

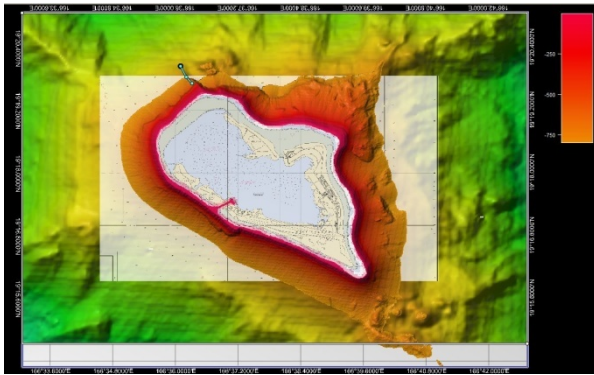


Okeanos Explorer ROV Dive Summary

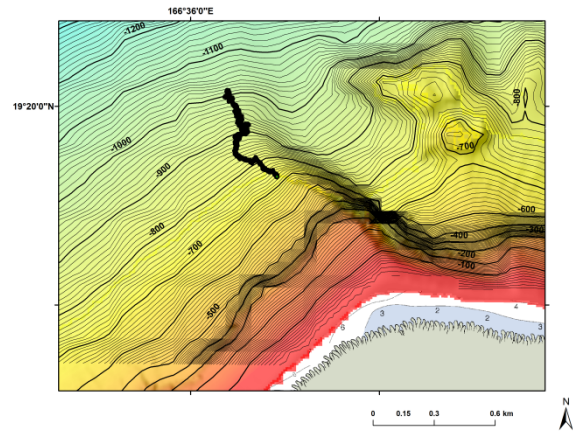
Dive Information	
Dive Map	
Site Name	North side of Wake Island (#7)
Expedition Coordinator(s)	Brian RC Kennedy
ROV Lead(s)	Dan Rogers
Science Team Lead(s)	Chris Kelley and Jasper Konter
General Area Descriptor	Wake Atoll unit of the PRIMNM
ROV Dive Name	
Cruise	EX-16-06
Leg	0
Dive Number	08

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Purpose of the Dive	<p>This was the first of two shallower dives targeting the precious coral resources and fishes around Wake Island. Nothing is known about the present of commercially valuable species of coralliids, isidids, antipatharians, and parazoanthids, nor even about the deeper fish species inhabiting the island slope. While no species in any of the coral families are known to have been harvested off Wake Island, precious corals are a fishery across the Pacific under the responsibility of NOAA Fisheries and therefore additional information on their distribution and abundance in any of the US EEZs is valuable for improving their management. These data are also important to the Deep Sea Coral Research and Technology Program. The objective of this dive is therefore to survey for corals, particularly precious corals, off Wake Island with the secondary objective of documenting the deeper fish community on the slopes. Our initial intent was to begin at a depth of 600 m and transect up from there as shallow as possible, potentially up to 250 m. However, the slope is so steep in that depth range that survey those depths would have put the ship too close to the reef. We therefore modified the plan to begin at just over 1,000 m and transect up to between 500-600 m.</p>		

<p>Description of the Dive</p>	<p>The vehicles arrived at the seafloor at 22:26UTC, at a depth of 1020m. The dive location was selected to optimize shallow water observation of fish and corals, and the northern side of the atoll accommodated this with some of the shallowest depths while maintaining a safe distance from the fringing reef. Wake Island (atoll) is the only geologic structure within the Wake unit of the Pacific Remote Islands Monument that reaches sea level (thus enabling this type of dive), and as expected the bottom at this short distance from the atoll consisted of mainly reef debris. Overall the bottom was characterized with three types of materials: loose sand, cobbles and boulders, and large rocky formations consisting of layers of reef debris. The initial landing site was located on a scree (talus) slope of mainly sand (shell and coral fragments, including pecten shells, a giant clam and various dead hard corals (Scleractinia), with occasional carbonate cobbles and boulders. As the vehicles moved upslope, it became clear that the sandy surface is defined by downward sediment transport, in both sandier and rockier down slope “streams”. The ridge structure observed in multibeam bathymetry was actually the edge of a rocky outcrop of layers made from cemented shell and coral fragments (large fragments, grain-supported limestone). Close to the second waypoint (near 900m), the gradient increased as we entered more of the rocky, layered terrain. The layered sediment (limestone) was yellow-ish near contacts with the surrounding sand, but covered in a very thin layer of black coating (presumably Mn) further from any contact. The layers had a very uneven appearance due to the large shell and coral fragments, and near the end of the dive potentially also due to carbonate dissolution (while at the surface presumably; karst). The final depth on the seafloor was approximately 745m, well short of the intended final way point.</p> <p>During this dive, the most commonly observed animals were a variety of fish and shrimp (Nematocarcinus sp, Heterocarpus sp, and Glypphocarangon sp.) Particularly on the sandy and rubble slopes, we focused on fishes including a number of eels (Bathyuroconger sp and 2 species of Bathyconger), eel-like fishes (Aldrovandria sp, Pyramodon sp, various macrourids, ophidiids, and suspected bythiids), codlings (Laemonema robustum? and possibly Luciobrotula sp), a lophiid (Sladenia sp), a shark (Odontaspis ferox), a ray (Plesiobatis daviesi), an oil fish (Ruvettus pretiosus), and a possible Scopelarchus sp. The sandy terrain also hosted a number of sea cucumbers, while anemones were found on a number of the cobbles and boulders. Other observations included a feather star and ctenophore. On the more massive layered carbonate we observed a small number of sponges, and several types of corals (primnoids, plexaurids, and acanthogorgiids). A coral (Narella sp.) was sampled just prior to leaving the sea floor (745m).</p>
<p>Overall Map of the ROV Dive Area</p>	<p>Close-up Map of Main Dive Site</p>

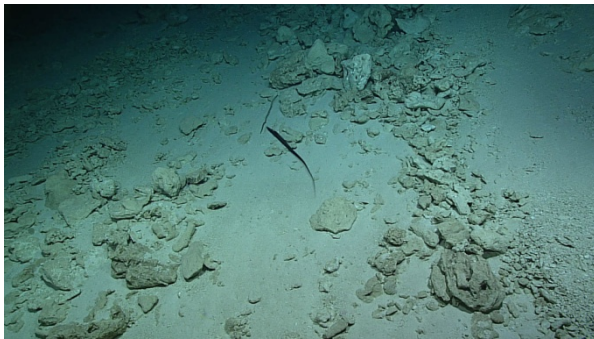


Overview map of the dive site.

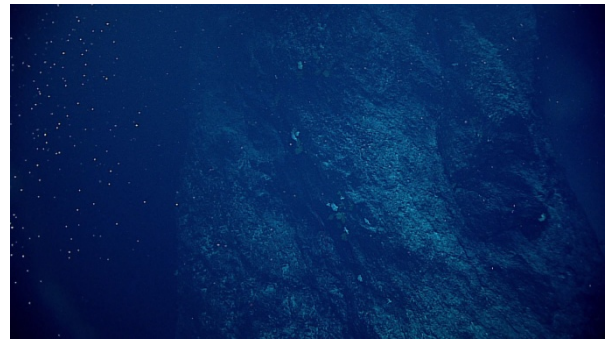


Map of the dive site showing the actual track.

Representative Photos of the Dive



Carbonate rubble and sediment seafloor with a halosaur, a common member of the community at this site.

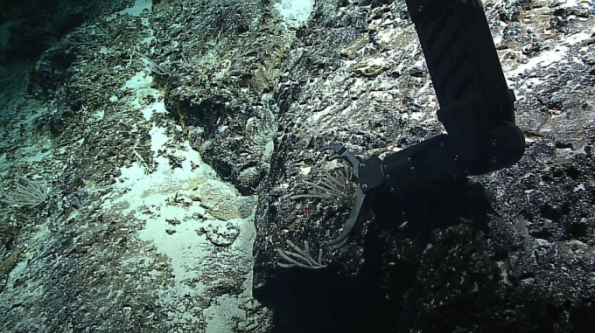


Peeking over the edge of a near vertical escarpment on the NE side of the dive site.

Samples Collected

Sample

Sample ID	D2_DIVE08_SPEC01BIO
Date (UTC)	20160810
Time (UTC)	3:35:39
Depth (m)	745.1436
Temperature (°C)	5.28338

Field ID(s)	Narella sp.	
Comments		

Please direct inquiries to:

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