

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center

Cruise Report

Date Submitted:

Platform:

Cruise Number:

Project Title:

Cruise Dates: -

Submitted by:
Field Party Chief

Date:

Approved by:
Lab Director

Date:

Approved by:
Director, SEFSC

Date:

CRUISE REPORT

Southeast Fishery-Independent Survey (SEFIS)

NOAA Ship *Pisces* Cruise PC-17-03

11 – 26 July 2017 (Leg 1)
29 July – 13 August 2017 (Leg 2)
14 August 2017 (Transit)

Total Number of Days At-Sea – 32
Days at-sea lost due to repairs – 0
Days at-sea lost due to weather – 1

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
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479 camera-trap deployments
86 CTD casts

INTRODUCTION

The NOAA Ship *Pisces* departed from Morehead City, NC, on 11 July 2017 for a Southeast Fishery-Independent Survey (SEFIS) research cruise in continental shelf and shelf-break waters off North and South Carolina. SEFIS was created by the National Marine Fisheries Service in 2010 and operates out of the NOAA-Beaufort Laboratory. This survey was created to conduct applied fishery-independent sampling and related research focusing on the assessment of spatial variability in distribution and abundance of red snapper and other reef species within the snapper-grouper complex, via data collected from fish traps, video cameras, and acoustics. During this survey, chevron trap catches and associated underwater video recordings were collected from hardbottom habitats from Cape Hatteras, North Carolina, to Daytona Beach, Florida. A total of 479 stations were sampled with camera-trap arrays over 32 sea days between 19 and 119 m depths.

OBJECTIVES

1. Fishery-independent sampling of randomly selected stations from North Carolina to Florida. Baited chevron traps, with two mounted high-definition video cameras, were utilized for (a) hardbottom reef fish community assessments, (b) collection of reef fish for biological samples (i.e., otoliths and gonads), and (c) comparative gear sampling (cameras versus traps).
2. Use video cameras on chevron traps to address trap selectivity issues, locate and describe hardbottom habitats, and provide an additional index of abundance for stock assessments.
3. Map bottom habitats using multibeam sonar to improve survey design and to expand knowledge of hardbottom habitats in the southeast US.
4. Use a CTD instrument package to collect environmental data (temperature, salinity, dissolved oxygen, turbidity) at camera-trap sampling locations, and XBTs to sample water temperature during multibeam mapping operations.

METHODS

Camera-Trap Sampling

Camera-trap gear consisted of two high definition video cameras mounted to a chevron fish trap. Chevron traps were composed of plastic-coated wire mesh. GoPro cameras (model HD Hero[®] H4) were attached above the mouth and nose of the trap (Figure 1). Traps were baited with Atlantic menhaden, *Brevoortia tyrannus*, and video cameras were set to record before deployment. Camera-traps were deployed at least 200 m apart on suspected or known hardbottom habitats, and soak time was targeted for approximately 90 min. Camera-traps were most often deployed in sets of six. A CTD cast (see environmental data collection) was conducted while traps were soaking. Fish catches were processed after trap retrieval. All fish were enumerated, weighed, and measured to the nearest millimeter. Individuals of many species (mostly species found in the snapper-grouper complex) were further processed for additional lengths and biological samples (otoliths, gonads, and DNA). Video files were downloaded and backed up on digital media storage devices. Biological samples and video files were brought to the Beaufort Laboratory for further processing and analysis.

Environmental Data Collection

Environmental data were collected with Seabird “Conductivity, Temperature, and Depth” instrument package (CTD; model SBE 9) and Scientific Computer System (SCS) software. CTD casts were conducted near the

middle of the camera-trap soak period; instruments were lowered to within 2 m of the bottom. Numerous water profile measurements were taken, including temperature (°C), salinity, dissolved oxygen (mg/L), average sound velocity (m/s), fluorescence (mg/m³), and beam transmission (%). CTD data were archived for further processing at the Beaufort Laboratory. SCS software 4.0 was used to collect specific information for each fishing and CTD event, including soak time/cast duration as well as start and end latitude, longitude, and depth (m). We also deployed expendable bathythermographs (XBTs) during the mapping shift to collect water column temperature data while the ship was underway, so that no time was lost during mapping to conduct CTD casts.

Acoustic Data Collection

We used the *Pisces* ME-70 multibeam sonar unit approximately 12 hours each night to create hydrographic maps for improving our understanding of the distribution of hardbottom in the Southeast. Mapping information in the region is critically important for (1) expanding fishery-independent sampling of reef fish, (2) improving our understanding of marine protected areas, (3) quantifying the relationship between the trap catch or video counts of reef fish and their habitat, (4) trying to scale up relative abundance information to true abundance of reef fish, which would benefit stock assessment greatly.

SURVEY RESULTS

Camera-Trap Sampling

Four hundred and seventy nine stations were sampled with camera-trap gear (Table 1). From these traps, fish were collected and worked up for length frequency data. Various reef fish species were further processed for otolith, gonad, and DNA tissues. Three traps were lost during the cruise due to deteriorating lines that will be replaced before the 2018 sampling season.

Environmental Data Collection

Eighty six CTD casts (Table 1) were conducted during the cruise. CTD data will be processed with Seabird SBE Data Processing software (version 7.2), and archived in a database at the NMFS-Beaufort Laboratory for future analysis.

Multibeam Acoustics Data Collection

We mapped an area of about 302 km² during PC-17-03. Some of these areas were relatively deep (> 100 m) areas that were mapped to learn more about blueline tilefish and snowy grouper habitats, while others were places where sampling points existed but maps were lacking. A patch tests was also conducted at the beginning of the first leg on an obstruction (“Yancy” wreck) that has been mapped on previous cruises.

Time Lost

Approximately 1.5 days of trap/video sampling was lost during leg 1 due to having to drop a crew member off in port in Morehead City, North Carolina (7/15 – 7/16, 2017). Also, leg 2 departed one day late (on 7/30 instead of 7/29) due to bad weather.

Table 1. Summary of station coordinates, depth (m), date, and time for each fishing event (camera-trap, Gear=324; hook and line, Gear=014) and CTD cast (Gear=298) conducted on the PC-17-03 survey. Times were recorded in Coordinated Universal Time (UTC).

| Collection | Gear | Date | Time (UTC) | Latitude | Longitude | Depth (m) |
|------------|------|-----------|------------|----------|-----------|-----------|
| 173582 | 324 | 7/12/2017 | 11:06 | 34.51095 | -76.3557 | 21 |
| 173583 | 324 | 7/12/2017 | 11:11 | 34.51456 | -76.3503 | 24 |
| 173584 | 324 | 7/12/2017 | 11:18 | 34.5157 | -76.3548 | 23 |
| 173585 | 324 | 7/12/2017 | 11:30 | 34.52048 | -76.3491 | 24 |
| 173586 | 324 | 7/12/2017 | 11:36 | 34.5204 | -76.3537 | 23 |
| 173587 | 324 | 7/12/2017 | 11:43 | 34.52677 | -76.3541 | 24 |
| 173588 | 298 | 7/12/2017 | 12:09 | 34.51365 | -76.3582 | 25 |
| 173589 | 324 | 7/12/2017 | 14:11 | 34.56531 | -76.332 | 29 |
| 173590 | 324 | 7/12/2017 | 14:19 | 34.55714 | -76.3383 | 25 |
| 173591 | 324 | 7/12/2017 | 14:27 | 34.5537 | -76.332 | 28 |
| 173592 | 324 | 7/12/2017 | 14:33 | 34.55123 | -76.3396 | 26 |
| 173593 | 324 | 7/12/2017 | 14:40 | 34.54649 | -76.3414 | 26 |
| 173594 | 324 | 7/12/2017 | 14:51 | 34.52996 | -76.3463 | 24 |
| 173595 | 298 | 7/12/2017 | 14:58 | 34.52645 | -76.3448 | 25 |
| 173596 | 324 | 7/12/2017 | 17:24 | 34.59393 | -76.321 | 27 |
| 173597 | 324 | 7/12/2017 | 17:30 | 34.59393 | -76.311 | 28 |
| 173598 | 324 | 7/12/2017 | 17:37 | 34.58767 | -76.3174 | 27 |
| 173599 | 324 | 7/12/2017 | 17:44 | 34.58799 | -76.313 | 27 |
| 173600 | 324 | 7/12/2017 | 17:47 | 34.58595 | -76.3093 | 28 |
| 173601 | 324 | 7/12/2017 | 17:53 | 34.58371 | -76.3158 | 27 |
| 173602 | 298 | 7/12/2017 | 18:09 | 34.59602 | -76.3229 | 26 |
| 173603 | 324 | 7/12/2017 | 20:29 | 34.54315 | -76.401 | 20 |
| 173604 | 324 | 7/12/2017 | 20:35 | 34.53727 | -76.4036 | 19 |
| 173605 | 324 | 7/12/2017 | 20:40 | 34.52949 | -76.4043 | 19 |
| 173606 | 298 | 7/12/2017 | 20:54 | 34.53247 | -76.3951 | 19 |
| 173607 | 324 | 7/14/2017 | 20:50 | 34.35898 | -76.3771 | 22 |
| 173608 | 324 | 7/14/2017 | 21:00 | 34.3471 | -76.3807 | 22 |
| 173609 | 324 | 7/14/2017 | 21:03 | 34.34153 | -76.3798 | 23 |
| 173610 | 298 | 7/14/2017 | 21:13 | 34.33504 | -76.3751 | 29 |
| 173611 | 324 | 7/15/2017 | 11:41 | 34.55239 | -76.2243 | 38 |
| 173612 | 324 | 7/15/2017 | 11:45 | 34.5522 | -76.2282 | 38 |
| 173613 | 324 | 7/15/2017 | 11:50 | 34.5544 | -76.2343 | 37 |
| 173614 | 324 | 7/15/2017 | 11:53 | 34.55621 | -76.2376 | 36 |
| 173615 | 324 | 7/15/2017 | 11:59 | 34.55737 | -76.2455 | 36 |
| 173616 | 324 | 7/15/2017 | 12:03 | 34.56079 | -76.2474 | 36 |
| 173617 | 298 | 7/15/2017 | 12:13 | 34.56249 | -76.2497 | 35 |
| 173618 | 324 | 7/15/2017 | 14:23 | 34.55164 | -76.2316 | 38 |

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|--------|-----|-----------|-------|----------|----------|----|
| 173619 | 324 | 7/15/2017 | 14:29 | 34.54696 | -76.2376 | 38 |
| 173620 | 324 | 7/15/2017 | 14:34 | 34.54959 | -76.2419 | 37 |
| 173621 | 324 | 7/15/2017 | 14:40 | 34.54541 | -76.2441 | 37 |
| 173622 | 324 | 7/15/2017 | 14:45 | 34.54323 | -76.2485 | 36 |
| 173623 | 324 | 7/15/2017 | 14:49 | 34.53974 | -76.2516 | 37 |
| 173624 | 298 | 7/15/2017 | 14:59 | 34.53524 | -76.2534 | 37 |
| 173625 | 324 | 7/15/2017 | 17:11 | 34.54675 | -76.2042 | 40 |
| 173626 | 324 | 7/15/2017 | 17:16 | 34.54289 | -76.2087 | 40 |
| 173627 | 324 | 7/15/2017 | 17:20 | 34.53906 | -76.2101 | 40 |
| 173628 | 324 | 7/15/2017 | 17:23 | 34.53708 | -76.2142 | 40 |
| 173629 | 324 | 7/15/2017 | 17:29 | 34.5344 | -76.2119 | 40 |
| 173630 | 324 | 7/15/2017 | 17:38 | 34.52335 | -76.2141 | 40 |
| 173631 | 298 | 7/15/2017 | 17:47 | 34.51952 | -76.216 | 40 |
| 173632 | 324 | 7/15/2017 | 20:35 | 34.52675 | -76.255 | 37 |
| 173633 | 324 | 7/15/2017 | 20:41 | 34.52438 | -76.2627 | 36 |
| 173634 | 324 | 7/15/2017 | 20:45 | 34.52066 | -76.2626 | 36 |
| 173635 | 298 | 7/15/2017 | 20:53 | 34.51842 | -76.2645 | 36 |
| 173636 | 324 | 7/16/2017 | 11:02 | 34.5624 | -76.1993 | 38 |
| 173637 | 324 | 7/16/2017 | 11:08 | 34.5669 | -76.2044 | 38 |
| 173638 | 324 | 7/16/2017 | 11:17 | 34.55846 | -76.2062 | 38 |
| 173639 | 324 | 7/16/2017 | 11:26 | 34.56151 | -76.2131 | 38 |
| 173640 | 324 | 7/16/2017 | 11:31 | 34.56693 | -76.2141 | 38 |
| 173641 | 324 | 7/16/2017 | 11:39 | 34.56683 | -76.2227 | 37 |
| 173642 | 298 | 7/16/2017 | 11:51 | 34.56538 | -76.2276 | 37 |
| 173643 | 324 | 7/16/2017 | 14:14 | 34.5667 | -76.2284 | 37 |
| 173644 | 324 | 7/16/2017 | 14:20 | 34.56182 | -76.2233 | 38 |
| 173645 | 324 | 7/16/2017 | 14:25 | 34.56126 | -76.2277 | 38 |
| 173646 | 324 | 7/16/2017 | 14:29 | 34.56407 | -76.2328 | 38 |
| 173647 | 324 | 7/16/2017 | 14:34 | 34.56121 | -76.2354 | 37 |
| 173648 | 324 | 7/16/2017 | 14:37 | 34.55816 | -76.2331 | 37 |
| 173649 | 298 | 7/16/2017 | 14:42 | 34.55475 | -76.2293 | 38 |
| 173650 | 324 | 7/16/2017 | 17:03 | 34.59178 | -76.204 | 37 |
| 173651 | 324 | 7/16/2017 | 17:14 | 34.58149 | -76.2114 | 37 |
| 173652 | 324 | 7/16/2017 | 17:20 | 34.57856 | -76.2169 | 37 |
| 173653 | 324 | 7/16/2017 | 17:28 | 34.57373 | -76.225 | 37 |
| 173654 | 324 | 7/16/2017 | 17:33 | 34.57032 | -76.225 | 37 |
| 173655 | 298 | 7/16/2017 | 17:40 | 34.56694 | -76.223 | 37 |
| 173656 | 324 | 7/17/2017 | 11:01 | 35.01513 | -75.4632 | 49 |
| 173657 | 324 | 7/17/2017 | 11:08 | 35.00932 | -75.4608 | 50 |
| 173658 | 324 | 7/17/2017 | 11:15 | 35.00504 | -75.454 | 50 |
| 173659 | 324 | 7/17/2017 | 11:31 | 35.00478 | -75.4623 | 50 |
| 173660 | 324 | 7/17/2017 | 11:37 | 35.0007 | -75.464 | 50 |
| 173661 | 324 | 7/17/2017 | 11:41 | 34.99754 | -75.4663 | 50 |

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|--------|-----|-----------|-------|----------|----------|----|
| 173662 | 298 | 7/17/2017 | 11:51 | 35.00197 | -75.4693 | 51 |
| 173663 | 324 | 7/17/2017 | 14:09 | 34.99914 | -75.4577 | 51 |
| 173664 | 324 | 7/17/2017 | 14:12 | 34.99738 | -75.4609 | 51 |
| 173665 | 324 | 7/17/2017 | 14:17 | 34.99371 | -75.4609 | 51 |
| 173666 | 324 | 7/17/2017 | 14:23 | 34.98642 | -75.4626 | 52 |
| 173667 | 324 | 7/17/2017 | 14:27 | 34.982 | -75.4633 | 52 |
| 173668 | 324 | 7/17/2017 | 14:31 | 34.97766 | -75.4611 | 53 |
| 173669 | 298 | 7/17/2017 | 14:40 | 34.97359 | -75.4563 | 59 |
| 173670 | 324 | 7/17/2017 | 17:17 | 34.93692 | -75.4541 | 65 |
| 173671 | 324 | 7/17/2017 | 17:24 | 34.93285 | -75.4621 | 62 |
| 173672 | 324 | 7/17/2017 | 17:31 | 34.93057 | -75.4574 | 65 |
| 173673 | 324 | 7/17/2017 | 17:42 | 34.92608 | -75.4644 | 62 |
| 173674 | 324 | 7/17/2017 | 17:47 | 34.92497 | -75.4701 | 63 |
| 173675 | 324 | 7/17/2017 | 17:54 | 34.92167 | -75.4661 | 66 |
| 173676 | 298 | 7/17/2017 | 18:04 | 34.92078 | -75.4601 | 75 |
| 173677 | 324 | 7/17/2017 | 20:20 | 34.92689 | -75.517 | 54 |
| 173678 | 324 | 7/17/2017 | 20:26 | 34.92251 | -75.523 | 53 |
| 173679 | 324 | 7/17/2017 | 20:31 | 34.92381 | -75.5286 | 53 |
| 173680 | 324 | 7/17/2017 | 20:37 | 34.9185 | -75.5264 | 54 |
| 173681 | 298 | 7/17/2017 | 20:46 | 34.91466 | -75.5231 | 55 |
| 173682 | 324 | 7/18/2017 | 11:00 | 34.91898 | -75.4984 | 60 |
| 173683 | 324 | 7/18/2017 | 11:06 | 34.9224 | -75.5034 | 57 |
| 173684 | 324 | 7/18/2017 | 11:16 | 34.91717 | -75.508 | 55 |
| 173685 | 324 | 7/18/2017 | 11:25 | 34.90926 | -75.5135 | 58 |
| 173686 | 324 | 7/18/2017 | 11:29 | 34.90561 | -75.5172 | 56 |
| 173687 | 324 | 7/18/2017 | 11:36 | 34.90162 | -75.5211 | 57 |
| 173688 | 298 | 7/18/2017 | 11:43 | 34.89746 | -75.5227 | 59 |
| 173689 | 324 | 7/18/2017 | 14:11 | 34.87205 | -75.5071 | 58 |
| 173690 | 324 | 7/18/2017 | 14:14 | 34.87127 | -75.5111 | 57 |
| 173691 | 324 | 7/18/2017 | 14:19 | 34.86736 | -75.5125 | 56 |
| 173692 | 324 | 7/18/2017 | 14:23 | 34.86872 | -75.5171 | 58 |
| 173693 | 324 | 7/18/2017 | 14:30 | 34.86581 | -75.526 | 58 |
| 173694 | 324 | 7/18/2017 | 14:33 | 34.86494 | -75.5294 | 57 |
| 173695 | 298 | 7/18/2017 | 14:45 | 34.8714 | -75.5356 | 66 |
| 173696 | 324 | 7/18/2017 | 17:07 | 34.86324 | -75.5357 | 64 |
| 173697 | 324 | 7/18/2017 | 17:12 | 34.86308 | -75.5305 | 58 |
| 173698 | 324 | 7/18/2017 | 17:16 | 34.8605 | -75.5284 | 58 |
| 173699 | 324 | 7/18/2017 | 17:19 | 34.85813 | -75.5298 | 59 |
| 173700 | 324 | 7/18/2017 | 17:24 | 34.85482 | -75.5264 | 60 |
| 173701 | 324 | 7/18/2017 | 17:31 | 34.85987 | -75.5198 | 58 |
| 173702 | 298 | 7/18/2017 | 17:42 | 34.86593 | -75.5166 | 57 |
| 173703 | 324 | 7/19/2017 | 11:00 | 34.61372 | -75.7971 | 60 |
| 173704 | 324 | 7/19/2017 | 11:04 | 34.60882 | -75.7993 | 60 |

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|--------|-----|-----------|-------|----------|----------|----|
| 173705 | 324 | 7/19/2017 | 11:21 | 34.58158 | -75.8054 | 63 |
| 173706 | 324 | 7/19/2017 | 11:27 | 34.57618 | -75.8098 | 62 |
| 173707 | 324 | 7/19/2017 | 11:35 | 34.58029 | -75.8236 | 62 |
| 173708 | 324 | 7/19/2017 | 11:47 | 34.57167 | -75.8406 | 62 |
| 173709 | 298 | 7/19/2017 | 11:56 | 34.56569 | -75.8423 | 60 |
| 173710 | 324 | 7/19/2017 | 14:43 | 34.6681 | -75.738 | 58 |
| 173711 | 324 | 7/19/2017 | 14:53 | 34.65387 | -75.7493 | 58 |
| 173712 | 298 | 7/19/2017 | 15:38 | 34.6743 | -75.7389 | 57 |
| 173713 | 324 | 7/19/2017 | 17:52 | 34.48799 | -75.8834 | 73 |
| 173714 | 324 | 7/19/2017 | 17:57 | 34.48394 | -75.8804 | 75 |
| 173715 | 324 | 7/19/2017 | 18:07 | 34.47435 | -75.8835 | 82 |
| 173757 | 324 | 7/21/2017 | 15:46 | 34.28749 | -76.5769 | 27 |
| 173838 | 324 | 7/30/2017 | 17:18 | 34.41815 | -76.606 | 21 |
| 173839 | 324 | 7/30/2017 | 17:24 | 34.42547 | -76.6078 | 21 |
| 173840 | 324 | 7/30/2017 | 17:30 | 34.43145 | -76.6114 | 23 |
| 173841 | 324 | 7/30/2017 | 17:39 | 34.44315 | -76.6222 | 20 |
| 173842 | 324 | 7/30/2017 | 17:44 | 34.44747 | -76.6244 | 20 |
| 173716 | 324 | 7/19/2017 | 18:13 | 34.47082 | -75.8829 | 88 |
| 173717 | 324 | 7/19/2017 | 18:20 | 34.46797 | -75.8866 | 86 |
| 173718 | 324 | 7/19/2017 | 18:29 | 34.47703 | -75.8968 | 74 |
| 173821 | 324 | 7/25/2017 | 10:59 | 33.81673 | -77.6399 | 25 |
| 173822 | 324 | 7/25/2017 | 11:07 | 33.81309 | -77.6465 | 24 |
| 173823 | 324 | 7/25/2017 | 11:16 | 33.81269 | -77.6436 | 24 |
| 173824 | 324 | 7/25/2017 | 11:21 | 33.813 | -77.6367 | 24 |
| 173825 | 324 | 7/25/2017 | 11:29 | 33.80953 | -77.6421 | 26 |
| 173826 | 324 | 7/25/2017 | 11:37 | 33.80701 | -77.6374 | 25 |
| 173827 | 298 | 7/25/2017 | 11:44 | 33.80342 | -77.6353 | 24 |
| 173828 | 324 | 7/25/2017 | 14:11 | 33.72802 | -77.6377 | 24 |
| 173829 | 324 | 7/25/2017 | 14:17 | 33.72518 | -77.6335 | 25 |
| 173830 | 324 | 7/25/2017 | 14:20 | 33.72294 | -77.63 | 27 |
| 173831 | 324 | 7/25/2017 | 14:25 | 33.71828 | -77.6253 | 27 |
| 173832 | 298 | 7/25/2017 | 14:31 | 33.71526 | -77.6236 | 25 |
| 173833 | 324 | 7/25/2017 | 17:01 | 33.62901 | -77.6368 | 24 |
| 173834 | 324 | 7/25/2017 | 17:04 | 33.62645 | -77.639 | 24 |
| 173835 | 324 | 7/25/2017 | 17:08 | 33.62339 | -77.6414 | 23 |
| 173836 | 324 | 7/25/2017 | 17:15 | 33.62016 | -77.636 | 23 |
| 173837 | 298 | 7/25/2017 | 17:24 | 33.61807 | -77.6314 | 23 |
| 173862 | 324 | 7/31/2017 | 17:59 | 34.13309 | -76.8215 | 35 |
| 173863 | 324 | 7/31/2017 | 18:09 | 34.13099 | -76.8119 | 35 |
| 173864 | 324 | 7/31/2017 | 18:13 | 34.13742 | -76.8118 | 34 |
| 173865 | 324 | 7/31/2017 | 18:17 | 34.14095 | -76.8092 | 33 |
| 173866 | 324 | 7/31/2017 | 18:21 | 34.14208 | -76.8122 | 33 |
| 173867 | 324 | 7/31/2017 | 18:28 | 34.14069 | -76.825 | 34 |

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|--------|-----|-----------|-------|----------|----------|----|
| 173868 | 298 | 7/31/2017 | 18:38 | 34.13705 | -76.8302 | 36 |
| 173869 | 324 | 8/1/2017 | 11:11 | 32.28107 | -79.7476 | 27 |
| 173870 | 324 | 8/1/2017 | 11:15 | 32.28208 | -79.742 | 28 |
| 173871 | 324 | 8/1/2017 | 11:22 | 32.27937 | -79.7355 | 28 |
| 173872 | 324 | 8/1/2017 | 11:30 | 32.27982 | -79.7276 | 29 |
| 173873 | 324 | 8/1/2017 | 11:36 | 32.28658 | -79.727 | 27 |
| 173874 | 324 | 8/1/2017 | 11:41 | 32.28254 | -79.7215 | 28 |
| 173875 | 298 | 8/1/2017 | 11:50 | 32.28315 | -79.7142 | 28 |
| 173876 | 324 | 8/1/2017 | 14:09 | 32.25526 | -79.7072 | 29 |
| 173877 | 324 | 8/1/2017 | 14:13 | 32.25583 | -79.7025 | 29 |
| 173878 | 324 | 8/1/2017 | 14:18 | 32.25951 | -79.6982 | 30 |
| 173879 | 324 | 8/1/2017 | 14:26 | 32.25453 | -79.69 | 30 |
| 173880 | 324 | 8/1/2017 | 14:32 | 32.25402 | -79.6819 | 31 |
| 173881 | 324 | 8/1/2017 | 14:35 | 32.25447 | -79.6778 | 31 |
| 173882 | 298 | 8/1/2017 | 14:45 | 32.25806 | -79.6704 | 31 |
| 173883 | 324 | 8/1/2017 | 17:08 | 32.23485 | -79.7017 | 32 |
| 173884 | 324 | 8/1/2017 | 17:13 | 32.23485 | -79.6968 | 32 |
| 173885 | 324 | 8/1/2017 | 17:19 | 32.23836 | -79.6998 | 32 |
| 173886 | 324 | 8/1/2017 | 17:22 | 32.23986 | -79.7041 | 31 |
| 173887 | 324 | 8/1/2017 | 17:29 | 32.24571 | -79.7061 | 30 |
| 173888 | 324 | 8/1/2017 | 17:38 | 32.24009 | -79.6947 | 32 |
| 173889 | 298 | 8/1/2017 | 17:49 | 32.24301 | -79.6923 | 31 |
| 173890 | 324 | 8/1/2017 | 20:15 | 32.22896 | -79.7031 | 32 |
| 173891 | 324 | 8/1/2017 | 20:17 | 32.23063 | -79.6996 | 32 |
| 173892 | 324 | 8/1/2017 | 20:21 | 32.23033 | -79.6937 | 32 |
| 173893 | 324 | 8/1/2017 | 20:26 | 32.23403 | -79.6862 | 32 |
| 173894 | 324 | 8/1/2017 | 20:29 | 32.23547 | -79.6826 | 33 |
| 173895 | 324 | 8/1/2017 | 20:34 | 32.24188 | -79.6846 | 32 |
| 173896 | 298 | 8/1/2017 | 20:44 | 32.24485 | -79.6852 | 31 |
| 173897 | 324 | 8/2/2017 | 11:21 | 31.96478 | -79.497 | 56 |
| 173898 | 324 | 8/2/2017 | 11:25 | 31.9677 | -79.4953 | 53 |
| 173899 | 324 | 8/2/2017 | 11:31 | 31.97146 | -79.4919 | 53 |
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| 174033 | 324 | 8/8/2017 | 14:22 | 33.38562 | -78.3365 | 28 |
| 174034 | 324 | 8/8/2017 | 14:26 | 33.38596 | -78.3325 | 26 |
| 174035 | 324 | 8/8/2017 | 14:28 | 33.38379 | -78.3317 | 27 |
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| 174048 | 324 | 8/9/2017 | 11:37 | 33.48678 | -76.9739 | 65 |

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| 174069 | 324 | 8/9/2017 | 20:46 | 33.45826 | -77.0176 | 63 |
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| 174071 | 324 | 8/9/2017 | 20:58 | 33.45987 | -77.0032 | 73 |
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| 174081 | 324 | 8/10/2017 | 14:16 | 34.16459 | -76.1483 | 111 |
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| 174093 | 298 | 8/10/2017 | 17:44 | 34.15699 | -76.1925 | 58 |
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| 174095 | 324 | 8/10/2017 | 20:18 | 34.14485 | -76.2035 | 53 |
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| 174102 | 324 | 8/11/2017 | 11:43 | 33.76196 | -76.6266 | 111 |
| 174103 | 324 | 8/11/2017 | 11:47 | 33.75792 | -76.6317 | 107 |
| 174104 | 324 | 8/11/2017 | 11:51 | 33.75583 | -76.6368 | 103 |
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| 174110 | 324 | 8/11/2017 | 14:46 | 33.74075 | -76.6572 | 106 |
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| 174125 | 298 | 8/11/2017 | 21:01 | 33.74052 | -76.7689 | 45 |
| 174126 | 324 | 8/12/2017 | 11:05 | 33.68437 | -76.9486 | 41 |
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| 174133 | 324 | 8/12/2017 | 14:24 | 33.62627 | -77.1117 | 40 |
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| 174142 | 324 | 8/12/2017 | 17:16 | 33.63566 | -77.2217 | 36 |
| 174143 | 324 | 8/12/2017 | 17:20 | 33.63913 | -77.2248 | 36 |
| 174144 | 324 | 8/12/2017 | 17:27 | 33.63584 | -77.2308 | 36 |
| 174145 | 324 | 8/12/2017 | 17:32 | 33.63838 | -77.2379 | 36 |
| 174146 | 298 | 8/12/2017 | 17:42 | 33.63923 | -77.2412 | 36 |



Figure 1. Chevron trap with video cameras used to sample reef fish on the PC-17-03 survey.

CRUISE PARTICIPANTS

Name / Title / Organization

Leg 1

Zeb Schobernd / Chief Scientist / NMFS-Beaufort
Lauren Bacharach / Scientist-Video Watch / JHT
Brandi Noble / Scientist-Mapping Watch / NMFS-Pascagoula
Zach Proux / Scientist-Mapping Watch / College of Charleston
Kevan Gregalis / Scientist-Video Watch / SEFIS JHT
David Berrane / Scientist-Deck Watch / SEFIS JHT
David Hoke / Scientist-Deck Watch / NMFS-Manteo, NC
Kathleen Howington / Scientist-Deck Watch / SCDNR-MARMAP
Steven Long / Scientist-Deck Watch / SCDNR-MARMAP
Zach Gillum / Scientist-Deck Watch / SEFIS JHT
Todd Kellison / Scientist-Deck Watch / NMFS-Beaufort

Leg 2

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John Brusher / Scientist / NMFS-Panama City
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Rob Cheshire / Scientist-Deck Watch / NMFS-Beaufort
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Cruise Report Prepared by: Nate Bacheler and Christina Schobernd

Note: The use of trade, product, industry, or firm names, products, software, or models, whether commercially available or not, is for informative purposes only and does not constitute an endorsement by the U.S. Government or the National Oceanic and Atmospheric Administration.