

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:

Assess/monitor effects of MPA status on reef fish populations and spawning aggregations in the Tortugas Ecological Reserves

### 1.2. Summary description of the data:

We supply abundance information of fish species along multiple randomly oriented transects at the lowest possible taxonomic level. This information is collected from multiple stations on an annual or biennial basis.

### 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 to null

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

W: -83.15, E: -82.95, N: 24.7, S: 24.4833

Florida Keys National Marine Sanctuary - Tortugas Ecological Reserves

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

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

Michael Burton

**2.2. Title:**

Metadata Contact

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

Michael.Burton@noaa.gov

**2.5. Phone number:**

252-728-8756

**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:**

Michael Burton

**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?**

Yes

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

0

**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:

- South Reserve: Once in the field, the boat captain navigates to previously selected station locations using a vessel-mounted GPS unit. On-site, divers are deployed on the exact station GPS numbers and maintain contact with each other throughout the entire census. One diver is responsible for collecting data on the fish

communities utilizing the belt-transect visual census technique over an area of 30m length X limit of visibility width. The belt-transect diver obtains a random compass heading from his data sheet upon arrival at the bottom, swims that heading for a random number of fin kicks written on his pre-printed data sheet, and then swims out his 30 m transect tape along a second random compass heading course, identifying and counting all snappers, groupers, and other major predator species he sees to the limit of visibility. Visibility is measured as the tape is reeled in so that a density calculation can be made later. Once the transect is finished and the diver is back at his starting point, he consults his data sheet for the next random compass heading and random number of fin kicks for the next transect and repeats the process. Up to four transects can be done at each station, depending on time and air supply. Visibility at each site must be sufficient to allow for identification of fish at a minimum of 3m away or the transect counts will be aborted. The second diver accompanies the primary counter, staying behind and off to the side of him, so as not to disturb the count. He may be tasked to do other data collection, such as species diversity, gross habitat characterizations, etc.

- North Reserve: Once in the field, the boat captain navigates to previously selected station locations using a vessel-mounted GPS unit. On-site, divers are deployed on the exact station GPS numbers and maintain contact with each other throughout the entire census. One diver is responsible for collecting data on the fish communities utilizing the belt-transect visual census technique over an area of 30m length X limit of visibility width. North Reserve habitat is configured differently, in a more spur and groove style of reef alignment, and thus the transects are conducted differently from the way they are in the South Reserve. Upon arrival on the bottom, divers swim to the ledge-sand interface. The data collector will swim one transect to the left (270 degrees while facing the reef), the next transect to the right (90 degrees while facing the reef), one transect to the diagonal left up the reef slope (315 degrees) and one transect to the diagonal right up the reef slope (45 degrees). All other data collection strategies employed in the South Reserve dives are used here. The habitat is never altered in any manner by lifting or moving structure, as the observer is recording only fish he sees out in the open. The diver is instructed to look forward toward to the end of the transect and to his sides, but not behind him. On-site, no attempt to avoid structural features within a habitat such as a sand patch, coral head, an anchor or a derelict fish trap should be made as these features affect fish communities and are "real" component of the habitats. The only instances when the transect should deviate from the designated path is to stay above 130 ft (limitations imposed by diving). The typical transect should take only about 5 minutes regardless of habitat type or number of animals present, as we are counting only the larger more visible species.

**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):**

Visually proof data sheets as they are key-entered into computer database.

**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)
- 7.2. Name of organization of facility providing data access

**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/24281>

**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?**

Yes

**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:**

No

**7.2.2. URL of data access service, if known:**

**7.3. Data access methods or services offered:**

Access is through the URL provided in the metadata.

**7.4. Approximate delay between data collection and dissemination:**

365

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

N/A

**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)*

NCEI\_NC

**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):**

Southeast Fisheries Science Center - Miami, FL

**8.3. Approximate delay between data collection and submission to an archive facility:**

365

**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*

The data resides on a secure government network requiring multi factor authentication for network access.

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*