HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P5-459

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 2: Robert Moffitt

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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 east 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 GPS coordinates 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 464 m and conducted an upslope transect to 182 m. Based on fish and habitat observations, the submersible descended from 182 m to 258 m and conducted two 30 minute contour transects and one 30 minute bait station. At the end of the bait station, the submersible ascended to 214 m and conducted the third transect. The submersible then descended to 300m to conduct the fourth and final transect. The second bait station was conducted immediately thereafter at the same depth. During each transect, the two observers audibly identified and counted all fish and invertebrate species visible through their windows while the pilot made audible observations on the substrate type and characteristics. The video camera was positioned on the slope to make a video record of both animals and substrate types as well. Potential bait station sites were identified during the transects. The submersible then returned to the site and set out two 5 lb bait bags and the bait station marker and 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 small plastic bag, no other man-made debris was observed throughout the dive. Bottomfishing species identified and counted on the transects and bait stations included hapuupuu grouper, onaga, ehu, gindai, and kalekale, the latter of which was only observed once. Based on the number of fish observed and the type of substrate, the second bait station at 300 m was identified as the locus for the long-term study. With respect to other fish and invertebrate species, the most abundant were *Symphysanodon maunaloae* (1000's), G*rammatonotus sp* 1 and *G. laysanus* (1000's), *Pseudanthias fucinus* (1000's), *Luzonichthys earlae* (1000's) and *Ammodytes pylei*. All but the latter are common on main Hawaiian Island bottomfishing sites and are suspected prey species for onaga and ehu. The predominant substrate throughout the dive was sediment covered carbonate ridges and slopes, with the most complex formations occurring at the 300 m bait station site. Similar to dive P5-458, a particularly interesting observation was the paucity of cnidarians growing on these outcrops. Only one small mixed patch of Cirrhipathes spiralis and Calyptrophora sp was observed throughout the dive. The current throughout the day was negligible.

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 east side of the bank, was achieved. The expected work was the following:

1) Conduct an upslope transect from the initial drop depth to 200 meters 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

The three primary tasks were all completed. There was insufficient time to conduct the fourth task, which was not critical to the project.

List specimens or samples collected on the mission.

None

Dive P5-459

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