HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT (QLR) for *Pisces* and *RCV-150*

DIVE: RCV150-R353

MISSION STATUS

Location: Southwest Molokai

Latitude: 21° 02.387 **Longitude:** 157° 11.083

Mission Date: Oct. 25, 2006 **Duration:** 1 hours 40 mins

Maximum Depth: 548 meters

Project Title: Boundaries and Bridges: Efficacy of marine protected areas for deep-slope snappers

Principal Investigator: Dr. Daniel Polhemus*/Walter Ikehara**

Address: *Department of Land and Natural Resources: Division of Aquatic Resources, 1151 Punchbowl, Rm 330, Honolulu, HI 96813
**NMFS PIRO, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814

Phone: 808-587-0110

Observer 1: Christopher Kelley **Observer 2:** Dan Polhemus

Address: Hawaii Undersea Research Lab **Address:**

University of Hawaii Division of Aquatic Resources

1000 Pope Rd, MSB 303 DLNR, 1151 Punchbowl St.

Honolulu, HI, 96822 Honolulu, HI, 96813

Pilot 1: Dan Greeson **Pilot 2:** Pete Townsend

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

Objectives:
1) Characterize "habitat bridges" as a potential mechanism to facilitate movement of adult bottomfish species from bottomfish restricted fishing areas into adjacent exploitable areas.
2) With input from a companion tagging and tracking study, observe opakapaka and onaga associated with the areas where habitat bridges may link protected areas and adjacent exploited areas.
3) Develop methodologies for introducing acoustic tags to selected bottomfish at depth in situ using a manned submersible.

Observations, findings, etc:

The ROV was deployed at a depth of 309 m facing a the steep western slope of an isolated pinnacle southeast of Penguin Bank. The transect continued upward over this slope, then continued almost due east for over 20 minutes across the undulating summit of the pinncle at depths of 240–300 m.; substrate along this section of the transect was primarily composed of fine sediment with occasional hard, calcareous features, and supported numerous types of emergent Cnidaria. The transect moved off the top of the pinnacle and down a small canyon incised into a steeply dropping slope; this descent was interrupted by a massive submarine landslide that orginated in a small side canyon to the north. In order to avoid the enormous sediment clouds generated by this slide, it was necessary to keep the ROV travelling horizontally at a depth of approximately 350 m. for approximately five minutes, before descending again to regain the seabed. The first several attempts to do this found the ROV gradually overrun by by the still-advancing sediment clouds, forcing it to lift away again. We eventually reached the relatively level basin floor east of the pinnaclein clear water at a depth of 524 meters and continued nearly due eastward for 30 minutes across this relatively level expanse. The biota in this region was more sparse, but composed of interesting and highly specialized groups of fishes and crustaceeans, notably Macrouridae, which were present in modest abundance. The transect ended on a gradually rising slope on the eastern side of the basin at a depth of 460 m. During the transect, efforts were made to identify all fish and invertebrates encountered. Closeups of organisms were obtained when possible, and good success was encountered with this due to the relatively modest speed at which the ROV was moving (0.5–0.8 knots). Fish and invertebrates observed during the transect are listed below.

Observed Species list:

Fish: Saurenchelys stylurus, Polymixia sp, Scorpaenid,

Echinoderms:

Cnidarians: cerianthid white, Cerianthus sp., Virgularia sp., Cirrhipathes spiralis

Mollusks:

Other Invertebrates: Lyrocteis sp,

Crustaceans: Plesionika sp.

Man-made Objects:

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

No major problems to report. The ROV worked very well on this evening due to the ability of the KOK to maintain a slow speed over the water, although this was accomplished by steering the ship on a course of approximately 130° to maintain an effective course of 90°, in order to counteract the effects of winds and currents. As with a dive a few days previously off Lanai, we have discovered that using the ship in this fashion, basically as a giant sea anchor, can be a very effective method of constraining the speed of the ROV in otherwise challenging conditions.

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:

Excellent video and closeups were obtained in a known bottomfish habitat site. The mission was therefore considered a success.

List specimens or samples collected on the mission:

None

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):

____ Boundaries and Bridges: Efficacy of marine protected areas for deep-slope snappers

_____

Held on Oct. 25, 2006 _____ (date) in the following way:

a. CTD data by Oct. 25, 2008 _____ (date)

b. Video and images by Oct. 25, 2008 _____ (date)

c. Other Oct. 25, 2008 _____(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

ANNUAL/FINAL REPORT

NOAA's Office of Undersea Research
Submersible Science Program

Report Status: _____ Final or Continuing _____

Date of Report: _____ Dive Numbers: _____

Inclusive Dates of Mission: _____

Project Title: _____

_____

Principal Investigator: _____ Signature: _____

Names of Co-Investigators: _____

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I. Abstract of Mission Results: Please include diagrams or figures as appropriate.

II. Please discuss the following:

A. Significance of the mission in relation to your research goals.
B. Scientific contributions of the mission in terms of species, patterns, and processes observed or measured. Were the initial hypotheses addressed; were any new ones posed as a result of the mission? Was the methodology and/or technology utilized successful and repeatable by others?
C. For continuing status reports, indicate the extent of data analysis or manuscript preparation completed to date.
D. Advantages of NOAA's Undersea Research Program to your research investigations.
E. Plans for use of the data gathered on this mission and the applications, products and/or benefits to NOAA.

III. Please include any comments on the following operational details, where applicable:

A. Weather and water conditions affecting operations
B. Safety problems and/or concerns
C. Dive management and personnel cooperation
D. Logistics and support activities