Data Management Plan
Okeanos Explorer (EX1404L1): Shakedown and
Mapping, NE Seamounts

Data Management Objectives
Test and re-certify established data pipelines.
Test new Okeanos Atlas functions with operational data.
Test modified workflow for SCS (pulling from tethys instead of hard-drive) and also check on
success of new SCS Submit Data functionality taken on by ship's crew.
Confirm data consolidation procedures / automation is still functional following dockside
maintenance / updates.
At sea data management training.
Continue development of automated full cruise data backup processes.
Field test / integration of Mac Warehouse systems

2.1 Name

1. General Description of Data to be Managed

1.1 Name and Purpose of the Data Collection Project

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The first portion of the cruise will include various shakedown items that are necessary after the ship has been alongside for summer dockside repairs, including at-sea testing of VSAT and communications networks and systems, mapping software updates, hardware updates, and sonar calibration. The second portion of the cruise will focus on mapping previously unmapped seamounts in the New England Seamount chain.

1.2 If this mission is part of a series of missions, what is the series name?

1.3 Summary description of the data to be collected.

Multibeam, single beam, and subbottom sonar data will be collected 24 hours a day and XBT casts will be conducted at an interval defined by prevailing oceanographic conditions, but not to exceed 3-4 hours. EX1404L1 will perform baseline characterization mapping (multibeam, splitbeam, subbottom) of New England Seamount chain in preparation for EX1404L3. During transiting to and from seamounts, exploration mapping will include areas of poor quality from existing ECS data and gaps in ECS data.

1.4 Keywords that could be used to characterize the data.

Davisville, expedition, exploration, explorer, mapping survey, marine education, multibeam, multibeam backscatter, multibeam sonar, multi-beam sonar, Narragansett Bay, New England Seamounts, noaa, noaa fleet, ocean, ocean discovery, ocean education, ocean exploration, ocean exploration and research, ocean literacy, ocean research, oceans, OER, okeanos, okeanos explorer, R337, Rhode Island, science, scientific computing system, scientific mission, scientific research, SCS, sea, single beam sonar, singlebeam sonar, single-beam sonar, stewardship, sub-bottom profile, systematic exploration, technology, transformational research, undersea, underwater, Veatch Canyon, water column backscatter

1.5 Anticipated temporal coverage of the data.

Cruise Dates: 8/9/2014   to   8/30/2014

1.6 Anticipated geographic coverage of the data.

Latitude Boundaries: 40 to   35.5

Longitude Boundaries: -72 to   -57.5

1.7 What platforms will be employed during this mission?

NOAA Ship Okeanos Explorer

1.8 What data types will you be creating or capturing?

Bottom Backscatter, Cruise Plan, Cruise Summary, Data Management Plan, EK60 Singlebeam Data, Highlight Images, Mapping Summary, Multibeam (image), Multibeam (processed), Multibeam (product), Multibeam (raw), Quick Look Report, SCS Output (compressed), SCS Output (native), Sub-Bottom Profile data, Water Column Backscatter, XBT (raw)

1.8 What data types will you be submitting for archive?

Bottom Backscatter, Cruise Plan, Cruise Summary, Data Management Plan, EK60 Singlebeam Data, Highlight Images, Mapping Summary, Multibeam (image), Multibeam (processed), Multibeam (product), Multibeam (raw), Quick Look Report, SCS Output (compressed), SCS Output (native), Sub-Bottom Profile data, Water Column Backscatter, XBT (raw)

2. Points of Contact for this Data Management Plan

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3. Data Lineage and Quality

3.1 What quality control procedures will be employed?

Quality control procedures for the data from the Kongsberg EM302 is handled at UNH CCOM/JHC. Raw (level-0) bathymetry files are cleaned/edited into new data files (level-1) and converted to a variety of products (level-2). Data from sensors monitored through the SCS are archived in their native format and are not quality controlled. Data from CTD casts and XBT firings are archived in their native format and are not quality controlled. CTDs are processed into profiles for display only on the Okeanos Atlas.

4. Data Documentation

4.1 Which metadata repository will be used to document this data collection?

An ISO format collection-level metadata record will be generated during pre-cruise planning and published in an OER catalog and Web Accessible Folder (WAF) hosted at NCDDC for public discovery and access. The record will be harvested by data.gov.

4.2 What additional metadata or other documentation is necessary to fully describe the data and ensure its long-term usefulness?

Additional metadata includes: Multibeam metadata to file level; Scientific Computing System (SCS) metadata; MAchine Readable Catalog (MARC) metadata for Library items.

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4.3 What standards will be used to represent data and metadata elements in this data collection?

ISO 19115-2 Geographic Information with Extensions for Imagery and Gridded Data will be the metadata standard employed; a NetCDF-4 standard for oceanographic data will be employed for the SCS data; the Library of Congress standard, MAchine Readable Catalog (MARC), will be employed for NOAA Central Library records.

5. Data Sharing

5.1 What date will the data be made available to the public?

All data from this mission is expected to be documented, archived and accessible within 60-90 days post-mission through the NOAA National Data Centers and public access GIS map applications. Meteorological and Oceanographic (METOC) sensor data from the SCS, and CTD data are converted in a post-mission model into archive ready compressed NetCDF-4 format and stored within the NCDDC THREDDS open-access server.

5.2 If the data are not to be made publicly available, under what authority are the data restricted?

Not Applicable

5.2a Access Constraints Statement?

No data access constraints, unless data are protected under the National Historic Preservation Act of 1966.

5.2b Use Constraints Statement?

Data use shall be credited to NOAA Office of Ocean Exploration and Research.

6. Initial Data Storage and Protection

6.1 Where and how will the data be stored initially (prior to archive submission)?

Data are recorded and stored on NOAA shipboard systems compliant with NOAA IT procedures. Data are moved from ship to shore using a variety of standard, documented data custody transfer procedures. Data are transferred to NOAA Data Centers using digital and physical data transfer models depending upon the data volume.

6.2 Discuss data back-up, disaster recovery, contingency planning and off-site storage relevant to this data collection.

Data management standard operating procedures minimizing accidental or malicious modification or deletion are in place aboard the Okeanos Explorer and will be enforced.

6.3 Describe how the data will be protected from unauthorized access, how permissions will be managed and what process will be followed in the event of unauthorized access.

Account access to mission systems are maintained and controlled by the Program. Data access prior to public accessibility is documented through the use of Data Request forms and standard operating procedures.

7. Long-Term Archiving and Preservation

7.1 In what NOAA Data Center(s) will the data be archived and preserved?

Data from this mission will be preserved and stewarded through the NOAA National Data Centers. Refer to the Okeanos Explorer FY14 Data Management Plan at NOAA's EDMC DMP Repository (EX_FY14_DMP_Final.pdf) for detailed descriptions of the processes, procedures, and partners involved in this collaborative effort.

7.1a If you do not plan to archive in the NOAA Data Centers, what is your long-term strategy for maintaining, curating, and archiving the data?

Not Applicable

7.2 What transformations or procedures will be necessary to prepare data for preservation or sharing?

SCS data shall be delivered in its native format as well as an archive-ready, documented, and compressed NetCDF-4 format to NODC; multibeam data and metadata will be compressed and delivered in a bagit format to NGDC.