



# Okeanos Explorer ROV Dive Summary

| Dive Information                 |  |
|----------------------------------|--|
| Dive Map                         |  |
| <b>Site Name</b>                 | Baker Islands Deep                                       |
| <b>Expedition Coordinator(s)</b> | Brian RC Kennedy, Nick Pawlenko                          |
| <b>ROV Lead(s)</b>               | Karl McLetchie   |
| <b>Science Team Lead(s)</b>      | Amanda Demopoulos and Steven Auscavitch                  |
| <b>General Area Descriptor</b>   | Pacific Remote Islands Marine National Monument (PRIMNM) |
| <b>ROV Dive Name</b>             |  |
| <b>Cruise</b>                    | EX-17-03   |





|  | <b>Name</b>   | <b>Affiliation</b>  | <b>Email Address</b>         |
|--|---|---|------------------------------|
| <p align="center"><b>Scientists Involved</b><br/>(please provide name, location, affiliation, email)</p> | Amanda Demopoulos   | USGS  | ademopoulos@usgs.gov         |
|  | Asako Matsumoto   | Chiba Institute of Technology (Chitech),                  | amatsu@gorgonian.jp          |
|  | Christopher Kelley  | University of Hawaii                                      | ckelley@hawaii.edu           |
|  | Deborah Glickson  | National Academies of Sciences, Engineering, and Medicine | dglickson@nas.edu            |
|  | Erin Easton   | Ecology and Sustainable Management of Oceanic Islands     | erineeaston@gmail.com        |
|  | Jill Bourque  | US Geological Survey Wetland and Aquatic Research Center  | jbourque@usgs.gov            |
|  | Les Watling   | University of Hawaii at Manoa                             | watling@hawaii.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              |
| <p align="center"><b>Purpose of the Dive</b></p>   | <p>The general goal of this dive is to acquire baseline information on deep sea habitats, seafloor geology, and biological communities on Baker Island in the Howland &amp; Baker Unit of the Pacific Remote Islands Marine National Monument. Deep-sea environments around Howland &amp; Baker Islands are virtually unexplored leading to poor knowledge of biological resources protected by these reserves. The</p> |   |                              |

|                                       |   |
|---------------------------------------|---|
|                                       | <p>previous Dive08 (this cruise) explored shallow and carbonate karstic terrain as well as upper bathyal fish communities &lt;600m depth. This dive will provide some perspective on biological resources as well as geological foundations of the island. Understanding deep-sea coral distribution as well as bathyal fish communities is of great importance to inform management in the area. Additionally, the age of Baker Island is not known, nor has any record of rock dredging in the area been reported.</p>  |
| <p><b>Description of the Dive</b></p> | <p>EX1703 dive # 12 was along a steep slope on a south ridge of Baker Island. The dive started at 1858m and the seafloor was composed of large boulders with exposed rock surfaces interspersed with sandy sediments. Several large boulders appeared as if they had been transported downslope via mass wasting events. There were columnar basalts observed along the slope, covered with thick manganese iron-oxide crust, some of which had a botryoidal texture (i.e., globular appearance).</p> <p>As we transited up a steep slope, we encountered several fish species, including multiple cusk eels (Ophidiidae: <i>Bassozetus</i>, unknown Ophidiidae), batfish (Ogcocephalidae: cf. <i>Halicmetus niger</i>), rattails (Macrouridae: <i>Coryphaenoides</i> cf. <i>armatus</i>), brotula (Bythitidae: <i>Diplacanthopoma</i>), cutthroat eel (Synphobranchidae), hake (Moridae: <i>Lepidion</i>), and several deep-sea spiny eels (Halosauridae: <i>Halosaurus</i>). Corals observed included black corals (<i>Stichopathes</i> and an unknown whip), chrysogorgiids (<i>Iridogorgia</i> cf. <i>magnispiralis</i>, <i>Metallogorgia</i>), <i>Anthomastus tahinodus</i>, bamboos (whips, cf. <i>Eknomisis</i>, cf. <i>Jasonisis</i>), cup corals, <i>Victorgorgia</i>, primnoid, paragorgiid, and yellow plexaurids. We also saw the colonial hydroid, <i>Solanderia</i>, with a possible egg case, a large polychaete, and isopod. Seastars (<i>Pteraster</i>, juvenile pterasterid, unknown goniasterid), urchins (aspidodiadematid, echinothuriids, cidarid), and holothurians (elpidiid, unknown purple specimen) were observed on rocks or the sediment surface. Other taxa observed included a few different types of sponges including Cladorhizidae, Euplectellidae, encrusting sponges, and a field of unknown dead hexactinellids, anemones (Hormathiidae), pectinid bivalves, stalked crinoids (<i>Paratelecrinus</i> sp.), and xenophyophores on the sediment and rock surfaces. Associates included ophiocanthids, polynoid and sabellid polychaetes, crinoids, and mysid shrimp. We saw a sea spider (cf. <i>Colossendeis</i>) eating a cup coral, which had not been observed by the scientists before. The dive ended on a short</p> |





|                          |  |  |
|--------------------------|--|--|
| <b>Date (UTC)</b>        | 20170319                                   |  |
| <b>Time (UTC)</b>        | 21:42:45                                   |  |
| <b>Depth (m)</b>         | 1760.22                                    |  |
| <b>Temperature ( °C)</b> | 2.57                                       |  |
| <b>Field ID(s)</b>       | Mn-crusted basalt                          |  |
| <b>Comments</b>          |  |  |
| <b>Sample</b>            |  |  |
| <b>Sample ID</b>         | EX1703_20170320T012841_D2_DIVE12_SPEC02BIO |   |
| <b>Date (UTC)</b>        | 20170320                                   |  |
| <b>Time (UTC)</b>        | 01:28:41                                   |  |
| <b>Depth (m)</b>         | 1495.54                                    |  |
| <b>Temperature ( °C)</b> | 3.01                                       |  |
| <b>Field ID(s)</b>       | Isididae                                   |  |
| <b>Comments</b>          |  |  |
| <b>Sample</b>            |  |  |
| <b>Sample ID</b>         | EX1703_20170320T013344_D2_DIVE12_SPEC03BIO |  |
| <b>Date (UTC)</b>        | 20170320                                   |  |
| <b>Time (UTC)</b>        | 01:28:41                                   |  |
| <b>Depth (m)</b>         | 1495.68                                    |  |
| <b>Temperature ( °C)</b> | 2.99                                       |  |
| <b>Field ID(s)</b>       | Isididae                                   |  |
| <b>Comments</b>          |  |  |

**Please direct inquiries to:**

NOAA Office of Ocean Exploration & Research  
1315 East-West Highway (SSMC3 10th Floor)  
Silver Spring, MD 20910  
(301) 734-1014