HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: PV-174

MISSION STATUS

Location: Au'au Channel, Maui

Latitude: 20º 57.2' N **Longitude:** 156º 44.8' W

Mission Date: October 23, 2006 **Duration:** 8 hours 0 mins

Maximum Depth: 150 m

Project Title: Ecological impact of *Carijoa riisei* on black coral habitat

Principal Investigator: Sam Kahng, University of Hawaii

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Observer 1: Sam Kahng **Observer 2:** Tony Montgomery
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Pilot 1: Terry Kerby **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 An investigation of the deep reef habitat was conducted in select locations in the Au'au Channel between the islands of Maui an Lanai in the Hawaiian Archipelago to determine the ecological impact of the *Carijoa riisei* biological invasion on the black coral habitat and the deep reef. This was one of two dives on the Pisces IV submersible and 3 remotely operated vehicle deployments of the RCV-125 conducted October 21-24, 2006.

Observations, findings, etc:

The Pisces V submersible track was over the 2nd Keyhole pinnacle in the northern end of the Au'au Channel between Maui and Lanai.

A series of temperature loggers were deployed at 10 m intervals along the NE flank of the pinnacle. One set of temperature loggers will record the vertical temperature profile every 30 minutes for two years. Another set of high frequency temperature loggers will record intermittent fluctuations near the thermocline caused by internal tides and waves.

Steep vertical walls with overhangs bordered the NW and SW edges of the pinnacle. The top of the ridge was colonized by black corals and the alien octocoral, *Carijoa riisei*. Some black corals were overgrown with *C. riisei* but proportionally less than the 1st Keyhole Pinnacle. *C. riisei* also colonized localized areas of rugose substrata.

Plate corals were abundant throughout the habitat 65-110 m bed and dominating several areas. The variety in colony morphology (e.g., pattern of calices) suggests that either diversity is greater than previously thought, or that morphological plasticity is prevalent. A new lettuce shaped species was recorded. Newly recruited coral colonies were readily found colonizing old dead skeletons.

Near the top of the pinnacle, areas were mixed with *Halimeda* sp. (cf. *H. distorta*) foliose algae, and bryozoans. Patches of *Leptoseris* plate corals were also common with large aggregations of small fish in close proximity.

A yellow sponge with large ostia was also common on exposed carbonate between 90-120 m.

Black corals and *Leptoseris* spp. were sampled for taxonomic and genetic analysis. Leptoseris spp. colonies were collected for live culturing at the Waikiki Aquarium.

Species list:

Carijoa riisei
Antipathes dichotoma
A. grandis
Myriopathes spp.
Leptoseris spp.
Halimeda spp.
Cirrhipathes sp..

MISSION EVALUATION:

Limitations, failures, or operational problems noted:
Science team was not allowed to perform optical casts either from small boat or from rear deck of the ship.

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.
Carijoa riisei, black coral, plate coral, macro algae

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