HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P5-689

MISSION STATUS

Location: West Twin Bank, NWHI

Latitude: 23° 01.540 **Longitude:** 163° 09.669

Mission Date: 10/31/07 **Duration:** 8 hours 30 mins

Maximum Depth: 1751 m

Project Title: Megafauna of Deep Seamounts and Ridges in the NWHI Monument

Principal Investigator: Christopher Kelley

Address: HURL

Phone: 808-956-7437

Observer 1: Christopher Kelley
Address: HURL

Observer 2: Jane Culp
Address: HURL

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

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

Objectives: The goal of this project is to census fish and invertebrate species in two under-surveyed but potentially high diversity habitat types: seamounts and submarine ridges, found inside the monument with the bathyal zone of 200-2000 m. The first study site is a submarine ridge extending south of West Twin Bank. The ridge is a suspected volcanic rift zone that was revealed by a single multibeam sonar swath acquired in 2003. The 800-1800 m portion of the feature was covered in the swath. Three submersible dives and up to six ROV dives will be conducted to census this site. Submersible dives will target the 1400-1800 m depth range while the ROV dives will target the 400-800 m range. During each submersible dive, a 200m wide by 3000 m long area will be surveyed at 1) the top of the ridge, 2) the west slope of the ridge, and 3) the east slope of the ridge. All fish and invertebrates observed will be identified and counted by the two observers. Two digital camera systems will record video as well as the audio records from each of the observers. A laser scale mounted on one of the cameras will provide the means by which to obtain size data. Specimens of unusual species that are potentially new to science will be collected for laboratory identification. Each day after the submersible is recovered, the ROV will be used to conduct 1-2 video transects. Observers in the ROV control room will make initial identifications of fish and invertebrates during the dives. Following these dives, the seabeam multibeam sonar system will be used to complete as much of the mapping of the ridge and surrounding features as possible.

Observations, findings, etc:

We were expecting to find primarily talus slope along the west side of the ridge similar to that observed on the ridge top the previous day. This was not the case. The west side was dominated by pillow lava formations and old flow features coated with manganese. In two locations, beds of cobbles were encountered between pillow lava areas that appeared to be manganese coated rhodoliths. A few areas of talus slope were encountered but significantly less than on the ridge top. The survey depth range was 1751-1388 m. Similar to the ridge top, no significant coral or sponge beds were observed until a depth of approximately 1550 m. Between 1550-1388, we encountered several areas where large isidids, Corallium sp, other corals, and sponges were abundant. Of particular interest was a large lemon yellow isidid which we have not observed on any of the archived HURL dives. Also of interest was the difference in the community of animals observed during this survey compared with the ridge top survey which was only several hundred meters upslope to the east.

Species list:

Fishes: Coryphaenoides longicirrhus, macrourid sp, Synaphobranchus affinis, S. brevidorsalis, Aldravandria phalacra, ophidiid unknown large, ophidiid? unknown small white with black head, Guttagadus sp?, Sladenia reminger, small black macrourid, Sphagemacrourus gibber?, bathygadid, Gadomus melanopterus. halosaur white mustache, Apristurus sp, Centroscyllium nigrum, Nettastoma parviceps, Bathypterois atricolor

Echinoderms: Bathyplotes patagiatus, Enyniastes sp clear, holothuriodean new (large tubes on back), ophiuroids, ophiacanthid star?, Ptilocrinus sp yellow, Proisocrinus ruberrimus, comatulid brown, Antedon yellow (which probably is wrong), Hymenodiscus sp, Asthenactus papyraceus, Hymenaster pentagonalis?, Circeaster sp?, unknown seastar

Arthropods: Homeryon asper, Lithodes longispinna, Gastroptychus sp, Endeis sp, Acanthophyra sp, mycid, red shrimp, chirostylid, Aristeus semidentatus, Nematocarcinus tenuisrostris, Aristaeopsis edwardsiana, Heterocarpus laevigatus, gooseneck barnacles

Cnidarians: Anthothelia nuttingi, Umbellula carpenteri, Halipterus willemoesi, Pennatula inflata, Calibelemnon-like, Anthoptilum sp, Actinoscyphia sp 3, hormathiid, Corallimorphus sp, Bathypathes alternata, Isidella lyrate spp, Iridogorgia bella, I. megaspiralis, Chrysogorgia stellata, C. geniculata, C. new sp., Anthomastus sp, Anthomastus steenstrupi, Corallium sp big pink (new according to Amy), Lepidisis sp red, isidiid fork, Metallogorgia melanotrichos (branched and unbranched), Acanella weberi, Candidella gigantea, Keratoisis grandis?, Keratoisis flabellum?, Plumerella sp, Paragorgia dendroides, new isidid yellow, Keratoisis pink polyps, Chrysogorgia new, Acanthogorgia sp, Calyptrophora sp, Narella sp, Corymorpha sp, Kophobelemnon-like, Bathypathes conferta, Lituaria sp?, Veretillum-like, Anemone long tentacles, Actinernus nobilis, isidid branched

Sponges: Semperella sp, Pheronematid sp 2, Trichasterina sp1, Walteria flemingi, Walteria sp, Poliopogon sp 1, Poliopogon sp 2, Caulophacus sp 3, Endorete sp, chonelasmatinid leaf, Bolosoma sp 1, hexactinellid unknown, farreid, Farrea occa, Farrea sp 1 and 2, Semperella schultzi, Tracoramorpha sp, Caulophacus sp 3, hexactinellid massive stalked (but it was itty bitty)

Other: octanonemid, cranchid squid

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None

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.

Yes. We completed a survey along the west side of the ridge then transited across a flat cobble field to a pinnacle, which was the original dive plan. During the dive, all equipment was functioning properly including digital video, CTD data, and tracking data. We obtained individual identifications and counts of all animals encountered that were recorded on the video tapes as well as hand-held recorders. Digital video close-ups of animals were recorded whenever the submersible stopped. We also collected both rock and coral specimens.

List specimens or samples collected on the mission.

2 rock specimens, one being rounded talus and the other being a number of small cobbles that initially appeared to be manganese coated rhodoliths.

4 coral specimens: a Corallium sp (white stalked, pink polyps, a lyrate isidid, a planar isidid, and a yellow isidid never observed before on HURL dives

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 P5-689 (Megafauna of Deep Seamounts and Ridges in the NWHI Monument)

held on 10/31/07 (date) in the following way:

a. CTD data by 10/31/09 (date)

b. video and images by 10/31/09 (date)

c. other 10/31/09 (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