HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. RCV-163

MISSION STATUS

Location: **Kahoolawe Island Reserve**

Mission Date: 09-02-02

Maximum Depth: 87m

Project Title: **RCV bottom survey of benthic resources around Kahoolawe**

Principal Investigator: Rick Grigg

Address: Dept. of Oceanography
1000 Pope Rd.
University of Hawaii, Honolulu, Hi. 96822

Phone: 956-7186

Observer 1: D..Chave
Address: Hawaii Undersea Research Lab
1000 Pope Road
University of Hawaii

Observer 2: C. Kelly
Address: Hawaii Undersea Research Lab
1000 Pope Road
University of Hawaii

Observer 3: S. Whitcraft
Address: Kahoolawe Island Reserve Commission
811 Kolu St #201
Wailuku, Hawaii

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

The primary objective of the KIR surveys is to evaluate bottom resources around Kahoolawe. RCV-163 was located on the north flank of Ku'ia Shoal, completing a triangular survey of the Shoal (south (RCV-159), middle (RCV-158) and north(RCV-163)). Start position of RCV-163 was 20:31.25 N by 156:44.90 W at a depth of 72m. End position was 20:32.523 N by 156:43.252 W at a depth of 91 m. Start time was 21:30 and end time was 23:48. Except for the end of the transect at depths below 80 m where sand was the dominant substratum, *Halimeda* communities dominated about 90% of the bottom area on this transect. At the beginning of the transect, *Halimeda* plants were very dense and healthy (few colonies bleached). However, toward the end of the transect (to the west closer to the island), the *Halimeda* beds contained up to 10-20% bleached (or dead) colonies. Several large plants were collected from this area. This transect when combined with transects in the middle and on the southern flank demonstrate the high degree of dominance of *Halimeda* communities on Kuia Shoal. In the depth range covered by these transects about 75% of the bottom is dominated by *Halimeda* pasture communities. All are characterized by low diversity although several species of fish occurred with high fidelity (*Arothron, Lactoria, Canthigaster* and sparse forays of *Decapterus*). The high abundance of *Halimeda* is important from the standpoint of sand production which must be

in the range of 10's to perhaps 1000's (?) of tons per year. The data collected will be analyzed to refine this estimate. Basically, the *Halimeda* is producing its own environment. Bottom currents were relatively strong along the entire transect. At the shoalest point on the transect (45 m) some small carbonate boulders were encountered. Several supported small colonies of *Porites lobata* and *Pocillopora meandrina*, the only reef coral encountered on the entire transect.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None

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.

Yes

List specimens observed on the mission.

FISHES
myctophids 30+
Ariosoma marginatum 5
Dascyllus albisella 4
Fistularia commersonii 4
Fistularia petimba 2
Lutjanus kasmira 2
Parupeneus chrysonemus 3
Decapterus macarellus 17
Chromis struhsakeri 1
Canthigaster coronata 10
Arothron hispidus 13
Lactoria diaphana 9
Ophidion muraenolepis 4
Synagrops japonicus 2
Centropyge fisheri 1
carapid 1

ECHINODERMS
ophiuroids 100+
Asterodiscides tuberculosus 5
Astropyga radiata 1
Leiaster leachii 1
Luidia magnifica 1
Bohadschia paradoxa 1
Pentaceraster cumingi 2

CRUSTACEANS
crabs brownish red 7
Stenopus hispidus 1
Paramunida type galatheids 10+

MOLLUSKS
tonnid gastropod 1
Sepioteuthis lessoniana 1

CORALS
Cirrhipathes spiralis 200+
Porites lobata 3
Pocillopora damicornis 4
Leptoseris sp 16
cnidarian with collar 1
anemone brown on Halimeda 30+

SPONGES
red round 30+
tan finger 6+

ALGAE
bacterial mat 4
red algae on Halimeda (some)
Halimeda (many large beds)
filamentous algae 30+

Dive RCV-163

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

RCV bottom survey of benthic resources around Kahoolawe

held on 09-02-02 in the following way:

a. CTD data by 09-02-04

b. video data by 09-02-04

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