Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

2016 USACE NCMP Topobathy Lidar DEM: Gulf Coast (AL, FL, MS, TX)

1.2. Summary description of the data:

These bare earth Digital Elevation Model (DEM) files along the coasts of Alabama, Florida, Mississippi, and Texas, contain rasterized topobathy lidar elevations at a 1 meter grid size, generated from data collected by the Coastal Zone Mapping and Imaging Lidar (CZMIL) system. In Florida, the data were collected on behalf of the National Park Service. CZMIL integrates a lidar sensor with simultaneous topographic and bathymetric capabilities, a digital camera and a hyperspectral imager on a single remote sensing platform for use in coastal mapping and charting activities. The 3-D position data are used to generate a series of gridded file products, which are tiled into quarter-quads or 5km boxes.

In addition to the bare earth DEMs, the topobathy lidar point data from which these DEM data were created, are also available. A link to this data is provided in the URL section of this metadata record. DEMs that were created from all classes of points (1, 2, 29) at a 1 meter grid size are available by request via email at: coastal.info@noaa.gov.

Original contact information:

Contact Org: JALBTCX

Title: Data Production Manager

Phone: 228-252-1121

Email: JALBTCX@usace.army.mil

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2016-07-23 to 2016-10-10

1.5. Actual or planned geographic coverage of the data:

W: -97.48317, E: -86.43802, N: 30.521814, S: 25.93808

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Model (digital)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:
coastal.info@noaa.gov

2.5. Phone number:
(843) 740-1202

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:
Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2016-09-09 00:00:00 - These data were collected using the CZMIL system. It is owned and operated by the U.S. Army Corps of Engineers (USACE). The system collects topo/bathy lidar data at 10 kHz and RGB imagery at 2 Hz. A CASI-1500 hyperspectral line scanner is integrated with the system as well. Aircraft position, velocity and acceleration information are collected through a combination of Novatel and POS A/V 510 equipment. All raw data streams are transferred to the office for downloading and processing in CZMIL's Hydro Fusion software. Aircraft position data are processed using POSPac software and the results are combined with the lidar data to produce 3-D positions for each lidar shot. Upon inspection and QA/QC in the software packages Fledermaus and PFM_ABE, anomalous data are flagged as invalid. PFM_ABE software then converts all valid data from ellipsoid to orthometric heights based on the NGS' GEOID12B model and exports valid lidar data as a series of unclassified LAS files.
- 2017-05-17 00:00:00 - LAS files are imported into GeoCue V2014.1.21.1, which is a geospatial workflow production and management software tool employed by JALBTCX to perform and monitor production of data products. Upon import into GeoCue, A customized classification macro, built upon the TerraScan V16 module within MicroStation V8i, classifies valid topobathy data as ground points (2), unclassified points (1), and bathymetric points (29). Upon completion the macro, the classification results undergo quality control and any misclassified points are manually edited. In areas of dense vegetation the bare earth ground points might be incorrectly classified due to the inability of the laser to penetrate the canopy and reach the bare ground. In these areas, JALBTCX defaults to the algorithm's "ground" surface instead of manually reclassifying those points. They are partitioned into a series of 5km or quarter quad delivery boxes, one Classified LAS file per box. The format of the file is LAS version 1.2. Data are classified as 1 (valid non-ground topographic data), 2 (valid ground topographic data), and 29 (valid bathymetric data).
- 2017-05-22 00:00:00 - Data classified as ground points (2) and bathymetric points (29) in the las files are converted to a grid by generating a triangulated irregular network (TIN) and then extracting the grid node elevations from the TIN surface. The origin point of the grid is located at a horizontal position whose value is evenly divisible by the 1m grid resolution such that rasters from subsequent surveys have

common cell boundaries. JALBTCX uses Quick Terrain Modeler V8 to perform this operation utilizing the following parameters; "Legacy Triangulation", "Max Sample Excursion - 30000", "Max Triangle Side - 30000", "Radius - none", "Tolerance - 1", and "Tiling Settings Snap to Grid (Expand)." The grid is exported from Quick Terrain Modeler as an ESRI ASCII Z grid file. Utilizing an in-house python script within ESRI ArcMap V10.2, the ASCII Z grid file is converted to a tiff-format raster file whose projection is defined as "The North American Datum of 1983 (2011)." The raster is then multiplied against a corresponding 1m Grid mask raster, a mask image produced from JALBTCX's 1m Grid, in ESRI's Raster Calculator to remove interpolated areas where data does not exist.
- 2017-09-01 00:00:00 - For the data in TX, the NOAA Office for Coastal Management (OCM) received the data in tif format, in several shipments from JALBTCX. The bare earth raster files were at a 1 m grid spacing. The data were in geographic coordinates and NAVD88 elevations in meters. OCM copied the raster files to database and https for Digital Coast storage and provisioning purposes.
- 2018-01-11 00:00:00 - For the data in Alabama, Florida, and Mississippi, the NOAA Office for Coastal Management (OCM) received the data in a later delivery than the Texas data. The data were received in tif format from JALBTCX. The bare earth raster files were at a 1 m grid spacing. The data were in geographic coordinates and NAVD88 elevations in meters. OCM copied the raster files to database and https for Digital Coast storage and provisioning purposes.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed

- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/49427

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access
NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:

https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=6371

https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/USACE_Gulf_Topobathy_DEM_2(

7.3. Data access methods or services offered:

Data may be obtained from the Digital Coast Data Access Viewer.

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.