

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:

NOAA Office for Coastal Management Sea Level Rise Data: 1-6 ft Sea Level Rise Inundation Extent (Hawaii)

1.2. Summary description of the data:

These data were created as part of the National Oceanic and Atmospheric Administration Office for Coastal Management's efforts to create an online mapping viewer depicting potential sea level rise and its associated impacts on the nation's coastal areas. The purpose of the mapping viewer is to provide coastal managers and scientists with a preliminary look at sea level rise (slr) and coastal flooding impacts. The viewer is a screening-level tool that uses nationally consistent data sets and analyses. Data and maps provided can be used at several scales to help gauge trends and prioritize actions for different scenarios. The Sea Level Rise and Coastal Flooding Impacts Viewer may be accessed at: <http://www.coast.noaa.gov/slr> These data depict the potential inundation of coastal areas in Hawaii resulting from a projected 1 to 6 feet rise in sea level above current Mean Higher High Water (MHHW) conditions. The process used to produce the data can be described as a modified bathtub approach that attempts to account for both local/regional tidal variability as well as hydrological connectivity. The process uses two source datasets to derive the final inundation rasters and polygons and accompanying low-lying polygons for each iteration of sea level rise: the Digital Elevation Model (DEM) of the area and a tidal surface model that represents spatial tidal variability. The tidal model is created using The Tidal Constituent and Residual Interpolation (TCARI) methodology to combine harmonic constituents, tidal datums, and residual water level data measured at tide stations into a composite tide curve. This solution is not a NOAA/CO-OPS-generated/recognized tidal-geodetic relationship. The tidal datum values were interpolated from published values using a 2-D mathematical interpolation model that solves for weighting functions that satisfy the Laplacian. This strictly mathematical approach assumes a smooth transition of tidal characteristics and the quality control step entailed comparing the interpolated values with other known values not included in the interpolation model. This derived surface is used in lieu of NAVD88 coverage in the Hawaiian Islands for the purposes of this project. The model used to produce these data does not account for erosion, subsidence, or any future

changes in an area's hydrodynamics. It is simply a method to derive data in order to visualize the potential scale, not exact location, of inundation from sea level rise.

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

1.5. Actual or planned geographic coverage of the data:

W: -160.278, E: -154.717, N: 22.336, S: 18.865

1.6. Type(s) of data:

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

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:

- 2013-01-01 00:00:00 - The process to derive the inundation rasters and polygons and low-lying area polygons is as follows: 1. The Hawaii MHHW tidal surface dataset is derived from The Tidal Constituent and Residual Interpolation (TCARI) methodology to combine harmonic constituents, tidal datums, and residual water level data measured at tide stations into a composite tide curve. This solution is not a NOAA/CO-OPS-generated/recognized tidal-geodetic relationship. The tidal datum values were interpolated from published values using a 2-D mathematical interpolation model that solves for weighting functions that satisfy the Laplacian. This strictly mathematical approach assumes a smooth transition of tidal characteristics and the quality control step entailed comparing the interpolated values with other known values not included in the interpolation model. This derived surface is used in lieu of NAVD88 coverage in the Hawaiian Islands for the purposes of this project. Each iteration (1-6ft) of slr is added to this base surface and subsequently used for mapping. 2. Using the DEM and the tidal surface (for each iteration of slr), raster calculations are made using ArcGIS Spatial Analyst Raster Calculation tool to generate multiple rasters, one 32-bit floating point raster representing depth of inundation and one 8-bit single value raster representing the extent of inundation. 3. The hydrologic connectivity of the single value raster for each iteration (1-6ft) of slr is evaluated using an 8-sided neighborhood rule in ArcGIS using the RegionGroup tool. The largest group of connected cells is selected to create a new feature class representing hydrologically connected areas. Additional areas (groups of cells) may be selected to be included as hydrologically connected where local information exists. The remaining cells groups are analyzed

to identify groups with total areas of at least 1 acre. These areas are chosen to represent unconnected 'low-lying' areas and saved as a separate layer for further analysis. 4. The rasters of hydrologically 'connected' and 'Unconnected' for each iteration of slr are converted to polygons for further analysis. (Citation: NOAA OCM Digital Elevation Models)

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:

- 1.6. Type(s) of data
- 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/48077>

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:

7.3. Data access methods or services offered:

This data may be downloaded at: <http://www.coast.noaa.gov/slr>;

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.