

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:**

Management-Strategy Evaluation of the Main Hawaiian Islands with the Atlantis Ecosystem Model: hind-cast simulations and ecosystem forecasting under climate scenarios

1.2. Summary description of the data:

The data described here is the Main Hawaiian Islands (MHI) Atlantis Ecosystem model output data for biomass and catch trends of various functional groups under different scenarios. Hind-cast simulations were run for model validation, and forecast simulations were run for ecological forecasting under different climate change scenarios. The data used in the model comes from benthic and coral reef fish surveys conducted by Pacific Island Fisheries Science Center (PIFSC) RAMP cruises, recreational fishery data from MRIP, commercial fishery data administered by WPacFIN, bottomfish fishery-dependent and independent data from PIFSC, and sea turtle and monk seal data from the PIFSC. Model simulations of ecological forecasting were carried out and included 50 year forecast (2020-2070) simulations with and without the predicted effects of climate change (ocean warming and ocean acidification) evaluating changes in ecological and social state components.

The MHI Atlantis Ecosystem Model incorporates the coral-specific modules that were developed for the Guam Atlantis model. The model can be used for management-strategy evaluation by simulating existing and alternative fisheries and land-use regulations and comparing the results under different management and environmental change scenarios (e.g. in terms of fish biomass, coral cover, fisherman participation). A hindcast simulation is used for model validation and the model is used for ecosystem forecasting under two climate change scenarios. Data can be accessed via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive, accession # 0240826.

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:

1995 to 2019, 2020 to 2070

1.5. Actual or planned geographic coverage of the data:

W: -160.5, E: -154.806, N: 23.185, S: 18.919

Main Hawaiian Islands (MHI), including Hawaii, Kahoolawe, Kauai, Maui, Oahu, Molokai, Niihau, and Lanai.

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:

Brooke Olenski

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

brooke.olenski@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:

Mariska Weijerman

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):

Lineage Statement:

The Atlantis Ecosystem Model framework (developed by CSIRO: <http://atlantis.cmar.csiro.au/>) was used as the model platform.

Process Steps:

- All process steps are detailed in a Technical Memorandum: Weijerman, M. 2020. Development of an Atlantis model for Hawai'i to support ecosystem-based management. U.S. Dept. of Commerce. NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-##, 137 p. doi:10.7289/V5/TM-PIFSC-##. (Citation: Weijerman, M. 2020. Development of an Atlantis model for Hawai'i to support ecosystem-based management. U.S. Dept. of Commerce. NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-113 doi.org/10.25923/cwqb-1z04)

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):

Sensitivity analysis and model skill assessments have been performed. These showed that the model is sensitive to plankton and shark biomass.

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)

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/55245>

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-](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

[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:**

Pacific Islands Fisheries Science Center (PIFSC)

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

<https://accession.nodc.noaa.gov/0240826>

<https://accession.nodc.noaa.gov/0240826>

<https://accession.nodc.noaa.gov/0240826>

<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>
<https://accession.nodc.noaa.gov/0240826>

7.3. Data access methods or services offered:

This specific dataset can be obtained via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive, accession # 0240826.

The biological diver survey data can be obtained from the Ecosystem Sciences Division at PIFSC.

The MRIP and commercial fisheries data requires a written confidentiality agreement which can be obtained from the Fisheries Research and Monitoring Division at PIFSC.

The monk seal data can be obtained from the Protected Species Division at PIFSC.

All other data used in the MHI Atlantis ecosystem model was derived from published reports or articles.

7.4. Approximate delay between data collection and dissemination:

NA

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)

NCEI_MD

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):

Pacific Islands Fisheries Science Center - Honolulu, HI

IRC

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

Unknown

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

Model data is stored on an external hard drive and backed up to a server at PIFSC weekly.

9. Additional Line Office or Staff Office Questions

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