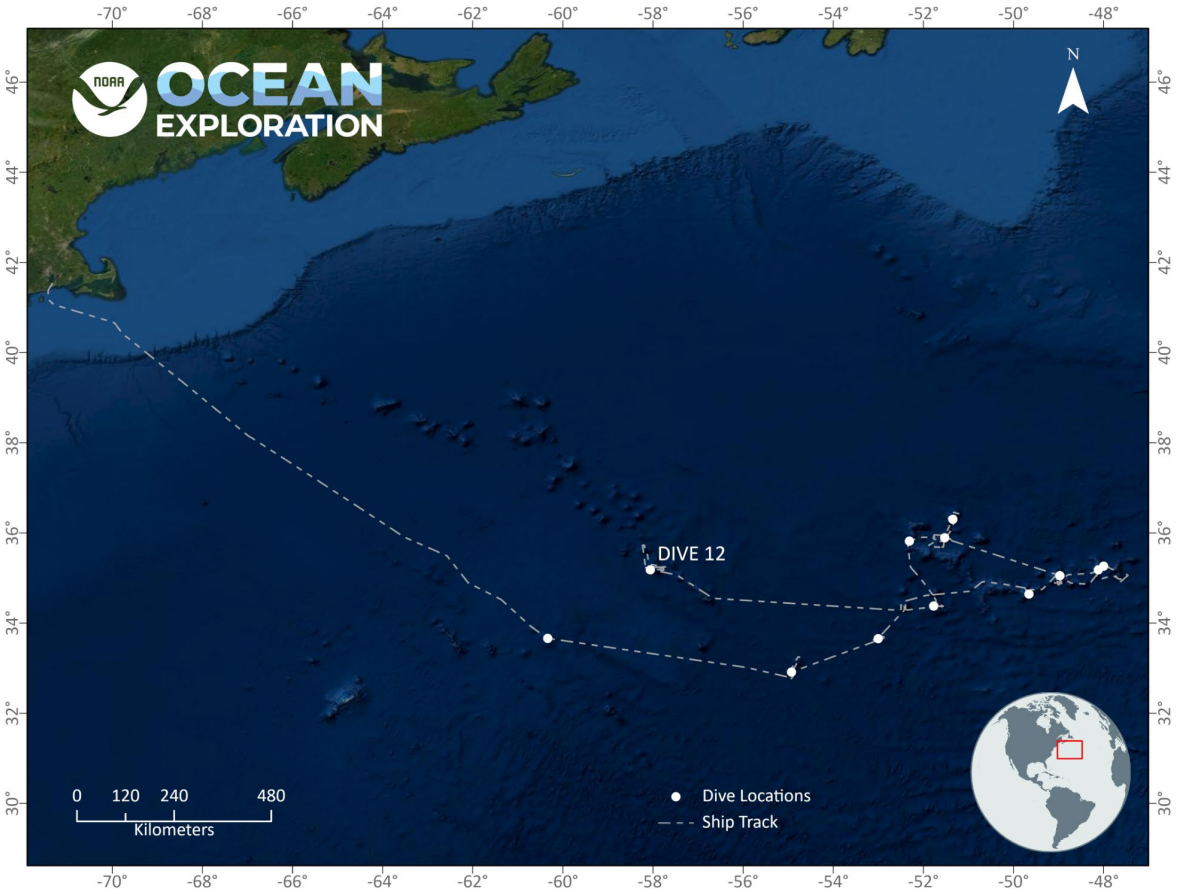
ROV Dive Summary, EX-21-04, Dive 12, July 17, 2021

General Location Map



Dive Information

Site Name	”Y” seamount (unmapped, unnamed)
General Area Descriptor	New England Seamounts, Eastern End
Science Team Leads	Rhian Waller, Kira Mizell
Expedition Coordinator	Kasey Cantwell, Kimberly Galvez (Expedition Coordinator in Training)
ROV Dive Supervisor	Chris Ritter
Mapping Lead	Shannon Hoy

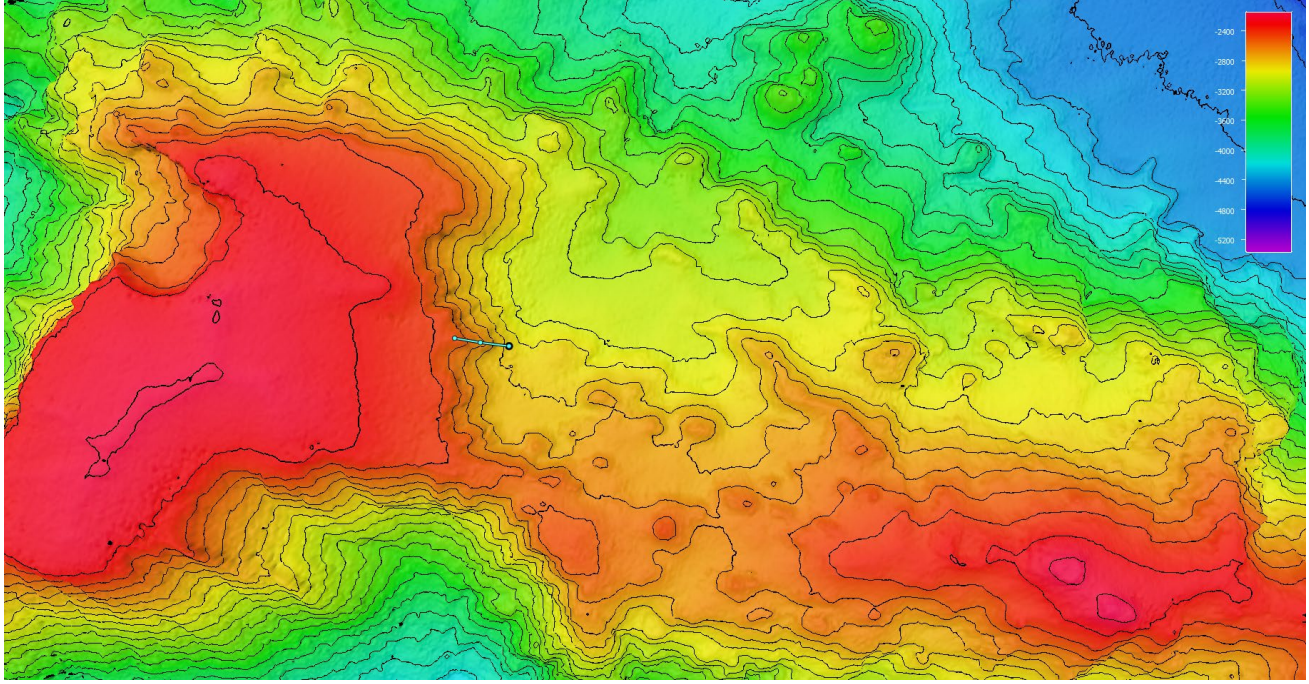
Dive Purpose	Explore new seamount area
Was the dive restricted for Underwater Cultural Heritage?	No
ROV Dive Summary Data	Dive Summary: EX2104_DIVE12 ^^ Dive Type: Normal In Water: 2021-07-17T12:19:49.069632 35.222449589612026 ; -58.03227235064662 On Bottom: 2021-07-17T14:06:02.701328 35.2206767347653 ; -58.03379144085918 Off Bottom: 2021-07-17T19:04:20.946592 35.221150368216804 ; -58.03550131472739 Out Water: 2021-07-17T20:33:40.778129 35.217746482647 ; -58.04668782782745 Dive Duration: 8:13:51 Bottom Time: 4:58:18 Max Vehicle Depth: 2806.8 m Min Seafloor Depth: 2580.1 m Distance Travelled: 282.0 m
Dive Description	This dive at "Y" seamount occurred on a previously unmapped and unexplored seamount at the eastern end of the New England seamount chain. At the beginning of the dive, the ROV landed at the base of a slope feature where sediments were accumulated and were notably finer than those at shallower depths during the last several dives in the Corner Rise Seamounts. Small scale ripples were observed in the sediments, and thin crusts of igneous rock intermittently cropped up out of the sediment. The first rock was collected near a Fe-Mn-crust-covered outcrop that we hoped was the same rock material but may have been a dropstone. As the dive progressed toward the slope, we encountered a large boulder field that looked to be the result of mass wasting of igneous rocks from above. In many places, debris flow of rock cobbles and sediment chutes were evident. Fe-Mn crusts looked fresher on the exposed, sediment-free faces of the boulders. A second loose piece of igneous rock coated in Fe-Mn crust was sampled from a rock pile with the hopes it would be suitable for age dating. At the middle and upper portions of the dive, the geology transitioned to lobate flow structures of igneous rock. All igneous surfaces were coated in Fe-Mn crusts and in many places, a thin layer of sediment surrounded each botryoid, making them very visually defined. Near the top of the dive, the ROV encountered a large vertical pillar that appeared to be a volcanic parasite cone. Some of the main igneous wall was so steep it was difficult to tell if it may have been a fault scarp or just an erosional cliffs. Near the end of the dive, we reached a ledge where sediment had accumulated into ponds that showed evidence of bioturbation, and ancient coral rubble had also clearly fallen downslope and collected there. Biological fauna on the deepest end of the transect, where sediment waves were present, was sparse, though a potentially new species of Stelodoryx sponge was collected at the very start of the dive and a live cup coral was observed under a ledge. As we moved into more bouldered terrain black corals (*bathypathes*, and *Heteropathes opreseki*) were observed, as well as sparse, mostly dead bamboos (potentially J Clade *Jasonisis*), moving upslope to observing

	large bamboo coral colonies, sparse crysogorgia, corallium (at least 2 species) and several large (>1.5m) primnoid colonies as we reached the upper areas of the dive. On a large sponge skeleton we observed several colonies of the true soft coral Aquaumbridae. Fossilized *Desmophyllum dianthus* were observed at the wall area. Sponge fauna was also greatest at the steeper sections of the dive, with several species of hexactinellid and demospongia being observed. On the steep wall we also observed and collected a slit limpet (Fissurellidae, genus Zeidora) feeding. Other notable fauna were a potential dandelion (Rhodalidae), brisingids, two sea cucumbers, a tomopteris polychaete and an unidentified Ophidid fish.
Notable Observations	Slit shell limpet
Community and habitat observations	Corals and Sponges - (Present) Chemosynthetic Community - (Absent) High biodiversity Community - (Absent) Active Seep or Vent - (Absent) Extinct Seep or Vent - (Absent) Hydrates - (Absent)
CMECS Feature Type(s)	Rock, Sediment (coarse unconsolidated)
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=2353

Equipment Deployed

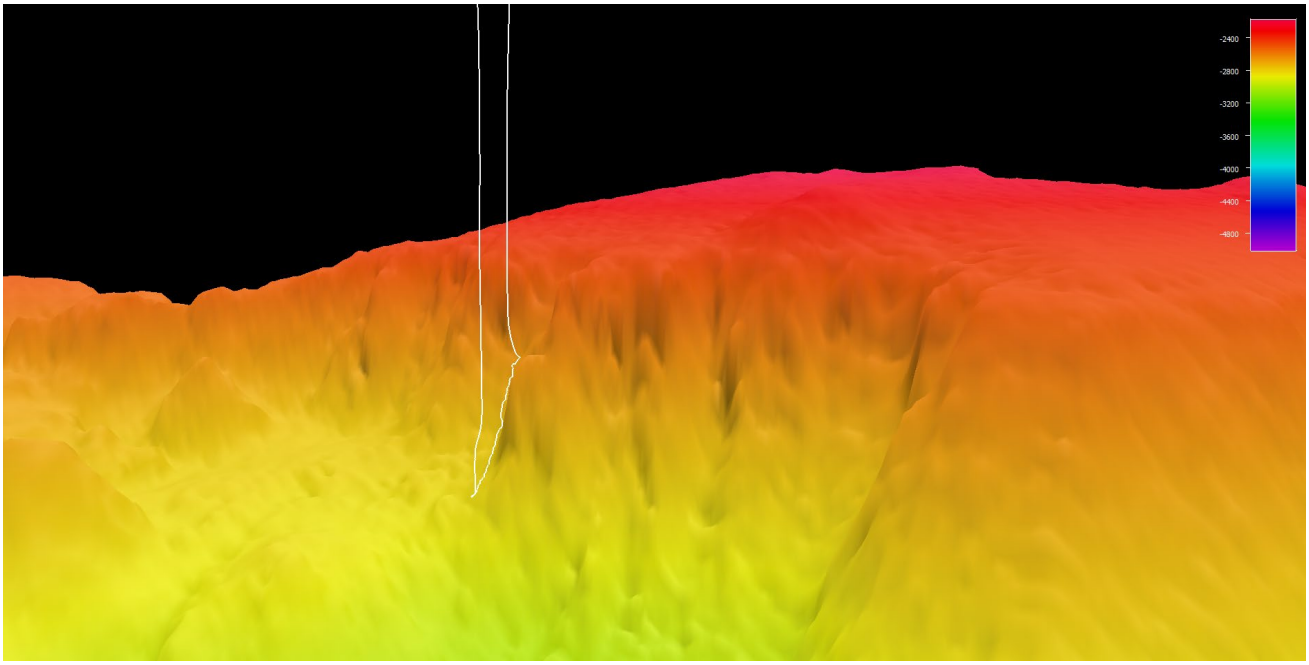
ROV	*Deep Discoverer*
Camera Platform	*Seirios*
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational
Equipment Malfunctions	none

Overview of Dive Site



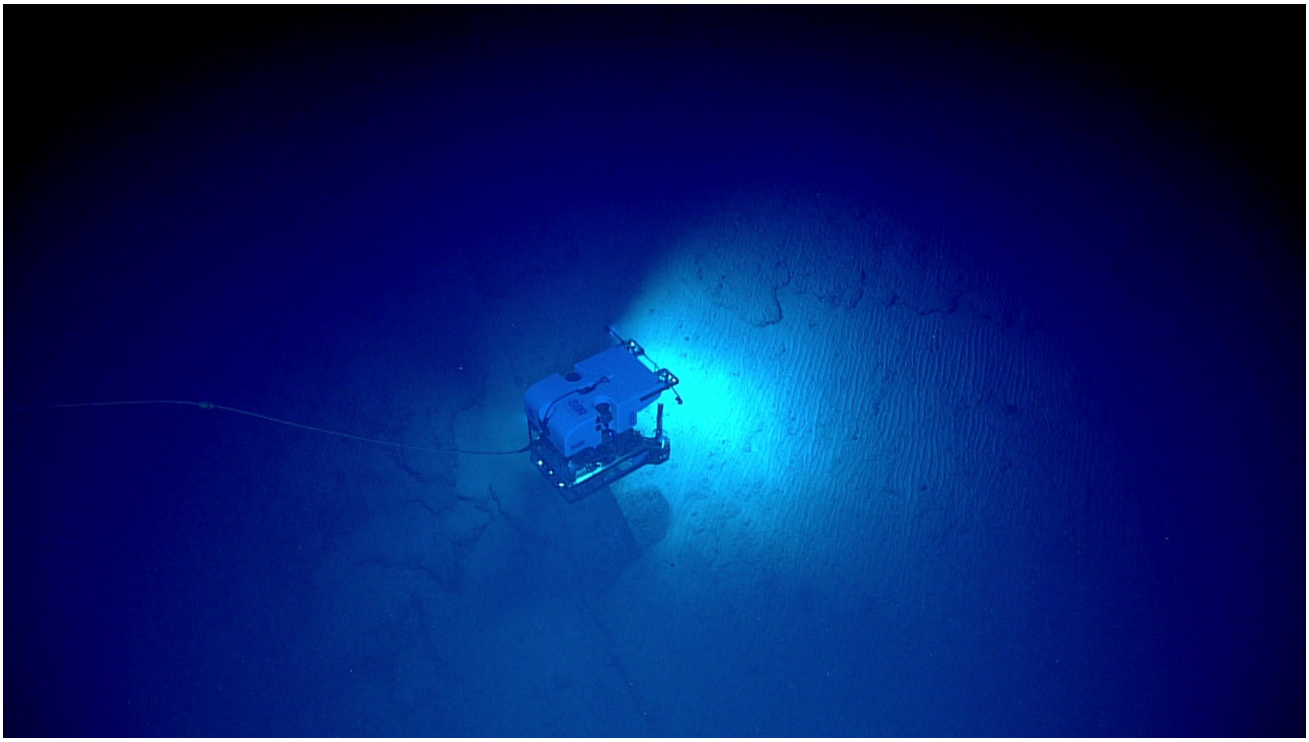
Smoothed ROV dive track (blue) on an overview bathymetry of the seamount, 3x vertical exaggeration.

Close-up Map of Main Dive Site



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

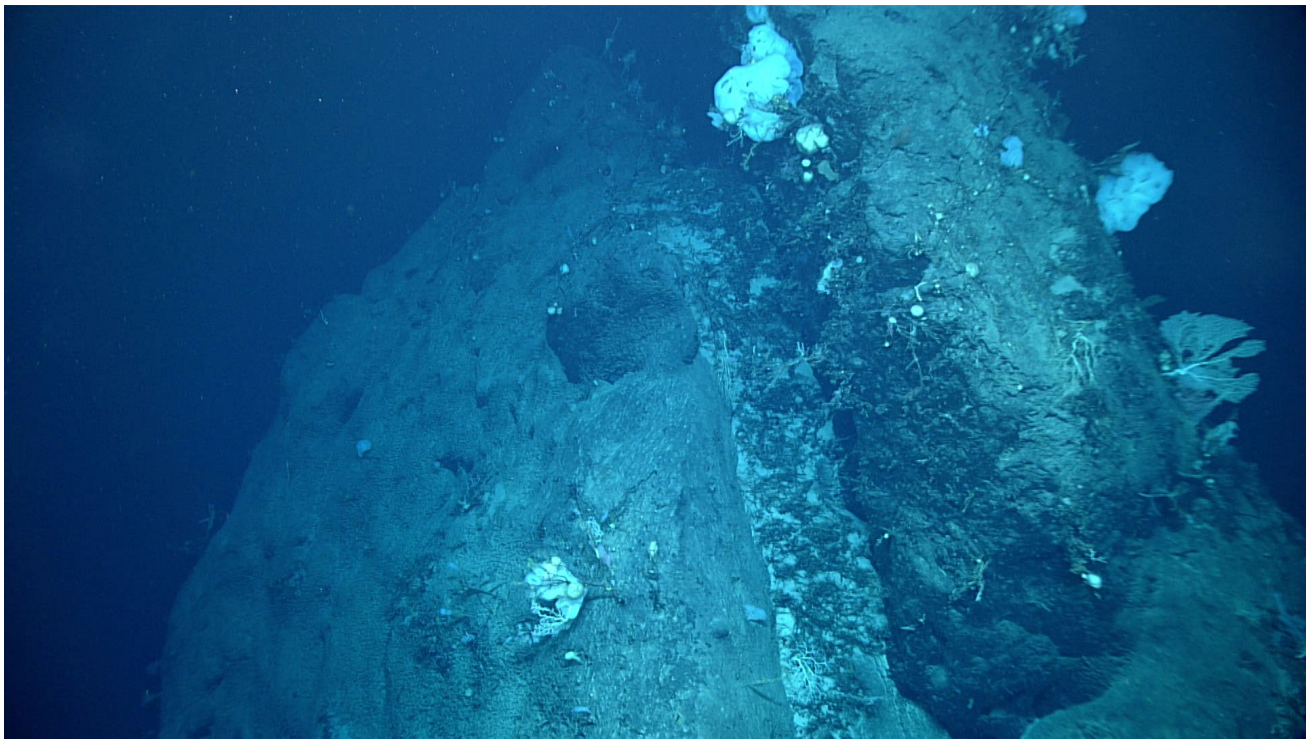
Representative Photos of the Dive



[D2 landed on a large area with tight sediment waves]

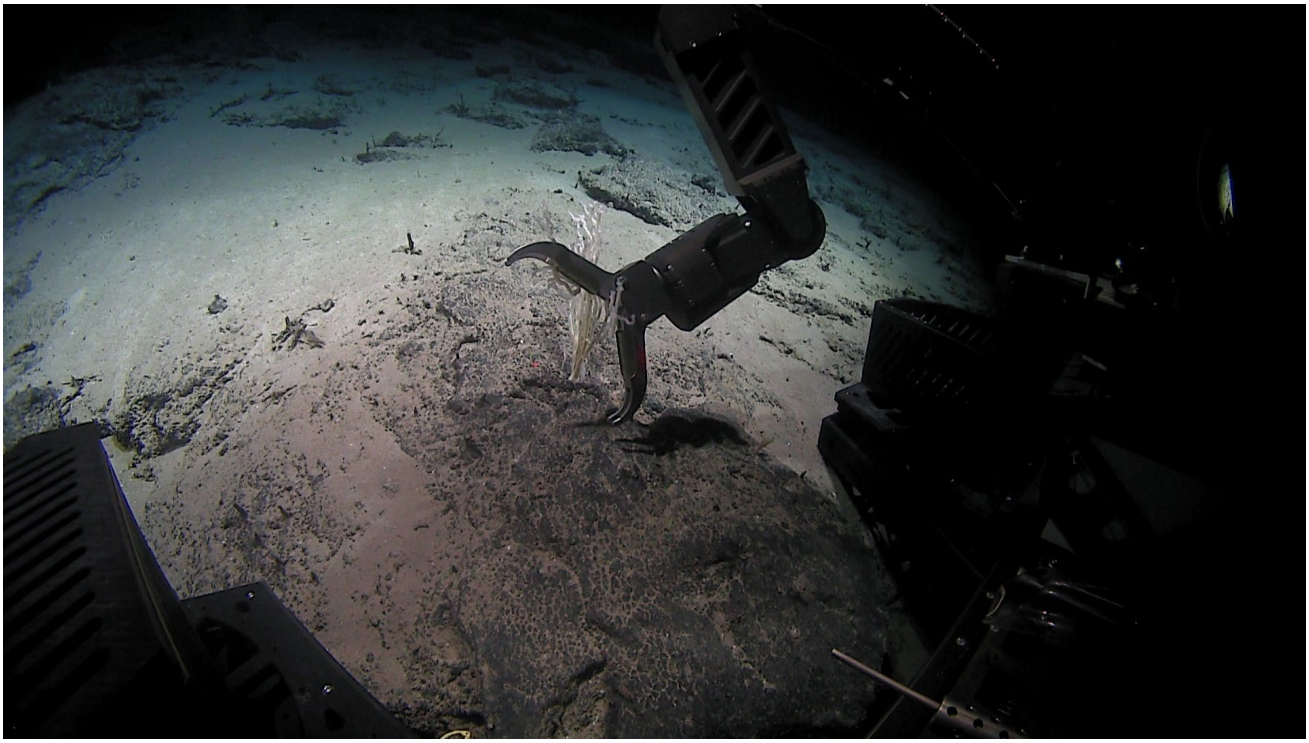
[large igneous boulder with coral-like sponges (Stelodoryx), fly trap anemone and brisingids]

[Unknown species of Ophidid cusk eel]



[One of the steep pinnacles climbed during this dive showing a sediment chute with fossil coral rubble, and ferromanganese encrusted ledge colonized with sponges and primnoid octocorals]

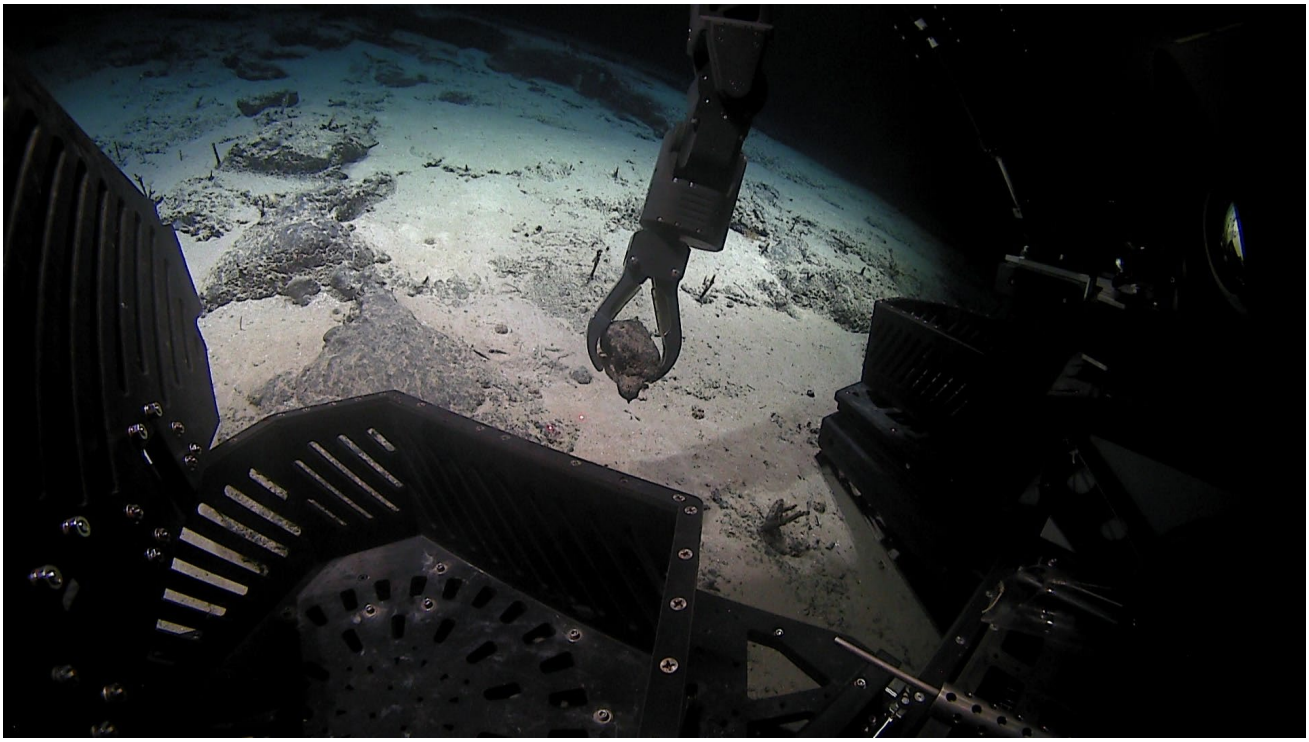
Samples Collected -



Sample ID	EX2104_D12_01B
Date (UTC)	20210717

Time (UTC)	142321
Depth (m)	2810.547119
Latitude (decimal degrees)	35.22054672
Longitude (decimal degrees)	-58.033741
Temp. (°C)	3.127000093
Field ID(s)	Hexactinellida
Comments	white sponge with coral-like morphology. Possible Hexactinellida? Softer than Hexactinellida. All pieces are <10cm.

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



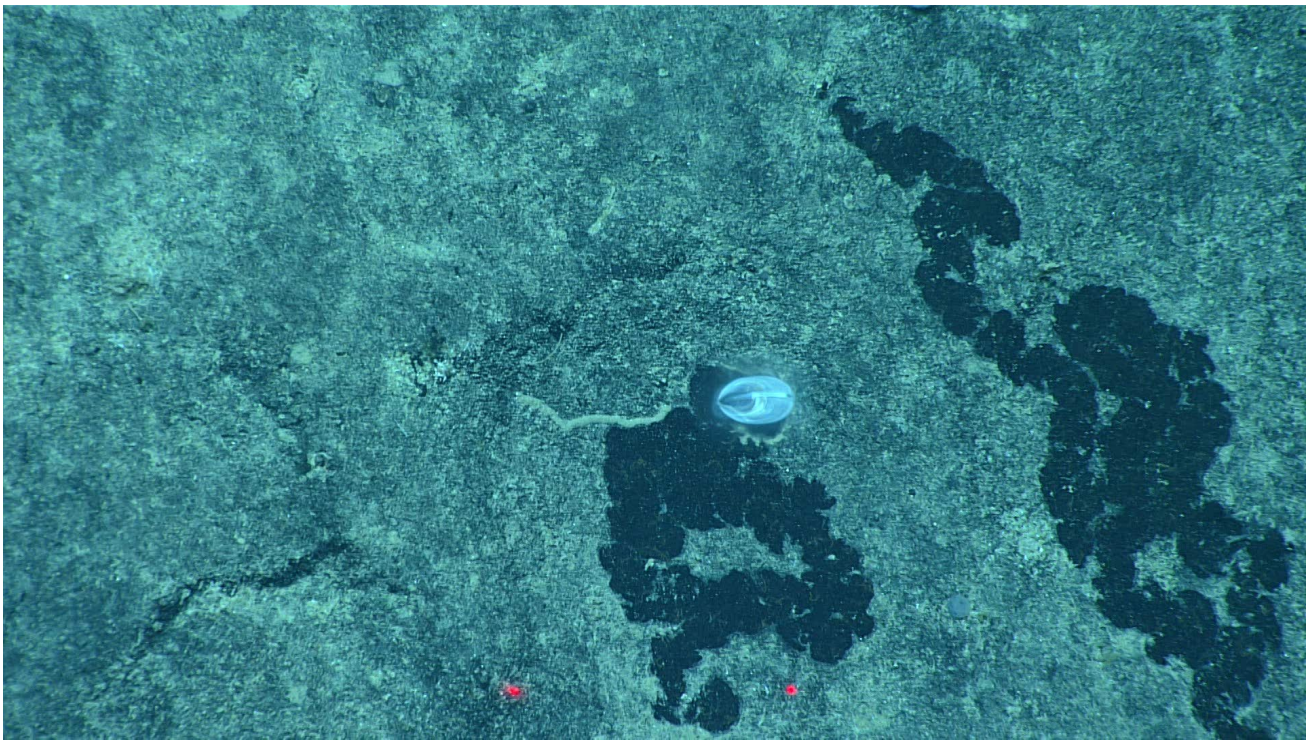
Sample ID	EX2104_D12_02G
Date (UTC)	20210717
Time (UTC)	142906
Depth (m)	2808.87793
Latitude (decimal degrees)	35.22058868
Longitude (decimal degrees)	-58.03367615
Temp. (°C)	3.125
Field ID(s)	Rock FeMn Crust
Comments	FeMn coated angular rock near encrusted outcrop. 2mm thick crust. Various organisms attached to it. 15cm long x 12.5cm wide x 7.5cm tall

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

Sample ID	EX2104_D12_03G
Date (UTC)	20210717
Time (UTC)	152731
Depth (m)	2777.626953

Latitude (decimal degrees)	35.2207222
Longitude (decimal degrees)	-58.03421783
Temp. (˚C)	3.10800004
Field ID(s)	Rock from wasting area FeMn crust
Comments	FeMn encrusted igneous rock from field of cobbles. Some iron rich portions (orange). Encrusted worm tubes. 23cm long x 14cm wide x 10cm tall

Associates Sample ID	Field Identification	Count
EX2104_D12_03G_A01	FeMn Crust	1



Sample ID	EX2104_D12_04B
Date (UTC)	20210717
Time (UTC)	174035
Depth (m)	2635.603027
Latitude (decimal degrees)	35.22118378
Longitude (decimal degrees)	-58.03523636
Temp. (˚C)	3.219000101
Field ID(s)	Zeidora
Comments	MgCl2 (as a relaxant) for 20 mins with final preservative of 70% ETOH. gastropod slit limpet. Observed eating surface layer of rock. Likely fissurellidae genus Zeidora (common name slit limpet Zeidora).

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

Scientists Involved (provide name, email, affiliation)

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