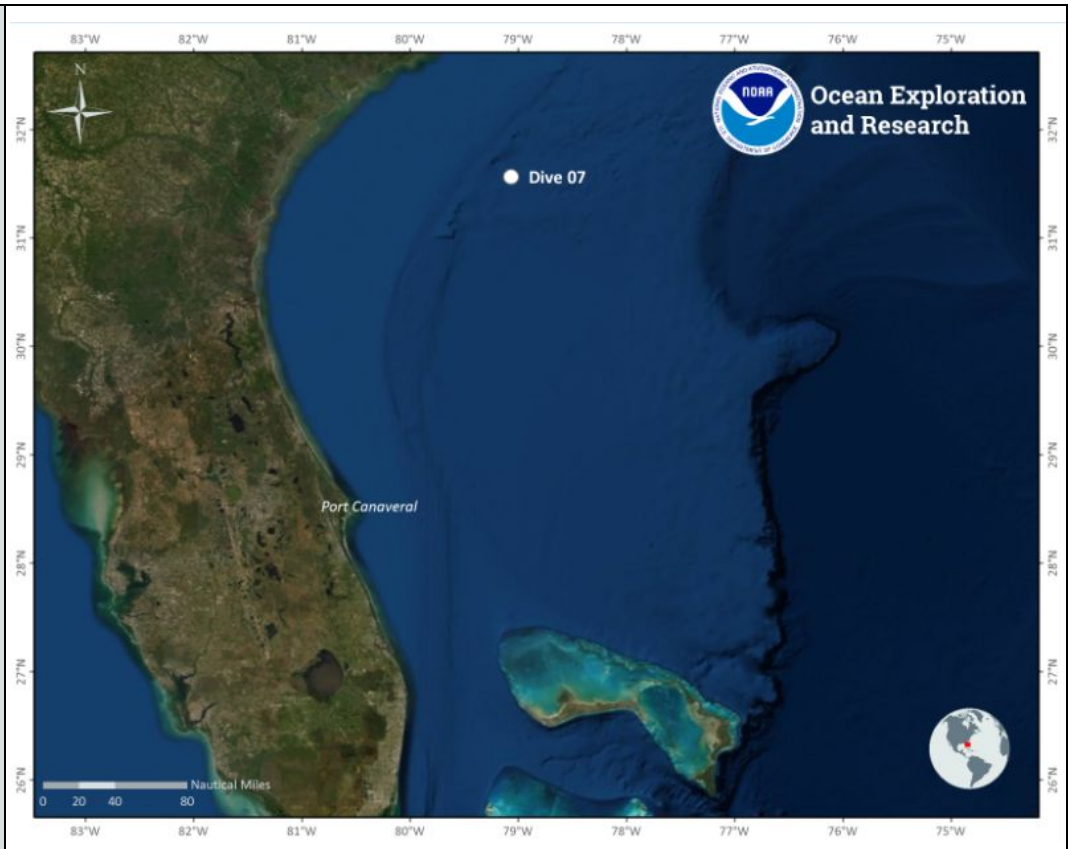
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information

General Location Map	
General Area Descriptor	U.S. Southeast , Blake Plateau, Savannah Banks
Site Name	"Shark Rock"
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	DIVE07

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_DIVE07 ^^ In Water: 2019-06-28T12:35:29.705873 31°, 35.422' N ; 79°, 6.597' W On Bottom: 2019-06-28T13:13:54.484011 31°, 35.567' N ; 79°, 6.3' W Off Bottom: 2019-06-28T20:18:44.830840 31°, 35.72' N ; 79°, 6.181' W Out Water: 2019-06-28T21:06:45.503653 31°, 36.083' N ; 79°, 5.551' W Dive duration: 8:31:15 Bottom Time: 7:4:50 Max. depth: 461.0 m		
Special Notes			

Scientists Involved (provide name, affiliation, email)

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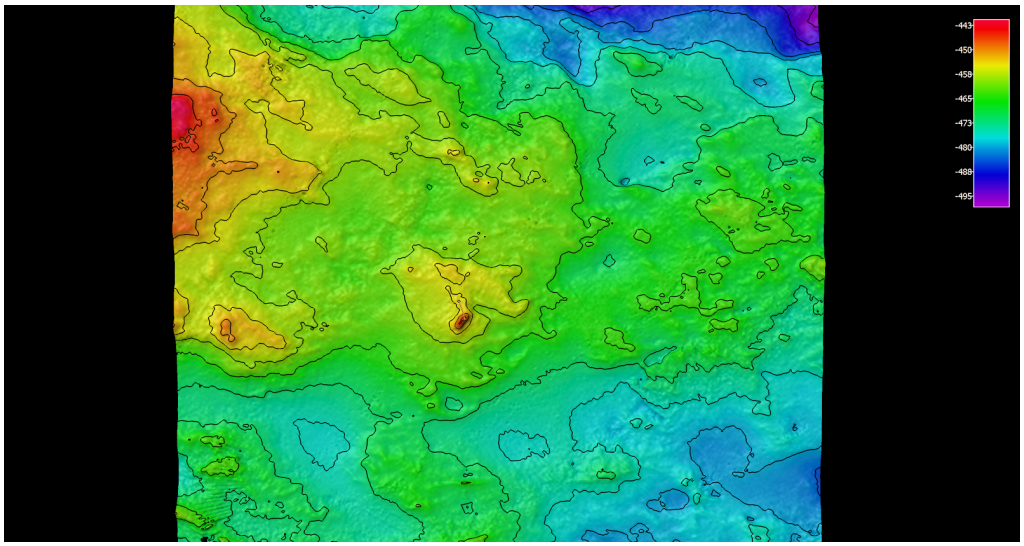
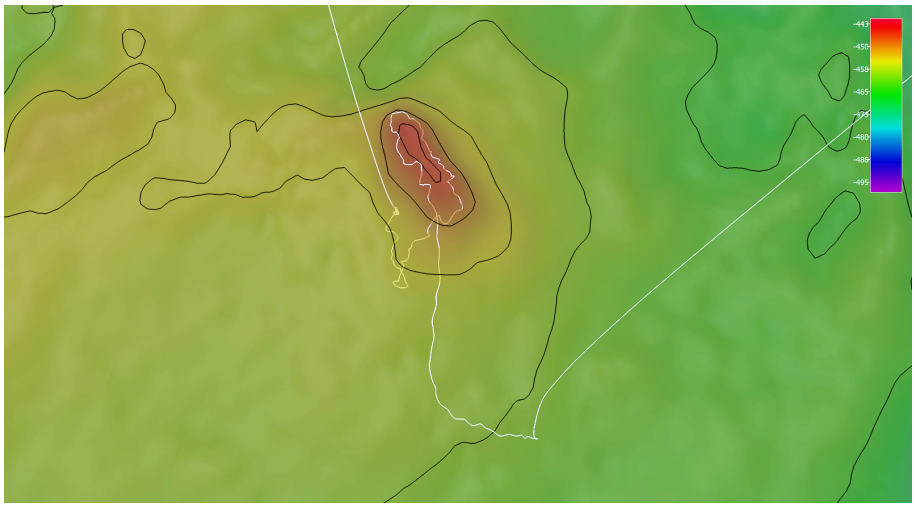
Dive Purpose	Locate and identify a potential shipwreck target. Once confirmed that this site was not an Underwater Cultural Heritage site, UCH protocols were secured and the dive preceded with benthic characterization.
Dive Description	Our dive target today was a potential Underwater Cultural Heritage (UCH) site that was thought to potentially be the Bloody Marsh shipwreck based on location and size. We landed approximately 200 m to the south of the potential target with strong surface currents above and transited toward the target. Along the track, we observed abundant and diverse sponges, some octocoral and Stylasterids, and a lot of black rock outcrops thought to be ferromanganese oxide crust. After reaching the target location and surveying the surrounding area, it was determined that the location was, unfortunately, not a shipwreck site. After we secured UCH protocols, we switched to a benthic dive and collected one geologic and three biological samples (two sponges and one coral). Throughout the dive, several small dogfish sharks were observed swimming around the site, and with about 45 minutes of bottom time left, the ROV pilots noted an aggregation of dogfish sharks in the distance. As we approached, we could see that the sharks were feeding on a dead swordfish that did not appear to have been on bottom for very long. We sat and observed the activity for several minutes. The fall was also attracting many crabs, eels and possibly a wreckfish. After several minutes, we observed the large wreckfish with the tail fin of one of the sharks in its mouth. At this time, after everyone was completely blown away, we had reached the end of the dive and began our ascent. Unfortunately, after about halfway through the shark feeding event, there were internet connectivity problems on shore and the video feed was cut. Internet was restored to the ship around 04:00 UTC.
Notable Observations	Dogfish sharks feeding on a dead swordfish and a wreckfish ambush and consume a dogfish shark.

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	Authigenic carbonate outcrop
Seatube (annotation program) Link	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&diveId=1004

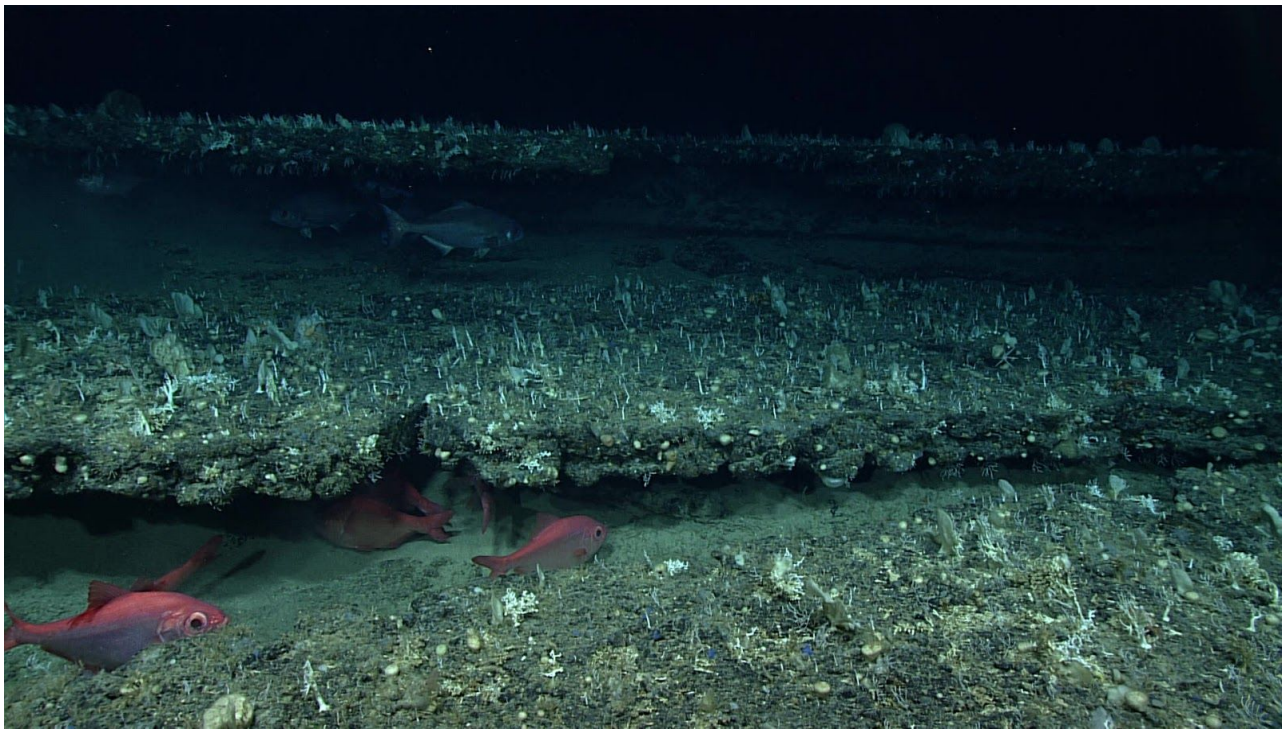
Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site

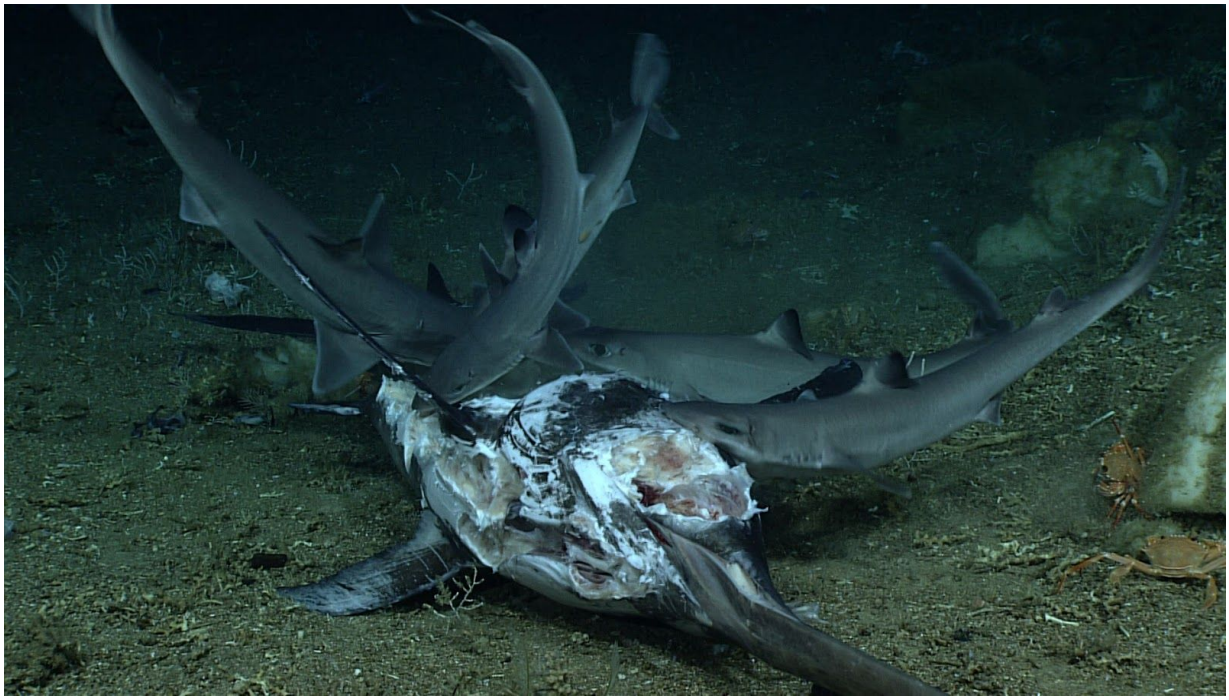


Representative Photos of the Dive

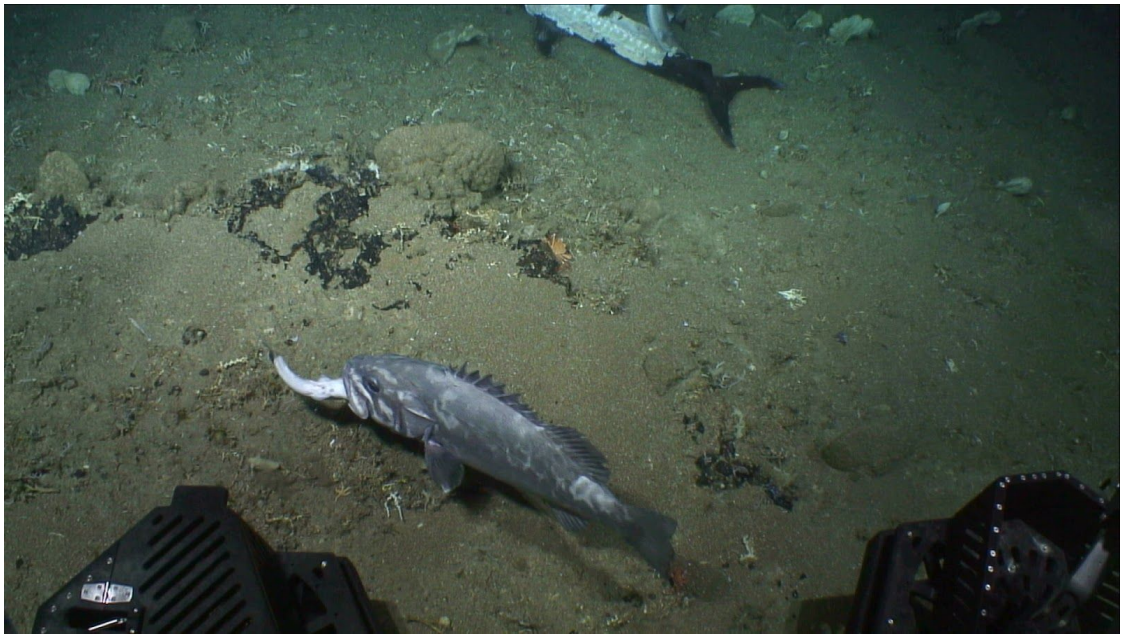


Ferromanganese crusted rock terraces covered with many soft sponges, coral and *Beryx sp.* fish hiding under ledges was characteristic of this site.

Cidaroid urchin and several species of Goniasteridae sea stars feeding on astrophorid sponge.

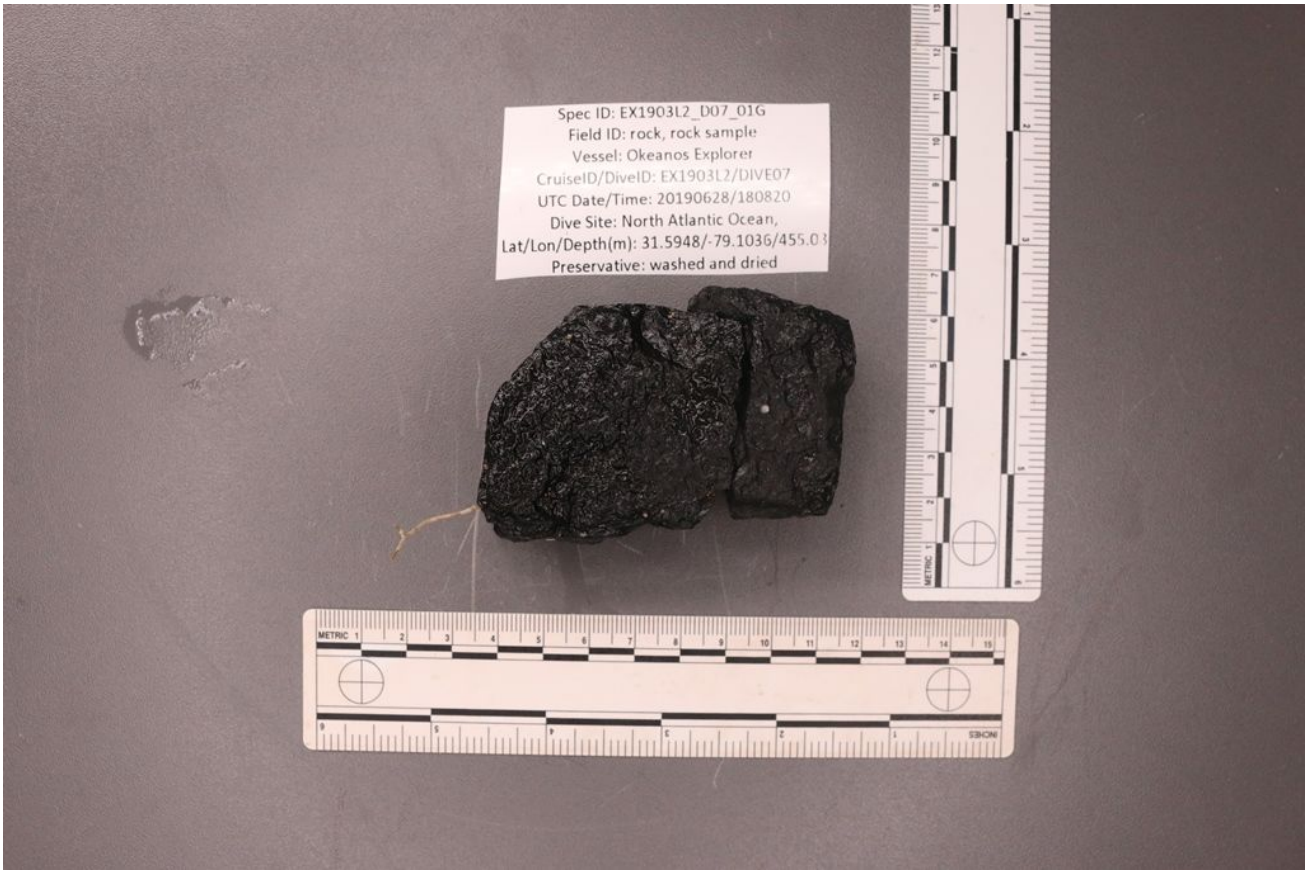


Dogfish sharks (*Squalus sp*) feeding on dead swordfish.



Wreckfish (*Polyprion sp.)* that was using ROV as cover to capture a small dogfish shark.

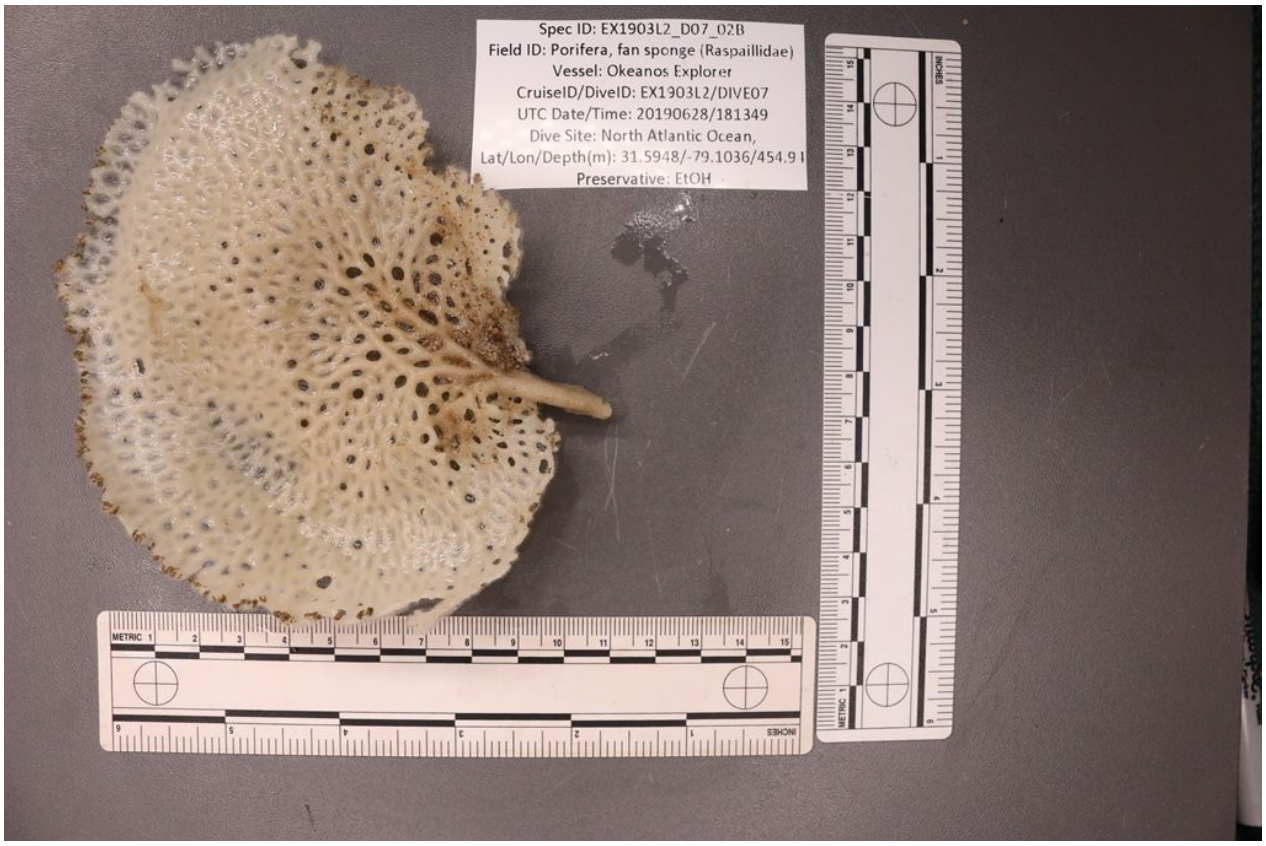
Samples Collected



Sample ID	EX1903L2_D07_01G
Date (UTC)	20190628
Time (UTC)	180820
Depth (m)	455.1
Temp. (°C)	10.491
Field ID(s)	rock sample
Associates	

Associates Sample ID	Field Identification
EX1903L2_D07_01G_A01	Plexauridae

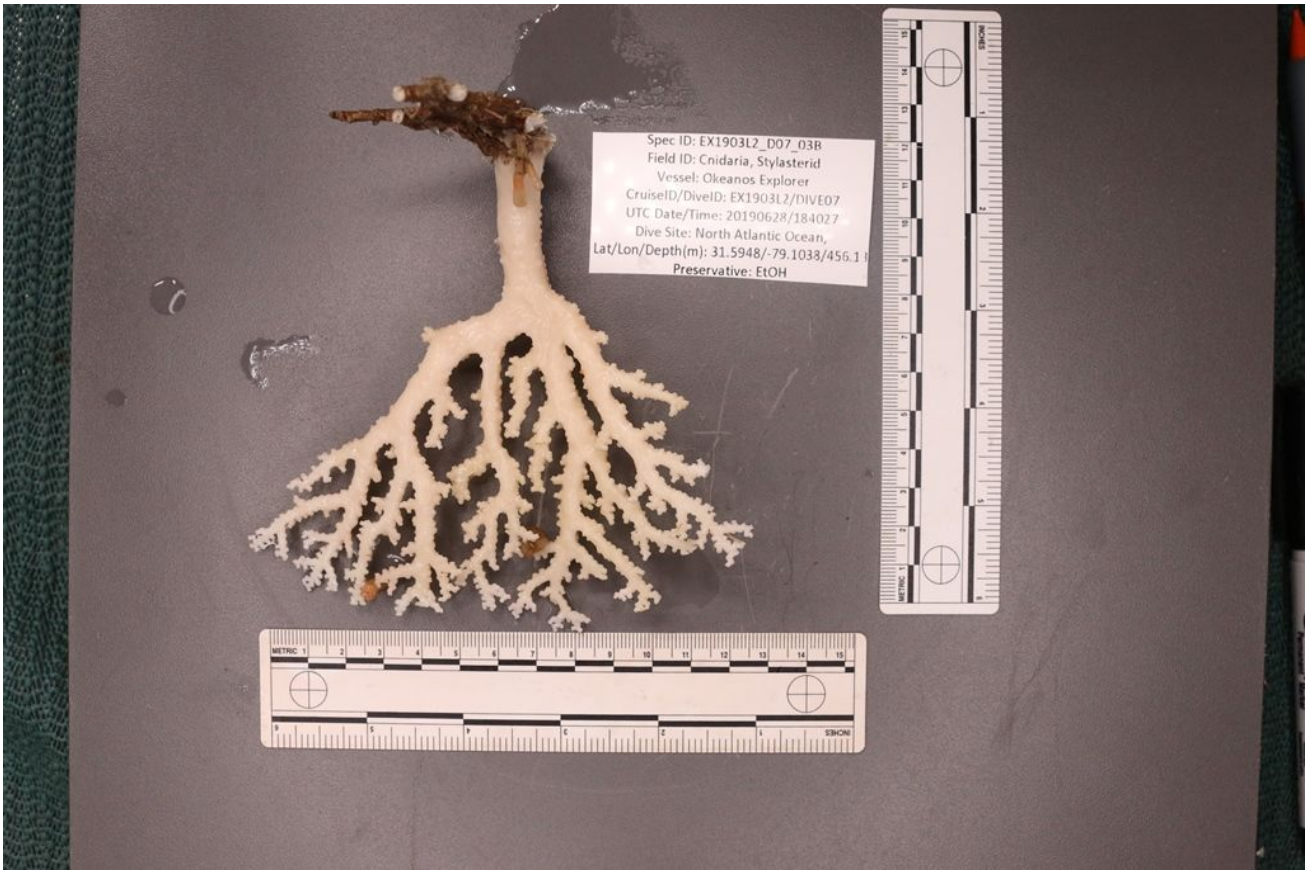
Comments	



Sample ID	EX1903L2_D07_02B
Date (UTC)	20190628
Time (UTC)	181349
Depth (m)	454.9
Temp. (°C)	10.477
Field ID(s)	Raspaillidae
Associates	

Associates Sample ID	Field Identification
EX1903L2_D07_02B_A01	Ferromangenese oxide encrusted rock
EX1903L2_D07_02B_A02	Caryophylliidae
EX1903L2_D07_02B_A03	Caryophylliidae skeleton
EX1903L2_D07_02B_A04	Hydrozoa

Comments	



Sample ID	EX1903L2_D07_03B
Date (UTC)	20190628
Time (UTC)	184027
Depth (m)	456.1
Temp. (˚C)	10.262
Field ID(s)	Stylasteridae
Associates	

Associates Sample ID	Field Identification
EX1903L2_D07_03B_A01	Tunicate (Chordata)
EX1903L2_D07_03B_A02	Hexactinellida
EX1903L2_D07_03B_A03	Plexauridae
EX1903L2_D07_03B_A04	Plexauridae

Comments	

Sample ID	EX1903L2_D07_04B
Date (UTC)	20190628
Time (UTC)	185908
Depth (m)	456.6
Temp. (˚C)	10.097
Field ID(s)	*Geodia sp*.
Associates	

Associates Sample ID	Field Identification
EX1903L2_D07_04B_A01	Ferromanganese oxide encrusted rock
EX1903L2_D07_04B_A02	Scleractinian skeleton
EX1903L2_D07_04B_A03	Actiniaria
EX1903L2_D07_04B_A04	Hexactinellida
EX1903L2_D07_04B_A05	Amphipoda

Comments	

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