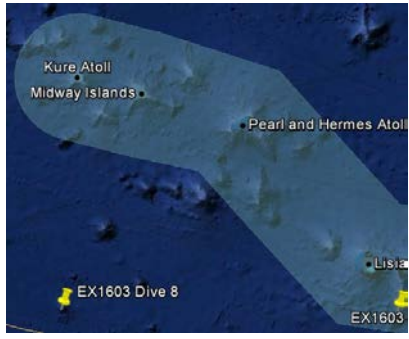


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Unnamed Seamount 3		
ROV Lead/Expedition Coordinator	Karl Mcletchie/ Brian RC Kennedy		
Science Team Leads	Daniel Wagner and Jonathan Tree		
General Area Descriptor	US EEZ south of Papahānaumokuākea Marine National Monument		
ROV Dive Name	Cruise Season	Leg	Dive Number
	EX1603	1	DIVE08
Equipment Deployed	ROV:	Deep Discoverer	
	Camera Platform:	Seirios	
ROV Measurements	<input checked="" type="checkbox"/> D2 CTD	<input checked="" type="checkbox"/> Depth	<input checked="" type="checkbox"/> Altitude
	<input checked="" type="checkbox"/> Scanning Sonar	<input checked="" type="checkbox"/> USBL Position	<input checked="" type="checkbox"/> Heading
	<input checked="" type="checkbox"/> Pitch	<input checked="" type="checkbox"/> Roll	<input checked="" type="checkbox"/> HD Camera 1
	<input checked="" type="checkbox"/> HD Camera 2	<input checked="" type="checkbox"/> ROV HD 2	<input checked="" type="checkbox"/> Seirios CTD
	Temperature Probe	<input checked="" type="checkbox"/> D2 DO Sensor	<input checked="" type="checkbox"/> Seirios DO sensor
Equipment Malfunctions	The Seirios CTD data had some erroneous spikes in the data.		
ROV Dive Summary (From processed ROV data)	Dive Summary: EX1603_DIVE08		
	~~~~~		
	In Water:	2016-03-11T18:39:34.446000 25°, 21.685' N ; 178°, 26.233' W	
	Out Water:	2016-03-12T02:25:36.951000 25°, 21.372' N ; 178°, 24.918' W	
	Off Bottom:	2016-03-12T00:13:00.349000 25°, 21.581' N ; 178°, 25.749' W	
	On Bottom:	2016-03-11T20:57:24.571000 25°, 21.597' N ; 178°, 25.856' W	
	Dive duration:	7:46:2	
	Bottom Time:	3:15:35	
Max. depth:	3995.6 m		
<b>Special Notes</b>			
<b>Scientists Involved (please provide name / location / affiliation / email)</b>	<b>Name</b>	<b>Affiliation</b>	<b>Email Address</b>
	Amy Baco-Taylor	Florida State university	abacotaylor@fsu.edu
	Brian Boston	University of Hawaii	bboston@hawaii.edu
	Mundy Bruce	NOAA NMFS PIFSC	bruce.mundy@noaa.gov
	Jeffrey Drazen	University of Hawaii	jdrazen@hawaii.edu

	Scott France	University of Louisiana at Lafayette	france@louisiana.edu
	Deborah Glickson	FAU-HBOI	dglickson@fau.edu
	Chris Kelley	University of Hawaii	ckelley@hawaii.edu
	Abby Lapointe	University of Hawaii at Manoa	abbylap@hawaii.edu
	Christopher Mah	National Museum of Natural History (Smithsonian)	brisinga@gmail.com
	Asako Matsumoto	Chiba Institute of Technology	amatsu@gorgonian.jp
	Tina Molodtsova	P.P. Shirshov Institute of Oceanology RAS	tina@ocean.ru; tina.molodtsova@gmail.com
	Andrea Quattrini	Harvey Mudd College	aquattrini@g.hmc.edu
	Michael Vecchione	NMFS Systematics Lab	vecchiom@si.edu
	Daniel Warren	Oceaneering	djwarren@oceaneering.com
	Les Watling	University of Hawaii	watling@hawaii.edu

#### Purpose of the Dive

This dive was on a ridge located on the top portion of an unnamed seamount. The seamount is located ~200 miles south of Midway and was chosen as the last dive site of this expedition due to its geographic position and transit considerations to Kwajalein Atoll. The seamount was only mapped during this expedition and had therefore never been previously surveyed. The objectives of this dive were to (1) survey for biological communities along the ridge, and (2) collect rock samples that could be used to determine the geological age of the seamount. The target start point of the dive was on the ridge crest at 4007 m. The plan was for the ROV to move east along the ridge crest towards the summit until running out of bottom time.

#### Description of the Dive:

The ROV landed on the ridge crest at a depth of 3994 m. The substrate consisted of rounded cobble to boulder talus with little to no sediment and cemented by Mn crust. Interspersed between the talus were Mn-nodule like textures. The bottom substrate was inhabited by a moderate density of sponges and corals. A moderate current was observed from the east towards the west. The ROV collected a rounded 19.6 kg Mn-crust rock sample close to the landing site at 3987 m (D2_DIVE08_SPEC01GEO). As the ROV moved up along the ridge crest, the density of corals remained moderate and consisted mainly of chrysogorgid, primnoid and bamboo corals, as well as stalked sponges. Further up the slope, the ROV collected a coral specimen of *Chrysogorgia* sp. at 3957 m. This species was relatively common throughout the dive. Along this portion of the dive track were channels incised in to the Mn-cemented surface with light sediment concentrations and smaller cobble-pebble aggregations suggestive of downslope transport via these structures. At 3925 m, the ROV collected a second Mn-crust rock sample (3.4kg; D2_DIVE08_SPEC3GEO) from a local high composed of intact pillow lava flows. The sample is angular vesicular pillow lava fragment with little Mn-crust thickness. The pillow lavas in the vicinity were fractured revealing radial starburst fracture patterns within the cores of pillow toes. As the ROV continued to

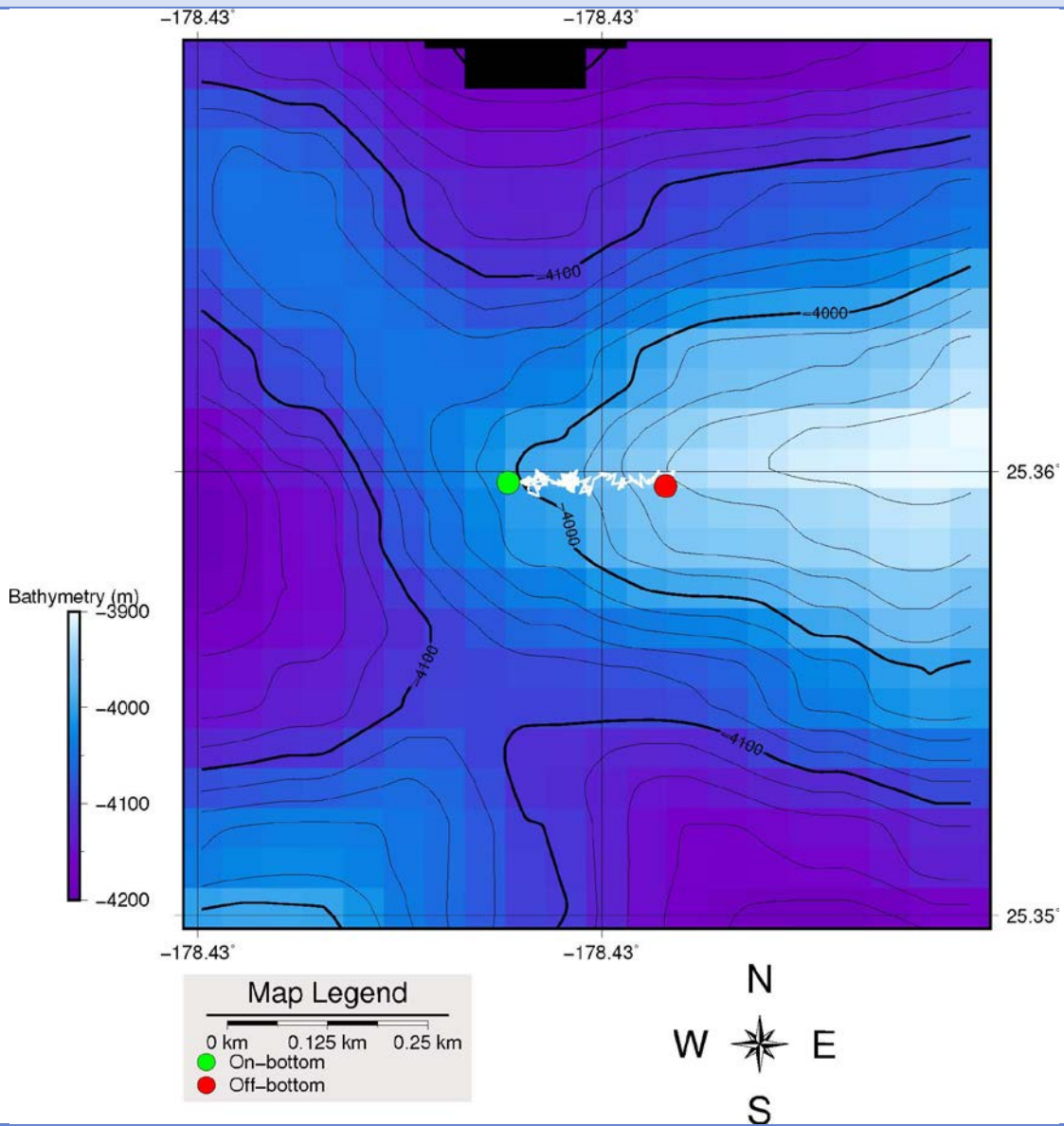
move up the slope the density of benthic animals remained moderately high. At 3915 m, the ROV collected a sample of a bamboo coral. Towards the end of the dive the ROV moved towards and over the steep southern flank of the ridge crest that was constructed of pillow lava structures with no obvious layering. Here, the substrate was covered by a high density of balanoid barnacles, but sponges and corals were less abundant than on the ridge crest. The ROV left the bottom at a depth of 3924 m after a total bottom time of 3:19 hrs. The density of benthic invertebrates was consistently moderate, which was surprising given the extreme depths of the dive. No fishes were observed during the dive.

### Animals observed during dive

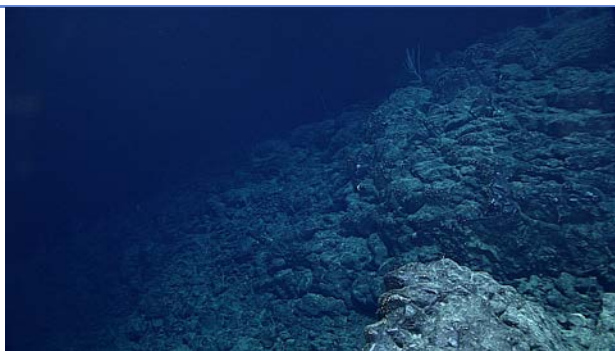
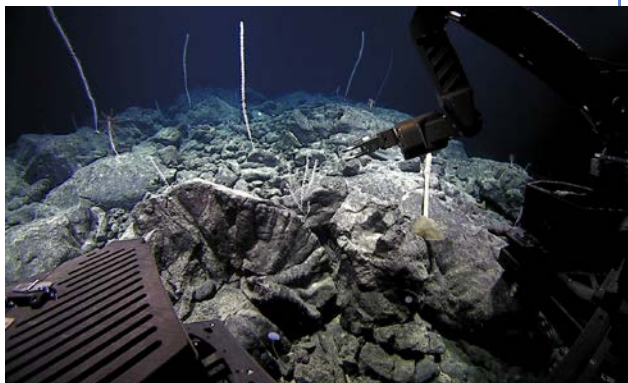
Phylum	Group	Species
Arthropods	Barnacles	Balanoidae
Arthropods	Barnacles	Scalpellidae
Arthropods	Shrimp	Lebbeus sp.
Arthropods	Squat lobsters	Munidopsis sp.
Arthropods	Squat lobsters	Munidopsis cf. albatrossae
Cnidarians	Actinarians	Unidentified anemones
Cnidarians	Antipatharians	Bathypathes alternata s.s.
Cnidarians	Antipatharians	Bathypathes patula
Cnidarians	Antipatharians	Bathypathes? sp. (unbranched)
Cnidarians	Gorgonians	Bathygorgia cf. tasmaniensis
Cnidarians	Gorgonians	Bathygorgia sp.
Cnidarians	Gorgonians	Bathygorgia sp. (branched)
Cnidarians	Gorgonians	Branched Chrysogorgia sp.
Cnidarians	Gorgonians	Calyptrophora angularis?
Cnidarians	Gorgonians	Chrysogorgia sp.
Cnidarians	Gorgonians	Chrysogorgia cf. pinnata
Cnidarians	Gorgonians	Iridogorgia magnispiralis
Cnidarians	Gorgonians	Isidella sp. lyrate
Cnidarians	Gorgonians	Pleurogorgia sp.
Cnidarians	Gorgonians	Primnoidae
Cnidarians	Gorgonians	Unbranched primnoid
Cnidarians	Pennatulaceans	Unidentified seapen
Cnidarians	Pennatulaceans	Halipteris sp.
Echinoderms	Asteroids	Ceramaster cf. bowersi
Echinoderms	Asteroids	Solasteridae
Echinoderms	Crinoids	Bathycrinidae
Echinoderms	Crinoids	Glyptometra sp.
Echinoderms	Crinoids	Unidentified comatulid
Echinoderms	Holothurians	Synallactidae
Echinoderms	Ophiuroids	Ophiuridae
Mollusks	Aplocophoran	Aplocophoran
Mollusks	Gastropods	Gastropod
Mollusks	Gastropods	Gaza daedala
Sponges	Hexactinellids	Bolosimidae sp.

Sponges	Hexactinellids	Bolosoma sp.
Sponges	Hexactinellids	Caulophacus (Caulodiscus) sp.
Sponges	Hexactinellids	Hyalostylus? sp.
Sponges	Hexactinellids	Poliopogon sp.
Sponges	Hexactinellids	Poliopogon sp.B

**Map of ROV Dive Area**



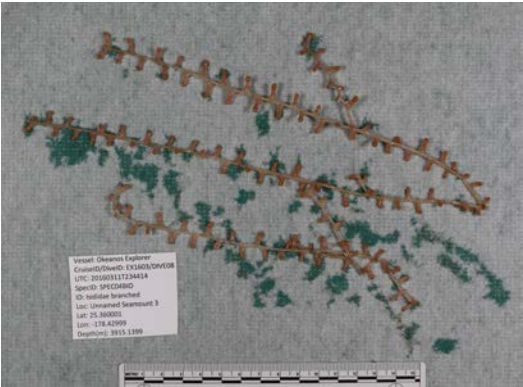


**Representative Photos of the Dive**



**Samples Collected**

<b>Sample ID</b>	SPEC01GEO	
<b>Date (UTC)</b>	20160311	
<b>Time (UTC)</b>	21:27:14	
<b>Depth (m)</b>	3981.7	
<b>Temperature (°C)</b>	1.42	
<b>Field ID(s)</b>	Mn-encrusted volcanic	
<b>Comments</b>		
<b>Sample ID</b>	SPEC02BIO	
<b>Date (UTC)</b>	20160311	
<b>Time (UTC)</b>	22:18:08	
<b>Depth (m)</b>	3957.1	
<b>Temperature (°C)</b>	1.47	
<b>Field ID(s)</b>	Chrysogorgia sp.	

		 <p>Vessel: Oceanos Explorer  Cruise/DiveID: EX1603/DIVE08  UTC: 20160311T211808  SpecID: SPEC03GEO  ID: Chrysiogorgia sp.  Loc: Unnamed Seamount 3  Lat: 25.360000  Lon: -178.42999  Depth(m): 3957.1399</p>
<b>Comments</b>		
<b>Sample ID</b>	SPEC03GEO	
<b>Date (UTC)</b>	20160311	
<b>Time (UTC)</b>	23:22:17	
<b>Depth (m)</b>	3919.8	
<b>Temperature (°C)</b>	1.43	
<b>Field ID(s)</b>	Mn-encrusted volcanic	
<b>Comments</b>		
<b>Sample ID</b>	SPEC04BIO	
<b>Date (UTC)</b>	20160311	
<b>Time (UTC)</b>	23:44:14	
<b>Depth (m)</b>	3915.1	
<b>Temperature (°C)</b>	1.46	
<b>Field ID(s)</b>	Branched Isididae	
<b>Comments</b>		

**Please direct inquiries to:**

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Silver Spring, MD 20910  
(301) 734-1014