

*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:**

Density of Cetaceans and Turtles in the Gulf of Mexico

### **1.2. Summary description of the data:**

The goal of this research was to develop Gulf-wide cetacean and sea turtle spatial density models (SDMs) based on line-transect surveys conducted in the U.S. waters of the Gulf of Mexico. Surveys used to develop the SDMs for species occupying continental shelf and oceanic waters of the Gulf of Mexico were conducted during the Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS) project and comparable-prior-year surveys. Aerial survey data from seasonal surveys conducted during 2011/2012 and 2017/2018 (GoMMAPPS Surveys) were used to develop SDMs for cetacean and sea turtle species over the continental shelf. Data collected from vessel surveys, including the two-team surveys conducted during summer 2017, winter 2018, and summer/fall 2018 (GoMMAPPS Surveys) and 2003, 2004, and 2009 (that included only one survey team), were used to develop SDMs for cetaceans in oceanic waters. In addition, for Rice's whale, surveys conducted in 2018 and 2019 were also used in developing the SDMs specific for this species.

Habitat-based SDMs were developed using a generalized additive modeling (GAM) framework to determine the relationship between cetacean and sea turtle abundance and environmental variables. Samples for modeling were created by summarizing survey effort and environmental variables with a hexagon grid developed by the Environmental Protection Agency expanded to fit the entire Gulf of Mexico. The grid was created in a Lambert azimuthal equal area projection and the area of each hexagon is 40 km<sup>2</sup>. For all hexagons that contained survey effort segments, cetacean and sea turtle density was calculated using total number of animals observed, segment effort length and average sighting condition covariates in the hexagon, and the parameters estimated in distance sampling abundance models. A total of 19 SDMs were developed for individual or groups of species. For each modeled taxon, predictions were made for the period 2015-2019 on the hexagon grid, summarized into mean monthly densities for the 5-year period, and then resampled into traditional raster grids. Models were extrapolated beyond the U.S. waters of the Gulf of Mexico to provide insight into potential high density areas throughout the Gulf. However, extrapolations of this type

should be interpreted with caution. This website contains the predictions as raster grids. The hexagon predictions are available as shapefiles in NCEI Accession 0256800. These models can be used by managers and federal agencies to assist with population assessments, environmental impact analyses, and conservation of these species.

As of October 2022, these are the latest available models for the Gulf of Mexico produced from NOAA Southeast Fisheries Science Center (SEFSC) surveys. The prior series of Gulf of Mexico models, produced by a collaboration between the Duke Marine Geospatial Ecology Lab (MGEL) and SEFSC and published as Roberts et al. 2016, are archived here. As of October 2022, SEFSC and MGEL consider the Roberts et al. 2016 models obsolete and recommend the GoMMAPPS models available here be used instead.

**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:**

2003 to 2019

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

W: -97.65, E: -80.366, N: 30.983, S: 17.766

**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:**

Laura A Dias

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

**2.4. E-mail address:**

[laura.dias@noaa.gov](mailto:laura.dias@noaa.gov)

**2.5. Phone number:**

(305) 361-4269

**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:**

Lance Garrison

**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?**

No

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

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):*

**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)
- 5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible
- 5.2. Quality control procedures employed
- 7.4. Approximate delay between data collection and dissemination
- 8.2. Data storage facility prior to being sent to an archive facility
- 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/70316>

**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:**

OBIS-SEAMAP (OBIS-SEAMAP)

**7.2.1. If data hosting service is needed, please indicate:**

Already Provided at OBIS-SEAMAP

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

[https://seamap.env.duke.edu/seamap-models-files/SEFSC/GOM\\_all\\_models\\_20221005.zip](https://seamap.env.duke.edu/seamap-models-files/SEFSC/GOM_all_models_20221005.zip)

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

Download from provided links

**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)*

WORLD\_DATA\_CENTER\_WDC\_FACILITY

**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):****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.*