HAWAI‘I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT (QLR) for *Pisces* and *RCV-150*

DIVE: ___P5-818_____

(*Extend length of sections as needed/appropriate*)

MISSION STATUS

Location: __South of Koko Head, Oahu_____

Latitude: _21__° _15.2’ N__ **Longitude:** _157_° _42.2’ W_

Mission Date: **__5-Aug-2013_____** **Duration:** **__6__** hours **_0_** mins

Maximum Depth: ____320_____ meters

Project Title: __ The Glacial Sea Level Lowstand Shoreline In the Hawaiian Archipelago _

Principal Investigators: __Rubin* and Fletcher _____
***note:** Rubin is now the PI for the project since Fletcher is a SOEST Associate Dean

Address: __Dept. of Geology and Geophysics, Univ. of Hawaii_____

__1680 East West Rd_____

__Honolulu, HI 96822_____

Phone: __808-946-5434 (Rubin)_____

Observer 1: __Rubin, Ken_____ **Observer 2:** ___Habel, Shellie_____

Address: ____(see above)_____ **Address:** ____(see above)_____

_____ _____

_____ _____

Pilot 1: ___Terry Kerby_____ **Pilot 2:** _____

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

Objectives:

To revisit and continue to map/sample coral reef structures/shoreline features discovered on P5-817. This reef is from the last glacial maximum and subsequent deglaciation (ca. 10 to 20 kyrs BP), where we hope to constrain the age and depth of sea level at the last ice age and after. We anticipate sampling corals and other carbonate materials that serve as sea-level position indicators known to grow within definable limits of their contemporaneous sea-level position. These might include shallow coral species, beach rock, coralline algae, mollusks, etc. Bathymetric maps of the region indicate the presence of shelves, walls and other large-scale features that are likely to host potential sample targets.

Observations, findings, etc:

The dive progressed generally from E to W in the same submerged embayment as in a prior dive, P5-817, making four semi-vertical transects up the slope at the back of this feature. Outcrops of reef rock were observed from 167m up through 95m water depth and high quality *in situ* coral samples were recovered. We spent less time in the eastern part of the embayment, where walls are very steep, and more time in the central portion of the embayment than on the prior dive. Good outcrops of volcanic Tuff on steep to very steep (near vertical) faces were observed below 180m. We managed to sample a coral at 167m depth, making it the deepest sample of the two day series As on the prior dive, we observed that all slopes less than 20-25 deg steep had extensive sand coverage, as did many with slopes up to 35 degrees, often times covering most of bed rock save small bits protruding through the sediment cover. Two of the vertical transects we did upslope were in sandy terrain all the way up to 14m depth. More extensive coral coverage was found at shallower depths. At deeper depths, encrusting corals were found on steeper slopes, and low-doming coral colonies were found on gentler slopes. In the western part of the embayment, coral-covered ridges were interspersed on high ground between sand channels containing coarse sands. Coral cover was generally restricted to more shallow depths (<140m) in the western part of the embayment, with sand drift deposits occurring beneath there. At very shallow sites (less than 110m, slopes were more gentle and there was significant sand cover, with sparse outcrops of coral sticking through (representing about 10-15% of the ground cover).

Observed Species list:

Various bottom fish, sea whips, crabs, algae, and corals.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None. LRT launch and recovery was superb, even in relatively high sea state for the launch. All systems in the sub preformed as expected.

Recommendations for corrective action or improvement:

None.

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

Accomplishments matched expectations. The dive covered a the expected amount of ground and depth range. The sub and pilot performed admirably.

List specimens or samples collected on the mission:

12 samples of coral/carbonate reef rock, numbered P5-818-01 through P5-818-12

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):

The Glacial Sea Level Lowstand Shoreline in the Hawaiian Archipelago

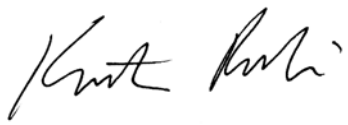
Held on __8/6/2013_____ (date) in the following way:

a. CTD data by _____ (date)

b. Video and images by __8/6/2015_____ (date)

c. Other _8/6/2015_____ (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).



Principal Investigator
Ken Rubin

(note: Rubin is now the PI for the project since Fletcher is a SOEST Associate Dean)