



# 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 Midwater</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>DIVE10</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: 2019-09-11T12:23:49.623524 39°, 59.551' N ; 67°, 21.218' W On Bottom: 2019-09-11T14:15:38.559732 39°, 59.544' N ; 67°, 21.027' W Off Bottom: 2019-09-11T15:07:27.626938 39°, 59.553' N ; 67°, 21.033' W Out Water: 2019-09-11T19:20:47.595953 40°, 0.39' N ; 67°, 20.161' W Dive duration: 6:56:57 Bottom Time: 0:51:49 Max. depth: 2181.0 m		
Special Notes	The ROV had to be recovered approximately 2.5 hour early due to strong currents that approached 3 knots and prevented holding station of the ship in dynamic positioning.		

## Scientists Involved

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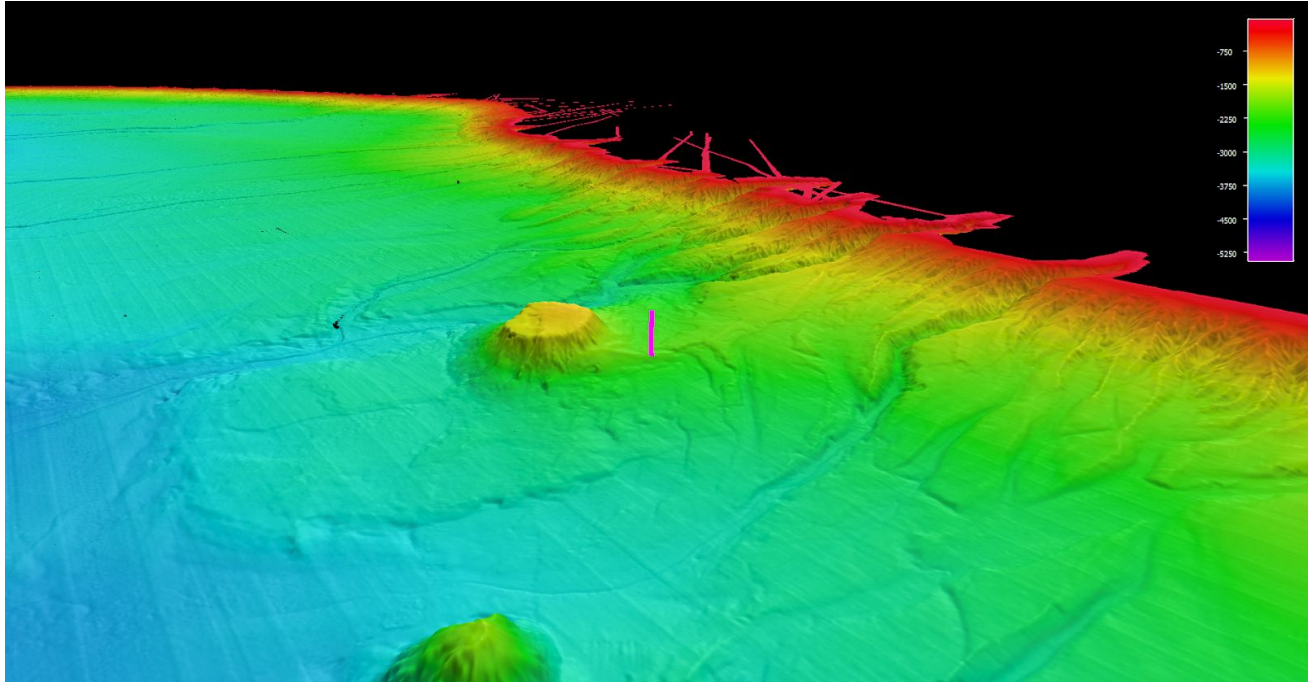


## Dive Purpose and Description

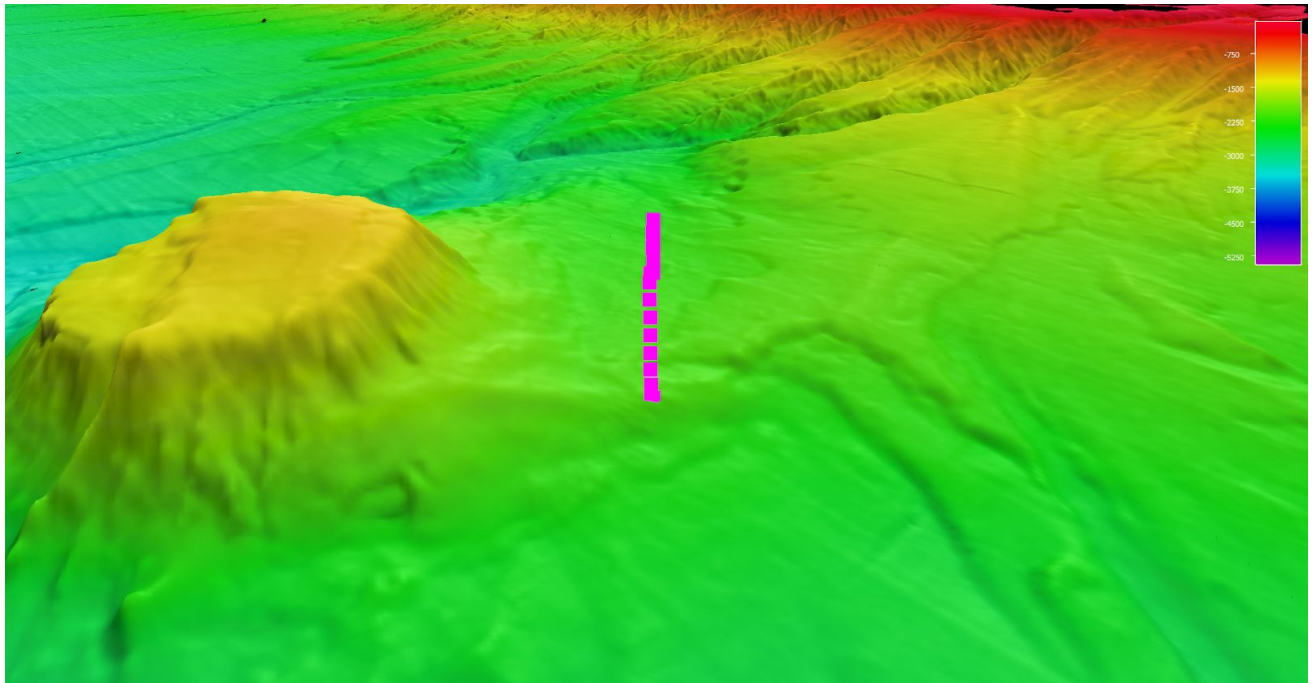
Dive Purpose	<p>This dive site was located just north of Bear Seamount, within the Northeast Canyons and Seamounts Marine National Monument. There have been extensive nekton trawling surveys in the vicinity of this site, as well as several ROV dives that explored benthic habitats on Bear Seamount. However, to date there have been no midwater ROV dives on the seamount. This dive therefore sought to collect valuable midwater video data that can be compared to historic midwater trawl data.</p>
Dive Description	<p>The midwater dive site was located 7 km north of Bear Seamount within the boundary of the Northeast Canyons and Seamounts Marine National Monument. Throughout the dive, on shore experts completed detailed and accurate video annotation on SeaScribe in order to produce an inventory as one of the products from this dive.</p> <p>Unlike previous midwater exploration dives, this dive began by descending to the bottom at a depth of 2182 m and performing two near bottom 24 minute transects at 1.5 m and 10 m altitude above the seafloor. Particulates in the water column was dense during these transects and numerous larvacean houses were observed along with ctenophores (<i>Cidippda</i>), arrow worms (<i>Chaetognatha</i>), krill (<i>Euphausiacea</i>), hydromedusae, and copepods. A large Chimera, <i>Hydrolagus</i> sp., and juvenile rattail fish, <i>Coryphaenoides</i> sp. were also observed just above the seafloor. Between transects a possible new species of red cidippid ctenophore was collected using the suction sampler just above the seafloor at 2173 m.</p> <p>After a brief ascent, transects were performed at 1100 m, 900 m and 700 m water depth. Animals observed included bristlemouth fish (<i>Cyclothone pallida</i>), Haliocreatid hydromedusae, krill, copepods, nemertea, jellyfish (<i>Poralia</i> sp.), physonect siphonophores, sawtooth eel (<i>Serrivomer beani</i>), lobate ctenophore (<i>Bathocyroe fosteri</i>), goiter blacksmelt (<i>Bathylagus europs</i>), and pyrosomes. Midway through the 700 m transect, surface currents picked up and approached 3 knots, thereby preventing the ship to hold station in dynamic positioning. As a result, the transect was ended prematurely at roughly 12 minutes, and the vehicles were recovered.</p>
Notable Observations	<ul style="list-style-type: none"> <li>- Several potential undescribed species observed</li> <li>- Collected a potentially new species of ctenophore</li> </ul>
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Corals and Sponges</li> <li><input type="checkbox"/> Chemosynthetic Community</li> <li><input type="checkbox"/> High-biodiversity Community</li> <li><input type="checkbox"/> Active Seep or Vent</li> <li><input type="checkbox"/> Extinct Seep or Vent</li> <li><input type="checkbox"/> Hydrates</li> </ul>



## Overall Map of the ROV Dive Area

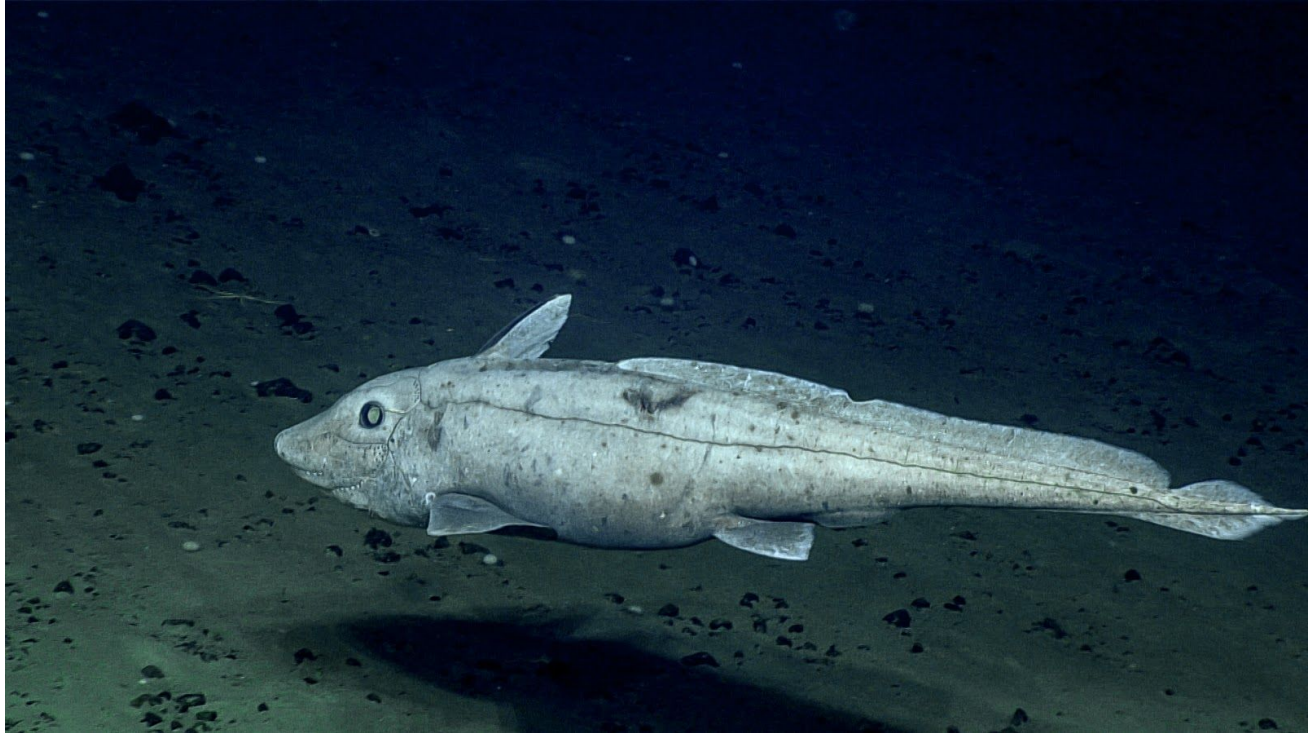


## Close-up Map of Main Dive Site





## Representative Photos of the Dive



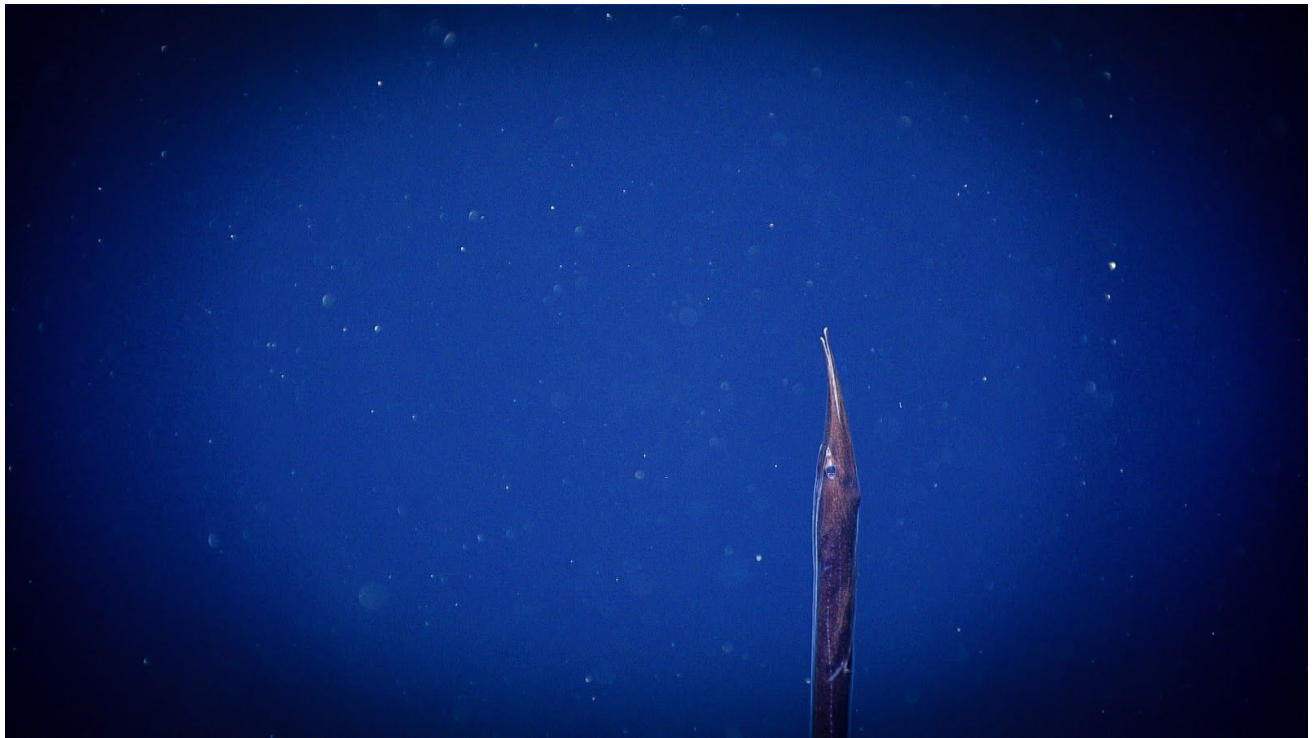
Chimera, *Hydrolagus* sp., cruising along near the seafloor during the first midwater transect at 1.5 m above the bottom.



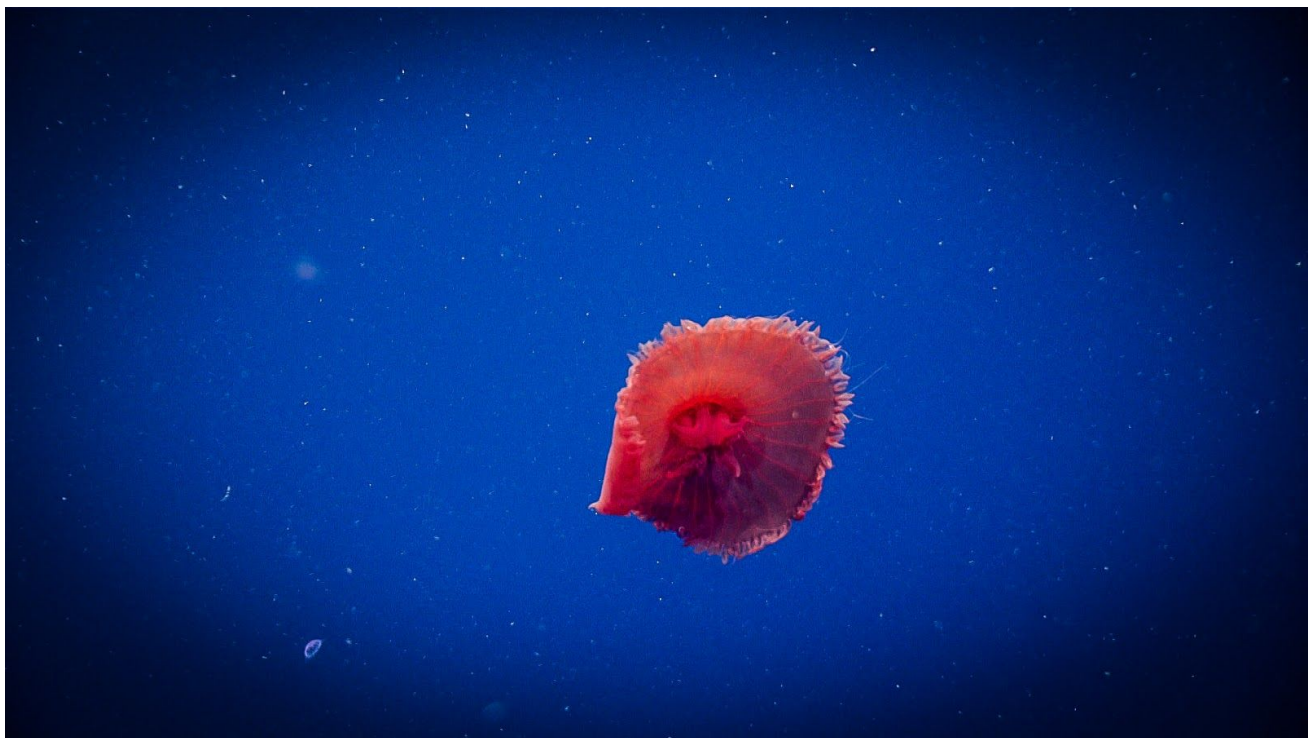
Potentially undescribed ctenophore floating gracefully in the water column. A similar individual was collected on this dive.







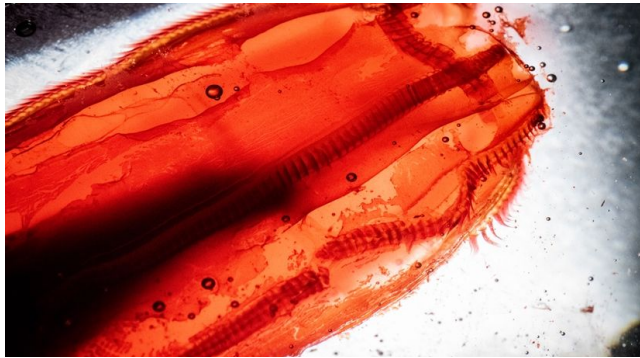
Sawtooth eel, *Serrivomer beari*, spotted floating vertically in the water column. This fish is unique in having teeth that are fused into a single band down the center of the roof of its mouth like a saw.



This dusky red jelly, *Poralia* sp., is a common sight during midwater transects.



## Samples Collected



Sample ID	EX1905L2_D10_01B
Date (UTC)	20190911
Time (UTC)	145614
Latitude	39.99260
Longitude	-67.35060
Depth (m)	2172.7
Temp. (°C)	3.289
Field ID(s)	<i>Agmayeria</i> sp.?
Commensals	No commensals
Comments	N/A

### Please direct inquiries to:

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