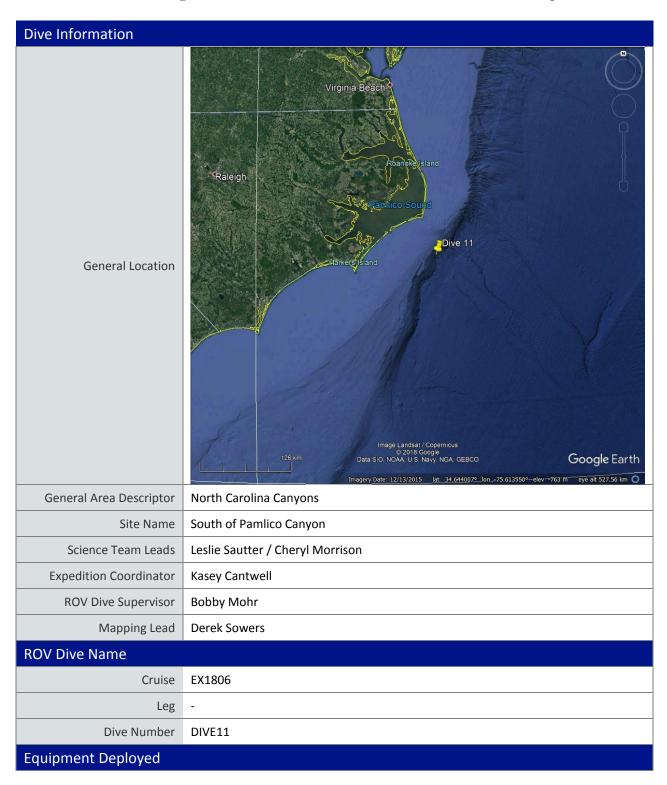


# Okeanos Explorer ROV Dive Summary



ROV	Deep Di	scovere	r			
Camera Platform	Seirios					
	⊠CTD			⊠Depth	⊠Altitude	
	⊠Scann	ing Sona	ır	⊠USBL Position	⊠Heading	
ROV Measurements	⊠Pitch			⊠Roll	⊠HD Camera 1	
	⊠HD Ca	mera 2		⊠Low Res Cam 1	⊠Low Res Cam 2	
	⊠Low Res Cam 3			⊠Low Res Cam 4	⊠Low Res Cam 5	
Equipment Malfunctions						
	00000		-	: EX1806_DIVE11		
	In Wate			2018-06-25T12:27:56.707918 34°, 46.406' N ; 75°, 20.8' W		
	On Bottom:			2018-06-25T13:33:42.505136 34°, 46.496' N ; 75°, 20.498' W		
ROV Dive Summary	Off Bottom:			2018-06-25T19:36:24.778710 34°, 46.71' N ; 75°, 20.964' W		
(from processed ROV data)	Out Water:			2018-06-25T20:33:07.99 34°, 46.691' N; 75°, 20.9		
	Dive duration:			8:5:11		
	Bottom Time:			6:2:42		
	Max. depth:			1716.0 m		
Special Notes						
	Name	Institu tion	email			
Scientists Involved (please provide name, location, affiliation, email)	Alexis		tug080 93@te			
	Aman da Demo poulos	USGS	ademo poulos @usgs .gov			



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Purpose of the Dive	commun margin. habitats, propose explored locations presence	nity com Subman , particu d by De d in deta s in the e and ID	iposition rine cany ularly in a ep Searc ail. The a canyons of coral	between deepwater habitats of the SE US continental you sites in the past have been shown to be deep sea coral areas of rock/hard-bottom exposure. This site was h to represent canyon features that have yet to be utonomous vehicle Sentry has surveyed a handful of off North Carolina, however visual information about the s and other benthic fauna have not been possible. An visually examine these rugged, high profile features.		
	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 pattern in the region. Diving in the area will provide important information to groundtrut these models.					
Description of the Dive	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.  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.					



Other sea pens observed included Halipterus finmarchica, Umbellula, Anthoptilum grandiflorum (with curled rachis), possibly Protoptilum and a Kophobelemnon. Other cnidarians observed included *Pseudoanthomastus*, anemones, cerianthid tube anemones, and an unknown cup coral attached to coral rubble. Besides the common brittle stars, a type of basket star, Asteronyx, was observed on a sea pen. Other echinoderms included the pancake urchins (Order Echinothurioida) Hygrosoma species, with spines on the oral side expanded into 'booties' to help them walk on soft sediment, plus *Phormosoma placenta* with inflated bags on the oral surface. The latter species was observed with a small cusk eel close to it's spines near the sediment surface, an association that has been noted in the literature. Asteroid sea stars included a Solaster sp. and several Neommorphaster sp. Crustaceans included a red shrimp, mysids or lophogastrids in the water column, a hermit crab (Paguroidea) with an anemone on its back, and a large lithodid crab that consumed a brittle star. A pycnogonid sea spider was observed with its proboscis extended, possibly eating an anemone or retracted sea pen. Mollusks included a Graneledone octopus, a Rossia bobtail squid, and a gastropod (possibly a Turrid). Cutthroat eels (Synaphobranchus, possibly brevidorsalis) were seen often, along with several tripod fish, Bathypterois phenax, eelpouts (Zoarcidae: Lycodes terraenovae), a halosaur or deep-sea lizardfish Haolsauropsis macrochir, a close relative of the blobfish (Cottunculus thomsonii), rattails (Nezumia bairdii), and a skate, possibly Rajella cf. purpuriventralis. Notable observations A Lithodid crab was observed eating a brittle star (in graphic detail). Community Presence/ X Corals and Sponges Present ☐ Active Seep or Vent Absence (community is ☐ Chemosynthetic Community Present ☐ Extinct Seep or Vent defined as more than two  $\square$  High biodiversity Community Present ☐ Hydrates Present species) Overall Map of the ROV Dive Area Close-up Map of Main Dive Site

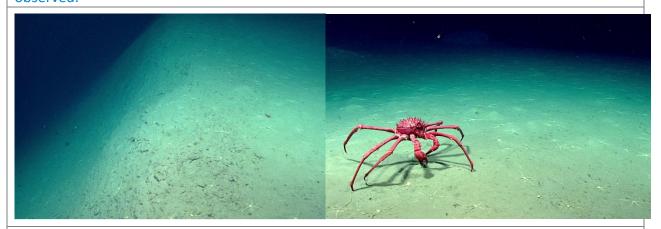


#### Representative Photos of the Dive

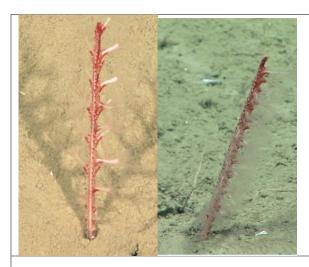


Cutthroat eels (*Synaphobranchus*, possibly *brevidorsalis*) were common, and brittle stars (possibly *Ophiomusa*) were very abundant throughout the dive. Many sediment mounds (top center of image) were observed.

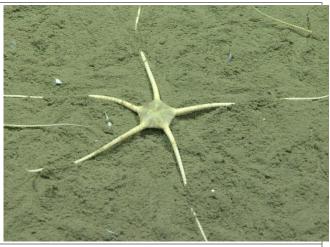
Several small pieces of cemented coral rubble were seen, covered with biota not found on the sediment substrate.



The current facing wall (left) of the intracanyon ridge was steep, but cohesive mud sediments remained intact. This Lithodid crab is shown on the brittle starstrewn mud-bottom seafloor that was seen throughout the dive.



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



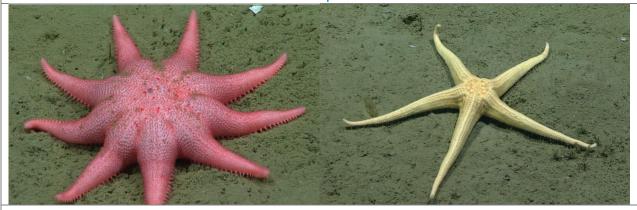
One species of brittle star (possible *Ophiomusa*) dominated the sediment substrate.



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

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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

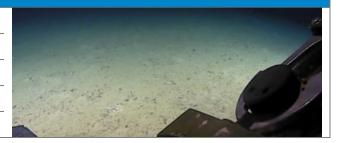
Site characterization

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	Primary organism for dive, and characterization of substrate.				
Notes					
Associates	Associate ID	Field Identification	Notes		
	A01	sediment	calcareous ooze		

Niskin Sampling Summary - No water samples were collected today.

## Please direct inquiries to:

NOAA Office of Ocean Exploration & Research 1315 East-West Highway (SSMC3 10th Floor) Silver Spring, MD 20910 (301) 734-1014

