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:
2019 AK DGGS Lidar DEM: Pilgrim Hot Springs, Alaska

1.2. Summary description of the data:
Product: 1-meter bare-earth raster digital elevation model (DEM) data tiles in GeoTIFF format.

Geographic Extent: Approximately 47 square miles encompassing the Pilgrim Hot Springs area of Western Alaska.

The State of Alaska Division of Geological & Geophysical Surveys (DGGS) produced airborne lidar-derived elevation data for the Pilgrim Hot Springs area, western Alaska. Both aerial lidar and ground control data were collected by DGGS. This data collection is being released as a Raw Data File with an open end-user license. These data were produced in support of active fault detection and geothermal hydrology research in the area. This data collection is being released as a Raw Data File with an open end-user license. All files can be downloaded free of charge from the Alaska Division of Geological & Geophysical Surveys website (http://doi.org/10.14509/30659).

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:
2019-08-15

1.5. Actual or planned geographic coverage of the data:
W: -165.088, E: -164.815, N: 65.1345, S: 65.015

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
GeoTIFF

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:

- 2019-08-15 00:00:00 - Airborne survey - The airborne survey occurred on August 15, 2019. The weather was clear throughout the survey. This dataset includes point cloud data, a digital terrain model (DTM), and a digital surface model (DSM) covering Pilgrim Hot Springs, western Alaska (approximately 47 mi2). This survey was conducted with a DGGS-operated Riegl VUX1-LR lidar system with an integrated Global Navigation Satellite System (GNSS) receiver and Northrop Grumman inertial measurement unit (IMU) system. The integration was designed by Phoenix LiDAR systems. This survey was flown with a pulse rate between 200,000 and 400,000 pulses/second, at a scan rate between 80 and 150 scans/second. This survey was flown with an average elevation of 400 m above ground level and a ground speed of approximately 40 m/s with a fixed-wing aircraft configuration, using a Cessna 185 aircraft. The scan angle was set from 55 to 305 degrees, centered normal to the bottom of the aircraft.

- 2019-08-15 00:00:00 - Ground survey - Trimble R8 and R9 real-time kinematic GNSS systems were used to collect 62 combined checkpoints and control points for the project. Points were adjusted for accuracy according to Online Positioning User Service (OPUS) corrections in Trimble Business Center.

- 2020-01-01 00:00:00 - Lidar dataset processing - Point data were processed in SDCimport software for initial filtering and multiple-time-around (MTA) disambiguation. MTA errors, corrected in this process, are the result of imprecise interpretations of received pulse time intervals and occur more frequently with higher pulse refresh rates. IMU and GPS data were used to integrate flightline information with the point cloud in Spatial Explorer software. The point data were calibrated at an incrementally precise scale of sensor movement and behavior, incorporating sensor velocity, roll, pitch, and yaw fluctuations throughout the survey. Points were classified in accordance with the American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 guidelines, using macros designed in Terrasolid software. Careful attention was given to the interpolation of the project's ground surface to compensate for inconsistent penetration through low vegetation as a function of the scan angle. Once classified, points underwent a geometric transformation and were converted from ellipsoidal heights to GEOID12B (Alaska) heights. Raster products were derived from the point cloud using ArcMap. The DTM was interpolated from all ground class returns using a mean binning method. The DSM was likewise interpolated from only the first returns for all classes. An intensity image was produced in ArcMap using mean binning.

- 2022-11-16 00:00:00 - Data were retrieved from the Alaska DGGS elevation portal then reorganized into cloud optimized geotiff format and ingested into the Data Access Viewer system. (Citation: Processed Digital Elevation Model)

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/68419

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=9610/details/9610
https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/AK_PilgrimHotSprings_DEM_20:

7.3. Data access methods or services offered:
Data is available online for bulk or 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.