HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P4-261

MISSION STATUS

Location: Necker Ridge

Latitude: 22° 10.1' N **Longitude: 167** ° 2.3'W

Mission Date: Oct. 18, 2011 **Duration: 8** hours 19 mins

Maximum Depth: 1853 m

Project Title: Biology of the Enigmatic Necker Ridge

Principal Investigator: Amy Baco-Taylor

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Observer 1: Amy Baco-Taylor
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Observer 2: John Smith
Address: HURL

Pilot 1: Terry Kerby

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.

Observations, findings, etc:

This fifth dive on Necker Ridge was conducted on the slope of a pinnacle feature near the northern end of the Necker Ridge. The seafloor was largely hard-pan with minimal sediment. Manganese nodules and pebbles and more sediment occurred near the end of the dive. Strong currents were encountered at the beginning of the dive.

This area was the richest of all the dives in terms of biology, likely due to the low occurrence of sediment and strong currents. Corals were very abundant and diverse. Probably the dominant species was a *Chrysogorgia* species, likely *geniculata*. Despite being very abundant here, only a few colonies of this species were observed on previous dives on the Ridge. The smaller *Chrysogorgia*, likely *stellata* was also very abundant. Chrysogorgiids were the dominant family, with every species plus more observed in each genus than are known from Hawaii and/or in the HURL animal guide for that given genus. Undoubtedly several of the observed species are new to science. The bamboo corals were also very abundant and diverse on this dive, with both branched and unbranched types present. Other families which occurred in lower abundance and diversity were the Primnoidae, Coralliidae, and Paragorgiidae. A few specimens of the seemingly symbiotic Paragorgiid and zoanthid colony were also observed and one was sampled. *Anthomastus* and *Antothela* were also observed, along with 2 corals that could not be identified to family and may be Plexaurids. A Christmas-tree like Antipatharian was also present.

The brown potato sea squirt had its highest abundance on this dive and we were able to collect a specimen for identification. We also observed several individuals of a chiton that was too flat and small to sample. Sponges were also present, with the skeleton sponge, which matches *Farrea occa* in the HURL guide, being the most common species. At this site almost every observed colony was live. Crinoids were notably rare on this dive, which just a few specimens of 2 species observed.

One interesting thing about this location is that there appeared to be active recruitment to the site. There were many young corals and sponges observed on the substrates. Sea stars also occurred, although they were at relatively low abundance, they were in much higher abundance than we have observed in the Archipelago at these depths and we saw several instances of sea stars feeding on octocorals.

Species list:

See above

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

We were very light on this dive which was challenging in the strong currents. At the start of the dive we could not sample or transect until a significant number of rocks had been added to the basket. This was hard to do because most of the substrate was cemented. We were not able to release the descent weights until after noon.

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.

The ballast issue consumed a significant chunk of our bottom time, it has been a challenge on all dives to some degree. Despite this, thanks to a high abundance and diversity of corals, once we got enough rocks to be heavy, we were able to stabilize and load up the basket with samples very quickly, which made up for a lot of the lost time. We then released the descent weights to be able to successfully complete transects. So, yes, ultimately we were able to complete the objectives of the dive.

List specimens or samples collected on the mission.

4 15-min transects

10+ rocks

2 *Acanella*
2 *Chrysogorgia* likely *geniculata* – lost from currents blowing them out of basket
3 Unbranched Bamboo
2 Undetermined Octocorals, possibly Plexaurids
1 Young sitck primnoid
1 Young stick Bamboo
3 Branched Bamboos
1 *Corallium*
1 Paragorgiid
1 Paragorgiid with Zoanthid
2 Potato Sea Squirts
2 Christmas Tree Antipatharians
1 Lyrate Primnoid
1 Fan Primnoid, likely *Narella*
1 *Anthomastus*
1 *Lepidisis*
1 Giant Branched *Iridigorgia* n. sp (n gen?)
1 *Iridigorgia* loose coil
1 Sea Pen on hard substrate
1 Skeleton sponge
1 Double *Iridigorgia*
1 Cup coral from rock
6 Coral Epifauna
4 Ophiuroids from Rocks

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