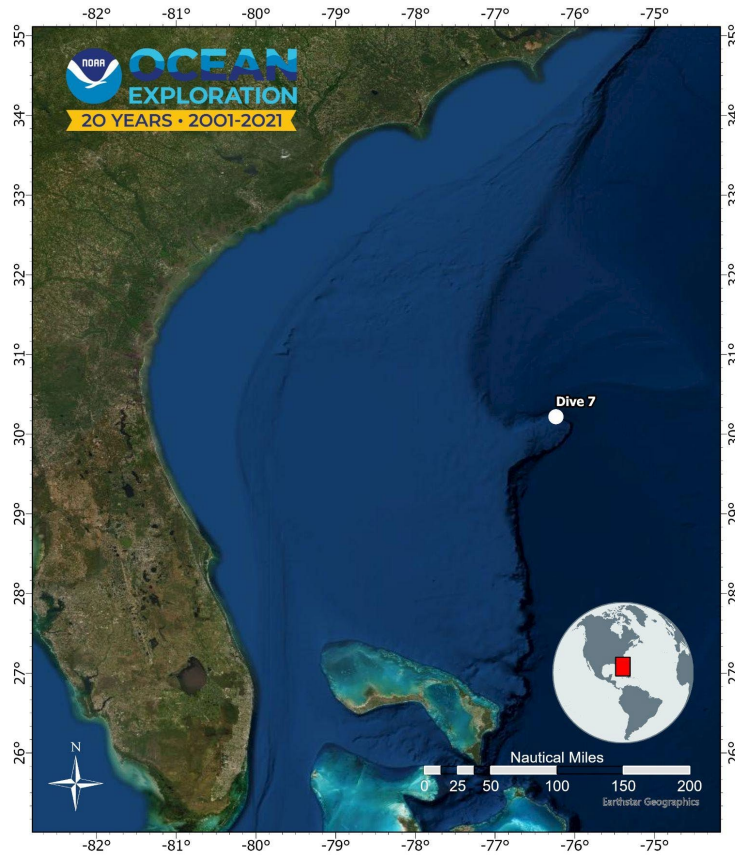


ROV Dive Summary, EX-21-07, Dive 07, November 04, 2021

General Location Map



Dive Information

Site Name	Blake Spur Canyon - Blake Plateau
General Area Descriptor	The a small canyon on wall of the Blake Spur
Science Team Leads	Stephanie Farrington, Allen Collins
Expedition Coordinator	Matt Dornback
Sample Data Manager	Madalyn Newman

ROV Dive Supervisor	Chris Ritter
Mapping Lead	Derek Sowers
Dive Purpose	Exploration
Was the dive restricted for Underwater Cultural Heritage?	No
ROV Dive Summary Data	<p>Dive Summary: EX2107_DIVE07 ^^^</p> <p>Dive Type: Normal</p> <p>In Water: 2021-11-04T12:33:42.624273 30.22188346986688 ; -76.2212851503658</p> <p>On Bottom: 2021-11-04T17:33:41.704726 30.22337140737549 ; -76.22553244545925</p> <p>Off Bottom: 2021-11-04T18:40:48.883923 30.222674667347366 ; -76.22479678967134</p> <p>Out Water: 2021-11-04T20:43:42.221849 30.22778539023443 ; -76.22982415530007</p> <p>Dive Duration: 8:09:59 Bottom Time: 1:07:07 Max Vehicle Depth: 3335.6 m Min Seafloor Depth: 3181.9 m Distance Travelled: 98.6 m</p>

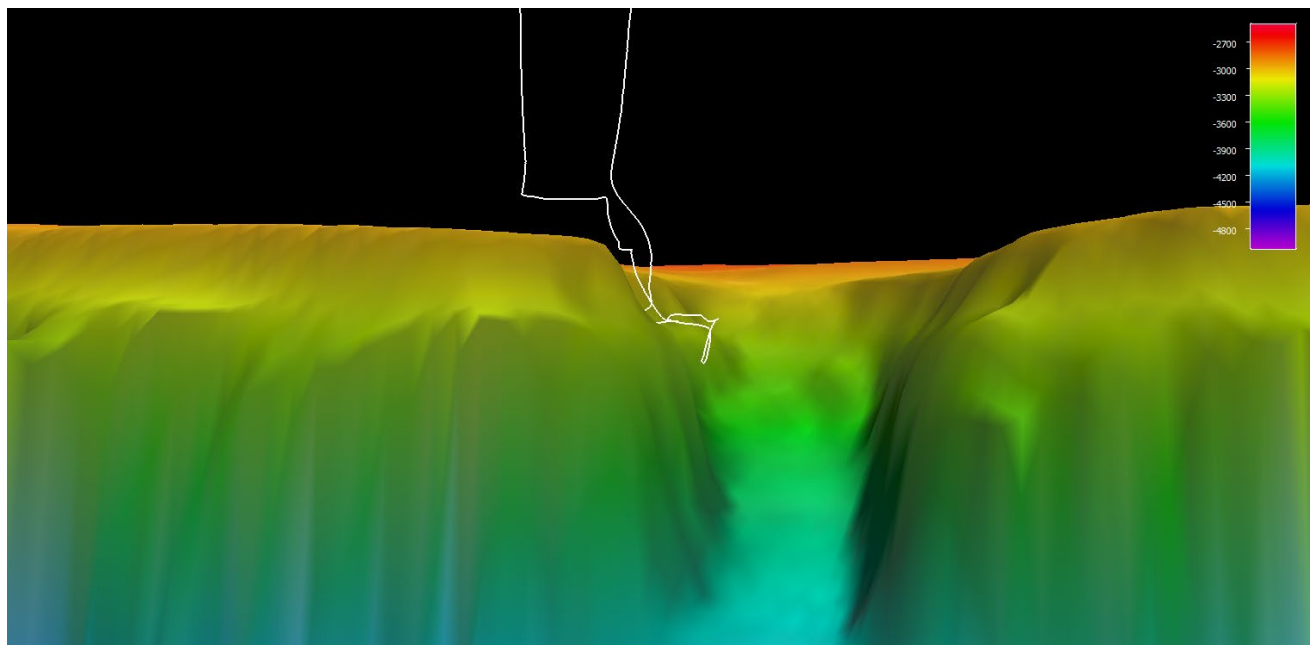
Dive Description	<p>It was a very challenging dive today, but the ROV pilots were able to push through some very strong currents and finally make it to the bottom. The depth of the canyon edge targeted for the start of the dive was already a challenge and adding the high current that occurs in the area showed to be exceedingly difficult to dive in. The dive was launched at 12:25 GMT, with the ROV finally landing on the bottom at 17:33 GMT. A descent to depth that would normally take D2 and Seirios about 2 hours, required almost 5 hours. Multiple attempts to reach the wall were conducted with no luck.</p> <p>During the dive, five water samples were taken for eDNA processing: EX2107_D07_01W at 500 m during descent; EX2107_D07_02W at 3191 m near bottom; EX2107_D07_03W at 3199 m near bottom; EX2107_D07_04W at 3187 m near bottom; and EX2107_D07_05W at 2800 during ascent to surface.</p> <p><u>On bottom:</u> Upon reaching the bottom, we found the most dominant group of organisms to be Porifera (both Hexactinellida and Demospongiae, mostly white or off-white forms). Among the living sponges, we observed very large 1-1.5 m wide, dead <i>Chonelasma</i> (hexactinellid, wide, ringed, thin plates). During the dive, we were able to view a few living individuals of this species, but parts of their bodies were brown and apparently dead. The many other species of sponges living in this area seemed normal/healthy from the footage.</p> <p>The geology of this wall consists of black, ferro manganese coated carbonate rocks that have a very pocky appearance. These pocks are likely due to impurities during formation and differential erosion or being exposed longer to the environment. The rocks appeared in some areas as jumbled piles, or part of the overall wall in others.</p> <p>Several species of <i>Geodia</i> and <i>Geodia</i>-like astrophorid sponges were encountered. Among the most common was <i>G. pachydermata</i>, a common species that ranges all the way up to mesophytic zones off Florida. Other ball-shaped sponges may have been <i>Petrosia</i>. Comparing today's dive to that of yesterday, there were only a few individuals of the flat fan sponge - <i>Tretopleura</i> sp. present in this locality. A single specimen of a pink/purple sponge, likely <i>Hertwigia</i>, was imaged. Stalked hexactinellids included a likely Bolosominiae and <i>Sympagella</i>. One demosponge species was growing in long lines along the rocks, an unusual habit that remains unexplained. One colonial tunicate was observed.</p> <p>Our first bubblegum coral- <i>Paragorgia</i> was spotted for this cruise. Interestingly, this genus has never been reported at this depth from the Atlantic and our observations could represent a range extension. At least 4-5 colonies were seen. A few oddly-branched bamboo corals and a few <i>Anthomastus</i>-like colonies (strawberry corals) were living amongst the sponge dominated community. Several anemones and zoantharian that had overgrown a dead octocoral colony were also observed.</p> <p>Very few individuals of the motile fauna were spotted, among them several stark-white Munidopsidae squat lobsters (one imaged feeding on detritus from the sea floor), as well as brisingid and cf. <i>Pteraster</i> sea stars. Not a single fish was seen during this dive.</p> <p>No Biological/geological collections were able to be obtained due to control of the ROV in the current.</p>
Notable Observations	<ul style="list-style-type: none"> • We documented a stunning sponge Garden • We observed bubblegum coral, <i>Paragorgia</i>, below 3000 meters when the genus had never been reported at this depth from the Atlantic, and so a depth range extension • We encountered a stunning pink/purple sponge, a rare form (likely an undescribed species) of the glass sponge genus <i>Hertwigia</i>
Community and habitat observations	<p>Corals and Sponges - Present Chemosynthetic Community - Absent High biodiversity Community - Present</p>

	Active Seep or Vent - Absent Extinct Seep or Vent - Absent Hydrates - Absent
CMECS Feature Type(s)	Scarp Wall
SeaTube Link (science annotation system)	http://dive-logger1.okex.tgfoe.org:8080/SeaTubeV3?resourceTypeId=600&resourceId=2483

Equipment Deployed

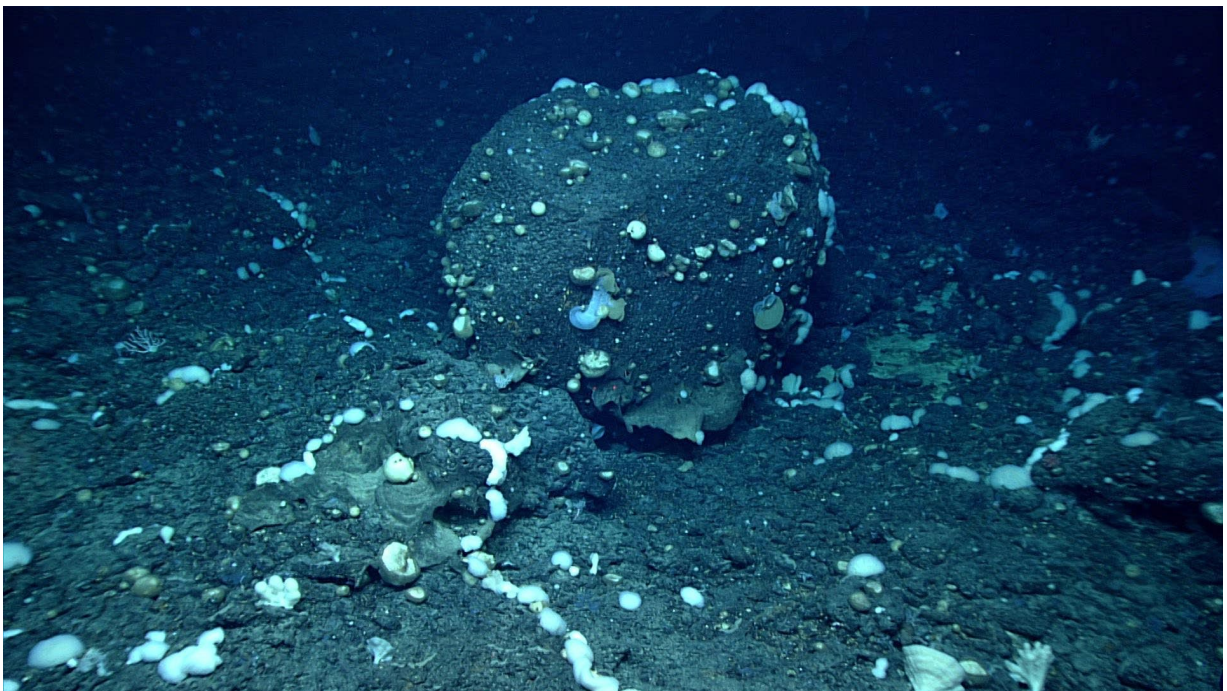
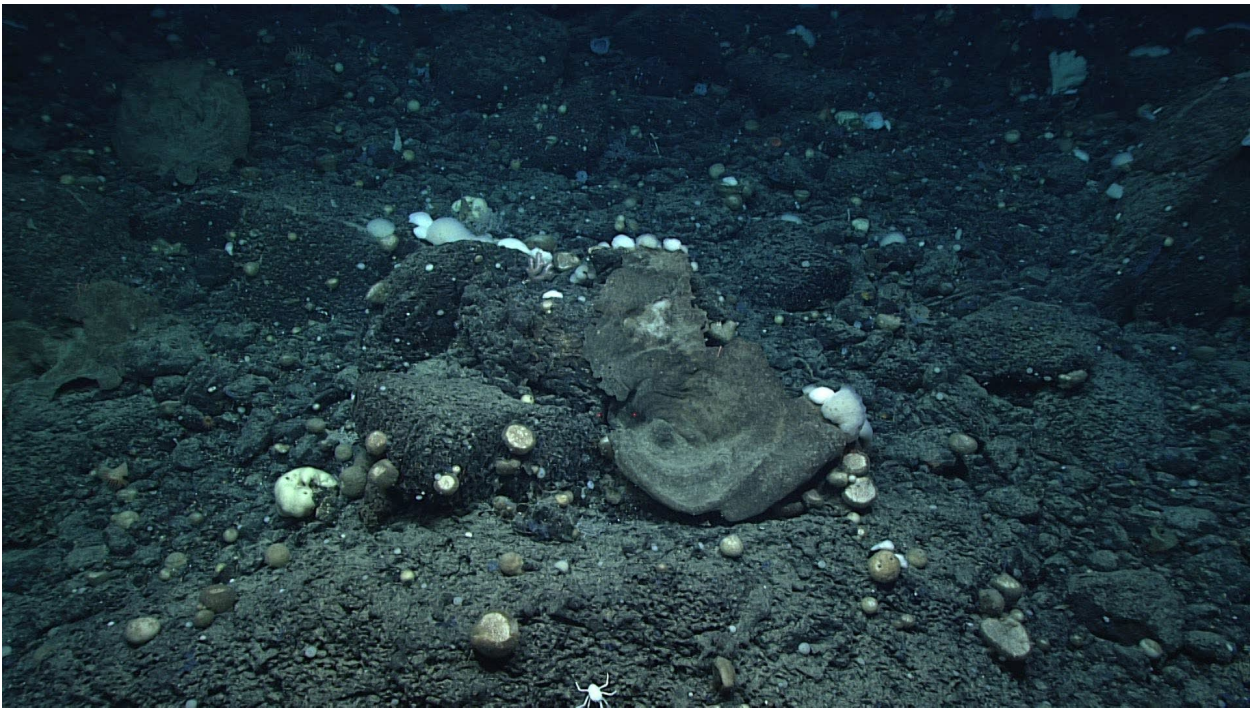
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	No malfunctions, just very difficult to reach the bottom in such conditions.

Close-up Map of Main Dive Site



Smoothed ROV dive track in white bathymetry, 1x vertical exaggeration.

Representative Photos of the Dive

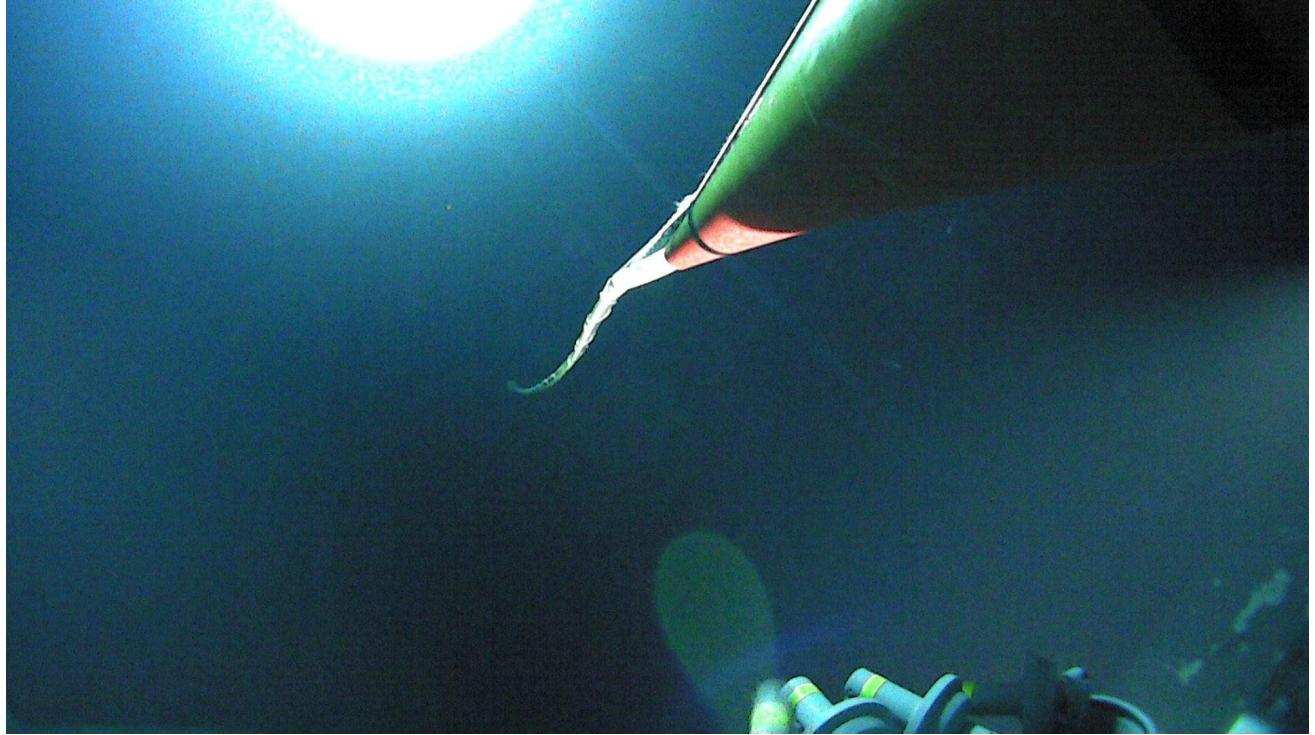


Samples Collected -



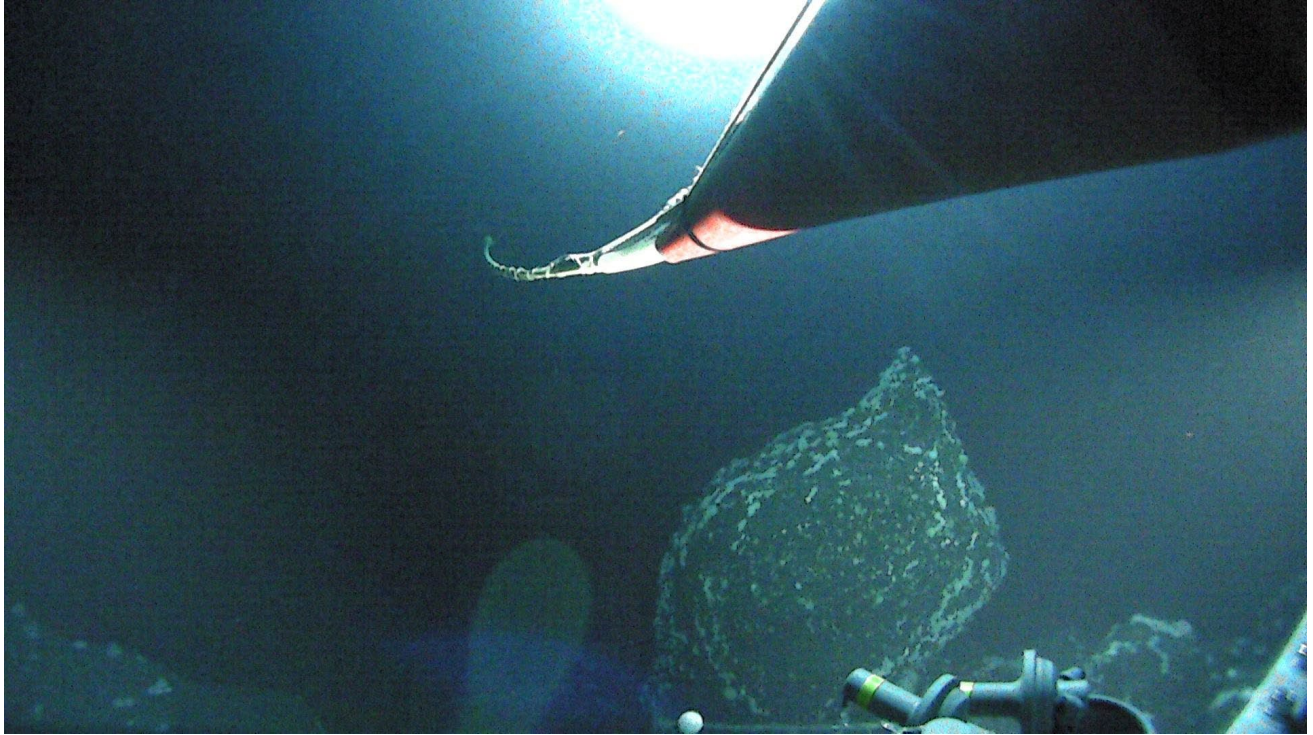
Sample ID	EX2107_D07_01W
Date (UTC)	20211104
Time (UTC)	12:54
Depth (m)	510.094
Latitude (decimal degrees)	30.22394
Longitude (decimal degrees)	-76.220110
Temp. (°C)	17.179
Field ID(s)	Water sample
Comments	eDNA

Associates Sample ID	Field Identification	Count
N/A	N/A	N/A



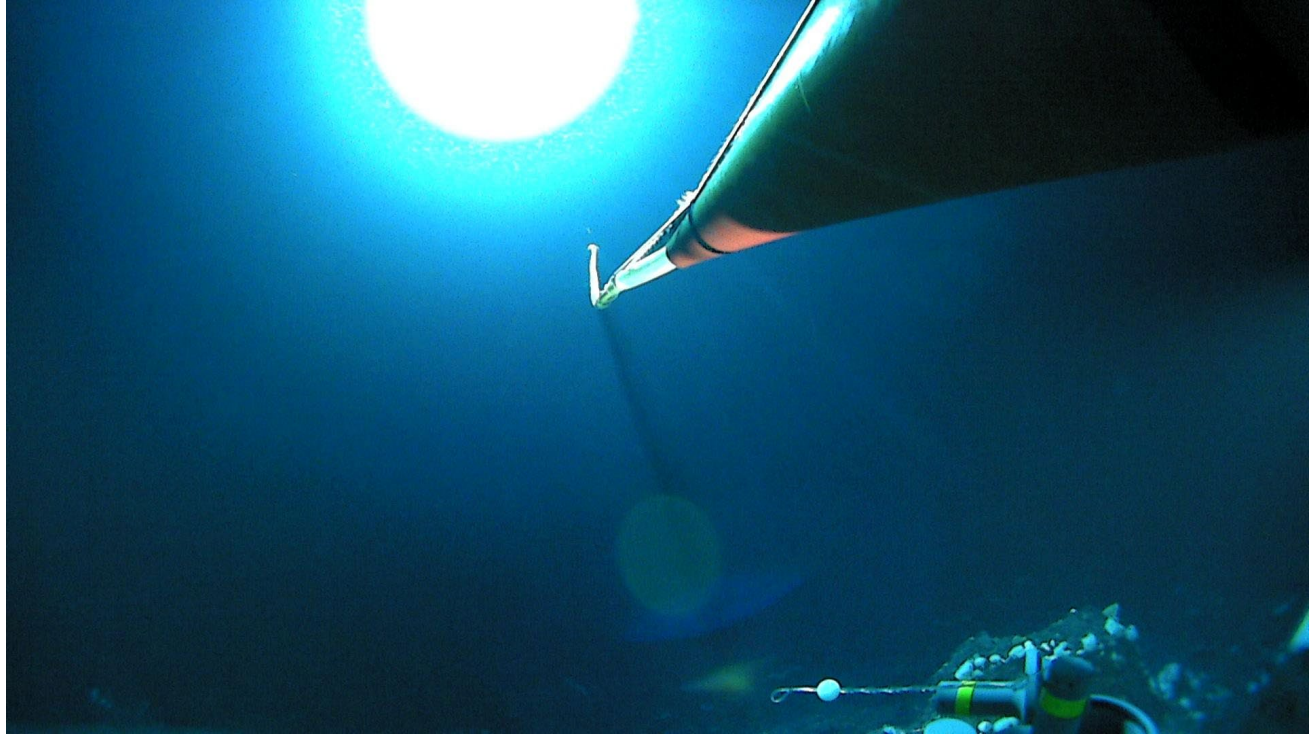
Sample ID	EX2107_D07_02W
Date (UTC)	20211104
Time (UTC)	17:52
Depth (m)	3190.965
Latitude (decimal degrees)	30.223080
Longitude (decimal degrees)	-76.225490
Temp. (°C)	2.694
Field ID(s)	Water sample
Comments	eDNA

Associates Sample ID	Field Identification	Count
N/A	N/A	N/A



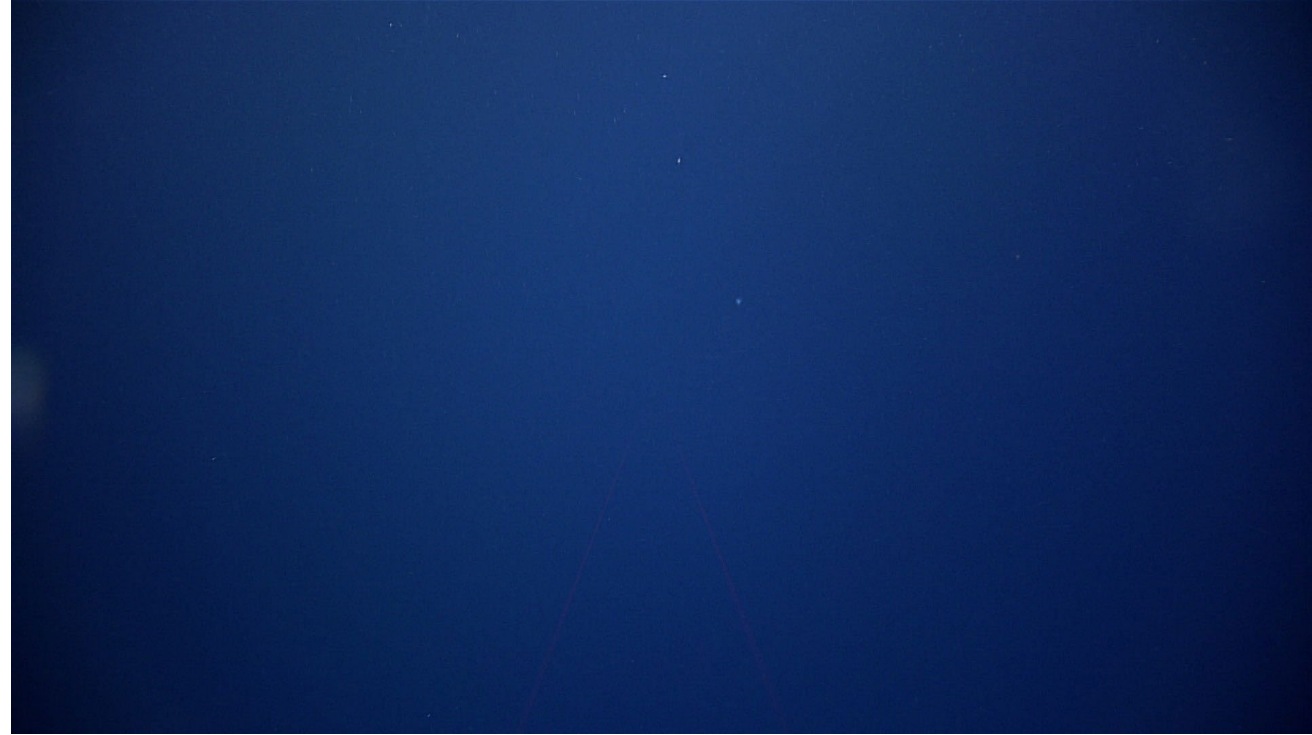
Sample ID	EX2107_D07_03W
Date (UTC)	20211104
Time (UTC)	18:28
Depth (m)	3199.188
Latitude (decimal degrees)	30.222700
Longitude (decimal degrees)	-76.225610
Temp. (°C)	2.682
Field ID(s)	Water sample
Comments	eDNA

Associates Sample ID	Field Identification	Count
N/A	N/A	N/A



Sample ID	EX2107_D07_04W
Date (UTC)	20211104
Time (UTC)	18:40
Depth (m)	3187.286
Latitude (decimal degrees)	30.222820
Longitude (decimal degrees)	-76.225270
Temp. (°C)	2.69
Field ID(s)	Water sample
Comments	eDNA

Associates Sample ID	Field Identification	Count
N/A	N/A	N/A



Sample ID	EX2107_D07_05W
Date (UTC)	20211104
Time (UTC)	19:00
Depth (m)	2797.391
Latitude (decimal degrees)	30.222920
Longitude (decimal degrees)	-76.224800
Temp. (°C)	2.826
Field ID(s)	Water sample
Comments	eDNA

Associates Sample ID	Field Identification	Count
N/A	N/A	N/A

Scientists Involved (provide name, email, affiliation)

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