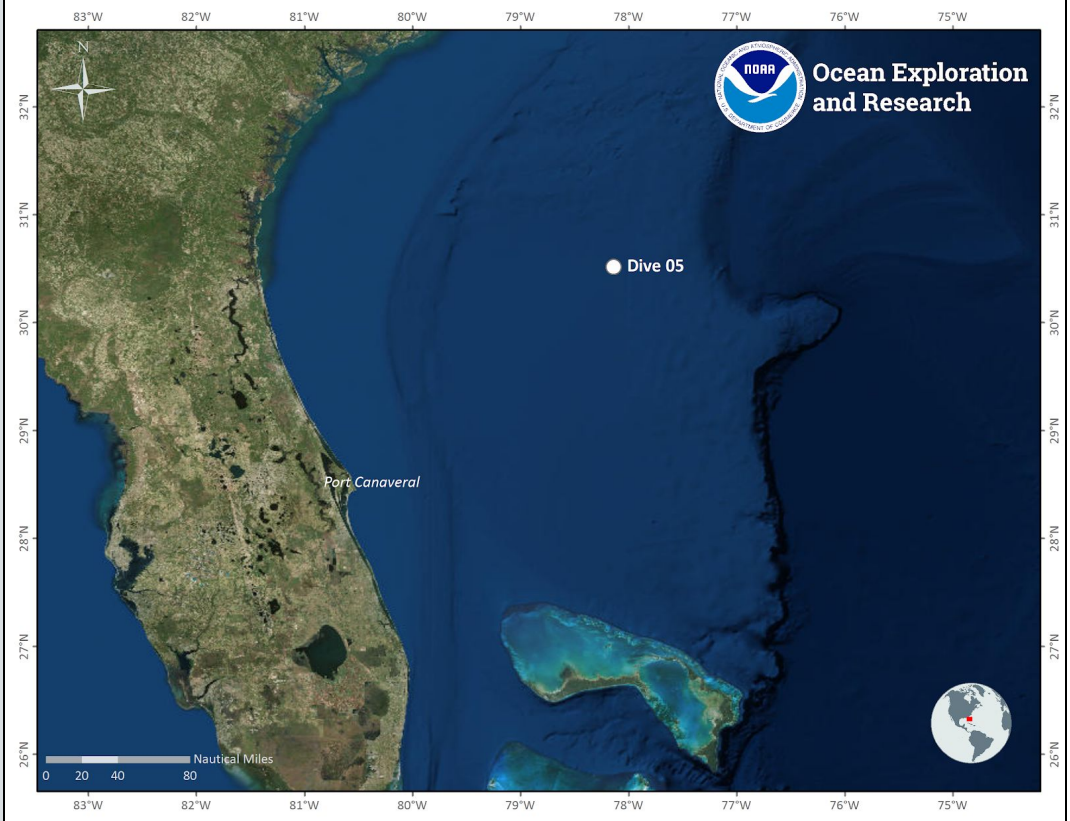
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information

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

ROV Dive Name

Cruise	EX1903L2
Dive Number	DIVE 05

Equipment Deployed

ROV	*Deep Discoverer*		
Camera Platform	*Seirios*		
ROV Measurements	✔CTD	✔Depth	✔Altitude
	✔Scanning Sonar	✔USBL Position	✔Heading
	✔Pitch	✔Roll	✔HD Camera 1
	✔HD Camera 2	✔Low Res Cam 1	✔Low Res Cam 2
	✔Low Res Cam 3	✔Low Res Cam 4	✔Low Res Cam 5
Equipment Malfunctions			
ROV Dive Summary Data (from Processed ROV)	Dive Summary: EX1903L2_DIVE05 ^^ In Water: 2019-06-25T12:27:32.802532 30°, 32.211' N ; 78°, 12.782' W On Bottom: 2019-06-25T13:27:26.774556 30°, 32.295' N ; 78°, 12.833' W Off Bottom: 2019-06-25T17:58:53.149571 30°, 32.33' N ; 78°, 13.107' W Out Water: 2019-06-25T18:40:39.110908 30°, 32.429' N ; 78°, 13.229' W Dive duration: 6:13:6 Bottom Time: 4:31:26 Max. depth: 866.0 m		
Special Notes	Dive was ended early due to the need to go into port for a required personnel transfer.		

Scientists Involved (provide name, affiliation, email)

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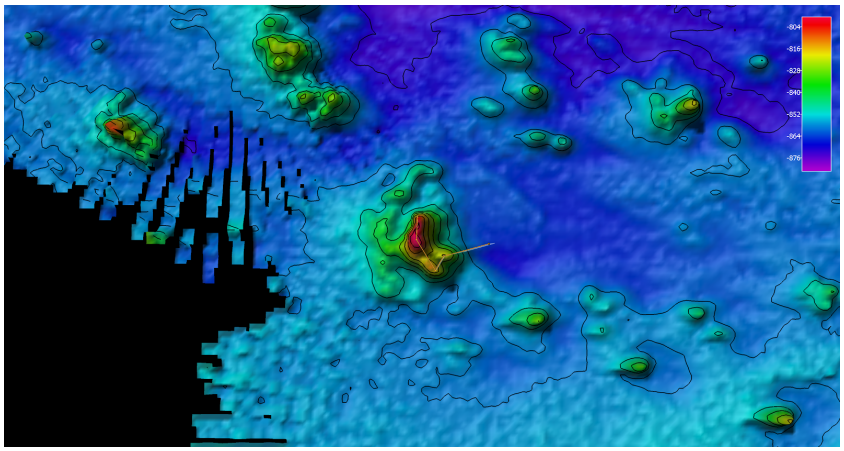
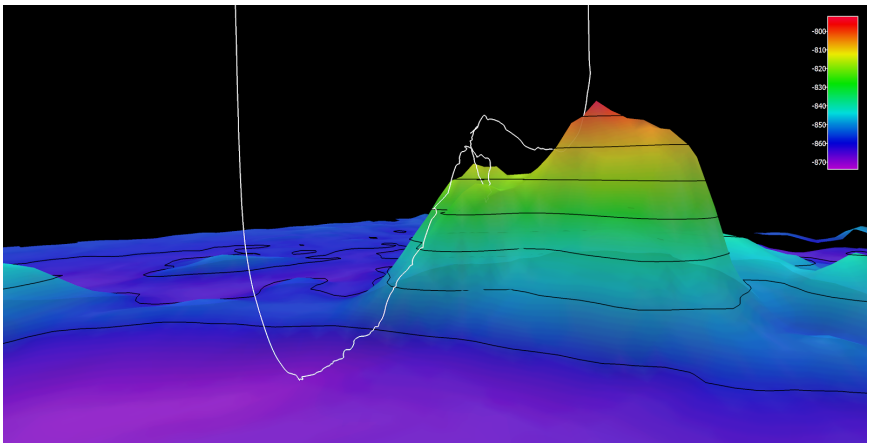
Dive Purpose	The primary objective of this dive is to explore and characterize the habitat of deep-water coral and sponges that inhabit a grouping of knolls on the Central Blake Plateau. The Blake Plateau, long described as a relatively flat, current-swept plain between the continental shelf and deep-ocean basin of the North Atlantic, is a relatively unexplored part of the Southeast Atlantic coast and, therefore, the biota of this area is mainly undescribed. Mapping of the central region of the Blake Plateau completed on Leg 1 of the Windows to the Deep 2019 expedition revealed many small mounds and knolls that have the potential to be suitable habitat for deep-sea corals and sponges. Commercial fishermen have begun targeting this area for fish species that may grow large, but very slowly, so studies of the benthic communities is important to characterize habitat suitability models. This dive will provide valuable information to start to fill-in this large data gap.
Dive Description	The ROV launched at 12:20 UTC and reached the bottom (depth of 860 m) at 13:27 UTC on a soft, sandy bottom on the eastern side of the mound. As the ROV traveled to the west up the side of the mound, we observed increasing coral rubble and some Hexactinellida sponges and Aereosoma pancake urchins. Toward the base of the mound, the bottom transitioned to a hard carbonate substrate, some current-swept coral rubble piles, and scattered black coral, cup corals, sponges, octocoral and brittle stars. At a depth of approximately 845 m, the bottom consisted of mostly coarse fine sand and coral rubble and increasing coverage of octocoral and sponges. As the ROV traveled to the top of the southernmost mound and turned toward the north, following the contour of the seafloor, the bottom stayed uniformly covered with coral rubble. On the northern mound, at a depth of 780 meters, a thicket of 15-20% live *Lophelia pertusa* and *Madrepora sp*. stony coral was observed. This observation was similar to the previous dive (EX1903L2_D04) where the greatest abundance of live coral was found on the north to northeastern side of the mound. One biological sample of the octocoral *Chrysogorgia sp.* with an *Uroptychus sp.* squat lobster was collected using the suction sampler. The dive ended at 17:58 UTC and the ROV reached the surface at 18:40 UTC.

Notable Observations	
Community Presence/ Absence (community is defined as more than two species)	✔ Corals and Sponges ✔ Chemosynthetic Community ✔ High biodiversity Community ✔ Active Seep or Vent ✔ Extinct Seep or Vent ✔ Hydrates
Feature Type	Colonized Deepwater/Coldwater Reef
SeaTube (annotations program) link	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&diveId=994

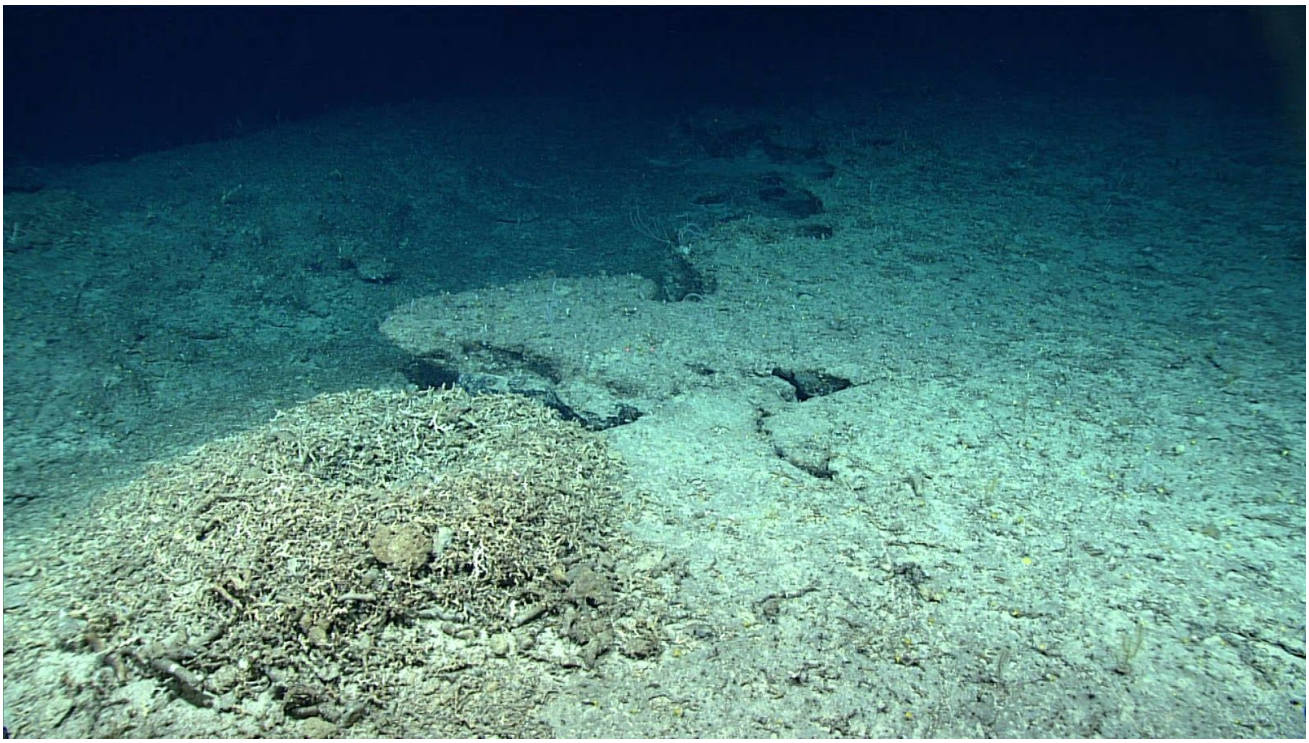
Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



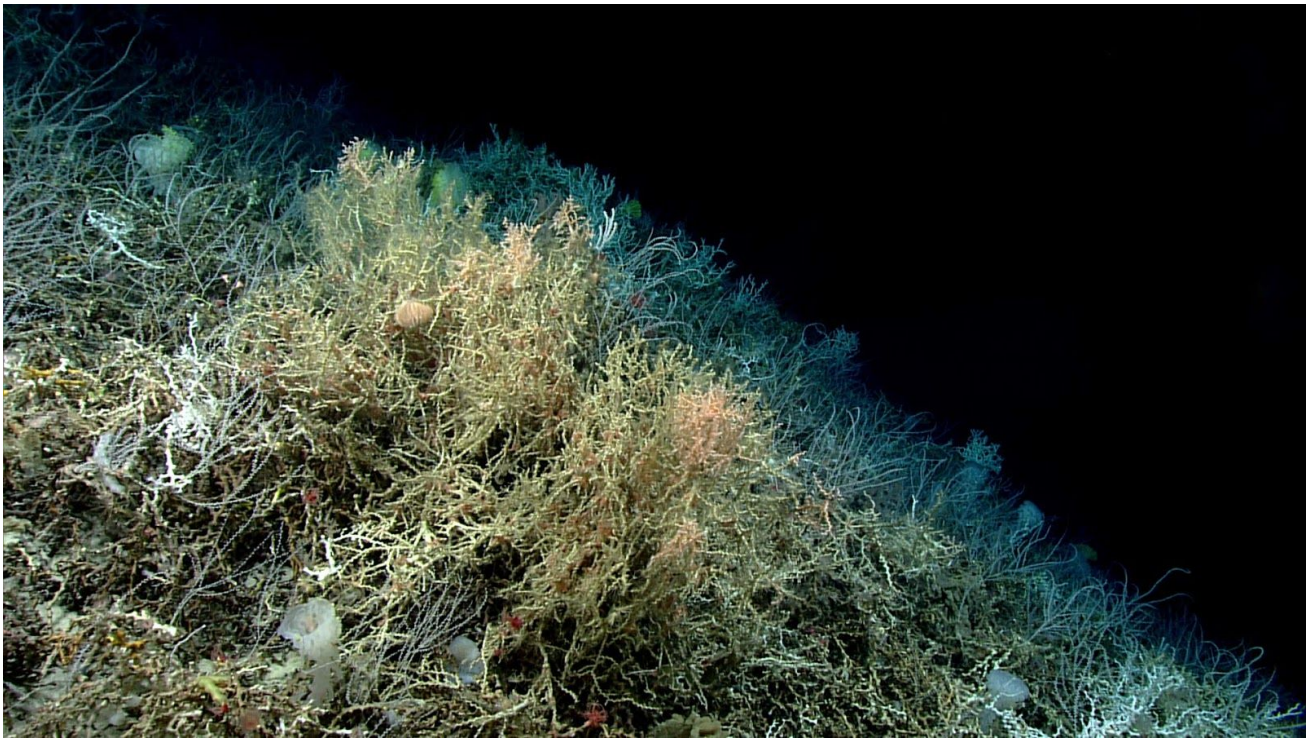
Representative Photos of the Dive



Carbonate shelves and coral rubble pile characteristic of lower portion of mound at approximately 850 m.

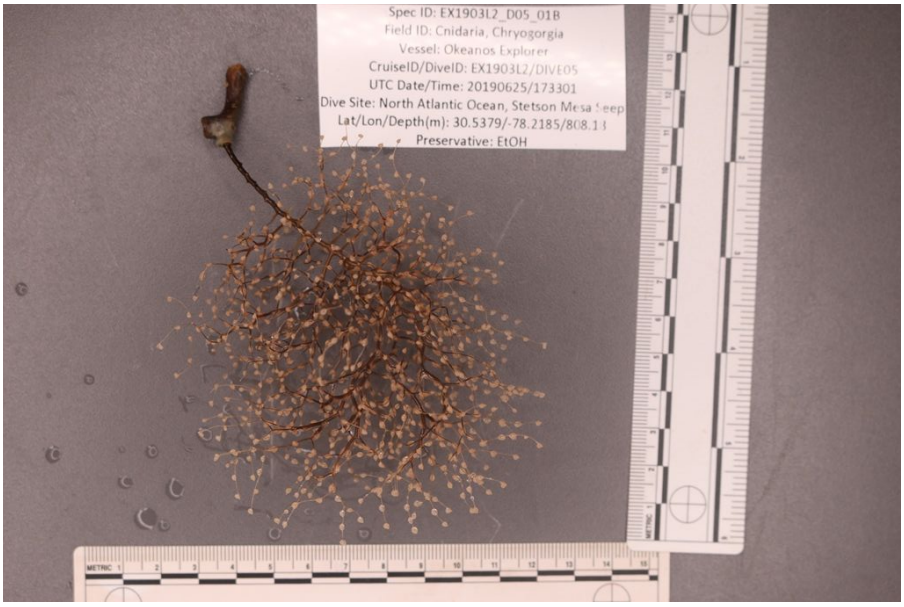
Interesting Ophiuroidea brittle star with baggy discs at 825 m - possibly *Ophiomyxa sp.* or *Ophiosyzygus sp.*

Monstrous “teapot” demosponge with two prominent oscula at a depth of 800 m.



Live *Lophelia pertusa* and *Madrepora sp.* thicket at top of mound (780 m).

Samples Collected



Sample ID	EX1903L2_D05_01B
Date (UTC)	20190625
Time (UTC)	173301
Depth (m)	808.2
Temp. (°C)	9.944
Field ID(s)	Chrysogorgia
Associates	

Associates Sample ID	Field Identification
EX1903L2_D05_01B_A01	Uroptychus

Comments	

Please direct inquiries to:

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