

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:

2010 USACE NCMP Topobathy Lidar: Oregon and Washington

### 1.2. Summary description of the data:

These data were collected with a Leica ALS60 system along the coast of Oregon and Washington. Data coverage generally extends along the coastline from the waterline inland 100 meters (topography). The ALS60 topographic lidar sensor has a pulse repetition rate of 200 kHz at 1064nm. Native lidar data is not generally in a format accessible to most Geographical Information Systems (GIS). Specialized in-house and commercial software processes the native lidar data into 3-dimensional positions that can be imported into GIS software for visualization and further analysis. The 3-D position data are sub-divided into a series of LAS files, each covering approximately 5 kilometers of shoreline. The format of the file is LAS version 1.2.

In addition to these lidar point data, the bare earth Digital Elevation Models (DEM) created from the lidar point data are also available. These data are available for custom download at the link provided in the URL section of this metadata record.

### 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:

2010-06-27 to 2010-07-13, 2010-07-24 to 2010-10-07

### 1.5. Actual or planned geographic coverage of the data:

W: -124.736861, E: -123.893299, N: 48.38915, S: 41.998928

### 1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)  
Point Cloud (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):*

**Lineage Statement:**

The USACE collected, processed, and provided the data to the NOAA Office for Coastal Management (OCM). OCM received the data and processed it to be available for custom download from the Data Access Viewer (DAV) and for bulk download from https.

**Process Steps:**

- These data were collected using the ALS60 lidar system. They are owned by Fugro EarthData and operated through contract. The system collects topographic lidar data at maximum pulse rate of 200 kHz in a wavelength of 1064 nm. A CASI-1500 hyperspectral line scanner integrated with the system. Aircraft position, velocity and acceleration information are collected by the onboard GPS/IMU system. Raw data were transferred to the office and processed in IPAS 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 processing, validation and QA/QC in the software packages GeoCue and TerraScan, anomalous data are flagged as invalid and necessary reflights are called. Fugro's proprietary software converts all valid data from ellipsoid to orthometric heights based on the NGS' GEOID09 model and exports topographic data as a series of LAS files with a single file per flightline per 5km box.

- 1. The raw lidar data was processed through a minimum block mean algorithm, and points were classified as either bare earth or non-bare earth. 2. User developed ""macros"" that factor mean terrain angle and height from the ground were used to determine bare earth point classification. 3. The next phase of the surfacing process was a 2D edit procedure that ensures the accuracy of the automated feature classification. 4. Editors used a combination of imagery, intensity of the lidar reflection, profiles and tin-editing software to assess points. 5. The lidar data was filtered, as necessary, using a quadric error metric to remove redundant points. This method leaves points where there is a change in the slope of surfaces (road ditches) and eliminates points from evenly sloped terrain (flat field) where the points do not affect the surface. 6. The algorithms for filtering data were utilized within Fugro EarthData's proprietary software and commercial software written by TerraSolid. 7. The flight line overlap points were merged back into filtered data set for delivery product. 8. The point cloud data were delivered tiled in LAS 1.2 format; unclassified (1), ground (2), low/noise (7), water (9), and overlap (12).

- 2018-08-27 00:00:00 - These data were then imported into GeoCue and combined with valid bathymetric data that was provided by Fugro in ASCII format. The resulting LAS v1.2 file has points classified as unclassified (1), ground (2), and valid bathymetric data (29.)

- 2018-10-03 00:00:00 - The NOAA Office for Coastal Management (OCM) received 157 laz files in las 1.2 format. The files contained lidar intensity and elevation measurements for the project area. Horizontal positions were provided in geographic coordinates, referenced to the North American Datum of 1983 (NAD83). Vertical positions were provided in ellipsoid elevations and in meters. OCM

performed the following processing for data storage and Digital Coast provisioning purposes: 1. Assigned the geokeys, sorted the data by gps time and copied the data to database and to https.

**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/55082>

**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](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=8607>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/8607/index.html>

### **7.3. Data access methods or services offered:**

Data is available online for bulk and custom downloads.

### **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.*