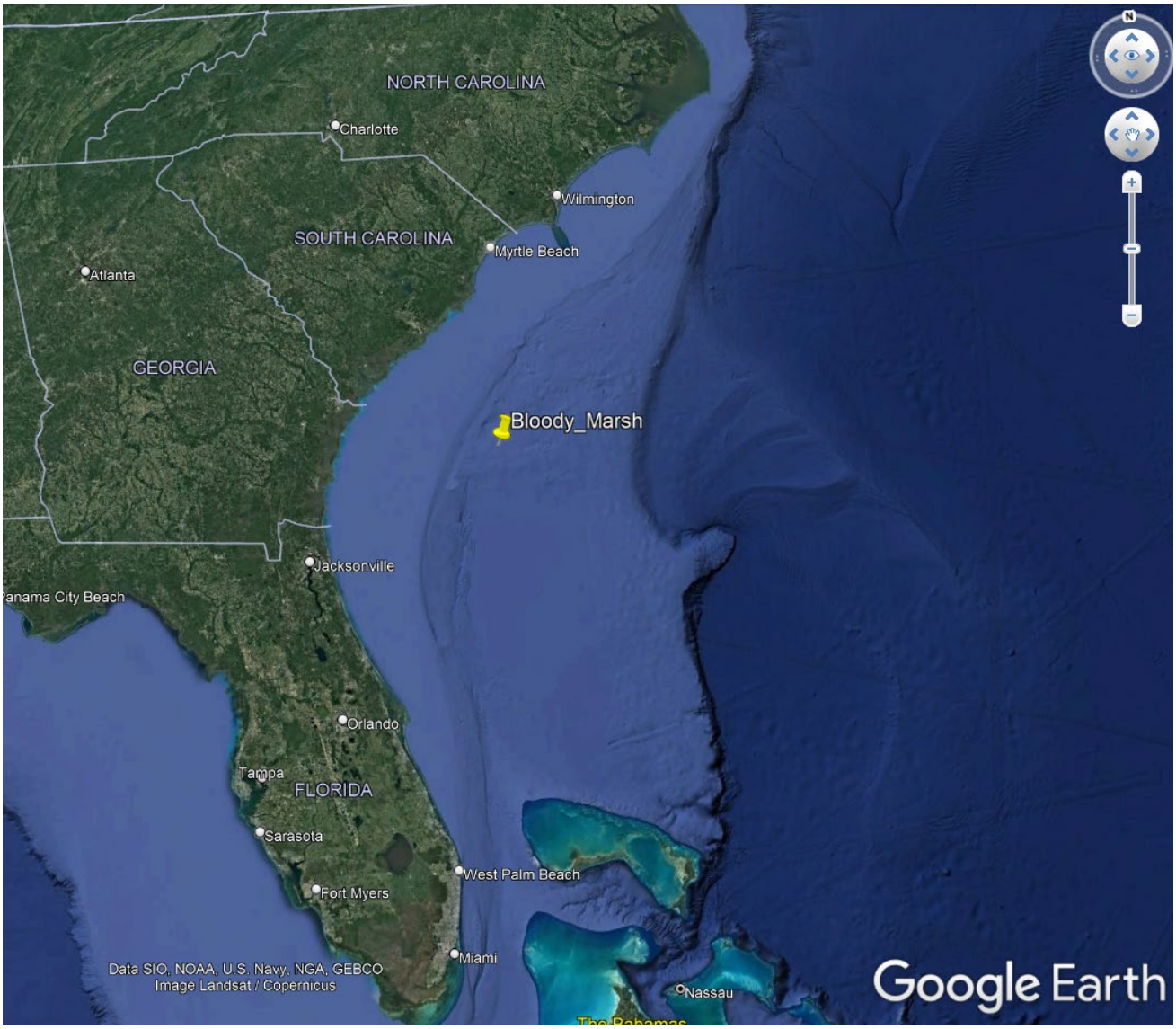
ROV Dive Summary, EX-21-07, Dive 02
October 28, 2021

General Location Map



Dive Information

Site Name	Bloody Marsh
General Area Descriptor	Pavement area on the Blake Plateau where a bathymetric anomaly was found on multibeam collected by OKEX over the summer, 2021.

Science Team Leads	Stephanie Farrington, Allen Collins
Expedition Coordinator	Matt Dornback
Sample Data Manager	Anna Lienesch
ROV Dive Supervisor	Chris Ritter
Mapping Lead	Derek Sowers
Dive Purpose	On the hunt for the SS *Bloody Marsh*, no collections.
Was the dive restricted for Underwater Cultural Heritage?	Yes
ROV Dive Summary Data	Dive Summary: EX2107_DIVE02 ^^ Dive Type: Normal In Water: 2021-10-28T12:46:47.414663 On Bottom: 2021-10-28T13:52:21.313878 Off Bottom: 2021-10-28T20:02:08.867898 Out Water: 2021-10-28T20:54:07.335660 Dive Duration: 8:07:19 Bottom Time: 6:09:47 Max Vehicle Depth: 475.1 m Min Seafloor Depth: 458.5 m Distance Travelled: 491.1 m

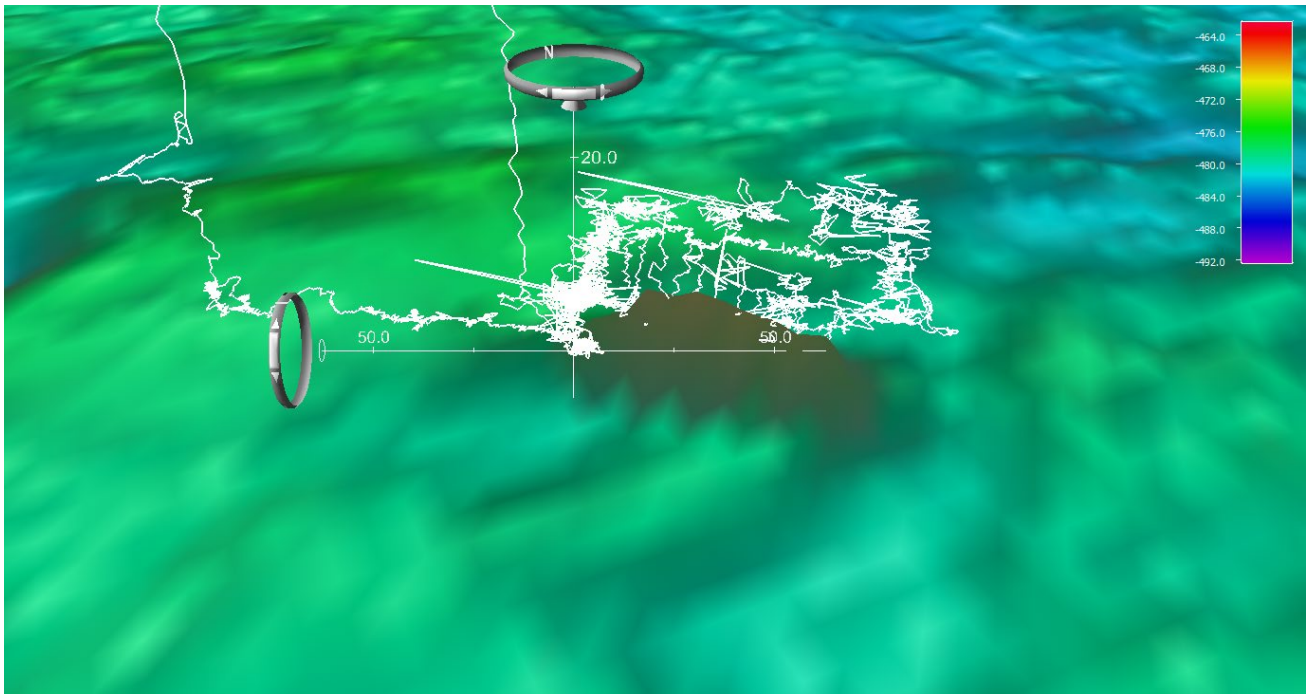
Dive Description	When we reached bottom, northwest of the sonar anomaly, we observed the substrate to be sediment-veneered pavement covered in an abundant sponge garden with pachastrellid fans, *Geodia* balls, perhaps a second type of ball/barrel-like sponge, *Phakellia*-like elephant-ear sponges, and other forms including a fan with anastomosing branches (likely Raspailiidae). On zoom, we were able to see a hydroid community closely associated with the sponges, including athecate and thecate forms. *Laemonema* (codeling) and *Chlorophthalmus* (Shortnose Greeneye) were common along the pavement areas. Within the sponge garden, a crab (likely *Bathynectes longispina*), a few small gorgonians and a few asteroids were observed. The sandy bottom began to thicken over the pavement before we came across the targeted sonar anomaly. Some marine debris (fishing knife) was encountered. Throughout the dive, sea water temperature was around 11° C with the predominant current of about ½ knot coming from the South. Sonar Anomaly: Large Polyprionidae (wreckfishes): *Polyprion americanus* were common around the metal hull of the wreck, along with *Nezumia* (rattails). A few specimens of Gorgonocephalidae (basket stars) were situated on prominences with their appendages partly sprawled out. Plexaurid gorgonians were the most common species taking up space on the hull, laid out with relatively clear zonation. Nestled among the plexaurids, abundant athecate hydroids were visible. The Plexaurids were all roughly the same size, suggesting that they may have settled out during the same spawning event. There were small areas with numerous larger shrimp (possibly *Nematocarcinus*) as well as a few *Bathynectes* (swimming crabs) observed throughout and occasionally *Euminda picta* (large squat lobster). Flytrap anemones were common along with goniasterid sea stars. Several large patches of yellow encrusting (possibly non-mineralized verongiid) sponges, along with thin veneers of yellowish encrustations (unclear if this was the same as the thicker patches presumed to be verongids or not). Toward the end of the dive, two species of deepsea cardinalfish (Apogonidae) were spotted and briefly zoomed in upon. A couple of pyrosomes (colonial pelagic tunicates) were seen in the water column. During a brief excursion to the port side of the ship at the end of the dive, numerous white stylasterids (hydrocorals) were observed attached to the wreckage. A small number of fishing lines were seen attached to the wreck. Observations confirmed that the wreckage discovery is likely the SS *Bloody Marsh*, an oil tanker that was sunk on its maiden voyage during WWII, on July 2nd 1943, by German U-Boat U-66. Consistent with the SS *Bloody Marsh*, the seams along the hull lacked rivets and were welded together (some welded sections split but most intact). Also consistent was the damage from 2 torpedo strikes, one in the stern area, and the second midship that separated the ship into two portions. At least another 100 ft of the bow is completely missing and remains undiscovered. The portion of wreckage that we observed was roughly 90 m in length, also consistent with the fate of the SS *Bloody Marsh*. The ship was oriented with the stern to the NW and the forward to the SE, but completely inverted with little offset from 180 degrees. Most of the hull was intact except for a few weathered holes (mainly in the center sections of welded plates) where we could see into the hull. The currents were quite strong coming from the south so D2 was only able to keep on the leeward (starboard) side of the ship. A good view of the stern of the ship on the port side, including cables, a spool, a ladder and other wreckage, was able to be seen towards the end of the dive when the current had died down enough to make a short port side move with D2. The ship showed no visible signs of leaking oils, however there were some chemosynthetic bacterial mats (*Beggiatoa*?) found around some of the scintillation holes, one very prominent, suggesting some type of oil was present in large enough quantities to maintain a bacterial community despite not being visible in the camera. The asteroid *Ampheraster alaminos* (small, 6-armed, white) was found near one of the scintillation holes. Specific diet information of this species is lacking but confamilial species are known to feed on bacterial mats, raising speculation that this asteroid feeds on bacterial mat communities based on the presence of petrocarbons.

	D2's multibeam scanners were used to scan on the outsides of the ship up to 100 m away into the darkness to see if there was any wreckage outside of the light pool. No other areas of wreckage were seen in the scans.
Notable Observations	The Bloody Marsh wreckage. No Samples Collected
Community and habitat observations	Corals and Sponges - (Present) Chemosynthetic Community - (Present) High biodiversity Community - (Absent) Active Seep or Vent - (Absent) Extinct Seep or Vent - (Absent) Hydrates - (Present)
CMECS Feature Type(s)	Wreck, Pavement area
SeaTube Link (science annotation system)	https://data.oceannetworks.ca/SeaTubeV3?resourceTypeId=600&resourceId=5740

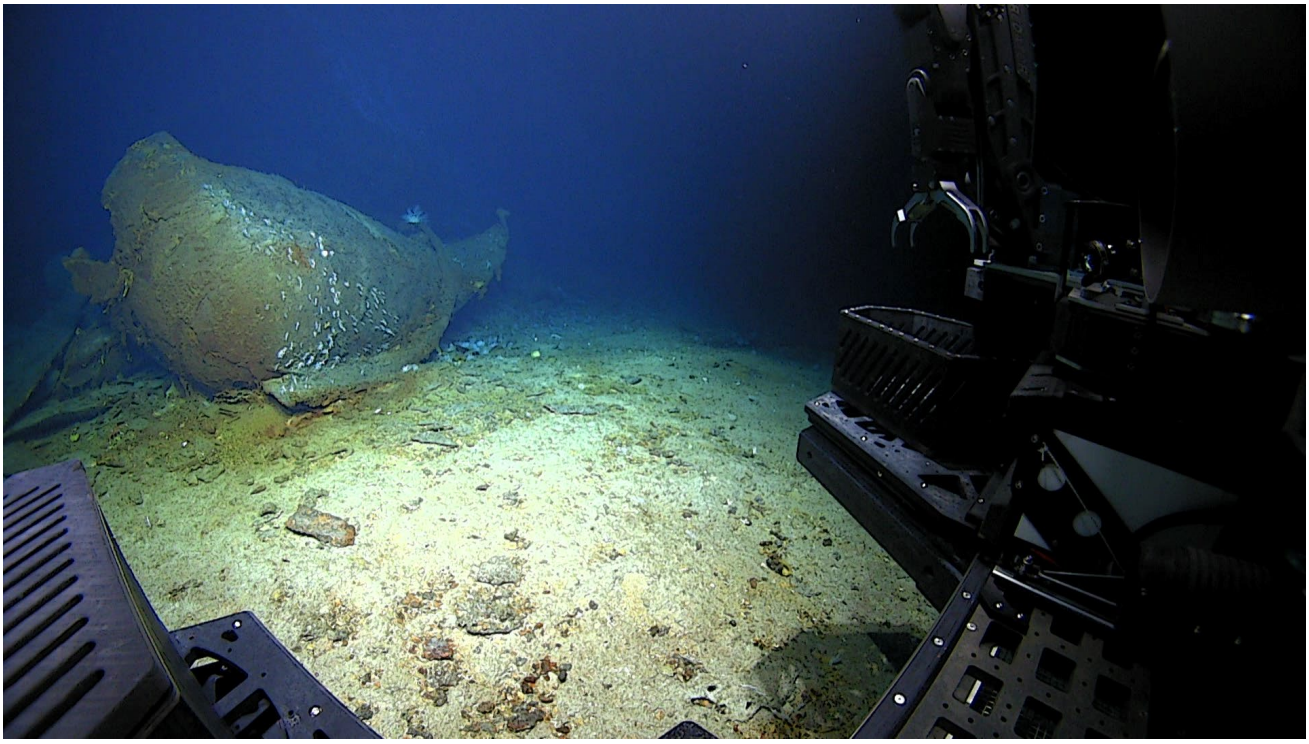
Equipment Deployed

ROV	*Deep Discoverer*
Camera Platform	*Seirios*
ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The section below notes if any of these sensors were malfunctioning or not operational.
Equipment Malfunctions	

Close-up Map of Main Dive Site



Representative Photos of the Dive



Samples Collected -

None

Scientists Involved (provide name, email, affiliation)

First Name	Last Name	Email	Affiliation
Chris	Mah	brisinga@gmail.com	National Museum of Natural History
Cris	Diaz	taxachica@gmail.com	Harbor Branch Oceanographic Institute
Scott	France	france@louisiana.edu	University of Louisiana at Lafayette
Asako	Matsumoto	amatsu@gorgonian.jp	Chiba Institute of Technology
Kevin	Rademacher	kevin.r.rademacher@noaa.gov	NOAA/NMFS
Nolan	Barrett	barrettnh56@gatech.edu	Georgia Institute of Technology
George	Matsumoto	mage@mbari.org	Monterey Bay Aquarium Research Institute
Cristiana	Castello Branco	cristianacbranco@gmail.com	National Museum of Natural History
Mike	Brennan	mike.brennan@searchinc.com	SEARCH Inc.
William	Sossorossi	william.sassorossi@noaa.gov	NOAA - Monitor National Marine Sanctuary
Robert	Schwemmer	Robert.Schwemmer@noaa.gov	NOAA - Monitor National Marine Sanctuary
Mike	Vecchione	vecchiom@si.edu	NMFS and NMNH
Heather	Judkins	Judkins@usf.edu	University of South Florida St. Petersburg
John	Reed	jreed12@fau.edu	Harbor Branch Oceanographic Institute
Cindy	Van Dover	clv3@duke.edu	Duke University
Andrea	Quattrini	quattriniA@si.edu	National Museum of Natural History
Megan	McCuller	megan.mcculler@naturalsciences.org	North Carolina Museum of Natural Sciences
Kelsey	Viator	ksviator2000@gmail.com	University of Louisiana at Lafayette
Upasana	Ganguly	upasana.ganguly1@louisiana.edu	University of Louisiana at Lafayette
ISC Watchstander	Watchstander	innerspacecenter@gmail.com	URI Inner Space Center
Kimberly	Galvez	kimberly.galvez@noaa.gov	NOAA Ocean Exploration
Monet	Murphy	dmonet.murphy@gmail.com	Duke University
Phil	Hartmeyer	Phil.hartmeyer@noaa.gov	NOAA Thunder Bay NMS
Steve	Auscavitch	steven.auscavitch@temple.edu	Boston University

Please direct inquiries to:

NOAA Office of Ocean Exploration & Research
1315 East-West Highway, SSMC3 RM 10210
Silver Spring, MD 20910
oceanexplorer@noaa.gov