



Okeanos Explorer ROV Dive Summary

Dive Information

<p>General Location Map</p>	
<p>General Area Descriptor</p>	<p>U.S. and Canadian Atlantic Continental Margin</p>
<p>Site Name</p>	<p>Northeast Channel</p>
<p>Science Team Leads</p>	<p>Meagan Putts (UH) Jeff Obelcz (USNRL)</p>
<p>Expedition Coordinator</p>	<p>Daniel Wagner (NOAA-OER)</p>
<p>ROV Dive Supervisor</p>	<p>Sean Kennison (GFOE)</p>
<p>Mapping Lead</p>	<p>Michael White (NOAA-OER)</p>

ROV Dive Name

<p>Cruise</p>	<p>EX1905L2</p>
<p>Dive Number</p>	<p>DIVE04</p>

Equipment Deployed

ROV	<i>Deep Discoverer</i>		
Camera Platform	<i>Seirios</i>		
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	N/A		
ROV Dive Summary Data (from Processed ROV)	In Water: 2019-09-01T12:28:18.227840 41°, 59.026' N ; 65°, 22.896' W On Bottom: 2019-09-01T13:46:07.553405 41°, 59.029' N ; 65°, 22.525' W Off Bottom: 2019-09-01T19:38:01.942448 41°, 59.41' N ; 65°, 22.654' W Out Water: 2019-09-01T20:36:45.076804 41°, 59.73' N ; 65°, 22.108' W Dive duration: 8:8:26 Bottom Time: 5:51:54 Max. depth: 1496.0 m		
Special Notes	N/A		

Scientists Involved

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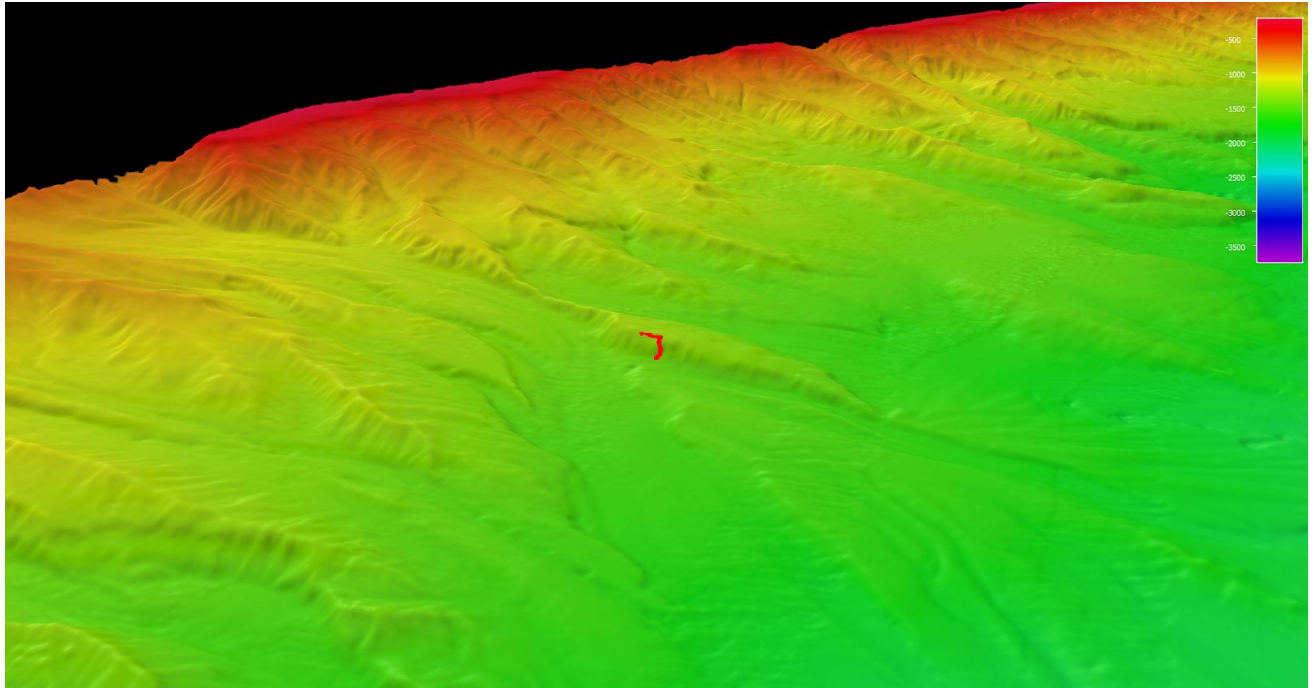


Dive Purpose and Description

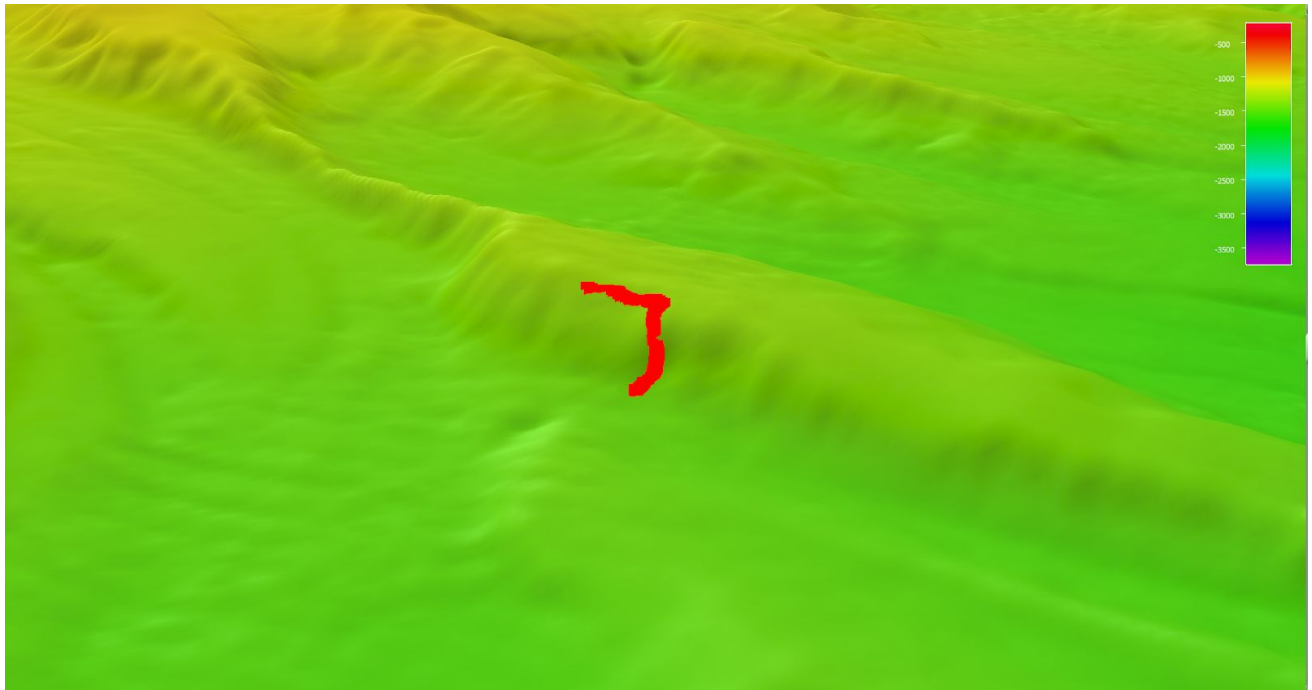
Dive Purpose	The Northeast Channel dive site was located immediately proximal to the Northeast Channel Coral Conservation Area, designed to protect deepwater coral and sponge communities from bottom contact fishing. The purpose of the dive was to characterize the deep-sea benthic community inside this current area of interest, which is under consideration for expansion of the protected area. Furthermore, the dive sought to investigate the geological origins of this site, presumed to be composed of glacial trough mouth fan materials.
Dive Description	The ROV reached the seafloor on a relatively flat, soft substrate adjacent to the submarine plateau slope we targeted for the dive. This area was characterized by the presence of halosaur (<i>Aldrovandia gracilis</i>), bamboo corals (<i>Acanella arbuscula</i>), sabellid polychaete tube worms, xenophyphores (<i>Syringammia</i> sp.), and lantern sharks (<i>Centroscymnus</i> sp.). This community was significantly different than that seen at shallower depths during the dive, despite similar substrate and slope. The toe of the slope was reached and ascent began, with a noted difference in bottom type from almost exclusively fine grained sediment to interspersed fine grained mantle with poorly sorted grains and debris ranging from silt sized to cobbles. The benthic community also shifted with slope and substrate, changing to a higher frequency of soft corals and small sponges. A small juvenile fish was spotted, ~1 cm in length, which is thought to be a juvenile sculpin or toadfish. Shortly after, a fathead sculpin (<i>Cottunculus</i> sp.), a fish in the same family as the blobfish, was observed resting on the bottom. The crest of the plateau was reached and the community shifted mostly back to that seen in the submarine channel axis at the start of the dive. Four biological samples were collected: a <i>Hyalonema</i> sp. glass sponge, a <i>Phakellia</i> sp.? demosponge with at least 11 distinct species of associates, <i>Paragoria</i> sp. with a euryalid associate, and small round demosponges.
Notable Observations	<ul style="list-style-type: none"> - Relatively steep slopes surficially composed of poorly sorted sediment and hemipelagic drape - Sparse observations of bamboo corals, bubblegum corals, and glass sponges
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Corals and Sponges <input type="checkbox"/> Chemosynthetic Community <input checked="" type="checkbox"/> High-biodiversity Community <input type="checkbox"/> Active Seep or Vent <input type="checkbox"/> Extinct Seep or Vent <input type="checkbox"/> Hydrates



Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



Representative Photos of the Dive



Ruffled glass sponge, *Asconema foliata*, on dropstone at the Northern Channel dive site located just outside an area of interest for deep-coral and sponge conservation.

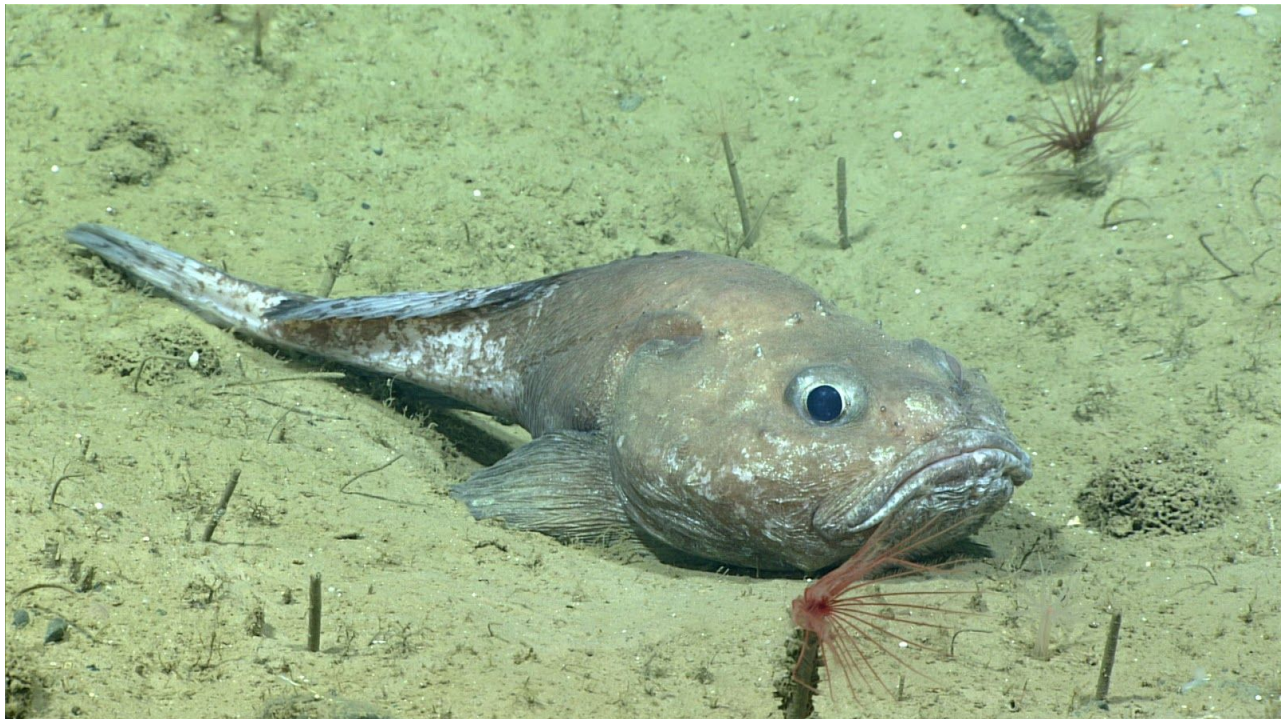


Mated pair of deep-sea red crabs, *Chaceon quinquidens*.





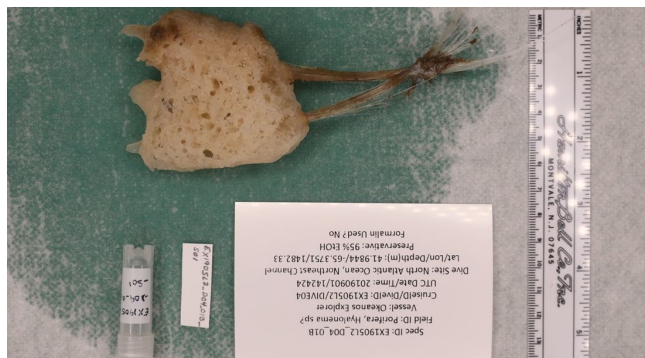
Large boulder, possibly a glacial dropstone, heavily encrusted with *Anthomastus* sp. mushroom corals, glass sponges and demosponges. A female octopus, *Granelodonne* sp., gently cares for her brood of eggs on the underside of the boulder.



A fathead sculpin, *Cottunculus* sp., was spotted resting on the soft sediment bottom. This fish is in the same family as the blobfish.



Samples Collected



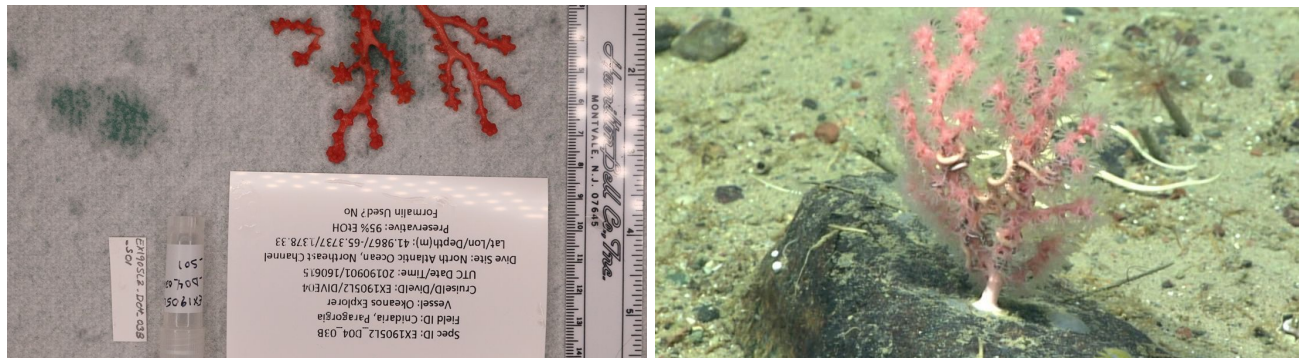
Sample ID	EX1905L2_D04_01B
Date (UTC)	20190901
Time (UTC)	142424
Latitude	41.98440
Longitude	-65.37510
Depth (m)	1482.3
Temp. (°C)	3.858
Field ID(s)	<i>Hyalonema</i> sp.?
Commensals	No commensals
Comments	N/A



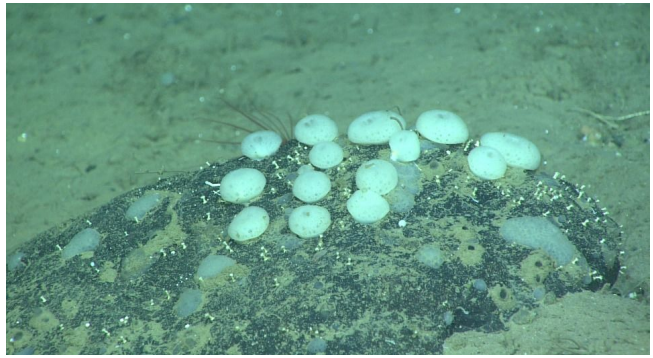
Sample ID	EX1905L2_D04_02B		
Date (UTC)	20190901		
Time (UTC)	145520		
Latitude	41.98500		
Longitude	-65.37370		
Depth (m)	1455.2		
Temp. (°C)	3.865		
Field ID(s)	<i>Phakelia</i> sp.?		
Commensals	Commensal Sample ID	Field Identification	Count
	EX1905L2_D04_02B_A01	Slate	1
	EX1905L2_D04_02B_A02	Isopoda	40
	EX1905L2_D04_02B_A03	Ophiacanthidae	3



	EX1905L2_D04_02B_A04	Gastropoda	2
	EX1905L2_D04_02B_A05	Polychaeta	1
	EX1905L2_D04_02B_A06	Polychaeta red	1
	EX1905L2_D04_02B_A07	Sipunculida	3
	EX1905L2_D04_02B_A08	Tubularidae	1
	EX1905L2_D04_02B_A09	Amphipoda A	2
	EX1905L2_D04_02B_A10	Amphipoda B	6
	EX1905L2_D04_02B_A11	Amphipoda C	4
	EX1905L2_D04_02B_A12	Isopoda	2
Comments	N/A		



Sample ID	EX1905L2_D04_03B		
Date (UTC)	20190901		
Time (UTC)	160615		
Latitude	41.98670		
Longitude	-65.37370		
Depth (m)	1378.3		
Temp. (°C)	3.899		
Field ID(s)	Paragorgia		
Commensals	Commensal Sample ID	Field Identification	Count
	EX1905L2_D04_03B_A01	Euryalida	1
	EX1905L2_D04_03B_A02	Polychaeta	1
Comments	N/A		



Sample ID	EX1905L2_D04_04B		
Date (UTC)	20190901		
Time (UTC)	172418		
Latitude	41.98820		
Longitude	-65.37370		
Depth (m)	1348.8		
Temp. (°C)	3.896		
Field ID(s)	Demospongiae?		
Commensals	Commensal Sample ID		Field Identification
	EX1905L2_D04_04B_A01		Mysida
			Count
			3
Comments	N/A		

Please direct inquiries to:

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