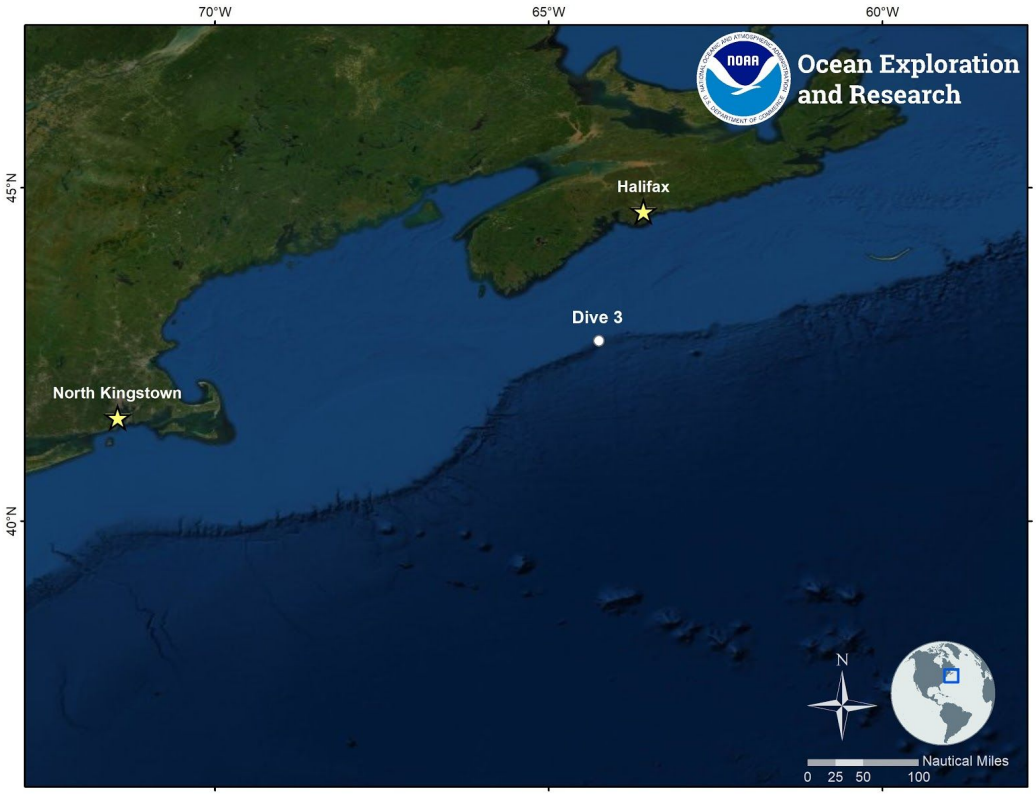
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary

Dive Information

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

ROV Dive Name

Cruise	EX1905L2
Dive Number	DIVE03

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	The ROV descent was paused for approximately 10 minutes during the descent to 50 m in order to resent the Phins positions system. There were no other equipment issues on this dive.		
ROV Dive Summary Data (from Processed ROV)	In Water: 2019-08-31T13:06:05.036112 42°, 40.818' N ; 64°, 13.001' W On Bottom: 2019-08-31T14:12:48.648982 42°, 40.953' N ; 64°, 13.174' W Off Bottom: 2019-08-31T20:06:54.363090 42°, 41.674' N ; 64°, 13.355' W Out Water: 2019-08-31T20:32:55.490651 42°, 41.718' N ; 64°, 13.635' W Dive duration: 7:26:50 Bottom Time: 5:54:5 Max. depth: 360.0 m		
Special Notes	N/A		

Scientists Involved

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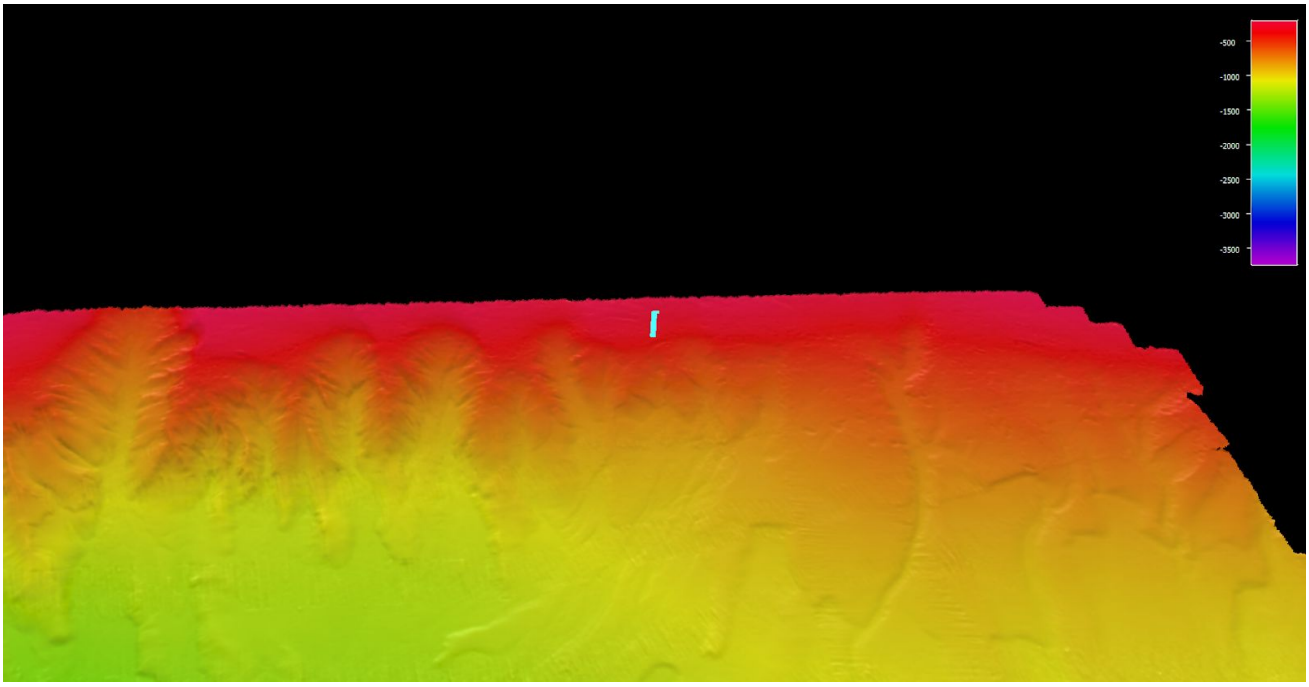
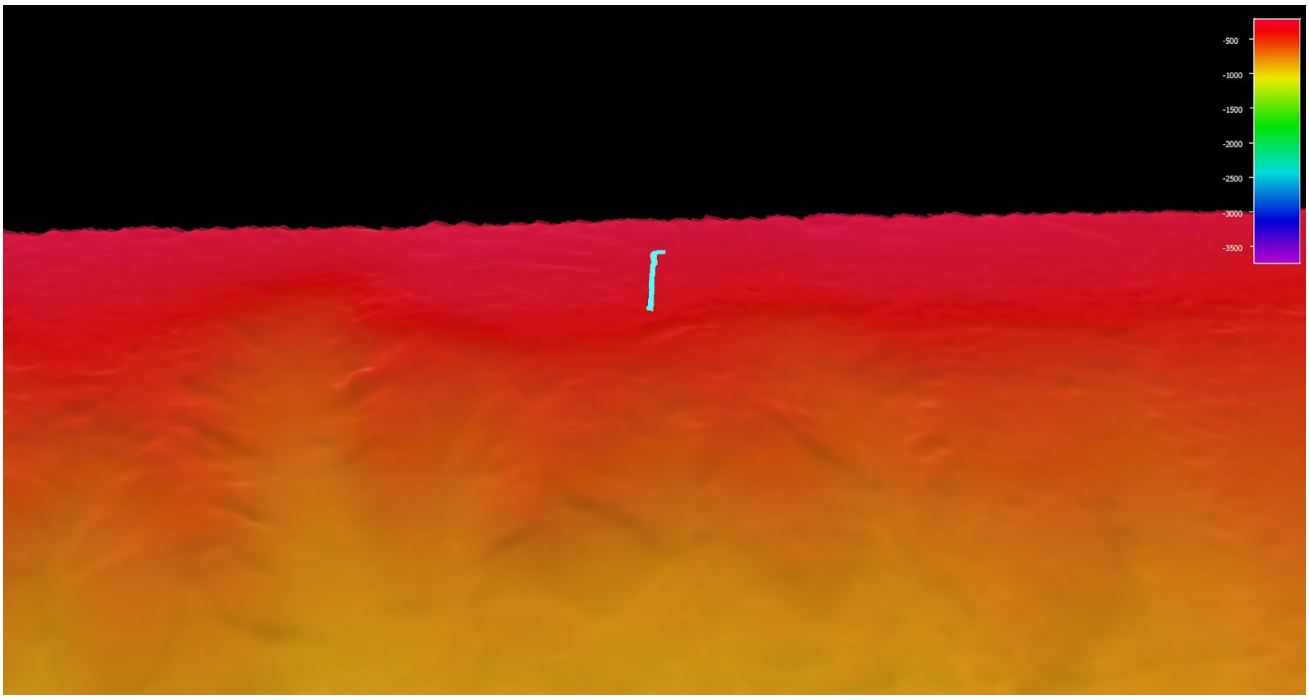
Dive Purpose and Description

Dive Purpose	This location on the Scotian Shelf was predicted to have high habitat suitability for *Vazella* sponges by models. This dive sought to test those habitat suitability models and add data (presence or absence) for future model iterations.
Dive Description	The dive reached the seafloor at approximately 360 m depth on soft substrate that characterized the majority of the dive. Benthic fauna included abundant sea pens, fishes, polychaete worms, anemones, and crabs. Sparse clasts were observed among the predominantly fine sediment, which were tentatively interpreted to be ice rafted debris. A large group of shortfin squid (*Illex illecebrosus*) were present during the majority of the dive, apparently attracted by the ROV lights. The squid fed on swarms of krill, *Meganytiphanes norvegica*, and the illuminated benthic fauna. Numerous predation events were observed throughout the dive, including (1) squid feeding on krill, squid, and various fish,(2) an anemone feeding on a fish, and (3) a *Homarus* sp. lobster feeding on a squid. Anemones and few sponges, an encrusting demosponge and *Hyalonema* sp. glass sponge, were present in the debris fields we transversed, but no *Vazella* specimens were observed during this dive. Two derelict lobster traps were spotted during the dive, which were encrusted with hydrozoans and anemones. A single suction sample was taken of a suspected foraminifera, and a squid sample was unintentionally collected because it was attached to the ROV.
Notable Observations	- No *Vazella* sponges were recorded on this dive - Abundant sea pens and squid - Predominantly soft substrate
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

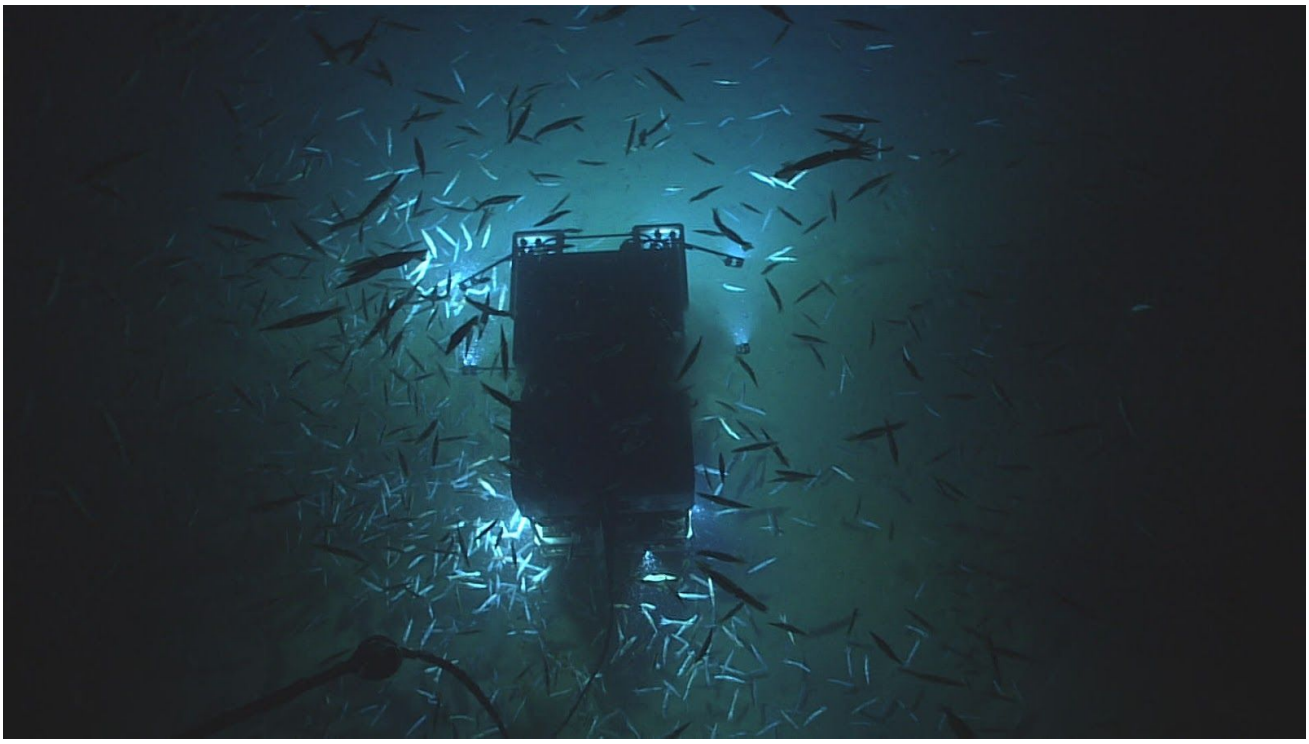
Overall Map of the ROV Dive Area



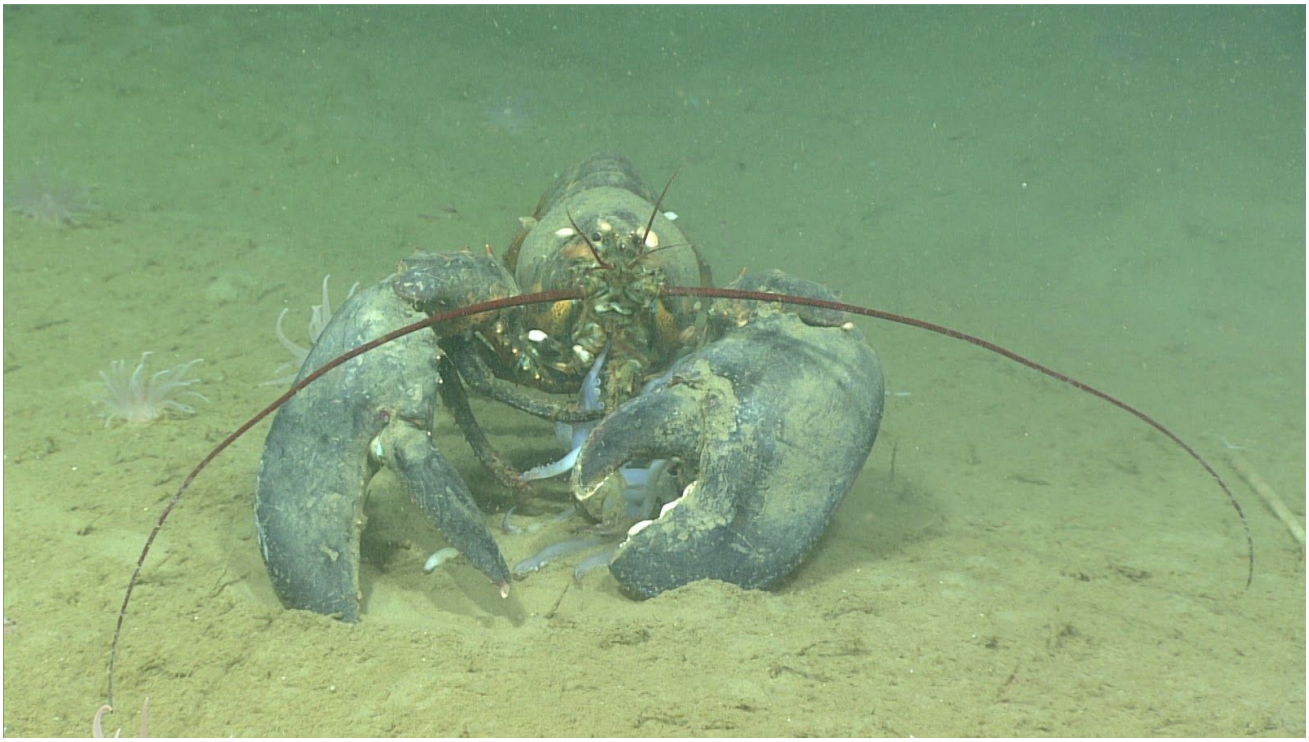
Close-up Map of Main Dive Site



Representative Photos of the Dive

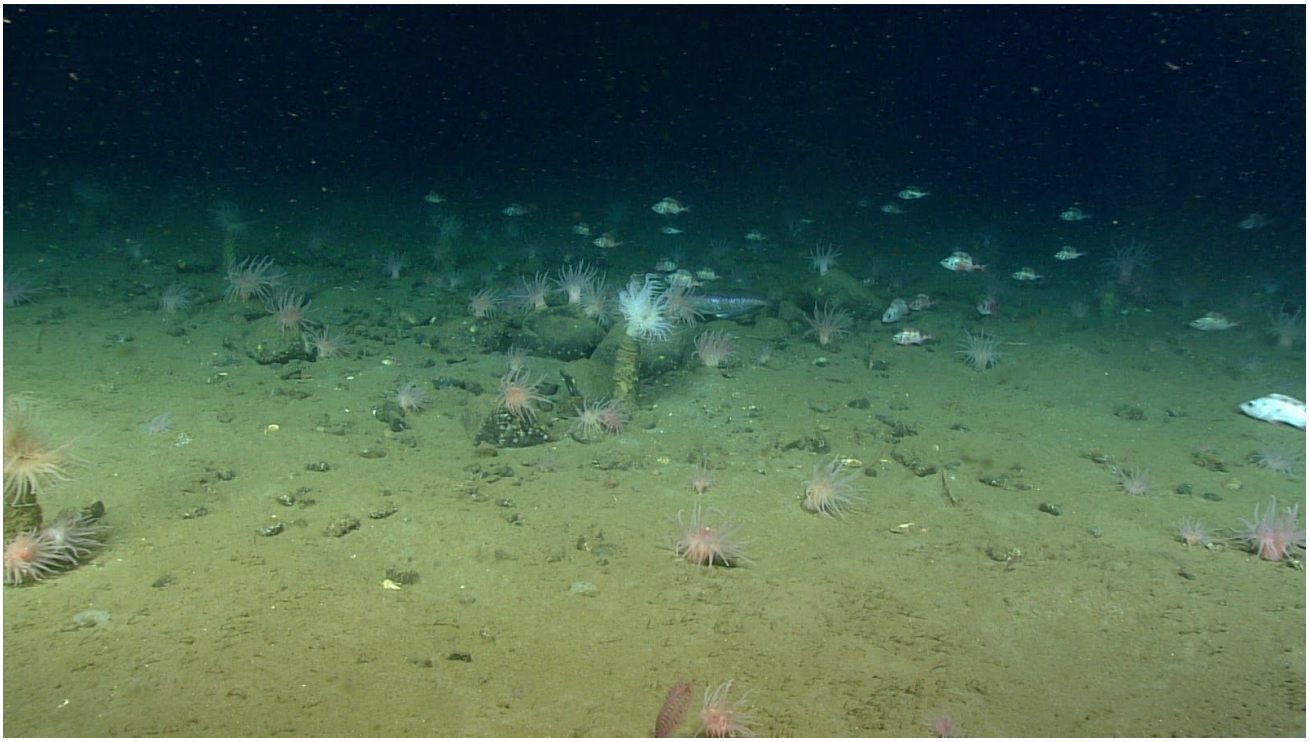


Swarms of the shortfin squid *Illex illecebrosus* feeding on the krill *Meganytiphanes norvegica* during the descent of *Deep Discoverer* to the seafloor.



The lobster *Homarus* sp. feeding on a squid tentacle.

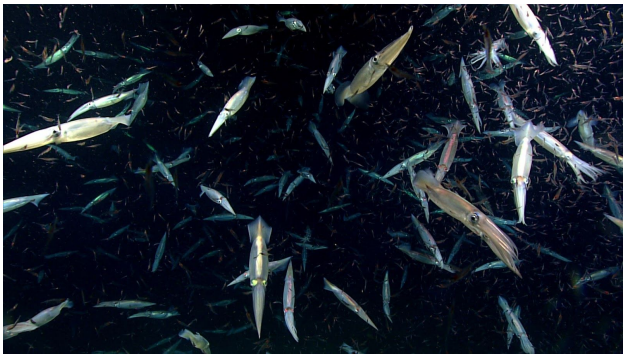
Derelict lobster trap covered with anemones, hydrozoans, and zoanthids.



Dense aggregation of anemones, blackbelly rosefish (*Helicolenus dactylopterus*), and seapens (*Pennatula* sp.) around a field of glacial dropstones.

Samples Collected

Sample ID	EX1905L2_D03_01B
Date (UTC)	20190831
Time (UTC)	144248
Latitude	42.68270
Longitude	-64.21980
Depth (m)	356.6
Temp. (°C)	8.305
Field ID(s)	Foraminifera?
Commensals	No commensals
Comments	N/A



Sample ID	EX1905L2_D03_02B
Date (UTC)	20190831
Time (UTC)	210000
Latitude	42.69564
Longitude	-64.22597
Depth (m)	surface
Temp. (°C)	N/A
Field ID(s)	*Illex illecebrosus*
Commensals	No commensals
Comments	Unintentional sample, came up with ROV

Please direct inquiries to:

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