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### Purpose of the Dive

The primary objectives of this shallow (~550 m throughout) dive were to characterize: 1) *Lophelia* and black coral associations on top of a number of mounds/bioherms known to occur in this vicinity and 2) to focus on golden crab occurrences in the vicinity of these corals. The dive was nominated as one of a series of dives in these water depths by Brian Kinlan and Peter Etnoyer (NOAA) and a team from CIOERT and Harbor Branch led by John Reed (and including Stephanie Farrington).

### Description of the Dive:

#### Geological Summary

The dive began considerably SE of the first waypoint, and N to S surface current (~1 kt) and quartering winds and seas from the SE necessitated a change of plan. The first bioherm investigated was associated with the third waypoint; this and three more bioherms were investigated, generally to the north and east.

The vehicles landed at the bottom of the SE flank of the first bioherm at a depth of 577 m, on sedimented seafloor with some rubble. One layer was also exposed, suggested the presence of old (platform) carbonate near the seafloor. A current estimate yielded a bottom velocity of 0.1 kt, directed to 345 degrees.

As the vehicles began to move upslope, the transition from sedimented seafloor to the edge of hard rock was abrupt (associated with a change to high backscatter). Coral rubble was everywhere. The top of the first bioherm was reached at 547 m. The NW side of this bioherm was an abrupt ledge at 554 m, showing a good cross-section of the bioherm itself (resembling mounds on mounds), sitting atop layered (platform) carbonates at the base. Currents enough to move the ROV were encountered intermittently throughout the dive.

The second bioherm at the fourth waypoint also occurred at 547 m. Another nice cross-section of a bioherm occurred at the fifth waypoint, just to the NW. Between this waypoint and the next one (WP 6), the seafloor was characterized rubble/debris, including coral fragments. Layers exposed at the seafloor, some of them apparently broken by joints, confirmed that platform carbonate was only shallowly buried, either by debris or biohermal accumulation.

At the final waypoint (WP 6), a small bioherm sat atop old carbonate layers. Some of these layers were broken, exposing fresh carbonate characterized by abundant fossil burrow structures. The dive ended at a water depth of ~537 m.

#### Biological Summary

While transecting the mounds/bioherms, there was 50-100 % cover of *Lophelia pertusa* coral rubble throughout the dive (this rubble is normal on *Lophelia* bioherms). There was one mound that was 100% covered in standing dead coral, with 50-70% live cover in parts. This was on the northern side of a mound near WP 4. The *Lophelia* appeared to be on the leeward side of a ridge; current was flowing over the top of the mound enough to push the ROV.

**Corals:** included scleractinians: cup corals (abundant), *Lophelia pertusa* - live and standing dead and rubble (dominate species), and *Madrepora* sp. (few to common); octocorals: *Acanthogorgia* sp., bamboo corals: *Chelidonis* and *Keratoisis*, *Muriceides* and *Paramuricea*; antipatharians - *Bathypathes*, *Leiopathes*, *Taxipathes*. Other cnidarians included: Pennatulacea?, Anthomastus, Aquambridae (recently discovered family of soft corals), stoloniferous corals and stylasterids.

**Sponges:** *Rossella nodastrella* (recently described species), *Petrosida* and *Aphrocallistes beatrix*;

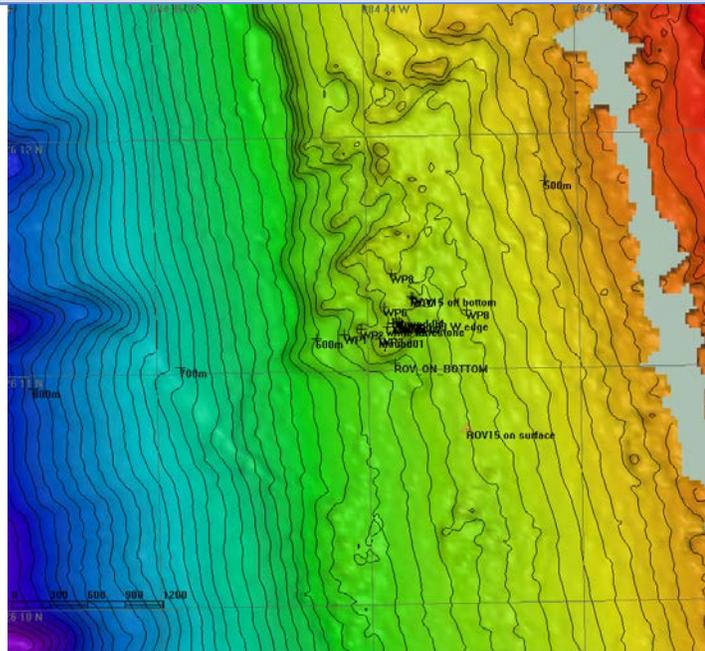
**Crab:** *Farrea* sp., *Chaceon fenneri* (common)

**Fish:** duckbill eel - *Nettenchelys*, cardinal fish - *Epigonus*, *Synagrops*, Darwin's slime head - *Gephyroberyx darwini*, Goosefish - *Lophiodes beroe*, hake, rockfish - *Helicolenus*, roughy - *Hoplsthethus mediterraneus*, rattail - *Nazumia*, scorpion fish - *Idiastion*, tinsselfish - *Grammicolepis*, Atlantic thornyhead - *Trachyscorpia cristulata*

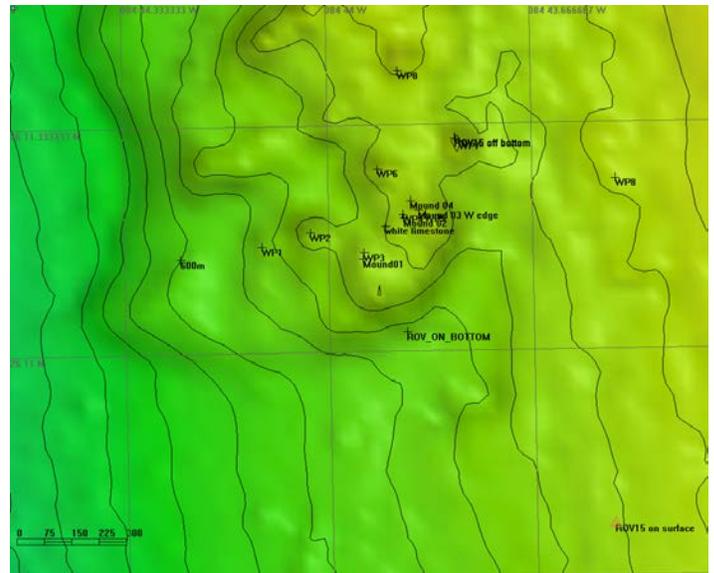
**Echinoderms:** Crinoid - Atelecrinidae, echinus? - sea urchins (rare) - one seen predated a Primnoidae octocoral.

**Other:** unidentified shrimp, squat lobsters: *Emunida picta*?, *Munida* sp., and bobtail squids (2) with a clutch of eggs seen.

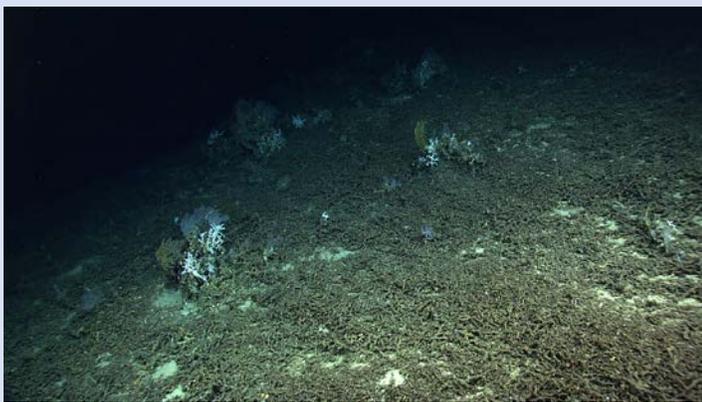
### Overall Map of ROV Dive Area



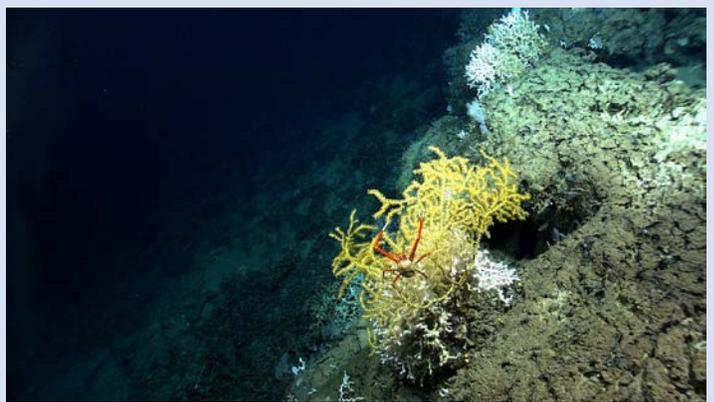
### Close-up Map of Main Dive Site



### Representative Photos of the Dive



EX1402L3\_IMG\_20140428T180430Z\_ROVHD\_COR\_RUBBLE.jpg;  
Coral rubble made up the ground cover on all the mounds



EX1402L3\_IMG\_20140428T203633Z\_ROVHD\_COR\_SQA.jpg  
Paramuricea and a *Emunida picta* rest on *Lophelia* coral

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