

Okeanos Explorer ROV Dive Summary

Dive Information

General Location Map	Ng North Kingstown	E5*W	Cocean Exploration and Research Dive 1
			N N N Nautical Miles 0 25 50 100
General Area Descriptor	U.S. and Canadian Atlantic Continen	tal Margin	
Site Name	Gully Canyon		
Science Team Leads Expedition Coordinator	Meagan Putts (UH) Jeff Obelcz (USNRL) Daniel Wagner (NOAA-OER)		
ROV Dive Supervisor	Sean Kennison (GFOE)		
Mapping Lead	Michael White (NOAA-OER)		

ROV Dive Name

Cruise	EX1905L2
Dive Number	DIVE01

Equipment Deployed

ROV	Deep Discoverer			
Camera Platform	Seirios			
	✓ CTD		🗸 Depth	✓ Altitude
ROV	✓ Scanning Sonar		✓ USBL Position	✓ Heading
Measurements	🖌 Pitch		🖌 Roll	✓ HD Camera 1
	🖌 HD Camera 2	2	✓ Low Res Cam 1	✓ Low Res Cam 2
	🖌 Low Res Cam	า 3	✓ Low Res Cam 4	✓ Low Res Cam 5
Equipment	The ROV had tr	rouble purgin	ng air from the suction sampler ho	ose on descent, and as a result lost
Malfunctions	roughly 10 min	utes on the v	way down. There were no other e	quipment issues.
ROV Dive Summary	In Water:	2019-08-29	T16:38:31.205285	
Data (from		43°, 54.093'	' N ; 58°, 56.454' W	
Processed ROV)				
	On Bottom:	2019-08-29	T17:57:06.310209	
		43°, 53.987	'N;58°,56.435'W	
	Off Pottom:	2010 00 20	T21.E6.02 1E2147	
	On Bottom.	2019-08-29 43° 54 106'	121.30.03.133147 'N · 58° 56 381'W	
		45, 54.100	N, 38, 30.381 W	
	Out Water:	2019-08-29	T22:39:26.881961	
	out materi	43°. 54.075'	' N : 58°. 56.198' W	
		-,	, ,	
	Dive duration:	6:0:55		
	Bottom Time:	ne: 3:58:56		
	Max. depth:	1348.0 m		
Special Notes	N/A			



Scientists Involved

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Dive Purpose and Description

Dive Purpose	This dive was located within the Gully Marine Protected Area (MPA), which protects the largest submarine canyon in the Western North Atlantic. This productive environment is host to a number of protected fish and marine mammal species, and assessment of biodiversity is critical for effective MPA management. The dive was meant to explore the eastern wall of the Gully Canyon, which has never been surveyed with deep-sea submersibles. Additionally, this dive sought to document and collect several species of sponges and corals which are thought to be new to science. Furthermore, this dive sought to explore the recent geological activity of the canyon in the form of seabed ripples, fresh debris fields, and axial canyon incision.
Dive Description	Shortly after reaching the seafloor near the eastern canyon wall (1350 m), a large boulder was sighted, which was encrusted with sessile fauna, including bamboo corals (<i>Keratoisis</i> sp.), anemones (<i>Phorosoma placenta</i>), soft corals (<i>Anthomastus</i> sp.), and soloniferous corals (<i>Hexadella</i> sp.). The transit up the eastern wall of the canyon began soon thereafter, but vigorous bottom currents made maneuvering and positioning of the ROV for photography difficult. Bamboo corals were observed in high abundance, which had not been documented during previous explorations on the western flank of the Gully Canyon. Two undescribed specimens of glass sponge were collected, a euplectellid vase sponge (<i>Dictyaulus/Euplectella</i>) and a ruffled sponge in the subfamily Corbitellinae. The canyon wall morphology was distinctive, with steep slopes and sheer cliffs in addition to slope parallel rills and abundant evidence of mass wasting. Several corals were also observed that were previously not recorded from this region, including a nodal branching bamboo coral and bubblegum coral (<i>Paragorgia</i>), which were collected as samples. The ROV left the seafloor at a final depth of approximately 1100 m, after having collected five total samples.
Notable Observations	 Collected three specimens of sponges identified as high priority by Fisheries and Oceans Canada Several corals observed that were not previously known from this region Steep and rugose canyon wall topography, including slope parallel rills
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



Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site





Representative Photos of the Dive



Large clast in proximity of east canyon wall encrusted with bamboo corals, mushroom corals, stoloniferous coral, crinoids, demosponges sponges, and anemones.



Sampling euplectellid vase glass sponge (Dicytaulus/Euplectella) which likely represents new species.





Slope parallel rills abundant on eastern canyon walls.



Dense deep-sea coral community on the eastern wall of Gully Canyon featuring an abundance of *Keratoisis* bamboo corals, parazoanthids, *Anthomastus* mushroom coral, and various invertebrate associates.



Samples Collected



Sample ID	EX1905L2_D01_01B		
Date (UTC)	20190829		
Time (UTC)	184539		
Latitude	43.90010		
Longitude	-58.94060		
Depth (m)	1317.1		
Temp. (°C)	3.931		
Field ID(s)	Dictyaulus sp.		
Commensals			
	Commensal Sample ID	Field Identification	Count
	EX1905L2_D01_01B_A01	Decapoda shrimp white	2
		·	·
Comments	N/A		



Sample ID	EX1905L2_D01_02B		
Date (UTC)	20190829		
Time (UTC)	190300		
Latitude	43.90020		
Longitude	-58.94070		
Depth (m)	1315.6		
Temp. (°C)	3.968		
Field ID(s)	Paragorgia sp.		
Commensals			
	Commensal Sample ID	Field Identification	Count
	EX1905L2_D01_02B_A01	Asteroschematidae	2
	EX1905L2_D01_02B_A02	Pycnogonidae	1
	EX1905L2_D01_02B_A03	Amphipoda	4
	EX1905L2_D01_02B_A04	Polychaeta	19
Comments	N/A		





Sample ID	EX1905L2_D01_03B
Date (UTC)	20190829
Time (UTC)	193837
Latitude	43.90040
Longitude	-58.94060
Depth (m)	1294.1
Temp. (°C)	3.969
Field ID(s)	Geodia barretti
Commensals	No commensals
Comments	N/A



Sample ID	EX1905L2_D01_04B		
Date (UTC)	20190829		
Time (UTC)	205816		
Latitude	43.90120		
Longitude	-58.94020		
Depth (m)	1142.5		
Temp. (°C)	4.040		
Field ID(s)	Corbitellinae new genus		
Commensals			
	Commensal Sample ID	Field Identification	Count
	EX1905L2_D01_04B_A01	Keratoisis sp.	1
Comments	N/A		





Sample ID	EX1905L2_D01_05B		
Date (UTC)	20190829		
Time (UTC)	215415		
Latitude	43.90170		
Longitude	-58.93970		
Depth (m)	1084.9		
Temp. (°C)	4.131		
Field ID(s)	Keratoisidinae nodal		
Commensals			
	Commensal Sample ID	Field Identification	Count
	EX1905L2_D01_05B_A01	Mysida	1
	EX1905L2_D01_05B_A02	Decapoda shrimp	1
	L	·	
Comments			

Please direct inquiries to:

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