

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:

2011 USGS NOAA USACE Lidar: Matanuska-Susitna Borough, AK

1.2. Summary description of the data:

The Matanuska Susitna Borough LiDAR/Imagery Project covers 3680 sq/mi of the Matanuska-Susitna Borough in Alaska. Project partners and funding sources include: Coastal Impact Assistance Program, Alaska Industrial Development and Export Authority, Alaska Energy Authority, United States Geological Survey, Matanuska Susitna Borough, United States Army Corps of Engineers, United States Fish and Wildlife Service, The Nature Conservancy, National Oceanic and Atmospheric Administration, Mat-Su Salmon Partnership, and Alaska Pacific University.

This dataset was originally in LAS 1.2 format with a non-standard class table. The format and the class table has been changed. Details are in the processing steps.

The following are the collection parameters and equipment used to create these data sets. The Leica sensor was used for flights in the northern half of the Core Area. All other flights were flown with Optech sensors.

Aircraft: Cessna 310(N7516Q), Piper Navajos (N6GR,T73TM and 812TB), Beechcraft KingAir (N898WW)

Lidar Systems: Optech ALTM Gemini (03SEN145 and 07SEN201) and Leica ALS 70

Approximate Collection Altitude (Above Mean Terrain): Optech--1400 meters, Leica--2200 meters

Ground Speed: Optech--150 kts, Leica--160 kts

Pulse Rate Frequency: Optech--70 kHz, Leica--163.6 kHz

Mirror Scan Frequency: Optech--40 Hz, Leica--41 Hz

Scan Angle (+/-): Optech--17 degrees, Leica--16 Degrees

Beam Divergence: Narrow (0.3 mrad)

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.

Original contact information:

Contact Name: Lidar Manager

Contact Org: Aerometric, Inc.

Title: Lidar Manager

Phone: (907) 272-4495

Email: aerometric@aerometric-ak.com

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:

2011-05-10 to 2011-11-12

1.5. Actual or planned geographic coverage of the data:

W: -150.758042, E: -147.236006, N: 62.900371, S: 61.229401

1.6. Type(s) of data:

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

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:

- 2011-10-12 00:00:00 - Create 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 provided to Aero-Metric by Lounsbury, Inc., and were referenced to NAD83 (CORS96) with GEOID09 derived orthometric heights. The maximum baseline distance for this area was 15 km, the average base line length was 5 km. The mean GPS positional accuracy for this area was +/- 0.06 meters.
- 2011-10-12 00:00:00 - Integrate SBET and raw laser data to produce point cloud

data in LAS 1.2 format for each flight line.

- 2011-10-12 00:00:00 - 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.
- 2011-12-12 00:00:00 - 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.
- 2012-04-15 00:00:00 - Manual classification of any data which appears to be properly classified using the automated methods.
- 2012-11-20 00:00:00 - Create point cloud data, by tile in LAS 1.2 format with absolute GPS timestamps
- 2013-11-26 00:00:00 - Data for the MatSu Bugoughs was downloaded from matsu.gina.alaska.edu/LiDAR for all areas available
- 2013-12-18 00:00:00 - Data were modified to work with the Digital Coast Data Access Viewer in the following ways: 1) projection was changed from Alaska State Plane to Geographic coordinates; 2) Vertical datum was changed from NAVD88 to NAD83 ellipsoid using NGS GEOID09; 3) the global encoding byte in LAS format was set to indicate adjusted GPS time instead of GPS seconds of the week; and 4) the classification table was modified to avoid classes already used as a standard within Digital Coast. The classification changes were for ground points near breaklines (original class 10 moved to class 2 with user byte set to 2), powerlines (original class 11 moved to class 16), and near ground noise (original class 13 moved to class 15). Data were also compressed to LAZ format using laszip from laszip.org. Data from multiple deliveries were combined and metadata rewritten to cover them all (Caswell Lakes, Core Area, Matanuska, North Susitna, Point MacKenzie, and Willow were the original delivery groups).
- 2021-06-22 00:00:00 - The previous change in the classes was recognized as unhelpful as most software does not provide a way to segment data by the user bytes field for LAS data. Instead of moving the classes back to their original non-standard classes, they were moved to match the LAS1.4 standards as much as possible. This includes moving the points near a breakline to class 20. One class, noise within 1 foot of the ground, is non-standard and was moved to class 77 to conform with the LAS 1.4 requirement that classes below 64 are reserved for ASPRS. The LAS format was also promoted to LAS 1.4. The resulting class table is:
classnumber classname 1 Unclassified 2 Ground 3 Low Vegetation 4 Medium Vegetation 5 High Vegetation 6 Building 7 Low Point (noise) 8 Reserved 9 Water 14 Wire-Conductor 17 Bridge Deck 20 Ignored Ground/Bathymetry 77 Near-Ground Noise (Citation: MatSu Point Clouds)

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/48144>

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=2609>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid12b/2609/index.html>

7.3. Data access methods or services offered:

This data can be obtained on-line at the following URL:

<https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=2609>

;

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.