HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE:

MISSION STATUS

Location: off Diamond Head, Honolulu, Hawaii

Latitude: 21° 13.417 **Longitude:** 157° 48.840

Mission Date: Oct 23, 2010 **Duration:** **7** hours 5 mins

Maximum Depth: 541 m

Project Title: Measuring Animal Metabolism in Hawaiian Bathyal Environments

Principal Investigator: Jeff Drazen

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Department of Oceanography
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Observer 1: John Yeh
Address: same as above

Observer 2: Chris Demarke
Address: same as above

Pilot 1: Terry Kerby

Pilot 2:

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

Transects were 15minutes with the HD camera faced forward viewing 3m wide swath of seafloor and observers performing counts from their fields of view

Observations, findings, etc:

Touched down on sandy flat bed where several Aspidodiadema sp. were observed and collected. Proceeded to SE to begin transect 1, several more urchins were collected along with asteroids. At the end of transect 1 terrain became more rocky with pillow basalts and steeper relief. Trap was deployed in this area. Another transect was completed followed by more sample collection. At eastern most extent of dive, terrain became very steep making collection difficult, at this time we headed back toward trap. After the trap was recovered, we proceed to collect animals via slurp gun until the beginning of the ascent.

Species list:

Abundant (observed more than 5 times)
Brisinga sp.
Aspidodiadema hawaiiensis
Heterocarpus ensifer
Heterocarpus laevigatus
Plesionika sp.
Myctophidae
Mediaster ornatus
Chlorophtahlmus spp.
Caelorinchus spp.
Sepiateuthis sp. or Nototodaras hawaiiensis
Polymixia berndti
Squalus mitsukurii
Bothus sp.
Neuzumia spp.
Ventrofossa spp.

Observed a few times
Malthopsis mitigera
C. smithi
Hoplostethus crassispinus
Stethopristes eos
Satyrichthys engyceros
Sympagurus dolfleini

Observed once
Ijimaia plocatellus
Pleseobatus daviesi
Calappidae
isopod
octopus (

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Kink in slurp gun hose prevented successful capture of some animals.

Recommendations for corrective action or improvement:

Check hose before deployment.

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 an abundant amount of animals across a broad taxonomic range and brought the majority of the animals alive using all 3 methods of sampling. 3 transects were completed as well.

List specimens or samples collected on the mission.

Specimens
Asteroids
(5) *Mediaster ornatus*
(1) *Henricia pauperrima*

Echinoids
(7) *Aspidodiodima sp.*

Holothuroids
(1) *Mesothuria sp.*

Crustaceans
(5) *Heterocarpus ensifer*
(5) *H. laevigatus*
(1) Paguridae
(2) Galatheidae
(1) isopod

Mollusks
(1) *Koonsia sp.*

Fish
(1) *Malthopsis mitigera*

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 Oct 23, 2010 (date) in the following way:

a. CTD data by immediately (date)

b. video and images by Oct 23, 2012 (date)

c. other Oct 23, 2012 (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