HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P4-258

MISSION STATUS

Location: Necker Ridge

Latitude: 21° 31.0' N **Longitude: 167** ° 56.0'W

Mission Date: Oct. 15, 2011 **Duration: 6** hours 45 mins

Maximum Depth: 1809 m

Project Title: Biology of The Enigmatic Necker Ridge

Principal Investigator: Amy Baco-Taylor

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Observer 1: Erin Easton
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Observer 2: Diego Figueroa
Address: same

Pilot 1: Terry Kirby

Pilot 2:

Scientific Data Acquired: Prepare an abstract outlining your objectives, techniques, findings, etc.

Objectives:
The goal of this series of dives is to compare the hard substrate fauna of Necker Ridge to the fauna of the Hawaiian Archipelago. To address this goal, the objectives on each dive are to complete quantitative video transects and to collect representative specimens of the most abundant species. The specimens will later be identified morphologically and using DNA analyses.

Specific to this dive, the objective was to complete 5 transects and collect (with the manipulator) specimens of the dominant coral, sponge, and other invertebrate taxa.

Observations, findings, etc:

The dive was conducted on the eastern side and ridge of the mesa between two pinnacles near the southern end of Necker Ridge. The seafloor on the mesa was largely sandy with patches dominated by small to large rubble. Patches of different-sized rubble were mostly

on the scale of 10-30 meters in length along transects. The current was weak on the mesa (possibly blocked by the wall along the ridge), although in one region the sand was rippled so this area must have high flow periodically. The eastern ridge of the mesa was a wall of lava with little sand covering the lava flow features. The current was relatively strong and from the NE along this ridge.

The top of the mesa generally had much lower abundance of organisms. The patches with more large rocks and hard substrate had a higher abundance of organisms. The entire area covered on this dive was dominated by crinoids. They were abundant on hard substrates at the highest point of each cobble or boulder. There were 2-3 stalked species, at least one bright-red species, along with a more rare 5-arm yellow one. The were 2-3 dominant unstalked species, at least one bright yellow/green species (larger and more bright species or specimens were living on top of live and dead *Walteria* sponges and on the sand) and a brownish yellow one that was harder to see and much more rare. Many other species of crinoids were present in lower abundance than these. Generally abundance was about 4-6 inds per square meter in rocky areas and no more than 1-2 inds per square meter on sandy areas. Along the mesa purple sea cucumbers and brisingids were also present.

Corals and sponges were also present but in comparatively low abundance. Again, there abundance was greater along the ridge. The main species were a pink *Bathypathes*-type antipatharian, a (bifurcating) branched bamboo, an unbranched bamboo, *Metallogorgia melanotrichos*, unbranched primnoids – likely *Candidella gigantea*, and a small species of *Chrysogorgia*, possibly *stellata*. Sponges were more sparse and included a vase sponge, a small lollipop sponge, *Walteria* sponge, and stalked sponge with tubes extending from opposite sides of the stalk. The mesa had patches where dead sponge skeletons had accumulated.

Species list:

See above and below.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

The dive was of shorter duration because of the earlier aborted dive.

Recommendations for corrective action or improvement:

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished.

Despite the shorter dive time, most of the objectives were accomplished. We had two fewer transects than planned, but we were able to collect representative specimens of the dominant taxa.

List specimens or samples collected on the mission.

3 15-min Video Transects

2 Metallogorgia
3 Unstalked crinoids
2 *Bathypathes*
1 Branched bamboo
1 Unbranched primnoid – likely C. gigantea
1 Unbranched bamboo
1 Walteria sponge
2 Additional Sponges
1 *Chrysogorgia*
7 Ophuiroids
1 Shrimp
2 Rock epifauna

DATA RELEASE

Data may be retained by the project leader for up to 2 years after the mission date with the following exception. NOAA may request to use photos for publication or publicity purposes at any time.

Fill in the appropriate statement below and sign this form.

I hereby release the data archived by HURL for public consumption following mission (project title) : Biology of the Enigmatic Necker Ridge

a. CTD data by Oct. 29, 2013 (date)

b. video and images by Oct. 29, 2013 (date)

c. other Oct. 29, 2013 (date)

d. I will give my written consent to individuals wishing to use these data prior to the above dates depending on the nature of the request(s).

Amy Baco-Taylor Principal Investigator