HAWAIʻI UNDERSEA RESEARCH LABORATORY
QUICK LOOK REPORT
DIVE: Pisces IV 146

MISSION STATUS

Location: Kingman Reef

Latitude: ***Begin*** 6° 26.0'S **Longitude:** ***Begin*** 162° 27.5'W

Mission Date: 24 July 05 **Duration:** 8hrs 22 min

Maximum Depth (m): 1359 m

Project Title: Past Decadal-Centennial Climate Variability Revealed by Deep Sea Corals from the Central North Pacific Gyre

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

Scientific Data Acquired:
Video record of distribution and abundance of deep-sea corals along a vertical transect on northwestern side of Kingman Reef. Selected fossil, sub-fossil, and living deep-sea macrofauna were sampled using the Pisces IV and returned to the surface in a coral collection basket.

Objectives: Acquire direct observation (e.g., video and notes) of the i) vertical distribution of deep-sea invertebrate macrofauna with an emphasis on deep-sea corals and related genera; ii) substrate/topography with a view towards establishing the relationship with benthic community properties. A primary mission goal is to collect fossil, sub-fossil, and live specimens of deep-sea corals across a range of depths and habitats.

Observations, findings, etc: (Also see Appended Dive Log)

We dove along a ridge that is part of the northwest facing pedestal of Kingman Reef. From depths of 1246 to 300 m, the terrain covered consisted of limestones, mostly well-bedded, some massively bedded and some finely bedded. We encountered nodular-appearing limestones as well as some limestone conglomerates or breccias. Relatively little sediment was observed, particularly above 1100 meters. Some of the limestone units were coated with manganese – others had a yellowish chalky appearance. Above 600 meters, the terrain became nearly vertical, with many features of dissolution apparent in the cliff faces, ranging from small dissolution pits to large-scale cavernous features. The terrains between 600 and 300 meters also included a number of limestone pinnacles and spires that were separated from the cliff ace or other pinnacles by characteristic distances of 10 to 20 meters. Some pinnacles appeared to be as much as 50 meters high and 20 to 30 meters in diameter. These pinnacles and the edge of the Kingman escarpment appear to for a preferred growth habitat for Gerardia. Many large Gerardia colonies were observed growing out from vertical walls between 350 and 400 meters. Some of these colonies had bases as large as 15 cm diameter and fan dimensions as great as 1.5 meters by 2 meters. Portions of this wall environment also supported many solitary cup corals.

Species List: (not meant to be completely inclusive)

Deep sea corals/gorgonians/sea fans/whips observed: *Acanella* sp., *Corallium* sp., *Dendrophyllia sp.* (abundant), *Gerardia sp.* (abundant), *Paramuricia sp., Iridogorgia superba, Bathypathes sp., Lepidisis (olapa?), Narella sp.*

Echinoderms: *Cidarid urchins, Caliderma spp.,* Brisingid sea star, crinoids, *Histocidaris variabilis*

Other: rat tails, Cusk eel (Brotula), *Coryphaenoides sp., Caelorinchus sp. (cf. tokianus), Sladenia sp.,* False cat shark

MISSION EVALUATION:

A. Limitations, failures, or operational problems noted:

We had loaded a screen to be used to hold corals in basket during recovery. However, this screen washed out during launch and was lost**.**

B. Recommendations for corrective action or improvement:

We need to devise a better system for retaining delicate coral samples during recovery. On the next dive, we propose to load a “bio-box” into the basket.

C. In your opinion, did the mission essentially achieve its purpose?

YES.

D. Compare actual work accomplished with the work that was expected to be accomplished. All expected work was accomplished.

E. List specimens or samples collected on the mission. (See Sample List Below):

Dive PIV-146

Sample Number	Time (L)	Latitude Min/decM	Longitude Min/decM	Depth(m)	Comments
P4-144-1	1019			1270 m	Live Corallium spp. (regale?) (broken branch sample rec. @ 1286m)
P4-146-2	1034			1271 m	Live Corallium spp. (regale?) (broken branch sample rec. @ 1283m)
P4-146-3	1046			1226 m	Live Acanella
P4-146-4	1214			827 m	Large fossil calcareous coral base
P4-146-5	1226			813 m	Live Dendrophyllia
P4-146-6	1242			788 m	Live Dendrophyllia
P4-146-7	1342			480 m	Live Dendrophyllia
P4-146-8	1400			462 m	Fossil Gerardia (not insitu)
P4-146-9	1445			320 m	Large live Gerardia branch
P4-146-10	1507			320 m	Large live Gerardia with 2 bases
P4-146-11	1530			310 m	2 living cup corals