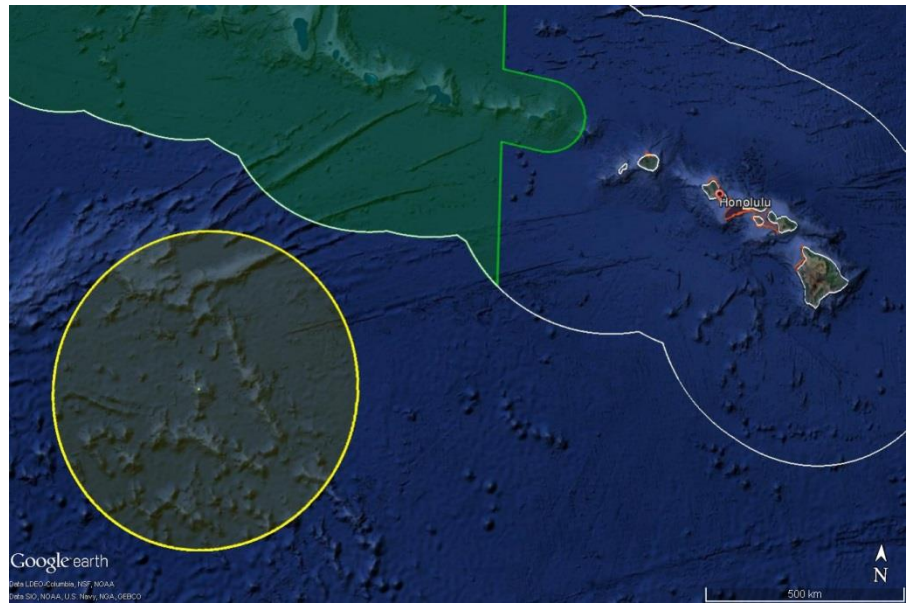




# Okeanos Explorer ROV Dive Summary

## Dive Information

Dive Map



Site Name	New Seamount 5
ROV Lead(s)	Dan Rogers
Expedition Coordinator(s) / Mapping Lead	Kelley Elliott / Mashkoor Malik
Science Team Lead(s)	Chris Kelley & Chris Mah
General Area Descriptor	Johnston Atoll Unit of PRIMNM

## ROV Dive Name

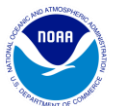
Cruise	EX1706
Leg	
Dive Number	12

## Equipment Deployed

ROV	Deep Discoverer (D2)		
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



	<p>monument. This site had to be mapped prior to conducting the ROV dive. The selected dive site was on the summit of a pinnacle formation on the shallowest part of the seamount.</p>
<p>Description of the Dive</p>	<p>The Deep Discoverer (D2) was deployed at approximately 8:20 AM reaching the bottom depth of 2325 m at approximately 10AM. Dive plan for the D2 dictated transit upslope to 2191 m. Transit began from a saddle on the seamount with upward movement up the ridge and upslope along the crest.</p> <p><b>Summary and bottom characterization</b></p> <p>Following arrival at the bottom, transit up the saddle was composed primarily of a sandy bottom with a strong water current moving from north to south, leaving evenly spaced, distinct current ripples in the sediment. Sediment was interrupted with widely spaced array of rocks and talus spread out the sandy field. The sediment covered region terminated at the base of a massive boulder cliff as the D2 transited upslope. Subsequent benthos were composed primarily of hard bottoms including a mixture large basalt rocks and boulders, sediment, and cemented hardpan. The crest was heterogeneous containing several platforms and valleys.</p> <p>Occurrence of organismal was sparse with minimal cover by sessile octocorals and sponges in vivid contrast to yesterday’s highly abundant and dense communities. Following departure from the saddle, the fauna shifted to more rocky bottom forms such as colonial corals and stalked glass sponges.</p> <p>Structures perceived to be foraminifera, within the class Xenophyphorea were abundant throughout the entire dive. This included a small, white arborescent forms, larger fan-shaped structures, tiny round capsule-like forms and short, uneven branching forms.</p> <p>Porifera were largely absent on the sediment-covered sandy region but began appearing with greater abundance on the rocky substrates following the D2’s trek through the ridge and crest areas. Most glass sponges observed were solitary with few occurring in groups. Glass sponges were most frequently encountered. This included <i>Bolosoma</i>, the euplectellid <i>Regadrella</i>, <i>Caulophacus</i>, <i>Farrea</i>, <i>Poliopogon</i>, <i>Walteria</i> and <i>Hyalonema</i>. Sponges in the Cladorhizidae were observed on at least two occasions.</p> <p>Cnidarians of many different types were observed throughout the dive as different species were associated with the changing regions along the transit area. The sediment covered saddle region for example featured two observations of “rock pens”, pennatulaceans tentatively identified as <i>Anthoptilium</i> sp. Octocorals and black corals were absent from the saddle region. More typical cnidarian fauna for this region began to appear as the benthic landscape changed from rippled sediments to basalt hard bottoms. Cnidarians observed in this region were dominated by a diversity of octocorals, including genera within the chrysogorgiidae (<i>Chrysogorgia</i> and <i>Iridigorgia</i>), bamboo corals (Isididae), precious corals (Corallidae), and mushroom corals (<i>Anthomastus</i>). Also present were sea anemones and black corals. (Antipatharia). Antipatharia observed included <i>Alternapathes</i>, <i>Bathypathes</i>, <i>Heteropathes</i>, <i>Parantipathes</i>, and <i>Stauroopathes</i>. A large dark purple cerianthid sea anemone apparently lacking a tube and residing on a rock face was observed and collected.</p> <p>Also observed was a single benthic ctenophore which was present on the surface of a glass sponge.</p> <p>Echinoderms were few. The most abundant forms observed were either</p>



feather stars (Crinoidea) or sea cucumbers (Holothuroidea). Most sea cucumbers observed were tentatively identified as *Hansenothuria* or some representative of the Synallactidae. One or two aberrant species include a species using sand as camouflage (*Mesothuria?* sp) and a transparent sea pig (Elpidiidae) were also observed. Both types of ophiuroids, "snake stars" present in the arms of a host octocoral were observed on *Hemicorallium* and "normal" brittle stars in the family Ophiacanthidae were present wrapped around dead glass sponge stalks for a sustained distance along the transect. One stalked crinoid in the *Bathycrinus* was observed as was one specimen of *Calliaster*, a species known primarily as corallivorous.

Among the most unusual of species collected during today's dive was a large (10.0 cm length) brown pleuorbranchaeid "side gill slug." Opisthobranchs are seldom observed from abyssal depth, making this a very unusual occurrence record. It was collected.

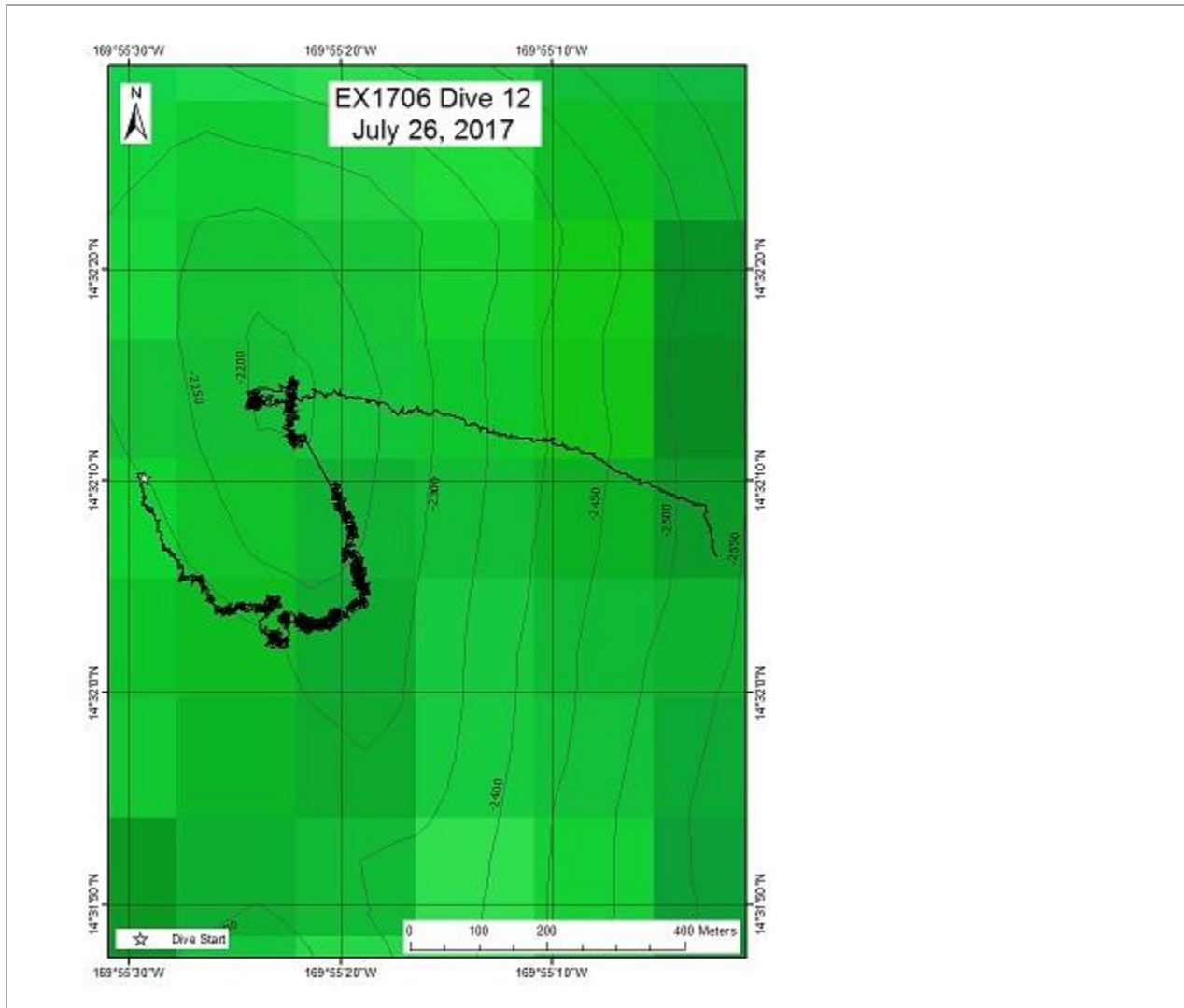
Worms were represented by several swimming polychaetes, possibly in the genus *Swima* and several observations of chaetognaths.

Arthropods observed included a large member of the Pycnogonida, probably *Colossendeis* feeding on an individual of the octocoral *Iridigorgia*. Observed crustaceans included swimming shrimps in the genus *Acanthophyra* and the commonly encountered *Nematocarcinus*.

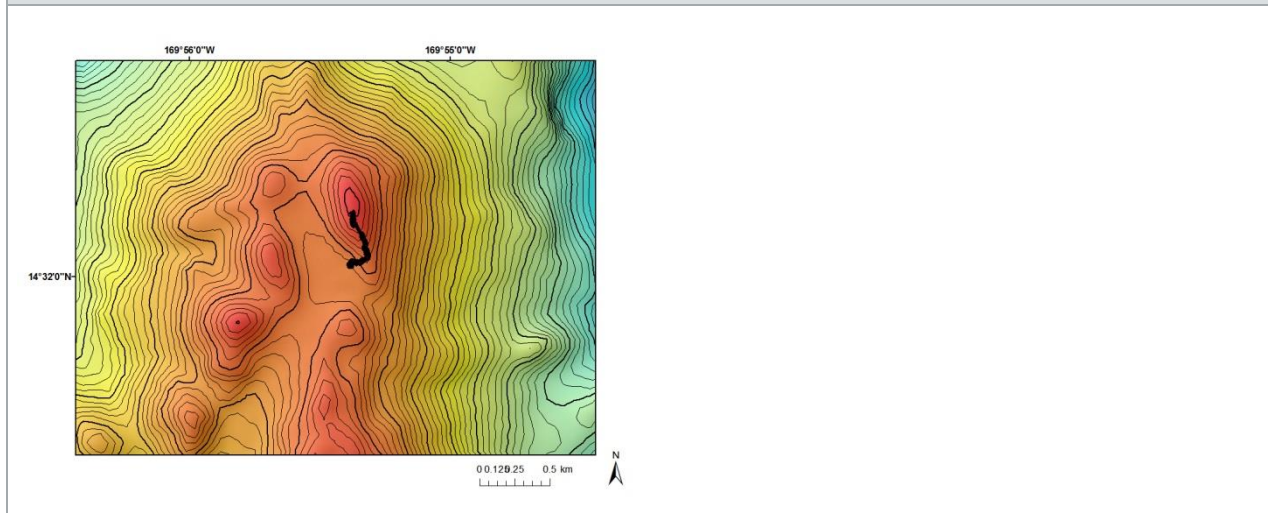
Fishes were represented by few observations, including several observations of grenadiers (Macouridae) and one observation of a halosaur.

Overall Map of the ROV Dive Area



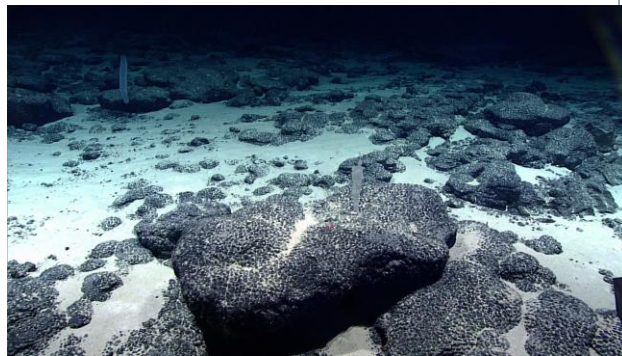


Close-up Map of Main Dive Site





**Representative Photos of the Dive**



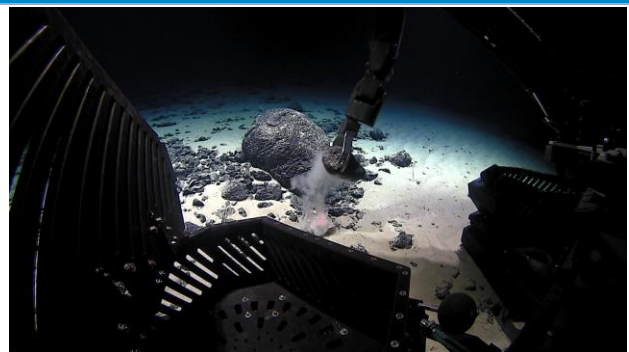
Region with the basalt hard bottom showing two species of glass sponges.

The glass sponge Bolosominae new genus.

**Samples Collected**

**Sample**

Sample ID	D2_DIVE_SPEC01
Date (UTC)	20170726
Time (UTC)	203303
Depth (m)	2321.9299
Temperature (°C)	
Field ID(s)	Mn encrusted rock
Comments	




**Sample**

Sample ID	D2_DIVE_SPEC02
Date (UTC)	20170726
Time (UTC)	211803
Depth (m)	2307.3401
Temperature (°C)	
Field ID(s)	Ceriantharia?




<b>Comments</b>	subsample ID SPEC02BIO_SO1
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### Sample

<b>Sample ID</b>	D2_DIVE_SPEC03	
<b>Date (UTC)</b>	201707	
<b>Time (UTC)</b>	224536	
<b>Depth (m)</b>	2256.51	
<b>Temperature (°C)</b>		
<b>Field ID(s)</b>	Mn encrusted rock	
<b>Comments</b>		

### Sample

<b>Sample ID</b>	D2_DIVE_SPEC04	
<b>Date (UTC)</b>	20170727	
<b>Time (UTC)</b>	1348	
<b>Depth (m)</b>	2207.52	
<b>Temperature (°C)</b>		
<b>Field ID(s)</b>	Pleurobranch	
<b>Comments</b>		

### Sample

<b>Sample ID</b>	D2_DIVE_SPEC05	
<b>Date (UTC)</b>	20170727	
<b>Time (UTC)</b>	11737	
<b>Depth (m)</b>	2180.52	
<b>Temperature (°C)</b>		
<b>Field ID(s)</b>	Pycnogonida on Iridigorgia sp.	
<b>Comments</b>		



<b>Comments</b>	
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**Please direct inquiries to:**

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