

Cruise Report for NSF OCE-1031050

R/V CAPE HATTERAS

CRUISE NUMBER: CH-09-12 / Chief Scientist = David B. Eggleston
BEGIN DATE: 31 October 2012 END DATE: 3 November 2012
PORT OF ORIGIN: Beaufort, NC
PORT OF TERMINATION: Beaufort, NC
ESTIMATED FAR POINT OF CRUISE:
LATITUDE 32.496737 °N LONGITUDE 76.191269 °W

SCHEDULED PORT CALLS: None

I. SCIENTIFIC PARTY COMPLEMENT

- 1. Dr. David Eggleston, Chief Scientist/co-PI, North Carolina State University**
- 2. Ashlee Lillis, Ph.D. Student, North Carolina State University**
- 3. Robert Dunn, M.S. Student, North Carolina State University**
- 4. Doreen McVeigh, Ph.D. Student, North Carolina State University**
- 5. Jason Peters, M.S. Student, North Carolina State University**
- 6. Joseph Zambon, Ph.D. Student, North Carolina State University**
- 7. Xiangming Zeng, Ph.D. Student, North Carolina State University**
- 8. Amy Burgess, Ph.D. Student, Oregon Institute of Marine Biology**
- 9. Bernie Ball, Research Technician, Duke University**
- 10. Jamie Wagner, Ph.D. Student, Duke University**
- 11. RV Cape Hatteras Marine Tech, Tina Thomas**

II. CRUISE OBJECTIVES

The specific objectives of research cruise CH-09-12 were to:

- 1. Deploy a deep-sea mooring at each of two seep sites: Blake Ridge & Cape Fear Diaper. The moorings contain a current meter, two types of larval traps, and a hydrophone (Blake Ridge only).**
- 2. Deploy XBTs and CTD to characterize water quality in terms of computing current velocities and validating predicted current velocities.**

III. Activities

- 1. October 31, 2012:**
 - A. Science Team mobilized on RV Cape Hatteras**
- 2. November 1, 2012:**
 - B. RV Cape Hatteras Departed Duke Marine Lab at 0900**
 - C. Started XBT sampling every 10 nm once the 500m depth was reached.**
- 3. November 3, 2012:**
 - 0600-0800 CTD sample at Blake Ridge**
 - 0900 Deployed mooring at Blake Ridge (32 29.84N 76 11.46W)**

Mooring included: current meter, technicap larval/sediment trap, larval tube-trap, and deep-sea hydrophone. Train wheel contained bone bags, wood bags, and larval tube trap.

Note: The acoustic release did NOT respond to repeated signals from the ship-based transponder to engage. The technical manual indicates that the syntactic float and technicap trap being placed so close to the acoustic release could interfere with the signal, however, we were successful getting the acoustic release to communicate for the Cape Fear Diaper (see below). I will continue to trouble-shoot possibilities with my Research Technician who prepared the release before deployment for why the release did NOT communicate. This was the NEW acoustic release, not the refurbished release. In terms of planning for the worse and hoping for the best, I would plan on the ROV Jason cutting the nylon line to release this mooring should the acoustic release fail during our recovery attempt in ~ 1 year.

0930-1200 Transit to Cape Fear Diaper with 2 XBT samples.

1200-1400 CTD sample at Cape Fear Diaper.

1300 Concurrent XBT with CTD for comparison purposes.

1430 Deployed mooring at Cape Fear Diaper (**32 58.727N 75 55.495W**).

Mooring included: current meter, technicap larval/sediment trap, and larval tube-trap. Train wheel contained bone bags, wood bags, and larval tube trap.

Note: The acoustic release responded to the ship-based transponder to engage. The release successfully communicated it was upright.

1600 Departed Cape Fear Diaper for Beaufort Inlet. Took XBT samples every 10 nm until the 500m depth contour on the return transit.

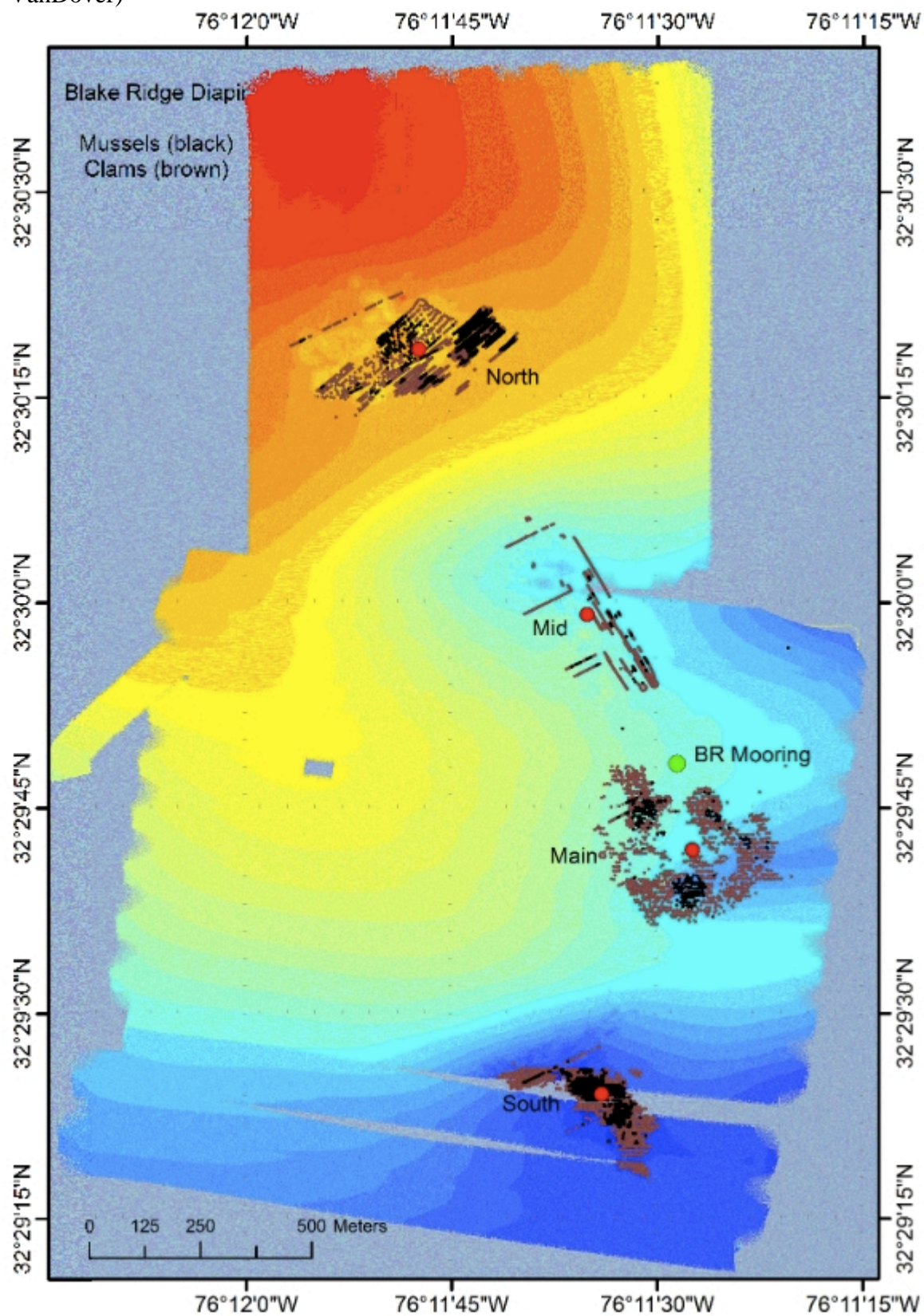
4. November 4, 2012

Arrived Duke Marine Lab at 1030

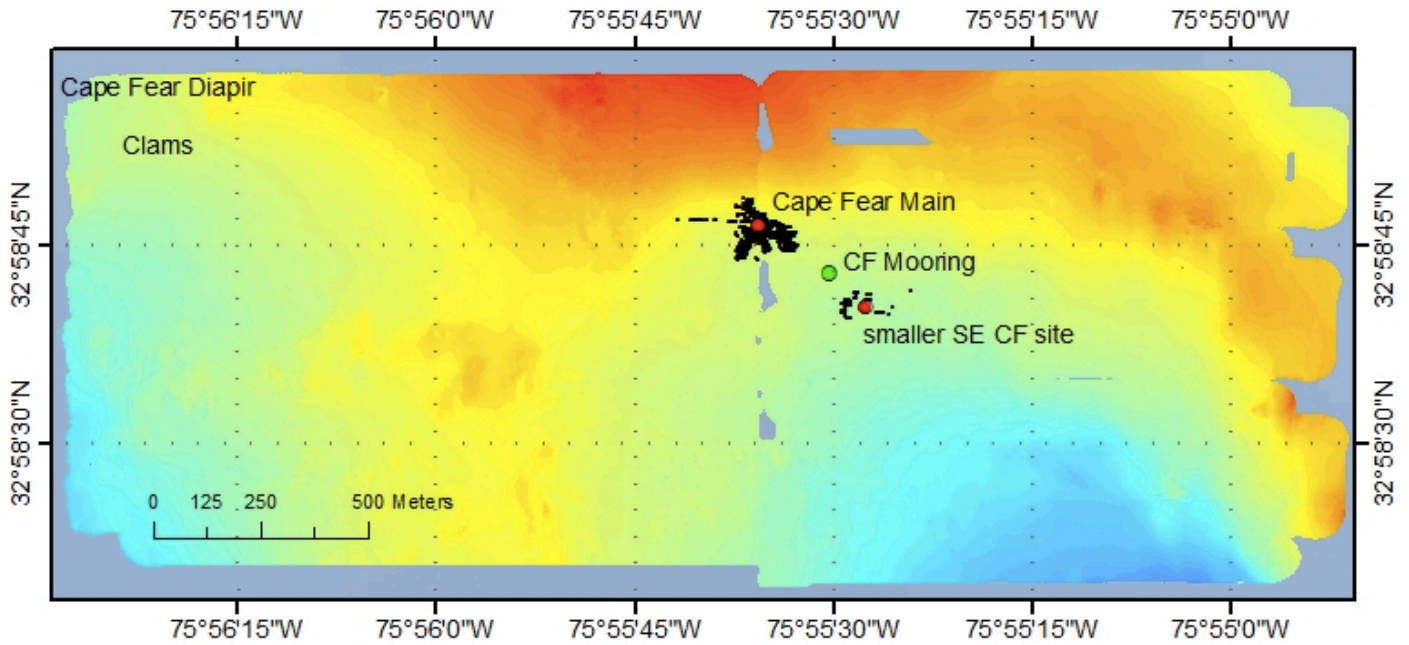
Science Team de-briefed and ship off-loaded.

Copies of XBT and CTD data were given to D. Eggleston and J. Zambon.

Mooring Location for Blake Ridge (From Jamie Wagner via a recent cruise by Cindy VanDover)



Mooring Location for Cape Fear Diaper (From Jamie Wagner via a recent cruise by Cindy VanDover)



Acoustic Release Codes for October SEEP-C Cruise

1) New acoustic release (To Be Deployed at Blake Ridge 2012)

Serial number: 43175

Enable: 461646

Disable: 461665

Release: 445666

2) Refurbished acoustic release from Orenoque B (To Be Deployed at Cape Fear Diaper 2012)

Serial number: 34607

Enable: 136162

Disable: 136200

Release: 134602