HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
ROV: RCV-284

MISSION STATUS

Location: South Ridge, Au'au Channel, Maui

Latitude: 20° 48.635' N **Longitude:** 156° 44.281' W

Mission Date: September 9, 2004 **Duration:** 2 hours 25 mins

Maximum Depth: 93 m

Project Title: Ecological impact of an invasive marine invertebrate in Hawaii's coral reef communities

Principal Investigator: Richard W. Grigg, University of Hawaii

Address: 1000 Pope Road, Honolulu, HI 96822

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Observer 1: Sam Kahng **Observer 2:** Steve Coles, Bill Browne
Address: 1000 Pope Road, Honolulu, HI 96822

Pilot 1: **Pilot 2:**

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

Objectives:

An investigation of the deep reef habitat was conducted in select locations in the Hawaiian Archipelago to determine the geographic spread and ecological intensity of the *Carijoa riisei* biological invasion on the deep reef. This dive was one of dives on the Pisces V submersible and 4 remotely operated vehicle deployments of the RCV-125 conducted September 8-15.

Observations, findings, etc:

The RCV track was SW along the south side of a ridge traversing the southern Au'au Channel between West Mauai and Lanai. The track traversed two solution basins and grazed the ridge in two locations.

Patches of Scleractinian plate corals (*Leptoseris* sp.) mixed with calcareous green algae (*Halimeda* sp.) were encountered at 60-70 m. *Carijoa riisei* was observed on a dead heavily eroded stalks of dead black coral colonies at 77-82m at two locations. The bottom of the solution basins were covered in sand. Rocky ledges were populated with large healthy black coral colonies. Some black coral colonies were clean of epifauna and some were heavily fouled with oysters and sponge. Some colonies exhibited partial mortality of an unknown cause where the dead branches appeared heavily eroded. Dead black coral stubs were also observed. Given that the RCV only grazed the lower portion of the ridge and encountered large, healthy black corals, it is likely that the upper parts of the ridge is populated with abundant black coral colonies. The upper parts of the ridge would have higher flow with less sedimentation.

Dense *Halimeda* beds were encountered at 58 m with two species intermixed – one species with small segments (probably *H. incrassata*) and commonly seen in much shallower depths; and another species with larger segments (commonly seen in deeper water). Areas covered in leafy green algae and a branching tube-like sponge (or bryozoan) were also observed at 52 m.

This area of the Au'au Channel represents an extreme southern position of the sunken land bridge between Maui and Lanai. The observations confirm the geographic range of the phenomena of *C. riisei* overgrowth on black coral colonies.

Species list:

Carijoa riisei
Antipathes dichotoma
Leptoseris sp.
Halimeda incrassata
Halimeda sp.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Recommendations for corrective action or improvement:

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

Mission accomplished. The crew did a fine job in helping us meet our scientific objectives.

List specimens or samples collected on the mission.

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 9/9/06 (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).

Richard Grigg Principal Investigator

HURL RCV-284; September 9, 2004
South Ridge, Au Au Channel
Summary Assessment

Chief Scientist: Sam Kahng, University of Hawaii
Observer: Steve Coles, Bill Browne, Marc Crepeau
Operator: Dan Greeson, Peter Townsend

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