



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>Bear Seamount eastern slope</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>DIVE08</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	No samples were collected on this dive due to low hydraulic oil temperature, which prevented the use of the manipulator arms.		
ROV Dive Summary Data (from Processed ROV)	In Water: 2019-09-09T13:21:04.210958 39°, 53.029' N ; 67°, 20.747' W On Bottom: 2019-09-09T15:51:23.292788 39°, 53.119' N ; 67°, 20.344' W Off Bottom: 2019-09-09T21:09:43.267035 39°, 53.109' N ; 67°, 20.702' W Out Water: 2019-09-09T22:39:05.279669 39°, 53.931' N ; 67°, 19.753' W Dive duration: 9:18:1 Bottom Time: 5:18:19 Max. depth: 2139.0 m		
Special Notes	N/A		

Scientists Involved

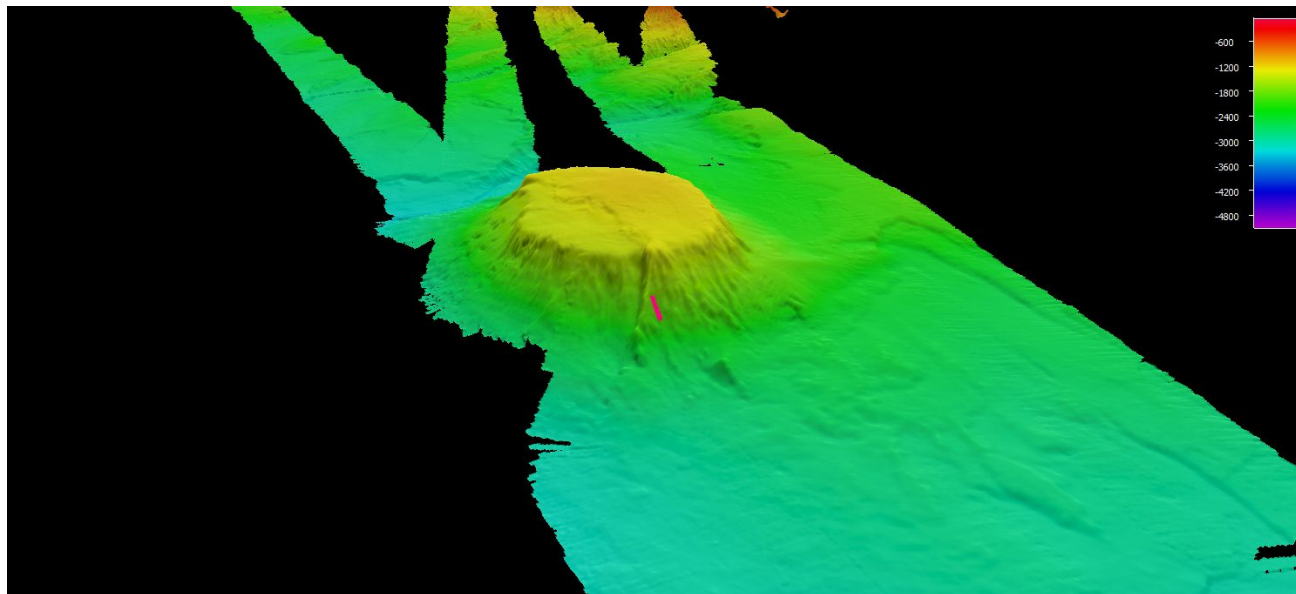
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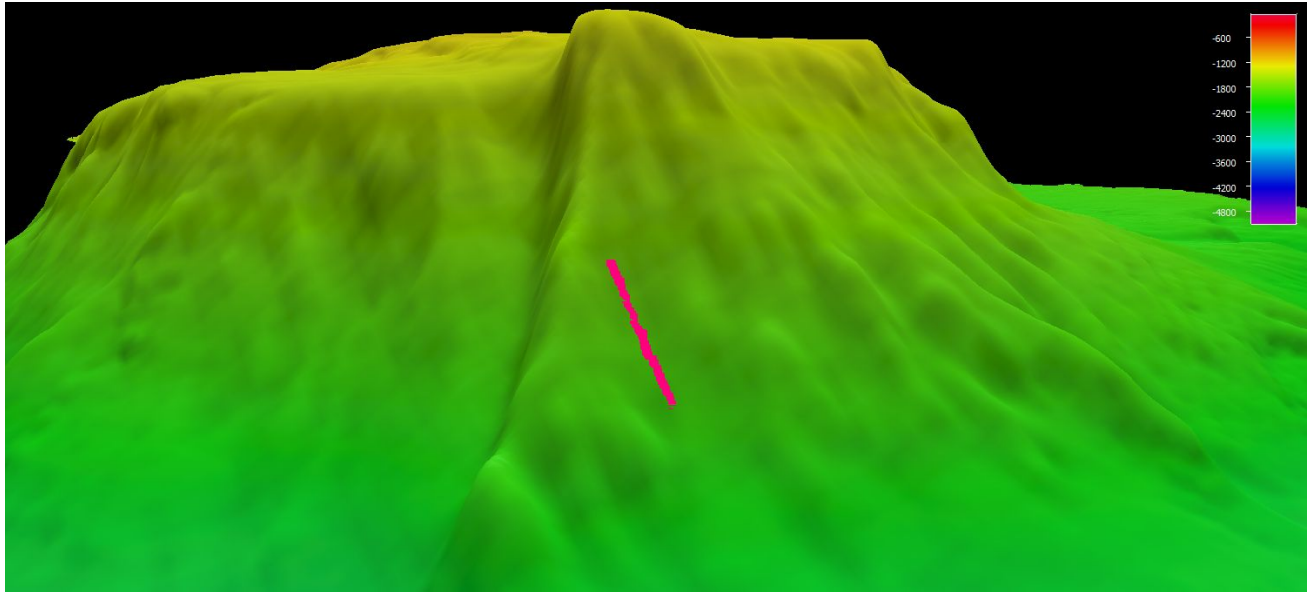
Dive Purpose and Description

Dive Purpose	The purpose of this dive was to explore a previously unsurveyed area on the southeast corner of Bear Seamount for deep-sea corals and sponges. Additionally, this dive sought to Investigate whether there is surficial evidence for apparent normal faulting cutting across the width of Bear Seamount.
Dive Description	The ROV reached the seafloor at 1545 UTC in approximately 2150 m water depth. The ROV landed north of the planned first waypoint, so transit up the ridge arm was changed to transit up the eastern wall instead. The bottom substrate generally consisted of talus sourced from the seamount walls, interspersed with fine pelagic sediments. Igneous rock was the predominant rock type, with both basalts and light-colored tuffs noted. A wide variety of glass sponges and demosponges were noted throughout the dive, with particularly dense aggregations on exposed rock faces. Interspersed between the sponges were long bamboo coral (<i>Keratoisidinae</i> B clade) and bushy bamboo (<i>Keratoisis</i> sp.), golden coral (<i>Metallogorgia melanotricos</i> and <i>Chrysogorgia</i> sp.), black coral (<i>Bathypathes</i> sp. and <i>Stauropathes arctica</i>), and <i>Paramuricea</i> sp. plexaurid coral. Cold bottom temperatures resulted in low hydraulic oil temperatures, which prevented manipulator arm function and sample collection during this dive.
Notable Observations	<ul style="list-style-type: none"> - Abundant evidence of slope failures - Dense and diverse deep-sea coral and sponge community
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> ✓ Corals and Sponges <input type="checkbox"/> Chemosynthetic Community ✓ High-biodiversity Community <input type="checkbox"/> Active Seep or Vent <input type="checkbox"/> Extinct Seep or Vent <input type="checkbox"/> Hydrates

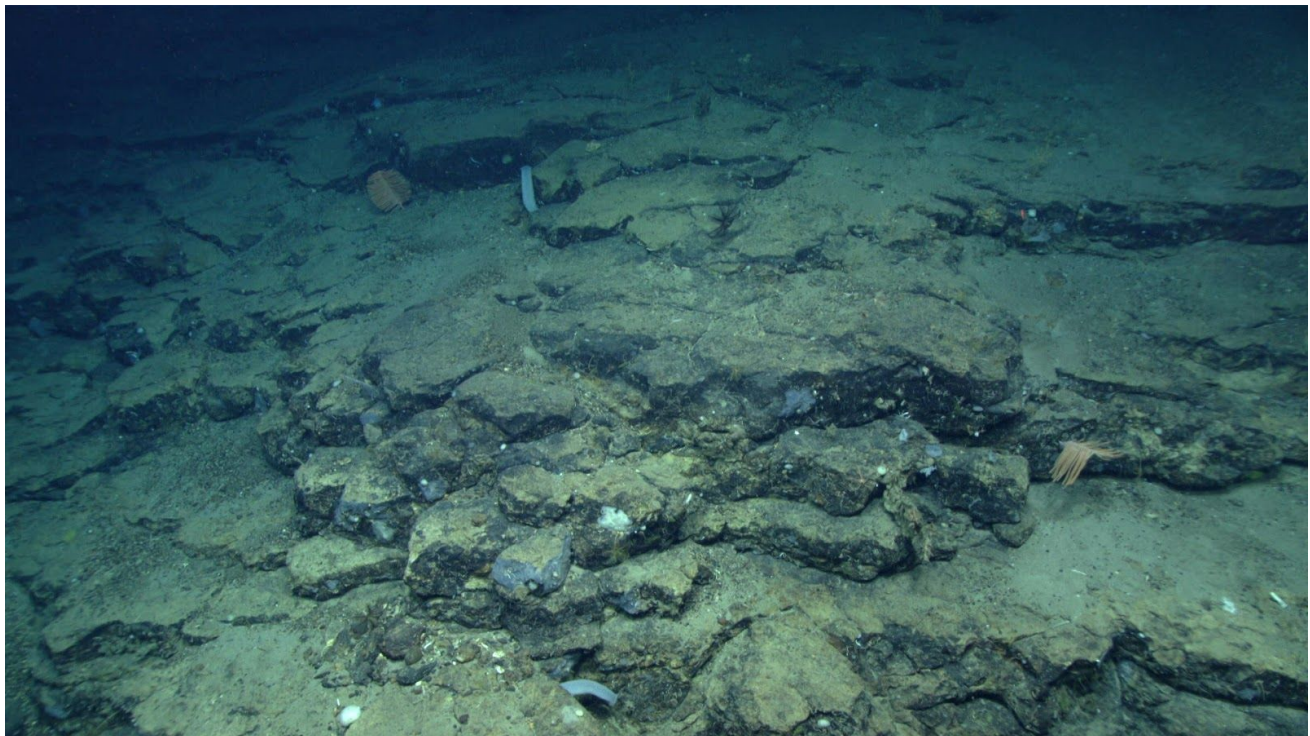
Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site

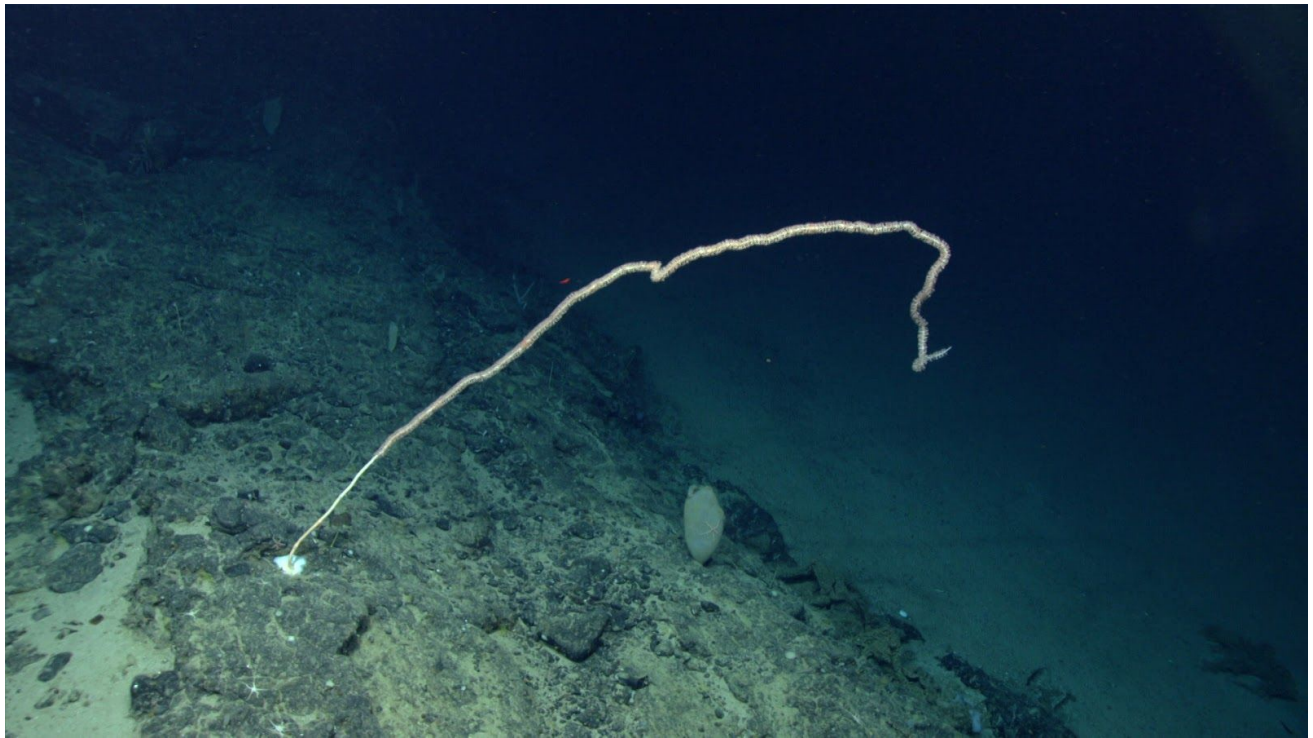


Representative Photos of the Dive



Slopes of manganese crusted basalt on Bear Seamount were characterized by a high diversity of deep-sea corals and sponges.





Reaching a length over 2 m long, this whip-like bamboo coral (Keratoisidinae B clade) colonized what appears to be an old pillow lava flow.



This *Graneledone verrucosa* octopus was seen on a steep sediment-covered slope on Bear Seamount.





Polymastia sp. demosponge with many conspicuous tube-like projections called papillae nestled in a field of talus.

Samples Collected

No samples were collected on this dive.

Please direct inquiries to:

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