



Okeanos Explorer ROV Dive Summary

Dive Information	
General Location	
General Area Descriptor	Offshore North Carolina
Site Name	"Big Dipper" Anomaly / Wreckless Scarp
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	DIVE13
Equipment Deployed	

	Zoology, NMNH Smithsonian	
Daniel Warren	P&C Scientific, LLC	daniel.warren@pandscien tific.com
Deborah Glickson	NASEM	dglickson@nas.edu
Derek Sowers	OER	derek.sowers@noaa.gov
Doug Jones	BOEM	douglas.jones@boem.gov
Elizabeth Fraser	DCEL	egugliotti@css-inc.com
Elizabeth Gugliotti	College of Charleston	gugliottief@g.cofc.edu
Ervan Garrison	University of Georgia	egarriso@uga.edu
Frank Cantelas	NOAA/OER	frank.cantelas@noaa.gov
Gary Fabian	Retired Archaeologist	
Hans Van Tilburg	NOAA ONMS	hans.vantilburg@noaa.gov
Heather Judkins	University of South Florida St. Petersburg	Judkins@mail.usf.edu
Irina Sorset	Bureau of Safety and Environmental Enforcement (BSEE)	irina.sorset@bsee.gov
Íris Sampaio	University of the Azores and Senckenberg am Meer, Germany	irisfs@gmail.com
Jack Irion	BOEM	jack.irion@boem.gov
James Delgado	SEARCH, Inc.	james.delgado@searchinc.c om
Jason Chaytor	USGS	jchaytor@usgs.gov
Jenna Hill	U.S. Geological Survey	jhill@usgs.gov
Jill Bourque	US Geological Survey	jbouque@usgs.gov
Jim Masterson	FAU Harbor Branch Oceanographic ECC	jmaste7@fau.edu
Joe Hoyt	NOAA MNMS	joseph.hoyt@noaa.gov
John Reed	Harbor Branch Oceanographic Institute	jreed12@fau.edu
Kate Rose	NOAA NCEI	kate.rose@noaa.gov
Kenneth Sulak	USGS (ret.)	ksulak@usgs.gov
Kevin Jerram	UNH	kjerram@ccom.unh.edu



Lauren Jackson	NCEI-Stennis	Lauren.Jackson@noaa.gov
Leslie Sautter	College of Charleston	Sautterl@cofc.edu
Lisa Levin	Scripps Institution of Oceanography	llevin@ucsd.edu
Louis Penrod	Florida Institute of Technology	lpenrod2011@my.fit.edu
Megan McCuller	North Carolina Museum of Natural Sciences	mccullermi@gmail.com
Michael Brennan	SEARCH	mike.brennan@searchinc.com
Michael Vecchione	NOAA/NMFS National Systematics Lab	vecchiom@si.edu
Nolan Barrett	South Carolina University	barrettnh@g.cofc.edu
Paul Larson	Fish and Wildlife Research Institute	paul.larson@myfwc.com
Rachel Bassett	NOAA NCCOS DCEL	rachel.bassett@noaa.gov
Robert Carney	Louisiana State Univ	rcarne1@lsu.edu
Robert Schwemmer	NOAA	Robert.Schwemmer@noaa.gov
Santiago Herrera	Lehigh University	sherrera@alum.mit.edu, sah516@lehigh.edu
Scott Allen	NOAA Ship Okeanos Explorer	
Scott France	University of Louisiana at Lafayette	france@louisiana.edu
Scott Harris	College of Charleston	harriss@cofc.edu
Scott Sorset	BOEM	scott.sorset@boem.gov
Shirley Pomponi	CIOERT - FAU HBOI	SPomponi@fau.edu
Stephanie Bush	Smithsonian	stephalopod@gmail.com
Steve Auscavitch	Temple University	steven.auscavitch@temple.edu
Tara Harmer Luke	Stockton University	luket@stockton.edu
Thomas Hansknecht	Ret. taxonomist (mobile Alabama)	tjhansk@comcast.net
Timothy Shank	Wood Hole Oceanographic	tshank@whoi.edu



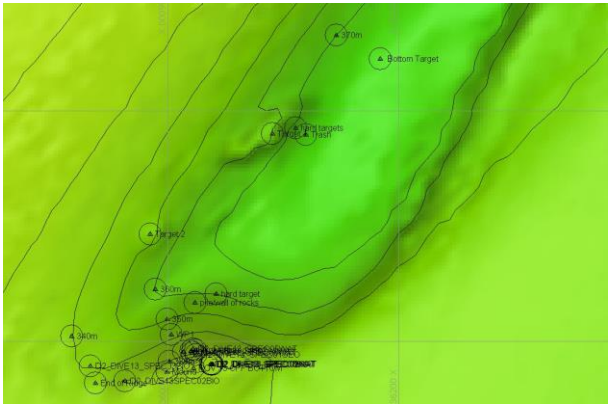
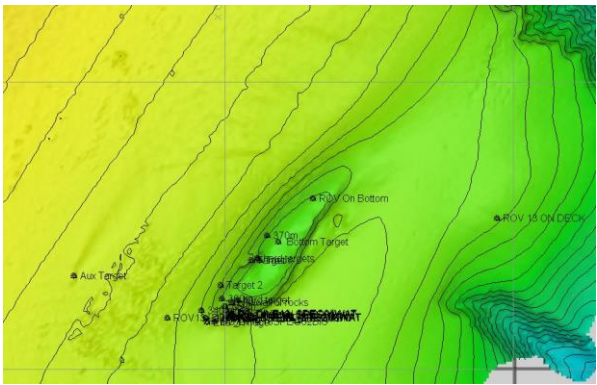
		Institution	
	Tina Molodtsova	Shirshov Institute of Oceanology RAS	tina@ocean.ru; tina.molodtsova@gmail.com
	Treyson Gillespie	College of Charleston	gillespieta@g.cofc.edu
	Victoria Gitto	College of Charleston	geogittotm@gmail.com
	William Sassorossi	NOAA	william.sassorossi@noaa.gov
	Zach Proux	College of Charleston	prouxzs@g.cofc.edu
Purpose of the Dive	<p>This dive was originally planned to <u>investigate a large and long scour mark on the seafloor identified in MB and backscatter images possibly caused by a shipwreck. Similar scour marks are associated with shipwrecks on the OCS off North Carolina caused primarily by the strong current of the Gulf Stream. The scour is near the reported location of a ship sunk in World War Two.</u> be a search and discover mission for a possible WWII shipwreck. Backscatter imagery showed a very large object with high intensity, that also had a long scour feature associated with it.</p>		
Description of the Dive	<p>The dive track <u>entered the scour from the down-current end then</u> approached the <u>suspected</u> target via the scour. <u>Instead of a shipwreck, the ROV and</u> encountered a steep scarp draped with rock slabs; the likely cause for the high intensity sonar returns. Unfortunately, no shipwreck was found. The dive transitioned rapidly into a biology/geology dive, and the chat room members switched from archaeologists to biologists and geologists. We slowly traversed the <u>__ m</u> scarp, where slopes ranged from 20 to >50°. The scarp's lower portion was dominated by blackbelly rosefish (<i>Helicolenus dactylopterus</i>), and white anemones (possibly <i>Actinia</i> sp.). Also observed were swallowtail bass (<i>Anthias woodsi</i>), conger eels (<i>Conger oceanicus</i>), the decapod crustaceans including the squat lobster <i>Eumunida picta</i>, and <i>Rochinia</i> spider crabs. At the scarp's higher areas, many large overhanging rocks provided habitat for a high diversity of organisms. Rocky substrate was colonized by cnidarians such as several anemone species, a white plexaurid octocoral (possibly <i>Thesia</i>, <i>Eunicella</i>, or <i>Muriceides</i>), a possible corallimorpharian, zoanthids, a white <i>Eleutherobia</i>-like soft coral, large feather-shaped and small stalked hydroids, and several colonies of <i>Lophelia pertusa</i>. Fishes were numerous and were seen under most rocks and included more of the species seen deeper, plus hake <i>Laemonema barbatulum</i>, the southern hake <i>Urophycis regia</i>, the scorpionfish <i>Trachyscorpia</i>, a Chaunax sp., a monkfish (<i>Lophius americanus</i>), and an ocean sunfish (<i>Mola mola</i>) seen swimming close to the rocky feature. Several slit shells (<i>Perotrochus maureri</i>) were observed on rocks, along with Psolid holothurians, while brown brachiopod (lophophorates) were seen under rocks. The flat surface at the top was habitat to fewer organisms, but was still well populated. Several cerianthid tube anemones were observed in sandy substrate on the top of the feature, and gooseneck barnacles inhabited a large rope (trash). The green proboscis of an acorn worm (enteropneust) was seen, along with several horseshoe crab shells (possibly molts?) Unlike previous dives on the expedition, we didn't see any live sponges, but several highly sedimented dead sponges were observed.</p>		



Notable Observations	<ul style="list-style-type: none"> ● Unusual rocky feature relative to area. ● Overall, high species diversity, and abundant fishes. ● The most trash we saw all expedition. ● While the acoustic returns on this site, and large scour indicated this site could potentially be a shipwreck, the site was composed of a large scour behind a geologic feature made primarily of broken rock.
----------------------	---

Community Presence/ Absence (<i>community is defined as more than two species</i>)	X Corals and Sponges Present	<input type="checkbox"/> Active Seep or Vent
	<input type="checkbox"/> Chemosynthetic Community Present	<input type="checkbox"/> Extinct Seep or Vent
	X High biodiversity Community Present	<input type="checkbox"/> Hydrates Present

Overall Map of the ROV Dive Area	Close-up Map of Main Dive Site
----------------------------------	--------------------------------

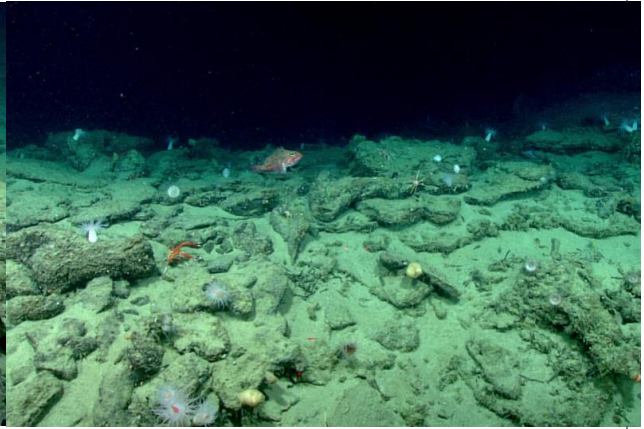
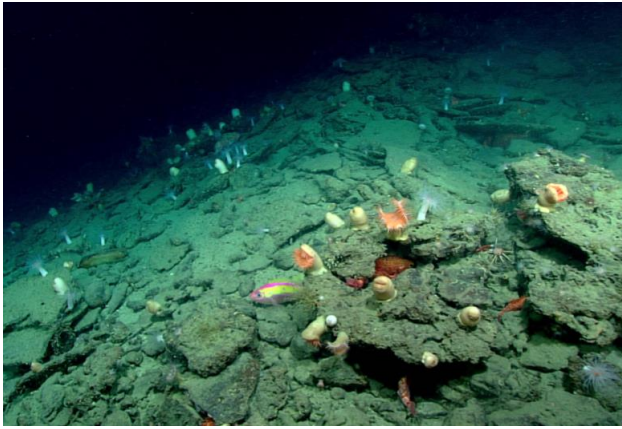


Representative Photos of the Dive	
-----------------------------------	--



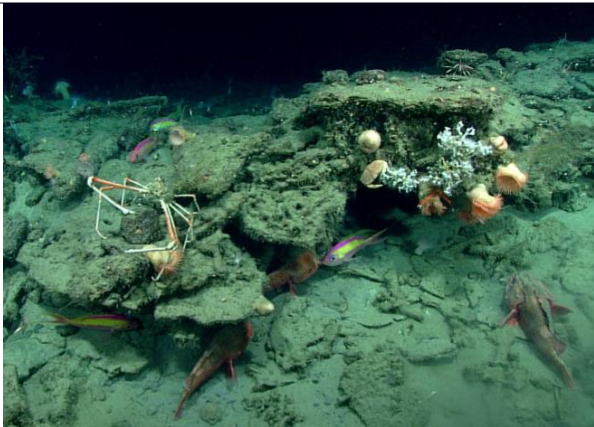
The approach to the rocky scarp was a deep scour which was heavily sedimented.

The scarp itself consisted of broken rock slabs and sediments.



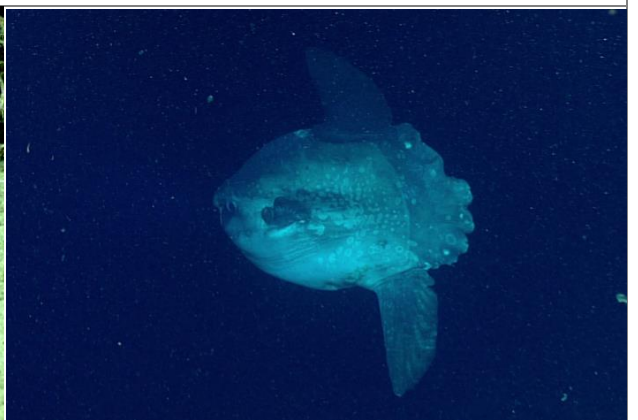
The top of the scarp's rocks were still somewhat in place, and provided excellent overhanging ledges for fish and other biota.

The scarp's top showed more rock slabs and great habitat.



Many different organisms were found co-habiting on and around the overhanging slabs.

[Descriptive caption here]



Several southern hake (*Urophycis regia*) were observed, and most were partially buried in sediment.

A *Mola mola* surprised us with a visit.



This conger eel (*Conger oceanicus*) was not bothered by its neighbor, a *Trachyscorpia* sp.



Sessile holothurians (*Psolidae*) were observed on several rocks.



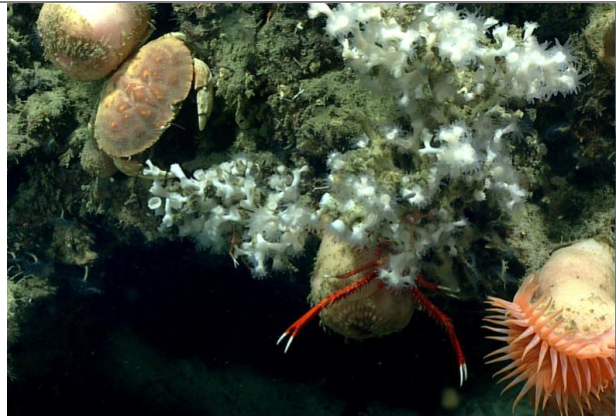
Beauty: Swallowtail Bass (*Anthias woodsi*)



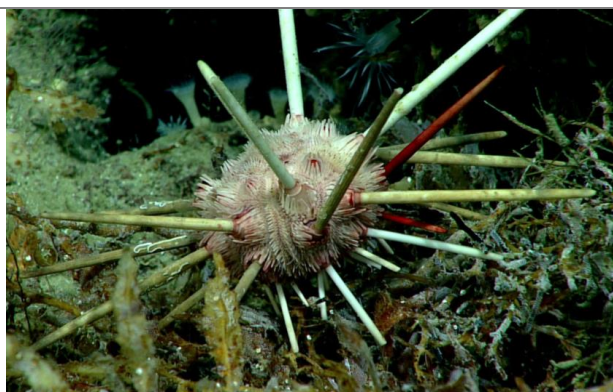
Beast: Goosefish (*Lophius americanus*)



Spider crabs (*Rochinia crassa*) were common.



Lophelia pertusa was found on several ledges and rocks. *Cancer* crabs, squat lobsters and venus fly-trap anemones were common.



Several beautiful slit shells/top shells (*Perotrochus maureri*) were seen on the rocks.

Cidaris pencil urchins were common.



A *Chaunax* sp. was seen.



Eleutherobia-like soft corals were seen.


Samples Collected

Sample


Sample ID	SPEC01GEO	
Date (UTC)	20180627	
Time (UTC)	15:41:34	
Depth (m)	328.7	
Temperature (°C)	7.67	
Field ID(s)	Indurated mudstone, encrusted with Fe-Mn oxides.	
Reason for Collection	<i>Representative of scarp surface.</i>	
Notes		
Associates	<i>[Notes section here can include number of organisms, condition of organism(s) upon retrieval or photos as needed]</i>	

Associate ID	Field Identification	Notes
SPEC01GEO_A01	Psolus	
SPEC01GEO_A02	Polychaeta	tube worm

Sample

Sample ID	SPEC02BIO													
Date (UTC)	2018 06 27													
Time (UTC)	17:11:43													
Depth (m)	330.93													
Temperature (°C)	7.91													
Field ID(s)	Octocorallia													
Reason for Collection	<i>Lab Assessment Required for ID</i>													
Notes														
	<i>[Notes section here can include number of organisms, condition of organism(s) upon retrieval or photos as needed]</i>													
Associates	<table border="1"> <thead> <tr> <th>Associate ID</th> <th>Field Identification</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>n/a</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Associate ID	Field Identification	Notes	n/a								
	Associate ID	Field Identification	Notes											
	n/a													


Sample

Sample ID	SPEC03BIO	
Date (UTC)	2018 06 27	
Time (UTC)	17:44:08	
Depth (m)	339.41	
Temperature (°C)	7.82	
Field ID(s)	Corallimorpharia	
Reason for Collection	<i>Lab Assessment Required for ID</i>	



Notes			
<i>[Notes section here can include number of organisms, condition of organism(s) upon retrieval or photos as needed]</i>			
Associates	Associate ID	Field Identification	Notes

Sample

Sample ID	SPEC07BIO	
Date (UTC)	2018 06 27	
Time (UTC)	19:58:36	
Depth (m)	332.09	
Temperature (°C)	7.78	

Field ID(s)	Actiniaria
-------------	------------

Reason for Collection	<i>Lab Assessment Required for ID</i>
-----------------------	---------------------------------------

Notes

<i>[Notes section here can include number of organisms, condition of organism(s) upon retrieval or photos as needed]</i>			
Associates	Associate ID	Field Identification	Notes

Water Samples Collected

Though water samples were collected on this dive, there were issues with sample storage and preservation, therefore no water samples were retained nor archived. Sample numbering and data remains the same, as if water sampling did occur. EX1806_DIVE13_SPEC04WAT, EX1806_DIVE13_SPEC05WAT, EX1806_DIVE13_SPEC06WAT, EX1806_DIVE13_SPEC08WAT, and EX1806_DIVE13_SPEC09WAT have no physical specimen associated with them.

Please direct inquiries to:

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

