVE10_SPE C02BIO												
Date (UTC)	20180427												
Time (UTC)	211239												
Depth (m)	2597.04												
Temperature (°C)	4.33												
Field ID(s)	<i>Sibogaster</i> sp.												
Commensals	<p>This is a new record for the Gulf of Mexico and deepest record for this species.</p> <table border="1"> <thead> <tr> <th>Commensal ID</th> <th>Field Identification</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>none</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Commensal ID	Field Identification	Notes	none								
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Sample													
Sample ID	EX1803_20180427T220137_D2_DIVE10_SPE C03GEO												
Date (UTC)	20180427												
Time (UTC)	220137												
Depth (m)	2574.47												
Temperature (°C)	4.32												
Field ID(s)	Metamorphic Rock												
													
	<i>Adam- do you want to add notes here?</i>												
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Comments													

Please direct inquiries to:

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