HAWAI'I UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT
DIVE: RCV-399

MISSION STATUS

Location: Seamount North of French Frigate Shoals, NWHI

Latitude: 24° 17.669 **Longitude:** 166° 4.354

Mission Date: 11/14/07 **Duration:** 4 hours 0 mins

Maximum Depth: 772 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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Pilot 1: Dan Greeson

Pilot 2: Peter Townsend

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: submarine ridges and seamounts, found inside the monument with the bathyal zone of 200-2000 m. The three submersible dives and two ROV dives were conducted on the ridge site earlier in the cruise. Two submersible dives have been completed on on our second study site, an un-named seamount located 25 miles north of French Frigate Shoals. HURL operations director, Terry Kerby, and the PIs of this project (Kelley and Smith) conducted a single exploratory dive (P5-464) on its north flank in 2001. The area covered during the dive was only a small strip of less than 1 km extending between 1100 and 1400 m. However, from that quick look, it was clear that this seamount is of consider geologic and biologic interest. The bedrock was coated in a thick manganese crust upon which a variety of cnidarians, sponges, echinoderms, crustaceans, and fishes were found. On this site, the submersible dives are targeting different sides and slopes of the seamount in the 800-1500 m range. The ROV will be used to survey the summit between the depths of 630-800 m. The plan was to deploy the ROV each evening for 1-2 video transects after the submersible is recovered. Observers in the ROV control room will make initial identifications of fish and invertebrates during the dives. Since the majority of the submersible time will be spent on the seamount slopes, the ROV will be the main survey instrument for the summit.

Observations, findings, etc:

This was the second ROV dive on this site. The seamount summit has a crescent shape (perhaps due to it possibly being collapsed volcanic cone) that curves from north to east. The survey was therefore designed to begin at the center of the crescent at 770 m and proceed north approximately 2.8 kilometers until the ROV reached the tip of the northern extension. The ROV was deployed and completed most of the survey as planned. The terrain observed during the dive was primarily boulders and cobbles interspersed between manganese coated plates. However unlike ROV dive 398 and Pisces dive 695, carbonate bedrock and plate-like aggregated sediment deposits were observed toward the northern end. As with the previous dives, we found a relatively low diversity biological community on the summit. The dominant attached invertebrate was an unidentified leaf-like hexactinellid sponge, possibly in the family Chondelasmatinidae. These animals were relatively abundant and seemed to have a randomly spaced distribution pattern. Other relatively common invertebrates observed included a tan actinostolid anemone, and the corallimorpharian, Corallimorphus sp 2, the dendrophyllid Enallopsammia rostrata, small Iridogorgia megaspiralis, and Calyptrophora sp. Relatively few fishes were observed with the most common being Neoscopelus sp, conger and synaphobranchid eels. Of particular note was a chimaerid (Hydrolagus purpurescens) at 726 m which is the shallowest depth record for that species in the HURL database and the observation of several macrourids that may be our first record of their species. There were also several observations of an unidentified white urchin that could also be a new record, an unusual holothurian, a Chrysogorgia geniculata with a side branch, and unidentified folded and bowl shaped hexactinellid sponges.

Species list:

Fishes: Synaphobranchus affinis?, conger white fins, Centrocyllium nigrum, Sladenia reminger, Neoscopelus sp, Nettastoma parviceps, unidentified macrourids, Hydrolagus purpurescens, Antimora microlepis?

Echinoderms: urchin white long spined, gorgonocephalid, crinoid yellow, urchin red top, Aspidodiadema-like urchin with thicker spines, Brissinga alberti, holothurian long pseudopodia?, Amphgymnus sp., Antedon yellow, Ceramasters bowersi

Arthropods: Heterocarpus laevagatus, unidentified red shrimp, homolid crabs, galatheid, Nematocarcinus tenuispina, Homeryon asper,

Cnidarians: Anthomastus red, Plumerella sp, Actinernus sp, Anthomastus steenstrupi, Calyptrophora agassizii, Lepidisis sp red, lyrate isidid, yellow gorgonian, single stalked cnidarian, branched Chrysogorgia geniculata, anemone long tentacles, Isadella lyrate, Calyptrophora sp, Enallopsammia rostrata, actinostolid tan, Narella sp, Chrysogorgia geniculata, branched isidid, Metallogorgia melanotrichos, Paracalyptrophora sp?, Corallimorphus sp 2, Iridogorgia megaspiralis, Acanthogorgia sp

Sponges: farreid, hexactinellid vase shaped, hexactinellid massive stalked, new folded hexactinellid, Basthydorus sp, Farrea occa, hexactinellid bowl, Farrea sp 1, chondelasmatinid leaf, Endorete sp, Poliopogon sp 3, dactylocalicid, hexactinellid massive stalked, Sericolophus sp?, Semperella schultzi, Regadrella sp 1,

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

None. The ROV worked flawlessly.

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. The intended survey was completed as planned.

List specimens or samples collected on the mission.

None.

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 R-399 (Megafauna of Deep Seamounts and Ridges in the NWHI Monument)

held on 11/14/07 (date) in the following way:

a. CTD data by 11/14/09 (date)

b. video and images by 11/14/09 (date)

c. other 11/14/09 (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