

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:**

2013 UAF/GINA Lidar: Vallenar Bay, Alaska

1.2. Summary description of the data:

The University of Alaska Fairbanks, Geographic Information Network of Alaska (UAF/GINA) provided Aero-Metric, Inc. (AeroMetric) and Watershed Sciences, Inc. (WSI) with detailed specifications for this project in the spring of 2013. Planning and acquisition of airborne LiDAR data was carried out by WSI in early May of 2013.

This delivery contains point cloud data in LAS 1.2 format classified in the following manner:

Class 1: Unclassified

Class 2: Bare Earth Ground

Class 3: Low Vegetation (vegetation within 12 inches of the ground surface)

Class 4: Medium Vegetation (vegetation greater than 12 inches, but less than 36 inches above the ground surface)

Class 5: High Vegetation (vegetation greater than 36 inches above the ground surface)

Class 6: Buildings

Class 7: Noise

Class 8: Ground Model Keypoints

Class 9: Water

Class 10: Breakline Proximity

Class 14: Bridge Decks

The following are the collection parameters and equipment used to create these data sets:

Aircraft: Cessna Caravan (N604MD)

LiDAR System: Leica ALS60

Approximate Collection Altitude (Above Mean Terrain): 900 meters

Ground Speed: 160 kts

Pulse Rate Frequency: 98-106 kHz

Mirror Scan Frequency: 66 Hz

Scan Angle (+/-): 14 degrees

Accuracy statements are based on areas of moderate terrain, with points classified as ground. Diminished accuracies are to be expected in areas of extreme terrain and dense vegetation. The accuracy of each point is expected to meet the vertical accuracy standard, derived products may be less accurate in areas of extreme terrain and dense vegetation due to a lesser number of points defining the ground in these areas. Classified data sets such as this one may have varying posting due to some pulses not reaching the ground.

The NOAA Office for Coastal Management (OCM) downloaded this lidar data from the AK DGGS site (<https://elevation.alaska.gov/>) and processed the data to be available on the Digital Coast Data Access Viewer (DAV). OCM processed all points to the Digital Coast Data Access Viewer (DAV).

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:

2013-05-07

1.5. Actual or planned geographic coverage of the data:

W: -131.851962111, E: -131.724883444, N: 55.410482472, S: 55.312103583

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):

Process Steps:

- 2013-05-31 00:00:00 - WSI created a smoothed-best estimated trajectory (SBET) of the sensor at a rate of 200 Hz, by integrating the airborne GPS and IMU data The

basis of the GPS coordinates were two dual frequency GPS receivers, collecting data at a rate of 2 Hz operated by Aero-Metric during the acquisition phase of this project, and were referenced to NAD83 (CORS96) ellipsoid heights.

- 2013-06-03 00:00:00 - WSI integrated SBET and raw laser data to produce point cloud data in LAS 1.2 format for each flight line.
- 2013-06-12 00:00:00 - WSI processed data calibration: An in-situ calibration was performed using the data collect for this project. The data was classified in each line separately for ground and other common features between lines, such as building roofs. This data was processed in TerraMatch 11.001 (TerraSolid, Ltd.), to compute corrections for roll, pitch, heading, and mirror scale. These corrections are applied in order to minimize discrepancies between flight lines.
- 2013-06-13 00:00:00 - WSI automated classification of the bare-earth data from the LiDAR point cloud using a series of algorithms customized for the types of terrain encountered in the project.
- 2013-06-20 00:00:00 - WSI manually classified any data which appears to be improperly classified using the automated methods.
- 2013-06-25 00:00:00 - WSI provided AeroMetric with calibrated, vertically adjusted, and classified LiDAR data in the Vallenar Bay area.
- AeroMetric completed a series of evaluations including verifying density requirements, confirming relative and absolute accuracies, reviewing coverage and classification's, and confirming the reproducibility of ranges within the LiDAR Data.
- 2013-09-09 00:00:00 - Due to tiling artifacts being identified in the low vegetation and high vegetations, using a automated method those classes were properly re-classified.
- Create point cloud data, by tile in LAS 1.2 format.
- 2018-09-10 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded 32 laz files from the Alaska Division of Geological and Geophysical Surveys data Portal (<https://elevation.alaska.gov/>). The files contained classified elevation and intensity measurements for the 2013 Vallenar Bay data set. The data were in Alaska State Plane, Zone 5001 coordinates (NAD83 2011, US survey feet) and NAVD88 elevations (GEOID12A) in feet. The data were classified: Class 1: Unclassified, Class 2: Bare-earth ground, Class 3: Low vegetation, Class 4: Medium Vegetation, Class 5: High Vegetation, Class 6_ Buildings, Class 7: Noise, Class 8: Ground Model Keypoints, Class 9: Water, Class 10: Breakline Proximity, Class 14: Bridge Decks. Low vegetation is defined in the report as vegetation within 12 inches of the ground surface, medium vegetation as vegetation greater than 12 inches, but less than 36 inches above the ground surface and high vegetation as vegetation greater than 36 inches above the ground surface. OCM processed all points to the Digital Coast Data Access Viewer (DAV). OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. The LAsTools software scripts lasinfo and lasvalidate were run on the laz files to check for errors. 2. An internal OCM script was run to check the number of points by classification and by flight ID and the gps times and intensity ranges. 3. Internal OCM scripts were run on the laz files to convert from Alaska State Plane, Zone 5001 coordinates to geographic

coordinates, to convert from NAVD88 elevations to ellipsoid elevations using the GEOID12A model, to convert from feet to meters, to assign the geokeys, to assign a lidar domain profile, to sort the data by gps time and zip the data to database and to http.

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/53623>

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=8595>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid12b/8595/index.html>

7.3. Data access methods or services offered:

Data is available online for custom and bulk 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.