HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P5-462

MISSION STATUS

Location: Raita Bank, NWHI

Mission Date: 9/13/01

Maximum Depth: 464 meters

Project Title: The Impact of Bottomfishing on the Raita and West St. Rogatien RPAs in the NWHI Coral Reef Ecosystem Reserve: Initial Survey and Identification of Study Sites

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Observer 1: Christopher Kelley

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Observer 2: Jane Culp

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

Objectives

The primary objective of this mission was to identify a long term study site on the south side of Raita Bank to assess the impacts of commercial bottomfishing on the bank's coral reef ecosystem. The secondary objectives were:

1) To obtain a baseline estimate of the number and types of bottomfish species present at the site.

2) To obtain a baseline estimate of other species of fish and invertebrate species present at the site that might be impacted by bottomfishing.

3) To obtain a baseline estimate of the amount of bottomfishing debris (i.e. fishing line, weights, anchors, anchor lines, miscellaneous trash, etc.) on the site.

Techniques

The approximate position for the dive had been provided by a commercial fisherman prior to the mission. To locate the exact depth to establish a long- term study site, the Pisces V initially descended to 294 m and conducted an upslope transect to the top of the break at 133 m. Based on fish and habitat observations, the submersible descended to a depth of 140-145 m and conducted four 30 minute contour transects. During each of these periods, the two observers audibly identified and counted all fish and invertebrate species visible through their windows while the pilot noted potential bait station sites. The video camera was positioned on the slope to make a video record of both animals and substrate types as well. The submersible returned to selected bait station sites and set out two 5 lb bait bags and a marker that doubled as a size reference (i.e. the pumpkin). The pilot then established a position approximately 10-20 ft from the pumpkin and turned out the lights. A CCD camera was used in addition to the digital and Panasonic cameras to record the fish and invertebrates attracted to the bait. After 30 minutes, the lights were turned on and the pumpkin was recovered. For general habitat characterization, close up images of animals were obtained with the digital camera each time the submersible came to a stop. Furthermore, the submersible's position was recorded at 10 minute intervals during each transect and radioed down to the sub where it was imprinted on the audio portion of the videotape.

Findings

With the exception of 1 fishing hook and leader found at 294 m, no other bottomfishing debris was observed throughout the dive. Bottomfishing species identified and counted on the transects and bait stations included hapupu grouper, onaga, gindai, opakapaka, butaguchi, kahala, and kale kale, the latter of which were primarily juveniles. Based on the substrate and number of fish observed, particularly kale kale, a number of locations on the dive could serve as long term study sites. With respect to other fish and invertebrate species, the most abundant were *Luzonichthys earlei*, *Priacanthus alalaua, Bodianus sanguineus*, *Chromis struhsakeri*, *Parupeneus chrysonemus*, *Holanthias fuscipinnis*. Several other notable species observed on the dive included *Prognathodes* sp, *Bodianus vulpinus*, *Labroides pthirophagus*, *Myripristis chryseres*, *Coris ballieui*, *Thamnoconus garretti*, a red diadematid urchin, The predominant substrate throughout the 145 m transects was a steep (60°) carbonate wall. A dramatic series of canyon-like ridges and sand channels were present at the second bait station site. Similar to previous dives on this bank, very few cnidarians were observed. The current throughout the day came from the east and was relatively slight. One final note, the range of resolution for the CCD camera was tested during the ascent and found to be between 300-350 meters.

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. The purpose of the mission, to identify a long term study site to assess the impacts of bottomfishing on the south side of the bank, was achieved. The expected work was the following:

1) Conduct an upslope transect from the initial drop depth to the break to identify the target transect depth
2) Conduct four 30 minute transects at the target transect depth.
3) Conduct two 30 minute bait stations at sites identified during the transects
4) If time permitted, collect specimens of selected invertebrates

All tasks were completed. There was sufficient time to collect one unusual urchin during the dive.

List specimens or samples collected on the mission.

One red diadematid urchin.

Dive P5-462

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. voice transcripts, video, and still camera film 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