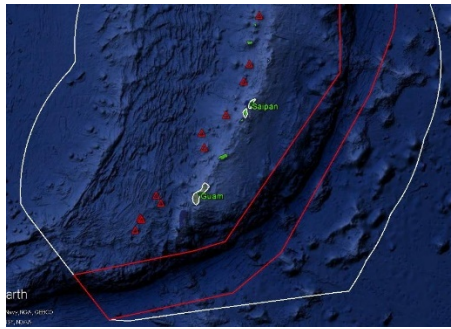


OKEANOS EXPLORER ROV DIVE SUMMARY

Site Name	Santa Rosa North			
ROV Lead/Expedition Coordinator	Jim Newman / Kelley Elliott			
Science Team Leads	Deborah Glickson & Diva Amon			
General Area Descriptor	Southern Marianas			
ROV Dive Name	Cruise Season	Leg	Dive Number	
	EX1605	1	DIVE 01	
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	Lost power after the 2 nd rock sample. This was due to the high current - thrusters were running at almost 100% to keep on station, and the use of the manipulator arm caused the vehicle to lose power.			
ROV Dive Summary (From processed ROV data)	<p>Dive Summary: EX1605L1_DIVE01</p> <p>~~~~~</p> <p>In Water: 2016-04-20T20:43:53.460000 12°, 51.617' N ; 144°, 18.089' E</p> <p>Out Water: 2016-04-21T04:40:27.333000 12°, 51.315' N ; 144°, 18.386' E</p> <p>Off Bottom: 2016-04-21T04:26:00.467000 12°, 51.291' N ; 144°, 18.384' E</p> <p>On Bottom: 2016-04-20T21:46:16.354000 12°, 51.631' N ; 144°, 18.247' E</p> <p>Dive duration: 7:56:33</p> <p>Bottom Time: 6:39:44</p> <p>Max. depth: 634.2 m</p>			
Special Notes				
Scientists Involved (please provide name / location / affiliation / email)	<p>Amy Baco Taylor, FSU; abacotaylor@fsu.edu David Burdick, U Guam; burdickdr@hotmail.com Scott France, UL Lafayette; france@louisiana.edu Mackenzie Gerring, UH; mgerring@hawaii.edu Tara Harmer Luke, Stockton University; Tara.Luke@stockton.edu Santiago Herrera, WHOI; sherrera@alum.mit.edu Chris Kelley, UH; ckelley@hawaii.edu Chris Mah, Smithsonian; brisinga@gmail.com Asako Matsumoto, Chiba Institute of Technology; amatsu@gorgonian.jp</p>			

Michael McCue, UnderwaterWorld Guam; mmccue@aquariumteam.com
 Tina Molodtsova, Shirshov Institute of Oceanology; tina@ocean.ru
 Bruce Mundy, NOAA PIFSC; bruce.mundy@noaa.gov
 Andrea Quattrini, Harvey Mudd College; aquattrini@g.hmc.edu
 Sonia Rowley, UH; srowley@hawaii.edu

Purpose of the Dive

This dive was on a pinnacle feature located on Santa Rosa Reef south of Guam where it explored for high-density communities of deep-sea corals, in this case precious corals that are under the management of NOAA Fisheries. While the precious coral fishery is listed as a managed fishery in Guam and CNMI, no precious coral beds have been identified to date and only anecdotal accounts have been published of their presence in this region of the Pacific. This dive also surveyed bottom-fish fishery habitat, which had not been previously characterized in Guam/CNMI. The purpose was to determine if there was a depth and site overlap between the two fisheries.

Description of the Dive:

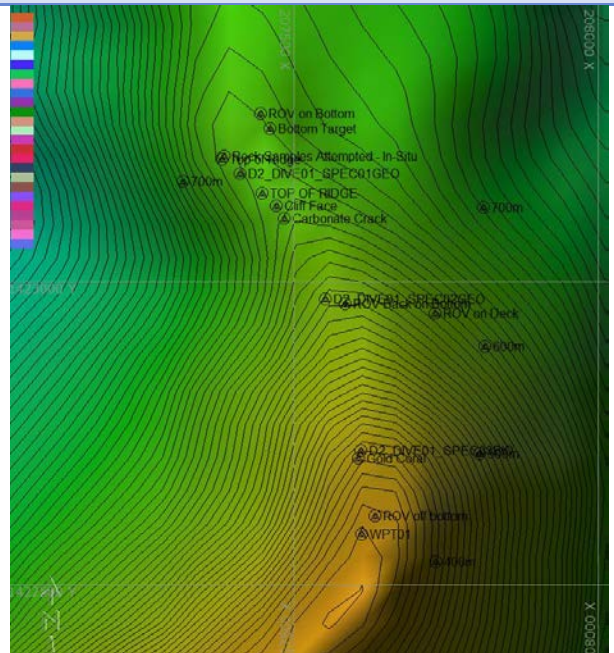
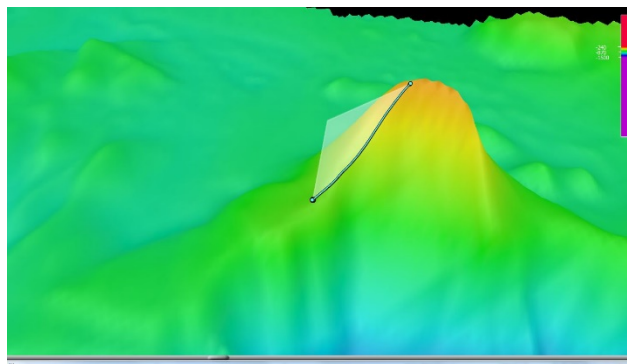
The dive began at ~640 m at the base of the pinnacle feature where the ROV then moved southeast up the pinnacle ridge for ~700 m to a final target depth of ~330 m at the top of the pinnacle.

The dive began in an area of volcanic rocks, most of which were lightly sedimented. The structures were not particularly well-defined, looking mostly like small broken pillow flows. We also noted intact pillow lava and collected a volcanic rock sample (D2_DIVE01_SPEC01GEO). This area was also typified by very few fauna; sparse *Acanella* coral, Charitometridae crinoids and the commercially-valuable shrimp, *Heterocarpus* sp. The few fauna may have been as a result of the very strong currents in the area (3 knots).

At about 545m depth, the volcanics (probably basalts) became co-mingled with a thick, fissured carbonate crust, which then transitioned entirely to a carbonate ridge. The ridge was highly fractured and fissured, and in some instances appeared to be uplifted and/or rotated at a high angle. These eventually turned into an eroded, hummocky carbonate platform. A carbonate rock was collected in this area (D2_DIVE01_SPEC02GEO). Fauna also increased in this area, specifically octocorals, scleractinians and echinoids, giving way to a high-density community. Gold coral *Kulamanamana* (commercial coral species) were observed overgrowing *Acanella* colonies. Some *Hemicorallium* specimens (another commercial species) were also observed. An unknown chrysogorgid was collected (D2_DIVE01_SPEC03BIO), which had two commensal chirostyliid squat lobsters (D2_DIVE01_SPEC03BIOC01 and D2_DIVE01_SPEC03BIOC02). During sampling of a *Hemicorallium* (which was too fragile to collect), a sixgill shark was observed. Currents were significantly less in this carbonate area.

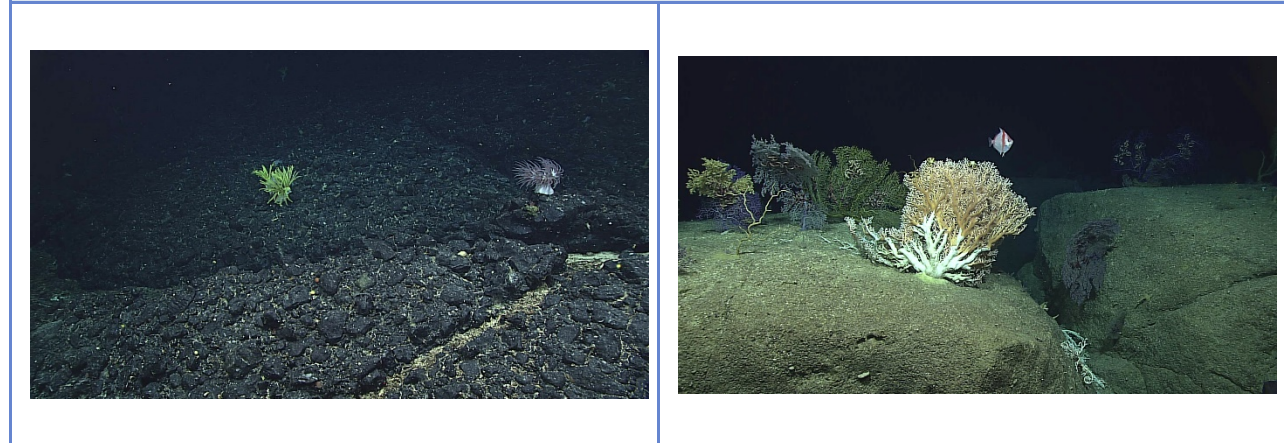
During this dive, there were also three commercial fish species observed: 1 *Eumegistus illustris* (monchong) individual, several *Beryx splendens* (alfonsino) and 2-3 individuals of *Hoplostethus* (roughy).

Map of ROV Dive Area




Fledermaus map of planned dive EX1605L1-DIVE01 track.	Hypack screengrab of actual dive EX1605L1-DIVE01 track.
---	---


Representative Photos of the Dive




Volcanic geology at the area in the beginning of the dive. There was also sparse biology in this area.	Carbonate geology was observed during the second half of the dive. This area was also characterized by a high density community that included many corals.
--	--

Samples Collected

Sample ID	D2_DIVE01_SPEC01GEO	
Date (UTC)	20160420	
Time (UTC)	23:08:24	
Depth (m)	596.0811	
Temperature (°C)	5.773	
Field ID(s)	Volcanic Rock	
Comments	No commensals.	

Sample ID	D2_DIVE01_SPEC02GEO	
Date (UTC)	20160421	
Time (UTC)	0:30:32	
Depth (m)	544.6907	
Temperature (°C)	5.761	
Field ID(s)	Carbonate Rock	

Comments	Three commensals: all ophiuroids (all preserved and labeled individually).
-----------------	--

Sample ID	D2_DIVE01_SPEC03BIO	
Date (UTC)	20160421	
Time (UTC)	3:07:35	
Depth (m)	354.8415	
Temperature (°C)	9.033	
Field ID(s)	Chrysogorgiid Octocoral	
Comments	Two commensals: both chirostyliid squat lobsters (preserved and labeled together).	
Please direct inquiries to:	NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10 th Floor) Silver Spring, MD 20910 (301) 734-1014	