HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P5-458

MISSION STATUS

Location: West St. Rogatien Bank, NWHI

Mission Date: 9/11/01

Maximum Depth: 280 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

Principal Investigator: Alexander Malahoff/Christopher Kelley

Address: Hawaii Undersea Research Laboratory

Phone: 956-6802/956-7437

Observer 1: Christopher Kelley

Address: HURL

Observer 2: Walter Ikehara

Address: Hawaii DLNR

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 north side of West St Rogatien 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 280 m and conducted an upslope transect to 200 m. Based on fish and habitat observations, the submersible descended from 200 m to 227 m and conducted three 30 minute contour transects and one 30 minute bait station. At the end of the third transect, the submersible descended to 286 m and conducted a second upslope transect to 181 m. The second bait station was conducted at this depth, followed by the submersible returning to 225 m to conduct the fourth transect. 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 audio record on the 8mm VCR 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

The presence of three lost fishing lines and observations of onaga, ehu, kalekale, and gindai during the 227 m transects confirmed that the dive location was a bottomfishing site. Of these species, kalekale was the most abundant (30+ individuals observed) on the transects. A large (50+) school of large kahala was also observed. The first bait station attracted both onaga and kahala but not ehu which were observed only on transects. It is probable that the large kahala around the bait station inhibited the smaller ehu and kalekale. The second bait station attracted hapuupuu grouper, kalekale, and kahala. With respect to other fish and invertebrate species, the most abundant were *Symphysanodon maunaloae* (1000's), *Pseudanthias fucinus*, and G*rammatonotus sp* 1, both of which are common on main Hawaiian Island bottomfishing sites and are suspected prey species for onaga and ehu. The substrate at 227 m was composed primarily of low relief carbonate outcrops. Of particular interest was an almost complete lack of cnidarians growing on these outcrops. Aside from the three fishing lines, no other bottomfishing debris was observed. 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 north 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 P5-458

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