



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>U.S. Southeast, Blake Plateau</p>
<p>Site Name</p>	<p>Stetson Mesa South Mounds</p>
<p>Science Team Leads</p>	<p>Amy Wagner (CSUS) and Alexis Weinnig (Temple)</p>
<p>Expedition Coordinator</p>	<p>Kasey Cantwell (NOAA-OER)</p>
<p>ROV Dive Supervisor</p>	<p>Chris Ritter (GFOE)</p>
<p>Mapping Lead</p>	<p>Shannon Hoy (NOAA-OER)</p>

ROV Dive Name

<p>Cruise</p>	<p>EX1903L2</p>
<p>Dive Number</p>	<p>Dive02</p>

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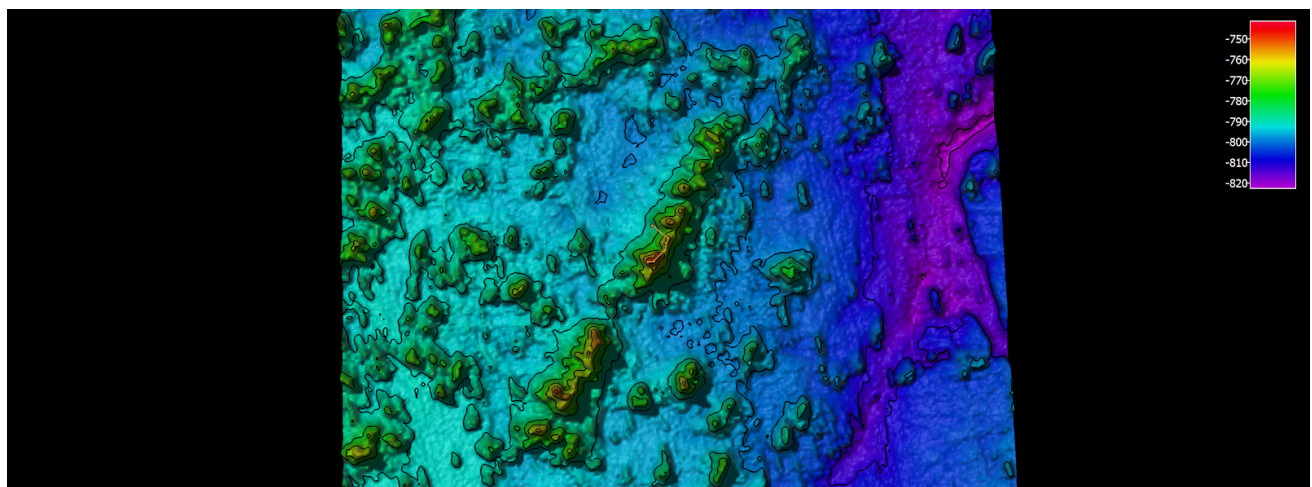
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Dive Purpose	The three primary purposes of this dive were to: 1) explore underwater mounds in Million Mounds region that has high potential to be suitable habitat for deep sea coral and sponge communities, 2) investigate area with unusual backscatter data for ground-truthing, and 3) perform mid-water transects on the ascent to characterize and sample water column biota.
Dive Description	<p>We started our dive a few hundred meters from the base of a cold-water coral mound at a depth of 770 m. Upon reaching the bottom, the ROV began transiting toward the Stetson Mesa South coral mound. We landed in an area of relatively soft sediment, however, a higher percentage of coral rubble vs. sand was observed. The coral rubble mixed with coarse-fine sands persisted throughout the majority of the dive and increased in abundance as we traversed up to the top of the mound and across the adjacent mounds. The general trend observed throughout the dive was a large abundance of coral rubble at the bottom of each mound with increasing abundance of live scleractinian coral coverage on the east to southeastern side of each mound.</p> <p>As we traversed along the base of the first mound, there was a substantial diversity of biota, including brittle stars, skates, sponges, pancake urchins, black coral and octocoral. There was a particularly high abundance of crinoids, particularly <i>Pentametrocrinus atlanticus</i>, the only feather star in the western Atlantic with five undivided arms. One individual <i>Pentametrocrinus</i> was observed swimming and it was noted that this was the first time this species was observed swimming through the water column. There was also a high abundance of cutthroat eels (<i>Synaphobranchus</i>) in the area in addition to three to four individual gulper sharks observed.</p> <p>As we proceeded up the first mound, the abundance of scleractinian coral rubble greatly increased and more live scleractinian (i.e. <i>Madrepora</i>, <i>Lophelia</i>) and octocorals were observed. Along the second mound that we explored, the occurrence and diversity of black coral species (i.e. <i>Leipoathes</i>, <i>Bathypathes</i>, <i>Stichopathes</i>, <i>Chrysopathes</i>) increased.</p> <p>After the benthic portion of the dive we conducted our first midwater exploration during this cruise. We completed transects at 700, 530, 500, and 300 meters and were able to complete three suction samples of pelagic organisms. The Deep Scattering Layer (DSL) was centered on 530 meters, this was added to the standard transect depths of 300, 500, and 700 for this dive. Both physonect and calycophoran siphonophores were observed during these transects, a typical occurrence for our midwater dives. We were able to collect a species of medusa in the genus <i>Haliscera</i> as our first suction sample for midwater exploration. Our observation of <i>Aegina citrea</i> will add to the records of geographic ranges and environmental conditions for this species.</p>
Notable Observations	Extremely large abundance of crinoids at this site, dominated by <i>Pentametrocrinus atlanticus</i> . Video footage of swimming <i>Pentametrocrinus</i> - only second record of this genus swimming. Three to four possible gulper sharks swimming around the ROV.



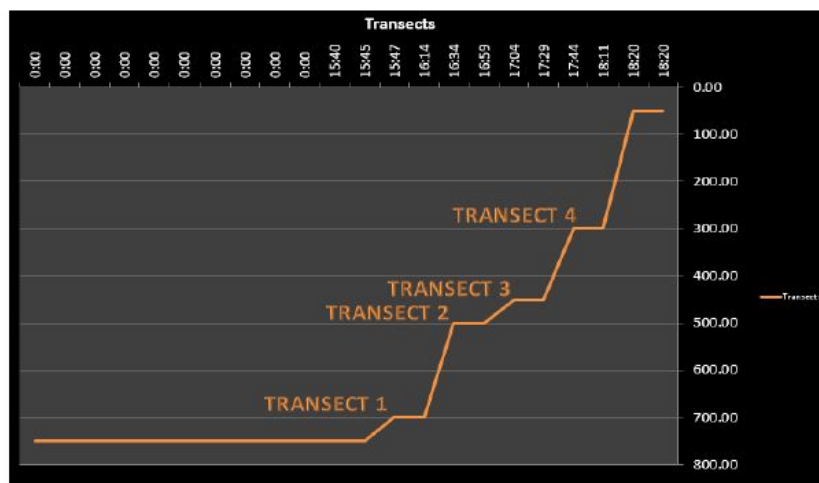
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> X Corals and Sponges <ul style="list-style-type: none"> ✓ Chemosynthetic Community X High biodiversity Community <ul style="list-style-type: none"> ✓ Active Seep or Vent ✓ Extinct Seep or Vent ✓ Hydrates
Feature Type	Deepwater/coldwater stony coral reef (cold-water coral mounds)
SeaTube (annotations program) link	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&diveId=2410

Overall Map of the ROV Dive Area

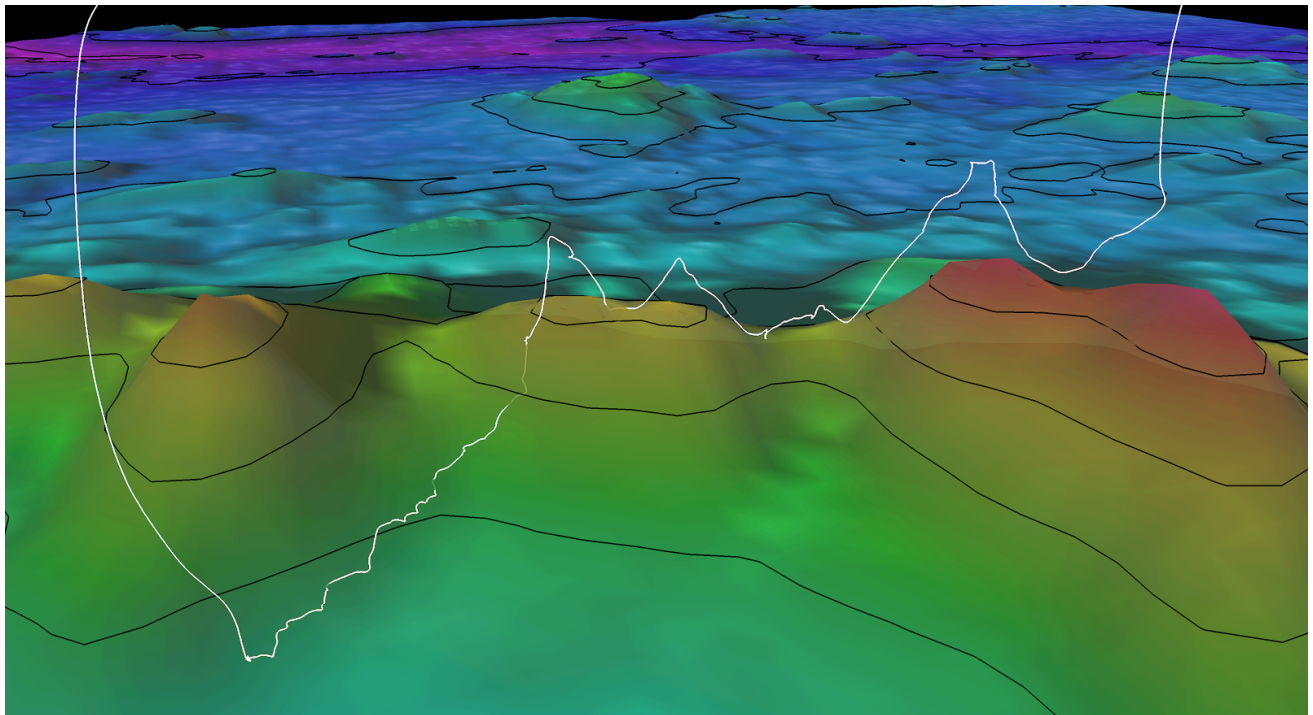


EX1903L2 DIVE 02 - TRANSECT PLAN

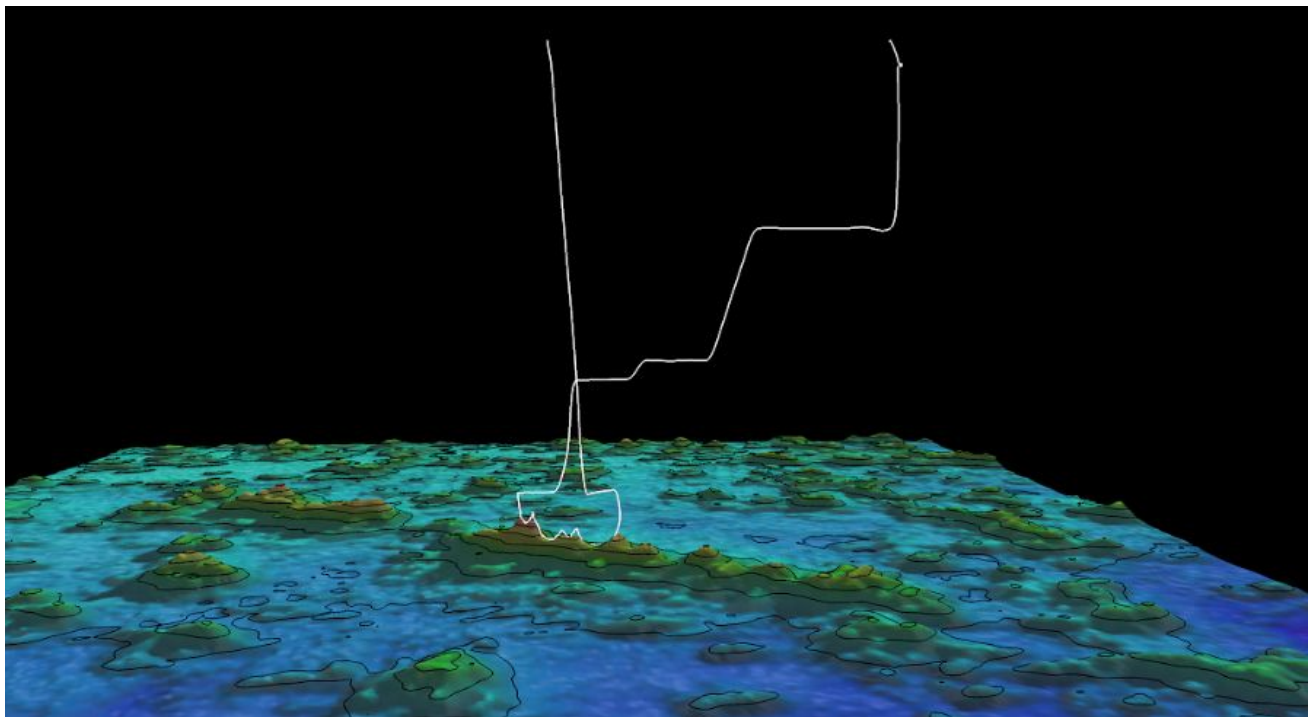
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Close-up Map of Main Dive Site



Benthic Portion of the dive



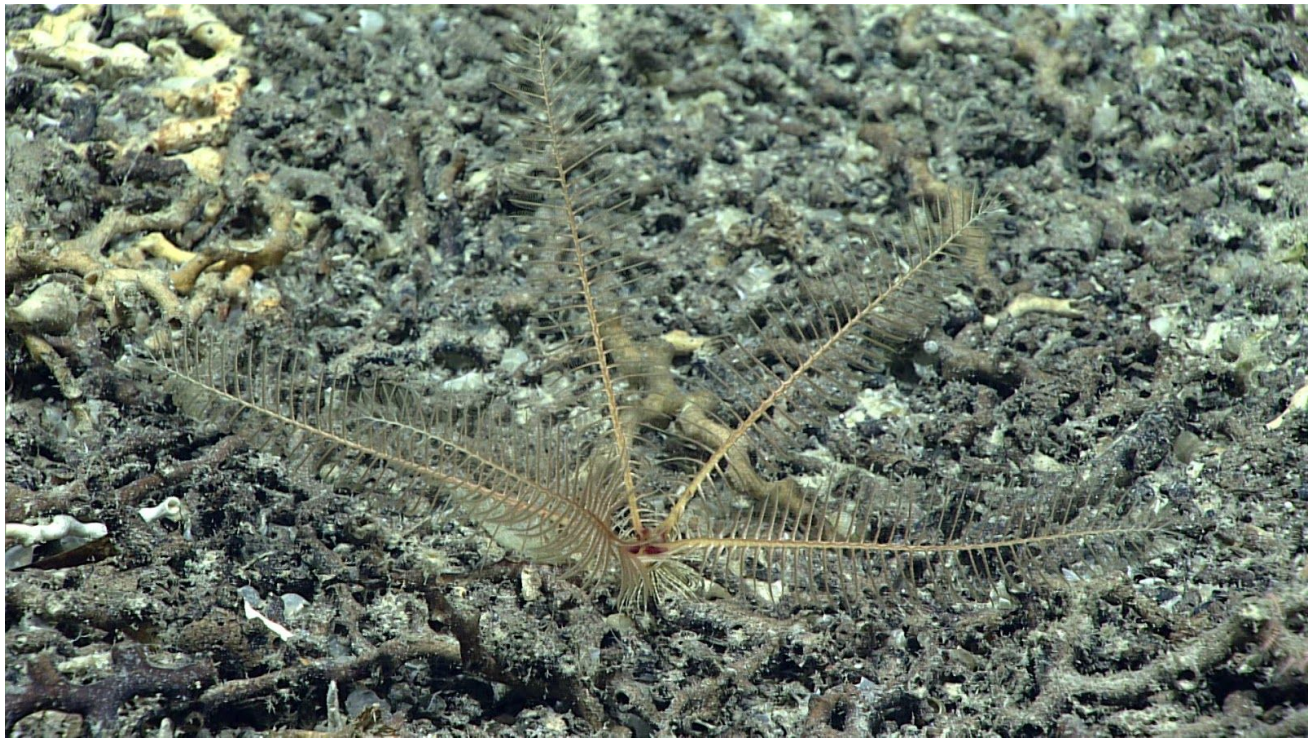
Midwater transects shown in 3D.



Representative Photos of the Dive



High coverage of dead coral rubble on and around mound feature.



Five arm crinoid (*Pentametrocrinus atlanticus*) on coral rubble. These were abundant throughout the beginning of the dive and one specimen was collected.



Slope of a cold-water coral mound with dead coral rubble and live white Plexaurid octocorals.



The jellyfish, *Aegina citrea*, in the water column observed during midwater exploration.

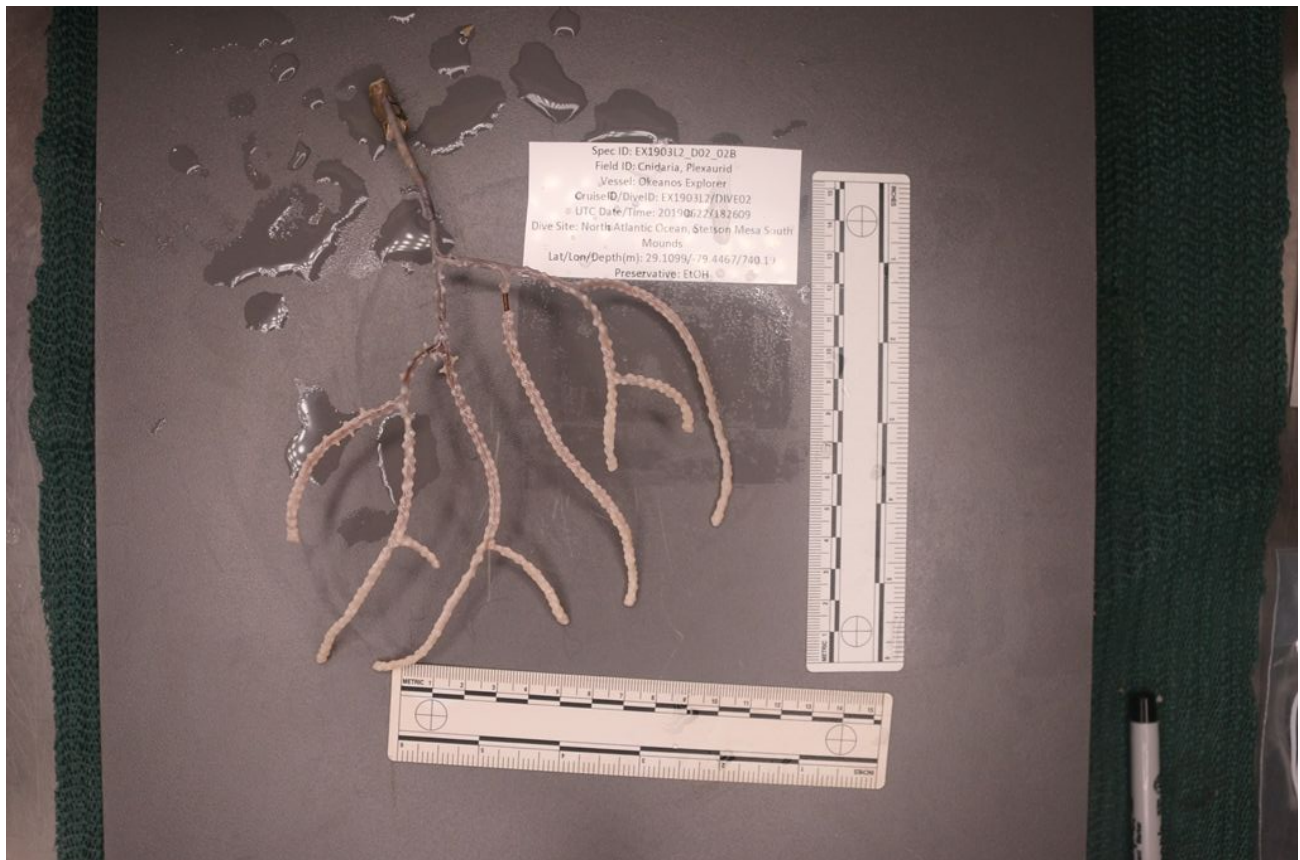
Samples Collected



Sample ID	EX1903L2_D02_01B
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Date (UTC)	20190622	
Time (UTC)	161741	
Depth (m)	749.0	
Temp. (°C)	8.267	
Field ID(s)	Crinoid	
Associates		
	Associates Sample ID	Field Identification
	No Associates	
Comments		



Sample ID	EX1903L2_D02_02B
Date (UTC)	20190622
Time (UTC)	182609
Depth (m)	740.2
Temp. (°C)	8.286
Field ID(s)	Plexaurid

Associates	Associates Sample ID	Field Identification
	EX1903L2_D02_02B_A01	Ophiuroidea
	EX1903L2_D02_02B_A02	Cirripedia
	EX1903L2_D02_02B_A03	<i>Lophelia pertusa</i> skeleton
	EX1903L2_D02_02B_A04	<i>Madrepora oculata</i> skeleton
Comments		



Sample ID	EX1903L2_D02_03B	
Date (UTC)	20190622	
Time (UTC)	195649	
Depth (m)	699.2	
Temp. (°C)	9.944	
Field ID(s)	<i>Halicera</i> sp.	
Associates	Associates Sample ID	Field Identification
	No Associates	
Comments		



Sample ID	EX1903L2_D02_04B	
Date (UTC)	20190622	
Time (UTC)	204943	
Depth (m)	500.7	
Temp. (°C)	14.554	
Field ID(s)	<i>Arctapodema</i> sp	
Associates		
	Associates Sample ID	Field Identification
	No Associates	
Comments		



Sample ID	EX1903L2_D02_05B									
Date (UTC)	20190622									
Time (UTC)	205509									
Depth (m)	503.0									
Temp. (°C)	14.725									
Field ID(s)	Bathocyroe									
Associates	<table border="1"> <thead> <tr> <th>Associates Sample ID</th> <th>Field Identification</th> </tr> </thead> <tbody> <tr> <td>No Associates</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Associates Sample ID	Field Identification	No Associates					
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Comments										

Please direct inquiries to:

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