HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: RCV-305

MISSION STATUS

Location: Kahoolawe

Latitude: 20° 36.5900 **Longitude:** 156° 37.4890

Mission Date: 16 Dec 2004 **Duration:** 4 hours 00 mins

Maximum Depth: 102 m

Project Title: Exploration of Deepwater Macroalgal Meadows in the Main Hawaiian Islands

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

The objectives were to survey deep water macroalgal assemblages and associated organisms from 50 to 100 m depths to determine their composition, densities, and spatial distribution. We were particularly interested in determining the distribution of the meadow-forming green alga *Halimeda incrassata*. From the start of the transect at 102 m depth, the substrate appeared dark and silty, suggesting terrestrial run-off from nearby Kahoolawe. The deepest alga observed was *Lobophora/Distromium* brown blades, occurring from 102 to 78 m depths over soft sediments. At 91 m depth, the prostrate *Halimeda* sp. was infrequently observed, and co-occurred with *H. incrassata* at 48 m depths. Although small, sparse individuals of *H. incrassata* were found at 87 m depth, dense meadows did not start until ~ 60 m depths. In constrast, a high abundance of tall (~ 10 cm) *Caulerpa mexicana* patches were found from 84 to 65 m depths, covering up to 75% of sandy, open substrate. Patches (~20 cm) of unknown green films were observed

growing over soft sediments from 75 to 85 m depths. Fish and invertebrates were identified by Frank Parrish.

Observations, findings, etc:
Overall, there appeared to be a zonation of algal abundance with depth transitioning from *Lobophora/Distromium* brown blades, to patches of *C. mexicana*, to *H. incrassata* meadows shallow.

Species list:
A gross tentative species list of macroalgae includes:

Halimeda incrassata
prostrate *Halimeda* sp.
Caulerpa mexicana
Lobophora/Distromium brown blades

Fish seen included:

Fistularia petimba	1
Decapterus macarellus	1
Arisoma marginatum	2
Lutjanus kasmira	3
Unid flounder	1
Decapterus macarellus	1
unid fish	2
Heniochus diphreutes	1
Lutjanus kasmira	1
Decapterus macarellus	4
Unid flounder	1
Canthigaster coronata	1
Unid flounder	1
Decapterus macarellus	1
Decapterus macarellus	5
Unid puffer	1
Decapterus macarellus	2
Unid flounder	2
Arisoma marginatum	1
Unid flounder	6
Arisoma marginatum	16
Unid flounder	1
Unid flounder	1
Synodus sp.	1
Unid flounder	1
Apogon erythrinus	1
Unid flounder	1
Decapterus macarellus	3
Apogon erythrinus	1
Unid flounder	1
Unid flounder	1
Unid flounder	1
Arothon hispidus	1
Lutjanus kasmira	2

Canthigaster coronata	1
Lutjanus kasmira	1
Lutjanus kasmira	8
Canthigaster coronata	1
Unid red fish	1
Sargocentron sp.	1
Canthigaster coronata	1
Lutjanus kasmira	1
Parupeneus sp.	1

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Strong current

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.

This was a tremendously successful mission. We were able to quantitatively document areas with and without deep water algae, invertebrates, and fishes.

List specimens or samples collected on the mission.

No collections

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)

held on_____(date) in the following way:

a. CTD data by_____(date)

b. video and images by_____(date)

c. other_____(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