HAWAI'I UNDERSEA RESEARCH LABORATORY

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

DIVE: P4-179

(*Extend length of sections as needed/appropriate*)

MISSION STATUS

Location: On 2nd Finger of Penguin Bank, S. Molokai

Latitude: 20° 58.601 **Longitude:** 157° 22.624

Mission Date: 11/02/06 **Duration:** 8 hours 20 mins

Maximum Depth: 357 meters

Project Title: Bottomfish Benthic Community Collection

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Pilot 1: Terry Kerby **Pilot 2:**

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

Objectives:

1) Collect specimens of known, but unidentified organisms that contribute to the bottomfish benthic community.

Observations, findings, etc:

Rotenone was mixed on deck prior to the dive. Five pounds of rotenone powder was placed in a five gallon bucket. One large Ivory Liquid bottle (32 oz ?), approx. 1.5 gal of hyper-saline water, and one large bottle of acetone nail polish remover (8 oz ?) were added to the powder and mixed with a paint stirring drill bit. The mixture was a muddy paste, a bit too thick for our dispensers, so another quart or so of saline was added. The resulting mix was a thick liquid. This was put in our shaker dispenser made from two stackable screw top zip lock containers. The inner container was perforated with 1/16" holes and placed in the intact outer container. A pipe fitting and a lead weight were placed inside the shaker to assist in dispensing of the rotenone liquid. The liquid was a little thinner than intended. More saline was added to the bucket making the volume close to five gallons then placed in the empty Ivory bottle and a five gallon cubi-tainer. The cubi-tainer was placed into a milk crate and fitted to a short section of ½" PVC pipe with soft plastic tubing. We experienced some trouble with fitting the tubing where a hose clamp was intended to attach the soft tubing to the PVC adaptor. The cubi-tainer had a PVC plate attached to the top for the manipulator arm to push down on to dispense rotenone. The PVC wand was corked with a wine cork.
On deployment of the sub the cubi-tainer floated out of the basket and pulled the tubing off of the PVC wand. We dispensed rotenone in the water column over the entire descent. The wine cork also came out of the tip of the PVC wand. We arrived on the bottom at 157 m and proceeded down slope to 201 m where we found a concentration of diamond-tail Grammatonotus and a few Symphysanodon maunaloae. We plunged rotenone out of the cubi-tainer near a hole with fish and waited. Within five minutes fish started to turn belly-up. We successfully collected both species at site. We continued down slope to 220 m where we encountered more S. maunaloae. We collected one at this site, but collection was difficult. We continued down slope to 242 m to a better site and collected both S. maunaloae and diamond-tail Grammatonotus. We then returned up slope to 225 m to collect Munida brucei which were in all of the small holes on the carbonate wall. We used the detergent bottle to jet large quantities of rotenone into their holes. The crabs were definitely irritated by the rotenone, but left their holes for neighboring holes before succumbing to the poison. We continued attempts at M. brucei collection for nearly an hour, but had no success. We then continued down slope to 307 m and collected an Epigonus sp. These were much harder to collect than the previous fish because they did not enter holes as readily as the others. We moved to a better site at 345 m and collected more Epigonus sp, S. maunaloae, and a carapid. At this site we used both the detergent bottle and the ziplock shaker with some success. However, we had a much harder time killing fish. Many of them were obviously affected, but still swimming and able to evade our suction hose (rotenone potency issue?? dilution issue?). At about 1530 we finished dispensing all of our remaining rotenone and surveyed the area. About 10-20 m from the application area we saw a red morid floating off the wall. We spent 20 or more minutes trying to suck up this groggy, but struggling fish (Physiculus rhodopinnis ?). We failed. We left the bottom at 357 m.

Observed Species list:

Fish: *Seriola dumerili*
Naso hexacanthus
Symphysanodon maunaloae
Diamond-tail *Grammatonotus*
Epigonus sp
Etelis carbunculus
Etelis coruscans
Pristipomoides zonatus
Gymnothorax berndti
Gymnothorax nuttingi
Gymnothorax ypsilon
Bodianus cylindriatus
Onuxodon sp (???)
Bembrops sp 1
Chrionema chryseres
Chascanopsetta prorigera
Pontinus macrocephalus
Polymixia japonica
Randallichthys filamentosus
Physiculus rhodopinnis (???)
Pseudanthias fucinus
Hollardia goslinei
Hollanthias elizabethi
Sternoptynid

Inverts: *Munida brucei*
Munida plexaura
Paromola alcocki
Scyllarides haanii
Homola dickinsoni
Randallia distincta
Stomatopod (green with dark tail)
Javania sp
Anthomastis pink
Antipathes sp 1
Scleractinian
Corallium secundum
Cirrhipathes spiralis
Anseropoda insignis
Tamaria sp
Henricia sp (???)Stereocidaris hawaiiensis
Stylocidarus rufa
Stylocidaris calacantha
Pleurobranch
Bivalve
Bursa latitude
Unidentified ball sponge

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

In general the sub operations worked well, as expected. The suction device, however, was barely adequate. Suction power was quite low even with the hydraulics stepped up high. Other problems on the cruise had to do with the rotenone dispensing equipment, particularly with the cubi-tainer dispenser, but were able to collect fish with this method. We were not able to collect Munida with rotenone, but the application methods did work well. A better crustacean collecting chemical, if one exists, or some kind of live trap would be needed. All in all, objectives were met.

Recommendations for corrective action or improvement:

The sub worked great. The collection equipment was adequate, but has room for improvement. A stronger suction devise would be nice. Also, bringing a net along would be nice for collection of not quite dead fish. The cubi-tainer needs to have weights added (and maybe restraining cords over the top) to prevent floating and the tubing to PVC connection needs to be tighter.

In your opinion, did the mission essentially achieve its purpose? Compare actual work accomplished with the work that was expected to be accomplished:

Objectives met

List specimens or samples collected on the mission:

Symphysanodon maunaloae
Diamond-tail Grammatonotus
Epigonus sp
Onuxodon sp
Bursa latitudo

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. Video and images 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