

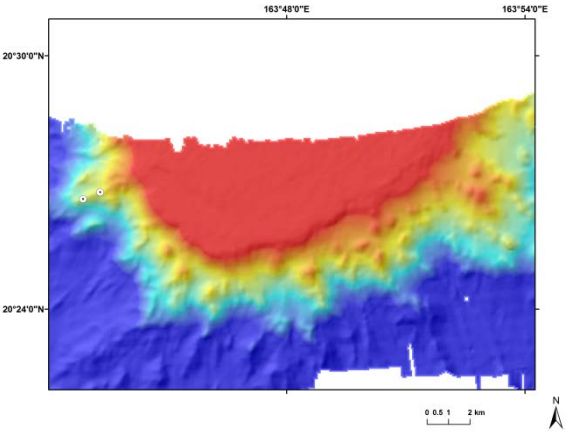
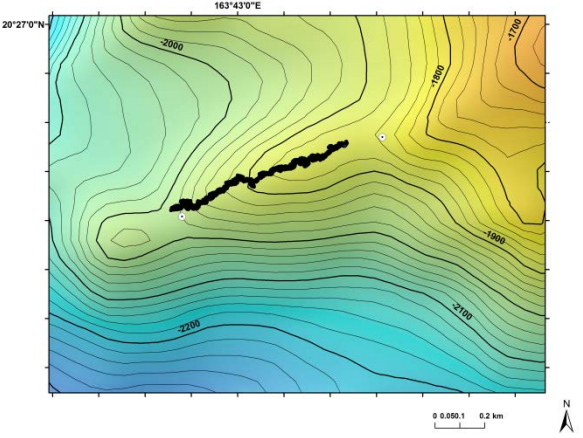
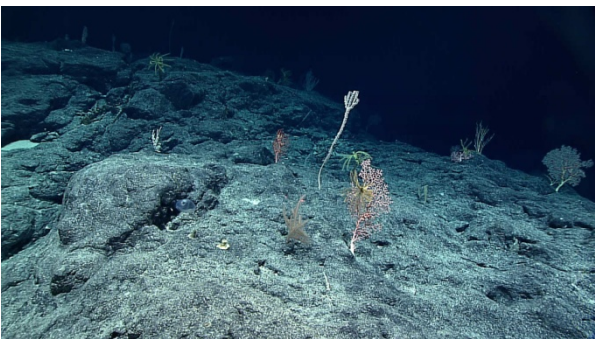
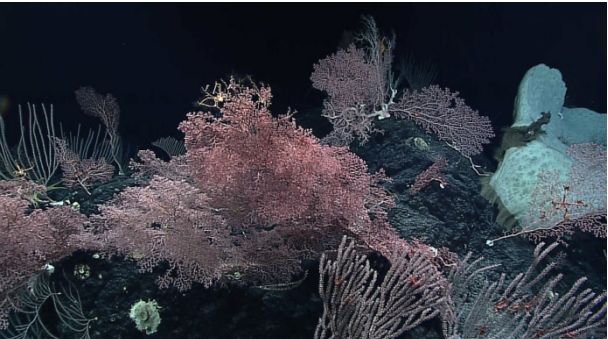


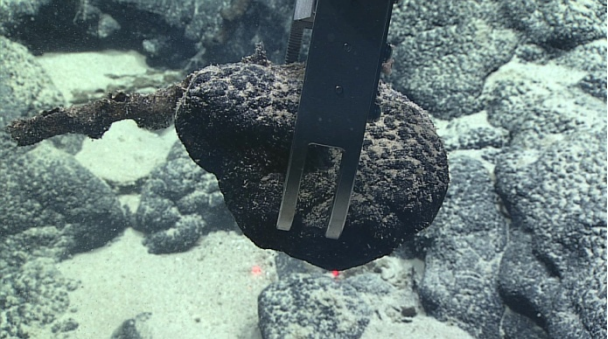


Okeanos Explorer ROV Dive Summary

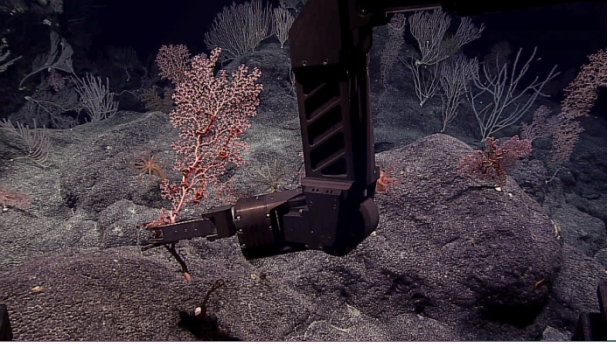
Dive Information	
Dive Map	
Site Name	Delilah Guyot (Seamount 3)
Expedition Coordinator(s)	Brian RC Kennedy
ROV Lead(s)	Dan Rogers
Science Team Lead(s)	Chris Kelley and Jasper Konter
General Area Descriptor	Wake Unit of the Pacific Remote Islands Marine National Monument
ROV Dive Name	
Cruise	EX-16-06
Leg	0
Dive Number	03

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Purpose of the Dive	<p>The purpose of the dive was to survey of the deepwater coral and sponge community on a ridge extending from Delilah guyot (Smoot, 1991) inside the northwestern part of the Wake Monument. The depth of the top of this seamount is similar to the adjacent seamounts, and fits with the expectation that it is approximately 100 Ma old (Cretaceous). The dive was planned to be entirely within the optimal depth range for the formation of Mn crusts (i.e., 1,000-2,500 m). Dense communities of deepwater corals and sponges have also been discovered at these depths and on this type of topography. The ridge was therefore expected to be Mn crusted and documenting the animals found at the site should increase our knowledge of the species that are potentially at risk from deep sea mining activities in the future. Documenting Mn crust communities is furthermore a major CAPSTONE priority. Another purpose of this dive was to provide data and samples for use in determining the geologic history of this seamount. The geology of the seamounts in this area of the Pacific is poorly understood.</p>		

<p>Description of the Dive</p>	<p>This southwest rift zone was similar in orientation and topography and Samson guyot where dive 2 took place. The ROV (D2) reached the bottom at about 21:33 UTC, at a depth of about 1990m. The seafloor during this dive was characterized with some steeper and more level sections that hosted mainly massively covered rock, and more sand-covered Mn-encrusted rock, respectively. The steeper sections appeared to consist of small knobs and hills seemingly built by pillow lavas (i.e. pillow mounds), subsequently covered in inch-scale Mn crust, as suggested by a few steeply-sided examples for which the sides appeared partly collapsed. Two geology samples were taken from the bottom of two of these mounds, one near the beginning of the dive, and one about $\frac{3}{4}$ of the way to the top. Particularly one of these looks like a pillow fragment, the other is too thickly encrusted to determine the material within the Mn.</p> <p>The animals at the landing site included a few primnoids (<i>Narella</i> sp), chrysogorgiids (<i>Chrysogorgia</i> sp), sponges (<i>Aspidoscopulia</i> sp), antipatharians (<i>Trissopathes</i> sp), as well as a polychelid lobster, crinoids, and a cusk eel (<i>Bassozetus</i> sp). As we moved upslope, the number of animals increased significantly and it became clear that the highest densities occurred on the edges of the ridge, particularly the northwestern edge. The favored substrate appeared to be the massively coated hills and boulders, likely because these locations optimize exposure to currents bringing food. Several of the boulders were very dense with life, including coralliids (<i>Hemicorallium</i> sp) primnoids, a few paramuriceids, paragorgiids, and acanthogorgiids, anemones, and mushroom corals (<i>Pseudanthomastus</i> and <i>Anthomastus</i> sp). Of particular interest was the observation of a beautiful blue shrimp that appeared to be in the <i>Aristeidae</i> family. The surrounding flatter substrate was not as densely populated however a few eels were recorded (<i>Synaphobranchus</i> sp), as well as seastars (<i>Calliaster</i> sp), long-legged shrimp (<i>Nematocarcinus</i> sp) and feather stars (<i>Glyptometra</i> sp). Further upslope, the coral and sponge community expanded with the presence of large bamboo fans (<i>Jasonisis</i> sp, <i>Keratoisis</i> sp), large primnoids (<i>Paracalyptrophora</i> sp) chrysogorgiids (branched <i>Iridogorgia</i> sp, <i>Calyptrophora</i> sp) and sponges (<i>Poliopogon</i> sp, <i>Lefroyella</i> sp, <i>Bolosominae</i>, <i>Farrea</i> sp). Amongst these animals were a few seastars (<i>Evoplosoma</i> sp), a few more fishes (myctophid?, <i>Ilyophis</i> sp?) and anemones. The two biological collections were a colony of <i>Hemicorallium</i> and a weird sponge that we called coined the “kebab sponge”.</p>
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Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
	
Map showing the dive plan start and end points	Map showing the actual dive track with start and end points.
Representative Photos of the Dive	
	
Modest density of corals and sponges near the landing site.	High density coral and sponge community found on hills and blocks toward the high point of the ridge.

Samples Collected		
Sample		
Sample ID	1606_DIVE03_SPEC01GEO	<p>[in situ image of specimen here]</p>  <p>cimen here]</p>
Date (UTC)	20160802	
Time (UTC)	22:28:41	
Depth (m)	1976.855	
Temperature (°C)	2.11927	
Field ID(s)	mn encrusted rock	
Comments		
Sample		
Sample ID	1606_DIVE03_SPEC02BIO	<p>[</p>  <p>in situ image of specimen here]</p>
Date (UTC)	20160803	
Time (UTC)	0:05:13	
Depth (m)	1890.5744	
Temperature (°C)	2.08363	
Field ID(s)	Kebab sponge	
Comments		
Sample		
Sample ID	1606_DIVE03_SPEC03GEO	
Date (UTC)	20160803	
Time (UTC)	1:25:36	
Depth (m)	1857.2514	
Temperature (°C)	2.14459	
Field ID(s)	Mn crusted rock	
Comments	One commensal glass sponge and one baby stalked crinoid.	
Sample		

Sample ID	1606_DIVE03_SPEC04BIO	
Date (UTC)	20160803	
Time (UTC)	3:01:51	
Depth (m)	1846.7753	
Temperature (°C)	2.24615	
Field ID(s)	Hemicorallium sp	
Comments	Two commensals, both ophiuroids in the family Astroschematidae.	

Please direct inquiries to:

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