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Purpose of the Dive

The main objective of this dive is to explore FDM for high density communities of deep sea corals and sponges. In particular- this dive will search shallow depths for precious depths. Geologic objective was to investigate the geomorphology of a ridge feature documented in the multibeam bathymetry.

Description of the Dive:

From a geological perspective, our goal was to explore what was seen in the bathymetry as a ridge feature, but we discovered, to our surprise, that the ridge crest had considerable relief. It consisted of a series of knolls and necessitated having the ROV drive up one side of each knoll and fly down to the base of the next one. Thus we were leap-frogging knolls for most of the dive. The entire first half of the dive traversed a series of alternating rough and smooth sea floor surfaces of what is probably volcanoclastics, and the first rock we recovered turned out to be a layered block of what is likely volcanic ash. As we approached the top of the ridge the sea floor was covered with jagged boulders and we recovered one. It was a coralline limestone.

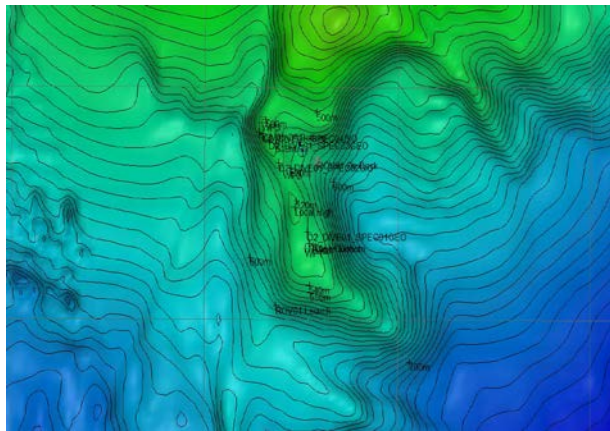
We observed at least 2 species of precious corals: bamboo coral (Primnoidae) and black coral (Schizopathidae?). Although not abundant, there were several different species of octocorals (including *Acanthogorgia* and *Paragorgia*), stoloniferans, and a few stony corals (Dendrophyllidae, *?Enallopsammia*). ,

The most obvious and abundant organism was a demosponge (Astrophorina, Pachastrellidae) that formed continuous "ribbons", with the entire base of the sponge attached to the rock. As we got shallower, the most dominant sponge was another Astrophorina (?Pachastrellidae), massive in size. There were at least 2 different species of lithistid demosponges (Family Corallistidae). Other invertebrates included abundant squat lobsters (*Eumunida* and *Munida*), shrimp, a stone crab, hermit crabs, comatulid crinoids, brittlestars (attached to sponges

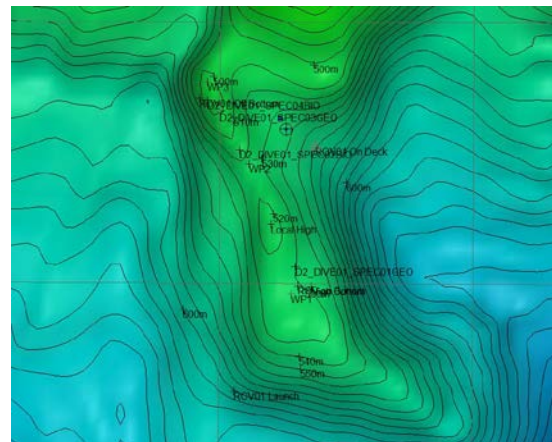
and octocorals), sea stars, and several different species of urchins. There is good video of a sea star with a parasite. Other highlights included stalked barnacles and an octopus.

Although the team of scientists, both at sea and land-based, were stumped by a green filamentous organism found attached (or stuck?) to anything fan-shaped or branching, participation from the land-based scientists was awesome!

Overall Map of ROV Dive Area



Close-up Map of Main Dive Site






Representative Photos of the Dive




Bubble-gum coral (*Paragorgia* sp.) with an undescribed filamentous commensal organism.



Green-eye fish (Family: Chlorophthalmidae) were common at this site. Due to the strong current, these fish stayed closed to the bottom.

Samples Collected		
Sample ID	SPEC01GEO	
Date (UTC)	20160618	
Depth (m)	530.24	
Field ID(s)	ROCK	
Time (UTC)	002613	
Temperature (°C)	6.07	
Comments	12x13x29cm, brown rock with thin MnO coating. Layered, slabby substrate.	
Sample ID	SPEC02BIO	
Date (UTC)	20160618	
Depth (m)	508.97	
Field ID(s)	DEMOSPONGE/ ?PACHASTRELLIDAE WITH GREEN BRANCHING COMMENSAL	
Time (UTC)	024136	
Temperature (°C)	6.83	
Comments	40x10x5cm, Green branching possible bryozoan. Found attached to other organisms and on the bottom.	
Sample ID	SPEC03GEO	
Date (UTC)	20160618	
Depth (m)	488.79	
Field ID(s)	ROCK/ PILLOW BASALT?/ WITH ASSOCIATED BIO	
Time (UTC)	033720	
Temperature (°C)	6.73	

Comments	32.5x11x16, rugose rough surface and crystals,	
Sample ID	SPEC04BIO	
Date (UTC)	20160618	
Depth (m)	488.57	
Field ID(s)	DEMOSPONGE/ FRAGMENT/ ASTROPHORIDA	
Time (UTC)	040650	
Temperature (°C)	7.15	
Comments	Very abundant at the dive site.	
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