

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:

Benthic Habitat Maps of Puerto Rico Prepared by Visual Interpretation from Remote Sensing Imagery Collected by NOAA, 1999

### 1.2. Summary description of the data:

This project is a cooperative effort among the National Ocean Service, National Centers for Coastal Ocean Science, Center for Coastal Monitoring and Assessment; the United States Geological Survey; the National Park Service; and the National Geophysical Data Center to produce benthic habitat maps and georeferenced imagery for Puerto Rico and the U.S. Virgin Islands. This project was conducted in support of the U.S. Coral Reef Task Force. Twenty-one distinct benthic habitat types within eight zones were mapped directly into a GIS system using visual interpretation of orthorectified aerial photographs. Benthic features were mapped that covered an area of 1600 km<sup>2</sup>. In all, 49 km<sup>2</sup> of unconsolidated sediment, 721 km<sup>2</sup> of submerged vegetation, 73 km<sup>2</sup> of mangroves, and 756 km<sup>2</sup> of coral reef and colonized hardbottom were mapped.

### 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:

1999 to 2001

### 1.5. Actual or planned geographic coverage of the data:

W: -68.01, E: -65.22, N: 18.59, S: 17.82

### 1.6. Type(s) of data:

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

### 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:**

NCCOS Scientific Data Coordinator

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:****2.4. E-mail address:**

NCCOS.data@noaa.gov

**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:**

NCCOS Scientific Data Coordinator

**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:**

- 2000-01-01 00:00:00 - Benthic habitat maps were digitized by delineating habitat boundaries from georeferenced imagery loaded into ArcView 3.2 GIS software with the Image Analysis and NOAA Coral Reef Habitat Digitizing extensions both activated. On-screen digitizing was conducted with the minimum mapping unit (MMU) set to 1 acre and the image scale at 1:6000. During the digitizing process, image stretches and manipulating image contrast, brightness and color balance were performed in the ArcView Image Analysis Extension to enhance features in the processed imagery. Additional collateral information including previously completed habitat maps, NOS nautical charts, and other descriptive references dealing with benthic and coastal habitats of Puerto Rico and the U.S. Virgin Islands was used to assist with image interpretation. A first draft map was completed and features in the imagery where uncertainties existed, due to confusing or difficult to interpret signatures, were identified for future ground validation effort. An ArcView GIS point theme was generated with points positioned on the features of uncertain habitat type or along transects though gradients between habitat types. The GIS points were converted to GPS waypoints using Trimble Pathfinder Software and were navigated to in the field using a Trimble GeoExplorer 3 GPS data logger. A benthic habitat characterization was conducted at each site by snorkeling, free diving, or via observations from the surface where water depth and clarity permitted. GPS data were collected at each location and site ID, depth, habitat type, zone and the method used to make the assessment were recorded. The ground validation data were incorporated into the second draft of each map.

**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)

- 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
- 7.2. Name of organization of facility providing data access
  - 7.2.1. If data hosting service is needed, please indicate
- 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/39071>

**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](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:****7.2.1. If data hosting service is needed, please indicate:****7.2.2. URL of data access service, if known:**

[http://coastalscience.noaa.gov/datasets/ccma/bioge/benthic/pr\\_shp/p\\_rico.zip](http://coastalscience.noaa.gov/datasets/ccma/bioge/benthic/pr_shp/p_rico.zip)

**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):**

National Centers for Coastal Ocean Science - Silver Spring, MD

**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.*