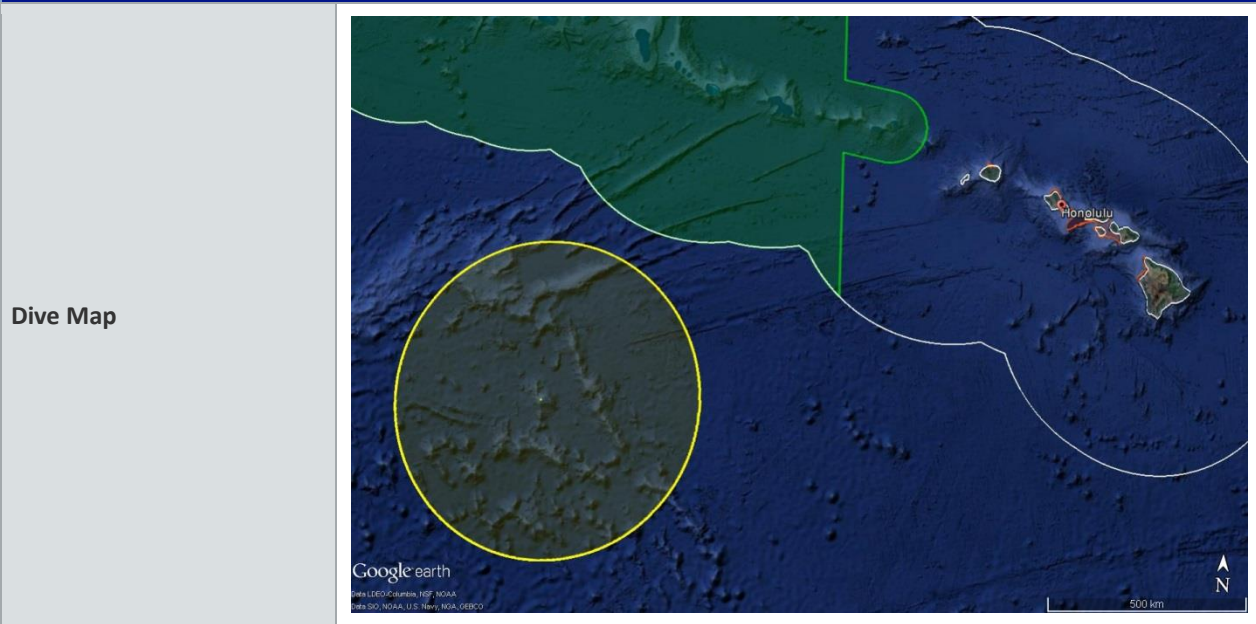




# Okeanos Explorer ROV Dive Summary

## Dive Information



<b>Site Name</b>	"Wetmore" Seamount East
<b>ROV Lead(s)</b>	Dan Rogers
<b>Expedition Coordinator(s) / Mapping Lead</b>	Kelley Elliott / Mashkoor Malik
<b>Science Team Lead(s)</b>	Chris Kelley & Chris Mah
<b>General Area Descriptor</b>	Johnston Atoll Unit of PRIMNM

## ROV Dive Name

<b>Cruise</b>	EX1706
<b>Leg</b>	
<b>Dive Number</b>	10

## Equipment Deployed

<b>ROV</b>	Deep Discoverer (D2)		
<b>Camera Platform</b>	Seirios		
<b>ROV Measurements</b>	CTD	Depth	Altitude
	Scanning Sonar	USBL Position	Heading
	Pitch	Roll	HD Camera 1
	HD Camera 2	Low Res Cam 1	Low Res Cam 2



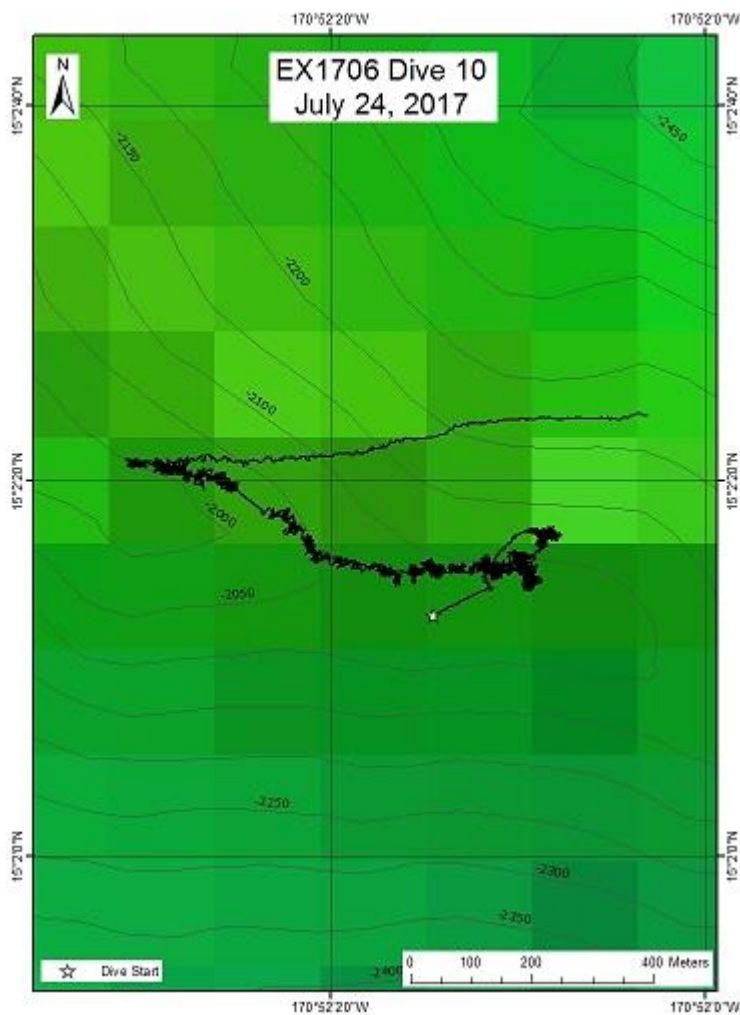
<p><b>Purpose of the Dive</b></p>	<p>This is a presumed Mn-crusted rift zone ridge extending SE from the east side of Wetmore Seamount, a guyot located in the JAU of PRIMNM and also in the PCZ. These ridges are a CAPSTONE priority because previous surveys have found large scale, high density communities of deep water corals and sponges on this type of topography as well as the many other animals they support. Ridges act as barriers to bottom current flow and their crests are locations where currents accelerated, which is where the corals and sponges are most heavily aggregated. Ridges are also sites where basalt can be found and are therefore desirable locations for obtaining rocks for dating seamounts. This particular dive was designed to explore a ridge site right around 2000 m that previous dives have shown to be a productive depth for discovering high density communities.</p>
<p><b>Description of the Dive</b></p>	<p>The Deep Discoverer was deployed at approximately 8:35 AM reaching bottom depth (2052) at approximately 9:45 AM. The “Wetmore Seamount East” site was primarily hard bottom composed of large boulders and blocks and then later almost entirely of cemented lava boulders and basalt. A light sediment overlay was present and the current was initially strong coming from the southeast, later changing to coming from the north. Two Mn crusted rocks were collected during the dive for geochemical and aging analyses.</p> <p>The community at this site could be described as high density even though the numbers of animals decreased and increased in patches as the ROV continued along the crest of the ridge. Octocorals were the dominant group of animals and included isidids (both branched and unbranched species), primnoids (both branched and unbranched species of <i>Narella</i>, <i>Candidella gigantea</i>, <i>Calyptrophora angularis</i>), chrysogorgiids (<i>Iridogorgia magnispiralis</i> and several <i>Chrysogorgia</i> species, coralliids in the genus <i>Hemicorallium</i>, <i>Paragorgia</i> sp, at least 3 different species of mushroom corals (<i>Anthomastus</i>) and a few sea pens. One species of an unbranched <i>Narella</i> was collected. Hexacorals included several species of antipatharians (<i>Trissopathes</i>, <i>Alternapathes</i>, and an undescribed species of <i>Antipathes</i> living in association with a farreid glass sponge), zoanthids and small anemones.</p> <p>Hexactinellid glass sponges were also abundant, particularly unstalked euplectellids (<i>Walteria</i> sp). Less abundant sponges included scattered <i>Poliopogon</i>, <i>Caulophacus</i>, <i>Bolosoma</i>, and <i>Aspidoscopulia</i> species. One colony of the latter was collected that also had the associated <i>Antipathes</i> sp.</p> <p>Some echinoderm observations, such as those from commensal or associate faunas such as ophiuroids or crinoids were present widely. Feather stars (at least three species of comatulid crinoids) and brittle stars (ophiacanthids, likely in the genus <i>Ophioplinthaca</i>, and euryalids were abundant on <i>Walteria</i> sp and octocorals). One genus of stalked crinoid, tentatively identified as <i>Bathycrinus</i> was observed twice. Small pentacrinoid larvae (juvenile feather stars) were also observed. Sea cucumbers were not particularly abundant presumably due to the lack of sediment. Those that were encountered were in the families Elpidiidae and Synallactidae. Large (&gt;10 cm across) purple echinothuriid urchins in the genus <i>Tromikosoma</i> were also at this site along with two genera of asteroids (a large white species of <i>Henricia</i> and two individuals of the coral predator <i>Hippasteria</i>). A small individual of <i>Hippasteria</i> was collected as an associate with an unbranched <i>Narella</i> and appeared to be observed preying on the primnoid. An unusually small cidaroid urchin was also observed.</p>



Other taxa included large patches of dead barnacles seen along the edges of large boulders and rocks, the stone crab (*Paralomis* sp), squat lobsters, swimming shrimp in the genus *Acanthophyra*, and small lyrate-shaped invertebrates that may or may not have been cladorhizid demosponges.

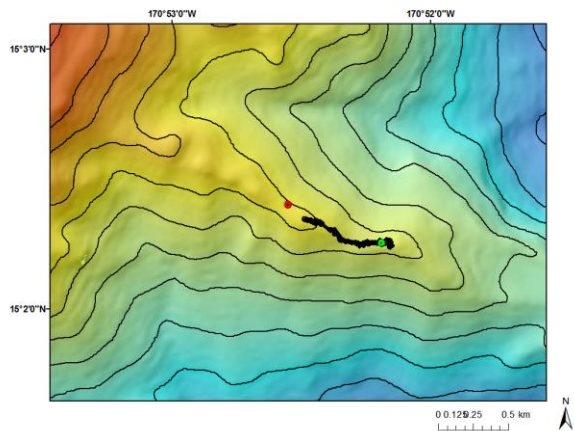
Relatively few fish were observed, including only a cutthroat eel (*Synaphobranchus brevidorsalis*) and two grenadiers (family Macrouridae). Finally, a finned octopod in either the genus *Cirrothauma* or *Grimpoteuthis* sp was caught on Seirios video toward the end of the dive.

### Overall Map of the ROV Dive Area

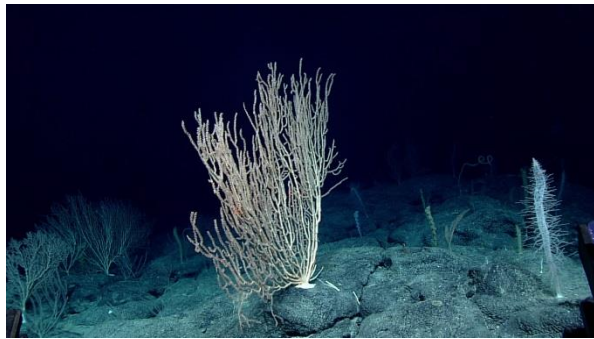


### Close-up Map of Main Dive Site





**Representative Photos of the Dive**



Corals and sponges observed near the landing site.

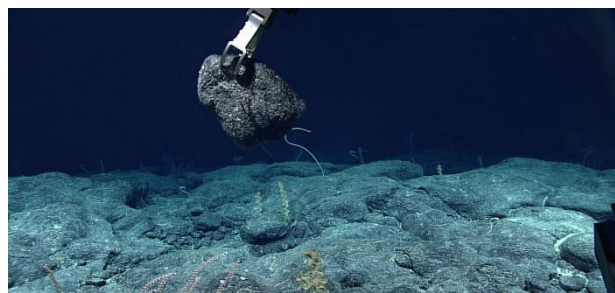


Coral and sponge community toward the end of the dive suggesting the densities persist for some distance along this area of the ridge.

**Samples Collected**


**Sample**

Sample ID	D2_DIVE_SPEC01GEO
Date (UTC)	20170724
Time (UTC)	212036
Depth (m)	2065
Temperature (°C)	2.13




<b>Field ID(s)</b>	Mn crusted Rock	
<b>Comments</b>	Four specimen lyrate associates removed from the underside (Demosponge lyrate?)	


### Sample

<b>Sample ID</b>	D2_DIVE_SPEC02BIO	
<b>Date (UTC)</b>	20170724	
<b>Time (UTC)</b>	213533	
<b>Depth (m)</b>	2065	
<b>Temperature (°C)</b>		
<b>Field ID(s)</b>	Farreidae	
<b>Comments</b>	Colony had commensal antipatharian	


### Sample

<b>Sample ID</b>	D2_DIVE_SPEC03GEO	
<b>Date (UTC)</b>	20170724	
<b>Time (UTC)</b>	221443	
<b>Depth (m)</b>	2065	
<b>Temperature (°C)</b>	2.14	
<b>Field ID(s)</b>	Mn Crusted Rock	
<b>Comments</b>	One small associate was recovered (demosponge?)	

### Sample

<b>Sample ID</b>	D2_DIVE_SPEC04BIO	
<b>Date (UTC)</b>	20170724	
<b>Time (UTC)</b>	003701	
<b>Depth (m)</b>	1994	
<b>Temperature (°C)</b>	2.03	
<b>Field ID(s)</b>	Narella unbranched	



<b>Comments</b>		
<b>Sample</b>		
<b>Sample ID</b>	D2_DIVE_SPEC04BIO_A01	
<b>Date (UTC)</b>	20170724	
<b>Time (UTC)</b>	003701	
<b>Depth (m)</b>	1994	
<b>Temperature (°C)</b>	2.03	
<b>Field ID(s)</b>	Goniasteridae	
<b>Comments</b>	Found on the Narella	

**Please direct inquiries to:**

NOAA Office of Ocean Exploration & Research  
1315 East-West Highway (SSMC3 10th Floor)  
Silver Spring, MD 20910  
(301) 734-1014

