HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: PV-574

MISSION STATUS

Location: North side of Penguin Bank

Latitude: **21**° 06.7500 N **Longitude:** 157° 36.5000 W

Mission Date: 09-16-04 **Duration:** **4** hours 21 mins

Maximum Depth: 356m

Project Title: Deep Seaweed Photosynthesis Research

Principal Investigator: Karla McDermid

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Observer 1: Karla McDermid
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Observer 2: Heather Spalding
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Pilot 1: Terry Kirby

Pilot 2:

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

Objectives:

- Collect macroalgal specimens.
- Measure light attenuation with depth.
- Measure ambient light levels (photosynthetically active radiation PAR) at collection sites.

Observations, findings, etc:

First intended dive position was at 21° 06.75 N / 157° 36.5 W, the North of the Penguin Bank, Hawaii. The light level changes with the depth was measured by Licor photometer and recorded as we submerged in every 5m. The water temperature at the bottom was 10.1 degrees Celsius. We got to the bottom at the depth of 356m at the location of 21° 06.7828 N / 157° 36.3805 W (target 3). While proceeding up the 50° steep wall toward the plain at the depth of 301m, we saw bamboo corals and Granitonotis. At the depth of 225m (temp was 17.5 degrees Celsius), Sterosideris (like Slate pencil urchin) were observed. Now we were at the depth of 189m at the location of 21° 06.6963 N / 157° 36.4262 W (target 3); the current was gentle. We collected a rock at 178m, and the water temperature was 20.3 degrees Celsius (target 4). At the depth of 162m, the sea floor became 45 degrees slope, more sediment, and less rock. Collecting a rock (15cm diameter w/ red nodules) in Bio Box at 153m on the location of 21° 06.6526 N / 157° 36.4312 W (target 5). We saw Skunk Urchins and Red Spined Urchins. We collected lots of algae samples at 21° 06.6254 N / 157° 36.4304 W in the depth of 130m (target 6). 5% cover of algae—probably more algae could be found under the sediment. Skunk urchins were at the depth of 120m. We collected 3 green balls (Codium), and turf at 113m; we saw rubble patch with triggerfish, and Kahala in distance. Collection of Ulva on the flat plains and Halimeda in depression; found a leaf Scorpionfish. A stingray was resting in a shallow sandy depression at the depth of 86m at 21° 06.3871N / 157° 36.4213 W (photos were taken) (target 7). Down cruising again, 93m at 21° 06.4684 N / 157° 36.5022 W collected some algae samples and ascended to the surface. The changes in the light level were measured by Licor and recorded as ascending.

Species list:

ALGAE (Total of 50 specimens)

Halimeda
Red crusts
Red blades
Ulva
Gayralia
Microdictyon
Caulerpa
Sargassum
Cladophora
Codium mammilosum
Codium sp.
Dictyopteris
Ceramiaceae filamentous red
Delesseriaceae red blade

ECHINODERMS

Sterosideris – like Slate pencil urchin
Skunk urchins
Red spined urchin

FISH

Stingray – making round depression in sand
Triggerfish
Kahala
Leaf Scorpion fish
gobies
wrasses

BRYZOANS

Various erect branching forms

CNIDARIA

Hydroids
Anemones
Bamboo Coral

SPONGES

Red
Yellow

ARTHROPODS

Banded shrimp in holes
snapping shrimp

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

It was difficult to hold/pick tiny red filamentous algae.

Recommendations for corrective action or improvement:

Add a small rubber pad on each side of the manipulator fingers to reduce the gaps between closed fingers.

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

Yes.

List specimens or samples collected on the mission.

Algae (Total of 50 specimens)

Halimeda
Red crusts
Red blades
Ulva
Gayralia
Microdictyon
Caulerpa
Sargassum
Cladophora
Codium mammilosum
Codium sp.
Dictyopteris
Ceramiaceae filamentous red
Delesseriaceae red blade

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)

Deep Seaweed Photosynthesis Research

held on 09-16-04 (date) in the following way:

a. CTD data by 09-16-06 (date)

b. video and images by 09-16-06 (date)

c. other Licor Light meter 09-16-06 (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