

## Okeanos Explorer ROV Dive Summary

Dive Map	
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Site Name	New Seamount 8 cone
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
<b>ROV Dive Name</b>	
Cruise	EX1706
Leg	
Dive Number	15
<b>Equipment Deployed</b>	
ROV	Deep Discoverer (D2)
Camera Platform	Seirios
ROV Measurements	<input checked="" type="checkbox"/> CTD <input checked="" type="checkbox"/> Depth <input checked="" type="checkbox"/> Altitude



	so, where it was located.
Description of the Dive	<p>The Deep Discoverer was deployed at 8:30 AM reaching bottom at 9:30AM with starting depth at 2006 m. The dive began along the northern side of the cone proceeding up to the top along a total length of 600m, concluding at approximately 1800m.</p> <p>Bottom Characterization: Video observations reveal a hard bottom composed of heavily consolidated manganese crust with small to moderate sediment pools present throughout. Coral and sponges moderate to heavily abundant ranging from widely spaced to more densely spaced closer to the top of the cone.</p> <p><b>Cnidaria</b></p> <p>Most abundant of the fauna observed during this dive were colonial octocorals, specifically bamboo corals (family Isididae) in various morphotypes (e.g., branching forms, whips, etc.) which composed over 60% of the cnidarian observations). Multiple Isidid genera were observed including Keratoisis, Lepidisis, and Isadella in addition to several unidentified bamboo coral genera and species.</p> <p>Other relevant octocorals included Chrysogorgiidae (Chrysogorgia, Iridigorgia, and Metallogorgia), Primnoidae (e.g. Candidella), Coraliidae (e.g. Hemicorallium), Anthohelidae (Victorgorgia) and Paragorgiidae. As with other Paragorgia colonies observed in this area, its skeleton was being overrun by a yellow zoanthid colony. Other alcyonacean octocorals observed included the mushroom coral Anthomastus and the rockpen Anthoptilum. Many hydroids were also observed.</p> <p>Other cnidarians observed included at least 3 species of acintosolid sea anemones, a closed homathiid, and several black corals (antipatharians) including Umbellapathes, Bathypathes, and Stauropathes.</p> <p>One scleractinian cup coral was observed during the dive.</p> <p><b>Porifera</b></p> <p>Glass sponges were the next most abundant animals observed during the dive with several commonly encountered species observed during the dive. The most commonly encountered was in the genus <i>Walteria</i> sp. Many <i>Walteria</i> were observed with many commensals, including large isopods, shrimps, and ophiuroids present within the internal chamber. Other observed glass sponge genera included <i>Bolosoma</i> (medium to large sized), <i>Caulophacus</i>, <i>Dictyaulus</i> (small thistle sized), <i>Poliopagon</i>, <i>Regardrella</i> and <i>Stelladoryx</i>.</p> <p><b>Echinodermata</b></p> <p>Asteroids were the most prominent echinoderms observed during this dive. Upon reaching the top of the cone, a high abundance of what appeared to be <i>Evoplosoma</i> cf. <i>forcipifera</i> were observed consistently feeding on bamboo corals (clade D2 as per L. Watling). These smaller and less abundant farther away from the peak. Upon reaching the top of the cone, they became far more abundant and were significantly larger (up to 10 cm diameter). Also observed was a 7 armed member of the genus <i>Asthenactis</i>, a member of the rarely encountered <i>Myxasteridae</i>.</p>



Sea urchins were represented by large individuals of the echinothuriid *Tromikosoma* which were only encountered at the peak and which were relatively large. Sea cucumbers were relatively uncommon but included a synallactid which was tentatively identified as *Hansenothuria*, as well as species in the Deimatidae (*Oneirophanta*?) and a member of the Elpidiidae.

At least 2 species of feather stars were observed in addition to one unusual observation of a stalked crinoid which might have been a juvenile pentacrinid larvae of a feather star in the genus *Psyathrometra* which were present in abundance around the survey track. This individual also had eggs or some gonadal structures present on the proximal pinnules adjacent to the cup. Observations of feather stars present as commensals on corals, sponges, and rocks were made throughout the dive. Similarly brittle stars, particularly ophiacanthids, were ubiquitous as commensals on sponges and corals. Amphiuroid brittle stars were observed with their arms splayed out on basalt boulders. Euryalid ophiuroids were observed on several octocoral colonies observed throughout the dive, including regular commensals of *Metallogorgia* and *Victogorgia*.

**Mollusca:** Although many small snails were observed throughout the dive as commensals on sponges and corals, most notable was the observation of aplousobranchs, tiny vermiform mollusks present on bamboo corals as predators of the tissue present on the surface.

**Crustacea:** Numerous smaller crustaceans were observed during the dive. Most evident were multiple species of squat lobsters (eg. *Unidopsis*, *Urptychus*) present among octocoral colonies, such as *Chrysogorgia*. Several smaller caridean shrimps were also observed. *Nematocarcinus* was regularly observed during the dive.

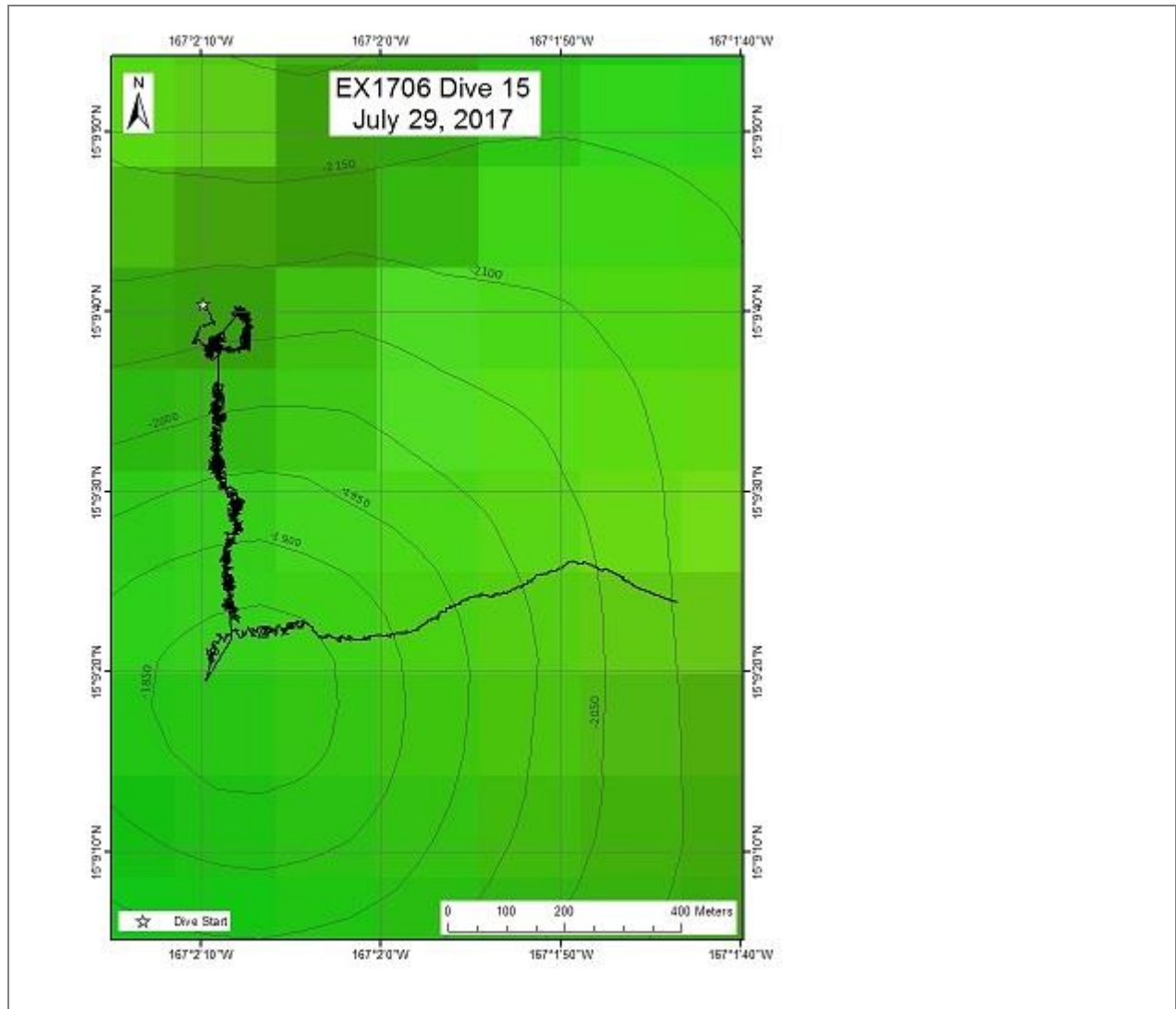
Moderately sized isopods, were observed living on the *Walteria* glass sponges as were multiple individuals of shrimps which permanently reside within the internal sponge chamber. A prominent isopod parasite was observed riding on the epidermis of a relatively large grenadier (*Coryphenoides*).

**Worms:** Several arrow worms (*Chaetognatha*) were observed during the dive as was a unique observation of a swimming ribbon worm (*Nemertea*).

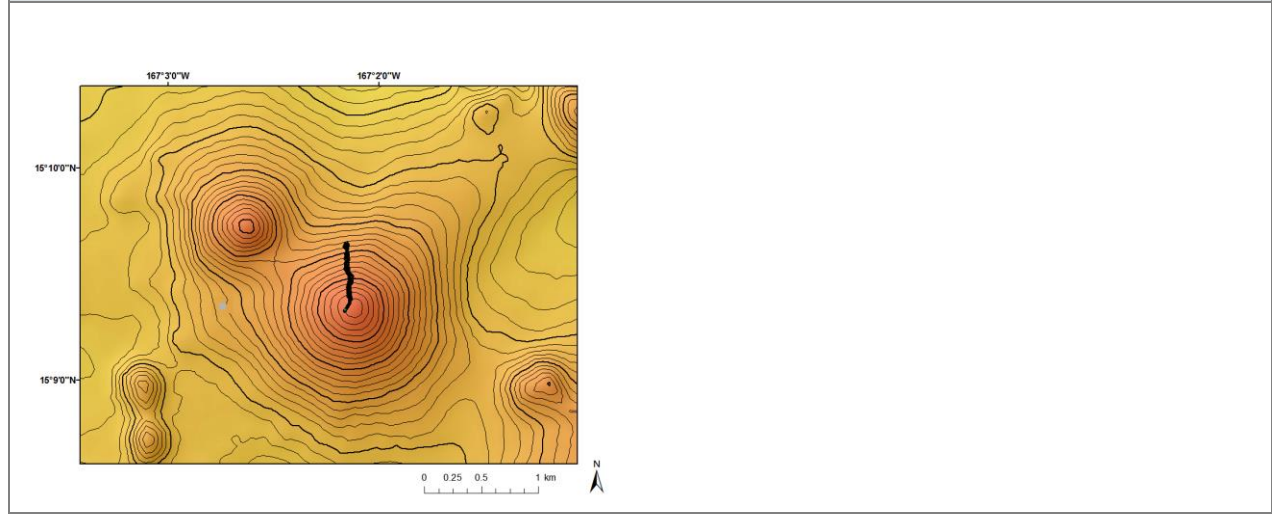
**Chordata:** Many fishes were observed during today's dive. This included approximately six grenadiers (*Macouridae*) which were primarily identified as being in the genus *Kumba*. Approximately four cusk eels (*Basogigas*) were also observed as were cutthroat eels.

Overall Map of the ROV Dive Area

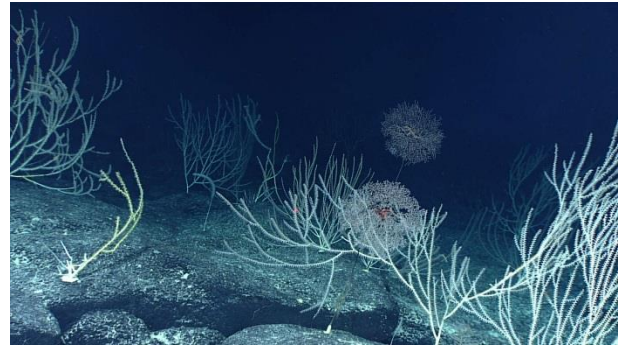
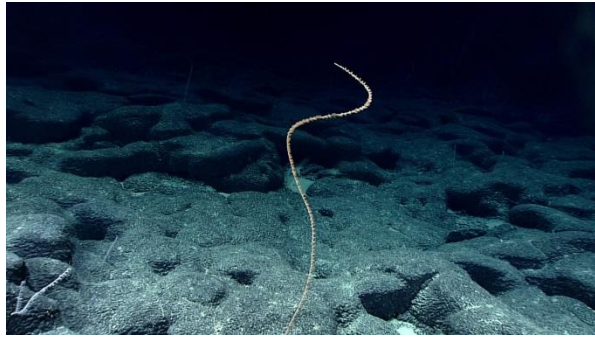




Close-up Map of Main Dive Site



Representative Photos of the Dive



Moderate density of corals and sponges observed at the landing site.

High density community dominated by bamboo corals found further upslope on the flank of the cone.

### Samples Collected

#### Sample

Sample ID	D2_DIVE15_SPEC01BIO
Date (UTC)	20170729
Time (UTC)	224022
Depth (m)	1905
Temperature (°C)	
Field ID(s)	Dictyaulus sp with shrimp



**Comments** Collected sponge to get the paired shrimp. Also found an isopod and 2 polychaete worms inside. Sponges had what appeared to be commensal cnidarians that were preserved in formalin.

#### Sample

Sample ID	D2_DIVE15_SPEC02GEO
Date (UTC)	20170730
Time (UTC)	010128
Depth (m)	1805
Temperature (°C)	
Field ID(s)	Mn crusted rock



**Comments** Collected both rocks at same site. May only be Mn crust.


#### Sample

Sample ID	D2_DIVE15_SPEC03GEO
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<b>Date (UTC)</b>	20170730
<b>Time (UTC)</b>	010648
<b>Depth (m)</b>	1805
<b>Temperature (°C)</b>	
<b>Field ID(s)</b>	Mn crusted rock
<b>Comments</b>	Collected both rocks at same site. May only be Mn crust

**Sample**

<b>Sample ID</b>	D2_DIVE15_SPEC04BIO	
<b>Date (UTC)</b>	20170729	
<b>Time (UTC)</b>	224022	
<b>Depth (m)</b>	1905	
<b>Temperature (°C)</b>		
<b>Field ID(s)</b>	Bamboo coral	

**Comments** Grabbed unintentionally with the sponge.

**Sample**

<b>Sample ID</b>	D2_DIVE15_SPEC05BIO	
<b>Date (UTC)</b>	20170729 or 30	
<b>Time (UTC)</b>	Unknown	
<b>Depth (m)</b>	Unknown	
<b>Temperature (°C)</b>	Unkown	
<b>Field ID(s)</b>	Bamboo coral	
<b>Comments</b>	Found in ROV frame after the dive	



Please direct inquiries to:

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