



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>Miami Terrace, 18 nautical miles east of Miami, HAPC</p>
<p>Site Name</p>	<p>Miami Terrace</p>
<p>Science Team Leads</p>	<p>Kimberly Galvez, University of Miami, Rosenstiel School of Marine and Atmospheric Science Stephanie Farrington, Florida Atlantic University, Harbor Branch Oceanographic Institute</p>
<p>Expedition Coordinator</p>	<p>Michael P. White, NOAA OER</p>
<p>ROV Dive Supervisor</p>	<p>Christopher Ritter, Global Foundation for Ocean Exploration</p>
<p>Mapping Lead</p>	<p>Shannon Hoy, NOAA OER</p>

ROV Dive Name

<p>Cruise</p>	<p>2019 Southeast U.S. Deep-sea Exploration</p>
<p>Dive Number</p>	<p>Dive 08</p>

Scientists Involved (provide name, affiliation, email)

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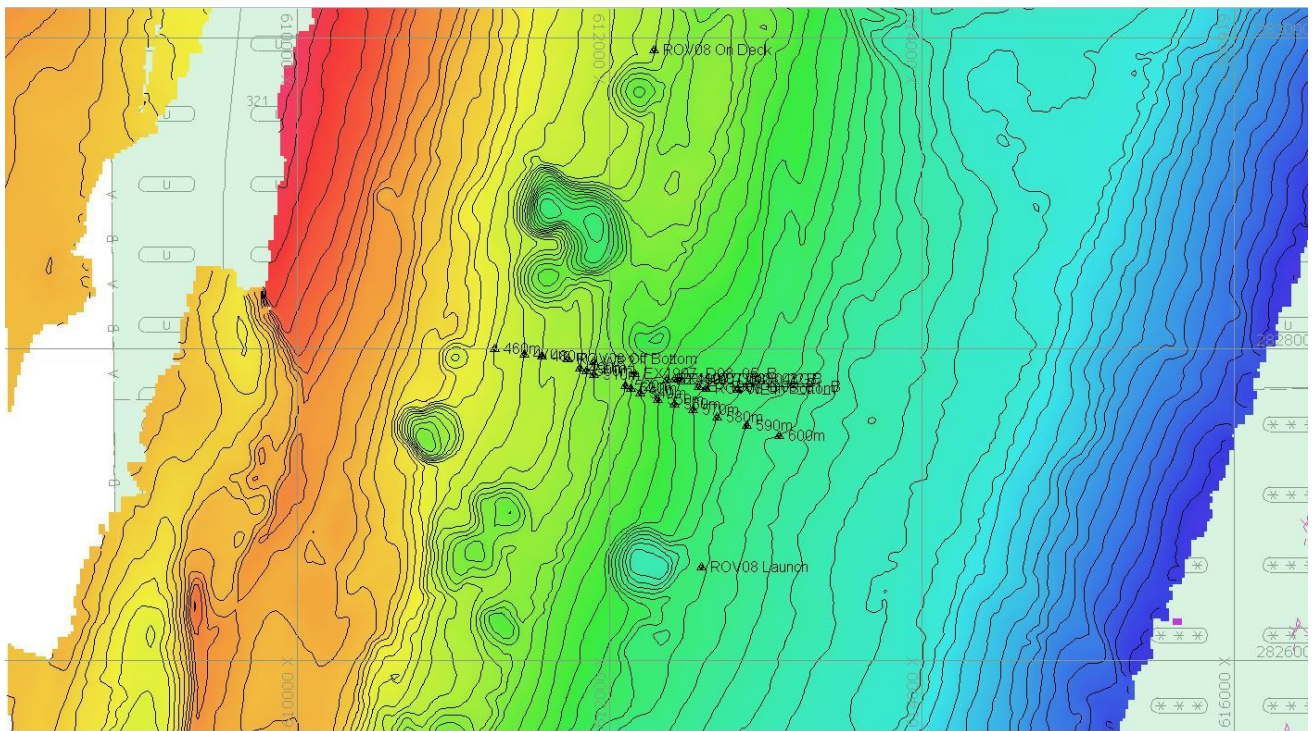


Dive Purpose	<p>This dive is located separately from other deep submergence work in the area near Miami. Collecting high resolution video and sample data will help characterize interesting features in the high resolution bathymetry. Characterizing this feature type will provide valuable information about the geologic makeup and biological communities that comprise these areas near Miami. Dive location is inside the Stetson-Miami HAPC. Dive objectives will be to collect high-resolution video footage of the geologic facies and the benthic communities that inhabit the region as well as a more refined data collection of current systems.</p>
Dive Description	<p>Target: Miami Terrace, 577-503 m slope, 74 m rise 13° slope, 900 m long transect.</p> <p>Landed on the slope of the Miami Terrace amongst a school of squid with many species of sponges common: Theonellidae, Euplectellidae (EX1907_D08_01B), along with fan shaped white sponges (<i>Phakellia</i> and Pachastrellidae), <i>Hylonema</i>, and small white carnivorous <i>Cladorhiza</i>/Cladorhizidae sponges: the "spiky lollipop sponge"- Stylocordylidae (EX1907_D08_02B) and "sun-burst sponges"- Cladorhizidae (EX1907_D08_03B) and a sparse branching Cladorhizidae- (EX1907_D08_05B) were collected during the dive.</p> <p>Besides the almost complete cover of <i>Lophelia</i> rubble throughout the dive, there were very few living corals seen. There were a few patches of standing framework dead <i>Lophelia</i> with very small areas of living <i>Lophelia</i> and a few colonies of <i>Madrepora</i>, but otherwise no true coral reefs were observed. The most common cnidarian was <i>Stylaster</i> (5-20 cm fans) throughout, with some solitary cup corals (<i>c.f. Desmophyllum</i>). Some gorgonians were observed such as primnoids, <i>Keratoisis/Eknomisis</i> (bamboo corals with volcano-shaped polyps). Some true soft corals were seen, mostly, <i>Nidalia</i> - strawberry corals and the brown soft coral Neptheadae.</p> <p>Arthropods were quite common throughout the dive as well including: <i>Chaceon fenneri</i> (golden crabs), <i>Acanthacaris caeca</i>- blind lobster some seen out of their burrows and one actively seen fishing for pray by using a small piece of organic tissue in it's 2nd chelate leg and twitching it back and forth (awesome and previously never seen before behavior), shrimp, and <i>Bathynomus giganteus</i> (giant isopod). There were also burrows throughout dive surrounded with piles of rubble, while no occupant was spotted, most likely the burrows were created by <i>Acanthacaris</i>.</p> <p>There were a few Echinoderms including 2 <i>Henricia antillarum</i>- stars and <i>Plinthaster dentatus</i>- (cookie star) and the sea cucumber <i>Oloughlinius</i>- 1st described from a sample collected by the <i>Okeanos</i> in the Gulf of Mexico, covered in pteropod shells (but of various species).</p> <p>There were a few different fish spotted including a few marbled catsharks, chain dogfish, underworld skates - <i>Fenestraja plutonia</i>, black bellied rosefish, frog fish, rat tails, shortnose greeneyes, and codlings.</p> <p>Along the transect upslope, the predominant facies was <i>Lophelia</i> rubble with small patches of minimal rubble and unconsolidated skeletal sediments. Areas of exposed hard bottom exposed encrusted karstified limestone were seen along with some reef-framework systems with trapped sediments within. Some areas of exposed hard substrate were flat along the slope while other areas large broken slabs (slope angles increased to 20-30°) and boulders dominated the facies. Biota mainly focused on exposed hard substrate.</p> <p>There was more anthropogenic debris on this dive than any other during cruise thus far. This was expected, as we were only 18 miles from Miami. Some of the debris included: green and brown glass bottles, buckets, fabrics and tin cans.</p>

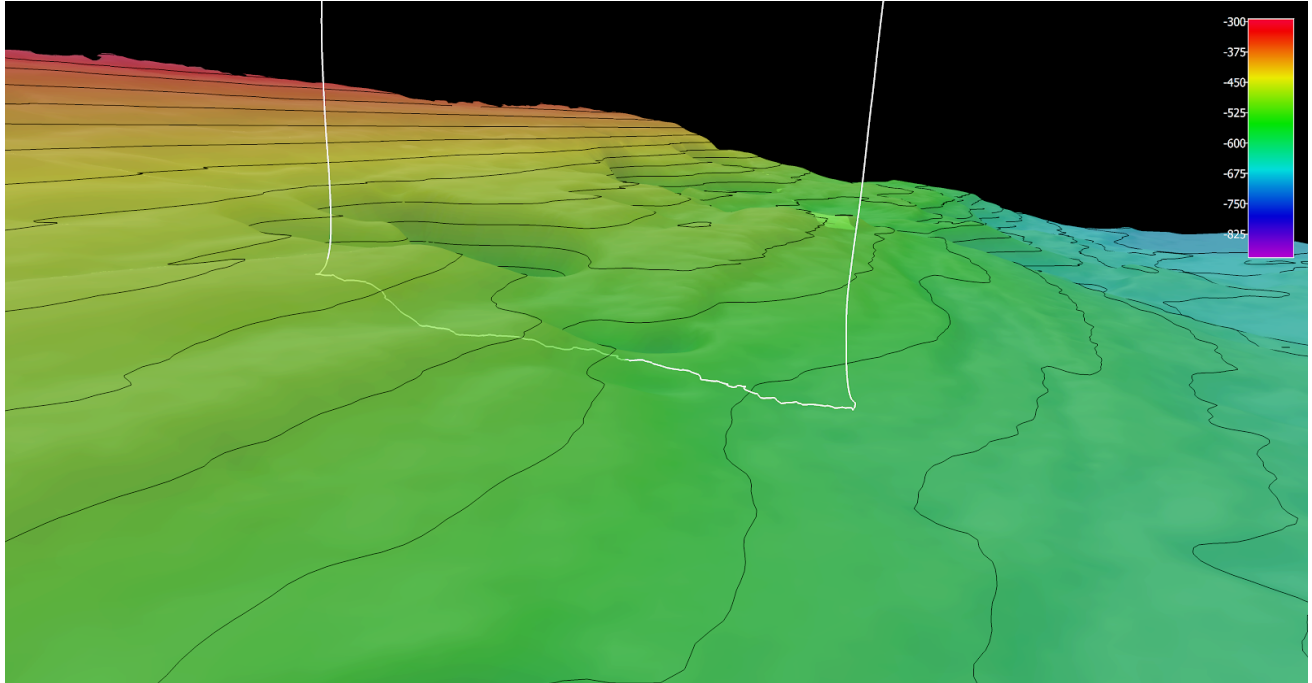


Notable Observations	<i>Acanthacaris caeca</i> - blind lobster some seen out of their burrows and actively seen fishing for pray by using a small piece of organic tissue in it's 2nd chelate leg and twitching it back and forth (awesome and previously never seen before behavior).
Community Presence/ Absence (community is defined as more than two species)	X Corals and Sponges <ul style="list-style-type: none"> ✓ Chemosynthetic Community ✓ High biodiversity Community ✓ Active Seep or Vent ✓ Extinct Seep or Vent ✓ Hydrates
CMECS Feature Type	Terrace
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&divId=3830

Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



Smoothed ROV dive track in white on 25x25 cell size bathymetry, 3x vertical exaggeration, depth in meters, 10 meter contours



Representative Photos of the Dive

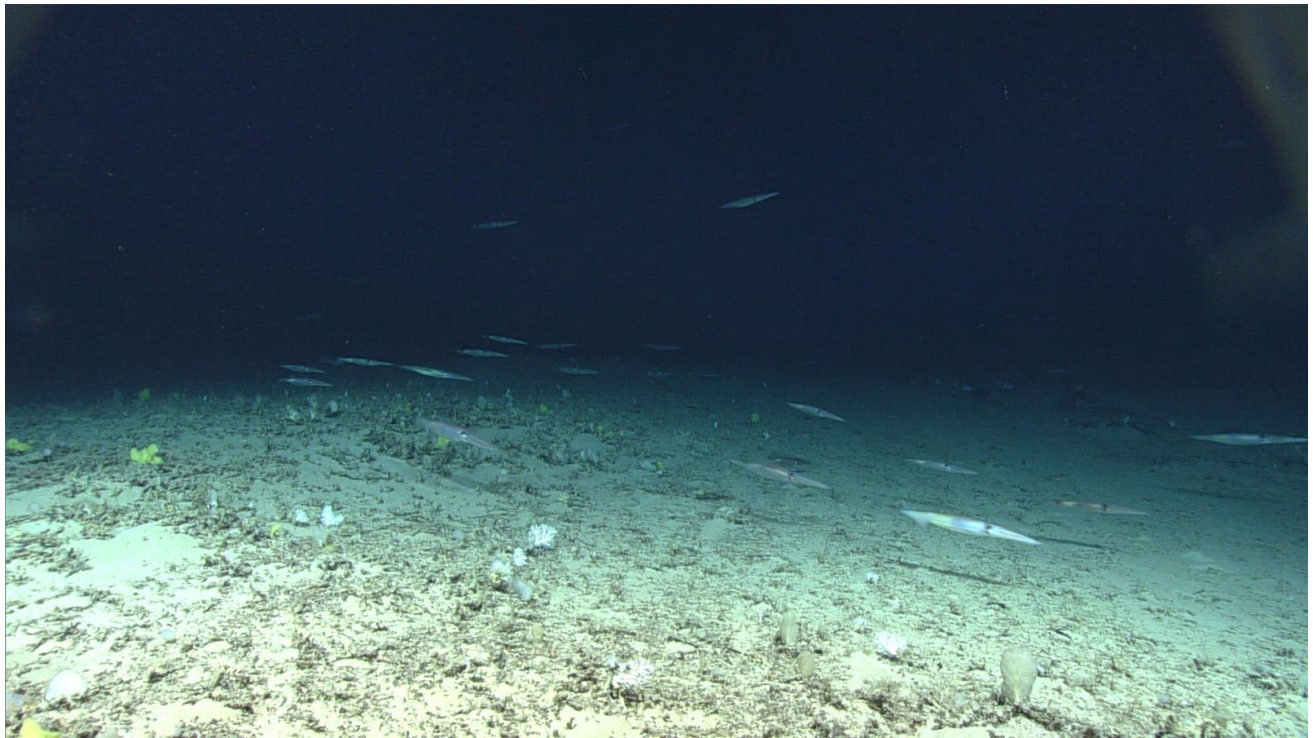


Acanthacaris caeca- blind lobster some seen out of their burrows and actively seen fishing for pray by using a small piece of organic tissue in it's 2nd chelate leg and twitching it back and forth (awesome and previously never seen before behavior).



Acanthacaris caeca- close up of a small piece of organic tissue in it's 2nd chelate leg and twitching it back and forth to lure prey.





Overview of the site with school of squid.



Area of standing dead *Lophelia* coral with human debris (blue bucket).

[CAPTION]

Samples Collected -

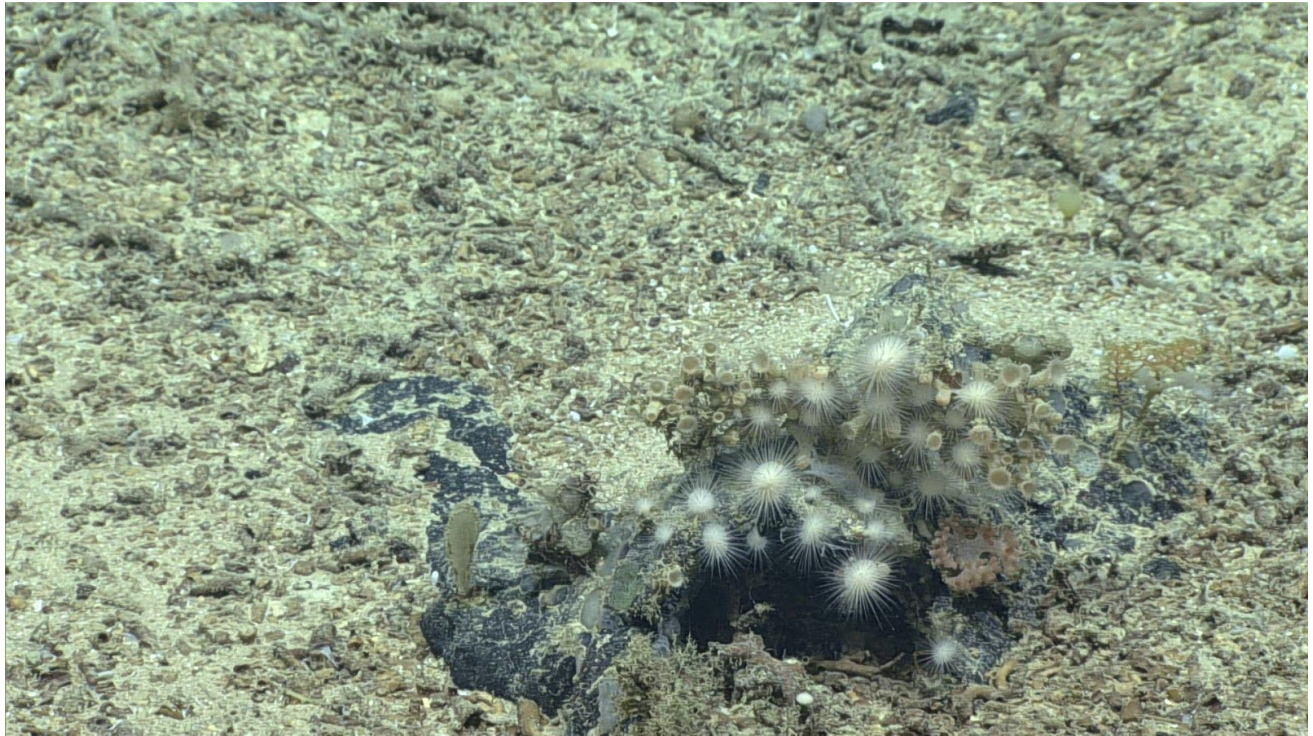


Sample ID	EX1907_D08_01B		
Date (UTC)	November 15, 2019		
Time (UTC)	14:28		
Depth (m)	563		
Temp. (°C)	6.942		
Field ID(s)	Euplectellidae ID: 131692 [WORM]		
Associates	Associates Sample ID	Field Identification	Count
	EX1907_D08_01B_A01	Ferrea sp.	1
Comments	Stopping to collect 20 cm hollow tube, mesh surface, no spicules in the sediment, attached lightly to dead coral rubble. unsubscribed species		





Sample ID	EX1907_D08_02B		
Date (UTC)	November 15, 2019		
Time (UTC)	15:51		
Depth (m)	555		
Temp. (°C)	7.136		
Field ID(s)	Stylocordylidae ID: 131675 [WORM] x10		
Associates	Associates Sample ID	Field Identification	Count
Comments	white lollipop sponges. a spike ball in a stick, 1 cm ball in a 3 cm stalk. suction can 1		



Sample ID	EX1907_D08_03B														
Date (UTC)	November 15, 2019														
Time (UTC)	16:22														
Depth (m)	552														
Temp. (°C)	7.255														
Field ID(s)	Cladorhizidae ID: 131644 [WORM]														
Associates	<table border="1"> <thead> <tr> <th>Associates Sample ID</th> <th>Field Identification</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>EX1907_D08_03B_A01</td> <td>Bryozoans</td> <td>few</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Associates Sample ID	Field Identification	Count	EX1907_D08_03B_A01	Bryozoans	few						
	Associates Sample ID	Field Identification	Count												
	EX1907_D08_03B_A01	Bryozoans	few												
Comments	"sun-burst sponges", 1 cm white ball sponge with spikes that move in the current similar to Marianas trench sponges, if carnivorous sponge it may be a new species.														



Sample ID	EX1907_D08_04G		
Date (UTC)	November 15, 2019		
Time (UTC)	16:45		
Depth (m)	551		
Temp. (°C)	7.246		
Field ID(s)	Rock		
Associates			
	Associates Sample ID	Field Identification	Count
Comments	5-10 cm rock slab, black.		



Sample ID	EX1907_D08_05B		
Date (UTC)	November 15, 2019		
Time (UTC)	18:35		
Depth (m)	535		
Temp. (°C)	7.257		
Field ID(s)	Cladorhizidae ID: 131644 [WORM]		
Associates	Associates Sample ID	Field Identification	Count
Comments	20 cm tall sparsely branching with filaments carnivorous sponge New Species		

Please direct inquiries to:

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**Ocean Exploration
and Research**