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:

2015 OLC Topobathy Lidar: Middle Fork Willamette River, OR

1.2. Summary description of the data:

Airborne topobathymetric lidar point cloud collected for the Middle Fork of Willamette River, Oregon in 2015.

In September 2015, Quantum Spatial (QSI) was contracted by the Oregon LiDAR Consortium (OLC) to collect topobathymetric Light Detection and Ranging (LiDAR) data in the fall of 2015 for the Middle Fork Willamette River site in Oregon. The Middle Fork Willamette River area of interest stretches between Eugene/Springfield and Dexter Dam and Fall Creek below Fall Creek Dam. Traditional near-infrared (NIR) LiDAR was fully integrated with green wavelength return data (bathymetric) LiDAR in order to provide seamless and complete project mapping.

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:

2015-09-14 to 2015-09-15

1.5. Actual or planned geographic coverage of the data:

W: -123.0368, E: -122.74759, N: 44.050142, S: 43.9083
Area includes the Middle Fork, Wilamette River and a buffer of land around it.

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:
Office for Coastal Management (OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
Office for Coastal Management (OCM)

2.4. E-mail address:

2.5. Phone number:

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:

- 2015-09-01 00:00:00 - Planning: The airborne survey was designed to collect a point density of 4-5 pulses/m2 for the topo-bathymetric LiDAR. The flight was planned with a scan angle of ±20o and 50% side-lap. The 50% side-lap was used to ensure uniform coverage and to minimize laser shadowing due to vegetation and terrain. The flights were conducted in the late fall during base flow conditions to maximize water clarity and ensure shallow depths. The flight lines were developed using ALTM-NAV Planner (v.3.0) software and Leica Mission Pro Flight Planning and Evaluation (FPES) software. Efforts were taken to optimize flight paths by minimizing flight times while meeting all accuracy specifications. The WSI acquisition staff considered all factors such as air space restrictions, private property access, and GPS quality in the planning of this mission.
- 2015-09-01 00:00:00 - Lidar Survey: The LiDAR survey was accomplished using a Leica ALS80 system dually mounted with a Riegl VQ-820-G topobathymetric sensor in a Cessna Caravan. The Riegl VQ-820-G uses a green wavelength (ʎ=532 nm) laser that is capable of collecting high resolution vegetation and topography data, as well as penetrating the water surface with minimal spectral absorption by water. The recorded waveform enables range measurements for all discernible targets for a given pulse. The Leica ALS80 laser system can record unlimited range measurements (returns) per pulse. It is not uncommon for some types of surfaces (e. g., dense vegetation or water) to return fewer pulses to the LiDAR sensor than the laser originally emitted. The discrepancy between first return and overall delivered density will vary depending on terrain, land cover, and the prevalence of water bodies. All discernible laser returns were processed for the output dataset. Table 3 (dataset report) summarizes the settings used to yield an average pulse densityof ≥4. 0 points/m2 for green LiDAR returns, and ≥8.0 points/m2 for NIR LiDAR returns over the Middle Fork Willamette River project area.
- 2015-09-30 00:00:00 - Lidar Processing: Upon completion of data acquisition, QSI processing staff initiated a suite of automated and manual techniques to process the data into the requested deliverables. Processing tasks included GPS control computations, smoothed best estimate trajectory (SBET) calculations, kinematic corrections, calculation of laser point position, sensor and data calibration for optimal relative and absolute accuracy, and LiDAR point classification (Table 7). Riegl's RiProcess software was used to facilitate bathymetric return processing. Once bathymetric points were differentiated, they were spatially corrected for refraction through the water column based on the angle of incidence of the laser. QSI refracted water column points using QSI's proprietary LAS processing software, LAS Monkey. The resulting point cloud data were classified using both manual and automated techniques. Processing methodologies were tailored for the landscape.
- 2020-08-14 00:00:00 - The NOAA Office for Coastal Management received the lidar data from the Oregon Lidar Consortium. Data were received in NAD83(2011) UTM zone 10 meters with vertical coordinates in NAVD88(GEOID 12A) meters. They were converted to geographic coordinates and ellipsoid heights for ingestion. Metadata was not delivered with the data. This metadata was created from the WSI report. (

Citation: lidar data)

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)
- 2.4. Point of Contact Email
- 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
- 7.3. Data access methods or services offered
- 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/62765

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:

Office for Coastal Management (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=9168
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/9168/index.html

7.3. Data access methods or services offered:

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.