*Okeanos Explorer* ROV Dive Summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Dive Information | | | | | |
| Dive Map | |  | | | |
| Site Name | | Titov 2 | | | |
| Expedition Coordinator(s) | | Brian RC Kennedy, Nick Pawlenko | | | |
| ROV Lead(s) | | Karl McLetchie | | | |
| Science Team Lead(s) | | Amanda Demopoulos and Steven Auscavitch | | | |
| General Area Descriptor | | Pacific Remote Islands Marine National Monument | | | |
| ROV Dive Name | | | | | |
| Cruise | | EX-17-03 | | | |
| Leg | | 0 | | | |
| Dive Number | | 13 | | | |
| Equipment Deployed | | | | | |
| ROV | | Deep Discoverer (D2) | | | |
| Camera Platform | | Seirios | | | |
| ROV Measurements | | CTD | | Depth | Altitude |
|  | | Scanning Sonar | | USBL Position | Heading |
|  | | Pitch | | Roll | HD Camera 1 |
|  | | HD Camera 2 | | Low Res Cam 1 | Low Res Cam 2 |
|  | | Low Res Cam 3 | | Low Res Cam 4 | Low Res Cam 5 |
| Equipment Malfunctions | |  | | | |
| ROV Dive Summary (from processed ROV data) | | Dive Summary: EX1703\_DIVE13  ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  In Water: 2017-03-20T18:45:43.299000  00°, 22.695' S ; 176°, 08.077' W  Out Water: 2017-03-21T02:40:09.227000  00°, 22.453' S ; 176°, 07.811' W  Off Bottom: 2017-03-21T01:52:56.706000  00°, 22.514' S ; 176°, 07.914' W  On Bottom: 2017-03-20T19:38:10.227000  00°, 22.680' S ; 176°, 07.972' W  Dive duration: 7:54:25  Bottom Time: 6:14:46  Max. depth: 1226.7 m | | | |
| Special Notes | |  | | | |
| Scientists Involved  (please provide name, location, affiliation, email) | | |  |  |  | | --- | --- | --- | | **Name** | **Affiliation** | **Email Address** | | Abby Lapointe | University of Hawaii | abbylap@hawaii.edu | | Amanda Demopoulos | USGS | ademopoulos@usgs.gov | | Amanda Netburn | NOAA OER | amanda.netburn@noaa.gov | | Amy Baco-Taylor | FLorida State University | abacotaylor@fsu.edu | | Andrea Quattrini | Harvey Mudd College | aquattrini@g.hmc.edu | | Asako Matsumoto | Chiba Institute of Technology (Chitech), | amatsu@gorgonian.jp | | Bruce Mundy | NOAA NMFS Pacific Islands Fisheries Science Center | bruce.mundy@noaa.gov | | Erik Cordes | Temple University | ecordes@temple.edu | | Jaymes Awbrey | University of Louisiana, Lafayette | jawbrey@louisiana.edu | | Les Watling | University of Hawaii at Manoa | watling@hawaii.edu | | Mary Wicksten | Texas A&M University | Wicksten@bio.tamu.edu | | Michael Parke | NOAA PIFSC | michael.parke@noaa.gov | | Nicole Morgan | Florida State University | nmorgan@fsu.edu | | Santiago Herrera | Lehigh University | sherrera@alum.mit.edu | | Scott France | University of Louisiana at Lafayette | france@louisiana.edu | | Steve Auscavitch | Temple University | steven.auscavitch@temple.edu | | Timothy Shank | Woods Hole Oceanographic Institution | tshank@whoi.edu | | Tina Molodtsova | P.P.Shirshov Institute of Oceanology RAS | tina.molodtsova@gmail.com | | Mike Ford | NOAA NMFS | michael.ford@noaa.gov | | | | |
| Purpose of the Dive | | The general goal of this dive is to acquire baseline information on deep sea habitats, seafloor geology, and biological communities on Titov Seamount in the Howland & Baker Unit of the Pacific Remote Islands Marine National Monument. Deep-sea environments around the Howland & Baker Islands are virtually unexplored leading to poor knowledge of biological resources protected by these reserves. This expedition has already explored the western ridge of Titov Seamount (Dive07) at a depth of 1890-1740m. This dive will provide some perspective on biological resources (fishes, biogenic habitat) as well as geological resources (crust precipitates) of the seamount. Understanding deep-sea coral distribution as well as bathyal fish communities is of great importance to inform management in the area. The age of Titov Seamount is not known. | | | |
| Description of the Dive | | EX1703 dive # 13 was our second dive at Titov Seamount. The dive track started at the base of a steep, sedimented slope at 1227 m. Immediately, we encountered a rattail previously unobserved on the expedition (Macrouridae/Bathygadinae: *Gadomus*) and also observed synaphobranchid eels (e.g., *Synaphobranchus affinis*). Other fish observed on the dive included several cusk eels (Ophidiidae: *Spectrunculus* sp., *Dicrolene* sp.), rattails (*Coryphaenoides* sp.; *Nezumia*?), goosefish (Lophiidae: *Sladenia* cf. *zhui)*, brotula (Bythitidae: *Diplacanthopoma*), oreo fish (Oreosomatidae: *Neocyttus* cf. *acanthorhynchus*), tripod fish (Ipnopidae: *Bathypterois* cf. *atricolor*), deep-sea spiny eels (Halosauridae: *Aldrovandia*), and bristlemouths (Gonostomatidae). On the scattered manganese iron oxide coated boulders and rock substrate, we observed primnoids (cf. *Narella*) and plexaurids, generally oriented perpendicular to the current flow, which was north to south at the base of the slope.  As the ROV progressed upslope, the sedimented seafloor was bordered by exposed rock, and several coral colonies were observed attached to the hard substrate. On the rock fringe, we saw large primnoids (*Callogorgia*, *Thouarella*?), chrysogorgiids (*Iridogorgia* spp., *Metallogorgia*, and unknown), *Anthomastus*, *Paragorgia*, Isididae, Coralliidae, *Victorgorgia*, *Bathypathes,* *Stichopathes*, cf. *Enallopsammia*, stoloniferans, cup corals, and pennatulids. Other fauna included crinoids (Atelecrinidae), holothurians (Laetmogonidae?, Elpidiidae), sponges (Euplectellidae, Euretidae: *Lefroyella*, unknown demosponges, encrusting sponges), seastars (Zoroasteridae*: Zoroaster*, Benthopectinidae: *Cheiraster*?, Goniasteridae: *Rosaster*?), urchins (Echinothuriidae, Aspidodiadematidae), red crabs (*Chaceon*), tunicate, squat lobster (Eumunididae: *Eumunida*, Munididae: *Munida*), xenophyophores, nematocarcinids, and a benthic colonial siphonophore.  Along the crest of the seamount, several large boulders and rock features looked like coral gardens, with multiple colonies of deep-sea corals, some sponges, and associates. The hard substrate was dominated by yellow plexaurids (cf. *Paramuricea*-collected) and primnoids (*Thouarella*?). Throughout the dive, suspended particulate material was observed, possibly indicative of sufficient food supply to sustain these corals. Coral and sponge associates included euryalid serpent stars (ophiuroids), barnacles (verrucamorphs), anemones, polychaetes, amphipods, shrimp (*Bathypalaemonella*), and egg cases (cf. cephalopods). | | | |
| Overall Map of the ROV Dive Area | | | **Close-up Map of Main Dive Site** | | |
| /Volumes/PublicData/cruises/EX1703/DiveSummaries/HypackScreengrabs/Dive13_Hypack_wide.JPG | | | /Volumes/PublicData/cruises/EX1703/DiveSummaries/HypackScreengrabs/Dive13_Hypack_zoom.JPG | | |
|  | | |  | | |
| Representative Photos of the Dive | | | | | |
| /Volumes/CruiseData/EX1703/Imagery/EX1703_DIVE13_20170320/EX1703_IMG_20170320T211855Z_ROVHD.jpg | | | /Volumes/CruiseData/EX1703/Imagery/EX1703_DIVE13_20170320/EX1703_IMG_20170321T005339Z_ROVHD.jpg | | |
| Cusk Eel swims over a sedimented slope | | | Sessile fauna growing on a Mn crusted rock. | | |
| Samples Collected | | | | | |
| Sample | | | | | |
| Sample ID | EX1703\_20170320T211059\_D2\_DIVE13\_SPEC01BIO | |  | | |
| Date (UTC) | 20170320 | |  | | |
| Time (UTC) | 01:33:44 | |  | | |
| Depth (m) | 1179.89 | |  | | |
| Temperature (°C) | 4 | |  | | |
| Field ID(s) | Thouarella sp | |  | | |
| Comments |  | | | | |
| ****Sample**** | | | | | |
| Sample ID | EX1703\_20170321T003156\_D2\_DIVE13\_SPEC02BIO | |  | | |
| Date (UTC) | 20170320 | |  | | |
| Time (UTC) | 21:10:59 | |  | | |
| Depth (m) | 1142.22 | |  | | |
| Temperature (°C) | 4.18 | |  | | |
| Field ID(s) | Plexauridae | |  | | |
| Comments |  | | | | |

**Please direct inquiries to:**

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