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Purpose of the Dive

This dive consisted of two parts: mid-water examinations at discrete depths for pelagic flora and fauna on descent, and a “deep-water” transect up the western wall of Bryant Canyon. The pelagic transect was nominated by Mike Vecchione of the Smithsonian Institution, and the seafloor dive was nominated by Tim Shank (WHOI) and Brian Kinlan (NOAA). The latter was designed to investigate potential deep-water coral habitats associated with seismic anomalies from BOEM and high backscatter areas registered by multibeam bathymetric data.

Description of the Dive:

Pelagic transect on descent

Five 15-min transects occurring in 100 m intervals between 800 and 1200 m. The 800 m transect had Shrimp - Mysis (relative of lophogastrid), salps, Ctenophores, shrimp, bristle mouth fish – *Cyclothone* sp. siphonophores, Chaetognatha, and jelly fish. The 900 m transect had unidentified fish, “sinkers” (remnant mucus feeding sacks from larvae), hatchet fish, Chaetognatha, sergestid shrimp. The 1000 m transect was mostly barren, except for background marine snow. The 1100 m transect had Chaetognatha, a siphonophore and a live pteropod (sea butterflies). The 1200 m transect had bristlemouth fish – *Cyclothone* sp., Chaetognatha, jellyfish (red with “flower petal”-like tentacles), and another very interesting jellyfish that may have been Narcomedusae?

Seafloor transect

The vehicles landed on the western side of the floor of Bryant Canyon, in a water depth of 2,813 m., on unrippled sedimented seafloor. High backscatter characteristic of the floor of this Canyon turned out not to be indicative of hard seafloor, as seafloor covered with soft sediment persisted to the base of the west wall.

The first extensive hardground outcrops began at a depth of 2,765 m. Furrows, similar to those found on Dive 9 on the other side of Bryant Canyon, were observed at 2,584 m. More extensive hardgrounds were observed beginning at a depth of 2,531 m. Hardgrounds and layered outcrops persisted, with occasional near-vertical slopes, until the top of the slope near the end of the dive. Rippled seafloor also occurred intermittently near the top of the slope. The dive ended at a depth of 2,470 m.

Biological summary

Floor of the canyon: snail fish – Liparid (few), Holothurian - *Enypniastes* sp., hexactinellid - *Euplectella* sp.- type, Fish - unidentified slender, grey, benthic, asteroids, shrimp - *Plesiopenaeus armatus*, Pennatulacea- *Umbellula* sp. and fly trap anemones, were all observed.

On the lower slope, characterized by both hardgrounds and sedimented seafloor, there were Cerianthid anemones, human debris - trash bag (filled with plastic and knitted material), hexactinellid sponges - lobate-type, Ascidiacea, cusk eels, tripod fish (common) and squat lobster- *Munidopsis rostrata*.

On steep portions of the hardground slope (dips > 45o), there were fly trap anemones (also common on small rocks atop soft sediment).

Ophiroids, holothurians - *Benthothytes typica* and *Benthothuria* were common throughout the remainder of the dive, as were sponge (or pink, translucent ascidian?), shrimp - unidentified, and a possible bacterial (mat).

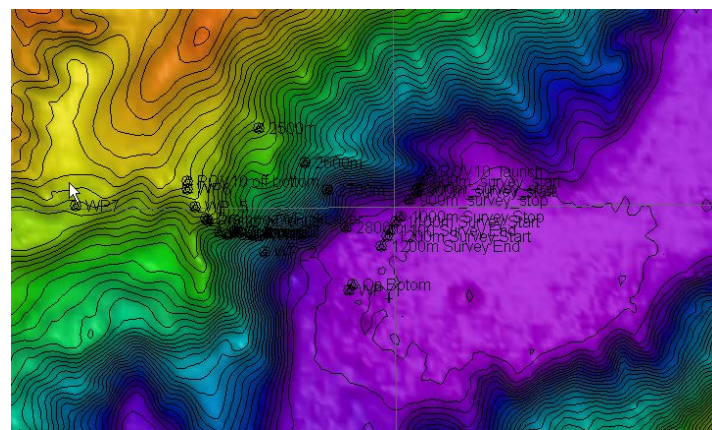
On the hummocky hard bottom, which was for the most part barren, there was a comatulid crinoid, hexactinellid sponges, Asteroid - *Dytaster* sp.* and tripod fish.

On the upper slope, associated with occasionally broken ledges of hardground layers: squat lobster- *Munidopsis* sp., tube polychaetes, shrimp - thread leg, Pennatulacea (plumose- possibly *Anthoptilum?* sp. type) and *Umbellula* sp.

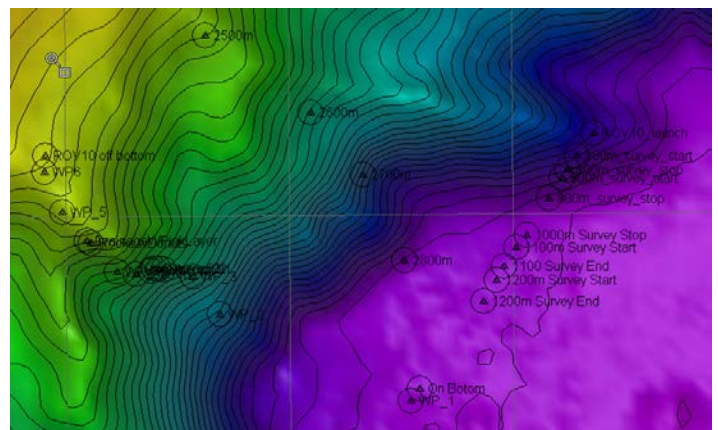
On layered hard-bottom, where in one place there was a pink stain along one horizon (iron-staining?): small shrimp, polychaetes, fly traps, pagurid (hermit crab) and a dead sea biscuit test with anemones.

*Note: during the dive, there was discussion of the orange sea star, *Dytaster* sp. We were corrected after the dive that the star does not eviscerate its stomach, but actually eats mud and infauna. Their swollen central disks were actually mud filled. We were also informed that these sea stars are quite rare.

Overall Map of ROV Dive Area



Close-up Map of Main Dive Site



Representative Photos of the Dive



EX1402L3_IMG_20140422T161144Z_ROVHD_1200M_TRANS_03 .jpg; A red jelly is seen during the pelagic transects.



EX1402L3_IMG_20140422T211609Z_ROVHD_OUTCROP_RED_S TAIN .jpg; Occasional near-vertical slopes were seen, almost barren.



EX1402L3_IMG_20140422T215332Z_ROVHD_OPH_FSH_ASR.jpg.
A rare *Dytaster* sp. sea star burrows its radial arms as it consumes sediment.

EX1402L3_IMG_20140422T204802Z_ROVHD_PEN.jpg; a plumose sea pen (*Anthoptilum?*- type) in the sediment.

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