

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:

Lidar for the Pocomoke and Atlantic Coastal Watersheds in Maryland

1.2. Summary description of the data:

This Light Detection and Ranging (LiDAR) dataset is a survey of the Pocomoke and Atlantic Coastal Watersheds in Maryland. The project area consists of approximately 500 square miles. The project design of the LiDAR data acquisition was developed to support a nominal post spacing of 0.70 meter. Fugro EarthData, Inc. acquired 151 flight lines in eight lifts on February 6, 7, 9, 13, 15, and 16, 2011; in tidal areas, data was collected within 2 hours (before or after) of mean low tide. The data was divided into 1500 by 1500 meter cells that serve as the tiling scheme. LiDAR data collection was performed with a Piper Navajo twin engine aircraft, utilizing a Leica ALS60 MPiA sensor, collecting multiple return x, y, and z as well as intensity data. LiDAR data is remotely sensed high-resolution elevation data collected by an airborne collection platform. This data of the Pocomoke and Atlantic Coastal Watersheds in Maryland, was collected at sufficient resolution to provide a nominal point spacing of 0.70 meter for collected points. Up to 4 returns were recorded for each pulse in addition to an intensity value.

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:

2011-02 to 2011-06

1.5. Actual or planned geographic coverage of the data:

W: -75.691501, E: -75.225534, N: 38.453581, S: 37.952398

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Map (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.)

Instrument: Leica ALS60

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:

Office for Coastal Management (OCM)

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

Office for Coastal Management (OCM)

2.4. E-mail address:

2.5. Phone number:

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?

Yes

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

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):

Lineage Statement:

Original acquisition and processing of lidar data was completed by Fugro EarthData, Inc. and delivered to NRCS and Maryland. NOAA OCM obtained the data from Maryland iMAP and modified for ingest into the Digital Coast system.

Process Steps:

- 2011-06-27 00:00:00 - Fugro EarthData utilized commercial software as well as proprietary software for automatic filtering. The parameters used in the process were customized for each terrain type to obtain optimum results. Once the automated filtering was completed, the files were run through a visual inspection to ensure that the filtering was not too aggressive or not aggressive enough. In cases where the filtering was too aggressive and important terrain features were filtered out, the data was either run through a different filter or was corrected during the manual filtering process. Interactive editing was then completed in 3D visualization software which also provides manual and automatic point classification tools. Vegetation and artifacts remaining after automatic data post-processing were reclassified manually through interactive editing. The hard edges of ground features that were automatically filtered out during the automatic filtering process were brought back into ground class during manual editing. Auto-filtering routines were utilized as much as possible within fenced areas during interactive editing for efficiency. The technician reviewed the LiDAR points with color shaded TINs for anomalies in ground class during interactive filtering. Upon the completion of peer review and finalization of bare earth filtering, the classified LiDAR point cloud work tiles went through a water classification routine. Upon the completion of finalization of the classified LiDAR point cloud work tiles, the tiles were reprojected to NAD83 (HARN), UTM zone 18 north, meters; NAVD88, meters, using GEOID09 and cut to the approved tile layout in LAS format.

- 2011-06-24 00:00:00 - The hydrographic features were collected as vector linework using classified LiDAR datasets, intensity images, shaded-relief TIN surfaces, and contours. These features were classified as Inland Ponds and Lakes, Inland Streams and Rivers (single line), Inland Streams and Rivers (double line), Non-Tidal Boundary Waters, and Tidal Waters. After initial collection, linework was then checked for the following topological and attribution rules: non-bank lines must be digitized from an uphill to downhill direction, lines must be attributed with the correct feature code, dangles must exist only at the upstream headwater end of streams and at the downstream outfall, line intersections must be at nodes, non-bankline features must form a dendritic collection network, lakes that have a digitized inflow path must have a centerline as well, lakes that have a digitized outflow path but do not have a digitized inflow path should not have a centerline, isolated ponds that are not part of the drainage network should not have centerlines; lake and stream banklines must form closed polygons, single streams should not fall within bankline polygons and lake and stream connector lines

should not fall outside of bankline polygons. Hydro features were collected as vector linework using LiDAR and its derived products listed above. This linework is initially 2D, meaning that it does not have elevation values assigned to individual line vertices. Vertex elevation values were assigned using a distance weighted distribution of LiDAR points closest to each vertex. After the initial 'drape', the linework elevation values were further adjusted based on the following rules: lake feature vertices were re-assigned (flattened) to lowest draped vertex value; lake connector line vertices were re-assigned (flattened) to lowest draped vertex value of the surrounding lake bankline, single stream and stream connector line vertices were adjusted so that subsequent vertices are lower than previous ones based on line direction, and double stream bankline vertices were re-assigned based on the vertices of the closest adjusted double stream connector line. After assignment of 3D values, the stream network is checked to ensure the following does not exist: large differences between initial drape and adjusted elevation values, elevation differences between nodes, and elevation values flowing in an 'uphill' direction. Data was provided to the terrain department for hydro-enforcement of the DEM.

- 2017-10-16 00:00:00 - NOAA OCM downloaded the data from Maryland iMAP as zip files by Block. (Citation: Lidar data from Maryland iMAP)
- 2018-02-26 00:00:00 - Lidar data were changed from NAVD88 (Geoid09) vertical coordinates to ellipsoid heights using the GEOID09 grids. The class scheme was not described in the original metadata, but research on the related data for the Worcester coastal area suggests class 10 is ignored ground near breaklines and class 11 is withheld. Examination of the data supports that hypothesis. Data were then ingested into the Digital Coast Data Access Viewer system for distribution.

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:

- 2.4. Point of Contact Email
- 3.1. Responsible Party for Data Management
- 5.2. Quality control procedures employed

- 7.4. Approximate delay between data collection and dissemination
- 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/51633>

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?

Yes

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:**

Office for Coastal Management (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=8484>

7.3. Data access methods or services offered:

Access via online tool

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)

NCEI_CO

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.