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Purpose of the Dive

To explore the bathyal community of a hard bottom on the SE slope of Johnston Atoll in the Pacific Remote Islands Marine National Monument

Description of the Dive:

The dive transited up a relatively steep slope onto the edge of a plateau. The substrate on arrival was a mix of hard bottom heavily encrusted with manganese and sediment patches. The sediments at the landing site were rippled, indicating relatively fast current flow. Pockets of sediment continued throughout the dive, even on relatively sharp slopes. Rocky erosion channels were seen at multiple sites. On the plateau were thicker sediments with only a few rocky outcroppings. A pale rock that turned out to be carbonate was collected from a depth of 1269 m. Throughout the dive oxygen concentration was very low.

The most abundant metazoans observed were comatulid crinoids of two different morphs, one yellow (? *Glyptometra*), and one reddish brown. Two of the reddish morphs were seen swimming. Holothurian sea cucumbers were observed but uncommon (two *Synallactidae*, one *Mesothuria*). A large asteroid (*Asthenactis*) was present on the sedimentary plateau.

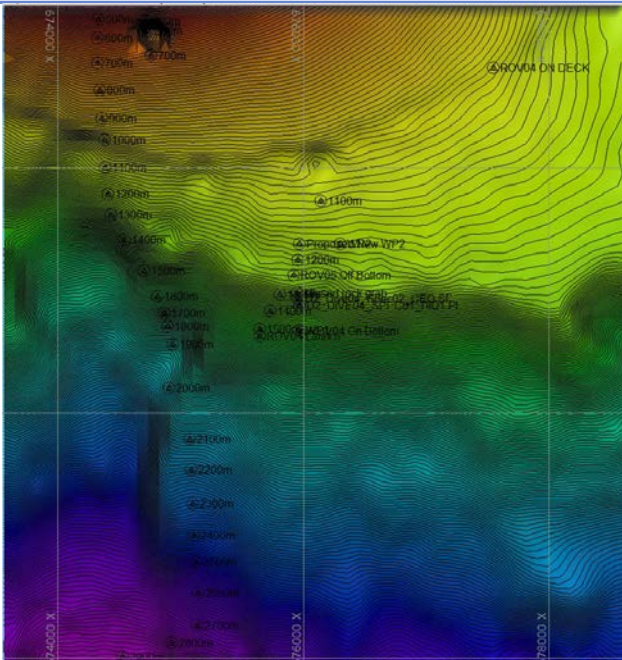
A small number of sea pens (*Umbellula*, *Calibelemon*, *Protoptilum*) and a tube anemone (*Ceriantharia*) were seen in sedimented pockets. Sea pens were more abundant on the sedimented plateau near the end of the dive. *Chrysogorgia* colonies were the most common octocoral observed, most with a chirostyliid crab associate; one colony was seen with an attached egg sac, and another with a nudibranch in its branches. The nudibranch appeared similar to the genus *Tritonia*, which are known coral predators. A few primnoid octocorals (*Narella* ?*macrocalyx*) were also present. The entire bottom transect took place in very low oxygen. This, coupled with high sedimentation rates, may account for the paucity of corals.

Hexactinellid sponges were relatively common, including Bolosominae, *Caulophacus*, *Dictyaulus/Regadrella* and *Sericolophus*. A sponge (?*Walteria*) with two benthic ctenophores (Platyctenida) and one scale worm (Polychaeta, Polynoida) was collected. Another dead *Walteria* was imaged that had six ophiuroid associates and a crinoid (*Glyptometra*) on top, as well as a few hydroids.

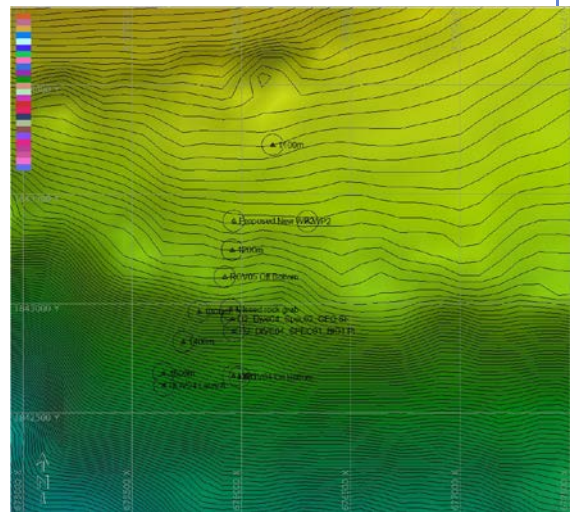
This dive was very interesting in terms of the fish community, and included several rare sightings. We saw a duck-billed eel (Nettostomatidae) upon arrival, possibly of the genus *Venefica* or *Nettastoma*. Halosaurs (*Aldrovandia*) were abundant during the dive. An ophidiid, possibly *Bassozetus* was seen, as was *Synaphobranchus brevidorsalis*, both common encounters in the deep sea. A particularly noteworthy observation on this dive was a male chimaera *Hydrolagus*, seen above the seafloor with a copepod parasite. A gempylid oilfish, *Ruvettus pretiosus* and a flatfish (Order *Pleuronectiformes*, ?*Cynoglossidae*, *Symphurus*) were also interesting piscine sightings.

Other observations of note include a carnivorous tunicate (Octanemidae) with a polynoid polychaete inside the hood; a single “pom-pom anemone” (*Liponema* sp.); a floating aggregate at 1310 m that upon further investigation turned out to be an egg sac provisioned with swimming medusa bells produced by a siphonophore; and a polychelid crustacean.

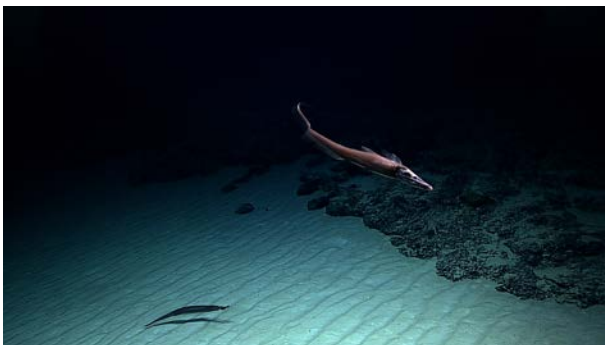
Overall Map of ROV Dive Area

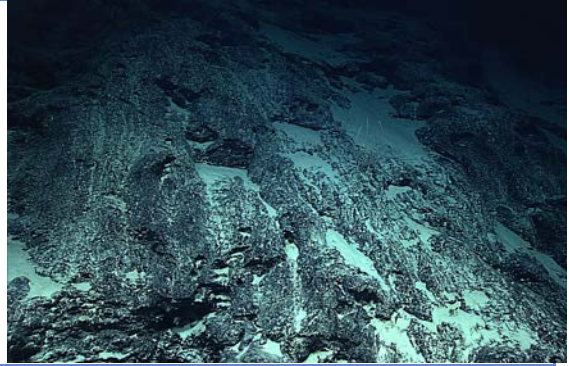


Close-up Map of Main Dive Site



Representative Photos of the Dive





Samples Collected

Sample ID	EX1504L4_20150919T014646_D2_DIVE04_SPE C01BIO	
Date (UTC)	20150919	
Time (UTC)	014646	
Depth (m)	1316.987	
Temperature (°C)	3.42915	
Field ID(s)	Walteria sp.	
Comments		
Sample ID	EX1504L4_20150919T021614_D2_DIVE04_SPE C02GEO	
Date (UTC)	20150919	
Time (UTC)	021614	
Depth (m)	1269.795	
Temperature (°C)	3.53897	
Field ID(s)	Carbonate Rock	
Comments		

Please direct inquiries to:

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