HAWAI'I UNDERSEA RESEARCH LABORATORY

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

DIVE: _R-406_____

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

MISSION STATUS

Location: Auau Channel, 3.3 mi. west of Olowalu, Maui

Latitude: 20° 48' **Longitude:** 156° 41

Mission Date: 12/7/2007 **Duration:** 3 hours 47 mins

Maximum Depth: 93 meters

Project Title: Investigating Deep (50 – 100 m) Coral Reefs of Hawaii

Principal Investigator: Montgomery/Pyle/Rooney/Popp/Parrish/Smith

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Observer 1: John Rooney **Observer 2:** Heather Spaulding

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2570 Dole St.___
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Address: Botany Department
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3190 Maile Way
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Pilot 1: Dan Greeson **Pilot 2:** Pete Townsend

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

Objectives:

The main objective of this dive, and other ROV dives in the Auau Channel on this cruise, was to collect video data of the seafloor to enable the quantitative characterization of benthic communities and substrates from the deep reef zone (50-100m) for different regions within the Auau Channel. These data will be used to map the distribution of deep coral reefs and may provide insights regarding the environmental characteristics that facilitate their development.

QLR continued
Observations, findings, etc:

This dive, along the eastern margin of the Auau Channel showed a pattern of shallow water coral species above 50 m, a reef of branching Montipora capitata and perhaps other coral species in the 50 – 60 m depth range, algal communities dominated by *Halimeda opuntia/ discoidea* and *H. kanaloana*, and finally, a reef with high densities of predominantly *Leptoseris hawaiiensis* on rocky substrates below approximately 60 m.

Observed Species list:

Antipathes grandis, Leptoseris hawaiiensis, Monitpora capitata, Halimeda opuntia/discoidea, Halimeda kanaloana, Porites lobata

MISSION EVALUATION:

Limitations, failures, or operational problems noted: Horizontal positional accuracy of the imagery produced by the ROV has apparently not been established, and positioning of the ROV is limited to fixes from the ship's GPS every 10 minutes or so, leading to much higher than necessary positional uncertainties.

Recommendations for corrective action or improvement:
A more thorough discussion of the ROV dive ops procedures and needs of the science party would improve the efficiency and productivity of ROV operations. Also, installing a Tracklink USBL transponder on the ROV would enable the ROV to be accurately tracked throughout the dive using the ship's existing USBL navigation system, significantly enhancing the utility of the imagery.

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished:
The dive was successful and accomplished all the main goals expected. I was impressed with the quality of the imagery and usefulness of the ROV's maneuverability for better characterizing benthic communities. The steadfastness of the ROV operators over this long dive is appreciated and provided valuable insights regarding the distribution of different coral communities.

List specimens or samples collected on the mission:
None

QLR continued

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): Investigating Deep (50 – 100 m) Coral Reefs of Hawaii

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Held on 12/7/2007 (date) in the following way:

a. CTD data by 12/8/2009 (date)

b. Video and images by 12/8/2009 (date)

c. Other 12/8/2009 (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).

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Principal Investigator

ANNUAL/FINAL REPORT

NOAA's Office of Undersea Research
Submersible Science Program

Report Status: _____ Final or Continuing _____

Date of Report: _____ Dive Numbers: _____

Inclusive Dates of Mission: _____

Project Title: _____

_____

Principal Investigator: _____ Signature: _____

Names of Co-Investigators: _____

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I. Abstract of Mission Results: Please include diagrams or figures as appropriate.

II. Please discuss the following:

A. Significance of the mission in relation to your research goals.
B. Scientific contributions of the mission in terms of species, patterns, and processes observed or measured. Were the initial hypotheses addressed; were any new ones posed as a result of the mission? Was the methodology and/or technology utilized successful and repeatable by others?
C. For continuing status reports, indicate the extent of data analysis or manuscript preparation completed to date.
D. Advantages of NOAA's Undersea Research Program to your research investigations.
E. Plans for use of the data gathered on this mission and the applications, products and/or benefits to NOAA.

III. Please include any comments on the following operational details, where applicable:

A. Weather and water conditions affecting operations
B. Safety problems and/or concerns
C. Dive management and personnel cooperation
D. Logistics and support activities