



**UNITED STATES DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
NOAA Marine and Aviation Operations  
Marine Operations Center  
439 W. York Street  
Norfolk, VA 23510-1114

MEMORANDUM FOR: Commander Robert Kamphaus, NOAA  
Commanding Officer, NOAA Ship *Okeanos Explorer*

A handwritten signature in blue ink, appearing to read "David A. Score", with the initials "carl/noaa" written below it.

FROM: Captain David A. Score, NOAA  
Commanding Officer, NOAA Marine Operations Center-Atlantic

SUBJECT: Project Instruction for EX-11-06  
Exploration Mapping to Davisville, RI

Attached is the final Project Instruction for EX-11-06, Exploration Mapping, which is scheduled aboard NOAA Ship *Okeanos Explorer* during the period of 15 September - 28 September 2011. Acknowledge receipt of these instructions via e-mail to [OpsMgr.MOA@noaa.gov](mailto:OpsMgr.MOA@noaa.gov) at Marine Operations Center—Atlantic.

Attachment

cc:  
MOA1

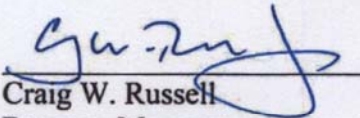


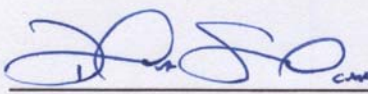


## Final Project Instructions

**Date Submitted:** September 2, 2011  
**Platform:** NOAA Ship *Okeanos Explorer*  
**Cruise Number:** EX-11-06  
**Project Title:** Exploration Mapping to Davisville, RI  
**Cruise Dates:** September 15 to September 28, 2011

Prepared by: Elizabeth (Meme) Lobecker  
Office of Ocean Exploration & Research

Approved by:  Dated: 9/2/2011  
Craig W. Russell  
Program Manager  
Office of Ocean Exploration & Research

Approved by:  Dated: 9/8/11  
Captain David Score, NOAA  
Commanding Officer  
Marine Operations Center – Atlantic

## I. **Overview**

### A. Cruise Plan Period

This cruise plan covers the ships transit and underway data collection from Pascagoula, Mississippi to Davisville, Rhode Island. The ship will depart Pascagoula on September 15, 2011 and arrive in Davisville on September 28, 2011. 24-hour multibeam mapping operations will be conducted during the entire transit, including XBT operations. The planned transit line of 3600 kilometers is expected to take 8.6 days at 9.5 knots. An additional 4 days are available within the cruise for exploration mapping. Exploration mapping activities will be focused in the Atlantic, in the area offshore from North Carolina to Rhode Island.

### B. Operating Area

The primary operating area will be in US waters between Mississippi and Rhode Island. All transits will occur within US waters.

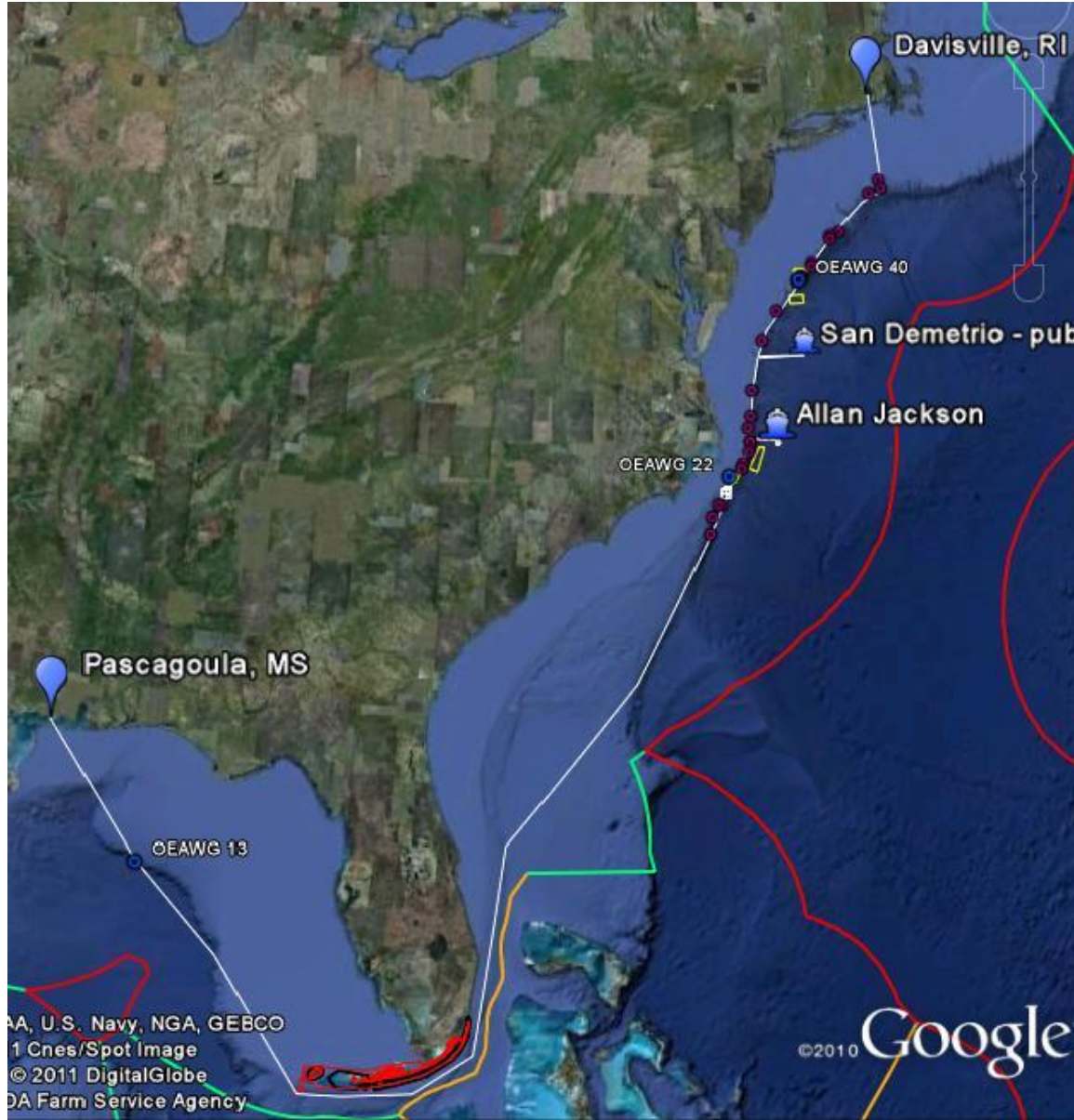


Figure 1. Depiction of general ship track including transit from Pascagoula, Mississippi to Davisville, Rhode Island, shown as white trackline. Foreign EEZs shown in green and orange. US EEZ shown in red. Area To Be Avoided (ATBA) around Florida Keys National Marine Sanctuary shown in black. Image created in Google Earth.

| General Transit Waypoints (approximate) |           |         |
|---|-----------|---------|
| Latitude                                | Longitude | Remarks |
|   |           |         |

|               |              |   |
|---------------|--------------|---|
| 30 19.7886' N | 88 34.0398'W | Pascagoula, MS                            |
| 28 9.3366' N  | 86 41.2428'W |   |
| 26 39.0' N    | 85 0.6168'W  |   |
| 24 15.4032' N | 83 11.0334'W |   |
| 24 14.5218' N | 82 19.7004'W |   |
| 24 18.8928' N | 81 1.0842'W  |   |
| 25 1.3314' N  | 79 55.383'W  |   |
| 28 43.992' N  | 79 39.6798'W |   |
| 31 29.3124' N | 77 11.8782'W |   |
| 33 55.5192' N | 75 46.209'W  |   |
| 33 52.904' N  | 75 50.675' W | Begin Canyons Track                       |
| 34 2.342' N   | 75 43.065' W |   |
| 34 20.060' N  | 75 41.149' W |   |
| 34 32.447' N  | 75 32.821' W |   |
| 34 32.296' N  | 75 28.432' W |   |
| 35 9.165' N   | 75 1.257' W  |   |
| 35 13.479' N  | 74 59.210' W |   |
| 35 26.363' N  | 74 50.847' W |   |
| 35 36.407' N  | 74 49.089' W |   |
| 35° 34.200'N  | 74° 12.000'W | Allan Jackson-position approximate        |
| 35 36.444' N  | 74 49.097' W |   |
| 35 50.284' N  | 74 51.864' W |   |
| 36 2.427' N   | 74 47.688' W |   |
| 36 28.774' N  | 74 45.773' W |   |
| 37 19.430' N  | 74 29.207' W |   |
| 37 50.019' N  | 74 6.804' W  |   |
| 38 20.095' N  | 73 34.965' W |   |
| 37° 1.800'N   | 73° 30.000'W | San Demetrio-position approximate         |
| 38 23.615' N  | 73 27.825' W |   |
| 38 23.693' N  | 73 27.691' W |   |
| 38 34.663' N  | 73 11.979' W |   |
| 38 38.355' N  | 73 11.062' W |   |
| 39 3.456' N   | 72 41.912' W |   |
| 39 6.947' N   | 72 41.019' W |   |
| 39 10.929' N  | 72 27.667' W |   |
| 39 50.988' N  | 71 37.809' W |   |
| 39 56.261' N  | 71 18.278' W |   |
| 40 5.765' N   | 71 21.150' W | End Canyons Track                         |
| 41 18.0' N    | 71 22.8' W   | Narragansett Bay, outside of Rhode Island |

*Table 1: General waypoints for the transit from Pascagoula, MS to Davisville, RI. The actual cruise tracks and way points may vary.*

### C. Summary of Objectives

NOAA Ship *Okeanos Explorer* will collect underway multibeam and meteorological/oceanographic (METOC) data during the entire cruise. The projected cruise track in Figure 1 and Table 1 is provided as general guides for the transit. Deviation from this is acceptable assuming that the final waypoints do not add considerable time to the transit.

Overall objectives during the transit exploration:

1. Continuous collection of EM302 data
2. Continuous collection of METOC data
3. Maintain base-level shoreside situational awareness via telepresence
4. Fulfillment of Data Management Plan – *DMP in progress*

Details of objectives:

1. Mapping operations
  - Generation of daily multibeam products
  - Ongoing system familiarization and training
  - Further streamline SOP for cultural data collection and archival procedures
  - Map Canyon Trackline, running along continental shelf break from North Carolina to south of Rhode Island
  - Focused exploration mapping operations in the vicinity of
    1. Battle of the Atlantic offshore North Carolina
    2. Baltimore / Wilmington Canyons
    3. San Demetrio wreck search
    4. Allan Jackson wreck search
  - Collect crossline data when convenient
2. Telepresence (VSAT 5 Mbps ship-to-shore; 1.54 Mbps (T1) shore-to-ship)
  - Continue to apply and refine SOP's
    1. *Okeanos Explorer* FTP Site – utilize for standard daily multibeam product suite.
    2. Event log updates four times daily, or as key operations call for.
    3. Possible telepresence events coordinated with OER Silver Spring communications for key exploration mapping areas, including but not limited to Wilmington Canyon
  - Ongoing system familiarization and training.
3. Data management
  - See the Data Management Plan in Appendix B.
  - A representative from NCDDC will be onboard to further understand ship operations, data pipeline, and product development.
4. Other

- A representative from OER will be onboard serving as a Foreign National Guest (FNG) host and will conduct an OER assets inventory.

#### D. Participating Institutions

National Oceanic and Atmospheric Administration (NOAA) Office of Ocean Exploration and Research (OER) 1315 East-West Hwy, Silver Spring, Maryland 20910

University of New Hampshire (UNH) Center for Coastal and Ocean Mapping (CCOM)  
24 Colovos Road, Durham, NH 03824 USA

University Corporation for Atmospheric Research (UCAR), Joint Office for Science Support (JOSS) PO Box 3000 Boulder, CO 80307

#### E. Personnel (Science Party)

|   | NAME                      | AFFILIATION | ROLE                                   | M/F | STATUS      | ON PREVIOUS LEG |
|---|---------------------------|-------------|--|-----|-------------|-----------------|
| 1 | Elizabeth “Meme” Lobecker | OER         | Expedition Manager / Mapping Team Lead | F   | US Citizen  | N               |
| 2 | Ashley Harris             | UCAR        | Mapping Watch Lead                     | M   | US Citizen  | N               |
| 3 | Denise Gordon             | NCDDC       | Mapping Watchstander                   | F   | US Citizen  | N               |
| 4 | Gustav Kagesten           | UCAR        | Mapping Watchstander                   | M   | FNG, Sweden | Y               |
| 5 | Adam Skarke               | OER         | Mapping Watchstander                   | M   | US Citizen  | N               |
| 6 | Frank Cantelas            | OER         | OER Representative                     | M   | US Citizen  | N               |
| 7 | Brendan Philip            | UCAR        | Mapping Watchstander                   | M   | US Citizen  | N               |

*Table 2: Full list of the mission personnel and their affiliation*

#### Shore-side Participants (Location and duration of participation will vary):

Possible telepresence events focused on mapping exploration surveys are in discussion with the OER communications team. Details forthcoming.

#### F. Administrative

Key Points of Contact

## *Ship Operations*

Marine Operations Center, Atlantic (MOA)  
439 West York Street  
Norfolk, VA 23510-1145  
Telephone: (757) 441-6776  
Fax: (757) 441-6495

Chief, Operations Division, Atlantic (MOA)  
LCDR Jennifer Pralgo  
Telephone: 757-441-6716  
E-mail: ChiefOps.MOA@noaa.gov

## *Mission Operations*

Meme Lobecker, Expedition Manager  
NOAA Ocean Exploration and Research  
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CDR Robert Kamphaus, NOAA  
Commanding Officer  
NOAA Ship *Okeanos Explorer*  
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LT Megan Nadeau, Field Operations Officer  
NOAA Ship *Okeanos Explorer*  
Phone: (207) 240-0957  
E-mail: [OPS.Explorer@noaa.gov](mailto:OPS.Explorer@noaa.gov)

## *Other Mission Contacts*

Craig Russell, EX Program Manager  
NOAA Ocean Exploration & Research  
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John McDonough, Deputy Director  
NOAA Ocean Exploration & Research  
Phone: 301-734-1023 / 240-676-5206  
E-mail: [John.McDonough@noaa.gov](mailto:John.McDonough@noaa.gov)

LCDR (Sel) Nicola VerPlanck, EX Deputy  
Program Manager  
NOAA Ocean Exploration & Research  
Phone: 206-526-4801  
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Webb Pinner, Systems Engineer  
NOAA Ocean Exploration & Research (2020, Inc.)  
Phone: 401-749-9322  
Email: [webb.pinner@noaa.gov](mailto:webb.pinner@noaa.gov)

## *Shipments*

Be sure to send an email to *Okeanos Explorer* Operations Officer [OPS.Explorer@noaa.gov](mailto:OPS.Explorer@noaa.gov) indicating the size and number of items being shipped and the name of the person it is being



shipped to. All items should be received in Pascagoula by **Sept 3**.

Gulf Marine Support Facility  
 151 Watts Avenue  
 Pascagoula, MS 39567-4102  
 Attention: NOAA Ship Okeanos Explorer

**G. Diplomatic Clearances**

The entire cruise will occur within US waters, therefore no diplomatic clearances are required.

**H. Licenses and Permits**

A Categorical Exclusion letter from the Acting Director of OER is included in the appendices of this report.

National Marine Fisheries Service – Office of Protected Resources will be contacted to determine if permits or operating guidelines are required.

**II. Operations**

A. Cruise Plan Itinerary –assumes 0800 9/15/11 departure from dock, 9.5 kts transit speeds. Actual dates may vary based on weather, transit speed, and track. 9 kt online survey speed over focused mapping areas.

| Date           | Operations   | Remarks                                   |
|----------------|--|---|
| 9/3/11         | Shipped items must be received by 9/3/11                     |   |
| 9/15/11 (0800) | Ship departs Pascagoula, MS                                  |   |
| 9/20/11 (2000) | Approximate arrival to first waypoint on Canyon Transit line | 2320 km from Pascagoula                   |
| 9/21/11 (0000) | Approximate arrival to mapping area 6                        | 19 hrs mapping time                       |
| 9/21/11 (2000) | Approximate arrival to mapping area 3                        | 12 hrs mapping time                       |
| 9/22/11 (1000) | Approximate arrival to mapping area 5                        | 7 hrs mapping time                        |
| 9/22/11 (2200) | Approximate arrival to mapping area 1                        | Keller Canyon area<br>10 hrs mapping time |
| 9/23/11 (1100) | Approximate arrival to Allan Jackson wreck exploration area  | 5 hrs mapping time                        |

|                |  |   |
|----------------|--|---|
| 9/24/11 (0900) | Approximate arrival to San Demetrio wreck exploration area | 5 hrs mapping time                          |
| 9/25/11 (0200) | Approximate arrival to mapping area 4                      | Baltimore Canyon 9hrs mapping time          |
| 9/25/11 (1300) | Approximate arrival to mapping area 2                      | South Wilmington Canyon 13 hrs mapping time |
| 9/26/11 (0200) | Resume Canyon Transit line to RI                           |   |
| 9/28/11 (0800) | Ship arrives at homeport in Davisville, RI                 | NOAA Quonset Facility in Davisville, RI.    |

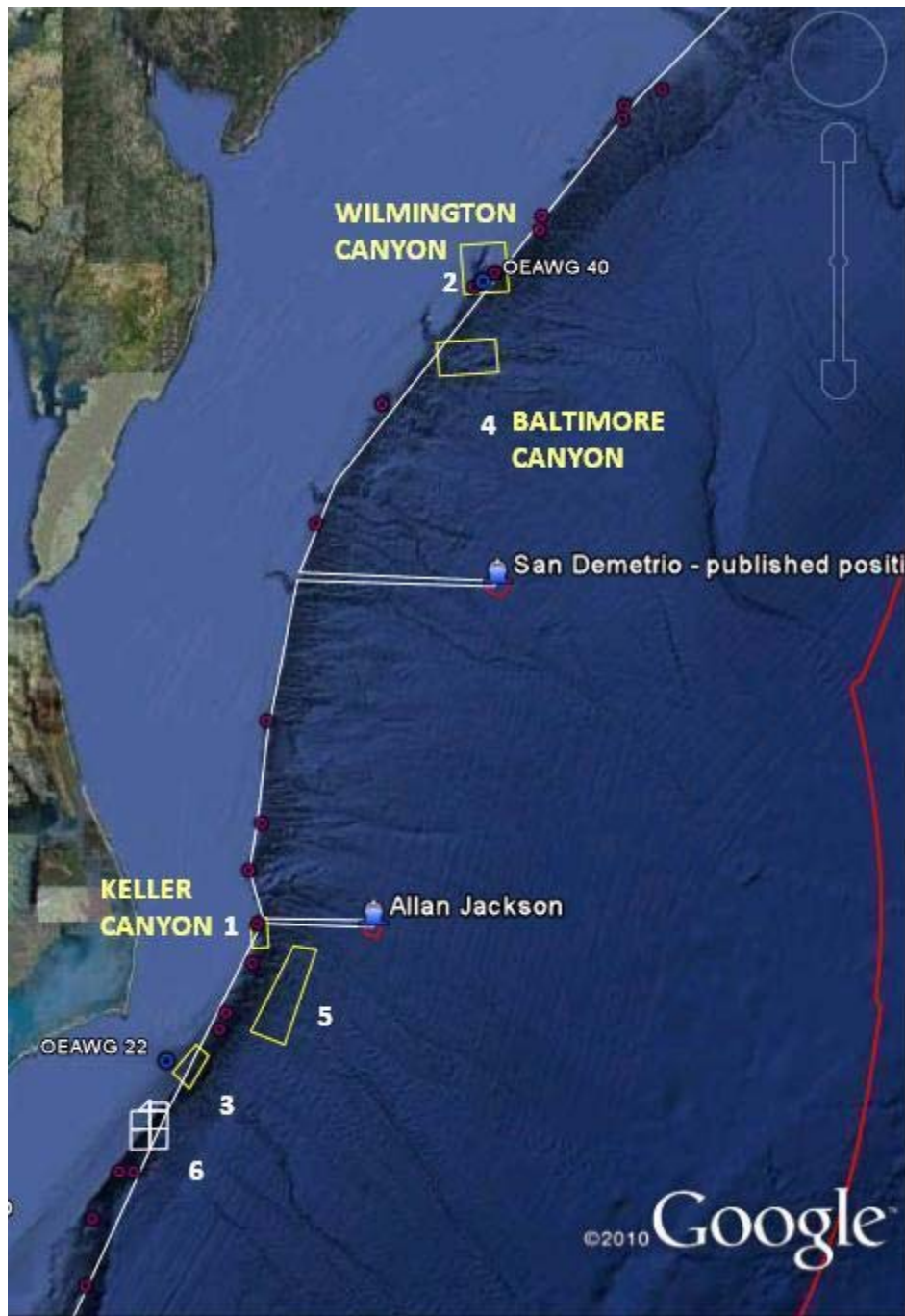


Figure 2. Detail of Atlantic Canyons trackline and survey areas. Approximate cruise track in white. Actual waypoints in purple, with expected deviations to yellow and white exploration survey boxes. Purple points listed as Canyon Track in Table 1. Mapping areas labeled 1 – 6 coordinates in Table 2. Image created in Google Earth.

**Focused Exploration Mapping Areas**

| ID                                       | Latitude     | Longitude    | Estimated Mapping Time (incl. turns) |
|--|--------------|--------------|--------------------------------------|
| 1<br>Keller Canyon area                  | 35 29.925' N | 74 51.014' W | 10 hrs                               |
|  | 35 37.432' N | 74 51.634' W |                                      |
|  | 35 37.686' N | 74 46.392' W |                                      |
|  | 35 30.087' N | 74 45.846' W |                                      |
| 2<br>South Wilmington Canyon             | 38 17.951' N | 73 38.608' W | 13 hrs                               |
|  | 38 30.700' N | 73 39.426' W |                                      |
|  | 38 31.287' N | 73 24.296' W |                                      |
|  | 38 18.534' N | 73 23.521' W |                                      |
| 3<br>Offshore North Carolina<br>(BOEMRE) | 34 53.587' N | 75 11.084' W | 12 hrs                               |
|  | 34 57.936' N | 75 16.415' W |                                      |
|  | 35 5.162' N  | 75 8.886' W  |                                      |
|  | 35 2.053' N  | 75 5.062' W  |                                      |
| 4<br>Baltimore Canyon                    | 37 56.820' N | 73 47.696' W | 9hrs                                 |
|  | 38 5.536' N  | 73 48.348' W |                                      |
|  | 38 6.324' N  | 73 28.432' W |                                      |
|  | 37 57.531' N | 73 27.923' W |                                      |
| 5<br>Offshore North Carolina<br>(BOEMRE) | 35 29.350' N | 74 30.457' W | 7 hrs                                |
|  | 35 4.780' N  | 74 40.774' W |                                      |
|  | 35 8.268' N  | 74 51.548' W |                                      |
|  | 35 30.252' N | 74 37.924' W |                                      |
| 6<br>Offshore North Carolina<br>(ONMS)   | 34 47.9' N   | 75 29.6' W   | 19 hrs                               |
|  | 34 37.9' N   | 75 29.6' W   |                                      |

|                          |           |           |       |
|--------------------------|-----------|-----------|-------|
|                          | 34 37.8'N | 75 18.0'W |       |
|                          | 34 49.8'N | 75 17.9'W |       |
| Allan Jackson wreck site | 35 37.6 N | 74 13.6 W | 5 hrs |
|                          | 25 32.7 N | 74 15.1 W |       |
|                          | 35 31.7 N | 74 10.5 W |       |
|                          | 35 36.7 N | 74 8.8 W  |       |
| San Demetrio wreck site  | 37 4.7 N  | 73 30.2 W | 5 hrs |
|                          | 37 1.2 N  | 73 34.0 W |       |
|                          | 36 59.2 N | 73 30.3 W |       |
|                          | 37 2.7 N  | 73 26.3 W |       |

Table 2. Bounding coordinates for mapping Exploration areas 1 – 6 and wreck searches shown in Fig. 2.

Focused exploration mapping operations:

1. Battle of the Atlantic area offshore North Carolina: The Department of the Interior’s Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) and the Office of National Marine Sanctuaries (ONMS) expressed interested in this survey area. Any work done in the area that has the potential to help establish new boundaries for existing or new managed areas is considered valuable. Results from this work also supports BOEMRE’s mandate to protect cultural and natural resources on the Outer Continental Shelf (OCS) from energy development.

a. *San Demetrio* wreck search

Any work done by *Okeanos Explorer* supports the current interagency partnership between OER and BOEMRE to discover and study areas slated for possible energy development in the Mid-Atlantic Canyons region. One of BOEMRE’s missions is to protect and manage submerged cultural resources within the US EEZ and *San Demetrio* is a high priority target for the current study. She was a British transport steam tanker 146 meters in length and 18.59 meters in width. She was attacked on March 17, 1942 by the German U-boat U-404 and sank in 2770 meters of water. Her approximate position is publically available. The accuracy of the position given is limited by the technology available in 1942 and the circumstances of warfare.

Further information provided in the Ocean Exploration Advisory Working Group 2011 white papers (public release forthcoming) includes:

*“While attacks of this nature were common during WWII particularly in 1942 this was no ordinary tanker. She had been attacked before in November 1940 by the German Heavy Cruiser the Admiral Scheer. With their vessel on fire and likely to explode the captain and crew of the San Demetrio abandoned ship. After two days floating in the freezing north*

Atlantic the crew came across their vessel again – still on fire. They re-boarded her put out the fire, rigged a temporary steering system and used celestial navigation to sail back to Britain. The story of the San Demetrio captured the public’s imagination and was turned into a movie titled “San Demetrio London” starring Walter Fitzgerald, Mervyn Johns, Ralph Michael and Robert Beatty.” – Dr. Rod Mather, University of Rhode Island



Figure 3. San Demetrio showing damage from being attacked by German vessel Admiral Scheer. Image courtesy [www.wrecksite.eu](http://www.wrecksite.eu).

b. *Allan Jackson* wreck search

Any work done by the *Okeanos Explorer* has the potential to support ONMS to expand sanctuary boundaries to include this wreck. The *Allan Jackson* was sunk by German torpedo in approximately 2700 meters of water on January 18, 1942. She was an American steam tanker 133 meters in length and 17 meters in width.

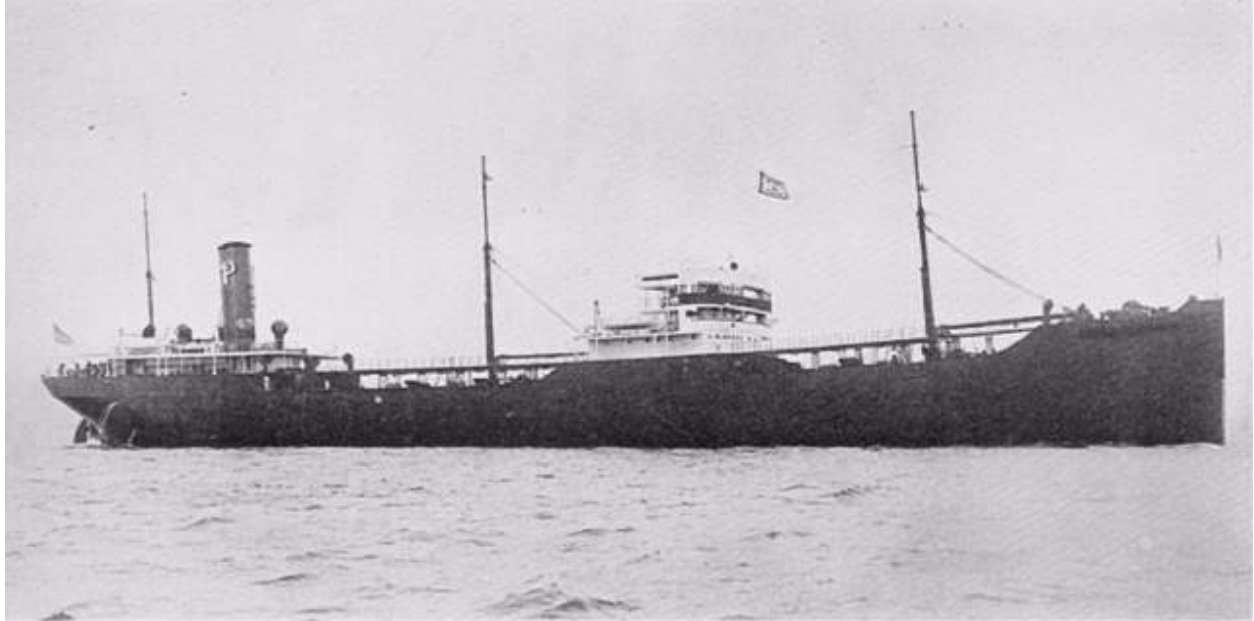


Figure 4. The Allan Jackson, image courtesy [www.sunkenshipsouterbanks.com](http://www.sunkenshipsouterbanks.com).

- c. Offshore North Carolina Area 6: In WWII, during the first half of 1942 the US merchant fleet suffered tremendous losses of the east coast, particularly near Cape Hatteras where German u-boats preyed on commercial ships. ONMS has undertaken a multi-year study of the Battle of the Atlantic in this area off North Carolina to discover and document these shipwrecks. This project supports their efforts to expand the Monitor NMS and protect significant underwater cultural heritage. This work has been partially supported by OER. The request to survey area 6 is a result of a detailed study of historical records analyzed in GIS to create a probability grid for marine losses. Accounts of naval action indicate Area 6 as likely to contain shipwrecks from WWII.
  
  - d. Other: Work in the following three areas supports the current interagency collaboration between OER and BOEMRE to study canyons along the mid-Atlantic coast. While the listed areas are outside study region, the company awarded the contract to complete the environmental and shipwreck study, CSA International Inc., has requested they be mapped to augment their work farther north.
    - A. Area 1
    - B. Area 3
    - C. Area 5
2. Wilmington and Baltimore Canyons
- These canyons are two of the least studied canyons of the northeast. They are in close proximity to the major cities of the northeast and have potentially profound effects on natural resources. Wilmington Canyon is a popular site for commercial and recreational fishing. Mapping this canyon head will provide the basis for further understanding of the features and processes of the canyon, with particular consideration for essential fish habitat (EFH) and the

possibility for designation as “Habitat Area of Particular Concern” by the New England Fishery Management Council.

B. Staging and de-staging:

*NONE*

C. Dive Plan (SCUBA)

The ship’s dive team intends to conduct a proficiency dive in the Tortugas North Ecological Reserve (TNER) at the west end of the Florida Keys National Marine Sanctuary (FKNMS). Provided the transit past the area occurs in daylight, it is estimated that the time off trackline will be approximately 3 hours. Proficiency dives are increasingly difficult to schedule in port due to the numbers of divers required and leave and watch schedules. To maintain a proficient dive team, good opportunities for dives need to be scheduled as other operations allow. A formal dive plan will be submitted to NDC.

D. Applicable Restrictions

*NOT APPLICABLE TO THIS CRUISE*

### **III. Equipment**

A. Equipment and capabilities provided by the ship

- Kongsberg Simrad EM 302 Multibeam Echosounder (MBES)
- Kongsberg Simrad EK60 Deepwater Echosounder (SBES)
- Knudsen 3260 Sub-bottom profiler (SBP)
- LHM Sippican XBT (various probes)
- Seabird SBE 911Plus CTD
- Light Scattering Sensor (LSS)
- Oxidation-Reduction Potential (ORP)
- Dissolved Oxygen (DO) sensor
- Altimeter Sensor
- Seabird SBE 50 CTD Stand
- CNAV GPS
- POS/MV
- Seabird SBE-45 (Micro TSG)
- Kongsberg Dynamic Positioning-1 System
- NetApp mapping storage system
- CARIS HIPS Software
- IVS Fledermaus Software
- SIS Software



- Hypack Software
- Scientific Computing System (SCS)
- ECDIS
- Met/Wx Sensor Package
- Telepresence System
- VSAT High-Speed link
- Cruise Information Management System (CIMS)
- ~~Little Hercules ROV~~(not available this cruise)
- ~~Seirios Camera Platform~~(not available this cruise)

B. Equipment and capabilities provided by the scientists

*NOT APPLICABLE TO THIS CRUISE*

#### **IV. Hazardous Materials**

A. Policy and Compliance

The Chief Scientist is responsible for complying with MOCDOC 15, Fleet Environmental Compliance #07, Hazardous Material and Hazardous Waste Management Requirements for Visiting Scientists, released July 2002. Documentation regarding those requirements will be provided by the Chief of Operations, Marine Operations Center, upon request.

By Federal regulations and NOAA Marine and Aviation Operations policy, the ship may not sail without a complete inventory of all hazardous materials by name and the anticipated quantity brought aboard, MSDS and appropriate neutralizing agents, buffers, and/or absorbents in amounts adequate to address spills of a size equal to the amount of chemical brought aboard. The amount of hazardous material arriving and leaving the vessel shall be accounted for by the Chief Scientist.

B. Radioactive Isotopes

*NOT APPLICABLE TO THIS CRUISE*

C. Inventory

*NOT APPLICABLE TO THIS CRUISE*

#### **V. Additional Projects**

A. Supplementary ("Piggyback") Projects

*NOT APPLICABLE TO THIS CRUISE*

B. NOAA Fleet Ancillary Projects

*NOT APPLICABLE TO THIS CRUISE*

## VI. Disposition of Data and Reports

A. Data Responsibilities

All data acquired on *Okeanos Explorer* will be provided to the public archives without proprietary rights. All data management activities shall be executed in accordance with NAO 212-15, Management of Environmental and Geospatial Data and Information [[http://www.corporateservices.noaa.gov/ames/NAOs/Chap\\_212/naos\\_212\\_15.html](http://www.corporateservices.noaa.gov/ames/NAOs/Chap_212/naos_212_15.html)].

### *Ship Responsibilities*

The Commanding Officer is responsible for all data collected for missions until those data have been transferred to mission party designees. Data transfers will be documented on NOAA Form 61-29. Reporting and sending copies of project data to NESDIS (ROSCOP form) is the responsibility of OER.

### *NOAA OER Responsibilities*

The Expedition Coordinator will work with the *Okeanos Explorer* Operations Officer to ensure data pipeline protocols are followed for final archive of all data acquired. The full data management plan is included in Appendix B of this cruise plan.

### *Deliverables*

- a. At sea
  - Daily plans of the Day (POD)
  - Daily situation reports (SITREPS)
  - Daily mapping progress bathymetry files
- b. Post cruise
  - Refined SOPs for all pertinent operational activities
  - Assessments of all activities
- c. Science
  - Multibeam and XBT raw and processed data, a full description is available in the data management plan.
  - Mapping Data Report

### *Archive*

- The Program and ship will work together to ensure documentation and

stewardship of acquired data sets in accordance with NAO 212-15. The Cruise Information Management System is the primary tool used to accomplish this activity.

## B. Pre and Post Cruise Meeting

### *Pre-Cruise Meeting*

Prior to departure, the Expedition Coordinator will conduct a meeting of the scientific party to inform them of cruise objectives. Vessel protocols, e.g., meals, watches, etiquette, etc, as well as safety rules / regulations and emergency procedures, will be presented by the ship's Operations Officer.

### *Post-Cruise Meeting*

Upon completion of the cruise, a meeting will be held (unless prior alternate arrangements are made) and attended by the ship Survey Technicians, the Expedition Coordinator, the ship's Operations Officer and members of the mission/scientific party to review the cruise. Concerns regarding safety, efficiency, and suggestions for improvements for future cruises should be discussed.

### *Shipboard Meetings*

Daily Operations Briefing meetings will be held at 1500 in the forward lounge to review the current day, and define operations, associated requirements and staffing needs for the following day. A Plan of the Day (POD) will be posted each evening for the next day in specified locations throughout the ship. A safety brief and overview of POD will occur on the Bridge each morning at 0800. Daily Situation Reports (SITREPS) will be posted as well and shared daily through e-mail and/or the *Okeanos Explorer* PLONE site (<http://terra.gso.uri.edu/NOAAShipOkeanosExplorer>).

## C. Ship Operation Evaluation Report

Within seven days of the completion of the cruise, a Ship Operation Evaluation form is to be completed by the Expedition Coordinator. The preferred method of transmittal of this form is via email to [OMAO.Customer.Satisfaction@noaa.gov](mailto:OMAO.Customer.Satisfaction@noaa.gov). If email is not an option, a hard copy may be forwarded to:

Director, NOAA Marine and Aviation Operations  
NOAA Office of Marine and Aviation Operations

8403 Colesville Road, Suite 500  
Silver Spring, MD 20910

## **VII. Miscellaneous**

### **A. Meals and Berthing**

Meals and berthing are available for up to 19 scientists. Meals will be served 3 times daily beginning one hour before scheduled departure, extending throughout the cruise, and ending two hours after the termination of the cruise. Since the watch schedule is split between day and night, the night watch may often miss daytime meals and will require adequate food and beverages (for example a variety of sandwich items, cheeses, fruit, milk, juices) during what are not typically meal hours. Special dietary requirements for scientific participants will be made available to the ship's command at least twenty one days prior to the survey (e.g., Expedition Coordinator is allergic to fin fish).

Berthing requirements, including number and gender of the scientific party, will be provided to the ship by the Expedition Coordinator. The Expedition Coordinator and Operations Officer will work together on a detailed berthing plan to accommodate the gender mix of the scientific party taking into consideration the current make-up of the ship's complement. The Expedition Coordinator is responsible for ensuring the scientific berthing spaces are left in the condition in which they were received; for stripping bedding and linen return; and for the return of any room keys which were issued. The Expedition Coordinator is also responsible for the cleanliness of the laboratory spaces and the storage areas utilized by the scientific party, both during the cruise and at its conclusion prior to departing the ship.

All NOAA scientists will have proper travel orders when assigned to any NOAA ship. The Expedition Coordinator will ensure that all non-NOAA or non-Federal scientists aboard also have proper orders. It is the responsibility of the Expedition Coordinator to ensure that the entire scientific party has a mechanism in place to provide lodging and food and to be reimbursed for these costs in the event that the ship becomes uninhabitable and/or the galley is closed during any part of the scheduled project.

All persons boarding NOAA vessels give implied consent to comply with all safety and security policies and regulations which are administered by the Commanding Officer. All spaces and equipment on the vessel are subject to inspection or search at any time. All personnel must comply with OMAO's Drug and Alcohol Policy which forbids the possession and/or use of illegal drugs and alcohol aboard NOAA Vessels.

### **B. Medical Forms and Emergency Contacts**

The NOAA Health Services Questionnaire (NHSQ, Revised: 08/08) must be completed in advance by each participating scientist. The NHSQ can be obtained from the Expedition

Coordinator or the NOAA website at [NOAA HEALTH SERVICES QUESTIONNAIRE](#). The completed form should be sent to the Regional Director of Health Services at Marine Operations Center. The participant can mail, fax, or scan the form into an email using the contact information below. The NHSQ should reach the Health Services Office no later than 4 weeks prior to the cruise to allow time for the participant to obtain and submit additional information that health services might require before clearance to sail can be granted. Please contact MOC Health Services with any questions regarding eligibility or completion of the NHSQ. Be sure to include proof of tuberculosis (TB) testing, sign and date the form, and indicate the ship or ships the participant will be sailing on. Clearances are valid for 2 years for personnel under age 50 and 1 year for age 50 and over. All PPD's expire after one year from the date of administration. The participant will receive an email notice when medically cleared to sail if a legible email address is provided on the NHSQ.

Contact information:

Regional Director of Health Services  
Marine Operations Center – Atlantic  
439 W. York Street  
Norfolk, VA 23510  
Telephone 757.441.6320  
Fax 757.441.3760  
E-mail: [MOA.Health.Services@noaa.gov](mailto:MOA.Health.Services@noaa.gov)

Prior to departure, the Expedition Coordinator must provide a listing of emergency contacts to the Operations Officer for all members of the scientific party, with the following information: name, address, relationship to member, and telephone number.

Emergency contact form is included as Appendix A.

### C. Shipboard Safety

Wearing open-toed footwear or shoes that do not completely enclose the foot (such as sandals or clogs) outside of private berthing areas is not permitted. Steel-toed shoes are required to participate in any work dealing with suspended loads, including CTD deployments and recovery. The ship does not provide steel-toed boots. Hard hats are also required when working with suspended loads. Work vests are required when working near open railings and during small boat launch and recovery operations. Hard hats and work vests will be provided by the ship when required.

Operational Risk Management: For every operation to be conducted aboard the ship (NOAA-wide initiative), risk management procedures will be followed. For each operation, risks will be identified and assessed for probability and severity. Risk mitigation strategies / measures will be investigated and implemented where possible. After mitigation, the residual risk will have to be

assessed to make Go-No Go decisions for the operations. Particularly with new operations, risk assessment will be ongoing and updated as necessary. This does not only apply to over-the-side operations, but to everyday tasks aboard the vessel that pose risk to personnel and property.

- CTD (and other pertinent) ORM documents will be followed by all personnel working on board *Okeanos Explorer*
- All personnel on board are in the position of calling a halt to operations/activities in the event of a safety concern.

#### D. Communications

A daily situation report (SITREP) on operations prepared by the Expedition Coordinator will be relayed to the program office. Sometimes it is necessary for the Expedition Coordinator to communicate with another vessel, aircraft, or shore facility. Through various modes of communication, the ship is able to maintain contact with the Marine Operations Center on an as needed basis. These methods will be made available to the Expedition Coordinator upon request, in order to conduct official business. The ship's primary means of communication with the Marine Operations Center is via e-mail and the Very Small Aperture Terminal (VSAT) link. Standard VSAT bandwidth at 128kbs is shared by all vessels staff and the science team at no charge. Increased bandwidth in 30 day increments is available on the VSAT systems at increased cost to the scientific party. If increased bandwidth is being considered, program accounting is required it must be arranged at least 30 days in advance.

Specific information on how to contact the NOAA Ship *Okeanos Explorer* and all other fleet vessels can be found at: <http://www.moc.noaa.gov/phone.htm>

#### **Important Telephone and Facsimile Numbers and E-mail Addresses**

Ocean Exploration and Research (OER):

OER Program Administration:  
Phone: (301) 734-1010  
Fax: (301) 713-4252

University of New Hampshire, Center for Coastal and Ocean Mapping

Phone: (603) 862-3438  
Fax: (603) 862-0839

NOAA Ship *Okeanos Explorer* - Telephone methods listed in order of increasing expense:

*Okeanos Explorer* Cellular:  
Ship (401) 932-4114  
OOD (401) 378-7414

*Okeanos Explorer* Iridium:

(808) 659-9179

(808) 851-3827 (phone located in dry lab for mission use)

*Okeanos Explorer* INMARSAT B

Line 1: 011-872-764-852-328

Line 2: 011-872-764-852-329

Voice Over IP (VoIP) Phone:

301-713-7772 (expect a delay once picked up by directory)

E-Mail: Ops.Explorer@noaa.gov (mention the person's name in SUBJECT field)

[expeditioncoordinator.explorer@noaa.gov](mailto:expeditioncoordinator.explorer@noaa.gov) - For dissemination of all hands emails by Expedition Coordinator while on board. See ET for password.

#### E. IT Security

Any computer that will be hooked into the ship's network must comply with the NMAO Fleet IT Security Policy prior to establishing a direct connection to the NOAA WAN. Requirements include, but are not limited to:

1. Installation of the latest virus definition (.DAT) file on all systems and performance of a virus scan on each system.
2. Installation of the latest critical operating system security patches.
3. No external public Internet Service Provider (ISP) connections.

Completion of these requirements prior to boarding the ship is preferable.

Non-NOAA personnel using the ship's computers or connecting their own computers to the ship's network must complete NOAA's IT Security Awareness Course within 3 days of embarking.

#### F. Foreign National Guests Access to OMAO Facilities and Platforms

All foreign national access to the vessel shall be in accordance with [NAO 207-12](#) and [RADM De Bow's March 16, 2006 memo](#).

The following are basic requirements. Full compliance with [NAO 207-12](#) is required.

Responsibilities of the Expedition Coordinator:

1. Provide the Commanding Officer with the e-mail generated by the FRNS granting approval for the foreign national guest's visit. This e-mail will identify the guest's DSN

and will serve as evidence that the requirements of [NAO 207-12](#) have been complied with.

2. Escorts – The Expedition Coordinator is responsible to provide escorts to comply with [NAO 207-12](#) Section 5.10, or as required by the vessel’s DOC/OSY Regional Security Officer. Ensure all non-foreign national members of the scientific party receive the briefing on Espionage Indicators ([NAO 207-12](#)) at least annually or as required by the servicing Regional Security Officer.
3. Export Control - The NEFSC currently neither possesses nor utilizes technologies that are subject to Export Administration Regulations (EAR).

The Commanding Officer and the Expedition Coordinator will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.

Responsibilities of the Commanding Officer:

1. Ensure only those foreign nationals with DOC/OSY clearance are granted access.
2. Deny access to OMAO platforms and facilities by foreign nationals from countries controlled for anti-terrorism (AT) reasons and individuals from Cuba or Iran without written NMAO approval and compliance with export and sanction regulations.
3. Ensure foreign national access is permitted only if unlicensed deemed export is not likely to occur.
4. Ensure receipt from the Expedition Coordinator or the DSN of the FRNS e-mail granting approval for the foreign national guest’s visit.
5. Ensure Foreign Port Officials, e.g., Pilots, immigration officials, receive escorted access in accordance with maritime custom to facilitate the vessel’s visit to foreign ports.
6. Export Control - 8 weeks in advance of the cruise, provide the Expedition Coordinator with a current inventory of OMAO controlled technology onboard the vessel and a copy of the vessel Technology Access Control Plan (TACP). Also notify the Expedition Coordinator of any OMAO-sponsored foreign nationals that will be onboard while program equipment is aboard so that the Expedition Coordinator can take steps to prevent unlicensed export of Program controlled technology. The Commanding Officer and the Expedition Coordinator will work together to implement any access controls necessary to ensure no unlicensed export occurs of any controlled technology onboard regardless of ownership.
7. Ensure all OMAO personnel onboard receive the briefing on Espionage Indicators ([NAO 207-12](#)) at least annually or as required by the servicing Regional Security Officer.

Responsibilities of the Foreign National Sponsor:

1. Export Control - The foreign national’s sponsor is responsible for obtaining any required export licenses and complying with any conditions of those licenses prior to the foreign national being provided access to the controlled technology onboard regardless of the technology’s ownership.



2. The DSN of the foreign national shall assign an on-board Program individual, who will be responsible for the foreign national while on board. The identified individual must be a U.S. citizen, NOAA (or DOC) employee. According to DOC/OSY, this requirement cannot be altered.
3. Ensure completion and submission of the Certification of Conditions and Responsibilities for a Foreign National Guest as required by [NAO 207-12](#) Section 5.03.h.

**Appendix A**

**EMERGENCY DATA SHEET  
NOAA OKEANOS EXPLORER**

PRINT CLEARLY

**NAME:** \_\_\_\_\_  
(Last, First, Middle)

Mailing Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Other than the ship address)

Phone (Home) \_\_\_\_\_  
(Cell) \_\_\_\_\_

Date of Birth \_\_\_\_\_

Emergency Contact: \_\_\_\_\_  
(Name and Relationship)

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone (Home) \_\_\_\_\_  
(Work) \_\_\_\_\_  
(Cell) \_\_\_\_\_

Email: \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Okeanos Explorer

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*EX-11-06: Exploration Mapping to Davisville, Rhode Island  
Data Management Plan*

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### **Document Purpose**

*This document is an addendum to the overarching Okeanos Explorer FY11 Data Management Plan (EX\_FY11\_DMP.doc) and is specific to the EX-11-06 mission entitled “Exploration Mapping to Davisville, Rhode Island” For more detailed information on the data management effort for the Okeanos Explorer in FY11, please refer to that document.*

### **Data Management Overview**

The sixth and final *Okeanos Explorer (EX)* mission of the FY11 field season will take the ship from Pascagoula, MS, around the tip of Florida, and up the Atlantic Coast to its new home port of Davisville, RI. During EX-11-06, the Okeanos will run continuous multibeam mapping with occasional XBTs for multibeam calibration.

### **Assumptions**

All data from the entire mission will be publicly releasable. Two sites of significance to underwater cultural heritage will be mapped, and the plan for their data management is under discussion with OER archaeologists.

***EX-11-06: Exploration Mapping to Davisville, Rhode Island (September 15 – September 28, 2011)***

### **Data Management Objectives**

The DMT’s objectives for this mission are:

- Develop ISO metadata for collection-level and dataset-level records (multibeam, singlebeam sonar, XBT, CTD, EX METOC)

- Onboard data manager to train in data collection, data pipeline procedures, and advanced product development for multibeam data bathymetry, bottom backscatter, and water column backscatter data
- Ensure the near real-time update of the *Okeanos Atlas* with
  - Data layers as contextual data to the display, including primary operating area, planned survey boundaries, and any other appropriate data layers found.
  - Ship track and hourly observations received via email.
  - Daily logs pulled from URI through RSS feeds and links to related images on oceanexplorer.noaa.gov website.
  - Daily cumulative bathymetric image overlays received via URI SRS.
- Post-Mission:
  - Execute multibeam and oceanographic data pipelines.

### **Expedition Principals for Data Management**

Elizabeth “Meme” Lobecker, OER Expedition Coordinator  
 Lt. Megan Nadeau, OMAO, Okeanos Explorer Operations Officer  
 Webb Pinner, OER Telepresence, EX Data and Information Lead  
 Sharon Mesick, NCDDC, Federal Program Manager, IPT Chair  
 Susan Gottfried, NCDDC, OER Data Management Coordinator  
 Denise Gordon, NCDDC, OER Data Manager  
 Andrew Navard, NCDDC, Okeanos Atlas Developer  
 David Fischman, NGDC, Geophysical Data Officer  
 Thomas Ryan, NODC, Oceanographic Data Officer  
 Anna Fiolek, NCL, Multimedia Librarian

## **Appendix C – Categorical Exclusion**



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
OCEANIC AND ATMOSPHERIC RESEARCH  
Office of Ocean Exploration and Research  
Silver Spring, MD 20910

September 1, 2011

MEMORANDUM FOR: The Record

FROM: John McDonough  
Acting Director  
NOAA Office of Ocean Exploration and Research (OER)

SUBJECT: Categorical Exclusion for NOAA Ship *Okeanos Explorer* cruise  
EX1106

NAO 216-6, Environmental Review Procedures, requires all proposed projects to be reviewed with respect to environmental consequences on the human environment. This memorandum addresses the NOAA Ship *Okeanos Explorer*'s scientific sensors possible affect on the human environment.

#### Description of Projects

This project is part of the Office of Ocean Exploration and Research's "Science Program". It will conduct multi-disciplinary ocean mapping and exploration activities designed to increase knowledge of the marine environment. This project is entitled "EX1106 Exploration Mapping to Davisville, RI" and will be led by Elizabeth Lobecker, a physical scientist for the *Okeanos Explorer* program within OER. The ship will depart Pascagoula, Mississippi on September 15<sup>th</sup>, and arrive in Davisville, Rhode Island on September 28<sup>th</sup>, and will conduct multibeam mapping operations at all times during the transit. Focused mapping operations will occur in the offshore area between North Carolina and Rhode Island. The Kongsberg EM 302 multibeam (30 kHz) and the Kongsberg EK 60 singlebeam (18 kHz) will be operated during the project. Additionally, expendable bathythermographs (XBTs) will be conducted in conjunction with multibeam data collection.

#### Effect of Projects

As expected with ocean research with limited time or presence in the marine environment, this project will not have the potential for significant impacts. Knowledgeable experts who are aware of the sensitivities of the marine environment will conduct the at-sea portions of this project.

#### Categorical Exclusion

This project would not result in any changes to the human environment. As defined in Sections 5.05 and 6.03.c.3 (a) of NAO 216-6, this is a research project of limited size or magnitude or with only short-term effects on the environment and for which any cumulative effects are negligible. As such, this project is categorically excluded from the need to prepare an environmental assessment.

Signed:   
John McDonough, Acting Director

Date: 9/1/11



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**Appendix D – National Marine Fisheries Service guidance - pending**