

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:

C-CAP USVI, St. Croix 2007-2012 Land Cover Change Analysis

1.2. Summary description of the data:

This data set contains the 2007 and 2012 classifications of St. Croix and can be used to analyze change. This data set utilized CIR imagery captured from Microsoft UltraCAM X (2011 flights) and Z/I Imaging DMC-II 230 (2012 flights) digital sensors and the 2007 high resolution St. Croix C-CAP dataset which were analyzed according to the Coastal Change Analysis Program (C-CAP) protocol to determine land cover.

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:

2007-03-11 to 2012-01-01

1.5. Actual or planned geographic coverage of the data:

W: -64.905956, E: -64.563847, N: 17.788029, S: 17.676339

1.6. Type(s) of data:

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

- 2014-12-31 00:00:00 - Process_Description This dataset, and the 2012-era classification was created by Dewberry. The 2007-era C-CAP classification was created by Sanborn. This dataset contains the classifications of 2007 imagery and 2012 imagery. It is used for change analysis between these years. The attributes

include a from-to change description category. There are 521 classes corresponding to the 521 possible from-to change combinations. In this section of the metadata, the 2007 classification procedure is described, then the 2012 change detection classification procedure is described. Finally in the post-processing section, the process of combining the maps to generate a spatial matrix of change is discussed.

Early Date (2007-era) Classification: Pre-processing steps: The ADS40 was provided to Sanborn as a geo-referenced product. Sanborn performed a quality control on the imagery to check for pixel dropouts and other image issues. Individual image tiles were combined to create a single image for the entire island. The early date (2003-era) classification was created first using satellite data because at the time it was the most recent, cloud free imagery available. The late date (2007-era) ADS40 became available shortly after the early date classification was completed. The ADS40 imagery was found to have ortho-rectification accuracy. The 2003-era classifications and imagery were geo-rectified to co-register with the ADS40 imagery. Change Detection: Once the images were aligned, the next step was to determine the areas of change between the 2003-era and 2007-era data. Since the 2003-era classification was already complete, it is only necessary to classify the areas of change to create a 2007-era classification of the same specifications. The 2007 ADS40 imagery was segmented with the 2003 land cover classification as a hard boundary delimiter. Logical rulesets and thresholding based on the spectral properties of the imagery and the early date classification were used to generate a mask of potential change. The change mask was incorporated into the early date classification to create the draft late date classification. This map was further revised with rulesets and thresholding. The final step before map finalization was to remove inaccuracies through manual segment labeling as interpreted by an analyst. Sanborn used independent reviewer's comments to further refine the land cover map.

- 2014-12-31 00:00:00 - Map Finalization - Sanborn used independent reviewers comments to further refine the land cover map. Attributes for this product are as follows: 0 Background 1 Unclassified 2 Impervious 3 4 5 Developed, Open Space 6 Cultivated Crops 7 Pasture/Hay 8 Grassland/Herbaceous 9 Deciduous Forest 10 Evergreen Forest 11 Mixed Forest 12 Scrub/Shrub 13 Palustrine Forested Wetland 14 Palustrine Scrub/Shrub Wetland 15 Palustrine Emergent Wetland 16 Estuarine Forested Wetland 17 Estuarine Scrub/Shrub Wetland 18 Estuarine Emergent Wetland 19 Unconsolidated Shore 20 Bare Land 21 Open Water 22 Palustrine Aquatic Bed 23 Estuarine Aquatic Bed 24 Tundra 25 Snow/Ice Late Date (2012) Classification: This section outlines the classification procedure for the St. Croix High Resolution C-CAP performed by Dewberry. The color-infrared imagery used in producing this land cover product was also utilized in producing an associated impervious surfaces layer for the island. This land cover is based on the 2007 high resolution St. Croix C-CAP dataset. Changes were identified using aerial photo interpretation of the 2007 dataset against the 2011-2012 imagery. A calibration visit was not conducted though NOAA had access to local resources for validation. Non impervious features were mapped using a 0.25 acre minimum mapping unit (MMU)

and impervious features were mapped using a 0.1 acre MMU. Pre-processing steps: The 2011-2012 color-infrared imagery utilized for this project was provided from the USACE as an orthorectified, georeferenced product. The imagery was reviewed for radiometric errors, pixel dropouts, and other image issues. Individual image tiles were merged into a single mosaic and re-sampled from the native 1-foot spatial resolution to 1m. Classification: The 2007 C-CAP dataset was over-laid with semi-transparency on the 2011-2012 color-infrared imagery. It was panned at a scale of 1: 5,000 and manually updated to match features in the 2011-2012 imagery. Analysts zoomed in to a larger scale when necessary to perform edits. The product went through a QC procedure to ensure features were accurately captured. Map Finalization - Dewberry used independent reviewer's comments to further refine the land cover map. Attributes for this product are as follows: 0 Background 1 Unclassified 2 Impervious 3 4 5 Developed, Open Space 6 Cultivated Crops 7 Pasture/Hay 8 Grassland/Herbaceous 9 Deciduous Forest 10 Evergreen Forest 11 Mixed Forest 12 Scrub/Shrub 13 Palustrine Forested Wetland 14 Palustrine Scrub/Shrub Wetland 15 Palustrine Emergent Wetland 16 Estuarine Forested Wetland 17 Estuarine Scrub/Shrub Wetland 18 Estuarine Emergent Wetland 19 Unconsolidated Shore 20 Bare Land 21 Open Water 22 Palustrine Aquatic Bed

Post-Processing Steps: A GIS matrix algorithm was run with 2007 and 2012 datasets as inputs. The algorithm generates a from-to file where each combination is uniquely labeled from 1 to 625.

- 2014-12-31 00:00:00 - Metadata imported

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
- 7.3. 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/48360>

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:

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.