HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P4-024

MISSION STATUS

Location: Northeast Kahoolawe

Mission Date: 10/29/01

Maximum Depth: 240 m

Project Title: Characterization and Assessment of Critical Habitat for Eteline Snappers in the Main Hawaiian Islands

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

Objectives

This study was awarded a total of 12 submersible dives, six of which were conducted in 1998 (i.e. P5-360-P5-366). The original objectives of the study were to 1) to characterize and compare the biological and physical aspects of pinnacle and wall habitats for onaga and ehu, and 2) to assess the numbers and sizes of onaga, ehu, and other important species of bottomfish in these habitats. The first objective was associated with the following 3 hypotheses:

Hypothesis 1) tops and bases of vertically oriented habitats, such as walls and pinnacles, have different physical and biological characteristics.

Hypothesis 2) the locations on the walls and pinnacles where onaga and ehu are found will have similar biological and physical characteristics.

Techniques

On all six dives, two basic techniques were used to accomplish the objectives: a set of four 30 minute contour transects (objective 1) and a set of two 30 minute bait stations (objective 2). During transects, an effort was made to identify and count all fish and invertebrates within the visual range of the observers while the digital video camera was used to record good images of both animals and substrate. For each bait stations, a 12 inch diameter reference sphere was deployed in front of the sub. Two 5 lb bait bags were then opened with the manipulators and the bait was distributed at the base of the sphere. The submersible then backed away from the sphere to a distance of approximately 5-10 meters. The lights were then turned off and a ROS wide angle CCD camera was used to record the numbers and species of bottomfish attracted to the bait. The standard protocol on this and other dives was to initially drop to the base of the habitat site, then conduct an upslope survey to the top of the site. The depths and locations of the subsequent transects and bait stations were based on the observations made during this survey.

Findings

This habitat site was a small pinnacle and adjacent small headland both of which had tops at 180 m and bases at 240 m. From observations on the upslope surveys, a transect depth of 200 m was selected. Due to the vertical nature of the terrain, bait stations were conducted on the tops of the features. Both the headland and the pinnacle were very complex carbonate formations with steep vertical sides pitted with holes and caves. Furthermore, both had similar communities of fish and invertebrates. Snappers included *Etelis coruscans*, *Etelis carbunculus*, *Pristipomoides sieboldii*, and *Pristipomoides filamentosus*. Other bottomfish included the grouper, *Epinephelus quernus*, the scorpaenid, *Pontinus macrocephalus*, and the amberjack, *Seriola dumerilii*. Potential prey fish species included *Symphysanodon maunaloae*, *Grammatonotus* sp 1 (i.e., diamond tail), *Holanthias elisabethae*, and small emmelichthyids, probably *E. strusakeri*. One unusual fish observation was a large *Bodianus vulpinus* male. Invertebrates included the galatheid crab, *Munida brucei*, the urchins, *Stereocidaris hawaiiensis*, *Acanthocidaris hastigera*, and *Acanthocidaris rufa*, and the cnidarians, *Madracis hawaiiensis*, yellow and pink dendrophyllids, *Cirrhipathes spiralis* an unidentified antipatharian, *Javania insignis*, and an unidentified anemone. There were also white demosponges and well a very unusual unidentified sponge not seen before. With respect to the two hypotheses, the physical nature of the headland and pinnacle was similar to other bottomfish habitats surveyed by submersible. In addition, many of the non-bottomfish fish species have been observed on other sites. However, only a few of the invertebrates have been observed elsewhere. Therefore, fish appear to be more constant from site to site, while invertebrates appear to be more variable.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Due to inclement weather, the dive was not conducted on the primary study site. Transit to the alternate site caused an approximate 1 hour delay in deploying the submersible.

Recommendations for corrective action or improvement:

Pray harder for better weather, human sacrifices, or possibly creating a large oil slick. No other recommendations besides these.

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 alternate site was a known bottomfish habitat which we were able to substitute for the primary site. We were able to carry out three of the four 30 minute transects and one of the two 30 minute bait stations. The second bait station was initiated, but terminated after 15 minutes at the end of the dive. Given the weather conditions (i.e.

List specimens or samples collected on the mission.

None

Dive P4-024

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 No. P4-024: Characterization and Assessment of Critical Habitat for Eteline Snappers in the Main Hawaiian Islands

held on 10/30/01in the following way:

a. CTD data by 10/30/03

b. voice transcripts, video, and still camera film by 10/30/03

c. other 10/30/03

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