HAWAII UNDERSEA RESEARCH LABORATORY

QUICK LOOK REPORT MISSION NO. P5-017

MISSION STATUS

Location: Cross Seamount

Mission Date: 8/11/87

Maximum Depth: 1300 ft.

Project Title: Settlement Onto Deep-Sea Hard Substrates

Project Leader: Lauren Mullineaux

Address: Ocean Engineering
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

Phone: (617) 548-1400 Ext. 2898

Observer: Cheryl Ann Butman

Address: Woods Hole Oceanographic Institution

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

Deployed pinger, five alabaster plates, four settlement substrates.

MISSION EVALUATION:

Limitations, failures, or operational problems noted:

Depth-limited navtrack.
35 mm Osprey not operating.
Video focus not operating at end of dive.
No CTD.

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.

Dive plan was modified so that substrates could be deployed.

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 "Settlement Onto Deep-Sea Hard Substrates" (project title) held on August 11, 1987 (date) in the following way:

a. CTD data by none (date)

b. voice transcripts, video, and still camera film by 8/89 (date)

c. other after publication (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).

_____

Project Leader

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VOICE TRANSCRIPT FOR HAWAII UNDERSEA RESEARCH LABORATORY MISSION

Dive Number: P5-017

Location: Cross Seamount

Date of Dive: 8/11/87

Project Leader: Lauren Mullineaux
Ocean Engineering
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

Observer: L. Mullineaux, C. Butman

Pilot: D. Foster

TAPE 1; SIDE 1

Butman: The rocks seem to be layered with a fine mist of sediment.

Butman: We're sitting at about 390 meters. There's a real steep slope up ahead. All the rocks are black and there's upright branching things which may be corals. Also white gorgonians. Those are gorgonians aren't they? Can see a seapen. A little tiny fish that's red and white, red and white stripes on its tail. Scooting around the yellow coralish things. This seems like an unusually dense assemblage of bottom stuff. A lot of tubeworms on the substrate. Maybe spirorbid type things. They're white; they look calcareous. They're not very well coiled though.

Butman: There's a yellow brittlestar also on the yellow...on the yellow coral. As well as shrimp and a great big crab. We're heading down and there's a big sediment patch; I'd say it looks pretty huge. With some boulders interspersed. The sand bottom is really coarse; there's enormous seapens sticking up right in the middle of the sand flat. A bunch of little fish that are red on the top and white on the bottom. This looks like a little crater because now we're approaching a wall again. Right now we're sitting on the bottom looking at the carbonate sands which are sprinkled with black rocks.

Foster: What number were we up to?

Butman: There's no evidence of flow whatsoever. None of the gorgonians or the upright corals are moving at all. There's a slight drift from right to left but...the particles are moving up and down quite a bit too.

Butman: 7...now heading southwest. The ripples are a couple of centimeters deep and asymmetrical. This is really a massive sand flat.

Foster: ...Kind of turning in a circle.

Butman: The sand flat seems to be sitting...almost sitting in the clear. Wow. These fish really kick up the bottom when they feed. Yeah. _____ of these bottom fish they have little whiskers on their...bottom of their mouths and they kick up the bottom when they feed. In addition to the regularly...regular ripples there are also biological looking gouges in the sediment that go perpendicular at some odd angle to the ripples, but the fish don't seem to be doing that. They just seem to be biting at it...the sediment.

Butman: Oh no, some...um putting the sub perpendicular to the ripples it looks like the flow is either east or west, though it's hard to tell...right now when we're heading east whether we're on the steep or the flat side of the ripples. The ripples look pretty old because they're sediment. The top of the ripples is a completely different color than the valleys which seem to have some deposit in them.

Butman: Observe rocks with huge...areas of rubble in their lee and they're oriented approximately to the lee rubble field is approximately east, indicating there is some pretty hefty currents here at some time. It looks actually like the rocks have been eroded away and the stuff off the rocks are deposited downstream.

End tape.

*Note: No tape 2.

Mullineaux: Testing 1, 2. Testing. We're on our way towards Cross Seamount.

Mullineaux: Date is 11/Aug/87; the first PISCES dive on Cross Seamount.

Mullineaux: 11:32 _____ the bottom. 11:33 flat bottom. Gorgonians...on a hard manganese substrate. _____

Mullineaux: We're at 390 meters. Looks like a lot of spirorbids on the substrate but also some _____. Really dense assemblage of gorgonians and corals and seapens. Small pink sea anemones also on the seafloor.

Mullineaux: 11:22 adjusting ballasting. The eel... Gorgonians have _____ crystal spaces that they grow up out of...

Mullineaux: 11:48. We're heading for a patch of sediment with some boulders in it. It doesn't have ripples; it's got a little bit of downslope transport. Heading 290 from our original position.

Mullineaux: 11:59. We're giving up on the still camera and heading southwest to find a suitable plot _____. Crossing over another sand patch looks like there are some ripples in it. Still a lot of crust interspersed with the sand.

Mullineaux: We're heading southwest and the slope is dropping off to the right of us. Then the slope is dropping off to the north. We must be on the north side of the seamount. Watching a big sand flat with ripples oriented about parallel with the way we're going which is southwest and they look like they're migrating downslope which is off to our right.

Mullineaux: On the sand flat there are a lot of fish foraging there irridescent blue with two whiskers down along the bottom.

Mullineaux: 12:18 we're in a big sand patch circling around trying to find out how big it is. _____ parallel to ...northwest/southeast. 12:19 hitting one of the edges.

Mullineaux: With no external lights on you can still see...crust in the distance.

Foster: Hard to tell.

Mullineaux: So there's lots of ambient light.

Mullineaux: Heading 065 and looks like you can go a long way in this direction. _____.

Mullineaux: 12:37. At the north end of this it pinches off into a cul de sac. We're heading south to see how long it is in the other direction. .....southern heading so we're heading east to see if that's the long direction. Heading 035 we haven't hit rocks yet.

Mullineaux: 12:42 heading southwest again because this patch didn't seem big enough. Heading 127 over a pile of rocks into another area that the same patch. Heading 092 on a sand patch to see how long it takes us to hit rocks.

Mullineaux: 12:48 deploying pinger in a sand patch; then we'll try to run some transects.

Mullineaux: 12:54 recovering the pinger to go find a better site.

Mullineaux: 1:04 found another sandy patch; we'll check it out and see how big...

Mullineaux: 1:12; we're going to check out the latest sand patch. Last sand patch was too small. Once again we're heading southwest.

Mullineaux: 1:22 another patch but it's not very big.

Mullineaux: 1:47 we've located the site, deployed the pinger, and we're going to start on the alabaster run.

Mullineaux: 1:59 the first alabaster substrate deployed - AL 1.

Mullineaux: 2:06 the AL 2 deployed at the end of the transect line and we'll work back towards the pinger.

Mullineaux: 2:17 the fifth alabaster plate's been deployed. We're going to go along and try to get the line on video.

Mullineaux: 3:15 we've got some _____ that's letting us head up the current which is 120 and deployed substrates as far upcurrent as possible, dive bombing them from about 2 meters above the seafloor.

Mullineaux: 3:46 the five alabaster plates were put in a cluster at the far end of a transect heading 120 from the pinger. Finished deploying the four settlement substrates in a line bearing about 264 from the pinger. The first one they deployed the thin flat plate landed upside down.

Mullineaux: OK, it's 1429. We weren't able to get the video or the stills working so we're on our way up.

End tape.

*Note: No tape 4.