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CRUISE SUMMARY

R/V *Atlantis* / DSV *Alvin* Expedition AT-41
August 19 to September 2, 2018

for

DEEP SEARCH
DEEP Sea **E**xploration to **A**dvance **R**esearch
on **C**oral/Canyon/Cold seep **H**abitats

Deepwater Atlantic Habitats II:
Continued Atlantic Research and Exploration
in Deepwater Ecosystems with Focus on
Coral, Canyon and Seep Communities
Contract - M17PC00009

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1 EXPEDITION BACKGROUND

The AT41 expedition on board the RV *Atlantis* with the DSV *Alvin* is the first submersible sampling cruise of the project. The primary goals of this cruise were as follows:

1. Sampling of corals and associated fauna for biodiversity and biogeography
2. Community sampling at seep and coral habitats
3. Sediment sampling at soft sediment sites for biogeochemistry and diversity
4. Collections of corals for live coral experiments
5. Water sampling for water chemistry and microbial diversity
6. Sediment, water, and faunal samples for eDNA work
7. Geological observations and sampling for geomorphology
8. Site selection for lander deployments
9. Description of the communities surrounding ADEON moorings

2 NOAA OER QUICK LOOK REPORT

- **Project title:** Deep SEARCH: Deep Sea Exploration to Advance Research on Coral/Canyon/Cold seep Habitats
- **Unique cruise ID:** AT41
- **Summary of expedition background and objectives:**

This is the third research expedition associated with the Deep SEARCH project focused on exploring and characterizing seeps, corals, and canyon environments along the Atlantic margin. This project is a collaboration among three federal agencies: Bureau of Ocean Energy Management (BOEM), NOAA Office of Ocean Exploration and Research (OER), and the U.S. Geological Survey (USGS). TDI Brooks with academic partners has been selected to serve as BOEM contractor for this study. Data gathered during this mission and future cruises for this project will help inform multiple management issues concerning this region. The cruise focused on several seep sites, canyons, and hard bottom features located <100 nm offshore, 36.8455°N, -74.5844°W to 31.7421°N, -79.0941°W.

The goal of this expedition was to validate several seep targets (Fig. 1), image and map seeps, canyons (e.g., Keller, Pamlico, Hatteras, and unnamed canyons), and hard bottom features located between Virginia and Georgia.

Specific objectives included:
1. Sampling of corals and associated fauna for biodiversity and biogeography
2. Community sampling at seep and coral habitats
3. Sediment sampling at soft sediment sites for biogeochemistry and diversity
4. Collections of corals for live coral experiments
5. Water sampling for water chemistry and microbial diversity
6. Sediment, water, and faunal samples for eDNA work
7. Geological observations and sampling for geomorphology
8. Site selection for lander deployments
9. Description of the communities surrounding ADEON moorings

Figure 2-1. Locations of sites visited.

3 GENERAL DIVE PLANS

Each dive has a specific plan based on the type of habitat, the sampling needs at the site, the capacity of the Alvin "basket," the results of the previous dive(s), and the overall needs of the entire project in mind. Although much of this information will only be available the evening before the dive, there is enough existing information to present generalized dive plans for the three habitats that are the focus of this study: canyons, corals, and cold seeps.

3.1 CANYONS

The canyon dives will focus on coral diversity, biogeochemistry, macro-infauna, geology, and water sampling. If bubble plumes and seeps are present, they will also be investigated. Dives will begin in the deepest parts of the chosen targets, and proceed upslope.
Basket: 24 push cores, 5 niskins, 1-chamber slurp, biobox w/ partitions, coral quivers
Priorities: corals for barcoding, key coral and mussel species with associates for pop gen, push cores in canyon axis and near corals and/or mussels, water samples near scleractinians and large coral colonies, rocks for geology

3.2 CORALS

These dive plans are primarily focused on the *Lophelia*-dominated habitats in the southern part of the study area.
Basket: 12 push cores, 5 niskins, 1-chamber slurp, 2 bioboxes, coral pots, coral quivers
Priorities: Coral community samples (near ADEON mooring, if present), push cores associated with community samples and away, water samples associated with community samples, rocks (if present), other corals for barcoding, video survey of area surrounding ADEON mooring (if present), *Lophelia* in bioboxes for live coral experiments

3.3 SEEPS

These plans are based on the habitats found at the main seep sites: Blake Ridge, Cape Fear, and Norfolk. Other seeps that are associated with the shallow parts of some of the canyons are handled within those plans.
Basket: 36 push cores, 5 Niskins, 1-chamber slurp, sample quivers, 2 mussel pots
Priorities: Mussel community sampling, push cores associated with community samples and away, mussel sampling into bioboxes for pop gen plus gill/host genomics, water samples associated with all mussel samples, carbonates

4 EXPEDITION ACTIVITIES-NARRATIVE

Following is the daily cruise narrative describing all the activities for that day. Attached as **Appendix A** are the compiled Plans of the Day (PODs).

4.1 AUGUST 16-18: CRUISE MOBILIZATION

The first of the expedition participants, including the chief scientist, arrived at the ship on the morning of the 16th. We began loading gear onto the ship, some of which had been shipped to the WHOI facility and some that had been transported up by the participants. Everything went smoothly and preparations were made to embark.

During this time, sites were sent to the Navy for clearance of the activity areas. In the past, this had been conducted by a single point of contact at the Navy, but now each individual field office had to be contacted for approval of our sites. One of the sites (Norfolk Seep) was denied, so two additional sites were submitted for clearance (Wilmington Canyon and Pea Island Seep). While Wilmington Canyon is outside of the area of highest priority for BOEM, it was considered relevant to the study and relevant to the objectives of the NOAA Deep Sea Coral and Research Technology Program, which paid for 2 of the operations days on the cruise. All of the sites were cleared in time for departure, except for Pea Island.

All of the science party was on board by the morning of the 18th, and the first science party orientation meetings and safety videos were held on the 18th.

4.2 AUG 19: DEPARTURE

The ship left on time around 0530 on the 19th. Safety drills were conducted and a series of science meetings were held about sampling and labeling protocols for the different categories of samples anticipated (community collections, corals, sediments, and water). The Alvin basket was prepared and the first dive plans were composed.

4.3 AUG 20

4.3.1 0200 Multibeam

We arrived on site around 0200 and began multibeam mapping around the head of Wilmington Canyon. We were on station for the first dive by 0700

4.3.2 0800 Alvin 4960 - Wilmington Canyon

The first dive of the series began right at 0800. It was a PIT dive, the last one for pilot-in-training Danik Forsman. Amanda Demopoulos was the observer. Unfortunately, when the sub hit the bottom around 700m depth, it encountered 3.5kt currents and near-zero visibility. They fought this for a while, but fishing line was observed and there was little control of the vehicle in these harsh conditions. They came up to about 600m depth but there was no change in conditions. Given the presence of fishing line in the area, the relative lack of control of the vehicle, and the low visibility, the decision was made to call the dive and recover the submersible.

4.3.3 1300 Alvin recovery

Following recovery, the ship transited to Pea Island Seeps. During the morning, we received clearance to dive at the site. However, we also had our clearance for the Blake Mounds site revoked, and were informed that we should remain very close to the center of the area that we had clearance for at the Million Mounds site. We are hopeful that the rest of the sites remain clear for diving.

4.4 AUG 21

4.4.1 0400 Multibeam

We arrived in the vicinity of the Pea Island seeps around 0400. The ship lost its heading and compass feed around the same time, so they went to manual steering. We ran a few multibeam lines over the Pea Island site to confirm that it was still active. Large bubble plumes were apparent in the water column data from the multibeam, indicating that the site is still very active in roughly the same places that it was when it was last examined approximately 1 year ago.

4.4.2 0800 Alvin 4961 – Pea Island Seeps

The dive went well. There was a squad of squid surrounding the sub during the entire dive. There were two main seep areas, and these appeared to be very active with large bacterial mats and visible bubble plumes in places. There was some outcropping carbonate at one site, quill worms in one of the bacterial mats, and *Chaceon* crabs scattered throughout. A series of push cores were acquired in mats and in a control area. Towards the end of the dive, the fingers of the port manipulator froze and the remaining sampling had to be done with the less dexterous starboard manip.

4.4.3 1700 Alvin recovery

We took some great drone footage towards the end of the dive and during recovery. Flight conditions were pretty good, although landing was a little challenging in the wind.

4.4.4 1800 CTD 01 and 02

After recovery, two CTD casts were conducted. One was right over the position of the most active bubble plume according to the water-column multibeam data from the morning, and the other was approximately

1km to the east away from the seep. The CHL max was at approximately 80m depth over the seep, and 60m depth away from the seep. Following the CTD casts, we transited to Pamlico Canyon.

4.5 AUG 22

4.5.1 0200 Multibeam

We arrived at Pamlico Canyon around 0200 and began multibeam surveys of the deeper parts of the canyon where it gets much wider and there are holes in the existing data. Once these holes were filled in, and we could clearly see the dog-butt-and-tail shape of the bottom of the canyon, we set up at the dive site.
The seas were about 5-7 feet and the winds were up between 25-30 knots on the dive site. We waited for about an hour and watched the weather, but the forecast suggested that the conditions would not improve. The decision was made to move on to the more southern sites. Rather than go to the next site (Cape Fear Seep), we took advantage of the extra time to transit all the way to the Stetson Deep site, approximately 200 miles to the south.

4.6 AUG 23

The transit to the Stetson Deep site (on a feature that was referred to as Richardson Ridge during the *Okeanos Explorer* cruise of May 2018) took a bit longer than we thought it would because we were battling a 3 knot current most of the way down to the site. We arrived a bit later than planned, and the dive got in a bit late.

4.6.1 0930 Alvin 4962 – Richardson Ridge

The dive was over *Lophelia* rubble the entire length of the 1.5 km dive track. The currents were very strong, approximately 3 knots at times, and the sub battled them all day. The vehicle reached the bottom nearly 1 km from its launch position, so we began working where we landed rather than chasing arbitrary waypoints. The substrate was mainly dead rubble near the bottom of the feature. As we began up the hill, a high density of small plexaurid octocorals were observed. On the leeward side, most of the coral was dead, but at the crests and the windward sides of the mounds, there was a high cover of live coral. A series of Lophelia collections were made, along with a large Madrepora colony, and some smaller Enallopsamia colonies. These came with a variety of octocorals and associates including brittle stars and crinoids. Early in the dive, a large swordfish swam around the sub and through the Lophelia reef. A nice 4K highlight video was captured of the event. This was the first dive that the 4K camera was available, and it was used on a number of occasions to capture highlight video. Although the dive went in late, the high currents resulted in heavy battery use and a relatively early recovery.

4.6.2 1700 Alvin recovery

4.6.3 1730 CTD 03 and 04

We immediately took two CTD casts, firing all of the bottles near the seafloor, to get enough water to keep the corals alive. It was noted that there wasn't a clear thermocline, with a steady decline in temperature all the way to the 800 m deployment depth, where the temperature was approximately 9 deg C.

4.6.4 1830 CTD 05

After dinner, another CTD cast was obtained to collect a full water column profile. We then began multibeam mapping in the area overnight. This helped to determine the full extent of the linear cold-water coral mound features in the area.

4.7 AUG 24

Overnight, some of the corals that were collected were fragmented, mounted on small PVC pedestals, and stained with alizarin red. They were then placed onto concrete blocks and prepared for deployment.

4.7.1 0800 Alvin 4963 – Richardson Ridge

This dive was on coral rubble and live coral the entire time, just as the previous dive. This dive started deeper (over 800 m) in the trough to the west of the line of coral mounds. We expected to find some core-able mud here, but the seafloor was still entirely composed of coral rubble. The sub climbed from here up to the top of the closest mound in the line of mounds. More live coral was encountered as the sub ascended.

There appeared to be more particulates in the water here than there were the day before. A few fish were noted, including roughy and small orange hagfish. There were a few small octocorals, including our first sighting of Paragorgia in the area. A suitable place for the coral growth deployments was located and they were deployed along with a 2-3m high marker. A series of Lophelia collections were made into the sterilized quivers for microbial work. At this point, the port arm developed a leak in the pressure compensator, and the arm was secured and the sub had to remain in place rather than changing depth and raising the probability of water intrusion. Some 4K highlights were obtained in this location, and then the sub came up a bit early.

4.7.2 1400 Alvin recovery

It appears as if this feature is entirely made up of a linear series of coral mounds. Overall, it extends approximately 15 nm and consisting of multiple lines of mounds, all likely composed of dead coral with living coral on the crests. In total, there was approximately 86 miles of coral mounds in the Richarson area. This was all released as a story in the Huffington Post on Aug 26th.

4.7.3 1600 CTD 06 and 07

A CTD cast was taken near the dive site, and a second was taken away from the dive track. Then we filled in some of the gaps in the multibeam so we got a clear picture of the full extent of the lines of coral mounds. The Atlantis then headed for the Blake Deep site a few hours away.

4.8 AUG 25

4.8.1 0800 Alvin A4964 – Blake Deep

Alvin set down near the intended launch target in an area of small boulders with corals on them surrounded by sandy sediments and occasional patches of coral rubble (primarily Solenosmilia). At first, it was mainly large bamboo colonies and a variety of other octocorals and antipatharians. A few collections and cores were taken, and then the sub headed for the first waypoint. They then turned to approach the wall, but the coral cover declined a bit near the base of the wall. The rubble here was primarily Madrepora. The sub started up the wall, in low coral abundance at first, but increasing towards the top. Colonies of Madrepora, Enallopsamia, and Solenosmilia were collected along with a variety of octocorals and a large dead bamboo coral skeleton.

4.8.2 1700 Alvin recovery

4.8.3 1830 CTD 08 and 09

Two CTD casts were obtained to get bottom water for the coral tanks and to complete a full water column profile. We then began our transit over to the Stetson Banks sites.

4.9 AUG 26

Upon arrival at the site, there was a strong, 4 knot current on the surface. The ship moved approximately 1 km to the WSW of the bottom target for launch.

4.9.1 0800 Alvin A4965 – Stetson Banks

After launch, the current continued in roughly the same direction. The sub moved almost 2km from its launch position to the bottom location. Rather than attempting to return to the list of waypoints, the sub moved straight towards the wall feature that was the subject of the dive. There was a heavy amount of marine snow in the water during the entire dive. On the way to the wall, there was cobble and carbonate pavement with occasional Leiopathes colonies and small Lophelia and Enallopsamia colonies. There were a good number of squid swimming around the sub during the transit. A variety of scleractinians and octocorals were collected into quivers and a rock was placed on the basket during the run to the wall. The wall came up steeply, with a pile of debris near the foot of the wall and plate-like ledges on the way up. There were few corals near the base of the wall, but higher abundances towards the top, particularly on overhanging ledges. More squid came back to the sub near the top of the wall. The sub transited laterally along the top of the wall for a time, which had a number of Lophelia colonies and small white plexaurids. These were collected along with a bamboo coral. A large white Leiopathes colony with chirostylid crabs was observed and filmed near the top. Near the end of the dive, the sub came to the top of the wall and transited over the plateau. The current was moving quickly on top, and there were occasional, small

Lophelia colonies and more of the short white plexaurids. A coral pot was obtained over one of the small Lophelia colonies.

4.9.2 1700 Alvin recovery

4.9.3 1830 CTD 10

After the recovery of the sub, 2 CTD casts were obtained. The first was a complete water column profile and the second was a collection of bottom water for the live corals. Following these, a block of multibeam was obtained to try to connect some of the maps that had been made by the Okeanos earlier in the year.

4.10 AUG 27

4.10.1 0800 Alvin A4966 – Stetson Banks

The goal of this dive was to locate the ADEON lander at the site and determine the community structure surrounding the area. The sub was launched over a km from the bottom target because of the strong surface currents. When the sub reached the bottom, it was still 1200 m from the mooring target. There was a hard ground in the pump for the main ballast tank, so that was secured during the dive.
The seafloor was a hard carbonate pavement with sponges, small stylasterids, very short octocoral colonies and sargassum. In small depressions in the carbonate, there was a sandy bottom with ripples from the obviously strong currents that are typically present at this site. Further along, there were patches of two different species of primnoids (one may be Callogorgia?) and larger yellow Acanthogorgia and Leiopathes colonies. There were also occasionally patches of baseball sized cobble with a heavy manganese crust. In some areas, there were small, interspersed Lophelia and Enallopsamia colonies.
During all of the transits, the sonar was ranged between 50 and 300 m out, and the sub maintained a constant scan for the floats of the lander. The sub ran north over the lander target, continuing for about 100m. The sub then came south east and then back to the west, running another line of the target. No sign of the mooring. The sub continued to the west another few hundred meters, and then came north and ran another parallel line, all the time scanning with the sonar. An effort was made to circle larger rock outcrops to avoid sonar shadows behind them and complete a thorough search. After running east, the sub went south so that it was about 100 m to the SE of the target. The sub came up off the bottom and drifted with the prevailing current in the hopes of running across the lander, but it was never seen. The sub left the bottom at 1500 local.

4.10.2 1530 Alvin recovery

4.10.3 1630 CTD 11 and 12

Following recovery, there were two CTD casts obtained over the site, the first for a water column profile and the second for bottom water. We then made our way to the Blake Ridge site (approximately 120 miles away). Now that we are going with the Gulf Stream, we are making excellent time, traveling nearly 15 knots for much of the transit.
The ship had to stop at one point so that the sub could be rolled out and the cover of the main ballast tank removed. The J-box was opened and inspected, but the ground was eventually traced to the penetrator behind the ballast tank. This was repaired by about midnight.

4.11 AUG 28

Upon arrival, the currents had slowed to about 0.2 kts and the seas were flat calm. Ivan was allowed to get in the small boat and shoot video of the launch as a swimmer.
During the pre-dive in the morning, there were power issues with some of the systems on the port side, but this was eventually traced to a computer error that was corrected in time for a normal launch time. Putting the ballast tank together took a little extra time but we still got a full dive.

4.11.1 0830 Alvin 4967 – Blake Ridge

The sub landed right on the numbers and began to cruise the crater at the center of the site. There was a lot of authigenic carbonate around the perimeter, but little bacterial mat was observed. The mussel bed was sampled and a mussel pot obtained along with a set of push cores. The sub then went to the second target, where there were a lot of live mussels, including smaller mussels. All of the observed mussels were Bathymodiolus heckerae. There were no B. childressi observed or collected. There were also numerous

lucinid clams and heart urchins burrowing through the reduced sediments. At the third target, there were 3 long lines of mussels, apparently arranged in linear faults overlying the diapir. Some of the mussels had bacterial mats on the shells. This may indicate that there was actually sulfide up in the water column at this location. There were many large empty shells at this location. A mussel pot and a set of cores were obtained here. They completed the loop around the different waypoints and then returned to the main crater to complete the sampling.

4.11.2 1700 Alvin recovery

4.11.3 1800 CTD 13

The CTD cast was deep and the wire was fouled at one point, so the entire cast took nearly 3 hours. At that point, it was decided that there was not time for a multicore sample offsite. However, since the sub obtained apparently off-site cores, this sample wasn't as necessary as was thought.

4.12 AUG 29

Overnight, we transited to the Cape Fear seep site to complete a multibeam survey over the active part of the site. After running a single line over the site, we continued on to the Cape Fear coral site, running perpendicular to the Gulf Stream on the way. We arrived on station for the scheduled dive time.

4.12.1 0800 Alvin 4968 – Cape Fear coral mound

The dive started on the western side of the coral mound. The sub approached the mound, going almost straight into the current. A coral pot and a series of cores were obtained in coral rubble near the base of the mound. The sub continued upslope, fighting the current the whole way. A second coral pot was obtained in standing dead coral skeleton, and a series of push cores were taken. A few octocoral collections were made, and the sub made it near to the top of the mound. At this point, the batteries were running low. The final coral pot was taken in mostly live coral, and live coral was collected into the biobox. A colony of Paramuricea was also collected. The sub then sat down and waited for the ship to be ready for recovery, and 4K video of a number of fish and crabs on the coral habitat was filmed.

4.12.2 1530 Alvin recovery

4.12.3 1630 CTD 14 and 15

Following the recovery of the vehicle, two CTD casts were taken. The first was a full water column profile, and the second was a collection of bottom water for the live coral maintenance. Temperature sensor 1 was changed out on the CTD after the second cast. Then the ship began the transit to Pamlico Canyon.

4.13 AUG 30

We arrived on station early in the morning, and there was a 3.5 knot current on the surface. We adjusted the launch position from the ship to be 1.2 km down-stream (230 deg) of the bottom target.

4.13.1 Alvin 4969 – Pamlico Canyon

The sub drifted most of the way over to the bottom target on descent, but had to drive the rest of the way over there. They landed right on the numbers, safely away from the side of the canyon wall and with little current in the area. There were a few boulders here, and a set of push cores were taken in soft sediment. The sub headed for the next waypoint, which was inside the "dog tail" of the canyon. There were a series of short ledges and walls climbing up into the tail. There was a lot of sediment away from the walls and another set of push cores was taken out here. The canyon axis did not appear to be very active. The sub began the climb up the wall, which appeared to be mud stone with occasional ledges and overhangs. Most of the corals here, Desmophyllum and Solensmilia along with Acanthogorgia and Paramuricea, and Acesta clams were under the overhangs. Occasionally, there were small piles of dead coral rubble accumulating on the ledges, and a few larger antipatharian colonies. As the sub approached the top of the wall, the current picked up a bit, but was still not like we had been dealing with on shallower dives. Near the top of the wall, at approximately 1100 m, there was a large Paragorgia and a subsample was taken.

4.13.2 1700 Alvin recovery

The sub was on deck right at 1700, and the ship started its transit to Pea Island.

4.13.3 2100 Multicore

The multicore was acquired over the most active part of the Pea Island seep. This was the location of the CTD cast following the dive here. The sampling went well, and the cores were offgassing on the surface.

4.13.4 2230 CTD 16

The CTD cast was taken over the northern part of the previous dive track, in a different active area of the seep. Following the CTD, the ship continued to transit to the Norfolk Canyon site. We realized on the way that the planned dive was outside of our clearance area, and the dive was re-located to the deeper part of the canyon. While this was not part of the plan, no one on board could think of a time when a dive was made in this part of one of the canyons, so it is a true exploration.

4.14 AUG 31

4.14.1 0800 Alvin 4970 @ Norfolk Canyon

The sub landed off in the flat, central part of the canyon. The Dan Cam was placed out in front of the camera and filmed itself flying by and landing in front of the camera. The camera was retrieved, and they took a set of push cores. The sub went towards the wall at the edge of the canyon, running over sediment most of the way. At a few points, there were observations of what appeared to be munitions. There was a small rise and some scattered boulders at the bottom of the wall, but still primarily sediment. Towards the top of the wall, there was a small field of Acanella bamboo corals. Further up, there were groups of sea pens, first very short and then long, slender forms. Some of each were collected into the biobox and quivers.

4.14.2 1700 Alvin Recovery

Following recovery, the sub was stripped down and washed in the car wash.

4.14.3 1830 CTD 17 and 18

The first CTD cast was for a complete water column profile, and the second was to collect bottom water for the live corals as we prepared to head to port.

4.15 SEPT 1

We spent the day transiting back to Woods Hole while finishing up some final analyses and packing up the labs.

4.16 AT-41 ENDS

5 SCIENTIFIC PERSONNEL

The scientific personnel participating in the cruise are listed in **Table 5-1** and shown in **Figure 5-1.**

Table 5-1. Scientific Personnel.

Number	Last	First	Affiliation	email
1	Cordes	Erik	Science - Temple	ecordes@temple.edu
2	Lunden	Jay	Science - Temple	jlunden@temple.edu
3	Weinnig	Alexis	Science - Temple	tug08093@temple.edu
4	Gasbarro	Ryan	Science - Temple	rgasbarro1@gmail.com
5	Joye	Mandy	Science - UGA	mjoye@uga.edu
6	Choi	Hanah	Science - UGA	hannahlychoi@uga.edu
7	Zhuang	Guangchao	Science - UGA	gzhuang@uga.edu
8	Carroll	Lauren	Science - UGA	lauren.carroll25@uga.edu
9	Brooke	Sandra	Science - FSU	sbrooke@fsu.edu

Number	Last	First	Affiliation	email
10	McFadden	Cathy	Science - Harvey Mudd	mcfadden@g.hmc.edu
11	Demopoulos	Amanda	Science - USGS	ademopoulos@usgs.gov
12	Quigley	Jonathan	Science - USGS	jquigley@usgs.gov
13	McClain-Counts	Jennifer	Science - USGS	jmcclaincounts@usgs.gov
14	Kovacs	Kaitlin	Science - USGS	kkovacs@usgs.gov
15	Morrison	Cheryl	Science - USGS	cmorrison@usgs.gov
16	Vokhshoori	Natasha	Science - UCSC	nvokhsho@ucsc.edu
17	Kellogg	Chris	Science - USGS	ckellogg@usgs.gov
18	Chaytor	Jason	Science - USGS	jchaytor@usgs.gov
19	Proux	Zach	Science - DSCRTP	prouxzs@g.cofc.edu
20	Rasser	Michael	Science - BOEM	michael.rasser@boem.gov
21	Adams	Caitlin	Science - NOAA OER	caitlin.adams@noaa.gov
22	Hurzeler	Ivan	Science - outreach	ivan@ivanhurzeler.com
23	Henning	Erin	Science - outreach	splitdiopter@gmail.com
24	D'Angelo	Chris	Science - outreach	chris.dangelo@huffpost.com

Figure 5-1. Scientific personnel AT41

6 STATIONS AND DIVE LOGS

The dive schedule is listed in **Table 6-1**. The complete dive logs are shown in **Appendix B.** Clearance to dive issued by the US Navy is shown in **Table 6-2**.

Table 6-1. Dive Schedule.

Date	Dive #	Site	Latitude	Longitude	Depth
19-Aug		WHOI			
20-Aug	4960	Wilmington Canyon	38.4294	-73.5361	665
21-Aug	4961	Pea Island seep	35.706	-74.826	500
22-Aug		no dive - weather			
23-Aug	4962	Richardson Ridge	32.00982	-77.40235	814
24-Aug	4963	Richardson Ridge	31.9862	-77.4182	855
25-Aug	4964	Blake Deep	31.323	-77.243	1300
26-Aug	4965	Stetson Banks	32.018	-78.322	500
27-Aug	4966	Stetson Banks	32.018	-78.322	500
28-Aug	4967	Blake Ridge	32.494	-76.191	2155
29-Aug	4968	Cape Fear	33.567	-76.45	425
30-Aug	4969	Pamlico Canyon	34.9359	-75.1672	1600
31-Aug	4970	Norfolk Canyon	37.03294	-74.3173	2000
1-Sep		transit			
2-Sep		WHOI			

Table 6-2. Dive Site Clearance - USN.

Site	Lat	Long	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep
Wilmington Canyon	38d26	73d32	x												
Pea Island seep	35d42	74d50	x	x	x										
Pamlico Canyon	34d59	75d12	x	x	x							x	x	x	
Cape Fear Seep	32d59	75d56		x	x	x					x	x	x		
Stetson Deep	32d01	77d24			x	x	x								
Blake Deep	31d19	77d15				x	x	x							
Blake Mounds	31d05	79d30													
Million Mounds N	30d34	79d42						x	x	x					
Stetson Shallow	32d01	78d19							x	x	x				
Blake Ridge	32d30	76d11								x	x	x			
Cape Fear	33d34	76d27									x	x	x		
Hatteras Canyon	35d17	74d54										x	x	x	
Norfolk Canyon	37d02	74d19											x	x	x
x indicates that the site was cleared for Alvin diving on that date															

The master sample log primary information is presented in **Appendix C.**

Appendix A – Plan of the Day (POD)

AT41 – DEEP SEARCH
Plan of the Day

Aug 19

0400 everyone on board

0530 departure from WHOI pier
transit to Wilmington Canyon (~22 hrs)
38.4294 -73.5361 665m depth
multibeam mapping along the route

1020 Safety briefing in main lab

Aug 20

0800 Alvin launch @ Wilmington Canyon

1500 recover Alvin
begin transit to Pea Island (~18 hrs)
35.706 -74.826 500m depth

Aug 21

0800 Alvin launch @ Pea Island

1500 recover Alvin

1600 multicore

1800 CTD

2000 begin transit to Pamlico Canyon (~5 hrs)
34.9576 -75.2047 923m depth

AT41 – DEEP SEARCH
Plan of the Day

Aug 21

0800 Alvin 4961 @ Pea Island
35.70111 -74.79917 495 m

1500 recover Alvin

1600 multicore

1700 CTD (maybe 2)

2000 begin transit to Pamlico Canyon (~5 hrs)
34.9576 -75.2047 923m

Aug 22

0100 multibeam around Pamlico

0800 Alvin 4962 @ Pamlico Canyon

1500 recover Alvin

1600 multicore

1700 CTD cast

1800 transit to Cape Fear seep (~11 hrs)
32.9790 -75.9270 2600m

Aug 23

0500 multibeam around Cape Fear

0800 Alvin 4963 @ Cape Fear Seep

AT41 – DEEP SEARCH
Plan of the Day

Aug 22

0100 multibeam around Pamlico

0800 Alvin 4962 @ Pamlico Canyon
34.9359 -75.1672 1600 m depth
34 56.148 N 75 10.028 W

1500 recover Alvin
note: This is the required time on deck, if there is a multicore. However, if we have a successful dive, the multicore will be cancelled and on deck time is 1600.

1600 multicore (optional) in canyon axis, exact target TBD

1700 CTD cast in canyon axis, target does not need to be exact

1800 transit to Cape Fear seep (~13 hrs)
32.9797 -75.9289 2600m
32 58.781 N 75 55.732 W

Aug 23

0700 1-2 multibeam lines over Cape Fear dive target

0800 Alvin 4963 @ Cape Fear Seep

1600 recover Alvin (just an estimate - not a set time)

1700 multicore (optional) just off site, target does not need to be exact

1800 CTD cast off site, target does not need to be exact

1900 CTD cast over bubble plume if one was seen in multibeam or on dive

2000 transit to Stetson Deep

Aug 24 – multibeam of Stetson Deep followed by Alvin 4964 @ 0800

AT41 – DEEP SEARCH
Plan of the Day

Aug 23

0800 Alvin 4962 @ Stetson Deep
32.00982 -77.40235 814m
32 00.589 N 77 24.141 W

~1700 recover Alvin (no specific time, whenever the dive is complete)

immediately followed by CTD cast, firing all bottles near the seafloor

1830 CTD cast #2

2000 multibeam survey in the Stetson Banks area

Aug 24

0800 Alvin 4963 @ Stetson Deep
31.9862 -77.4182 855m
31 59.170 N 77 24.141 W

~1700 recover Alvin (no specific time, whenever the dive is complete)

immediately followed by multicore near launch target, no specific location

1830 CTD cast in same approximate location as multicore

2000 Transit to Blake Deep (~ 5 hrs)
31.323 -77.243 1300m
31 19.38 N 77 14.579 W

Aug 25

0100 Multibeam around Blake Deep

0800 Alvin 4964 @ Blake Deep
exact launch coordinates TBD

AT41 – DEEP SEARCH
Plan of the Day

Aug 25

0000 Multibeam around Blake Deep

0800 Alvin 4964 @ Blake Deep
31.319057 -77.244999 1293.68 m depth
31 19.143 N 77 14.699 W

Alvin recovery (upon completion of tasks, no specific time)
Followed by multicore if there is a suitable location
Then CTD cast nearby

When complete, begin transit to Stetson Shallow
32.018 -78.322 500 m
32 01.08 N 78 19.32 W

Multibeam overnight

Aug 26

0800 Alvin 4965 @ Stetson Banks
exact launch target TBD

Alvin recovery (upon completion of tasks, no specific time)
Followed by multicore if there is a suitable location
Then CTD cast nearby

Mapping in the Stetson Banks area overnight

Aug 27

0800 Alvin 4966 @ Stetson Banks
exact launch target TBD

Alvin recovery (upon completion of tasks, no specific time)
Followed by CTD cast nearby

Transit to Blake Ridge (~12 hrs)

AT41 – DEEP SEARCH
Plan of the Day

Aug 25

0000 Multibeam around Blake Deep

0800 Alvin 4964 @ Blake Deep
31.319057 -77.244999 1293.68 m depth
31 19.143 N 77 14.699 W

Alvin recovery (upon completion of tasks, no specific time)
Followed by multicore if there is a suitable location
Then CTD cast nearby

When complete, begin transit to Stetson Shallow
32.018 -78.322 500 m
32 01.08 N 78 19.32 W

Multibeam overnight

Aug 26

0800 Alvin 4965 @ Stetson Banks
exact launch target TBD

Alvin recovery (upon completion of tasks, no specific time)
Followed by multicore if there is a suitable location
Then CTD cast nearby

Mapping in the Stetson Banks area overnight

Aug 27

0800 Alvin 4966 @ Stetson Banks
exact launch target TBD

Alvin recovery (upon completion of tasks, no specific time)
Followed by CTD cast nearby

Transit to Blake Ridge (~12 hrs)

AT41 – DEEP SEARCH
Plan of the Day

Aug 26

Brief multibeam survey at Stetson Banks after the 7-8 hr transit
Target for center of survey:
32 04.279 N 78 22.396 W
Be on station at launch site (see below) by 0700

0800 Alvin 4965 @ Stetson Banks
32.01023 -78.32439 556 m depth
32 00.613 N 78 19.463 W

Alvin recovery (upon completion of tasks, no specific time)
Followed by multicore if there is a suitable location
Then CTD cast nearby

Mapping in the Stetson Banks area overnight

Aug 27

0800 Alvin 4966 @ Stetson Banks
exact launch target TBD

Alvin recovery (upon completion of tasks, no specific time)
Followed by CTD cast nearby

Transit to Blake Ridge (~12 hrs)
32.494 -76.191 2155
32 29.64 N 76 11.46 W

Aug 28

Short multibeam survey upon arrival
Be on station no later than 0700

0800 Alvin 4967 @ Blake Ridge
exact launch target TBD

AT41 – DEEP SEARCH
Plan of the Day(s)

Aug 27

overnight multibeam survey in the Stetson Banks area

0600 Be on station no later than this
suggested launch target (but evaluate currents in the morning)
Target is 250 m south and 1500 m upstream from mooring
32 03.489 N 78 22.995 W
32.058164 -78.383258 398 m depth

0800 Alvin 4966 @ Stetson Banks
mooring location: 32 04.279 N 78 22.396 W
32.071309 -78.373331 405 m depth

Alvin recovery - on deck no later than 1700

CTD cast nearby – needs to be completed by 1900

Transit to Blake Ridge (~12 hrs)
32.494 -76.191 2155
32 29.64 N 76 11.46 W

Aug 28

Short multibeam survey upon arrival
Be on station no later than 0700

0800 Alvin 4967 @ Blake Ridge
exact launch target TBD

CTD cast over site following recovery

Steam to an off-site location and take a multicore

Transit to Cape Fear seep for a short multibeam survey
32 58.74 N 75 55.62 W
32.9790 -75.9270 2600

Then continue to Cape Fear coral site
33 34.02 N 76 27.0 W
33.567 -76.45 425 m depth

AT41 – DEEP SEARCH
Plan of the Day(s)

Aug 28

Transit to Blake Ridge

0800 Alvin 4967 @ Blake Ridge
32 29.648 N 76 11.455 W
32.49413 -76.19092 2166 m

~1700 Alvin on deck (approximate)

1800 CTD cast over largest bubble plume on site following recovery

1900 Steam to an off-site location and take a multicore

2000 Transit to Cape Fear seep for a short multibeam survey
32 58.74 N 75 55.62 W
32.9790 -75.9270 2600 m

Aug 29

0100 continue to Cape Fear coral site
33 34.02 N 76 27.0 W
33.567 -76.45 425 m depth

0600 Arrive Cape Fear Coral site for short multibeam survey

0700 be on station

0800 Alvin 4968 @ Cape Fear coral mounds
exact launch position TBD

Alvin recovery upon completion of dive, no specific time

Followed by CTD cast over site (maybe 2)

Transit to Pamlico Canyon (~100 miles)
34.9359 -75.1672 1600 m depth
34 56.148 N 75 10.028 W

Aug 30: dive on Pamlico, CTD cast, transit to Pea Island (50 miles) for CTD and MUC, continue to Norfolk Canyon (80 miles)

AT41 – DEEP SEARCH
Plan of the Day(s)

Aug 28

2100 Transit to Cape Fear seep for a short multibeam survey

Aug 29

0100 continue to Cape Fear coral site

0600 Arrive Cape Fear Coral site for short multibeam survey

0700 be on station

0800 Alvin 4968 @ Cape Fear coral mounds
33 34.6 N 76 28.172 W
33.57668 -76.46954 457 m

Alvin recovery upon completion of dive, no specific time

Followed by CTD cast over site (maybe 2)

Transit to Pamlico Canyon (~100 miles)

Aug 30

0800 Alvin 4969 @ Pamlico Canyon
34.9359 -75.1672 1600 m depth
34 56.148 N 75 10.028 W

1700 Alvin on deck

transit to Pea Island (~50 miles)
35.70001 -74.8011 450 m depth
35 42.0 N 74 48.066 W

2200 CTD cast, then MUC

Aug 31

Transit to Norfolk Canyon (~80 miles)

0800 A4970 @ Norfolk Canyon, then start transit to WHOI

AT41 – DEEP SEARCH
Plan of the Day(s)

Aug 30

0800 Alvin 4969 @ Pamlico Canyon
34.9359 -75.1672 1600 m depth
34 56.148 N 75 10.028 W

1700 Alvin on deck

transit to Pea Island (~50 miles)

2100 MUC
35 42.001 N 74 48.066 W 450 m depth

2200 CTD cast
35 42.391 N 74 48.754 W 450 m depth

Aug 31

Transit to Norfolk Canyon (~80 miles)

0800 A4970 @ Norfolk Canyon
bottom target for launch:
37.048806 -74.522506 1347 m
37 02.928 N 74 31.350 W

recover Alvin at completion of dive

1830 CTD cast over site x2
First is a complete water column profile in deeper part of canyon
(use A4970 launch target above)
Second is water collection just below the thermocline

Begin transit to WHOI

Sept 1

Transit all day

Sept 2

0845 Arrive Woods Hole

Appendix B – Dive Log

Dive: 4960 **Pilot:** Bruce Strickrott **Observer:** Amanda Demopoulos
Danika Forsman
Date: 20 August 2018 **Site:** Wilmington Canyon

Time	Depth (m)	Activity	Comments
1209	on deck	cheeks / rechecks	
1214	at surface	released from ship	
1222	at surface	diving	approx bottom d = 687m
1225	90	continuing to dive	CTD is on
1228	200	no grounds / ~~no~~ lines - checking nav	
12:35	430	no nav coms, will have surface (top lab) navigate us	
12:36	467	–	POM / particulate material
1239	595	100 mab	
1244	682	on bottom	soft sediment
1246	682	"	good current from SW
1251	682	"	ground, Heading 223
1252	682		ground +24 hill
1304	683	reset Nav /	lines - low vis. / talking thru ground issue, current is ripping
|	|		2kt current @ SW to NE
1316	684.4	ground resolved on the move	VB saltwater pump motor grd
1322	685		HDG - 233, fish - ophidiid ? small
|	|		frame grabber not working / audio ~~doesn't~~ ~~just turned on~~
1328	685	—	all teradecks w/out power
|	|		current to NE - 3kt approx
1338	685		pointed into current / teradecks
|	|		not working
1342	685		started the power to acquire data
|	|		but framegrabbers not working
|	|		dolphins audible
1403	681		heading to T2 → crabbing along
1406	674	moving to WP2	rattail / myctophid
1410	669		hilly terrain
1411	683	bottom - muddy	rattail / trash, ~~pen~~ plate
1431	662	on bottom - adding water → vis 0%	
1441	656	"	current changed direction from NE
|			Chaceon crab - missing limbs
|			in down working
1451	635	came off bottom	shrimp / other swimmers
1506	642	moving W	anemone, fishing gear nearby
1509	647	" "	lots of swimers in water
1518	668	on bottom	0% vis

port video boulder w/ crab →

Dive: 4960 **Pilot:** BS DF **Observer:** A. Dompoulos

Date: 20Aug2018 **Site:** Wilmington Canyon

Time	Depth (m)	Activity	Comments
1534	668	on bottom - assessing	- plan to move west
1539	663	off bottom	lots of ctenophores
1542	679	moving west	persistent nepheloid layer
1546	668	on bottom	hake ~~off~~ port; beer can
1556	688	taking PC 1	inserted into mud
1558	688	~~take~~ recovered PC 1	in gunner, mud seafloor
1559	688	taking niskins	
1601	688	niskin 5 fired	
1602	"	niskin 4 fired	
1603	"	niskin 3 fired	
1604	688	niskin 2 fired	
1606	688	niskin 1 fired	
1607	688	getting ready to leave bottom	
1609	686	off bottom	lots of salps, jellies
		heading to surface	ctenophores, POM, dense
1615	529		lots of fish.
1622	327	heading up.	POM - tolerance marine
1634	15		wavy water
1639	11	on surface	
1645	9	@ bow	
1648	7	Tow is attached	

all same location

Time	Depth	Lat	Long	activity
1315	0			diving
1325	250			
1343	735			bottom in sight
1349	738	32 0.838	77 23.757	on bottom
1355				
1414				Q4
1420	725			B2
1423		32 0.803	77 23.755	marker 17
1439	725			niskin 5
1458	722			running south
1506	740			collecting
1518	744	32 0.722	77 23.704	Q1
1525				B3
1532				4K
1537		32 0.722	77 23.704	marker 18
1541	744			niskin 4
1550				running
1607				
1615	711			B1
				4K
1625				
1628				niskin 3
1650	695			4K
1655				B4
1702				Q2
1707				niskin 2
1711				4K
				driving
1718				4K
1731	695	32 0.562	77 23.742	B6
1750				4K
1800				
1821				HD
1830				B5
1850	718			
1857	715			Q3
1904	715			Q5
				niskin 1
1910		32 0.509	77 23.672	Q9

1918	715			
				Q8
1929		32 0.517	77 23.642	Q10
1937	708			
1939		32 0.524	77 23.637	Q7
1945				Q6
1950				P1
2006				4K
2021	720			

comments

(0915 local)
drifting NE of T1
driving SW, got dark ~200m
12m off, coral rubble with sediment
all Lophelia rubble, lots of sm octocorals
over 1km from peak @ T4, decided to work here
headed S upslope
plumarella?, plexaurid, anthomastus
Echinus + Lophelia
huge ridge of coral - live Lophelia everywhere

good 4K video
up over ridge into current, tons of live stuff on N face
live Lophelia, ~100 m S of 1st collection
lophelia in micro quiver
live Loph, Duva? Plumarella? Brittles, sm piece fell in bottom of B1
swordfish!!!

headed south 165 deg
came to 210 some small Enallop, mostly rubble in depressions
live Lophelia
good live coral scene
collection complete

Lophelia closeup
collecting Lophelia
Lophelia

anthomastus
to WPT3
takeoff
collecting Lophelia
reef and takeoff
headed to WPT3, getting blown around
highlight
Lophelia and Madrepora
came down on lee side, some Enallopsamia
Lophelia and Enallopsamia
Enallopsamia

Enallopsamia

crawling forward
Enallopsamia
Lophelia, some also in Q7
moved over to get last Enallop
kind of small, piece in basket

tried to core, but fell right out
coral/fish closeup
leaving bottom

Time	Depth	Lat	Long	activity
1224	0			descending
1235	340			bottom in sight
1240	395			on bottom
1253	400			
				(0900 local time)
1310	400	32 03.572	78 22.379	
1316				
1322	400			
1328				
1329				1km south of target
1349				400 m SSW
1408	403			mooring search cont
1458				
1509	402			
1541	402			
1553	402			
1606	400			
1612	404			
1624				sampling
	404	32 04.186	78 22.268	
1649				niskin 5
1651				
1707	403	32 04.190	78 22.290	
1740	402	34 04.19	78 22.342	coral pot
1750				
1800				niskin 4
1810				
1815				
1820				
1834	403			
1900				
1920				

comments

rocks and sand with ripples
sponges, stylasterids, lots of cup corals
some sargassum, very short octocorals
carbonate crust, outcrop w/ 100 white plexaurids
about 1200m S of mooring target
heading N to TGT
strong current blowing E
a few small Lophelia
lg Acanthogorgia
sm field of Callogorgia (?)
more Acanthogorgia, cobble/nodules
some large Leiopathes
Lophelia and Enallopsamia
2 small octopus
all corals are short, except a few Leiopathes
get too tall and blown over? Sediment abrasion?
ran over TGT S-N, nothing
ran right nover TGT E-W, still nothing in sonar
knoll E of TGT w/ lots of Lophelia and Enallopsamia
ran W into depression, trying to get deeper, very sandy
then turned E + ran w/ current
lost coms and tracking so we stopped
continuing ENE of TGT
coming S, 200m E of TGT
stopping SE of TGT for sonar sweep
because we're bored
sm rocks

heading NW towards TGT
collecting sm rocks into biobox w/anthomastus, acanthogorgia, cup corals

sample secure

drifting NE
came SE
chain catshark
getting ready to leave
weights away
on surface

Dive: 4965 **Pilot:** J. Grau **Observer:** Demopoulos/Adams

Date: 26 Aug. 2018 **Site: Stetson Banks**

Time	Depth (m)	Activity	Comments
12:03	At surface	Waiting to dive	Surface current ~4kt
12:08	At surface	diving	400 m NE of launch target, cameras recording
1210	60	CTD started	Note: CTD was actually removed from the Sub, so no CTD data
1217	300	descending	Good amount of marine snow
1220	407	descending	Lasers on
1226	541	Bottom in site	About 1 km east of launch target, off the map (underlay)!
1226	541		Bottom appears hard (rock pavement). Lots of white corals and sponges
1235	545	Taking in water (to gain weight)	Current pushing to the SE, trying to sit on bottom
1238	543		Squid off port side
1242	545	On bottom	
1250	553	Transiting to wall	Small coral patches (stony), hard bottom, squids!
1250	553		Dead coral rubble, rattail fish
1256	555	Setting down to collect	Black coral – maybe leiopathes, Lophelia, stylasterids
1304	558	Collect black coral	In quiver 5
1316	558	Quiver 5	Collected white and yellow coral into q5 (yellow and white enallopsammia)
1321	558	Niskin 5	By q5 collection
1322	558	PC10 attempt	No way, hard bottom
1324	558	Moving for collection	Near q5 leiopathes collection
1331	558	B1	2 soft corals, zoanthid?, white Stony coral(enallopsammia)
1335	558	Rock collecting	MnFe coated rocks put aft of quiver milk crate
1342	558	Q4	Bamboo collection
1347	558	On the move	Headed to wall, lasers on, coral rubble, hard pavement,, lots of tiny plexaurids, small stony colonies, scattered rocks
1358	553	transiting	Lots of small colonies white and yellow stony corals.
1405	551	transiting	Green eye?, lumpy terrain

1411	551	Setting down to collect	Lophelia?
1423	551	Collect B2	plexaurid
1427	551	moving	Current from SW, fewer colonies, toward wall
1436	540	Moving to wall	Terrain – rocky, small hills
1444	512	Moving along wall	
1451	496		Beryx-fish
1502	482	Setting down to collect	Along rock ledge feature, lots of lophelia and plexaurids
1521	482	collection	Q6 bamboo, lophelia, plexaurid
1545	468	wall	Platey/steps, exposed lighter Surfaces, conger with fish in mouth
1552	456	Lateral along wall	Steep cliff face
1601	429	Reached top of ledge	
1612	434	Collect b4	plexaurid
1617	434	Collect lophelia in b4	
1624	434	Collect niskin 2	Next to plexaurid
1625	434	Moving lateral	
1637	434	Moving NE	Red staining on clean rock face
1639	433		Current strong moving NE
1642	435	Attempting coral collection	Callogorgia? And lophelia
			Observed fish: scorpaenid (black Belly rosefish, Beryx), edges of Ledges loaded with plexaurids. Collection was not successful
1654	434	Collecting Q7	Callogorgia? And enallopsammia Q7
1708	436	Moving NE	
1711	437	Collected rock	Starboard aft part of basket
1723	445		Fishing line with hooks on seafloor
1725	447		Found another leiopathes
1735	447	Collect B5	leiopathes
1753			Attempt to collected Enallopsammia no luck
1810	447	Heading to top of ledge	
1814	429	On top of ledge	POM visible throughout dive
1818	429	Top of ledge/plateau	Sponge, stylasterid, callogorgia?, Zooanthids on black coral, enallop
1829	425	Drift test	~ 10m/min
1842	427	Moving toward T5	Using current to push west,

			Substrate pavement with FeMn Coating, some sediment “dust”
1846	429		Getting ready to mussel/coral pot
1849	429	MP collected	Over live/dead lophelia and enallopsammia? with rock
1854	428	Setting up to niskin	45 m from MP
1859	429	Niskin #1 fired	
1900	429	Trying to PC	Not possible, hard pavement Covered with light dust
1907	429	Q4	Collected small paragorgia? White coral that looked different.
1914	427	Transiting	Fan type sponges, w/callogorgia?, Enallopsammia,
1942	428	Finished transiting	
1950	350	Off bottom	End of dive
2000	On surface		

Dive: 4968 **Pilot:** Bruce **Observer:** Michael Rasser

Date: 8/29/18 **Site: Cape Fear**

Time	Depth (m)	Activity	Comments
12:09	-	Launch	
12:11	75m	descending	
12:21	249m	Transiting	
12:26	400	Squid	Inked
12:28	450	Reached bottom	Some small fish, can see bottom, bottom appeared highly scoured
12:29	452	Shrimp	
12:30	454	On bottom	
12:35 heading	455	Heading towards target.	
12:33	455	Transiting	Interesting sandy bottom with sorted sediment perpendicular to the route of travel
12:35	455	Transiting	Heading towards target 1
12:38		Transiting	Lophelia sighted
12:40		Transiting	Rat tail, , urchins
12:45	457	Sampling	Coral rubble, lophelia
12:50	‘	Sampling	Jelly fish everywhere
13:06	‘	Sampling	Trouble with camera, joystick not operable, later was working.
13:08	459	Sampling	Good 4K video of fish (rattail)
13:24		Sampling	On a small slope coring , coring was difficult , retried 2 and 6 . 1 set of push cores collected though not sure if complete because of difficulties Marker 6 deployed.
13:36	‘	Sampling	Deploying muscle pot
13:56	‘	Sampling	Live lophelia
14:04		Transiting	To Point 1
14:11		Transiting	Major “drop off” edge of mound visible
14:13	428	Transiting	Lots of lophelia
~14:30	411	Stop	Current issues Bruce calls Eric
14:30		Transiting	
14:38		Transiting	Sharks
14:47	399		
15:05	406	Sampling	Currents difficult

15:24	‘	4K	Great 4k video of crabs eating
1537		Sampling	Marker installed (16)
15:48	400	Sampling	Niskin 4, Muscle Pot 3 Crab video
15:55	400	Sampling	Tried coring, Q5 cup coral
16:12	397		
16:20		Sampling	Tried sampling octocoral (white in color)
16:38			Big Wreck Fish!
16:39			Big Wreck Fish! Captured on 4K
16:42	385	Sampling	Sampling octocoral.
17:01	380	Transit	Lots of dead coral rubble and some anemones
17:03		4k	Lots of anemones, 4K video take.
17:10	371		Lots of dead coral
17:15	381	Sampling	Marker 10 live lophelia
17:26	‘		
18:03	381		
18:24	381		
18:30:50		4K	Great video of a large red fish
18:31	374	4k video	Video of spider crab
18:38		Transiting	On return trip saw more live lophelia
• Times of sample locations are located in scanned basket map.			

Dive: 4969 **Pilot:** J. Grau **Observer:** J. Chaytor

Date: 08/30/2018 **Site: Pamlico Canyon**

Time	Depth (m)	Activity	Comments
1154		Off deck	
1156		In water	
1200		Diving	
1309	1607	On bottom	4oC, trash nearby
1310	1607	Push coring (cores 1-6)	Near boulders in arrival spot, soft sediments, trails; boulder has seastars; fish and crustaceans present
1323	1603		
1325		Heading towards T2	Sargassum present
1335	1595	At first wall	Chalky-looking rocks; fly-trap anemone
1337	1596	Sampling rock (R1)	Broke before going into the basket (orange milk crate-Scoop), some made it in; some fell in between quivers
1343	1596	Coring – base of wall	Cores 6-12, thick sediments, dead coral, sargassum, clam shells,
1356	1956	Successful slurp of crustacean	
1408	1579	Sampling Black coral and single branch white coral	Black coral has an oph. Associate; corals collected in the same location; 3.5oC
		Niskin #5 shot	
1419	1577	Sampling octo coral (Q9)	
1429	1565	Sampling solitary Desmo. for micro	Steep wall, slight overhang
1438	1564	Niskin #4 shot	
1454	1533	Sampling stoney and octo-corals	In B5 together; overhang
1504	1511	Sampling rock, multiple pieces	In orange crate (scoop), broke into
1515	1508	Sampling suspected param. x2 with ophs.	Q3; wall
1519	1508	Niskin #3	With Q3 corals
1530		4k stuff	
1549	1478	@ T2	
1555	1479	Rockfall?	

Commented [CJ1]:

1604	1477	Push cores 13-18	In mixed base of slope rock and debris
		Sampled rock (v. white)	In orange crate (scoop)
1613	1476	Sampling clam	In B4, shell may be crushed a little; 4oC
1626	1453	Sampled multiple Desmo. in Q7	Multiple desmo from overhang plus underlying dead coral
1629	1453	Niskin #2	With Q7 samples
1636	1450	Octo-coral, yellow (param.?)	In biobox B4
1641	1435	Sampling octo coral x2 (Chryso. and another) with associates	In biobox B6 together
1648	1430	Sampling Scler.	In Q10
1655		4K stuff	
1701	1428	Black coral with associates, big hold-fast	Q6 snip
1709	1395	Top of the tail (T3)	
1718	1337	Steep sed. slope	No sign of significant downslope transport or strong bottom current
1727	1273	T3, sediment	
1738	1263	Coring (#'s 19-24)	Base of "upper" wall, some scattered bio/geo debris; needed to shake out a core and reposition; 4oC
1755	1262	Sampled rock	White, bioturbated
1807	1253	Sampling coral (Scler.)	Difficulty sampling, managed to get some small pieces (in Q4); 4.5oC
1818	1254	Niskin #1	
1831	1242	Sampling coral (Anth.), in Q5	Tried for purple colored coral but but lost it; collected small red octo coral nearby in Q5
1846	1224	Vertical "fracture" in wall, filled by black rock; sampled	In Orange crate (scoop)
1918	1104	Sampled Paragorgia	In micro quiver Q1
1947	1052	T4!	Sediment, fish, sargassum
2010	1047	Leave bottom	

Dive: A4969 **Pilot:** Jefferson Grau **Observer:** Zach Proux

Date: 08/30/2018 **Site:** Pamlico Canyon

Time	Depth (m)	Activity	Comments
13:09:00	1607	Push cores 1-6	
14:07:00	1578	Popped Niskin #5	
14:09:00	1578	Quiver #8 collection	Bathypathes and white octocoral
14:19:00	1577	Quiver #9 collection	UnI.D. octocoral
14:31:00	1564	Quiver #2 collection	What we thought was solitary Desmophyllum, but was Javania
14:37:00	1564	Popped Niskin #4	
14:53:00	1533	Biobox B5 collection	Solensmilia and unI.D. octocoral
		Push cores 7-12	
15:13:00	1507	Quiver # 3 collection	2 small Paramuricea
15:17:00	1507	Popped Niskin #3	
	1477	Push cores 13-18	
16:09:00	1477	Rock collection in scoop	
16:11:00	1475	Biobox B4 collection	Clam
	1453	Quiver #7 collection	Many Desmophyllum
16:26:00	1453	Popped Niskin #2	
16:35:00	1444	Biobox B4 collection	Paramuricea mayB Acanthogorgia
16:42:00	1435	Biobox B6 collection	Chrysogorgia and Acanthogorgia
16:52:00	1430	Quiver #10 collection	Solensmilia
17:01:00	1428	Quiver #6 collection	Branch from large black coral
		Quiver #4 collection	Solensmilia
18:17:00	1254	Popped Niskin #1	
18:35:00	1248	Quiver #5 collection	Anthomastus, purple stoloniferan
19:18:00	1105	Quiver #1 collection	Paragorgia
20:20:00		Off bottom	

Dive: A4960 **Pilot:** Bruce Strikrott/Danik Forsman **Observer:** Amanda Demopoulos

Date: 20 August 2018 **Site: Wilmington Canyon**

Time (UTC)	Depth (m)	Activity	Comments
1209	On deck	Checks/rechecks	Pit dive
1214	surface	Released from ship	
1222	surface	diving	Approx. bottom depth=687 m
1225	90	diving	CTD is on
1228	200	diving	No grounds/checking nav, nav not working
1235	430	diving	No nav comms, top lab will have to navigate us
1236	467	diving	Lots of marine snow
1239	595	diving	100 m above bottom
1244	682	On bottom	Soft sediment
1246	682	On bottom	Strong current from SW to NE
1251	682	On bottom	Ground detected (maybe 24 thru hull, but trying to isolate)
1304	683	Reset nav sms	Low visibility, PIT/P troubleshooting ground issue, 2kt current ripping, SW to NE
1316	684	Ground resolved	Ground in VB saltwater pump motor motor
1322	685	On the move	HDG-233, fish – ophidiid? Frame grabber not working
1328	685	On the move	All teradecks w/out power/not working, 3 kt current to NE, sub headed in direction of current
1342	685	On the move	Started power to acquire data but framegrabber not working. Dolphins/whales audible
1403	681	Heading to WP2	Crabbing along to the SE, using current
1406	674	Heading to WP2	Rattail and myctophid fishes
1410	669	Heading to WP2	Lumpy, hummocky terrain, soft sediment
1411	673	On bottom	Muddy/soft sediment, rattail and trash (plastic plate)
1431	662	On bottom/adding weight/water	Vis 0%
1441	656	On bottom	Current seems to have changed direction from the NE. Chaceon crab missing several limbs in down looking camera
1451	635	Off bottom	Shrimp/other zooplankton swimmers in water column, anemone on rock. Top lab reported that fishing gear was nearby, to the NE of us (same direction as the current)
1506	642	Moving west	Moving to get away from fishing gear, Lots of swimmers in the water. Rounded

			boulder on port side with Bathynectes-like crab at base, took internal camera image.
1509	647	Moving west	
1518	668	On bottom	0% vis
1534	668	On bottom	Assessing plan given no vis, swift current, and fishing gear. Plan to continue moving west to gain distance between us and gear.
1539	662	Off bottom	Lots of ctenophores in water column
1542	679	Moving west	Persistent nepheloid layer
1546	688	On bottom	“hake” off port side, beer can
1556	688	Push core	PC1, inserted into mud once vis became clear, good core.
1559	688	Push core recovered	PC1 in quiver, mud seafloor
1559	688	Niskin samples	Collecting niskins at push core location
1601	688	Niskin 5 fired	All niskins collected in same location, where push core 1 was collected
1602	688	Niskin 4 fired	
1603	688	Niskin 3 fired	
1604	688	Niskin 2 fired	
1606	688	Niskin 1 fired	
1607	688	Prepping to leave bottom	
1609	686	Off bottom	Heading to surface, lots of salps, jellies, Ctenophores, dense POM
1615	529	Off bottom	Lots of fish
1622	327	Heading to surface	Dense marine snow, POM
1634	15	none	Wavy water
1639	11	On surface	
1645	9	At bow	
1648	7	Tow’s attached	

AT41 Dive #4961 Report
Mandy Joye, Port Observer
22 August 2018

Pea Island Seep
Geological description
Biological description

Dive Notes (ALVIN time, GMT)

1206 – Left surface; diving. Water depth=488. Weather=calm. Surface water T=27ºC. Good bit of biomass in the water.

1214 – 262m; phenomenal amount of turbidity in the water, small and multi cm-sized marine snow (sinking with tails pointing upward). Marine snow gets more dense as we approacb bottom

1221 – 500m, 10-20m off bottom. 7ºC, very turbid, abundant animals

1242 – 511m, on bottom; survey area. Lots of worms (tubes, feathery heads, very thin) and sediment surface is brown and hummocky. No discoloration evident here.

1256 – 489m, proceed to waypoint #1. Many animals on the bottom, anemones, eels, crabs, shrimp, salps, ctenophores, many sarcina clusters of bacteria, and a lot of marine snow

1301 – 479m, bulls eye mats!; a school of squid has shown up and are putting on a show

1310 – 462m, mat patches – 10'x10'-15' area of bulls eye mat; methane vents and jet black areas that likely denote high sulfide

1322 – 442m, 1st set of cores taken at this location.

1329 – Core 1 in with some compression. Looks good. Bubble release upon core insertion.

1332 – Core 2, ~5 cm compression

1332 – Core 3, ~2 cm compression

1333 – pulled these three cores to check pull out and to evaluate the depth; they look really good. Flat surface, all have nice mat; about 20-25 cm depth consistently.

1337 – 442m, continue coring at Mat Site #1. Core #4 was inserted over hydrate, refusal around ~15 cm. Core #5 (1343) also on top of hydrate and shorter

1345 – Core 6. Recover this trio of cores because squid are attracted to the area and are dive-bombing and disturbing (squirting water at Beggiatoa patches) the mat all around the set of cores

1354 – cores 7-9 are take home Beggiatoa mat samples. Moved a little to starboard from our previous position. Similar looking patch of mat. 1357 – core 7, lots of bubbles; core 8, crooked and compressed; core 9, in and compressed. Nice matt in each of them.

1408 – recover this trio of cores. Completion of Set #3 of cores (9 cores, 3 for Amanda, 3 for Joye lab, 3 for Joye lab take home)

1410 – there are 3 sets of cores, same habitat but different locations. Be sure to split equally between AD, MJ and JTH so one core from each set of 3 goes to each

1413 – fly over and get video of sampling area

1416 – 445m, head to waypoint 2

1417 – 429m – WOW. Big field of shell hash and carbonate. Shells are B. childressi (probably, about the right size) and clams. Shells are not cemented and are distributed across the surface in a substantial area. The carbonate has the typical look of authigenic carbonate (there are pavements and outcrops from sediment).

1424 – more carbonates! Lots. These appear quite old as there is a sediment drape on the top and many animals associated with the carbonate. Tried to break off a piece of the pavement and it is solid. Secondary cementation is holding it together.

1434 – picked up two pieces of carbonate (fist size) and placed into biobox (anemone on one of the carb pieces).

1434 – tried to catch a crab, no luck

1451 – 408, at waypoint #3. Soft bottom, brown. No signs of seepage. No carbonates. Worms are extending from tubes and feeding (with ~5 tentacles) on the seafloor. Collected some of these worms and put into biobox. No signs of plumes here. We surveyed the area and observed nothing so are leaving area.

1512 – moving to Northern line of targets (waypoint 4) transiting above bottom (>10' off) to save some battery and time

1537 – midway between S and N lines, stopped to take control mud cores near some patchy carbonate. There are small (baseball sized) mats in the vicinity but no mat within 20' of the coring location

1540-1550 – 366m, coring pen worm location

1549 – triggered Niskin #5 at coring location

1605 – 367m, completed coring and began core pull out. Nice level cores, about 20-25 cm of sediment; brown, no obvious redox zonation.

1641 – 431m, head to T3 but there is nothing here. Same boring brown bottom.

1644 – 431m, patches of Beggiatoa here and there

1645 – 434m, check video…is this possibly hydrate?

1655 – 455m, Niskins #3 and 4 at a new Beggiatoa mat coring location. This is a much thicker mat!

1657 – 455m, coring – THICK Beggiatoa mats and very porous, highly sulfidic sediment; started with core #18. Manip jaws are not operating correctly. Barely got that core. Tried to discern what is wrong with manip…

1705 – we need to switch to Starboard manip for the rest of coring. Will be slower and a bit tedious

1705-1733 – collected 9 cores. Three for Demopoulos/Joye Lab parallel work and three for the Joye Lab to use for experiments. Core order: 17- 16 – 21 – 20 – 19 – 24 – 23 – 22 – 25 – 26 – 27. BUT, all of the cores were crooked and sub-optimal for slicing and dicing. These are extremely gassy and might be better suited for lab work.

1759 – v. difficult to core with the starboard manip. Jerky and v. difficult to set the cores flush with the sediment interface.

1800 – moving around looking for good targets to sample

1825 – 468m, arrived at way point #3. Brown sediment with worms and little else. Ran a grid around the waypoint and say nothing to indicate seepage in the area. Heading back towards waypoint #4.

1836 – 468m, another nice, thick, fairly sized mat. No bubbles so perhaps not as active as the first seep site but we will core here.

1837 – Fired Niskin #2 before coring

1840-1900 – Coring – 30, 29, 28, 31, 32, 33. All cores at a rather steep angle but we should be able to do something with them. Bad vis here; tough to get the cores out and in (squid-interference did not help). Finished placing cores at 1900.

1902 – Pulling cores (slow), done at 1920.

1920 – fired Niskin #1

1930 – finished sampling

1935 – collected more worms since there are some around

Note: Squid are still messing with mat; swim down and stir things up for no apparent reason

1940 – 469m, Slurp mat. Slurped as much mat as possible to use for lab experiments.

2010 – 469m, Left bottom; End of Dive.

Dive: A4961 **Pilot:** Jefferson **Observer:** Chris Kellogg

Date: 8/21/18 **Site: Pea Island Seeps**

Time	Depth (m)	Activity	Comments
12:15	269	Sinking	Marine snow, lots of snot, small (2") silver fish
12:18	414	Sinking	Cloud of 2" silver fish
12:20	470	Sinking	Several small red shrimp; lots of gelatinous animals
12:22	509	On bottom	2 squid; anemones on soft bottom
12:23	508	Balancing	Tube worms lying on bottom; galatheid crab; squid
12:28	509	Balancing	Squid turned dark, inked us, fled
12:33	508	Balancing	Tons of salps; some squid; ribbon eels with black stripe on end of tail shrimp in water
12:51	497	Way point 1	Soft sediment; anemones; no seepage, no bubble plume
12:53	493	Scanning WP1	Tripod fish (?) weird coloration
12:56	489	Scanning WP1	Tongue fish; cut throat eel
12:57	489	Moving to WP2	Soft sediment; anemones; crabs; black-tail eels; salps
13:01	479	Moving to WP2	First evidence of bacterial mats
13:06	471	Transiting	Picked up school of squid; patchy bacterial mats; anemones; spider crabs
13:09	464	Transiting	4 black-bellied rosefish; patchy bacterial mats
13:20	441	Setting up for first set of 9 cores	Large white bacterial mat on slope; light seepage
13:38	442	First 3 push cores done	Cores 1, 2, 3 squid
13:51	442	Next 3 push cores	Cores 4, 5, 6 Squid interference
13:54	441	Slight move w/i same bacterial mat	Slight reposition to continue coring same bacterial mat as cores 1-6
14:04	442	Core 9 retrieved	
14:05	442	Core 7 retrieved	
14:06	442	Core 8 retrieved	First set of 9 cores complete
14:13	438	Turning upslope	Towards Target 2 (T2) = WP2; bacterial mats, diffuse seepage
14:17	429	Transiting to WP2	5 rosefish near anemones; broken mussel shells
14:18	424	Transiting to WP2	Exposed hydrate; dead worms;

			broken mussel shells
14:22	424	Set down by carbonate outcrop	Large shiny flat fish, tail like file fish, spines along back of head
14:26	424	Opening biobox	Hoping to sample carbonate rock
14:31	424	Collection	Chunk of rock into Biobox 1
14:32	424	Collection	2nd chunk of rock into Biobox 1
14:41	422	Crab leg collection	Spider crab (*Rochinia*?) legs into Quiver 9
14:49	408	Transiting	Realized worms lying on their sides on the bottom are alive; saw them retract and move
14:51	408	Biobox opened	Worm collection into Biobox 2
14:55	408	Collecting worms	Several claw-fuls of worms into Biobox 2
15:01	407	Turning in a loop	Looking for plume near WP2
15:03	399	Transiting	>20 crabs with anemones on their butts; rosefish curled around anemones or in burrows in soft bottom
15:12	416	Lifting off bottom	Transiting in midwater to more rapidly reach WP4
15:37	355	Setting down	"Control" core site with lots of worms but away from bacterial mats
15:42	367	Coring	Setting cores 10, 11, 12, 13, 14, 15 during squid swarm
15:50	367	Lights out	Turned off sub lights and hit strobe to see if squid would pulse back; they wandered off briefly instead
15:52	367	Water sample	Niskin 5
15:55	367	Retrieving push cores	Core 13
15:57	367	Retrieving push cores	Core 14
15:58	367	Retrieving push cores	Core 15
16:00	367	Retrieving push cores	Core 12
16:02	367	Retrieving push cores	Core 10
16:05	367	Retrieving push cores	Core 11
16:05	367	2nd set of cores completed	Six cores (10-15) taken in worm field
16:05	367	Transiting	Continuing to WP4
16:06	367	Off bottom	Transit to WP4 in midwater
16:23	Midwater	Transiting to WP4	63m off bottom; squid escort; salps
16:37	426	Bottom sighted	20m more to WP4
16:41	431	On bottom	Heading toward WP3

16:52	454	Bacterial mats found	Setting up for coring in mat
16:55	455	Water samples	Niskin 4 and Niskin 3 (3 starboard bottles are done)
16:58	455	Beginning coring	Pushed in core 18
16:59	455	Core 18 retrieved	
17:06	455	Equipment failure	Lost control of jaw on port manipulator; switching to starboard manipulator
17:11	455	Core 17	Pushed into bottom
17:13	455	Core 16	Pushed into bottom
17:17	455	Core 21	Pushed into bottom
17:21	455	Core 20	Pushed into bottom
17:23	455	Core 19	Pushed into bottom
17:25	455	Core 24	Pushed into bottom
17:27	455	Core 23	Pushed into bottom
17:29	455	Core 22	Pushed into bottom
17:34	455	Core 25	Pushed into bottom
17:36	455	Core 26	Pushed into bottom
17:39	455	Core 27	Pushed into bottom
17:41	455	Beginning core retrieval	12 cores at this site (16-27); Retrieving all except 18 which was collected at 16:59
18:04	455	Push cores	All retrieved from 2nd bacterial mat site; heading to WP3
18:07		Off bottom	Transiting to WP3
18:09	473	Bottom in view	
18:19	487	Circling	Vicinity of WP3; looking for mats
18:33	477	Circling	Armored sea robin; eel pout
18:35	470	Circling	Squid eating fish as long as itself
18:36	468	Stopping	White bacterial mat; 4 seastars; worms
18:39	469	Water sampling	Prior to coring; Niskin 2
18:42	469	Core 30	Pushed into bottom
18:48	469	Core 29	Pushed into bottom
18:50	469	Core 28	Pushed into bottom
18:54	469	Core 31	Pushed into bottom
18:57	469	Core 32	Pushed into bottom
18:59	469	Core 33	Pushed into bottom
19:20	469	Finished retrieving cores	Set of 6 cores (28-33) in bacterial mat
19:20	469	Water sample	Niskin 1
19:29	469	Collection	Seastar at coring site into Biobox 3
19:35	469	Collection	Worm at coring site into Biobox 3
19:36	469	Biobox closed	

19:41	469	Slurping bacterial mat	Slurping from 19:41 to 19:49
19:51	469	Predation event	Hagfish eating thin black eel; seen via starboard porthole
20:00	469	Securing biobox closed	Preparing to leave bottom
20:03	467	Moving	Bacterial mats; hagfish; seastar
20:06	463	Leaving bottom	Dropped 2 weights
			50m below surface lots of bubbles from cores degassing

Dive: A4962 **Pilot:** Bruce **Observer:** Cathy McFadden

Date: 8-23-18 **Site:** Richardson Ridge

Time	Depth (m)	Activity	Comments
13:26	258	sinking	drifted NE of WPT1, correcting
13:30	354	sinking	
13:39	639	sinking	
13:42	734	sinking	bottom in sight
13:45	739	cruising just above bottom	coral rubble, many white plexaurids, primnoids, urchins, skate
13:48	738	on bottom	coral rubble, white plexaurids
13:55	734	transiting uphill	
13:58	727	transiting uphill	primnoids, Anthomastus, cup corals
14:01	728	collecting octocorals	
14:20	725	collecting Lophelia	ridge with large Lophelia colonies; dropped marker 17
14:39	725	tripped Niskin #5	B2 filled with Lophelia; markers in Bioboxes interfering with collection
14:49	725	playing with 4K camera	lots of globose sponges
14:54	725	transiting south	strong current; corals mostly on windward side of ridge
15:02	732	transiting south	crossing over lots of coral
15:06	748	maneuvering, stirring up sediment	rubble field, some live Lophelia, primnoids, urchin, crinoid, orange cup corals
15:12	744	setting down to collect coral	nephtheids, primnoids, some live Lophelia
15:18	744	collecting Lophelia	marker in Biobox a problem, loaded coral on top of it
15:24	744	filling Biobox with Lophelia	
15:33	744	collecting soft coral	swordfish buzzed sub several times, hit us; dropped marker 18
15:41	744	fired Niskin #4	
15:50	744	eating lunch	current seem to have subsided somewhat
15:51	744	transiting south	
15:53	744	crossing rubble plain	some Enallopsammia
15:54	745	crossing rubble plain	not much live stuff
15:59	730	climbing hill	still mostly rubble

16:05	717	still moving uphill	small patches of Lophelia, Enallopsammia
16:10	711	climbing hill	many white plexaurids
16:11	711	collecting coral	assorted corals, all in a clump
16:27	711	firing Niskin #3	
16:35	711	moving uphill	
16:43	695	stopped on ridge	lots of Lophelia, soft corals, primnoids
16:57	695	collecting Lophelia	would be easier if starboard Biobox opened out so lid is not in path of manip
17:01	695	filling 2nd quiver with Lophelia for Chris	
17:03	695	Chris's quiver #1 got opened briefly	
17:07	695	firing Niskin #2	
17:13	695	moving towards WPT3	
17:20	693	moving towards WPT3	tons of Lophelia, big globose sponges, soft corals
17:27	695	following ridge	tons of Lophelia; ridge seems to be a coral mound; fish with black tail and anal fins
17:33	695	stopped to take more samples	
17:39	696	collecting coral	Lophelia, soft corals
17:47	696	finished collecting	no Niskin, will save for 6th coral sample
17:54	696	continuing along ridge to WPT3	
18:02	699	en route to WPT3, flying above bottom	strong currents
18:08	711	on slope, looking for Madrepora	Lophelia, encrusting pink octocoral, lots of nephtheids, Anthomastus, saw one Madrepora
18:14	704	set down on ridge; collecting Madrepora	
18:20	704	setting up to collect	strong currents pushing sub, making things difficult
18:30	704	leaving ridge before securing biobox	current ripping
18:38	708	trying to find a place to set down	being carried by current
18:41	708	set down, securing Biobox	

18:48	708	heading east, will try to tack back west	current too strong to go south
18:50	713	heading east	rubble slope with some plexaurids, bamboo coral
18:59	715	stopped to collect Enallopsammia	having difficulty holding still in current
19:03	715	collecting Lophelia	
19:11	714	collecting Enallopsammia	
19:24	708	being pushed uphill by current	tried to set down to collect but couldn't
19:27	705	collecting Lophelia	
19:32	705	drifting NE with current	looking for more Enallopsammia
19:35	708	setting down on rubble slope, collecting Enallopsammia	
19:53	708	securing basket for ascent	
19:57	708	playing with 4K camera	
20:06	711	lifting off, drifting with current	more Enallopsammia
20:07	721	stopped to wait for permission to surface	
20:20	721	lifting off to surface	

Dive: A4963 **Pilot:** Jefferson **Observer:** Sandra Brooke

Date: 8-24-2018 **Site:** Richardson Ridge

Time (UTC)	Depth (m)	Activity	Comments
12.08	853	Launch	
12.15	853	Leave surface	
12.50	866	On bottom	Rubble bottom with some coral, Gracilis urchins,
13.03	836	Sampling Lp into Q1	Small colonies of Lp in rubble field. Temp = 5.1ºC
13.11	836	Fired Niskin 5	Same location as Lp collection
13.15	827	Stopping to sample	Small scattered live Lp and sponges, rubble and standing dead coral
13.17	827	Lp in Q2	Collection ~25m from Q1
13.23	802	Heading upslope to T3	Live corals are becoming larger with more standing dead and less rubble
13.27	789	Stopping to sample	Medium sized colonies of Lp, several Roughys.
13.30	789	Lp in Q3	Temperature 5.27ºC
13.32	790	Firing Niskin 4	Fired at same location as sample
13.35	770	Heading upslope	Medium live Lp colonies, standing dead, and rubble
13.39	743	Heading upslope	Temp jumped to 8.5ºC
13.48	737	Heading to T3	Fields of white octocorals (Muricedes?) Temp = 9.9ºC. Took 4k image of pink hagfish
13.53	718	Heading to T3	Large patch of live and dead Lp. Temp = 10.34oC
14.06	692	Stopping to deploy coral experiment	Units near large live Lp colony in with medium colonies nearby. 31 -77 24.6893
14.18	692	Collecting Paragorgia into Q6	Temp = 10ºC
14.20	692	Fired Niskin 3	Same location as Paragorgia collection. Temp 10.74ºC
14.23	687	Heading upslope	Large colonies of Lp, some , low diversity
14.39	684	Stopping to collect Lp	Temp = 11ºC
14.36	684	Sample of Lp into Q4	
14.40	684	Collected larger sample of same	Collected same colony as the Q4 sample for live coral maintenance

		colony into Stbd Biobox	
14.48	684	Fired Niskin 2	Same location as coral collection
14.55	683	Searching for more Lp to collect	Patches of large live Lp and (Geodids?). Temp = 11ºC
15.03	683	Sample of Lp into Q9	Near top of mound near target T3. Temp – 11ºC
15.10	685	Sample of Lp in Q10	~15m from Q9 sample
15.20	684	Sample Lp into Q8	~20m from Q10 sample
15.28	683	Sample of Lp into Q9	~50 m from Q8 sample
15.33	683	Anthomastus into Bio 1	Different habitat area – less Lp, more *Muricedes* octocorals, *Thecopsammia* on rubble, *Anthomastus*
15.37	681	Heading to NE side	
15.45	688	Madrepora into Bio 1	
15.51	688	Anthomasus into Bio 1	6-7 small Anthomastuson dead branch, same clump as Madrepora. Temp = 10.5ºC
15.59	683	Heading SE down mound	Rubble field with sparse Ep, Lp
16.04	691	Ep sample in Bio 2	Sparse colonies of Ep and Lp 31 59.07, -77 24.63
16.10	690	Ep in Bio 6	Similar area a few meters from Bio 2 samples
16.11	690	Fired Niskin 1	Next to Ep collection
16.17	689	Attempting pushcore	Near collection site
16.19	689	Pushcore #10 collected	Some of core fell out
16.22	689	Pushcore #1 collected	
16.31	689	Pushcore #12 failed	
16.38	686	Looking for mud patches	Lp habitat, giant Geodids
16.51	685	Pushcore #12 taken again	Core may not be good 31 59.06, -77 24.6535
16.59	684	Collected Madrepora into Bio 6	Next to push core site
17.16	683	Taking images with 4K camera	Top of mound near T3
17.25	677	Leave bottom	

Dive: A4963 **Pilot:** Jefferson Grau **Observer:** Kaitlin Kovacs

Date: 24 Aug 2018 **Site: Stetson Deep**

Time	Depth (m)	Activity	Comments
12:03	Surface	Launch	
12:10	Surface	Commence diving	
12:36	848	Diving	
12:49	863	Reached bottom	Bottom visible, headed to WPT2
12:52	860	Transiting to WPT2	Coral rubble, occasional anemone, sponge, urchin, fish
12:53	859	Transiting	Headed upslope
13:01	836	Reached bottom	Live coral patch
13:06	836	Collection	Lophelia collected for Chris, Q1
13:10	837	Niskin fired	Niskin 5 to correspond with coral collection Q1
13:13	834	Transiting	Headed upslope
13:19	827	Collection	Lophelia Q2
13:27	789	Bottom	Settled down to prep for collection
13:31	789	Collection	Lophelia Q3, patches of live coral Mainly rubble
13:31	789	Fired Niskin	4
13:33	787	Transiting	Headed upslope
13:36	714	Transiting	Mainly rubble, occasional sponge, Anemone, patches of live lophelia
13:43	737	Bottom	Prep for octocoral collection
13:44	737	Photos	Kept going – no collection because of marker is on top of biobox; took photo of pink hagfish
13:49	737	Transiting	Uphill
14:04	692	Bottom	Prep to deploy coral experiment
14:06	692	Deploy experiment	coral stand 1
14:08	692	Deploy experiment	Coral stand 2
14:10	692	Deploy experiment	Coral stand 3
14:13	692	Deploy marker	Took fix for coral experiment
14:19	692	Collection	Paragorgia sp. Q6
14:21	692	Niskin fired	3
14:22	692	Transiting	Uphill; glass sponges, live lophelia And coral rubble
14:31	683	Looking for Lophelia to sample	Field of live coral and rubble; looks like we're at the top of the ridge
14:36	684	Collection	Q4
14:44	684	Collection	Starboard biobox – Lophelia

14:48	684	Niskin fired	2; corresponds with starboard biobox
14:52	684	Headed to next sample site	
15:04	684	Collection	Q7 Lophelia
15:12	685	Collection	Q10 Lophelia
15:21	684	Collection	Q8 Lophelia
15:29	683	Collection	Q9 Lophelia
15:33	683	Collection	Biobox 1
15:40	683	Transiting	
15:45	688	Collection	Madrepora? In Biobox 1
15:55	688	Collection	Multiple coral species collected, in Biobox 1
16:06	691	Collection	Yellow coral in Biobox 2
16:11	690	Collection	2 coral sp. Near each other Collected; in Biobox 6
16:12	690	Niskin fired	1
16:15	690		Manipulator arm issue; can't go Deeper so can't go downslope to Look for mud for cores
16:22	689	PC collection	10 and 1 Push Core taken next to Each other; small coral Lophelia And octocoral around (mud patch Quite small). Cores went in Smooth, sediment looks like it's Falling out, looks silty
16:28	688	Transiting	Only moved a bit over, trying for PC's again
16:34	687	Collection	Using starboard arm, tried to take PC 12 – fell out, too silty/sandy Small patches of Lophelia right Around mud patch
16:36	686	Transiting	Attempting to look for mud
16:50	685	Collection	PC 12 – live Lophelia and coral Rubble around mud patch
16:55	685	Collection	Attempted PC11 near PC 12 Collection site – sediment fell out. Attempted twice.
16:59	685	Collection	Coral collection, in Biobox 6
17:04	683	Cruising	Taking photos, looking for mud
17:24	677	Surfacing	

Dive: A4964 **Pilot:** Bruce **Observer:** Cheryl Morrison

Date: 8/25/18 **Site: Blake Deep**

Time	Depth (m)	Activity	Comments
12:25	360	Descending	Current pushing us South, drive a bit
12:46	1000	Descending	About 50 m from T1, stop driving
12:56	1265	On bottom	Slight uphill grade with some small rocks, many very large bamboo corals (Keratoisis?), Solenosmilia, white sponges- Farrea? Synaphobranchid eels
13:00	1266	Repositioning	Maneuvering to a low spot next to large bamboo and rock outcrop to image and possibly collect
13:01	1271	Bottom location	X=20460, Y=27 -77 14.7029, 31 19.34
13:02	1271	Collection set-up	Setting up to collect Keratoisis. At least 6 species of coral in view, including Stichopathes, Bathypathes, Leiopathes, huge squiggly whip bamboos. Also see a stalked crinoid on outcrop, Desmophyllum skeletons, Coryphaenoides rattail fish, small halosaur. Quill worm tubes on sediment surface? No worms though.
13:15	1273	Keratoisis collection	Small branch of Keratoisis into Q4
13:21	1273	Rock collection	B5, flat rock with manganese crust
13:21	1273	Water collection	Niskin 5 fired, failed
13:22	1273	Water collection	Niskin 4 fired- worked!
13:24	1273	4K video	Bruce filming with 4K camera
13:33	1273	Antipatharian collections	Stichopathes, Antipathes/Leiopathes? collection Q3. Stichopathes on scleractinian skeleton
13:39	1273	Antipatharian collections	These two samples didn't fit in Q3, some of Antipathes/Leiopathes into BB5.
13:47	1273	Reposition	Moving about 5 m to port for Solenosmilia collection
13:50	1273	Imaging	Setting up for Solenosmilia collection, note small Paragorgia johnsoni? With ophuroid out port porthole
13:58	1273	Collection	Solenosmilia collection, B2
14:01	1273	Observation	Octopus in cave, rock outcrop slightly uphill, port side
14:08	1273	Fixing cameras	Delay on starboard brow cam- talking with surface for fix
14:12	1273	Observation	A second small P. johnsoni on coral rubble out port
14:12	1273	Observation	Water temp= 4.3 C
14:13	1273	Observation	Giant Stichopathes, Lepidisis? Bamboo whip corals, squiggly
14:13	1273	Fixing cameras	Still working on delay on Pat;s cams

14:19	1273	Collection	Paragorgia johnsoni? And ophiuroid, Q5
14:20	1273	Push core	Attempting push cores at base of rock outcrop, #1 went in about 5". CTD turned on
14:23	1273	Repositioning	Moved sub about 15 m to starboard for push cores.
14:45	1273	Push cores	Push cores 2 and 3, not ideal. X=20472, Y=27 -77 14.6955, 31 19.35
14:48	1273	Observation	Crinoid, several large bamboos, dead skeletons of Desmophyllum and large bamboos.
14:53	1273	Push coring	Attempting more push cores, limited success. #P3 best
14:56	1273	Push coring	P4 failed.
14:58	1273	Push coring	Push core fell over on it's own. Too sandy. Give up on this spot. Also see different bamboo species- possibly young candelabra? Stauropathes
15:03	1273	Collection	Setting up to collect Bathypathes- turned slightly to d
15:06	1273	Collection	Bathypathes, Q6.
15:16	1273	Moving to T1	Conger eel, more large bamboo corals, many other corals, small manganese covered rocks
15:21	1264	At T1	Made it to first target, moving towards T2
15:24	1266	Push cores	Another round of push cores attempted in front of large bamboo
15:26	1265	Failed cores	Tried P4 again, only went in about an inch. Rock and/or rubble underlying?
15:34	1250	Collection	Attempting collection of Enallopsammia rostrata, B1, arge bamboo skeleton
15:41	1251	Video	Bruce shooting 4K video of large bamboo, E. rostrate, crinoid
15:43	1251	Observation	Crinoid swimming
15:46	1251	Collection	E. rostrata collection into Biobox 1
15:47	1251	Water sample	Niskin #3 fired
15:49	1251	Collection	Picked up large bamboo skeleton, placed on basket
		Push cores	Note: Push core 4 has something in it, but may be lifferent attempts! No good.
15:51	1251	Push cores	P2 good, putting out 7 more here (P2, P5-11) X=20572, Y=19.39
15:56	1251	Push cores	Push cores not put back in order. Alexis has notes on Basket map. 8 good cores from this area
16:14	1251	Stowing, moving	Done with cores, Secured bamboo coral skeleton l 2 weights from basket
16:16	1251	Moving to T2	Heading upslope, sediment with a lot of rubble g, then sandy area with sand ripples
16:18	1209	Observation	Rock ledge at edge of flat area, steep below
16:21	1209	Observation	Close to T2, flatter area with rocks (black from iron

			Manganese?) Many more large bamboos and other Smaller bamboos, many Farrea sponges
16:40	1207	Collection	Collection of white Madrepora, B4, slender branches
16:50	1207	Water collection	Niskin 2 fired
16:52	1207	Observation	Large feathery hydroid, Munidopsis squat lobster
17:00	1207	Observation	Large lithodid crab- taking 4K video
17:08	1207	Observation	Saw large Chrysogorgia- spin back to collect
17:13	1208	Collection	Collecting Chrysogorgia. Associate- squat lobster Or shrimp? Looks like shrimp. Q9
17:26	1208	Collection	Collecting plexurid- Paramuricea? Q10
17:32	1208	Moving	Continuing to T4. Many large bamboo skeletons
17:36	1208	Push Cores	Found sandy spot- try push cores
17:37	1208	Push Cores	Testing cores, hitting hard surface quickly and/or Won't stay in. Abort
17:59	1218	Moving	Following wall, Oreos, Coryphaenoides rattails, Nezumia, small shark out starboard side, Farrea
18:00	1221	Push Cores	Moved under the rock ledge to try push cores
18:19	1221	Push Cores	8 push cores complete!
18:25	1216	Collection	Desmophyllum on dead bamboo skeleton, Q1
18:36	1216	Collection	Another Desmophyllum on dead bamboo skeleton, Q2
18:44	1216	Collection	3rd Desmophyllum fell into scoop box
19:15	1220	Collection	Yellow plexurid octocoral collection, Q7
19:32	1217	Collection	Black coral that looks like a small pink Bathypathes on a stick, Q8
19:33	1217	Collection	Stauropathes Q8
			Biobox and quivers full, 3 push cores left
19:45	1222	Push Cores	Dropped down to do last 3 push cores just below rock Ledge.
19:48	1222	Water Sample	Fired Niskin 1
19:53	1217	Moving	Cruising along edge rocky edge of scarp
19:54	1217	Collection	Rock collection, flat, long and skinny.
20:04	1218	4K video	Large bamboo with crinoid
20:15	1222	End dive	Stow samples, leave bottom

Dive: A4965 **Pilot:** Jefferson Grau **Observer:** Caitlin Adams

Date: 8/26/18 **Site:** Stetson Banks Shallow

Time	Depth (m)	Activity	Comments
1204	0	Sub in water	
1209	13	Descent begins	
1218	355	Lights on	Camera testing
1220	400	Lasers on	
1224	535	Nearing bottom	16m away
1226	543	Seeing bottom	Coral hardbottom in sight
1235	545	Getting neutral	Drifting SE
1243	551	Landing on bottom	Achieved neutrality, 1.2km from WPT1
1245	556	Heading NW	Transiting to wall as best we can with current (NW)
1256	557		Black coral seen
1300	557		Yellow cup corals all around
1302	557		Black coral
1304	557	Q5	Black coral sampled
1307	557	Q5	Lophelia sampled, added to same quiver
1318	558	Q5	Enallopsammia added to Q5, sealed at 1319
1320	558	N5	Collected
1323	558		Attempted and failed to pushcore
1325	558	B1	Collecting medley of corals
1333	558		Squid swimming in front of sub
1334	558	Rock collection	Placed in basket behind quivers
1338	558	Q4	Collecting bamboo coral with base
1347	557	Transit	Finished sampling, headed to ridge
1358	5532	Transit	Diversity increasing? Enallop, bamboo, fish, sponges
1407	551	Transit	Seeing large coral (Enallop?), to sample
1414	552	B2	Sampling Lophelia
1421	552	B2	Still searching for plexaurid to add to box. Current challenging.
1425	551	B2	Plexaurid sample complete
1425	551	N4	Complete
1428	550	Resume transit	Destination: wall
1431	548	Transit	Cup corals now pink instead of yellow, still abundant
1434	544	Transit	Going up slope now
1435	541	Transit	Seeing more crabs, sponges

1439	529	Transit	Rocky outcrops, coral rubble, fish
1446	506	Transit	Crab caught on camera
1451	496	Transit	Cool pink fish around sub
1454	488	Transit	Squid!
1457	481	Sampling	Stopping transit to sample Lophelia on wall. Squid in way.
1504	482	Sampling	Lophelia, plexaurid, bamboo visible.
1513	482	Q6	Picking new Lophelia target
1522	482	Q6	Lophelia, plexaurids, bamboo corals in Q6
1522	482	N3	Flushed Niskin before collection
1538	482	Transit	Resuming along the wall after break
1546	468	Transit	Amazing step/shelf features. Odd texture, mudstone? Lots of holes.
1548	465	Transit	Switched camera to see ledge Feature
1551	455	Transit	Pulling away from ledge to clear it
1600	428	Top of wall	Reached top, now dropping down sample/lateral transit
1606	434	Sampling	Attempted coral sampling on ledge
1616	434	B4	Lophelia, plexaurid sample complete
1624	434	N2	Triggered after flushing
1625	434	Resume transit	Lateral movement along ledge
1638	433	Transit	Pink fish`
1642	435	Q7	Attempting but sample fell in basket
1654	434	Q7	Metallogorgia (?) added
1655	434	Q7	Enallop. added, quiver closed
1656	434	Resume transit	NE along wall
1702	440	Rock sample	Attempting to get loose rock from ledge, unsuccessful
1704	440	Resume transit	
1710	438	Rock sampling	In basket behind quivers
1714	436	Transit	Going down face a bit more
1720	443	Sampling	Soleno. attempted, ledge too narrow
1722	445	Transit resumes	
1726	447	Sampling + 4K	Black coral estimating width of base to be ¼ of laser light width
1733	447	B5	Leiopathes added
		Resume transit	
1747	448	Sample	Enallop attempted, dropped but

			reattempting
1752	449	Q3	Enallop collected!
1813	429	Transit	Reached top of wall
1823	427	Transit	Lots of corals, mg crusts
1828	427	Drift test	Trying to establish current on plateau
1831	428	Drift test	50m in 5min, 5sec → 10m/min. Bearing 125, NW→SE.
1837	428	Transit	More enallop., barrel sponges
1847	429	Mussel pot	Lophelia, mostly dead, some live
1858	429	N1	Niskin 45m from mussel pot, flushed with water
1859	429	Pushcore	Attempted but impossible
1902	429	Q4	Attempting paragorgia (?) to add to Q4
1920	427	Test piloting!	Caitlin and Amanda try driving
1938	429	Request clearance to leave bottom	
1951	429	Cleared to surface	
1952		Ascent begins	
2006	0	Surfaced	

Dive: 4965 **Pilot:** J. Grau **Observer:** Demopoulos/Adams

Date: 26 Aug. 2018 **Site: Stetson Banks**

Time	Depth (m)	Activity	Comments
12:03	At surface	Waiting to dive	Surface current ~4kt
12:08	At surface	diving	400 m NE of launch target, cameras recording
1210	60	CTD started	Note: CTD was actually removed from the Sub, so no CTD data
1217	300	descending	Good amount of marine snow
1220	407	descending	Lasers on
1226	541	Bottom in site	About 1 km east of launch target, off the map (underlay)!
1226	541		Bottom appears hard (rock pavement). Lots of white corals and sponges
1235	545	Taking in water (to gain weight)	Current pushing to the SE, trying to sit on bottom
1238	543		Squid off port side
1242	545	On bottom	
1250	553	Transiting to wall	Small coral patches (stony), hard bottom, squids!
1250	553		Dead coral rubble, rattail fish
1256	555	Setting down to collect	Black coral – maybe leiopathes, Lophelia, stylasterids
1304	558	Collect black coral	In quiver 5
1316	558	Quiver 5	Collected white and yellow coral into q5 (yellow and white enallopsammia)
1321	558	Niskin 5	By q5 collection
1322	558	PC10 attempt	No way, hard bottom
1324	558	Moving for collection	Near q5 leiopathes collection
1331	558	B1	2 soft corals, zoanthid?, white Stony coral(enallopsammia)
1335	558	Rock collecting	MnFe coated rocks put aft of quiver milk crate
1342	558	Q4	Bamboo collection
1347	558	On the move	Headed to wall, lasers on, coral rubble, hard pavement,, lots of tiny plexaurids, small stony colonies, scattered rocks
1358	553	transiting	Lots of small colonies white and yellow stony corals.
1405	551	transiting	Green eye?, lumpy terrain

1411	551	Setting down to collect	Lophelia?
1423	551	Collect B2	plexaurid
1427	551	moving	Current from SW, fewer colonies, toward wall
1436	540	Moving to wall	Terrain – rocky, small hills
1444	512	Moving along wall	
1451	496		Beryx-fish
1502	482	Setting down to collect	Along rock ledge feature, lots of lophelia and plexaurids
1521	482	collection	Q6 bamboo, lophelia, plexaurid
1545	468	wall	Platey/steps, exposed lighter Surfaces, conger with fish in mouth
1552	456	Lateral along wall	Steep cliff face
1601	429	Reached top of ledge	
1612	434	Collect b4	plexaurid
1617	434	Collect lophelia in b4	
1624	434	Collect niskin 2	Next to plexaurid
1625	434	Moving lateral	
1637	434	Moving NE	Red staining on clean rock face

Time	Depth	Lat	Long	activity
1224	0			descending
1235	340			bottom in sight
1240	395			on bottom
1253	400			
				(0900 local time)
1310	400	32 03.572	78 22.379	
1316				
1322	400			
1328				
1329				1km south of target
1349				400 m SSW
1408	403			mooring search cont
1458				
1509	402			
1541	402			
1553	402			
1606	400			
1612	404			
1624				sampling
	404	32 04.186	78 22.268	
1649				niskin 5
1651				
1707	403	32 04.190	78 22.290	
1740	402	34 04.19	78 22.342	coral pot
1750				
1800				niskin 4
1810				
1815				
1820				
1834	403			
1900				
1920				

comments

rocks and sand with ripples
sponges, stylasterids, lots of cup corals
some sargassum, very short octocorals
carbonate crust, outcrop w/ 100 white plexaurids
about 1200m S of mooring target
heading N to TGT
strong current blowing E
a few small Lophelia
lg Acanthogorgia
sm field of Callogorgia (?)
more Acanthogorgia, cobble/nodules
some large Leiopathes
Lophelia and Enallopsamia
2 small octopus
all corals are short, except a few Leiopathes
get too tall and blown over? Sediment abrasion?
ran over TGT S-N, nothing
ran right nover TGT E-W, still nothing in sonar
knoll E of TGT w/ lots of Lophelia and Enallopsamia
ran W into depression, trying to get deeper, very sandy
then turned E + ran w/ current
lost coms and tracking so we stopped
continuing ENE of TGT
coming S, 200m E of TGT
stopping SE of TGT for sonar sweep
because we're bored
sm rocks

heading NW towards TGT
collecting sm rocks into biobox w/anthomastus, acanthogorgia, cup corals

sample secure

drifting NE
came SE
chain catshark
getting ready to leave
weights away
on surface

Dive: 4967 **Pilot:** Jefferson Grau **Observer:** Mandy Joye

Date: 23 Aug 18 **Site:** Blake Ridge

Time	Depth (m)	Activity	Comments
1225	Surface	Safety checks	A lot of phytoplankton in the water
1229	Surface	Diving	
1340	2165	On Bottom	Animals in view: clams, brittle stars, B, heckerae shells; fly around to orient, check out area
1359	2167	Mussle Bed #1	Live heckerae, clams on outside of bed and a lot of carbonate
1402	2167	Water sampling	Fire **Niskin #5**
1409	2168	Push Coring	Collect Cores 1-6 in the soft sediment adjacent to the mussel bed (see times noted on basket map)
1420	1467	Shooting 4K	Close up of mussels and assoc. Fauna; nice shot but zoom is clunky
1429	2168	Mussel Pot	**Mussel pot #2** within Heckerae
1434	2168	Silted out	Mussel pot stirred up a lot of silt, it is quite thick reminiscent of brine fog
1439	2168	Mussel pot	Got it; closed, retrieved and stowed pot
1441	2168	Mussel collection	Collected 3 grabs of Heckerae for experiments
1451	2168	Slurp	Slurping critters from mussel bed
1459	2168	Moving to next location	There is a ridge behind this mussel bed and possibly hydrate, we will check that out
1515	2169	Dead clam bed	Many dead baby clams (1-2 cm sized, must be thousands of them). Sediments look pretty sulfidic.
1520	2169	General area	There are many clam and gastropod trails here; many fairly (~5+ cm) gastropods.
1534	2169	Shooting 4K	Small purple octopus near a mussel bed; say hello to the camera
1534	2169	Niskin	Fire **Niskin #4**
1535	2169	Mussel Pot	A lot of carbonate, v. hard to close the mussel pot but Jefferson got it done. **Mussel Pot #1**

1536	2169	Marker	Deployed **Marker #16**
1541	2168	Push Coring	Collected 6 cores inside an area inhabited by small and large clams and urchins on the periphery of the mussel bed. No bubbles at all and no mat but the cores look (a little black at the bottom)
1603	2169	Rock Collection	A LOT of very large carbonate boulders here!
1614	2168	Marker	Ran back to first Mussel collection site and dropped marker **Marker #20**
1621	2166	Transit	Heading 135m SW to pockmark target
1637	2166	@ extensive mussel Bed	Large area of juvenile mussels, ell from here whether Heck or childressi; fired **Niskin #3**
1640	2166	Mussel bed	Collected a lot of baby mussels and dropped **Marker #21**
1650	2164	Transit	To target T2
1656	2164	Transit	Evidence of significant relict carbonate, extensive carbonate, mussel shells, clam shells, etc. and a lot of living gastropods
1704	2163	Microbial mat!	Clam area that also has some mat; the mat is not extensive but it's the best I've seen so far.
1710	2163	Mat hunting	Really tough to find big mat patches, none here really
1712	2163	Ask TL for gas plume location	X,y too far, staying here.
1716	2163	Mat cores	Mat along with urchin?? Looks really interesting. Not think but peculiar looking, don't think it is Beggiatoa
1717	2163	4K mat	12 cores; 6 for take home (times on basket map sheet)
1730	2163	Slurp	Slurped gastropods and urchins
1758	2163	Niskin	Fired **Niskin #2**
1802	2163	Mat Search #2	Looking for mat
1814	2164	Niskin	Fired **Niskin #1** after purging for 20 seconds
1815		4K of brittle stars	Brittle stars on mussel bed
1818		Slurp	Juv mussels with hundreds of small brittle stars
1822	2164	Collecting rocks	Carbonates with white mat..and

			sponges??
1826	2162	Mats canvas	No mat…but found an area that looks a little less reduced and will core there as a control
1845	2162	Push Coring	Collected 6 cores (see basket map for times) and 3 more for take home [surprisingly cores had a strong black bottom…so they are sulfidic but no mat]
1920		To secret site	
			**cores degassed a bit at the surface

Dive: A4968 **Pilot:** Bruce Strickrott **Observer:** Jay Lunden, port

Date: 8/29/18 **Site:** Cape Fear

Time	Depth (m)	Activity	Comments
12:08	0	Alvin launching	
12:09	0	Alvin in water	Free from ship at 12:10
12:12	0	Alvin diving	Jellies observed on descent
12:28	453	On bottom	Fine sand, smooth track noticed on seafloor from possible trawl? Patches of sargassum, squids, shrimp
12:33	453	Internal GoPro turned on	
12:37	453		Small colony of Lophelia, lots of coral rubble
12:39	453	Moderate visibility	Thecopsammia cup corals, brittle stars, Anthothela
12:41	451	Begin moving up hill	Squid abundant
12:45	457	Stopping to sample	Abundant coral rubble, standing dead Lophelia skeleton; current strong at 2 knots; bottom temp = 7.7 deg C
12:59	458	Running 4K on coral rubble and *E. picta*	
13:07		Port side joystick on camera controller giving issues, not functioning properly	
13:08	458		Lots of small colonies of live Lophelia interspersed within coral rubble and dead skeleton
13:15	459	Push core #1 in sediment	In sediment near Lophelia on the side of hill; picture taken of cores
13:18	459	Push core #2 in sediment	

13:20	458	Push core #3 in sediment	Angled in sediment
13:21	458	Push core #4 in sediment	
13:22	458	Push core #5 in sediment	
13:22	456	Push core #6 attempted, hit hard substrate; attempt #2 was successful	
13:25-13:30	459	Push cores placed in basket	See basket map for specific times
13:39	459	Coral pot #3	Coral rubble w/ light density of ophiuroids
13:41	459	Niskin 5	Near coral pot #3, Coral rubble, small pieces of live Lophelia
13:42	459	Marker #6 deployed	At site of coral pot #3
13:49	459	Shooting 4K	live Lophelia and brittle stars on dead Lophelia
13:56	460	Live Lophelia into Q2	For micro
13:58	460		Port lasers turned on
14:15	422	Moving upslope	Basket stars on Lophelia, lots of Laemonema fishes
14:20	413		Madrepora (orange and white); can't sample due to heavy current
14:33	412	Changing direction on dive plan	Currents are too strong to continue on dive track; checked with TopLab before changing course and ChiefSci, moving to NE corner of mound
14:35	402	Moving upslope	Very large wreckfish; current is carrying sub without us using props
			Common organisms include urchins, basket stars, galatheids, flytrap anemones

14:43	399		Anthothela on Lophelia rubble
14:51	399		E. picta preying on an ophiuroid
15:05	399	Sampling Anthothela in Q10	Collected from Lophelia rubble
15:12	399	Handheld pictures	E. picta and Laemonema competing for squid carcass (squid chopped up by propeller)
15:23	400	Shooting 4K	E. picta crabs eating squid mantle; Laemonema approached and stole squid carcass from crabs; chainshark eventually took carcass
15:39	400 m	Coral pot #2	Over standing dead coral; marker #14 deployed
15:43	400	Niskin 4 fired	Near coral pot #2
15:53	400	Attempted to core but unsuccessful	Sandy sediment; fell out of core
16:00-16:01	400	Thecopsammia into Q5	2 cups collected, attached to dead Lophelia skeleton
16:13	397	Madrepora into Q6	Some dead skeleton in addition to live polyps
16:19	390	?Muriceides observed	
16:28	393	?Muriceides into Q3	Cathy McFadden later confirmed that this is not ?Muriceides but some other species, maybe new
16:37	385		Paramuricea with large fish
16:39	385	Shooting 4K	
16:45	385	Collecting live colony of Paramuricea	Secured with port manip to MP2
16:50	385	Paramuricea into B3, starboard side	

16:57	378		Coral rubble and anemones dominant
17:09	372		Current very strong; pushing forward at full speed and not moving at all
17:15	381	Setting up to coral pot over live Lophelia (small patch)	
17:23	381	Still setting up to coral pot	
17:33	381	Coral pot #1	Some material may have been lost because the hydraulic ram on the port manip came loose (nut was screwed on loosely); it was difficult to close and tighten the coral pot
17:45	381	Setting up to collect live Lophelia	
17:46	381	Live Lophelia into B6	Numerous anemones on dead skeletons
17:58	381	Lophelia into Q1	For micro
18:03	381	Attempted to push core	Unable to core, hard substrate underneath thin film of sediment
18:05	381	Niskin 3	Near live Lophelia
18:14	374	Live Lophelia into B3	
18:24	374	Niskin 2	
18:25	374	Niskin 1	Replicate of Niskin 2
18:30	374	Shooting 4K	Large Beryx fish
18:57	378	Coming up of bottom	Huge wall of live Lophelia
19:00		Off bottom heading up	Weights dropped

Dive: **Pilot:** **Observer:**

Date: **Site:**

Time	Depth (m)	Activity	Comments
9:15	1947m	Pictures	Brittle stars. Urchins, Fish, copepods.
9:56	1946m	Pick up camera	Sea cucumbers, small jellies
10:04	1947m	Push Cores	(#1-6) in order on basket
10:20	1947m	Looking around inside	Grounding issue in sub, Bruce fix.
11:02	1947m	Looking around outside	Headed toward T2. Starfish, prawns, basket stars, crab.
11:28	1938m	Push Cores	(#7-12) on basket map
11:42	1937m	Bruce Finds Bowl	Bowl Collected
11:45	1937m	Heading up Wall	Looking for coral
12:01	1847m	Coral Spotted	Pictures Taken
12:11	1813m	Large Fish Sighted	Video Taken
12:12	1808m	Rock?	Collected
12:16	1806m	Looking	Comb Jelly
12:22	1792m	Soft Coral Found	Quiver #8 (12:24, 1792m)
12:38	1785m	Niskin Fired	#5 (12:40, 1783m)
12:51	1758m	Corals Found	Chrysogorgia, bio box B1 (12:58, 1758m), Quiver #8 (1:03, 1758m), Niskin Fired (#4, 1:05, 1758m)
1:24	1707m	Bamboo Coral Found	Quiver #10 (1:31, 1707). Niskin #3 (1:34, 1707m)
1:37	1707m	Push Cores	#13-18, Labeled on map
1:56	1689m	Coral Collecting	Quiver #6 (2:03, 1698)
2:06	1698m	Sea Pen Collection	Quiver #12 (2:00, 1698m)
2:26	1678m	Sea Pen Collection	Bio Box (2:30, 1678m) Brittle Star
3:03	1666m	Push Cores	#19-24, Labeled on Map
3:13	1666m	Coral Sampling	Chrysogorgia, Biox Box B2 (3:21, 1666m)
3:49	1662m	Sea Pen Sampling	Biobox B5 (3:53, 1662m)

Dive: A4970 **Pilot:** Bruce Strickrott **Observer:** Ryan Gasbarro

Date: 08/31/2018 **Site: Norfolk Canyon**

Time	Depth (m)	Activity	Comments
11:58	0	Enter water	
12:04	0	Descending	
12:19	516.4	Descending	Some bioluminescent plankton responding to flashes
12:28	852.2	Descending	Larger jellies & siphonophores now
12:39	1218.5	Descending	Smaller particles now
13:01	1942.7	Descending	Bottom in sight
13:02	1943.9	On bottom	Urchins, brittle stars, anomurans, eel, rattail, anemones. Fairly low vis
13:17	1946.7	Undertaking selfie	
13:18	1946.7	Set camera down	Beginning to back off camera
13:20	1945		Many small mounds & pockmarks in the sediment
13:22	1946	Sub selfie	Turning towards camera for drive-up
13:41	1946	Sub selfie	Found the camera
13:59	1946	Sub selfie	Camera retrieved
14:01	1946	Sub selfie	Set Go-Pro on Biobox
14:02	1946	Push-coring	1st set of cores; soft sediment/mud; near T1
14:13	1947	Push-coring	Set #1 (cores 1-6) complete
14:16	1947	Sub selfie	Go-Pro stowed in crate
15:03	1947	Begin transit to wall	Dealt with ground issue
15:10	1945	Transit	Venus flytrap anemone, pycnogonid, ctenophores, fishes
15:17	1945	Transit	Trash – bottle (glass)
15:17	1945	Transit	Rock w/ two brysingids
15:17	1945	Transit	Getting into rubble & uphill slope
15:24	1929		Turning around to get nearby cores in mud
15:31	1938	Push core set #2	Cores 7-12. On uphill slope SW of where we think wall begins
15:44	1938	Begin wall ascent	Push core set #2 done, moving upslope towards high relief
15:50	1912	Transit	Headed upslope on lightly sedimented hard substratum
15:53	1890	Transit	Multiple brysingid asteroids on rocks
16:02	1844	Highlight	Stopped to photograph basket stars on rock – Sony camera
16:07	1823.6	Highlight	Stopped to observe ammo casing
16:10	1814.1	Highlight	Few large fish (n~3)
16:14	1808.8	Rock Collection	Begind quivers 8/9
16:36	1790.2	Collection	*Psuedoanthomastus*

16:37	1790	Niskin	Niskin #5
16:57	1757.9	Collection	Soft coral (*Acanella*); Biobox #1
17:04	1757.1	Collection	Soft coral (*Acanella*); (Quiver #8)
17:32	1707.3	Collec	White bamboo coral (Quiver #10)
17:42	1707	Push-cores	Doing 3rd set of cores. Near opportunistic coral sample (PC #13-18)
18:01	1698.5	Collection	octocoral
18:11	1698.5	Collection	Pennatulucean Collection
18:16	1698.5	Collection	Pennatulucean Collection
18:17	1698.5	Nikin	Niskin #2 fired
18:24	1681	Transit	Filed of *Acanella*
18:29	1678	Collection	Pennatulucean & associates (Biobox #4)
19:04	1666	Transit	Turned West, still in sediment dotted w/ *Acanella*
19:05	1667	Cores	Stopped for 4th set of push cores (PC #19-24)
19:40	1665	End science	Begin amateur sub-driving
19:49	1662	Collection	Stopped for one more sea pen morphotype
19:56	1662	Collection	Adjusting sea pen, it is blocking biobox from closing/sealing
19:58	1662	Surfacing	Leaving bottom
20:49	151	Ascent	Light beginning to penetrate
21:09	0	On deck	

Dive: AL4964 **Pilot:** Bruce Stickrott **Observer:** Alexis Weinnig

Date: 08/25/2018 **Site: Blake Escarpment**

Time	Depth (m)	Activity	Comments
1204	0	Hatch Closed	
1219		Highlight	Sun and swimmers with descent
1237	700	Descending	
1243	888	Descending	Light current on descent, headed down moving toward T1
1246	1000	Descending	
1255	1262	See bottom	Multiple corals – bamboo, solenosamilia, black corals, sponges, eel – not as muddy as expected but some patches
1302	1270	Setting up to collect	Bamboo, bathypathes, solenosamilia, yellow sponge, dead desmophyllum, sticopathes, pretty rocky
1310	1272	Set up and messing w/ cameras	
13:14		Opening Q4	
13:17	1273	Sampling	Bamboo in Q4
13:21		Niskin 5 failed	
13:21		Sampling	Rock in B5
13:21		Sampling	Niskin 4 fired
13:24-30		Hightlight	4k of bamboo
13:34		Opened Q3	
13:36		Sampling	Sticopathes in Q3
13:39		Sampling	Leiopathes in Q3 – broke off of piece in B5
13:40		Sampling	Leiopathes (?) on rock in B5
13:46		Sampling	Q3 closed
13:51		Hightlight	Brittle star on bamboo 4K
13:58		Sampling	Solenosamilia into B2
14:10		Camera Issues	STBD pats camera responding slowly – Bruce trying to fix
14:16		Sampling	Q5 opened
14:18		Sampling	Paragorgia in Q5
14:19		Sampling	Q5 closed
14:22		PC1- in sediment (probably 4in deep)	Right by Paragorgia collection

14:37		Camera Issues	Troubleshooting camera again -mostly patz camera problems – very delayed
14:37	1272	Temp	3-4 C
14:44	1273	Moving	Shifted for push cores
14:44	1273	Sampling	PC2 in the mud
14:46		Sampling	PC3 in the mud – decently deep
14:47		Sampling	PC4 in the mud – not very deep
14:50		Sampling	PC4 picked up and mud fell out
14:50		Sampling	Retrying PC4
14:53		Sampling	Retrieving PC4v but likely blown out – Bruce says it's empty
14:58		Sampling	PC2 fell over – no good! Out of the 4 Cores we attempted, 1 is probably best And others are trash – super sandy!
15:03		Moving	Manovered for bathypathes collection
15:05		Sampling	Q6 opened
15:10		Sampling	Bathypathes collected in Q6
15:15	1271	Transiting	Heading to T1
15:19	1266	Transiting	Transiting to T1; continuing to see Bamboos and sponges and black corals
15:21	1263	Transiting	Made it to T1 and headed up to T2
15:24	1265	Sampling	Trying to pushcore – not good sediment About an inch deep so no go
15:35	1250	Sampling	Stopped to collect Enallopsammia rostrata
15:42		Hightlight	4k highlight of enallopsammia and crinoid
15:46		Sampling	Enallopsammia collection in B1
15:47		Sampling	N3 fired
15:50	1250	Sampling	Trying to pushcore – PC2 in the mud next to Enallopsammia
15:52		Sampling	PC5 & 6 in the mud
15:54		Sampling	PC2 retrieved
15:58		Sampling	PC7, 8, 9, 10, 11 in the mud
16:07		Sampling	PC 2, 5, 6, 7, 8, 9, 10, 11 retrieved from next to Enallopsammia
16:08		Sampling	Collected dead bamboo skeleton/base
16:14		Transiting	Headed to T2
16:22		Transiting	Headed up slope but less steep than Expected, came over the first ridge and Similar diversity
16:29	1206	Sampling	Positioning to collect Madrepora
16:47	1206	Sampling	Madrepora in B4
16:50	1206	Sampling	N2 fired by Madrepora
16:56	1206	Transiting	Headed to T4

17:03	1207	Highlight	4K of big crab
17:14	1208	Sampling	Settled to collect chyrsogorgid
17:15		Sampling	Open Q9
17:19	1208	Sampling	Chrysogorgid in Q9 w/ shrimp – used Push core and paintbrush to get into Q
17:29	1208	Sampling	Plexaurid in Q10
17:37	1207	Sampling	Trying to push core – 13 in mud, 16 in Mud – retrieved PC16 but short
17:40		Sampling	PC19 out but Failed, cloudy,
17:43	1207	Sampling	PC13 retrieved but short
17:58	1215	Transiting	Spent the last few minutes flying Along the ridge edge – corals and Sponges all along
18:00	1220	Sampling	PC19 out
18:02		Sampling	PC14 out
18:02		Sampling	PC15 out
18:03		Sampling	PC17 out
18:03		Sampling	PC18 out
18:03		Sampling	PC19 out
18:03		Sampling	PC20 out
18:04		Sampling	PC21 out
18:05		Sampling	PC22 out
18:17	1220	Sampling	PC14, 15, 17, 18, 19, 20, 21, 22 – all Collected down slope of ridge
18:28	1215	Sampling	Stopping to collect Desmophyllum
18:32	1216	Sampling	Q1 opened
18:33	1216	Sampling	Desmophyllum into Q1
18:36	1216	Sampling	Desmophyllum in Q2
18:44	1216	Sampling	Desmophyllum attempt but fell in the Scoop basket – still good for DNA
19:05	1217	Sampling	Positioning to sample Plexaurid
19:12	1217	Sampling	Plexaurid under ridge into Q7
19:22	1213	Transiting	Transiting around the ridge – very thin Madrepora, sponges, bamboos, black corals
19:30	1217	Sampling	Setting up to sample
19:32	1217	Sampling	Q8 opened
19:33	1217	Sampling	Mystery black coral sampled in Q8
19:35	1217	Sampling	Storipathes sampled into Q8
19:38	1221	Moving	Repositioning for 3 final pushcores
19:41	1222	Sampling	PC12 in mud
19:43		Sampling	PC23 in mud
19:43		Sampling	PC24 in mud
19:47	1222	Sampling	PC12, Pc 23, PC24 retreived
19:52	1220	Off bottom	
19:54	1220	Sampling	2 rocks in scoop basket

20:00	1218	Transiting	Cruising around looking for coral shots
20:09	1218	Highlight	Crinoid tickling
20:14	1221	Situating Basket	
20:15	1221	Dropped first weight	
20:15	1221	Headed up	

Dive: **Pilot:** **Observer:**

Date: **Site:**

Time	Depth (m)	Activity	Comments

Appendix C – Master Sample Log

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4960-N01	A4960	Wilmington Canyon	8/20/2018	16:06	38.4264659	-73.538164	688	Water
AT41-AL4960-N02	A4960	Wilmington Canyon	8/20/2018	16:04	38.4264658	-73.538164	688	Water
AT41-AL4960-N03	A4960	Wilmington Canyon	8/20/2018	16:03	38.4264658	-73.538164	688	Water
AT41-AL4960-N04	A4960	Wilmington Canyon	8/20/2018	16:02	38.4264659	-73.538164	688	Water
AT41-AL4960-N05	A4960	Wilmington Canyon	8/20/2018	16:01	38.4264659	-73.538164	688	Water
AT41-AL4960-P01	A4960	Wilmington Canyon	8/20/2018	15:58	38.426466	-73.538163	687.86	Sediment
AT41-AL4961-A1	A4961	Pea Island Seeps	8/21/2018	Sub Recovery			Found on Sub during recovery	Squid, cf. Illex sp.
AT41-AL4961-B1-A1	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A2	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A3	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A4	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A5	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A6	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A7	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A8	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A9	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-A10	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Pink Anemone
AT41-AL4961-B1-Crustacea	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Crustaceans
AT41-AL4961-B1-Picked	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Picked Biology
AT41-AL4961-B1-Sieved	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Sieved macrofauna
AT41-AL4961-B1-Polychaete	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Polychaetes
AT41-AL4961-B1-R1	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Rock (Auth. Carb.)
AT41-AL4961-B1-R1-Crustacea	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Crustaceans
AT41-AL4961-B1-R1-Picked	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Picked Biology
AT41-AL4961-B1-R1-Polychaete	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Polychaetes
AT41-AL4961-B1-R1-Sieved	A4961	Pea Island Seeps	8/21/2018	14:31	35.6992512	-74.802268	424	Sieved macrofauna
AT41-AL4961-B2-01	A4961	Pea Island Seeps	8/21/2018	14:56	35.6990247	-74.802995	408	Quill worms, Hyalinocia tubicola
AT41-AL4961-B2-02	A4961	Pea Island Seeps	8/21/2018	14:56	35.6990247	-74.802995	408	Amphipod
AT41-AL4961-B2-Sieved	A4961	Pea Island Seeps	8/21/2018	14:56	35.6990247	-74.802995	408	Sieved macrofauna

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4961-B3-01	A4961	Pea Island Seeps	8/21/2018	19:29	35.7064722	-74.812033	468	Sea Star, Plutinaster sp.
AT41-AL4961-B3-02	A4961	Pea Island Seeps	8/21/2018	19:35	35.7064791	-74.812016	469	Quill Worms, Hyalinocea sp.
AT41-AL4961-B3-Sieved	A4961	Pea Island Seeps	8/21/2018	19:35	35.7064791	-74.812016	469	Sieved macrofauna
AT41-AL4961-N01	A4961	Pea Island Seeps	8/21/2018	19:20	35.7064702	-74.812035	469	Water
AT41-AL4961-N02	A4961	Pea Island Seeps	8/21/2018	18:59	35.7064448	-74.81205	469	Water
AT41-AL4961-N03	A4961	Pea Island Seeps	8/21/2018	16:55	35.7062909	-74.81304	455	Water
AT41-AL4961-N04	A4961	Pea Island Seeps	8/21/2018	16:55	35.7062909	-74.81304	455	Water
AT41-AL4961-N05	A4961	Pea Island Seeps	8/21/2018	15:52	35.7017689	-74.807955	367	Water
AT41-AL4961-P99	A4961	Pea Island Seeps	8/21/2018					Beggiatoa
AT41-AL4961-P01	A4961	Pea Island Seeps	8/21/2018	13:38	35.699637	-74.801605	442	Sediment
AT41-AL4961-P02	A4961	Pea Island Seeps	8/21/2018	13:38	35.699637	-74.801605	442	Sediment
AT41-AL4961-P03	A4961	Pea Island Seeps	8/21/2018	13:38	35.699637	-74.801605	442	Sediment
AT41-AL4961-P04	A4961	Pea Island Seeps	8/21/2018	13:51	35.6996312	-74.801603	442	Sediment
AT41-AL4961-P05	A4961	Pea Island Seeps	8/21/2018	13:50	35.6996311	-74.801602	442	Sediment
AT41-AL4961-P06	A4961	Pea Island Seeps	8/21/2018	13:50	35.6996311	-74.801602	442	Sediment
AT41-AL4961-P07	A4961	Pea Island Seeps	8/21/2018	14:05	35.6996256	-74.80162	442	Sediment
AT41-AL4961-P08	A4961	Pea Island Seeps	8/21/2018	14:06	35.6996261	-74.80162	442	Sediment
AT41-AL4961-P09	A4961	Pea Island Seeps	8/21/2018	14:04	35.6996254	-74.801619	442	Sediment
AT41-AL4961-P10	A4961	Pea Island Seeps	8/21/2018	16:02	35.7017478	-74.80795	367	Sediment
AT41-AL4961-P11	A4961	Pea Island Seeps	8/21/2018	16:05	35.7017423	-74.807948	367	Sediment
AT41-AL4961-P12	A4961	Pea Island Seeps	8/21/2018	16:00	35.7017541	-74.80796	367	Sediment
AT41-AL4961-P13	A4961	Pea Island Seeps	8/21/2018	15:55	35.7017603	-74.807957	367	Sediment
AT41-AL4961-P14	A4961	Pea Island Seeps	8/21/2018	15:57	35.7017687	-74.807962	367	Sediment
AT41-AL4961-P15	A4961	Pea Island Seeps	8/21/2018	15:58	35.7017535	-74.807941	367	Sediment
AT41-AL4961-P16	A4961	Pea Island Seeps	8/21/2018	18:03	35.7059983	-74.81319	455	Sediment
AT41-AL4961-P17	A4961	Pea Island Seeps	8/21/2018	17:46	35.7060331	-74.813187	455	Sediment
AT41-AL4961-P18	A4961	Pea Island Seeps	8/21/2018	16:59	35.7062771	-74.813049	455	Sediment
AT41-AL4961-P19	A4961	Pea Island Seeps	8/21/2018	17:56	35.7060178	-74.81319	455	Sediment
AT41-AL4961-P20	A4961	Pea Island Seeps	8/21/2018	17:59	35.7060038	-74.813195	455	Sediment
AT41-AL4961-P21	A4961	Pea Island Seeps	8/21/2018	18:01	35.7059991	-74.813194	455	Sediment
AT41-AL4961-P22	A4961	Pea Island Seeps	8/21/2018	17:47	35.706032	-74.813188	455	Sediment
AT41-AL4961-P23	A4961	Pea Island Seeps	8/21/2018	17:54	35.7060197	-74.813193	455	Sediment
AT41-AL4961-P24	A4961	Pea Island Seeps	8/21/2018	17:47	35.706032	-74.813188	455	Sediment

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4961-P25	A4961	Pea Island Seeps	8/21/2018	17:42	35.7060359	-74.81319	455	Sediment
AT41-AL4961-P26	A4961	Pea Island Seeps	8/21/2018	17:51	35.7060249	-74.813189	455	Sediment
AT41-AL4961-P27	A4961	Pea Island Seeps	8/21/2018	17:47	35.706032	-74.813188	455	Sediment
AT41-AL4961-P28	A4961	Pea Island Seeps	8/21/2018	19:14	35.7064685	-74.812036	469	Sediment
AT41-AL4961-P29	A4961	Pea Island Seeps	8/21/2018	19:10	35.7064527	-74.812054	469	Sediment
AT41-AL4961-P30	A4961	Pea Island Seeps	8/21/2018	19:08	35.7064514	-74.812053	469	Sediment
AT41-AL4961-P31	A4961	Pea Island Seeps	8/21/2018	19:17	35.7064702	-74.812035	469	Sediment
AT41-AL4961-P32	A4961	Pea Island Seeps	8/21/2018	19:05	35.7064485	-74.812052	469	Sediment
AT41-AL4961-P33	A4961	Pea Island Seeps	8/21/2018	19:03	35.7064484	-74.812052	469	Sediment
AT41-AL4961-Q9	A4961	Pea Island Seeps	8/21/2018	14:41	35.6991014	-74.802415	422	Spider Crab, Chaceon
AT41-AL4962-ALL	AL4962	Stetson Deep	08/23/2018	na	na	na	na	Lophelia, Madrepora
AT41-AL4962-B1-1	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Lophelia
AT41-AL4962-B1-2	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Ophiuroid
AT41-AL4962-B1-6	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Urchin
AT41-AL4962-B1-Urchin sp.2	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Urchin, cf. Cidaris sp.
AT41-AL4962-B1-Criniod	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Crinoid
AT41-AL4962-B1-Nemertean	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Nemertean
AT41-AL4962-B1-Gastropod	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Gastropod
AT41-AL4962-B1-Amphipod	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Amphipod
AT41-AL4962-B1-Annelid sp.1	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Annelid sp. 1
AT41-AL4962-B1-Annelid sp.2	AL4962	Stetson Deep	8/23/2018	16:26	32.01033	-77.3948	711	Annelid sp. 2
AT41-AL4962-B2-1	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Lophelia
AT41-AL4962-B2-2	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Plexaurid
AT41-AL4962-B2-3	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Chrysogorgia
AT41-AL4962-B2-4	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Crinoid
AT41-AL4962-B2-5	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Primnoid
AT41-AL4962-B2-6	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Urchin, Echinus sp.
AT41-AL4962-B2-Polychaete	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Polychaete
AT41-AL4962-B2-Hydroid	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Hydroid
AT41-AL4962-B2-Barnacle	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Barnacle
AT41-AL4962-B2-Brittlestar	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Brittlestar
AT41-AL4962-B2-Annelid	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Annelid
AT41-AL4962-B2-Shrimp	AL4962	Stetson Deep	8/23/2018	14:35	32.01337	-77.39594	725	Shrimp
AT41-AL4962-B3-1	AL4962	Stetson Deep	8/23/2018	15:38	32.01205	-77.39508	777	Lophelia

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4962-B3-2	AL4962	Stetson Deep	8/23/2018	15:38	32.01205	-77.39508	777	Neptheid
AT41-AL4962-B3-3	AL4962	Stetson Deep	8/23/2018	15:38	32.01205	-77.39508	777	Neptheid
AT41-AL4962-B4-1	AL4962	Stetson Deep	8/23/2018	17:01	32.00998	-77.39507	695	Lophelia
AT41-AL4962-B5-1	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Lophelia
AT41-AL4962-B5-2	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Madrepora
AT41-AL4962-B5-3	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Brittle Star
AT41-AL4962-B5-4	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Barnacle
AT41-AL4962-B5-Hydroid	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Hydroid
AT41-AL4962-B5-Amphipod	AL4962	Stetson Deep	8/23/2018	18:28	32.01033	-77.3948	704	Amphipod
AT41-AL4962-B6-1	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Stoliniforan
AT41-AL4962-B6-2	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Lophelia
AT41-AL4962-B6-3a	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Chrysogorgia
AT41-AL4962-B6-3b	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Chrysogorgia
AT41-AL4962-B6-4a	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Neptheid
AT41-AL4962-B6-4b	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Neptheid
AT41-AL4962-B6-5	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Crinoid
AT41-AL4962-B6-6	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Brittle Star
AT41-AL4962-B6-7	AL4962	Stetson Deep	8/23/2018	17:47	32.00936	-77.3957	696	Hydroid ?
AT41-AL4962-N1	AL4962	Stetson Deep	8/23/2018	19:10	32.00848741	-77.39454032	714	Water
AT41-AL4962-N2	AL4962	Stetson Deep	8/23/2018	17:07	32.00998476	-77.39507331	693	Water
AT41-AL4962-N3	AL4962	Stetson Deep	8/23/2018	16:28	32.01033424	-77.39480271	711	Water
AT41-AL4962-N4	AL4962	Stetson Deep	8/23/2018	15:42	32.01205199	-77.39508184	744	Water
AT41-AL4962-N5	AL4962	Stetson Deep	8/23/2018	14:39	32.01336888	-77.39594332	725	Water
AT41-AL4962-Q10-1	AL4962	Stetson Deep	8/23/2018	19:30	32.00862	-77.39404	705	Lophelia
AT41-AL4962-Q1-1	AL4962	Stetson Deep	8/23/2018	15:22	32.01204	-77.39506	744	Lophelia
AT41-AL4962-Q1-2	AL4962	Stetson Deep	8/23/2018	15:22	32.01204	-77.39506	744	Brittle Star
AT41-AL4962-Q1-3	AL4962	Stetson Deep	8/23/2018	15:22	32.01204	-77.39506	744	Crinoid
AT41-AL4962-Q1-4	AL4962	Stetson Deep	8/23/2018	15:22	32.01204	-77.39506	744	Eunicid
AT41-AL4962-Q2-1	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Lophelia
AT41-AL4962-Q2-2	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Brittle Star
AT41-AL4962-Q2-3	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Neptheid
AT41-AL4962-Q2-Eunicid	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Eunicidae
AT41-AL4962-Q2-Hydroid	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Hydroid
AT41-AL4962-Q2-Barnacle	AL4962	Stetson Deep	8/23/2018	17:06	32.00998	-77.39507	695	Barnacle
AT41-AL4962-Q3-1	AL4962	Stetson Deep	8/23/2018	19:02	32.00845	-77.39457	715	Lophelia
AT41-AL4962-Q3-2	AL4962	Stetson Deep	8/23/2018	19:02	32.00845	-77.39457	715	Brittle Star

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4962-Q3-3	AL4962	Stetson Deep	8/23/2018	19:02	32.00845	-77.39457	715	Snails
AT41-AL4962-Q4-1	AL4962	Stetson Deep	8/23/2018	14:09	32.01366	-77.39584	729	Plexaurid
AT41-AL4962-Q4-2	AL4962	Stetson Deep	8/23/2018	14:09	32.01366	-77.39584	729	Plexaurid
AT41-AL4962-Q4-3	AL4962	Stetson Deep	8/23/2018	14:09	32.01366	-77.39584	729	Primnoid
AT41-AL4962-Q4-4	AL4962	Stetson Deep	8/23/2018	14:09	32.01366	-77.39584	729	Anthomastus
AT41-AL4962-Q4-Plexaurid	AL4962	Stetson Deep	8/23/2018	14:09	32.01366	-77.39584	729	Plexaurid
AT41-AL4962-Q5-1	AL4962	Stetson Deep	8/23/2018	19:06	32.00846	-77.39455	715	Enallopsammia
AT41-AL4962-Q5-2	AL4962	Stetson Deep	8/23/2018	19:06	32.00846	-77.39455	715	Plexaurid
AT41-AL4962-Q5-3	AL4962	Stetson Deep	8/23/2018	19:06	32.00846	-77.39455	715	Brittle Star
AT41-AL4962-Q5-Sponge	AL4962	Stetson Deep	8/23/2018	19:06	32.00846	-77.39455	715	Sponge
AT41-AL4962-Q6-1	AL4962	Stetson Deep	8/23/2018	19:45	32.00875	-77.39395	705	Enallopsammia
AT41-AL4962-Q7-1	AL4962	Stetson Deep	8/23/2018	19:40	32.00873	-77.39395	708	Enallopsammia
AT41-AL4962-Q7-2	AL4962	Stetson Deep	8/23/2018	19:40	32.00873	-77.39395	708	Lophelia
AT41-AL4962-Q7-3	AL4962	Stetson Deep	8/23/2018	19:40	32.00873	-77.39395	708	Cup coral
AT41-AL4962-Q8-1	AL4962	Stetson Deep	8/23/2018	19:18	32.00846	-77.3945	715	Enallopsammia
AT41-AL4962-Q8-2	AL4962	Stetson Deep	8/23/2018	19:18	32.00846	-77.3945	715	Plexaurid
AT41-AL4962-Q8-3	AL4962	Stetson Deep	8/23/2018	19:18	32.00846	-77.3945	715	Neptheid
AT41-AL4962-Q8-Hydroid	AL4962	Stetson Deep	8/23/2018	19:18	32.00846	-77.3945	715	Hydroid
AT41-AL4962-Q9-1	AL4962	Stetson Deep	8/23/2018	19:16	32.00849	-77.39454	714	Enallopsammia
AT41-AL4962-Q9-2	AL4962	Stetson Deep	8/23/2018	19:16	32.00849	-77.39454	714	Cup coral
AT41-AL4963-B1-1	AL4963	Richardson Ridge	08/24/2018	15:55	31.9845984	-77.410721	691.7	Madrepora
AT41-AL4963-B1-2	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Plexaurid
AT41-AL4963-B1-3a	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Anthomastus
AT41-AL4963-B1-3b	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Anthomastus
AT41-AL4963-B1-3c	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Anthomastus
AT41-AL4963-B1-4	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Cup coral
AT41-AL4963-B1-5	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Neptheid
AT41-AL4963-B1-6	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Ophiuroid
AT41-AL4963-B1-Polynoidae	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Annelid, Polynoidae
AT41-AL4963-B1-Hydroid	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Hydroid
AT41-AL4963-B1-Crinoid	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Crinoid
AT41-AL4963-B1-Amphipod	AL4963	Richardson Ridge	08/24/2018	15:33	31.9843985	-77.410667	686.4	Amphipod
AT41-AL4963-B2-1	AL4963	Richardson Ridge	08/24/2018	16:06	31.9845361	-77.410566	695.1	Enallopsammia
AT41-AL4963-B2-2	AL4963	Richardson Ridge	08/24/2018	16:06	31.9845361	-77.410566	695.1	Cup coral1

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4963-B2-3	AL4963	Richardson Ridge	08/24/2018	16:06	31.9845361	-77.410566	695.1	Cupcoral2
AT41-AL4963-B2-4	AL4963	Richardson Ridge	08/24/2018	16:06	31.9845361	-77.410566	695.1	Plexaurid
AT41-AL4963-B2-5	AL4963	Richardson Ridge	08/24/2018	16:06	31.9845361	-77.410566	695.1	Hydroid
AT41-AL4963-B6-1	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Lophelia
AT41-AL4963-B6-2	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Madrepora
AT41-AL4963-B6-3	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Enallopsammia
AT41-AL4963-B6-4	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Plexaurid
AT41-AL4963-B6-5	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Cup coral
AT41-AL4963-B6-6	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Ophiuroid
AT41-AL4963-B6-7	AL4963	Richardson Ridge	08/24/2018	16:11(?)	31.984493	-77.410563	693.8	Polynoid
AT41-AL4963-N1	AL4963	Richardson Ridge	08/24/2018	16:12	31.98449306	-77.41056401	690	Water
AT41-AL4963-N2	AL4963	Richardson Ridge	08/24/2018	14:48	31.98437924	-77.41089105	684	Water
AT41-AL4963-N3	AL4963	Richardson Ridge	08/24/2018	14:21	31.98446222	-77.41137187	692	Water
AT41-AL4963-N4	AL4963	Richardson Ridge	08/24/2018	13:31	31.98449838	-77.41393059	789	Water
AT41-AL4963-N5	AL4963	Richardson Ridge	08/24/2018	13:10	31.98499291	-77.4149856	837	Water
AT41-AL4963-P1	AL4963	Richardson Ridge	08/24/2018	16:22	31.9843915	-77.410663	693.2	Sediment
AT41-AL4963-P10	AL4963	Richardson Ridge	08/24/2018	16:28	31.9843921	-77.410673	692.3	Sediment
AT41-AL4963-P12	AL4963	Richardson Ridge	08/24/2018	16:50	31.9844143	-77.410892	688.8	
AT41-AL4963-Q10-1	AL4963	Richardson Ridge	08/24/2018	15:12	31.9845002	-77.41122	688.7	Lophelia
AT41-AL4963-Q10-2	AL4963	Richardson Ridge	08/24/2018	15:12	31.9845002	-77.41122	688.7	Soft coral
AT41-AL4963-Q10-Hydroid	AL4963	Richardson Ridge	08/24/2018	15:12	31.9845002	-77.41122	688.7	Hydroid
AT41-AL4963-Q10-Annelid1	AL4963	Richardson Ridge	08/24/2018	15:12	31.9845002	-77.41122	688.7	Annelid
AT41-AL4963-Q10-Annelid2	AL4963	Richardson Ridge	08/24/2018	15:12	31.9845002	-77.41122	688.7	Annelid
AT41-AL4963-Q1-1	AL4963	Richardson Ridge	08/24/2018	13:08	31.9849886	-77.414987	843.5	Lophelia
AT41-AL4963-Q1-2	AL4963	Richardson Ridge	08/24/2018	13:08	31.9849886	-77.414987	843.5	Ophiuroid
AT41-AL4963-Q1-3	AL4963	Richardson Ridge	08/24/2018	13:08	31.9849886	-77.414987	843.5	Eunicid
AT41-AL4963-Q2-1	AL4963	Richardson Ridge	08/24/2018	13:19	31.9849442	-77.414711	833.5	Lophelia
AT41-AL4963-Q2-2	AL4963	Richardson Ridge	08/24/2018	13:19	31.9849442	-77.414711	833.5	Eunicid
AT41-AL4963-Q3-1	AL4963	Richardson Ridge	08/24/2018	13:31	31.9844984	-77.413931	794.4	Lophelia
AT41-AL4963-Q3-2	AL4963	Richardson Ridge	08/24/2018	13:31	31.9844984	-77.413931	794.4	Stalked crinoid
AT41-AL4963-Q3-Hydroid	AL4963	Richardson Ridge	08/24/2018	13:31	31.9844984	-77.413931	794.4	Hydroid
AT41-AL4963-Q4-1	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	687.6	Lophelia
AT41-AL4963-Q4-2	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	687.6	Ophiuroid

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4963-Q4-3	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	687.6	Galatheid
AT41-AL4963-Q4-4	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	687.6	Crinoid
AT41-AL4963-Q6-1	AL4963	Richardson Ridge	08/24/2018	14:19	31.9844577	-77.411374	695.3	Paragorgia
AT41-AL4963-Q6-Hydroid	AL4963	Richardson Ridge	08/24/2018	14:19	31.9844577	-77.411374	695.3	Hydroid
AT41-AL4963-Q6-Sponge	AL4963	Richardson Ridge	08/24/2018	14:19	31.9844577	-77.411374	695.3	Sponge
AT41-AL4963-Q6-Amphipod	AL4963	Richardson Ridge	08/24/2018	14:19	31.9844577	-77.411374	695.3	Amphipod
AT41-AL4963-Q7-1	AL4963	Richardson Ridge	08/24/2018	15:04	31.984402	-77.411124	687.7	Lophelia
AT41-AL4963-Q8-1	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Lophelia
AT41-AL4963-Q8-2	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Stoliniforan
AT41-AL4963-Q8-3	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Neptheid
AT41-AL4963-Q8-Crinoid	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Crinoid
AT41-AL4963-Q8-Polychaete	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Polychaete
AT41-AL4963-Q8-Hydroid	AL4963	Richardson Ridge	08/24/2018	15:21	31.9845855	-77.411062	688.2	Hydroid
AT41-AL4963-Q9-1	AL4963	Richardson Ridge	08/24/2018	15:29	31.9843983	-77.410662	688.7	Lophelia
AT41-AL4963-Q9-2	AL4963	Richardson Ridge	08/24/2018	15:29	31.9843983	-77.410662	688.7	Gastropod
AT41-AL4963-Q9-3	AL4963	Richardson Ridge	08/24/2018	15:29	31.9843983	-77.410662	688.7	Hydroid
AT41-AL4963-STBDBB-01	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	684	Lophelia
AT41-AL4963-STBDBB-02	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	684	Ophiuroid?
AT41-AL4963-STBDBB-03	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	684	Munidopsis
AT41-AL4963-STBDBB-04	AL4963	Richardson Ridge	08/24/2018	14:44	31.9843387	-77.41083	684	Crinoid
AT41-AL4964-B1-1	AL4964	Blake Escarpment	08/25/2018	15:46	31.3232056	-77.2438593	1250	Enallopsammia
AT41-AL4964-B2-1	AL4964	Blake Escarpment	08/25/2018	13:58	31.322522	-77.24511	1272	Solenosomilia
AT41-AL4964-B2-2	AL4964	Blake Escarpment	08/25/2018	13:58	31.322522	-77.24511	1272	Bamboo coral
AT41-AL4964-B2-Sponge	AL4964	Blake Escarpment	08/25/2018	13:58	31.322522	-77.24511	1272	Yellow sponge
AT41-AL4964-B2-Hydroid	AL4964	Blake Escarpment	08/25/2018	13:58	31.322522	-77.24511	1272	Hydroid
AT41-AL4964-B4-1	AL4964	Blake Escarpment	08/25/2018	16:47	31.3239893	-77.244176	1206	Madrepora
AT41-AL4964-B5-1	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Storopathes
AT41-AL4964-B5-2	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Coral base
AT41-AL4964-B5-R1-Picked	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Picked Biology
AT41-AL4964-B5-R1-Sieved	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Sieved macrofauna
AT41-AL4964-B5-R1	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Rock (Mudstone)
AT41-AL4964-BASKET-C1	AL4964	Blake Escarpment	08/25/2018	15:47	31.3232057	-77.24385968	1250.77	Bamboo coral skeleton
AT41-AL4964-N1	AL4964	Blake Escarpment	08/25/2018	19:48	31.3237866	-77.2413071	1222	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4964-N2	AL4964	Blake Escarpment	08/25/2018	16:50	31.3239894	-77.2441758	1206	Water
AT41-AL4964-N3	AL4964	Blake Escarpment	08/25/2018	15:47	31.3232057	-77.2438597	1250	Water
AT41-AL4964-N4	AL4964	Blake Escarpment	08/25/2018	13:21	31.3224832	-77.245047	1273	Water
AT41-AL4964-PC1	AL4964	Blake Escarpment	08/25/2018	14:22	31.32251932	-77.24513781	1272	Sediment
AT41-AL4964-PC10	AL4964	Blake Escarpment	08/25/2018	16:01	31.32320696	-77.24387124	1250	Sediment
AT41-AL4964-PC11	AL4964	Blake Escarpment	08/25/2018	16:00	31.32320678	-77.24387113	1250	Sediment
AT41-AL4964-PC12	AL4964	Blake Escarpment	08/25/2018	19:46	31.3237871	-77.24130573	1222	Sediment
AT41-AL4964-PC13	AL4964	Blake Escarpment	08/25/2018	17:43	31.32413651	-77.24396232	1207	Sediment
AT41-AL4964-PC14	AL4964	Blake Escarpment	08/25/2018	18:13	31.32286458	-77.24257535	1220	Sediment
AT41-AL4964-PC15	AL4964	Blake Escarpment	08/25/2018	18:13	31.32286458	-77.24257535	1220	Sediment
AT41-AL4964-PC16	AL4964	Blake Escarpment	08/25/2018	17:39	31.32413678	-77.24396243	1207	Sediment
AT41-AL4964-PC17	AL4964	Blake Escarpment	08/25/2018	18:14	31.32286242	-77.24257714	1220	Sediment
AT41-AL4964-PC18	AL4964	Blake Escarpment	08/25/2018	18:15	31.32286224	-77.24257703	1220	Sediment
AT41-AL4964-PC19	AL4964	Blake Escarpment	08/25/2018	18:13	31.32286458	-77.24257535	1220	Sediment
AT41-AL4964-PC2	AL4964	Blake Escarpment	08/25/2018	15:54	31.32320768	-77.24387134	1250	Sediment
AT41-AL4964-PC20	AL4964	Blake Escarpment	08/25/2018	18:15	31.32286224	-77.24257703	1220	Sediment
AT41-AL4964-PC21	AL4964	Blake Escarpment	08/25/2018	18:16	31.32286098	-77.24257745	1220	Sediment
AT41-AL4964-PC22	AL4964	Blake Escarpment	08/25/2018	18:16	31.32286098	-77.24257745	1220	Sediment
AT41-AL4964-PC23	AL4964	Blake Escarpment	08/25/2018	19:47	31.32378719	-77.24130657	1222	Sediment
AT41-AL4964-PC24	AL4964	Blake Escarpment	08/25/2018	19:46	31.3237871	-77.24130573	1222	Sediment
AT41-AL4964-PC3	AL4964	Blake Escarpment	08/25/2018	14:53	31.32249136	-77.24490574	1273	Sediment
AT41-AL4964-PC4	AL4964	Blake Escarpment	08/25/2018	14:53	31.32249136	-77.24490574	1273	Sediment
AT41-AL4964-PC5	AL4964	Blake Escarpment	08/25/2018	16:04	31.32320687	-77.24387113	1250	Sediment
AT41-AL4964-PC6	AL4964	Blake Escarpment	08/25/2018	16:04	31.32320687	-77.24387113	1250	Sediment
AT41-AL4964-PC7	AL4964	Blake Escarpment	08/25/2018	16:03	31.32320696	-77.24387082	1250	Sediment
AT41-AL4964-PC8	AL4964	Blake Escarpment	08/25/2018	16:02	31.32320687	-77.24387103	1250	Sediment
AT41-AL4964-PC9	AL4964	Blake Escarpment	08/25/2018	16:02	31.32320687	-77.24387103	1250	Sediment
AT41-AL4964-Q10-1	AL4964	Blake Escarpment	08/25/2018	17:29	31.3237896	-77.2439527	1208	Plexaurid
AT41-AL4964-Q10-2	AL4964	Blake Escarpment	08/25/2018	17:29	31.3237896	-77.2439527	1208	Ophiuroid
AT41-AL4964-Q1-1	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Desmophyllum
AT41-AL4964-Q1-2	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Eunicid polychaete
AT41-AL4964-Q1-Anemone	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Anemone
AT41-AL4964-Q1-Barnacle	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Barnacle

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4964-Q1-Hydroid	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Hydroid
AT41-AL4964-Q1-Lophelia	AL4964	Blake Escarpment	08/25/2018	18:33	31.3226924	-77.2423408	1216	Lophelia pertusa
AT41-AL4964-Q2-1	AL4964	Blake Escarpment	08/25/2018	18:36	31.3226912	-77.2423378	1216	Desmophyllum
AT41-AL4964-Q2-2	AL4964	Blake Escarpment	08/25/2018	18:36	31.3226912	-77.2423378	1216	Gastropod
AT41-AL4964-Q2-3	AL4964	Blake Escarpment	08/25/2018	18:36	31.3226912	-77.2423378	1216	Polychete
AT41-AL4964-Q2-Barnacle	AL4964	Blake Escarpment	08/25/2018	18:36	31.3226912	-77.2423378	1216	Barnacle
AT41-AL4964-Q3-1	AL4964	Blake Escarpment	08/25/2018	13:36	31.3224828	-77.2450495	1273	Sticopathes
AT41-AL4964-Q3-2	AL4964	Blake Escarpment	08/25/2018	13:39	31.322483	-77.2450497	1273	Antipatharian (Stauropathes?)
AT41-AL4964-Q3-3	AL4964	Blake Escarpment	08/25/2018	13:39	31.322483	-77.2450497	1273	Ophiuroid
AT41-AL4964-Q4-1	AL4964	Blake Escarpment	08/25/2018	13:17	31.3224839	-77.2450481	1273	Keratoisididae
AT41-AL4964-Q5-1	AL4964	Blake Escarpment	08/25/2018	14:18	31.32252	-77.2451381	1272	Paragorgia
AT41-AL4964-Q5-2	AL4964	Blake Escarpment	08/25/2018	14:18	31.32252	-77.2451381	1272	Ophiuroid
AT41-AL4964-Q6-1	AL4964	Blake Escarpment	08/25/2018	15:10	31.3224972	-77.2449415	1273	Bathypathes
AT41-AL4964-Q6-2	AL4964	Blake Escarpment	08/25/2018	15:10	31.3224972	-77.2449415	1273	Worms
AT41-AL4964-Q6-3	AL4964	Blake Escarpment	08/25/2018	15:10	31.3224972	-77.2449415	1273	Isopoda(?)
AT41-AL4964-Q7-1	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Plexaurid
AT41-AL4964-Q7-2	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Hermit crab
AT41-AL4964-Q7-3	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Scale worm
AT41-AL4964-Q7-4	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Barnacle
AT41-AL4964-Q7-Annelid	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Annelid
AT41-AL4964-Q7-Isopod	AL4964	Blake Escarpment	08/25/2018	19:12	31.3223259	-77.241751	1220	Isopod
AT41-AL4964-Q8-1	AL4964	Blake Escarpment	08/25/2018	19:33	31.3238311	-77.2413248	1217	Pink Antipatharian
AT41-AL4964-Q8-2	AL4964	Blake Escarpment	08/25/2018	19:35	31.3238311	-77.2413248	1217	Stauropathes
AT41-AL4964-Q9-1	AL4964	Blake Escarpment	08/25/2018	17:19	31.3237929	-77.2439539	1208	Chrysogorgia
AT41-AL4964-Q9-2	AL4964	Blake Escarpment	08/25/2018	17:19	31.3237929	-77.2439539	1208	Shrimp
AT41-AL4964-Q9-Amphipod	AL4964	Blake Escarpment	08/25/2018	17:19	31.3237929	-77.2439539	1208	Amphipod
AT41-AL4964-Q9-Polychaete	AL4964	Blake Escarpment	08/25/2018	17:19	31.3237929	-77.2439539	1208	Polychaete
AT41-AL4964-SCOOP-R1	AL4964	Blake Escarpment	08/25/2018	19:54	31.32378	-77.24135	1217	Rock (Mudstone)
AT41-AL4964-SCOOP-R2	AL4964	Blake Escarpment	08/25/2018	19:54	31.32378	-77.24135	1217	Rock (Mudstone)
AT41-AL4965-B1-1	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Stoliniforan
AT41-AL4965-B1-2	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Lophelia
AT41-AL4965-B1-3	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Brittle star
AT41-AL4965-B1-4	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Neptheid

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4965-B1-5	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Thecopsammia
AT41-AL4965-B1-Amphipod	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Amphipod
AT41-AL4965-B1-6	AL4965	Stetson Banks	08/26/2018	13:31	32.01250164	-78.31346975	558	Ostracod
AT41-AL4965-B2-1	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Enallopsammia
AT41-AL4965-B2-2	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Plexaurid
AT41-AL4965-B2-3	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Stoliniferan
AT41-AL4965-B2-4	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Pink polyps
AT41-AL4965-B2-Ophiuroid	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Ophiuroid
AT41-AL4965-B2-Sargassum	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Sargassum detritus
AT41-AL4965-B2-Gastropod	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Gastropod
AT41-AL4965-B2-Amphipod	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Amphipod
AT41-AL4965-B4-1	AL4965	Stetson Banks	08/26/2018	16:12	32.0144471	-78.32487642	434	Plexaurid
AT41-AL4965-B4-2	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	434	Lophelia
AT41-AL4965-B4-Amphipod	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	434	
AT41-AL4965-B4-Annelid	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	434	
AT41-AL4965-B5-Sieved	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Sieved macrofauna
AT41-AL4965-B5-Crustacea	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Crustaceans
AT41-AL4965-B5-1	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Black coral (Leiopathes)
AT41-AL4965-B5-2	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Eumunida picta
AT41-AL4965-B5-Hydroid	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Hydroid
AT41-AL4965-B5-Barnacle	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Barnacle
AT41-AL4965-M1-Sieve	AL4965	Stetson Banks	08/26/2018	16:17	32.0144471	-78.32487642	447	Sieved macrofauna
AT41-AL4965-M1-1	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Stoliniferan
AT41-AL4965-M1-10	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Lophelia skeleton
AT41-AL4965-M1-11	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Neptheid
AT41-AL4965-M1-12	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Nemertean1(?)
AT41-AL4965-M1-13	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Nemertean2(?)
AT41-AL4965-M1-2	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Sargassum
AT41-AL4965-M1-3	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Demosponge
AT41-AL4965-M1-4	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Hexactinelild
AT41-AL4965-M1-5	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Hydroid
AT41-AL4965-M1-6	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Stylasterid
AT41-AL4965-M1-7	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Ophiuroid

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4965-M1-8	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Cup Coral
AT41-AL4965-M1-9	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Dead Coral
AT41-AL4965-M1-R1	AL4965	Stetson Banks	08/26/2018	18:49	32.01790271	-78.32376833	429	Rock
AT41-AL4965-N1	AL4965	Stetson Banks	08/26/2018	18:59	32.01772171	-78.32424241	429	Water
AT41-AL4965-N2	AL4965	Stetson Banks	08/26/2018	16:24	32.01444927	-78.32487473	434	Water
AT41-AL4965-N3	AL4965	Stetson Banks	08/26/2018	15:22	32.01460321	-78.32385481	482	Water
AT41-AL4965-N4	AL4965	Stetson Banks	08/26/2018	14:26	32.01428035	-78.31966262	551	Water
AT41-AL4965-N5	AL4965	Stetson Banks	08/26/2018	13:20	32.01251039	-78.31345842	558	Water
AT41-AL4965-Q3-1	AL4965	Stetson Banks	08/26/2018	17:53	32.01555259	-78.32346498	449	Enallopsammia
AT41-AL4965-Q4-1	AL4965	Stetson Banks	08/26/2018	13:42	32.01227473	-78.3133565	558	Isidid
AT41-AL4965-Q4-2	AL4965	Stetson Banks	08/26/2018	13:42	32.01227473	-78.3133565	558	White plexaurid
AT41-AL4965-Q5-1	AL4965	Stetson Banks	08/26/2018	13:06	32.01245961	-78.3133983	558	Black coral (Leiopathes)
AT41-AL4965-Q5-2	AL4965	Stetson Banks	08/26/2018	13:06	32.01245961	-78.3133983	558	Yellow Enallopsammia
AT41-AL4965-Q5-3	AL4965	Stetson Banks	08/26/2018	13:06	32.01245961	-78.3133983	558	Enallopsammia
AT41-AL4965-Q5-Ophiuroid	AL4965	Stetson Banks	08/26/2018	13:06	32.01245961	-78.3133983	558	Ophiuroid
AT41-AL4965-Q6-1	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	Lophelia
AT41-AL4965-Q6-2	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	Bamboo coral
AT41-AL4965-Q6-3	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	Plexaurid
AT41-AL4965-Q6-4	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	Purple anemone on Isididae
AT41-AL4965-Q6-Hydroid	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	
AT41-AL4965-Q6-Amphipod	AL4965	Stetson Banks	08/26/2018	15:29	32.01460646	-78.32385661	482	
AT41-AL4965-Q7-1	AL4965	Stetson Banks	08/26/2018	16:55	32.01462432	-78.32474591	434	Enallopsammia
AT41-AL4965-Q7-2	AL4965	Stetson Banks	08/26/2018	16:55	32.01462432	-78.32474591	434	Primnoid
AT41-AL4965-Q7-3	AL4965	Stetson Banks	08/26/2018	16:55	32.01462432	-78.32474591	434	White anemone
AT41-AL4965-Q7-4	AL4965	Stetson Banks	08/26/2018	16:55	32.01462432	-78.32474591	434	Bulbous pink stoliniferan
AT41-AL4965-Q7-Plexaurid	AL4965	Stetson Banks	08/26/2018	16:55	32.01462432	-78.32474591	434	Plexaurid
AT41-AL4965-R1	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Rock
AT41-AL4965-R1	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Holothurian
AT41-AL4965-R1	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Annelid
AT41-AL4965-R1	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Sabellid
AT41-AL4965-R1-Sponge	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Sponge
AT41-AL4965-R1-Polychaete	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Polychaete
AT41-AL4965-R1-Bryozoan	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Bryozoan

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4965-R1-Stoliniferan	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Stoliniferan
AT41-AL4965-R1-02	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	Thecopsammia
AT41-AL4965-R1-1A	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	white plexaurid
AT41-AL4965-R1-1B	AL4965	Stetson Banks	08/26/2018	17:11	32.01510058	-78.32406163	437	white plexaurid
AT41-AL4965-R2	AL4965	Stetson Banks	08/26/2018	13:36	32.01233705	-78.31333215	558	Picked Biology
AT41-AL4965-R2	AL4965	Stetson Banks	08/26/2018	13:36	32.01233705	-78.31333215	558	Rock
AT41-AL4965-R2	AL4965	Stetson Banks	08/26/2018	13:36	32.01233705	-78.31333215	558	Sieved macrofauna
AT41-AL4965-R2-Polychaete	AL4965	Stetson Banks	08/26/2018	13:36	32.01233705	-78.31333215	558	Polychaete
AT41-AL4966								Multip Rocks - Jason needs check video for locations
AT41-AL4966-B1-RockPick	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Picked Biology
AT41-AL4966-B1-RockSieve	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Sieved macrofauna
AT41-AL4966-B1-Sieve	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Sieved macrofauna
AT41-AL4966-B1-Sargassum	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Sargassum detritus
AT41-AL4966-B1-Hydroid	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Hydroid
AT41-AL4966-B1-1	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Zoanthid
AT41-AL4966-B1-2	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Primnoid
AT41-AL4966-B1-3	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Thecopsammia
AT41-AL4966-B1-4	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Thecopsammia
AT41-AL4966-B1-5	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Purple anemone
AT41-AL4966-B1-6	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Anthomastus
AT41-AL4966-B1-7	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Pink anemone
AT41-AL4966-B1-8	AL4966	Stetson Banks	08/27/2018	16:30	32.06975163	-78.37114049	402.58	Purple anemone on Primnoid
AT41-AL4966-B2-1	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Anthomastus
AT41-AL4966-B2-3	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Plexaurid
AT41-AL4966-B2-R1	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Rock
AT41-AL4966-B2-Anemone	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Anemone
AT41-AL4966-B2-Hydroid	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Hydroid
AT41-AL4966-M1-1	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Shrimp
AT41-AL4966-M1-2	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Sargassum
AT41-AL4966-M1-3	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Hydroid
AT41-AL4966-M1-4	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Demosponge
AT41-AL4966-M1-5	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Ophiuroid
AT41-AL4966-M1-6	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Polychaete1

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4966-M1-7	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Polychaete2
AT41-AL4966-M1-8	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Dead Lophelia
AT41-AL4966-M1-9	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Live Lophelia
AT41-AL4966-M1-Sieved	AL4966	Stetson Banks	08/27/2018	17:50	32.06991342	-78.37236564	401.71	Sieved macrofauna
AT41-AL4966-N4	AL4966	Stetson Banks	08/27/2018	18:00	32.06991261	-78.37236469	401.64	Water
AT41-AL4966-N5	AL4966	Stetson Banks	08/27/2018	16:49	32.06976687	-78.37112028	402.44	Water
AT41-AL4966-Slurp-1	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Thecopsammia
AT41-AL4966-Slurp-2	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Plexaurid
AT41-AL4966-Slurp-Hydroid	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Hydroid
AT41-AL4966-Slurp-Sponge	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Sponge
AT41-AL4966-Slurp-Amphipod	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Amphipod
AT41-AL4966-Slurp-Sieve	AL4966	Stetson Banks	08/27/2018	18:34	32.0696563	-78.36952954	402.62	Sieved macrofauna
AT41-AL4966-Sargassum	AL4966	Stetson Banks	08/27/2018					Sargassum detritus
AT41-AL4967-B2-1	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	B. heckerae
AT41-AL4967-B2-2	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	B. heckerae
AT41-AL4967-B2-3	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	B. heckerae
AT41-AL4967-B2-4	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	B. heckerae
AT41-AL4967-B2-6	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	urchin
AT41-AL4967-B2-Echinoderm	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	Echinoderm sp. 1
AT41-AL4967-B2-Sargassum	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	Sargassum detritus
AT41-AL4967-B2-Sieved	AL4967	Blake Ridge	08/28/2018	17:30	32.49576325	-76.19055639	2165.07	Sieved macrofauna
AT41-AL4967-B4-1	AL4967	Blake Ridge	08/28/2018	15:15	32.49488122	-76.18916096	2168.61	urchin
AT41-AL4967-B4-Sieved	AL4967	Blake Ridge	08/28/2018	15:15	32.49488122	-76.18916096	2168.61	Sieved macrofauna
AT41-AL4967-B6-1	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-2	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-3	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-4	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-5	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-6	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-7	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-8	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-9	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-10	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-11	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4967-B6-12	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-13	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-14	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-15	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-16	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-17	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-18	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-19	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-20	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-21	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-22	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-23	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-24	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-25	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-26	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-28	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-29	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-30	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-31	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-32	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-33	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-34	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-35	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-36	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-37	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-38	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-39	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-40	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-41	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-42	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-43	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-44	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-45	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-46	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-47	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-48	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4967-B6-49	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-50	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-51	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-52	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-53	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-54	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-55	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-56	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-57	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-58	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-59	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-60	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-61	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-62	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-63	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-64	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-65	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-66	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-67	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-68	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-69	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-70	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-71	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-72	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-73	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	B. heckerae
AT41-AL4967-B6-74	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Chirodota sp.
AT41-AL4967-B6-74b	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Venus flytrap anemone
AT41-AL4967-B6-75	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Chirodota sp.
AT41-AL4967-B6-76	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Chirodota sp.
AT41-AL4967-B6-77	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Chirodota heheva
AT41-AL4967-B6-R1	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Rock (Auth. Carbonate)
AT41-AL4967-B6-Sieve	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Sieved macrofauna
AT41-AL4967-CenterRock-Eunicid	AL4967	Blake Ridge	08/28/2018	14:39	32.49480385	-76.18974616	2168.19	Eunicidae
AT41-AL4967-M1-1	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Holothurian
AT41-AL4967-M1-2	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Alvinocaris
AT41-AL4967-M1-3	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Shrimp

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4967-M1-4	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Sargassum
AT41-AL4967-M1-5	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Polychaete1
AT41-AL4967-M1-6	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Amphipod
AT41-AL4967-M1-7	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Polychaete2
AT41-AL4967-M1-Sieve	AL4967	Blake Ridge	08/28/2018	15:37	32.49517493	-76.18969008	2168.9	Sieved macrofauna
AT41-AL4967-M2-Sieve	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Sieved macrofauna
AT41-AL4967-M2-1	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Worm tubes
AT41-AL4967-M2-2	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Sargassum
AT41-AL4967-M2-3	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Clams
AT41-AL4967-M2-4	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Alvinocaris
AT41-AL4967-M2-5	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Ophiuroid
AT41-AL4967-M2-6	AL4967	Blake Ridge	08/28/2018	14:29	32.49483631	-76.18978872	2168.36	Polychaete
AT41-AL4967-N4	AL4967	Blake Ridge	08/28/2018	15:34	32.49517	-76.18969	2169	Water
AT41-AL4967-N5	AL4967	Blake Ridge	08/28/2018	14:02	32.49480	-76.18973	2168	Water
AT41-AL4967-PC1	AL4967	Blake Ridge	08/28/2018	14:02	32.49480	-76.18973	2168	Sediment
AT41-AL4967-PC2	AL4967	Blake Ridge	08/28/2018	14:06	32.49480	-76.18972	2168	Sediment
AT41-AL4967-PC3	AL4967	Blake Ridge	08/28/2018	14:07	32.49480	-76.18972	2168	Sediment
AT41-AL4967-PC4	AL4967	Blake Ridge	08/28/2018	14:09	32.49480	-76.18972	2168	Sediment
AT41-AL4967-PC5	AL4967	Blake Ridge	08/28/2018	14:11	32.49480	-76.18972	2168	Sediment
AT41-AL4967-PC6	AL4967	Blake Ridge	08/28/2018	14:13	32.49480	-76.18972	2168	Sediment
AT41-AL4967-PC7	AL4967	Blake Ridge	08/28/2018	15:43	32.49514	-76.18970	2168	Sediment
AT41-AL4967-PC8	AL4967	Blake Ridge	08/28/2018	15:45	32.4951	-76.1897	2168	Sediment
AT41-AL4967-PC9	AL4967	Blake Ridge	08/28/2018	15:47	32.4951	-76.1897	2168	Sediment
AT41-AL4967-PC10	AL4967	Blake Ridge	08/28/2018	15:48	32.4951	-76.1897	2168	Sediment
AT41-AL4967-PC11	AL4967	Blake Ridge	08/28/2018	15:49	32.4951	-76.1897	2168	Sediment
AT41-AL4967-PC12	AL4967	Blake Ridge	08/28/2018	15:51	32.4951	-76.1897	2168	Sediment
AT41-AL4967-PC13	AL4967	Blake Ridge	08/28/2018	17:19	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC14	AL4967	Blake Ridge	08/28/2018	17:21	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC15	AL4967	Blake Ridge	08/28/2018	17:22	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC16	AL4967	Blake Ridge	08/28/2018	17:23	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC17	AL4967	Blake Ridge	08/28/2018	17:26	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC18	AL4967	Blake Ridge	08/28/2018	17:27	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC19	AL4967	Blake Ridge	08/28/2018	17:29	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC20	AL4967	Blake Ridge	08/28/2018	17:30	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC21	AL4967	Blake Ridge	08/28/2018	17:33	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC22	AL4967	Blake Ridge	08/28/2018	17:35	32.4958	-76.1906	2165	Sediment

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4967-PC23	AL4967	Blake Ridge	08/28/2018	17:37	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC24	AL4967	Blake Ridge	08/28/2018	17:37	32.4958	-76.1906	2165	Sediment
AT41-AL4967-PC25	AL4967	Blake Ridge	08/28/2018	18:46	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC26	AL4967	Blake Ridge	08/28/2018	18:47	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC27	AL4967	Blake Ridge	08/28/2018	18:48	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC28	AL4967	Blake Ridge	08/28/2018	18:49	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC29	AL4967	Blake Ridge	08/28/2018	18:50	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC30	AL4967	Blake Ridge	08/28/2018	18:51	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC31	AL4967	Blake Ridge	08/28/2018	18:54	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC32	AL4967	Blake Ridge	08/28/2018	18:55	32.4965	-76.1926	2161	Sediment
AT41-AL4967-PC33	AL4967	Blake Ridge	08/28/2018	18:57	32.4965	-76.1926	2161	Sediment
AT41-AL4967-R1	AL4967	Blake Ridge	08/28/2018	16:10			2169	Rock (Auth. Carbonate)
AT41-AL4967-R2	AL4967	Blake Ridge	08/28/2018	18:25			2164	Rock (Auth. Carbonate)
AT41-AL4967-Slurp1	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Holothurian
AT41-AL4967-Slurp3	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Clams
AT41-AL4967-Slurp4-1	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Ophiuroid
AT41-AL4967-Slurp4-2	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Chirodota sp.
AT41-AL4967-Slurp5	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Shrimp
AT41-AL4967-Slurp-Bathymodiolus1	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Bathymodiolus2	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Bathymodiolus3	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Bathymodiolus4	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Bathymodiolus5	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Bathymodiolus6	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Bathymodiolus
AT41-AL4967-Slurp-Sieve	AL4967	Blake Ridge	08/28/2018	14:51	32.49480267	-76.18974509	2168.11	Sieved macrofauna
AT41-AL4968-B3-1	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Lophelia
AT41-AL4968-B3-2	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Paramuricea
AT41-AL4968-B3-3	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Anemone
AT41-AL4968-B3-5	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Ophiuroid
AT41-AL4968-B3-Hydroid	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Hydroid
AT41-AL4968-B3-6	A4968	Cape Fear Mounds	8/29/2018	18:14	33.57281218	-76.46541044	374	Amphipods
AT41-AL4968-B6-1	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Lophelia
AT41-AL4968-B6-2	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Anemone
AT41-AL4968-B6-3	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Gastropod

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4968-B6-4	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Ophiuroid
AT41-AL4968-B6-Hydroid	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Hydroid
AT41-AL4968-B6-Sieve	A4968	Cape Fear Mounds	8/29/2018	17:46	33.57256117	-76.46504769	381.17	Sieved macrofauna
AT41-AL4968-basket	A4968	Cape Fear Mounds	8/29/2018					Pink anemone
AT41-AL4968-basket	A4968	Cape Fear Mounds	8/29/2018					Small brown zoanthid
AT41-AL4968-CenterRock	A4968	Cape Fear Mounds	8/29/2018					Eunicid polychaete
AT41-AL4968-M1-1	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Pencil urchin
AT41-AL4968-M1-2	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Pancake urchin
AT41-AL4968-M1-3a	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Anemone1
AT41-AL4968-M1-3b	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Anemone1
AT41-AL4968-M1-4	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Corallivorous snail
AT41-AL4968-M1-5	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Dead Lophelia
AT41-AL4968-M1-6	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Live Lophelia
AT41-AL4968-M1-7	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Polychaete1
AT41-AL4968-M2-1	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Ophiuroid1
AT41-AL4968-M2-10	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Limpet
AT41-AL4968-M2-11	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Polychaete3
AT41-AL4968-M2-12	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Annelid
AT41-AL4968-M2-13	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Amphipod
AT41-AL4968-M2-14	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Dead Lophelia
AT41-AL4968-M2-2	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Ophiuroid2
AT41-AL4968-M2-3	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Asteroid
AT41-AL4968-M2-4	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Polychaete1
AT41-AL4968-M2-5	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Hexactinelild
AT41-AL4968-M2-6	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Polychaete2
AT41-AL4968-M2-7	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Anemone1
AT41-AL4968-M2-8	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Shrimp1
AT41-AL4968-M2-9	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Hydroid
AT41-AL4968-M3-1	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57496083	-76.46573053	459.22	Ophiuroid
AT41-AL4968-M3-2	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Cup Coral
AT41-AL4968-M3-3	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Bryozoan
AT41-AL4968-M3-4	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Polychaete1
AT41-AL4968-M3-5	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Polychaete2

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4968-M3-6	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Dead Lophelia
AT41-AL4968-M1-Sieved	AL4968	Cape Fear Mounds	8/29/2018	17:33	33.57255504	-76.46504974	381.2	Sieved macrofauna
AT41-AL4968-M2-Sieved	AL4968	Cape Fear Mounds	8/29/2018	15:39	33.57496083	-76.46573053	399.97	Sieved macrofauna
AT41-AL4968-M3-Sieved	AL4968	Cape Fear Mounds	8/29/2018	13:39	33.57551362	-76.46790355	459.22	Sieved macrofauna
AT41-AL4968-N1	AL4968	Cape Fear Mounds	8/29/2018	18:25	33.57281254	-76.46541022	373.95	Water
AT41-AL4968-N2	AL4968	Cape Fear Mounds	8/29/2018	18:24	33.57281254	-76.46541022	373.95	Water
AT41-AL4968-N3	AL4968	Cape Fear Mounds	8/29/2018	18:05	33.57255486	-76.46504565	381	Water
AT41-AL4968-N4	AL4968	Cape Fear Mounds	8/29/2018	15:43	33.57496949	-76.46575649	400.04	Water
AT41-AL4968-N5	AL4968	Cape Fear Mounds	8/29/2018	13:41	33.57551488	-76.46790398	459	Water
AT41-AL4968-PC1	AL4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-PC2	AL4968	Cape Fear Mounds	8/29/2018	13:25	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-PC3	AL4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-PC4	AL4968	Cape Fear Mounds	8/29/2018	13:27	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-PC5	AL4968	Cape Fear Mounds	8/29/2018	13:27	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-PC6	AL4968	Cape Fear Mounds	8/29/2018	13:30	33.57552245	-76.46790668	458	Sediment
AT41-AL4968-Q10-1	A4968	Cape Fear Mounds	8/29/2018	15:05	33.57491701	-76.46571211	399.52	Anthothela
AT41-AL4968-Q10-4	A4968	Cape Fear Mounds	8/29/2018	15:05	33.57491701	-76.46571211	399.52	Eunicid
AT41-AL4968-Q10-Hydroid	A4968	Cape Fear Mounds	8/29/2018	15:05	33.57491701	-76.46571211	399.52	Hydroid
AT41-AL4968-Q10-Amphipod	A4968	Cape Fear Mounds	8/29/2018	15:05	33.57491701	-76.46571211	399.52	Amphipod
AT41-AL4968-Q10-Annelid	A4968	Cape Fear Mounds	8/29/2018	15:05	33.57491701	-76.46571211	399.52	Annelid
AT41-AL4968-Q1-1	A4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790614	459.07	Lophelia
AT41-AL4968-Q1-3	A4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790614	459.07	Small cream anemone
AT41-AL4968-Q1-Hydroid	A4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790614	459.07	Hydroid
AT41-AL4968-Q1-Sieve	A4968	Cape Fear Mounds	8/29/2018	13:26	33.57552245	-76.46790614	459.07	Sieved macrofauna
AT41-AL4968-Q2-1	A4968	Cape Fear Mounds	8/29/2018	13:56	33.57551019	-76.4679182	459.59	Lophelia
AT41-AL4968-Q2-Ophiuroid	A4968	Cape Fear Mounds	8/29/2018	13:56	33.57551019	-76.4679182	459.59	Ophiuroid
AT41-AL4968-Q2-Sieve	A4968	Cape Fear Mounds	8/29/2018	13:56	33.57551019	-76.4679182	459.59	Sieved macrofauna
AT41-AL4968-Q3-1	A4968	Cape Fear Mounds	8/29/2018	16:28	33.57473155	-76.46547732	391.3	White plexaurid
AT41-AL4968-Q3-Annelid	A4968	Cape Fear Mounds	8/29/2018	16:28	33.57473155	-76.46547732	391.3	Annelid
AT41-AL4968-Q3-Amphipod	A4968	Cape Fear Mounds	8/29/2018	16:28	33.57473155	-76.46547732	391.3	Amphipod
AT41-AL4968-Q3-Picked	A4968	Cape Fear Mounds	8/29/2018	16:28	33.57473155	-76.46547732	391.3	Picked Biology
AT41-AL4968-Q3-Shrimp	A4968	Cape Fear Mounds	8/29/2018	16:28	33.57473155	-76.46547732	391.3	Shrimp
AT41-AL4968-Q5-1	A4968	Cape Fear Mounds	8/29/2018	16:00	33.57493964	-76.46560656	400.33	Thecopsammia

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4968-Q5-Ophiuroid	A4968	Cape Fear Mounds	8/29/2018	16:00	33.57493964	-76.46560656	400.33	Ophiuroid
AT41-AL4968-Q5-Hydroid	A4968	Cape Fear Mounds	8/29/2018	16:00	33.57493964	-76.46560656	400.33	Hydroid
AT41-AL4968-Q5-Sieve	A4968	Cape Fear Mounds	8/29/2018	16:00	33.57493964	-76.46560656	400.33	Sieved macrofauna
AT41-AL4968-Q6-1	A4968	Cape Fear Mounds	8/29/2018	16:13	33.57484191	-76.46554054	397.23	Madrepora
AT41-AL4968-Q6-2	A4968	Cape Fear Mounds	8/29/2018	16:13	33.57484191	-76.46554054	397.23	Ophiuroid
AT41-AL4968-PortRock-Pick	A4968	Cape Fear Mounds	8/29/2018					Picked Biology
AT41-AL4968-Anemone	A4968	Cape Fear Mounds	8/29/2018					Anemone
AT41-AL4968-Ophiuroid	A4968	Cape Fear Mounds	8/29/2018					Ophiuroid
AT41-AL4968-Madrepora	A4968	Cape Fear Mounds	8/29/2018					Madrepora
AT41-AL4968-Zoanthid	A4968	Cape Fear Mounds	8/29/2018					Zoanthid
AT41-AL4968-Mussel01	A4968	Cape Fear Mounds	8/29/2018					Mussel
AT41-AL4969-B4-1	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Paramuricea
AT41-AL4969-B4-2	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Asteroschema
AT41-AL4969-B4-3	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Acesta
AT41-AL4969-B4-4	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Hermit crab
AT41-AL4969-B4-5	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Wrinkly anemone on Paramuericea
AT41-AL4969-B4-Ophiuroid	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Ophiuroid
AT41-AL4969-B4-Sieve	A4969	Pamlico Canyon	8/30/2018	16:36	34.93895569	-75.17025954	1452.84	Sieved macrofauna
AT41-AL4969-B5-1	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Acanthogorgia
AT41-AL4969-B5-2	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Solenosamilia
AT41-AL4969-B5-3	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Desmophyllum
AT41-AL4969-B5-4	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Brittle star
AT41-AL4969-B5-5	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Scallop
AT41-AL4969-B5-6	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Barnacle
AT41-AL4969-B5-Amphipod	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Amphipod
AT41-AL4969-B5-Sieve	A4969	Pamlico Canyon	8/30/2018	15:33	34.93745501	-75.16991268	1480.09	Sieved macrofauna
AT41-AL4969-B6-1	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Chrysogorgia
AT41-AL4969-B6-2	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Acanthogorgia
AT41-AL4969-B6-3	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Brittle star
AT41-AL4969-B6-4	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Shrimp
AT41-AL4969-B6-5	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Tiny red anemones on hydroid
AT41-AL4969-B6-7	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Mystery eggs
AT41-AL4969-B6-Hydroid	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Hydroid

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4969-B6-Scaleworm	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Scale worm
AT41-AL4969-B6-Amphipod	A4969	Pamlico Canyon	8/30/2018	16:41	34.9389739	-75.17020197	1435.44	Amphipod
AT41-AL4969-Basket	A4969	Pamlico Canyon	8/30/2018					
AT41-AL4969-N1	A4969	Pamlico Canyon	8/30/2018	18:18	34.9404	-75.1678	1254	Water
AT41-AL4969-N2	A4969	Pamlico Canyon	8/30/2018	16:29	34.9390	-75.1703	1453	Water
AT41-AL4969-N3	A4969	Pamlico Canyon	8/30/2018	15:19	34.9376	-75.1697	1507	Water
AT41-AL4969-N4	A4969	Pamlico Canyon	8/30/2018	14:37	34.9367	-75.1685	1564	Water
AT41-AL4969-N5	A4969	Pamlico Canyon	8/30/2018	14:07	34.9367	-75.1685	1578	Water
AT41-AL4969-PC1	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC2	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC3	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC4	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC5	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC6	A4969	Pamlico Canyon	8/30/2018	13:10	34.9360	-75.1672	1607	Sediment
AT41-AL4969-PC7	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC8	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC9	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC10	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC11	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC12	A4969	Pamlico Canyon	8/30/2018	13:43	34.9367	-75.1684	1596	Sediment
AT41-AL4969-PC13	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC14	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC15	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC16	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC17	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC18	A4969	Pamlico Canyon	8/30/2018	16:03	34.9389	-75.1704	1477	Sediment
AT41-AL4969-PC19	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-PC20	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-PC21	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-PC22	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-PC23	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-PC24	A4969	Pamlico Canyon	8/30/2018	17:38	34.9405	-75.1681	1263	Sediment
AT41-AL4969-Q10-1	A4969	Pamlico Canyon	8/30/2018	16:48	34.93859972	-75.17082181	1477.93	Solenosamillia

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4969-Q10-2	A4969	Pamlico Canyon	8/30/2018	16:48	34.93859972	-75.17082181	1477.93	Paragorgia johnsonii
AT41-AL4969-Q10-Sieve	A4969	Pamlico Canyon	8/30/2018	16:48	34.93859972	-75.17082181	1477.93	Sieved macrofauna
AT41-AL4969-Q1-1	A4969	Pamlico Canyon	8/30/2018	19:18	34.94133021	-75.16617154	1104.51	Paragorgia
AT41-AL4969-Q1-Amphipod	A4969	Pamlico Canyon	8/30/2018	19:18	34.94133021	-75.16617154	1104.51	Amphipod
AT41-AL4969-Q2	A4969	Pamlico Canyon	8/30/2018	14:34	34.9367017	-75.16851079	1564.08	Javania
AT41-AL4969-Q2-Amphipod	A4969	Pamlico Canyon	8/30/2018	14:34	34.9367017	-75.16851079	1564.08	Amphipod
AT41-AL4969-Q3-1	A4969	Pamlico Canyon	8/30/2018	15:15	34.937552	-75.16969936	1507.04	Acanthogorgia
AT41-AL4969-Q3-2	A4969	Pamlico Canyon	8/30/2018	15:15	34.937552	-75.16969936	1507.04	Asteroschema
AT41-AL4969-Q3-Annelid	A4969	Pamlico Canyon	8/30/2018	15:15	34.937552	-75.16969936	1507.04	Annelid
AT41-AL4969-Q4-1	A4969	Pamlico Canyon	8/30/2018	18:07	34.9404086	-75.16786873	1253.46	Solenosamilia
AT41-AL4969-Q4-Hydroid	A4969	Pamlico Canyon	8/30/2018	18:07	34.9404086	-75.16786873	1253.46	Hydroid
AT41-AL4969-Q4-Sponge	A4969	Pamlico Canyon	8/30/2018	18:07	34.9404086	-75.16786873	1253.46	Sponge
AT41-AL4969-Q4-Sieve	A4969	Pamlico Canyon	8/30/2018	18:07	34.9404086	-75.16786873	1253.46	Sieved macrofauna
AT41-AL4969-Q5-1	A4969	Pamlico Canyon	8/30/2018	18:31	34.94037975	-75.16759991	1242.02	Anthomastus
AT41-AL4969-Q5-2	A4969	Pamlico Canyon	8/30/2018	18:31	34.94037975	-75.16759991	1242.02	Trachythela
AT41-AL4969-Q6-1	A4969	Pamlico Canyon	8/30/2018	17:01	34.9389977	-75.17010839	1428.47	Black coral
AT41-AL4969-Q7-1	A4969	Pamlico Canyon	8/30/2018	16:27	34.93895668	-75.17026086	1452.75	Solenosamilia
AT41-AL4969-Q7-2	A4969	Pamlico Canyon	8/30/2018	16:27	34.93895668	-75.17026086	1452.75	Desmophyllum
AT41-AL4969-Q7-3	A4969	Pamlico Canyon	8/30/2018	16:27	34.93895668	-75.17026086	1452.75	Scallop
AT41-AL4969-Q7-4	A4969	Pamlico Canyon	8/30/2018	16:27	34.93895668	-75.17026086	1452.75	Tiny stalked sponge
AT41-AL4969-Q7-Pick	A4969	Pamlico Canyon	8/30/2018	16:27	34.93895668	-75.17026086	1452.75	Picked Biology
AT41-AL4969-Q8-1	A4969	Pamlico Canyon	8/30/2018	14:07	34.93665608	-75.16849437	1578.52	Bathypathes
AT41-AL4969-Q8-2	A4969	Pamlico Canyon	8/30/2018	14:07	34.93665608	-75.16849437	1578.52	Bamboo
AT41-AL4969-Q8-3	A4969	Pamlico Canyon	8/30/2018	14:07	34.93665608	-75.16849437	1578.52	Brittle star
AT41-AL4969-Q8-Annelid	A4969	Pamlico Canyon	8/30/2018	14:07	34.93665608	-75.16849437	1578.52	
AT41-AL4969-Q9-1	A4969	Pamlico Canyon	8/30/2018	15:17	34.93753298	-75.16970822	1507.26	Red Gorgonian
AT41-AL4969-Q9-2	A4969	Pamlico Canyon	8/30/2018	15:17	34.93753298	-75.16970822	1507.26	brittle star
AT41-AL4969-R1	A4969	Pamlico Canyon	8/30/2018	13:37	34.9368	-75.1684	1596	Rock (Shale)
AT41-AL4969-R2	A4969	Pamlico Canyon	8/30/2018	15:04	34.9376	-75.1697	1511	Rock
AT41-AL4969-R3	A4969	Pamlico Canyon	8/30/2018	16:04	34.9389	-75.1704	1477	Rock
AT41-AL4969-R4	A4969	Pamlico Canyon	8/30/2018	17:55	34.9404	-75.1680	1262	Rock
AT41-AL4969-R5	A4969	Pamlico Canyon	8/30/2018	18:46	34.9403	-75.1674	1224	Rock (Sandstone?)
AT41-AL4969-Slurp1-1	A4969	Pamlico Canyon	8/30/2018	13:58	34.9367	-75.1684	1596	Zoanthid from hermit crab shell

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4969-Slurp1-2	A4969	Pamlico Canyon	8/30/2018	13:58	34.9367	-75.1684	1596	Hermit crab
AT41-AL4969-Slurp1-Sieve	A4969	Pamlico Canyon	8/30/2018	13:58	34.9367	-75.1684	1596	Sieved macrofauna
AT41-AL4969	A4969	Pamlico Canyon	8/30/2018					Eumunida picta
AT41-AL4970-B1-1	A4970	Norfolk Canyon	8/31/2018	17:57	37.04743216	-74.31266286	1698.04	Acanella
AT41-AL4970-B1-3	A4970	Norfolk Canyon	8/31/2018	17:57	37.04743216	-74.31266286	1698.04	Brittle Star
AT41-AL4970-B1-Scaleworm	A4970	Norfolk Canyon	8/31/2018	17:57	37.04743216	-74.31266286	1698.04	Scale worm
AT41-AL4970-B1-Holothurian	A4970	Norfolk Canyon	8/31/2018	17:57	37.04743216	-74.31266286	1698.04	Larval holothurian
AT41-AL4970-B2-1	A4970	Norfolk Canyon	8/31/2018	19:27	37.04882264	-74.3145702	1666.57	Acanella
AT41-AL4970-B4-1	A4970	Norfolk Canyon	8/31/2018	18:29	37.04792993	-74.3129505	1678.21	Pistichoptilum
AT41-AL4970-B4-2	A4970	Norfolk Canyon	8/31/2018	18:29	37.04792993	-74.3129505	1678.21	Brittle Star
AT41-AL4970-B5-1	A4970	Norfolk Canyon	8/31/2018	19:52	37.04971518	-74.31512017	1663.24	Anthitilum
AT41-AL4970-N1	A4970	Norfolk Canyon	8/31/2018	19:30	37.04882237	-74.31457008	1667	Water
AT41-AL4970-N2	A4970	Norfolk Canyon	8/31/2018	18:17	37.04741288	-74.31266938	1699	Water
AT41-AL4970-N3	A4970	Norfolk Canyon	8/31/2018	17:35	37.04721743	-74.31261959	1707	Water
AT41-AL4970-N4	A4970	Norfolk Canyon	8/31/2018	17:05	37.04613548	-74.31296118	1757	Water
AT41-AL4970-N5	A4970	Norfolk Canyon	8/31/2018	16:37	37.04570142	-74.31363772	1790	Water
AT41-AL4970-PC1	A4970	Norfolk Canyon	8/31/2018	14:10	37.040461	-74.31758412	1947	Sediment
AT41-AL4970-PC2	A4970	Norfolk Canyon	8/31/2018	14:10	37.040461	-74.31758412	1947	Sediment
AT41-AL4970-PC3	A4970	Norfolk Canyon	8/31/2018	14:11	37.04046136	-74.31758434	1947	Sediment
AT41-AL4970-PC4	A4970	Norfolk Canyon	8/31/2018	14:13	37.04046046	-74.31758479	1947	Sediment
AT41-AL4970-PC5	A4970	Norfolk Canyon	8/31/2018	14:13	37.04046046	-74.31758479	1947	Sediment
AT41-AL4970-PC6	A4970	Norfolk Canyon	8/31/2018	14:12	37.04046055	-74.31758479	1947	Sediment
AT41-AL4970-PC7	A4970	Norfolk Canyon	8/31/2018	15:38	37.0433902	-74.31500732	1938	Sediment
AT41-AL4970-PC8	A4970	Norfolk Canyon	8/31/2018	15:39	37.04339011	-74.31500755	1938	Sediment
AT41-AL4970-PC9	A4970	Norfolk Canyon	8/31/2018	15:36	37.04339011	-74.31500721	1938	Sediment
AT41-AL4970-PC10	A4970	Norfolk Canyon	8/31/2018	15:40	37.04339011	-74.31500777	1938	Sediment
AT41-AL4970-PC11	A4970	Norfolk Canyon	8/31/2018	15:39	37.04339011	-74.31500755	1938	Sediment
AT41-AL4970-PC12	A4970	Norfolk Canyon	8/31/2018	15:37	37.04339038	-74.31500721	1938	Sediment
AT41-AL4970-PC13	A4970	Norfolk Canyon	8/31/2018	17:44	37.04721833	-74.31261779	1707	Sediment
AT41-AL4970-PC14	A4970	Norfolk Canyon	8/31/2018	17:44	37.04721833	-74.31261779	1707	Sediment
AT41-AL4970-PC15	A4970	Norfolk Canyon	8/31/2018	17:44	37.04721833	-74.31261779	1707	Sediment
AT41-AL4970-PC16	A4970	Norfolk Canyon	8/31/2018	17:43	37.04721914	-74.31261611	1707	Sediment
AT41-AL4970-PC17	A4970	Norfolk Canyon	8/31/2018	17:42	37.04721932	-74.3126133	1707	Sediment

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-AL4970-PC18	A4970	Norfolk Canyon	8/31/2018	17:42	37.04721932	-74.3126133	1707	Sediment
AT41-AL4970-PC19	A4970	Norfolk Canyon	8/31/2018	19:11	37.04877416	-74.31454165	1667	Sediment
AT41-AL4970-PC20	A4970	Norfolk Canyon	8/31/2018	19:11	37.04877416	-74.31454165	1667	Sediment
AT41-AL4970-PC21	A4970	Norfolk Canyon	8/31/2018	19:12	37.04877434	-74.31454165	1667	Sediment
AT41-AL4970-PC22	A4970	Norfolk Canyon	8/31/2018	19:13	37.04877425	-74.31454198	1667	Sediment
AT41-AL4970-PC23	A4970	Norfolk Canyon	8/31/2018	19:13	37.04877425	-74.31454198	1667	Sediment
AT41-AL4970-PC24	A4970	Norfolk Canyon	8/31/2018	19:13	37.04877425	-74.31454198	1667	Sediment
AT41-AL4970-Q10-1	A4970	Norfolk Canyon	8/31/2018	18:29	37.04792993	-74.3129505	1678.21	Bamboo coral
AT41-AL4970-Q12-1	A4970	Norfolk Canyon	8/31/2018	18:16	37.0474127	-74.31266882	1698.7	Protoptilum
AT41-AL4970-Q6-1	A4970	Norfolk Canyon	8/31/2018	18:01	37.04743171	-74.31265803	1699	
AT41-AL4970-Q8-1	A4970	Norfolk Canyon	8/31/2018	16:36	37.04569313	-74.31362963	1790.14	Psuedo-Anthomastus
AT41-AL4970-Q9-1	A4970	Norfolk Canyon	8/31/2018	17:04	37.04612206	-74.31298489	1758.12	Acanella
AT41-AL4970-Q9-2	A4970	Norfolk Canyon	8/31/2018	17:04	37.04612206	-74.31298489	1758.12	Scale worm
AT41-AL4970-Q9-3	A4970	Norfolk Canyon	8/31/2018	17:04	37.04612206	-74.31298489	1758.12	Mysterious orange blob
AT41-AL4970-Q9-Sieve	A4970	Norfolk Canyon	8/31/2018	17:04	37.04612206	-74.31298489	1758.12	Sieved macrofauna
AT41-AL4970-R1	A4970	Norfolk Canyon	8/31/2018	16:14	37.0451559	-74.31453861	1808	Rock
AT41-CTD001-MC	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.3	Sediment
AT41-CTD001-N01	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.3	Water
AT41-CTD001-N02	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.3	Water
AT41-CTD001-N03	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.4	Water
AT41-CTD001-N04	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.5	Water
AT41-CTD001-N05	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	438.4	Water
AT41-CTD001-N06	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	400.3	Water
AT41-CTD001-N07	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	400.5	Water
AT41-CTD001-N08	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	350.4	Water
AT41-CTD001-N09	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	350.4	Water
AT41-CTD001-N10	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	300	Water
AT41-CTD001-N11	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	300	Water
AT41-CTD001-N12	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	250.5	Water
AT41-CTD001-N13	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	250.5	Water
AT41-CTD001-N14	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	200.4	Water
AT41-CTD001-N15	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	200.5	Water
AT41-CTD001-N16	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	150.5	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD001-N17	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	150.4	Water
AT41-CTD001-N18	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	100.9	Water
AT41-CTD001-N19	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	101	Water
AT41-CTD001-N20	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	81.1	Water
AT41-CTD001-N21	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	81	Water
AT41-CTD001-N22	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	25	Water
AT41-CTD001-N23	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	1.6	Water
AT41-CTD001-N24	CTD0001	Pea Island Seeps	8/21/2018	18:16	Start: 35.699507 Stop: 35.699493	Start: -74.801603 Stop: -74.801577	1.5	Water
AT41-CTD002-MC	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	756.2	Sediment
AT41-CTD002-N01	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	756.2	Water
AT41-CTD002-N02	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	756.7	Water
AT41-CTD002-N03	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	758.4	Water
AT41-CTD002-N04	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	699.9	Water
AT41-CTD002-N05	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	700.3	Water
AT41-CTD002-N06	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	650.1	Water
AT41-CTD002-N07	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	650.2	Water
AT41-CTD002-N08	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	500	Water
AT41-CTD002-N09	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	500.4	Water
AT41-CTD002-N10	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	401.3	Water
AT41-CTD002-N11	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	401.9	Water
AT41-CTD002-N12	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	299.9	Water
AT41-CTD002-N13	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	300.2	Water
AT41-CTD002-N14	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	250	Water
AT41-CTD002-N15	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	250	Water
AT41-CTD002-N16	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	199.6	Water
AT41-CTD002-N17	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	199.9	Water
AT41-CTD002-N18	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	100.1	Water
AT41-CTD002-N19	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	100.2	Water
AT41-CTD002-N20	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	60.8	Water
AT41-CTD002-N21	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	61.2	Water
AT41-CTD002-N22	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	26.4	Water
AT41-CTD002-N23	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	3	Water
AT41-CTD002-N24	CTD0002	Pea Island Seeps	8/21/2018	20:30	Start: 35.702555 Stop: 35.709223	Start: -74.786577 Stop: -74. 780567	3	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD003-MC	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	752	Sediment
AT41-CTD003-N01	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N02	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N03	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N04	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N05	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N06	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N07	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N08	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N09	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N10	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N11	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N12	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N13	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N14	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N15	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N16	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N17	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N18	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N19	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N20	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N21	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N22	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N23	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	710	Water
AT41-CTD003-N24	CTD003	Stetson Deep	8/23/2018	17:45	Start: 32.0259 Stop: 32.0222	Start: -77.3749 Stop: -77.3667	752	Water
AT41-CTD004-MC	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	787	Sediment
AT41-CTD004-N01	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N02	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N03	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N04	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N05	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N06	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N07	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD004-N08	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N09	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N10	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N11	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N12	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N13	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N14	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N15	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N16	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N17	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N18	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N19	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N20	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N21	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N22	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N23	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	785	Water
AT41-CTD004-N24	CTD004	Stetson Deep	8/23/2018	19:15	Start: 32.0258 Stop: 32.0331	Start: -77.3749 Stop: -77.3667	787	Water
AT41-CTD005-N01	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	787	Water
AT41-CTD005-N02	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	786	Water
AT41-CTD005-N03	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	786	Water
AT41-CTD005-N04	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	750.3	Water
AT41-CTD005-N05	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	750.4	Water
AT41-CTD005-N06	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	700.7	Water
AT41-CTD005-N07	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	701.1	Water
AT41-CTD005-N08	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	600.1	Water
AT41-CTD005-N09	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	600.6	Water
AT41-CTD005-N10	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	500	Water
AT41-CTD005-N11	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	499.6	Water
AT41-CTD005-N12	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	400	Water
AT41-CTD005-N13	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	400	Water
AT41-CTD005-N14	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	300.2	Water
AT41-CTD005-N15	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	300.3	Water
AT41-CTD005-N16	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	200	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD005-N17	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	200.7	Water
AT41-CTD005-N18	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	138.5	Water
AT41-CTD005-N19	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	139.5	Water
AT41-CTD005-N20	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	100.3	Water
AT41-CTD005-N21	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	100.7	Water
AT41-CTD005-N22	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	26.1	Water
AT41-CTD005-N23	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	2.7	Water
AT41-CTD005-N24	CTD005	Stetson Deep	8/23/2018	20:50	Start: 32.02685 Stop: 32.036517	Start: -77.3724 Stop: -77.354583	2.7	Water
AT41-CTD006-N01	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	765	Water
AT41-CTD006-N02	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	764	Water
AT41-CTD006-N03	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	764	Water
AT41-CTD006-N04	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	764	Water
AT41-CTD006-N05	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	764	Water
AT41-CTD006-N06	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	764	Water
AT41-CTD006-N07	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	763	Water
AT41-CTD006-N08	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	762	Water
AT41-CTD006-N09	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	762	Water
AT41-CTD006-N10	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	761	Water
AT41-CTD006-N11	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	761	Water
AT41-CTD006-N12	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	761	Water
AT41-CTD006-N13	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	700	Water
AT41-CTD006-N14	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	650	Water
AT41-CTD006-N15	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	600	Water
AT41-CTD006-N16	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	501	Water
AT41-CTD006-N17	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	400	Water
AT41-CTD006-N18	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	300	Water
AT41-CTD006-N19	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	250	Water
AT41-CTD006-N20	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	200	Water
AT41-CTD006-N21	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	200	Water
AT41-CTD006-N22	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	115	Water
AT41-CTD006-N23	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	2.2	Water
AT41-CTD006-N24	CTD006	Richardson Ridge	08/24/2018	15:15	Start: 31.00971 Stop:	Start: -77.39 Stop:	2.2	Water
AT41-CTD007-MC	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	829	Sediment

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD007-N01	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	827	Water
AT41-CTD007-N02	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	827	Water
AT41-CTD007-N03	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	827	Water
AT41-CTD007-N04	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	751	Water
AT41-CTD007-N05	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	751	Water
AT41-CTD007-N06	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	698	Water
AT41-CTD007-N07	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	698	Water
AT41-CTD007-N08	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	600	Water
AT41-CTD007-N09	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	600	Water
AT41-CTD007-N10	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	500	Water
AT41-CTD007-N11	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	500	Water
AT41-CTD007-N12	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	400	Water
AT41-CTD007-N13	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	400	Water
AT41-CTD007-N14	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	300	Water
AT41-CTD007-N15	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	300	Water
AT41-CTD007-N16	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	250	Water
AT41-CTD007-N17	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	250	Water
AT41-CTD007-N18	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	220	Water
AT41-CTD007-N19	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	200	Water
AT41-CTD007-N20	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	201	Water
AT41-CTD007-N21	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	125	Water
AT41-CTD007-N22	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	125	Water
AT41-CTD007-N23	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	3.3	Water
AT41-CTD007-N24	CTD007	Richardson Ridge -away	08/24/2018	18:10	Start: 31.9274 Stop: 31.9446	Start: -77.5349 Stop: -77.5221	3.4	Water
AT41-CTD008-01	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1280	Water
AT41-CTD008-02	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1280	Water
AT41-CTD008-03	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1280	Water
AT41-CTD008-04	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1230	Water
AT41-CTD008-05	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1230	Water
AT41-CTD008-06	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1180	Water
AT41-CTD008-07	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1180	Water
AT41-CTD008-08	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1000	Water
AT41-CTD008-09	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1000	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD008-10	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	800	Water
AT41-CTD008-11	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	800	Water
AT41-CTD008-12	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	600	Water
AT41-CTD008-13	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	600	Water
AT41-CTD008-14	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	400	Water
AT41-CTD008-15	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	400	Water
AT41-CTD008-16	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	250	Water
AT41-CTD008-17	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	250	Water
AT41-CTD008-18	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	200	Water
AT41-CTD008-19	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	200	Water
AT41-CTD008-20	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	93	Water
AT41-CTD008-21	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	93	Water
AT41-CTD008-22	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	25	Water
AT41-CTD008-23	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	3	Water
AT41-CTD008-24	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	3	Water
AT41-CTD008-MC	CTD008	Blake Escarpment	08/25/2018	18:27	Start: 31.3249	Stop:-77.2403	1260	Sediment
AT41-CTD009-01	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1280	Water
AT41-CTD009-02	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1280	Water
AT41-CTD009-03	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1280	Water
AT41-CTD009-04	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1230	Water
AT41-CTD009-05	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1230	Water
AT41-CTD009-06	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1180	Water
AT41-CTD009-07	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1180	Water
AT41-CTD009-08	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1000	Water
AT41-CTD009-09	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	1000	Water
AT41-CTD009-10	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	800	Water
AT41-CTD009-11	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	800	Water
AT41-CTD009-12	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	600	Water
AT41-CTD009-13	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	600	Water
AT41-CTD009-14	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	400	Water
AT41-CTD009-15	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	400	Water
AT41-CTD009-16	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	250	Water
AT41-CTD009-17	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	250	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD009-18	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	200	Water
AT41-CTD009-19	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	200	Water
AT41-CTD009-20	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	93	Water
AT41-CTD009-21	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	93	Water
AT41-CTD009-22	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	25	Water
AT41-CTD009-23	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	3	Water
AT41-CTD009-24	CTD009	Blake Escarpment	08/25/2018	20:30	Stop: 31.3209	Stop:-77.2462	3	Water
AT41-CTD010-01	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	552	Water
AT41-CTD010-02	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	552	Water
AT41-CTD010-03	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	553	Water
AT41-CTD010-04	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	501	Water
AT41-CTD010-05	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	501	Water
AT41-CTD010-06	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	450	Water
AT41-CTD010-07	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	450	Water
AT41-CTD010-08	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	400	Water
AT41-CTD010-09	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	400	Water
AT41-CTD010-10	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	300	Water
AT41-CTD010-11	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	299	Water
AT41-CTD010-12	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	250	Water
AT41-CTD010-13	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	250	Water
AT41-CTD010-14	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	200	Water
AT41-CTD010-15	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	200	Water
AT41-CTD010-16	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	150	Water
AT41-CTD010-17	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	150	Water
AT41-CTD010-18	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	100	Water
AT41-CTD010-19	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	100	Water
AT41-CTD010-20	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	74	Water
AT41-CTD010-21	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	74	Water
AT41-CTD010-22	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	30	Water
AT41-CTD010-23	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	3.1	Water
AT41-CTD010-24	CTD0010	Stetson Banks	08/26/2018	18:30	32.01180	-78.3132	3.1	Water
AT41-CTD011-01	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	454	Water
AT41-CTD011-02	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	454	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD011-03	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	454	Water
AT41-CTD011-04	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	401	Water
AT41-CTD011-05	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	401	Water
AT41-CTD011-06	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	350	Water
AT41-CTD011-07	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	350	Water
AT41-CTD011-08	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	300	Water
AT41-CTD011-09	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	301	Water
AT41-CTD011-10	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	250	Water
AT41-CTD011-11	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	250	Water
AT41-CTD011-12	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	200	Water
AT41-CTD011-13	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	201	Water
AT41-CTD011-14	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	150	Water
AT41-CTD011-15	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	150	Water
AT41-CTD011-16	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	120	Water
AT41-CTD011-17	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	120	Water
AT41-CTD011-18	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	101	Water
AT41-CTD011-19	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	101	Water
AT41-CTD011-20	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	45	Water
AT41-CTD011-21	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	45	Water
AT41-CTD011-22	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	25	Water
AT41-CTD011-23	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	2.5	Water
AT41-CTD011-24	CTD0011	Stetson Banks	08/27/2018	16:15	32.07270	-78.3094	2	Water
AT41-CTD012-01	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-02	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-03	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-04	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-05	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-06	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	504	Water
AT41-CTD012-07	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-08	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-09	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-10	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-11	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD012-12	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-13	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-14	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-15	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-16	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-17	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-18	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-19	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-20	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-21	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-22	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-23	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD012-24	CTD0012	Stetson Banks	08/27/2018	18:10	32.07490	-78.2542	505	Water
AT41-CTD013-01	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2167.3	Water
AT41-CTD013-02	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2167.3	Water
AT41-CTD013-03	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2167.3	Water
AT41-CTD013-04	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2120	Water
AT41-CTD013-05	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2120	Water
AT41-CTD013-06	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2067	Water
AT41-CTD013-07	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	2067	Water
AT41-CTD013-08	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1700	Water
AT41-CTD013-09	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1700	Water
AT41-CTD013-10	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1299	Water
AT41-CTD013-11	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1297	Water
AT41-CTD013-12	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1000	Water
AT41-CTD013-13	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	1001	Water
AT41-CTD013-14	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	700	Water
AT41-CTD013-15	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	700	Water
AT41-CTD013-16	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	400	Water
AT41-CTD013-17	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	400	Water
AT41-CTD013-18	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	200	Water
AT41-CTD013-19	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	201	Water
AT41-CTD013-20	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	98.9	Water
AT41-CTD013-21	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	98.4	Water
AT41-CTD013-22	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	26.4	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD013-23	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	3.2	Water
AT41-CTD013-24	CTD013	Blake Ridge	08/28/2018	18:20	32.49062	-76.1926	3.4	Water
AT41-CTD014-01	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	443	Water
AT41-CTD014-02	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	443	Water
AT41-CTD014-03	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	443	Water
AT41-CTD014-04	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	425	Water
AT41-CTD014-05	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	425	Water
AT41-CTD014-06	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	400	Water
AT41-CTD014-07	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	400	Water
AT41-CTD014-08	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	350	Water
AT41-CTD014-09	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	350	Water
AT41-CTD014-10	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	300	Water
AT41-CTD014-11	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	300	Water
AT41-CTD014-12	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	250	Water
AT41-CTD014-13	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	250	Water
AT41-CTD014-14	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	200	Water
AT41-CTD014-15	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	200	Water
AT41-CTD014-16	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	150	Water
AT41-CTD014-17	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	150	Water
AT41-CTD014-18	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	100	Water
AT41-CTD014-19	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	100	Water
AT41-CTD014-20	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	49.8	Water
AT41-CTD014-21	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	50.1	Water
AT41-CTD014-22	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	25.3	Water
AT41-CTD014-23	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	2.4	Water
AT41-CTD014-24	CTD014	Cape Fear Mounds	8/29/2018	14:30	33.5796	-76.4676	2.1	Water
AT41-CTD015-01	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-02	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-03	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-04	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-05	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-06	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-07	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD015-08	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-09	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-10	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-11	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-12	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-13	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-14	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-15	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-16	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-17	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-18	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-19	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-20	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-21	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-22	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-23	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-24	CTD015	Cape Fear Mounds	8/29/2018	14:30				Water
AT41-CTD015-MC	CTD015	Cape Fear Mounds	8/29/2018	14:30				Sediment
AT41-CTD016-01	CTD016	Pea Island	8/30/2018	23:00			465	Water
AT41-CTD016-02	CTD016	Pea Island	8/30/2018	23:00			465	Water
AT41-CTD016-03	CTD016	Pea Island	8/30/2018	23:00			465	Water
AT41-CTD016-04	CTD016	Pea Island	8/30/2018	23:00			465	Water
AT41-CTD016-05	CTD016	Pea Island	8/30/2018	23:00			465	Water
AT41-CTD016-06	CTD016	Pea Island	8/30/2018	23:00			450	Water
AT41-CTD016-07	CTD016	Pea Island	8/30/2018	23:00			450	Water
AT41-CTD016-08	CTD016	Pea Island	8/30/2018	23:00			450	Water
AT41-CTD016-09	CTD016	Pea Island	8/30/2018	23:00			450.5	Water
AT41-CTD016-10	CTD016	Pea Island	8/30/2018	23:00			400.2	Water
AT41-CTD016-11	CTD016	Pea Island	8/30/2018	23:00			400.3	Water
AT41-CTD016-12	CTD016	Pea Island	8/30/2018	23:00			349.8	Water
AT41-CTD016-13	CTD016	Pea Island	8/30/2018	23:00			349.8	Water
AT41-CTD016-14	CTD016	Pea Island	8/30/2018	23:00			300.7	Water
AT41-CTD016-15	CTD016	Pea Island	8/30/2018	23:00			250.8	Water
AT41-CTD016-16	CTD016	Pea Island	8/30/2018	23:00			200.4	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD016-17	CTD016	Pea Island	8/30/2018	23:00			150.4	Water
AT41-CTD016-18	CTD016	Pea Island	8/30/2018	23:00			100.5	Water
AT41-CTD016-19	CTD016	Pea Island	8/30/2018	23:00			52	Water
AT41-CTD016-20	CTD016	Pea Island	8/30/2018	23:00			44	Water
AT41-CTD016-21	CTD016	Pea Island	8/30/2018	23:00			38.8	Water
AT41-CTD016-22	CTD016	Pea Island	8/30/2018	23:00			38.8	Water
AT41-CTD016-23	CTD016	Pea Island	8/30/2018	23:00			38.8	Water
AT41-CTD016-24	CTD016	Pea Island	8/30/2018	23:00			8	Water
AT41-CTD016-MC	CTD016	Pea Island	8/30/2018	23:00				Sediment
AT41-CTD017-01	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1944	Water
AT41-CTD017-02	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1944	Water
AT41-CTD017-03	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1944	Water
AT41-CTD017-04	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1900	Water
AT41-CTD017-05	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1900	Water
AT41-CTD017-06	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1850	Water
AT41-CTD017-07	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1850	Water
AT41-CTD017-08	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1700	Water
AT41-CTD017-09	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1700	Water
AT41-CTD017-10	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1300	Water
AT41-CTD017-11	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1300	Water
AT41-CTD017-12	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1000	Water
AT41-CTD017-13	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	1000	Water
AT41-CTD017-14	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	700	Water
AT41-CTD017-15	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	700	Water
AT41-CTD017-16	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	400	Water
AT41-CTD017-17	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	400	Water
AT41-CTD017-18	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	200	Water
AT41-CTD017-19	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	200	Water
AT41-CTD017-20	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	37	Water
AT41-CTD017-21	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	37	Water
AT41-CTD017-22	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	25	Water
AT41-CTD017-23	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	4	Water
AT41-CTD017-24	CTD017	Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164	4	Water

Sample Number	Dive /CTD/ Multicore Number	Site	Date Collected	Time Collected (GMT)	Latitude	Longitude	Depth (m)	Tentative ID
AT41-CTD017-MC		Norfolk Canyon	8/31/2018	18:30	37.03990	-74.3164		Sediment
AT41-CTD018-01	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-02	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-03	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-04	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-05	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-06	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-07	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-08	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-09	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-10	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-11	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-12	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-13	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-14	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-15	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-16	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-17	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-18	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-19	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-20	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-21	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-22	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-23	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-CTD018-24	CTD018	Norfolk Canyon	8/31/2018	20:50	37.04060	-74.3169	400	
AT41-MUC01-1	MUC01							
AT41-MUC01-2	MUC01							
AT41-MUC01-3	MUC01							
AT41-MUC01-4	MUC01							
AT41-MUC01-5	MUC01							
AT41-MUC01-6	MUC01							
AT41-MUC01-7	MUC01							
AT41-MUC01-8	MUC01							