HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: P5-690

MISSION STATUS

Location: West Twin Bank, NWHI

Latitude: 23° 01.725 **Longitude:** 163° 09.166

Mission Date: 11/1/07 **Duration:** 8 hours 20 mins

Maximum Depth: 1683 m

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

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Observer 1: Christopher Kelley
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Observer 2: Jane Culp
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Pilot 1: Max Cremer **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 not sure if we would find talus slope similar to that observed on the ridge top or pillow lava formations similar to that found on the west side of the ridge. After arriving on the bottom at 1683 m in an area of pillow lavas, it was clear that the east side of the ridge was going to be similar to the west side, not the ridge top. As we made our way through these formations that were interspersed with some talus slopes, we found a very unusual Bathypathes coral, resembling a B. conferta but having at least 5 side branches. The titan manipulator was not working again, however Max was able to collect a specimen with the hyco arm. One difference between this side of the ridge was the presence of a modest bed of Acanthogorgia sp near the drop depth. However, mostly the substrate had a scattering corals and sponges until approximately 1550 m. Similar to the other sites, coral and sponge densities increased significantly from this depth up through to the end of the dive at 1153 m. Very large bamboos, Corallium sp, stalked sponges, and chrysogorgids were interspersed with small coral and sponge species such as Plumerella snf Semperella sp. We completed the ridge transect as planned then had enough time to transit to the pinnacle located at 1200 m right on the ridge top. On the way to the top, large spectacular Iridogorgia megaspiralis and other corals were abundant. On the top, primnoids seemed to dominate the community. In addition, a very unusual green hydrozoan??? was found that resembled grass. We have never seen this before and were able to obtain closeup images but unfortunately no sample.

Species list:

Fishes: Coryphaenoides longicirrhus, macrourid sp, Synaphobranchus affinis, S. brevidorsalis, Synaphobranchus sp (large mottled with dorsal in middle) Aldravandria phalacra, ophidiid unknown, unknown small white fish with black head, Sladenia reminger, macrourid gray, bathygadid, small black macrourid, Gadomus melanopterus, Eptatretus carlhubbsi, Apristurus sp, Nettastoma parviceps, Bathypterois atricolor, Coryphenoides sp

Echinoderms: Orphnurgus glaber, Bathyplotes patagiatus, Enyniastes sp red, holothuriodean clear, ophiuroids, ophiacanthid star?, Proisocrinus ruberrimus, comatulid brown, Antedon yellow-like, Hymenodiscus sp, Asthenactus papyraceus, unknown seastars, Circeaster sp?, Aerosoma sp, Aspidodiadema hawaiiensis,

Arthropods: Homeryon asper, Gastroptychus sp, Endeis sp, Acanthophyra sp, mycid, red shrimp, chirostylid, Aristeus semidentatus, Nematocarcinus tenuisrostris, Aristaeopsis edwardsiana, Benthesicymus laciniatus, amphipod

Cnidarians: Anthothelia nuttingi, Umbellula carpenteri, Halipterus willemoesi, Calibelemnon-like, Anthoptilum sp, Actinoscyphia sp 3, hormathiid, Corallimorphus sp, Bathypathes alternata, Bathypathes patula, Bathypathes conferta-like, Bathypathes branched conferta-like, 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 geniculata-like side branch, Acanthogorgia sp, Calyptrophora sp 5 and sp, Narella sp, Corymorpha sp and tubulariid, Kophobelemnon-like, Veretillum-like, Anemone white-tipped, Actinernus nobilis, isidid branched, Narella dichotoma, gorgonian yellow, Calyptrophora spinosa, Calyptrophora agasizzi, isidid new, Keratoisis sp 4

Sponges: Hertwigia sp, pheronematid sp 1, 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 and 2, hexactinellid unknown, farreid, Farrea occa, Farrea sp 1 and 2, Semperella schultzi, Tracoramorpha sp, Caulophacus sp 3, Poliopogon sp 3, Caulophacus sp multipuff, hexactinellid massive stalked (but it was itty bitty), hexactinellid plate?, Saccocalyx sp, tretodictyid waffle, unknown hexactinellid vase,

Other: octanonemid, cranchid squid, polychaete worm (bristle worm)

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

The titan manipulator failed on start up similar to dive P5-689. We were therefore very limited on the amount of samples we could collect.

Recommendations for corrective action or improvement:

None. The operations team is doing everything they possibly can to fix the problem.

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 east side of the ridge then transited up to a pinnacle located on the ridge top as planned. With the exception of the titan arm, all equipment functioned 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 a rock and a coral specimen.

List specimens or samples collected on the mission.

1 rock specimen: a polished knob-like piece of the bedrock from the top of the pinnacle that Max was able to break off.

1 coral specimen: an antipatharian believed to be in the genus Bathypathes.

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 P5-690 (Megafauna of Deep Seamounts and Ridges in the NWHI Monument)

held on 11/1/07 (date) in the following way:

a. CTD data by 11/1/09 (date)

b. video and images by 11/1/09 (date)

c. other 11/1/09 (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