# OKEANOS EXPLORER ROV DIVE SUMMARY

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| **Site Name** | Minor Canyon Near Shallop Canyon |  | |
| **ROV Lead/Expedition Coordinator** | David Lovalvo/<br>Brian Kennedy | | |
| **Science Team Leads** | Amanda Demopoulos<br>Martha Nizinski | | |
| **General Area Descriptor** | Northwest Atlantic Ocean;<br>Northeast U.S. Canyons | | |
| **ROV Dive Name** | Cruise Season | Leg | Dive Number |
| | EX1304 | 2 | DIVE02 |
| **Equipment Deployed** | ROV: | Deep Discoverer | |
| | 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 2 |
| **Equipment Malfunctions** | | | |
| **ROV Dive Summary (From processed ROV data)** | In Water at: | 2013-08-02T12:30:58.446000<br>39°, 56.213' N ; 069°, 13.470' W | |
| | Out Water at: | 2013-08-02T19:42:57.503000<br>39°, 55.874' N ; 069°, 13.898' W | |
| | Off Bottom at: | 2013-08-02T18:44:49.540000<br>39°, 56.018' N ; 069°, 13.742' W | |
| | On Bottom at: | 2013-08-02T13:10:23.912000<br>39°, 56.005' N ; 069°, 13.563' W | |
| | Dive duration: | 7:11:59 | |
| | Bottom Time: | 5:34:25 | |
| | Max. depth: | 1139.8 m | |
| **Special Notes** | | | |
| **Scientists Involved** *(please provide name / location / affiliation / email)* | **Primary**<br>Jason Chaytor, USGS, jchaytor@usgs.gov<br>Taylor Heyl, WHOI, theyl@whoi.edu<br>Scott France, UL Lafayette , france@louisiana.edu<br>Rhian Waller, U of Maine, rhian.waller@maine.edu<br>Michael Vecchione, NOAA NMFS, VecchioneM@si.edu<br>Martha Nizinski, NOAA NMFS, nizinski@si.edu<br>Andrea Quattrini, Temple, andrea.quattrini@temple.edu<br>Brian Kinlan, NMFS, brian.kinlan@noaa.gov<br>Cheryl Morrison, USGS, cmorrison@usgs.gov | | |

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| | Les Watling, UH, watling@hawaii.edu<br>Amy Baco-Taylor, FSU, abacotaylor@fsu.edu<br>Santiago Herrera, WHOI, sherrera@whoi.edu<br>Amanda Demopoulos, USGS, ademopoulos@usgs.gov<br>Tim Shank, WHOI, tshank@whoi.edu<br><br>**Passive**<br>Nicola Morgan, FSU, nbmorgan11@yahoo.com<br>Brendan Roark, Texas A&M, broark@geos.tamu.edu<br>Brian Kennedy, NOAA OER, Brian.Kennedy@noaa.gov<br>Thomas Ritter, MSU, thomas.ritter@msu.montana.edu<br>Kerry McCulloch, U Oregon, mcculloc@uoregon.edu |

**Purpose of the Dive**

The purpose of the dive was to characterize 1) the submarine canyon geomorphology and benthic habitats, including possible coral and sponge communities in a minor canyon near Shallop Canyon and 2) groundtruth a model of predicted deep-sea coral occurrence.

**Description of the Dive:**

The second dive of leg 2 was at a minor canyon near Shallop Canyon. While descending to the bottom, numerous salps and fine marine snow were suspended in the water column. The ROV reached the bottom at a depth of 1131 m at 1313 UTC. The seafloor was characterized by mud bottom interspersed with burrows, eels, squid, and midwater myctophids. The sediment was relatively homogeneous at a broad scale, with no rubble or rocks, and thus no surficial evidence of down-canyon sediment transport. Continuing along the dive track, additional fish were noted and a rubber glove (trash) was partially buried in the sediment. At 1357 UTC, at a depth of 1118m, the ROV came upon a large rock with no debris at the base, a thin sediment coating on the top, and heavy sediment drape at the base. Small octocorals, with only a few polyps, had colonized the rock feature, and their small size was a possible indication of recent recruitment. At 1117 m, the ROV transited to a steep and tall rock face that had weak layering and relatively heavy erosion. At base of the large rock face, piles of dead stony corals and live bivalves, gave the clue that something interesting may be just above. At 1509 UTC, at 1094 m, the ROV ascended up the rock feature and imaged many of the rock associates, including hydroids, *Acanthogorgia*, squat lobsters, various sponges, many limidae bivalves. While exploring the rock face, several sessile invertebrates were found attached to the wall, in cracks, crevices, and overhangs. Specific corals observed included bamboo coral, black corals (*Bathypathes, Parantipathes*), octocorals (*Anthothela, Thourella, Anthomastus, Acanthogorgia, Paragorgia, Clavularia, Swiftia*), and scleractinians (cf. *Desmophyllum, Solenosmilia*, and *Lophelia*). Large black corals were particularly numerous on the wall, with associated chirostylid crabs and ophiuroids hanging on their branches. Other animals noted on the dive included an octopus, hydromedusae, and fishes, including a fathead, oreo, macrourids, *Cyclothone* sp., and *Gaidropsaurus* sp. The rock wall, potentially Eocene in origin, contained numerous holes, which provided a habitat for a polychaete worm, squat lobsters, and encrusting sponges. The ROV reached the top of the feature at 1031 m, which was highly sedimented and contained similar fauna and features as the base of wall, including eels and burrows. Once it was clear that the ROV had crossed the steepest feature, there was a ship move to head back to the cliff and continue exploring the wall to the north. At a depth of 1034 m, while exploring the wall, several echinoderms were noted, including brisingid sea stars and urchins. The ROV video obtained some amazing footage of several small amphipods perched on a hydroid. At 1030 m, two small colonies of *Lophelia pertusa* were found attached to the rock wall; one colony was growing adjacent to another colonial scleractinian, cf. *Solenosmilia*. At 1907 UTC, the ROV left bottom as the dive was called early due to increasing sea state.

| **Overall Map of ROV Dive Area** | **Close-up Map of Main Dive Site** |
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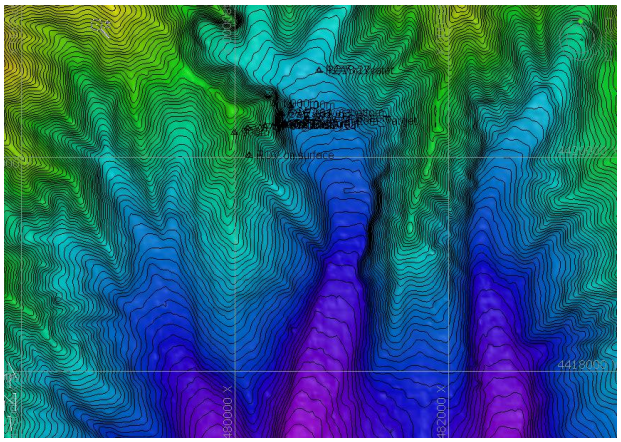
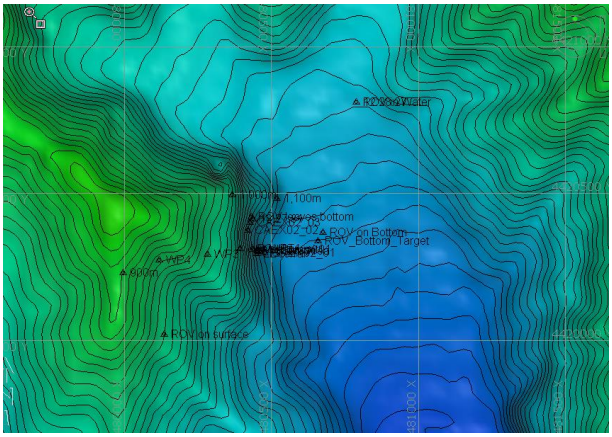
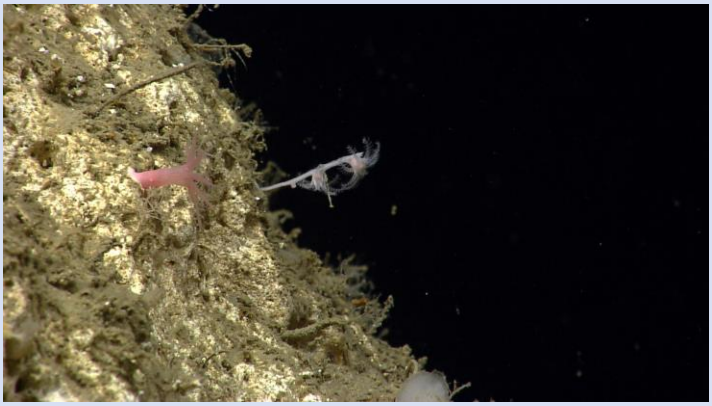




**Representative Photos of the Dive**



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| **Please direct inquiries to:** | NOAA Office of Ocean Exploration & Research<br>1315 East-West Highway (SSMC3 10th Floor)<br>Silver Spring, MD 20910<br>(301) 734-1014 |