



Okeanos Explorer ROV Dive Summary

Dive Information	
General Location	
General Area Descriptor	North Carolina Canyons
Site Name	South of Pamlico Canyon
Science Team Leads	Leslie Sautter / Cheryl Morrison
Expedition Coordinator	Kasey Cantwell
ROV Dive Supervisor	Bobby Mohr
Mapping Lead	Derek Sowers
ROV Dive Name	
Cruise	EX1806
Leg	-
Dive Number	DIVE11
Equipment Deployed	

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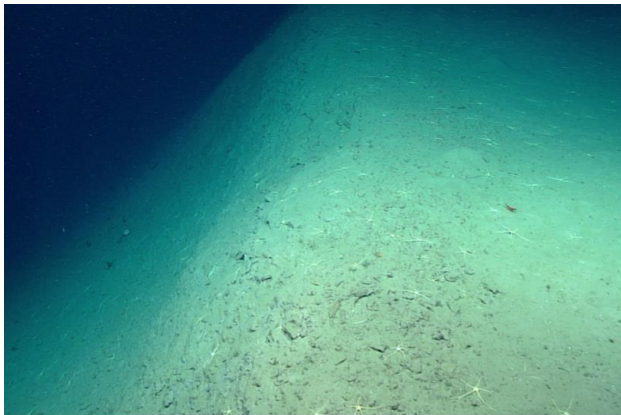
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Purpose of the Dive	<p>This dive is part of a series that investigates the similarities and differences in community composition between deepwater habitats of the SE US continental margin. Submarine canyon sites in the past have been shown to be deep sea coral habitats, particularly in areas of rock/hard-bottom exposure. This site was proposed by Deep Search to represent canyon features that have yet to be explored in detail. The autonomous vehicle <i>Sentry</i> has surveyed a handful of locations in the canyons off North Carolina, however visual information about the presence and ID of corals and other benthic fauna have not been possible. An ROV/HOV is required to visually examine these rugged, high profile features.</p> <p>This region was first mapped during a MPA cruise aboard the NOAA Ship <i>Nancy Foster</i> in 2007 (NF-07-02) and new information will inform biogeographic patterns in the region. Diving in the area will provide important information to groundtruth these models.</p>			
Description of the Dive	<p>Substrate throughout the dive was calcareous mud that appeared slightly cohesive just below the surface. No hard-bottom/rock substrate was encountered. At nearly every point, brittle stars (possibly <i>Ophiomusa</i>) dominated the scene, broadly distributed on the sediment surface. Numerous deep burrows were observed, as well as conical mounds, although the organisms that made these features is unknown.</p> <p>Sea pens (Pennatulacea) were the dominant cnidarians observed. A small, red species, possibly <i>Distichoptilum gracile</i>, was the most common early in the dive.</p>			

Representative Photos of the Dive



Cutthroat eels (*Synaphobranchus*, possibly *brevidorsalis*) were common, and brittle stars (possibly *Ophiomusa*) were very abundant throughout the dive. Many sediment mounds (top center of image) were observed.

Several small pieces of cemented coral rubble were seen, covered with biota not found on the sediment substrate.

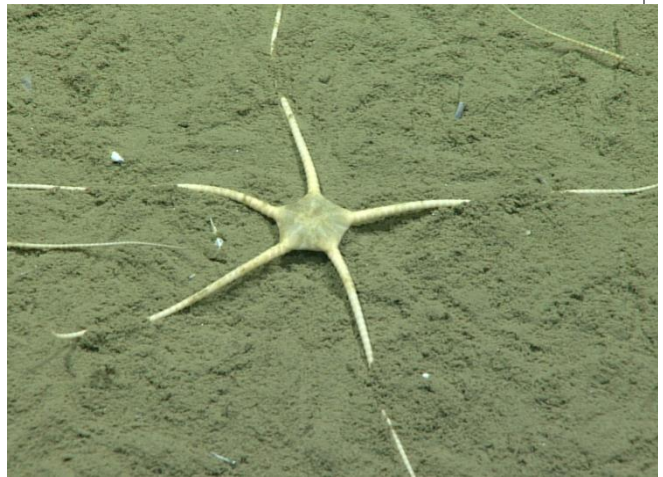


The current facing wall (left) of the intra-canyon ridge was steep, but cohesive mud sediments remained intact.

This Lithodid crab is shown on the brittle star-strewn mud-bottom seafloor that was seen throughout the dive.



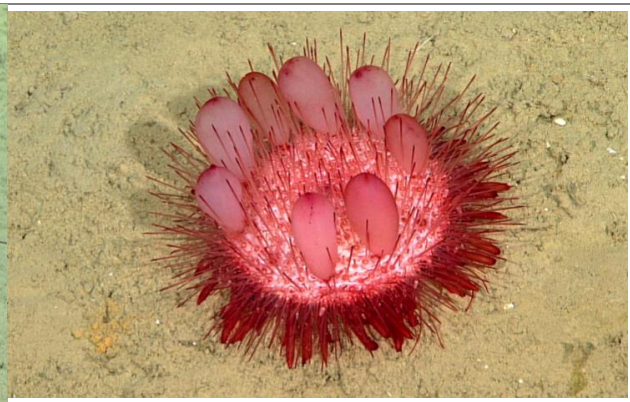
Sea pens were quite common (possible *Protoptilum* sp.)



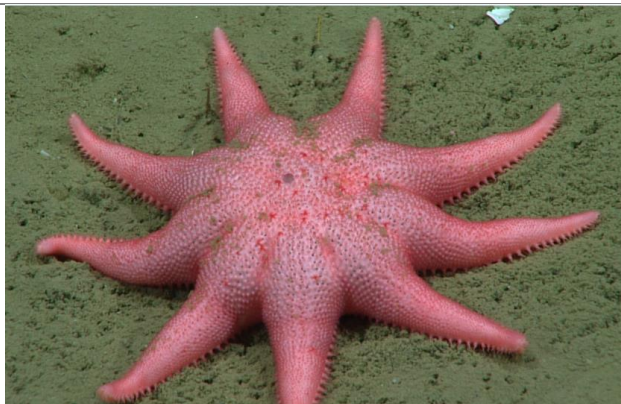
One species of brittle star (possible *Ophiomusa*) dominated the sediment substrate.



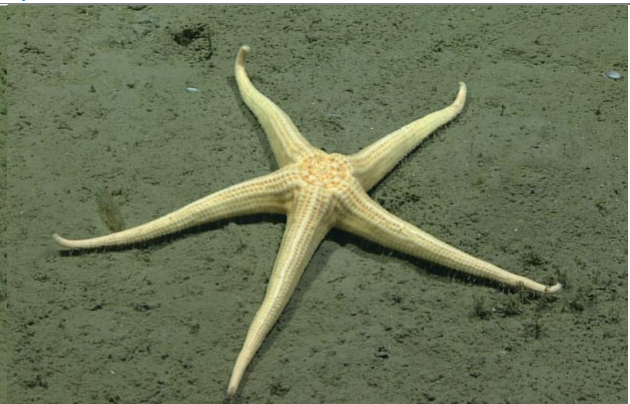
A pancake urchin (*Hygrosoma* sp.) showing lower spines with expanded hoof-like tips.



Another pancake urchin, *Phormosoma placenta*, with its hypodermic needle-like spines.



Solaster sp.



Neomorphaster sp.



A tiny octopus (*Graneledone sp.*) checked out a brittle star.



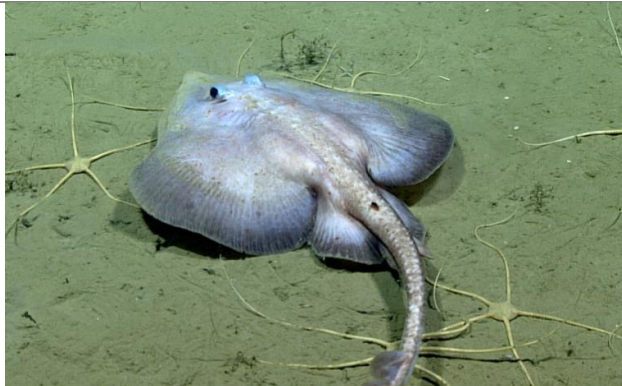
A bobtail squid (*Rossia sp.*), classified in the order Sepiida (the cuttlefish).



Several eelpout (*Lycodes terraenovae*) were seen.



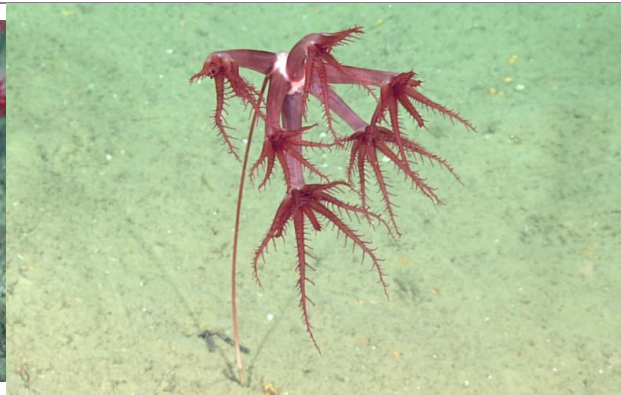
The deepsea lizardfish, *Bathysaurus ferox*



A skate, possibly *Rajella cf. purpuriventralis*, was observed on soft sediment.



Several tripod fish (*Bathypterois phenax*) were observed on soft sediment.



This Lithodid crab was observed eating a brittle star (in graphic detail).

A stalked sea pen (*Umbellula*)

Samples Collected

Sample

Sample ID	D2_DIVE11_SPEC01BIO		
Date (UTC)	20180625		
Time (UTC)	190025		
Depth (m)	1518.99		
Temperature (°C)	4.01		
Field ID(s)	Pennatulacea		
Reason for Collection	<i>Site characterization</i>		
Notes			
Associates	Associate ID	Field Identification	Notes
	None		

Sample

Sample ID	D2_DIVE11_SPEC02BIO	
Date (UTC)	20180625	
Time (UTC)	190512	
Depth (m)	1519.0	
Temperature (°C)	4.01	

Field ID(s)	Ophiuroidea		
Reason for Collection	<i>Primary organism for dive, and characterization of substrate.</i>		
Notes			
Associates	Associate ID	Field Identification	Notes
	A01	sediment	calcareous ooze

Niskin Sampling Summary - No water samples were collected today.

Please direct inquiries to:

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