HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P4-254

MISSION STATUS

Location: Gardner Pinnacles

Latitude: 24°31.0182' N **Longitude: 167** ° 50.4817'W

Mission Date: Oct. 11, 2011 **Duration: 7** hours mins

Maximum Depth: 1021 m

Project Title: Evidence for Miocene and Younger Glacial/Deglacial Climate Variability from Drowned Coral Reefs around Gardner Pinnacles

Principal Investigator: David Clague

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Observer 1: Jennifer Paduan
Address: MBARI

Observer 2: Juan Carlos Braga
Address: University of Granada, Spain

Pilot 1: Max Cremer

Pilot 2:

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

Objectives: collect reef samples from coral reefs surrounding Gardner Pinnacles that drowned in the Miocene to determine amount of post-volcanic subsidence and climate variability during the Miocene approximately 12-15 million years ago. Determine the age of Gardner Pinnacles more precisely using Sr isotopes of reef debris and compare to the seawater Sr curve. This dive was on reef terraces just shallower than P4-253.

Observations, findings, etc: Ascended two 200m high, nearly vertical cliffs, which are ancient coral reef facies, and crossed broad, thickly sedimented reef terraces between. Ascended a smaller cliff that isn't of a well-defined terrace, and ended the dive at the base of the wall that is of the shallowest reef around the old island. Corals and detrital carbonate samples were collected at each feature.

Species list: corals (Coralliun lauuense, Gerardia, an antipatharian, 2 primnoids, a stylasterid coral), hydroids.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

The dive start was delayed by an hour by problems with the sub's thrusters, and a typo of the dive start position in the ship's nav system. We left the bottom at 4:00, but our ascent was only 11 minutes. The Orion manipulator arm drooped after being stowed, and jerked when the jaw was closed. Regarding yesterday's QLR: we were properly ballasted.

Recommendations for corrective action or improvement:

Investigate the arm's problem. Tie the biojars into the biobox. True ascent and recovery time needs to be assessed better to maximize bottom time.

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

Yes, we collected samples representative of each of the reef terraces that we traversed. The only disappointment was that we did not reach the top of the youngest reef, due to the shorter dive time.

List specimens or samples collected on the mission.
14 rock samples were collected, with samples 1 on the slope below the first reef face, 2-6 from the base and 7 from the top of the deepest reef, 8 and 9 from the top of the next deepest reef, 10 and 11 from below a minor reef face, and the last three rocks from the base of the youngest reef. Two sediment scoops were collected. Four corals were deliberately collected.

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)

a. CTD data by Oct. 29, 2011 (date)

b. video and images by Oct. 29, 2011 (date)

c. other Oct. 29, 2011 (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).

David Clague Principal Investigator