*Okeanos Explorer* ROV Dive Summary

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| --- | --- | --- | --- | --- | --- |
| Dive Information | | | | | |
| Dive Map | |  | | | |
| Site Name | | Howland Deep 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 | | 11 | | | |
| 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\_DIVE11  ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^  In Water: 2017-03-18T18:33:46.437000  00°, 48.032' N ; 176°, 40.513' W  Out Water: 2017-03-19T02:41:14.323000  00°, 48.441' N ; 176°, 40.048' W  Off Bottom: 2017-03-19T01:25:50.371000  00°, 48.390' N ; 176°, 40.238' W  On Bottom: 2017-03-18T19:56:33.804000  00°, 48.247' N ; 176°, 40.452' W  Dive duration: 8:7:27  Bottom Time: 5:35:16  Max. depth: 2226.9 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 | | Asako Matsumoto | Chiba Institute of Technology (Chitech), | amatsu@gorgonian.jp | | Chris Mah | Dept. of Invertebrate Zoology, NMNH Smithsonian Institution | brisinga@gmail.com | | Christopher Kelley | University of Hawaii | ckelley@hawaii.edu | | Dhugal Lindsay | JAMSTEC | dhugal@jamstec.go.jp | | Erik Cordes | Temple University | ecordes@temple.edu | | Nolan Barrett | FAU Harbor Branch Oceanographic Institute | barrettnh@g.cofc.edu | | Scott France | University of Louisiana at Lafayette | france@louisiana.edu | | Shirley Pomponi | HBOI-FAU CIOERT | spomponi@fau.edu | | Steve Auscavitch | Temple University | steven.auscavitch@temple.edu | | | | |
| Purpose of the Dive | | The goal of this dive is to acquire baseline information on deep sea habitats, seafloor geology, and biological communities on Howland Island in the Howland & Baker Unit of the Pacific Remote Islands Marine National Monument. Deep-sea environments around Howland & Baker Islands are virtually unexplored leading to poor knowledge of biological resources protected by these reserves. Previous Dive09 (this cruise) explored a steep slope downslope from this large ridge. This dive will carry on where the previous dive left off to survey the remainder of the ridge crest, including taking a closer look at a diversity of octocorals at the dive start location. Understanding deep-sea coral biological resources as well as bathyal fish communities is of great importance to inform management in the area. | | | |
| Description of the Dive | | EX1703 dive #11 continued our dive tract remaining from dive #9, transiting a ridge feature from 2227 to 2084 m depth. The seafloor at the start of the dive was a sedimented plateau surrounded by exposed, high profile rock features. Along the ridge track, we observed a sedimented slope with a perimeter of rocky ledges, which was interspersed by rock boulders. There were areas toward the end of the dive with continuous hard-rock pavement and with high profile, exposed rocky substrate.  We started the dive at the base of the ridge, on a plateau with several large coral colonies. We collected a piece from an unknown chrysogorgiid that had a width of 1.5m. Other corals encountered along the ridge included chrysogorgiids (*Chrysogorgia*, *Iridogorgia*, and unknown), primnoids (cf. *Calyptrophora*, *Narella*), seapens (*Anthoptilum* or *Kophobelemnon*), black corals (cf. *Stichopathes*, *Heteropathes*, *Umbellapathes*), bamboos (cf. *Jasonisis* [large colonies], *Orstomisis*, whip, unknown internodal branching form), *Anthomastus* cf. *tahinodus*, *Paragorgia* cf. *coralloide*s, plexaurids, and *Victorgorgia*. We observed typical coral and sponge associates, including crinoids (e.g., *Paratelecrinus*), ophiuroids, ctenophores (*Tjalfiella* sp.), shrimp, unknown worms, and aplacophorans. One new “associate” observed was a cirrate octopod egg case attached to a paragorgiid octocoral. The case was cracked open, revealing the chorion, which may expand as the octopus embryo develops. We noted that other empty brown cases were observed on dive 9 at a similar depth, attached to a colonial hydroid (*Solanderia*). Other invertebrates observed, either attached to the rocks or on the sediment surface, included a few different types of holothurians (e.g., *Mesothuria* or *Pseudostichopus*), sea stars (Goniasteridae: cf. *Calliaster* sp., new species [collected], brisingids), solitary hydroid, hexactinellid sponges (Euplectellidae: *Dictyaulus* or *Regadrella*, unknown Corbitellinae with shrimp within the vase, *Walteria* sp., *Heterorete*, *Chonelasma*), a hermit crab with a zoanthid house, nematocarcinid shrimp with stilt-like legs, xenophyophores, stalked crinoids (cf. *Bathycrinus*), an asteroschema on the rock surface without a host (unusual), sea urchins (aspidodiadematids, echinothuriids), a gastropod (*Gaza* sp.) and a sea spider (cf. *Colossendeis* sp.). Along the ridge, we observed at least 3 fish species, including a few individuals of Halosaurs (Halosauridae: cf. *Halosaurus*) and cusk eels (Ophediidae: *Porogadus* cf. *miles*, *Bassozetus*). | | | |
| Overall Map of the ROV Dive Area | | | **Close-up Map of Main Dive Site** | | |
| /Volumes/PublicData/cruises/EX1703/DiveSummaries/HypackScreengrabs/Dive11_Hypack_wide.JPG | | | /Volumes/PublicData/cruises/EX1703/DiveSummaries/HypackScreengrabs/Dive11_Hypack_zoom.JPG | | |
|  | | |  | | |
| Representative Photos of the Dive | | | | | |
| /Volumes/CruiseData/EX1703/Imagery/EX1703_DIVE11_20170318/EX1703_IMG_20170318T212021Z_ROVHD.jpg | | | /Volumes/CruiseData/EX1703/Imagery/EX1703_DIVE11_20170318/EX1703_IMG_20170318T223043Z_ROVHD.jpg | | |
| A partially hatched octopus egg | | | An octocoral and several sponges that were characteristic on the dive | | |
| Samples Collected | | | | | |
| Sample | | | | | |
| Sample ID | EX1703\_20170318T204428\_D2\_DIVE11\_SPEC01BIO | |  | | |
| Date (UTC) | 20170318 | |  | | |
| Time (UTC) | 20:44:28 | |  | | |
| Depth (m) | 2226.58 | |  | | |
| Temperature (°C) | 2.14 | |  | | |
| Field ID(s) | Chrysogorgiidae | |  | | |
| Comments |  | | | | |
| ****Sample**** | | | | | |
| Sample ID | EX1703\_20170318T231238\_D2\_DIVE11\_SPEC02BIO | |  | | |
| Date (UTC) | 20170318 | |  | | |
| Time (UTC) | 23:12:38 | |  | | |
| Depth (m) | 2175.43 | |  | | |
| Temperature (°C) | 2.15 | |  | | |
| Field ID(s) | Goniasteridae | |  | | |
| Comments |  | | | | |

**Please direct inquiries to:**

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