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:
2018 AK DGGS Lidar DEM: Chilkat Ridge, Alaska

1.2. Summary description of the data:
The State of Alaska Division of Geological & Geophysical Surveys (DGGS) used lidar to produce a digital terrain model (DTM) and digital surface model (DSM) over ridgelines along the Chilkat River just north of Haines, Alaska. The lidar and Global Navigation Satellite System (GNSS) data were collected on November 15-16, 2018, and processed using Terrasolid. This data collection is being released as a Raw Data File with an open end-user license. The complete report and digital data are available from the DGGS website: http://doi.org/10.14509/30224.

The NOAA Office for Coastal Management (OCM) downloaded this data set from this AK DGGS site:

https://elevation.alaska.gov/

This file was processed to make the data available for custom and bulk download from the NOAA Digital Coast Data Access Viewer (DAV) . The total number of files downloaded and processed was 1.

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:
2018-11-15 to 2018-11-16

1.5. Actual or planned geographic coverage of the data:
W: -135.97071, E: -135.640466, N: 59.414268, S: 59.236685

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:

- 2018-01-01 00:00:00 - Lidar data acquisition - DGGS operates a Riegle VUX1-LR lidar integrated with a GNSS and Northrop Grumman IMU system. The integration was designed by Phoenix LiDAR systems. The sensor is capable of collecting up to 820, 000 points per second over a distance of 150 m. This survey was flown at a scan rate of 400,000 points per second and a scan rate of 200 revolutions per second. The average pulse spacing was 15 cm and the average point density was 40 points per square meter. This survey was flown with an average elevation of 200 m above ground level and a ground speed of approximately 40 m/s with a fixed-wing aircraft configuration, using Cessna 185. The scan angle was set from 55 to 305. Ground Control points were collected using a Trimble system consisting of a Trimble R7 base station and an R8 rover system.
- 2018-01-01 00:00:00 - Raw lidar data processing - Raw data were processed using Terrasolid software to produce integrated files for navigation correction and a point cloud for calibration. The navigation was corrected using Inertial Explorer software, where the GNNS and IMU data are integrated to establish the correct flight path and orientation of the lidar sensor.
- 2018-01-01 00:00:00 - Point cloud data calibration - Internal lidar point cloud data were calibrated using Terrasolid software. The initial accuracy of the point cloud was 8.346 cm. After calibration, the point cloud had an average magnitude accuracy of 6.914 cm.
- 2018-01-01 00:00:00 - Point cloud data classification - The point cloud is classified for ground points as well as low, medium, and high vegetation (0.01-0.3 m, 0.3-5 m, and 5-60 m heights above the ground, respectively). Some manual processing was required to eliminate fog and misclassified ground points. All low points and air points are eliminated from the dataset. Lastly, the DSM and DTM were hydroflattened to mean surrounding elevation for all lakes and ponds.
- 2019-01-01 00:00:00 - Digital terrain model - The ground points from the final point cloud were used to build the digital terrain model in ArcGIS. The point cloud was loaded as a las dataset and filtered for ground points. The remaining points were used in a las dataset-to-raster conversion tool. Rasters, with a ground pixel resolution of 1 meter, were derived from mean values from a 2-meter sampling distance. The DTM was hydroflattened to mean surrounding elevation for all lakes and ponds.
- 2019-01-01 00:00:00 - Digital surface model - The digital surface model was created from the first returns in the point cloud. Due to a large number of points in vegetation, we used a binning method with natural neighbor gap-filling. The 1 m bins did not gap-fill correctly in the entire dataset, however, so we opted to store the DSM in a 2-m-resolution raster. The DSM was hydroflattened to mean surrounding elevation for all lakes and ponds.

- 2019-01-01 00:00:00 - Intensity image - The intensity raster was generated using the ground points. The raster resolution is 1-meter.
- 2022-11-29 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded 1 raster DEM file in GeoTiff format from the Alaska DGGS Elevation Portal. The data were in UTM Zone 8N NAD83 (2011), meters coordinates and NAVD88 (Geoid12B) elevations in meters. The bare earth raster file was at a 1 meter grid spacing. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. Used an internal script to assign the EPSG codes (Horizontal EPSG: 6337 and Vertical EPSG: 5703) to the GeoTiff formatted file. 2. Copied the files 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/68619

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=9672/details/9672
https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/AK_Chilkat_DEM_2018_9672/ind

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.