

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:

The effects of elevated temperature and acidification on the biodiversity of coral reef cryptobenthic communities that recruited Autonomous Reef Monitoring Structures placed within mesocosms at the Hawaii Institute of Marine Biology between July 2016 and June 2018

### 1.2. Summary description of the data:

The data described here includes cytochrome oxidase I (COI) DNA metabarcoding data collected from modified Autonomous Reef Monitoring Structures deployed in mesocosms at the Hawaii Institute of Marine Biology as part of an Ocean Acidification Program funded project granted to NOAA's Pacific Islands Fisheries Science Center (PIFSC), Ecosystem Science Division (formerly known as the Coral Reef Ecosystem Division). Treatments in this fully factorial mesocosm experiment included present-day pH and temperature (Ambient treatment), ocean acidification (-0.2 pH units - Acidified treatment), ocean warming (+2 Â°C - Heated treatment), and future ocean combined stressors (-0.2 pH units and +2 Â°C - Acidified-Heated treatment). ARMS were placed in replicated mesocosms for each treatment on July 2016 and removed June 2018. Upon removal, the ARMS units were individually scraped clean, contents homogenized, and 10 grams were subsampled from each unit for COI DNA metabarcoding.

### 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:

2016-07-06 to 2018-06-14

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

W: -155.068611111111, E: -155.068611111111, N: 19.729444444444, S: 19.729444444444

Hawaii Institute of Marine Biology on Coconut Island in Kaneohe Bay within the island of Oahu.

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

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

fastq files

**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:**

Molly A Timmers

**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"):**

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:

These data represent the first laboratory study to evaluate the richness and composition of an entire coral reef community that developed over a multi-annual time frame under predicted future ocean conditions.

Process Steps:

- For mesocosm set-up, ARMS processing, DNA extraction, amplification, and sequencing see Timmers M, Jury C, Vicente J, Webb M, and Toonen RJ (In Review) Coral reef biodiversity shuffles but does not decline under the combined stressors of experimental ocean warming and acidification. PNAS.
- To obtain the sequencing data from this study, go to [https://www.ncbi.nlm.nih.gov/biosample?LinkName=bioproject\\_biosample\\_all&from\\_uid=649058](https://www.ncbi.nlm.nih.gov/biosample?LinkName=bioproject_biosample_all&from_uid=649058) which takes you to the National Center for Biotechnology Information (NCBI) which hosts Genbank, a genetic sequence database collection of all publicly available DNA sequences. To download a sequence file, click on the SRA link associated with each entry. Click on the data access tab in the new link and select the highlighted name to download the sequence file.
- Once sequences are downloaded, you may choose to conduct the bioinformatics in a numbers of ways based on your preference. To process the samples in the same way as was conducted by NOAA, please refer to the supplementary information in the paper, Coral reef biodiversity shuffles but does not decline under the combined stressors of experimental ocean warming and acidification.

**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):

See Timmers et al. XXX

## 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/61283>

**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:**

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://www.ncbi.nlm.nih.gov/biosample?LinkName=bioproject\\_biosample\\_all&from\\_uid=649058](https://www.ncbi.nlm.nih.gov/biosample?LinkName=bioproject_biosample_all&from_uid=649058)

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

Data can be accessed online via Genbank.

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

Unknown

**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)*

OTHER

**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

**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*

NOAA IRC and NOAA Fisheries ITS resources and assets.

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

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