HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: R-461

MISSION STATUS

Location: south Oahu, southeast of Diamond Head

Latitude: **Longitude:**

Mission Date: Oct_22_2010 **Duration: 0** hours 33 mins

Maximum Depth: 345m

Project Title: Measuring Animal Metabolism in Hawaiian Bathyal Environments

Principal Investigator: Jeff Drazen

Address: University of Hawaii
Department of Oceanography
1000 Pope Rd.
Honolulu, HI 96822

Phone: 808-956-6567

Observer 1: Jeff Drazen
Address: same as above

Observer 2: various Drazen lab members
Address: same as above

Pilot 1: Dan Greeson

Pilot 2: Pete Townsend

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

Objectives:

1) Capture a diversity of benthic animals and measure their metabolism in the laboratory to estimate energetic demands

   To accomplish this goal and bring the animals back alive we used three techniques
   a) A modified slurp gun with plastic insulated barrel and ball valve to keep cold *in situ* water inside – for crabs, shrimps etc
   b) A modified biobox – thick walled PVC for insulation – to place animals, mostly echinoderms, in after capture with scoops and the manipulator arm
   c) An insulated baited trap – for capture of mobile shrimps, crabs, and fishes

2) Perform submersible transects to measure animal densities so that the metabolism data can be extrapolated to the ecosystem level

ROV dives were conducted to gather additional video transects at night in the areas where animals were collected.

Observations, findings, etc:
Performed a transect from the south west towards the northeast along the east flank of Diamond Head. The transect started at about 345 m and rapidly shallowed to about 90m depth in 30 minutes. The large patches of the red urchin Micropyga tuberculata which we saw during dives were observed again (ROV dive to northeast of PISCES dive site) at the beginning of the dive around 270m depth. At 90m depth carbonate reef was encountered. Many reef fishes and also myctophids were observed along the seafloor.

Species list:

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Continuing electomechanical problems with the ROV prevented a lengthy transect. The system went "dead" after 33 minutes of operations.

Also, the system and ship do not work together ideally. The ROV is simply a towed vehicle pulled by the ship.

Recommendations for corrective action or improvement:

Acquire a new ROV.

Evaluate other means of station keeping for the KOK to allow the ROV a more controlled ability to maneuver on the seafloor.

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

No, a small partion of the objective was reached. The goal was for a transect from about 350 to about 200m. The failure of the ROV early in the dive and the lack of ability for the ROV to maintain an along slope transect heading prevented the desired transect.

List specimens or samples collected on the mission.

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

Measuring Animal Metabolism in Hawaiian Bathyal Environments

held on Mar 22, 2011 (date) in the following way:

a. CTD data by immediately (date)

b. video and images by Mar 22, 2011 (date)

c. other Mar 22, 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).

_____ Principal Investigator