



Okeanos Explorer ROV Dive Summary

Dive Information

General Location Map	
General Area Descriptor	U.S. Southeast
Site Name	Richardson "Jellyfish"
Science Team Leads	Amy Wagner (CSUS) and Alexis Winnig (Temple)
Expedition Coordinator	Kasey Cantwell (NOAA-OER)
ROV Dive Supervisor	Chris Ritter (GFOE)
Mapping Lead	Shannon Hoy (NOAA-OER)

ROV Dive Name

Cruise	EX1903L2
Dive Number	Dive 10

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			
ROV Dive Summary Data (from Processed ROV)	<div> Dive Summary:EX1903L2_DIVE10 <div> <div> <div> In Water: 2019-07-01T12:27:12.805848 <div> 32°, 5.738' N ; 77°, 40.082' W </div> </div> </div> </div> <div> <div> On Bottom: 2019-07-01T13:04:56.553733 <div> 32°, 5.785' N ; 77°, 39.877' W </div> </div> </div> </div> <div> <div> Off Bottom: 2019-07-01T20:07:05.275798 <div> 32°, 5.346' N ; 77°, 40.22' W </div> </div> </div> <div> <div> Out Water: 2019-07-01T20:34:45.821120 <div> 32°, 5.543' N ; 77°, 40.062' W </div> </div> </div> <div> <div> Dive duration: 8:7:33 </div> </div> <div> <div> Bottom Time: 7:2:8 </div> </div> <div> <div> Max. depth: 886.0 m </div> </div>		
Special Notes			

Scientists Involved (provide name, affiliation, email)

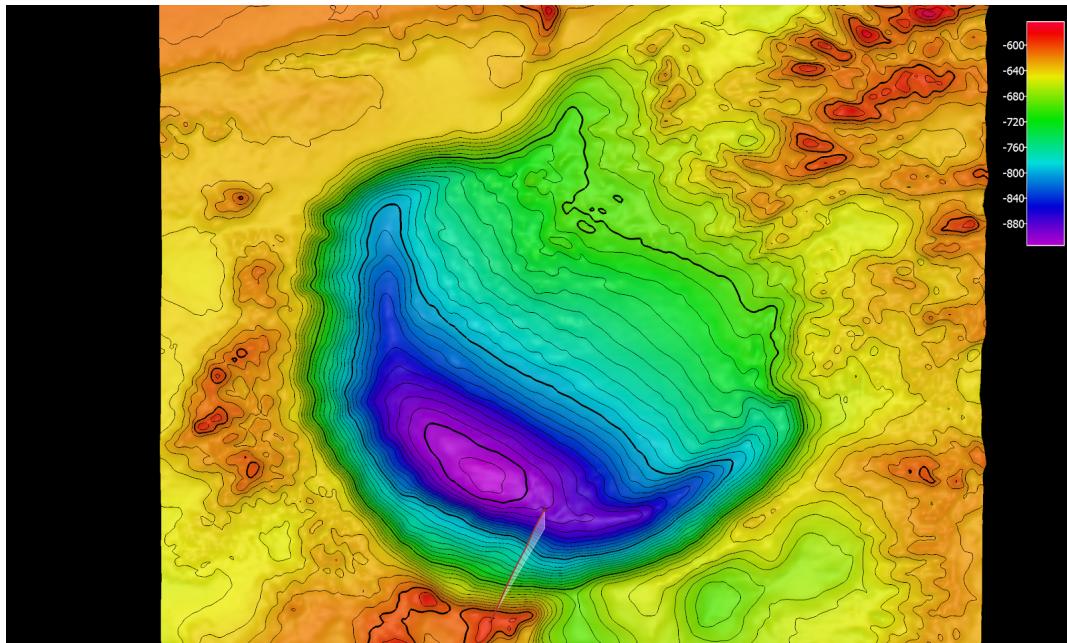
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Dive Purpose	This site is to the south of the region explored on the Windows to the Deep 2018 expedition when a large deep sea reef was discovered. Leg 1 of the Windows to the Deep 2019 mapped more of the area and found this feature that appears to be an underwater slump and has the same characteristic mounds around the top of the feature as those seen in Richardson Reef. This dive will help to identify any further extent of the reef complex.
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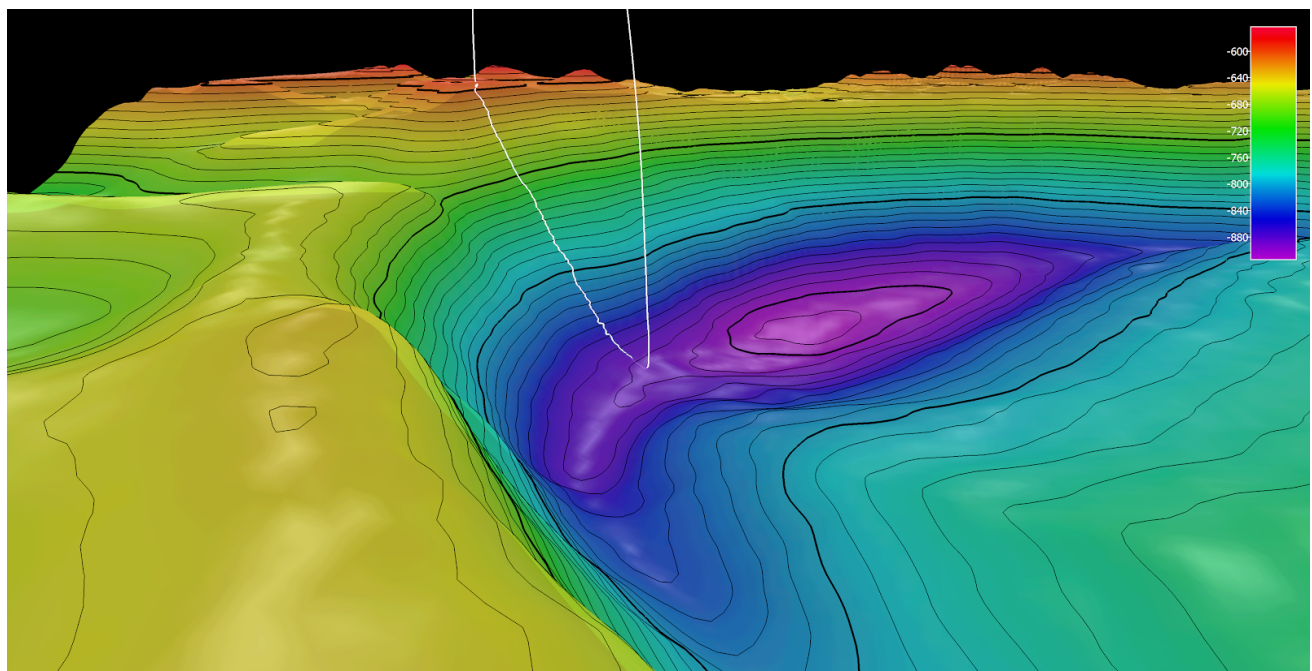


Dive Description	The ROV launched at 12:17 UTC and reached bottom, slightly to the south of the first waypoint, at 13:04 UTC and a depth of 885 m. The bottom was primarily fine-coarse sediment and coral rubble with very little coral or sponge coverage. There was a high amount of detritus in the water column and visibility was relatively low compared to previous dive sites. The dive proceeded up the feature at a constant pace due to the long dive track, observing many fish including cusk eels and Atlantic roughy, and fan-shaped bryozoans (Phidoloporidae family). Several swimming polychaetes (<i>Tomopteris sp.</i>) were seen swimming near the bottom and in the Seirios camera. As the bottom became more rocky, there were more bamboo (<i>Isididae sp.</i>) and primnoid corals present. Towards the top of the feature, there were large outcrops of exposed manganese encrusted rocks with large <i>Lophelia pertusa</i> colonies on the edges. At the top of the feature as the slope flattened out, there was a smaller abundance of stony corals and a softer, sediment bottom with smaller octocorals and sponges. During the dive, we collected five biological samples. The ROV began the ascent to the surface from a depth of 591 meters at 20:07 UTC.
Notable Observations	
Community Presence/Absence (community is defined as more than two species)	<ul style="list-style-type: none"> ✓ Corals and Sponges ✓ Chemosynthetic Community ✓ High biodiversity Community ✓ Active Seep or Vent ✓ Extinct Seep or Vent ✓ Hydrates
Feature Type (CMECS)	Colonized Deepwater/Coldwater Reef; Rock Outcrop, Hole/Pit, Ridge
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV2?resourceTypeId=1000&resourceId=23621&divId=1433

Overall Map of the ROV Dive Area



Close-up Map of Main Dive Site



Representative Photos of the Dive

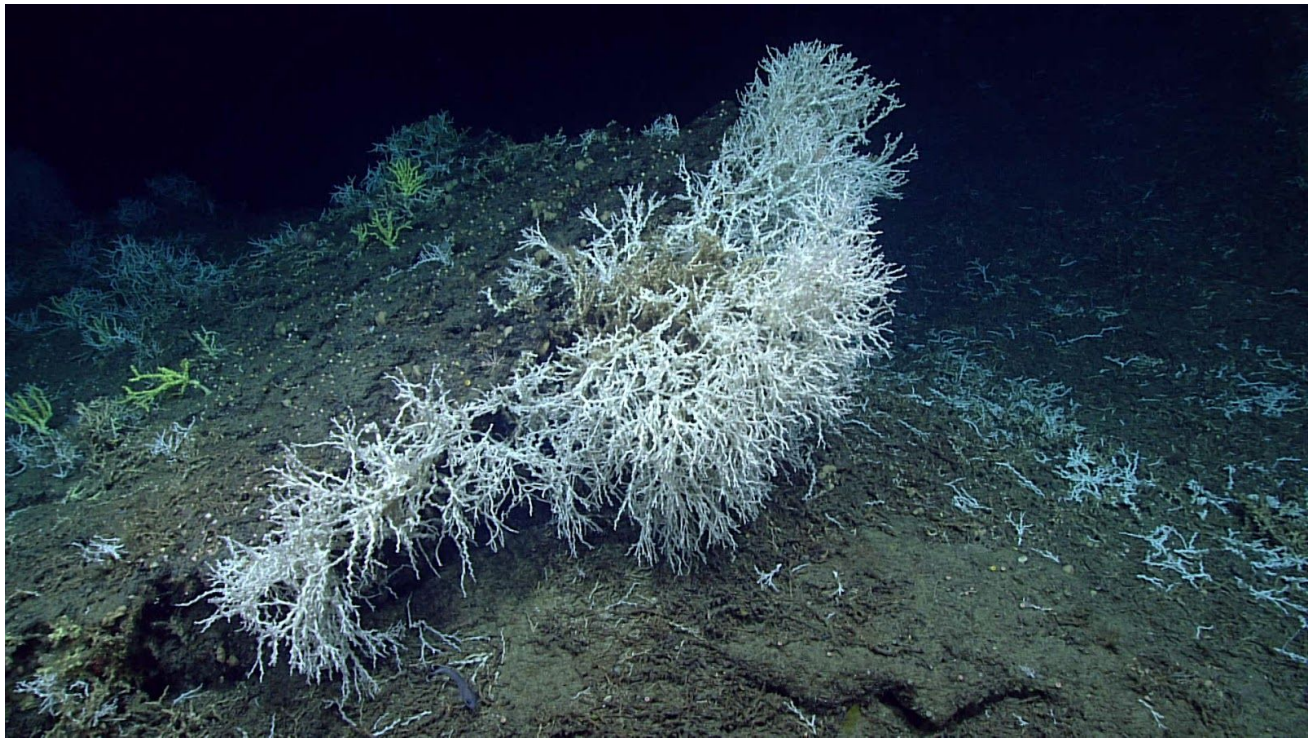


Three sea toads, or coffinfish, (family Chaunacidae) were seen throughout the dive.



Several large bamboo coral (*Isididae* sp.) were seen on rock outcroppings.



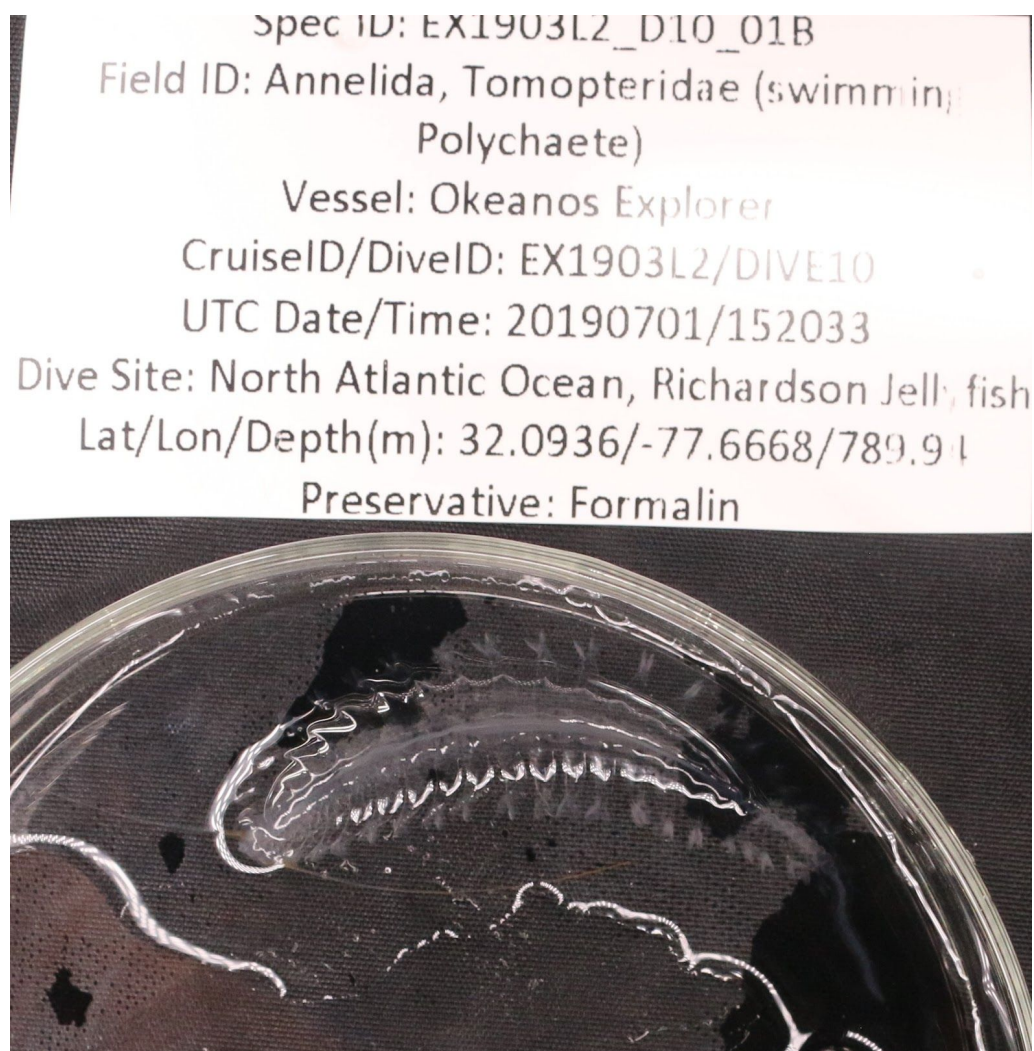


Large *Lophelia pertusa* colonies were seen near the top of the feature at a depth around 600 m on the edges of exposed rock slabs.



Octopus seen towards the end of the dive at the top of the feature.

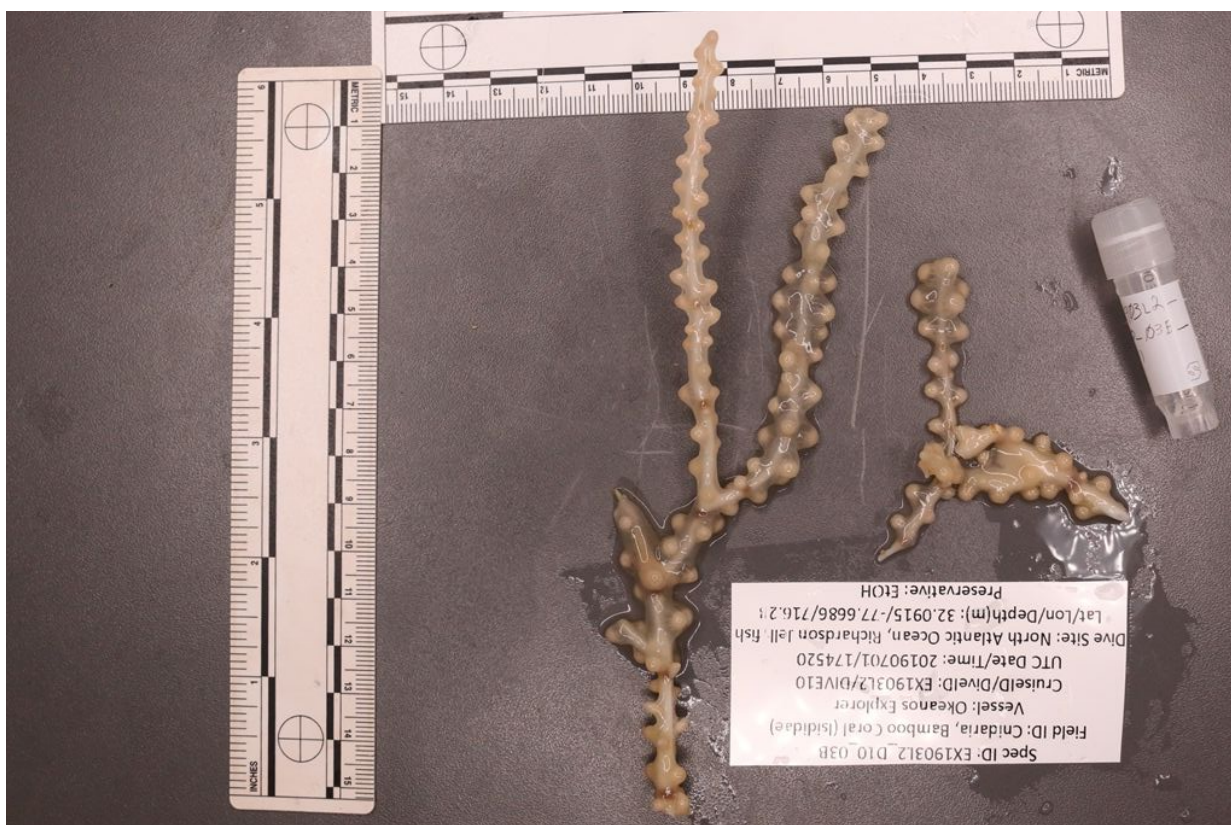
Samples Collected



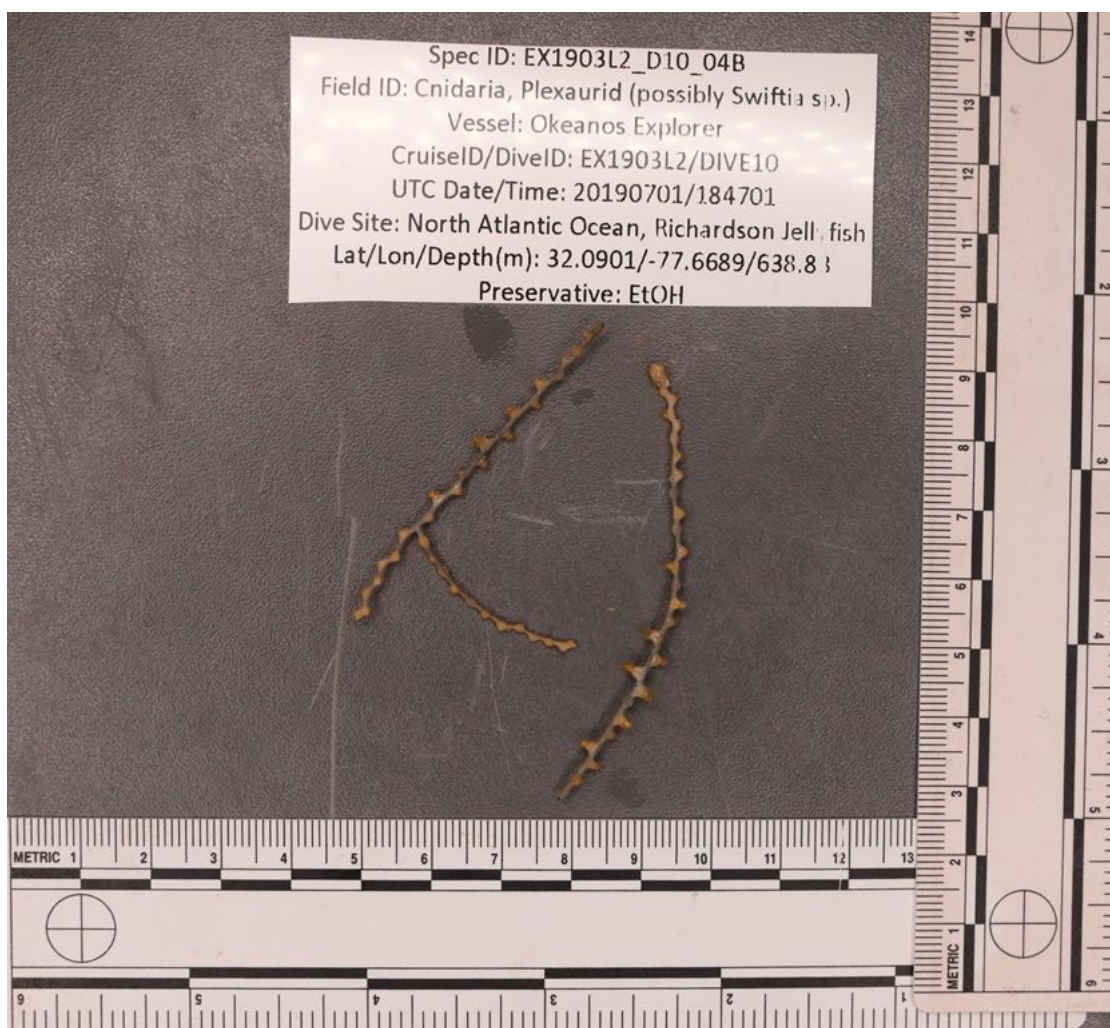
Sample ID	EX1903L2_D10_01B	
Date (UTC)	20190701	
Time (UTC)	152033	
Depth (m)	789.9	
Temp. (°C)	8.115	
Field ID(s)	Tomopteridae (swimming Polychaete)	
Associates		
	Associates Sample ID	Field Identification
	No associates	
Comments		



Sample ID	EX1903L2_D10_02B	
Date (UTC)	20190701	
Time (UTC)	163532	
Depth (m)	756.3	
Temp. (°C)	8.181	
Field ID(s)	Bryozoan	
Associates		
	Associates Sample ID	Field Identification
	EX1903L2_D10_02B_A01	Ophiuroids
	EX1903L2_D10_02B_A02	Microfossils
	EX1903L2_D10_02B_A03	Unknown
Comments		



Sample ID	EX1903L2_D10_03B	
Date (UTC)	20190701	
Time (UTC)	174520	
Depth (m)	716.3	
Temp. (°C)	8.317	
Field ID(s)	Isididae	
Associates	Associates Sample ID	Field Identification
	No associates	
Comments		



Sample ID	EX1903L2_D10_04B	
Date (UTC)	184701	
Time (UTC)	174520	
Depth (m)	638.8	
Temp. (°C)	8.823	
Field ID(s)	Plexaurid (possibly Swiftia sp.)	
Associates	Associates Sample ID	Field Identification
	EX1903L2_D10_04B_A01	Amphipoda
Comments		



Sample ID	EX1903L2_D10_05B		
Date (UTC)	20190701		
Time (UTC)	200218		
Depth (m)	593.0		
Temp. (°C)	9.188		
Field ID(s)	<i>Gilbertaster</i> sp.		
Associates			
	Associates Sample ID	Field Identification	Count
	EX1903L2_D10_05B_A01	Primnoidae	
	EX1903L2_D10_05B_A02	Hydrozoa	
Comments			

Please direct inquiries to:

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**Ocean Exploration
and Research**