



# Okeanos Explorer ROV Dive Summary

Dive Information	
Dive Map	
<b>Site Name</b>	Swains Atoll
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<b>ROV Lead(s)</b>	Karl McLetchie
<b>Science Team Lead(s)</b>	Amanda Demopoulos and Steven Auscavitch
<b>General Area Descriptor</b>	National Marine Sanctuary of American Samoa Swains Atoll unit
<b>ROV Dive Name</b>	
<b>Cruise</b>	EX-17-03

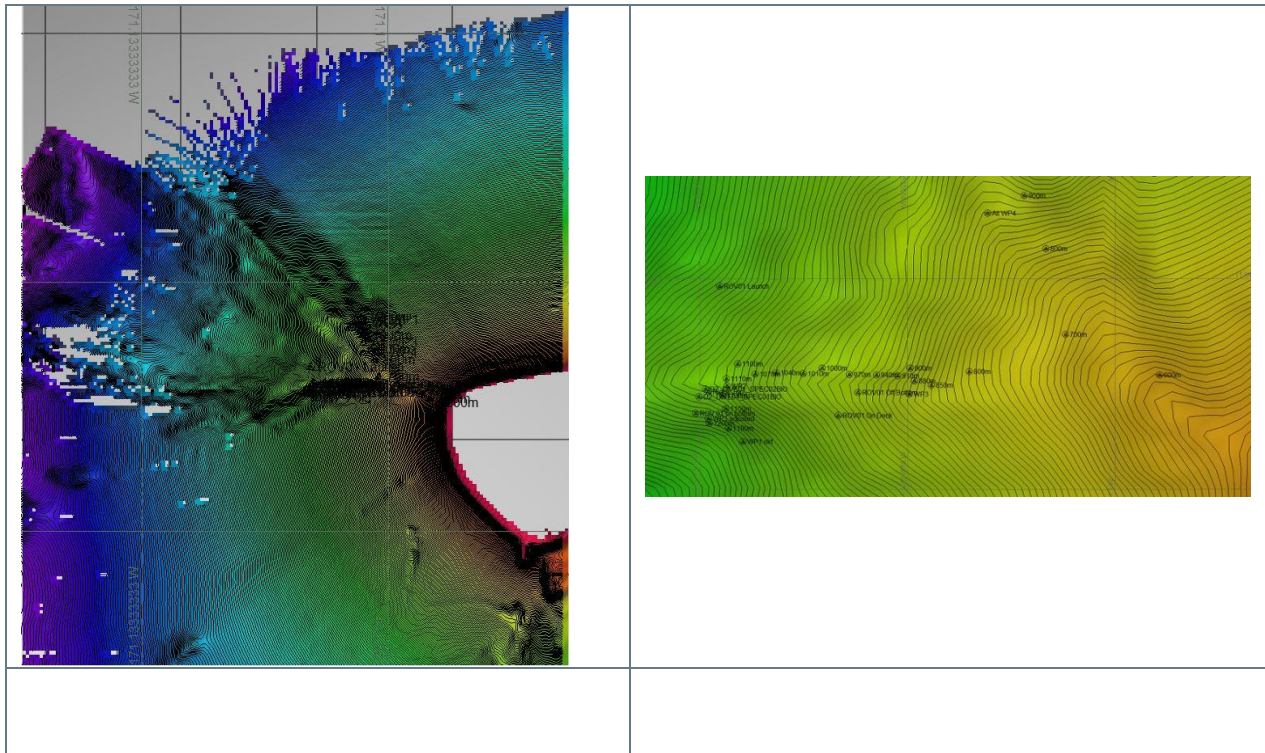


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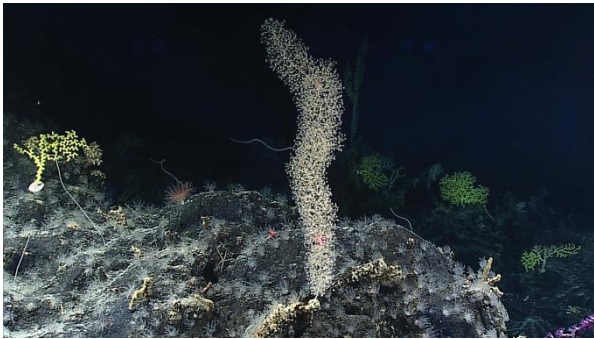
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<b>Purpose of the Dive</b>	The goal of this dive is to acquire baseline information on deep sea habitats, seafloor geology, and biological communities at the Swains Island region of the National Marine Sanctuary of American Samoa. Geological interests include sampling basalt rocks for dating the age of this feature.			
<b>Description of the Dive</b>	<p>The first dive of EX1703 was off Swains Island, within American Samoa Unit, National Marine Sanctuary. The dive started at 1143m along a steep slope. Extensive pillow basalt outcrops and fragments were observed throughout the dive. However, rocks were cemented to the seafloor, making them impossible to collect. The dominant substrate was coated in manganese iron oxide and interspersed with patches of thin sediment drape. The complex rock substrate was populated with several scleractinians, including <i>Enallopsammia</i> spp. (at least two species), cup corals, as well as octocorals: <i>Victorgorgia cf. nuttingi</i>, plexaurids, acanthogorgiids, <i>Chrysogorgia</i> sp. (some with egg masses), and isidid (unbranched whip split into 2 bases), and antipatharians: whips, e.g., <i>Stichopathes</i> sp. Much of the rock surfaces were covered with anemones or possibly corallimorphs. Fishes encountered on the steep slope included alepocephalids (slick head), halosaurs, and ophiidiids. Shrimp (<i>Heterocarpus</i>, <i>Nematocarcinus</i>), polychelid (blind lobster), paguroids (hermit the crab), as well as a few Deimatidae holothurians were observed on the rock surface or sediment patches. There were several hexactinellid sponges throughout the dive, including Rossellidae, possibly <i>Poliopogon</i>, and <i>Tretopleura</i> sp. We also observed and collected an <i>Aspidoscopulia</i> sp., which represented a new record for this region. Coral associates included chirostylid crabs and ophiuroids. There was quite a bit of dead manganese-coated scleractinian debris in sediment patches interspersed within the rock outcrops. At 1114m, we encountered a large boulder field that was covered in multiple species of corals, a notable transition from patchy to high-density cover. Prior to the transition from the slope transect to the ridge track, we observed a long, skinny squid (<i>Chiroteuthis</i> sp., either <i>C. picteti</i> or <i>C. spoeli</i>) with</p>			

	<p>long tentacles and large eyes, swimming in the water column. Starting at ~1100 m, our dive track transitioned to the ridge transect. While the ridge initially appeared to have a gradual slope, it was punctuated by large mounds of pillow lava and boulders, often covered with abundant encrusting fauna. We saw several fishes that were not observed along the slope, including an anglerfish (<i>Sladenia</i> sp.), conger eels, oilfish (<i>Ruvettus pretiosus</i>), rattails (macrourids), black scorpion fish (Scorpaenidae), cusk eels (synphobranchids), and bristlemouths (gonostomatids). New coral observations included the black coral, <i>Parantipathes?</i>, stoloniferans sp. (cf. <i>Clavularia</i> and a white morph), <i>Madrepora</i> sp., and <i>Anthomastus</i> sp. We saw a very large (&gt;1m tall) black coral (<i>Antipathes?</i>), with hermit crab associates and encrusting zoanthiids. Additional fauna encountered along the ridge included the hexactinellid sponge, <i>Bolosoma</i>, sea urchins (<i>Sperosoma</i> sp.?), and at least one swimming polychaete. We only observed Asteroid seastars along the slope, including the cookie star (<i>Ceramaster</i>), <i>Asthenactis</i>, and a brisingid, all perched on the side of rock faces. One notable “associate” was a homolid-type crab found on several corals and on the rocks, often holding a hydroid or black coral with its back legs, potentially serving as camouflage. Throughout the dive, we saw several <i>Enallopsammia</i> sp. that were similar sizes, suggesting a single recruitment event, possibly following disturbance.</p> <p>Based on feedback from the shore-side scientists, this dive had apparently higher diversity and abundance of corals and other taxa compared to other dives conducted in the region. However, the depth range was not covered by these previous dives, so follow up surveys at similar depths will improve our understanding of the relationship between depth and the distribution and connectivity of fauna within the region.</p>
Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site





**Representative Photos of the Dive**



Example of the high-density community documented near Swains Island


we observed a long, skinny squid (*Chiroteuthis* sp., either *C. picteti* or *C. spoeli*) with long tentacles and large eyes, swimming in the water column

**Samples Collected**

**Sample**

<b>Sample ID</b>	EX1703_20170307T205042_D2_DIVE01_SPEC01BIO
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<b>Date (UTC)</b>	20170307	
<b>Time (UTC)</b>	20:50:42	
<b>Depth (m)</b>	1111.81	
<b>Temperature ( °C)</b>	4.13148	
<b>Field ID(s)</b>	Hexactinellid Sponge	
<b>Comments</b>	(Poss. Farreidae)	
<b>Sample</b>		
<b>Sample ID</b>	EX1703_20170307T214200_D2_DIVE01_SPEC02BIO	
<b>Date (UTC)</b>	20170307	
<b>Time (UTC)</b>	21:42:00	
<b>Depth (m)</b>	1100.645	
<b>Temperature ( °C)</b>	4.15573	
<b>Field ID(s)</b>	Acanthogorgiidae	
<b>Comments</b>		

**Please direct inquiries to:**

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