

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:

National Coral Reef Monitoring Program: Water Temperature Data from Subsurface Temperature Recorders (STRs) deployed at coral reef sites in the Hawaiian Archipelago from 2005 to 2024

1.2. Summary description of the data:

Water temperature time series data provided in this data set are from subsurface temperature recorders (STRs) deployed at permanent coral reef sites across the Hawaiian Archipelago by the NOAA Pacific Islands Fisheries Science Center (PIFSC), Ecosystem Sciences Division (ESD; formerly the Coral Reef Ecosystem Division) as part of the NOAA National Coral Reef Monitoring Program (NCRMP). The STRs were deployed for a period of 2-8 years between 2005 to 2024 and recovered during ESD-led NCRMP missions to the Hawaiian Archipelago in 2013, 2016, 2019, and 2024.

The high-accuracy temperature loggers made by Sea-Bird Electronics (SBE) and RBR Ltd. USA were weighted and strapped to solid substrate on the seafloor by SCUBA divers at depths ranging from 0 to 30 meters at permanent monitoring sites established by ESD's Ocean and Climate Change team. Sample interval of STRs varies between 1 minute and 60 minutes. The current (2024) sample interval is typically 5 minutes. Each time an STR was recovered another STR was typically deployed at the same location and depth and was assigned the same OCC_SITEID. Data were downloaded using the SeaBird SeaTerm V2 or RBR Ruskin V2 program and post-processed using R to trim "out of water" data.

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:

2005-03-02 to 2013-09-13, 2013-07-13 to 2016-09-25, 2013-07-14 to 2019-09-05, 2016-09-04 to 2024-08-25

1.5. Actual or planned geographic coverage of the data:

W: -178.3842, E: -154.8176, N: 28.45923, S: 18.922527

The Hawaiian Archipelago, including both the Main Hawaiian Islands (Hawaii, Kauai, Maui, Oahu, Molokai, Niihau, Lanai, as well as Lehua, and Molokini) and the

Northwestern Hawaiian Islands (French Frigate Shoals, Laysan, Lisianski, Pearl and Hermes, and Kure)

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.)
Instrument: RBR Solo3T, SBE 39plus, SBE 56

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:

Annette M DesRochers

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

annette.desrochers@noaa.gov

2.5. Phone number:

(808)725-5461

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:

Hannah C Barkley

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:

Water temperature data are collected using high-accuracy subsurface temperature recorders (STRs) made by SeaBird Electronics (SBE). STRs are deployed on the reef for a period of 1-3 years (occasionally up to 6 or 8 years if the instrument was not retrieved on the following mission) at depths ranging from 0-30 m at permanent monitoring sites established by the NOAA Fisheries, Ecosystem Sciences Division.

Process Steps:

- STRs are attached to a mounting bracket, weighted, and strapped to solid substrate (attached dead coral or rock) at the benthos by SCUBA divers using cable ties. A GPS point is taken by surface support personnel at the surface float that is positioned directly above the instrument during the dive. The depth of the instrument is taken by photographing a diver depth gauge next to the serial number of the instrument after installation. On recovery, a second waypoint and depth are taken in the same manner as the deployment before cutting the instrument free. When a STR is recovered, typically another STR is deployed in the same location and the same depth and is assigned the same OCC_SITEID (as long as the coordinates are within 100-m diameter and 3-m depth cylinder of the pre-existing OCC_SITEID).
- Data are downloaded using the SeaBird SeaTerm V2 or RBR Ruskin program, and then post-processed in R. Data from when the instrument was turned on but not yet deployed are removed, and data from the period between removal and data download are also removed.

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):

Quality control is conducted by PIFSC ESD personnel after the data is downloaded from the instrument during the cruise, when the data are post-processed, again after it is migrated to the database, and finally when it is packaged and submitted to the NOAA archive.

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?

Yes

6.1.1. If metadata are non-existent or non-compliant, please explain:

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/37070>

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

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:

NOAA National Centers for Environmental Information (NCEI)

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/0300489
https://accession.nodc.noaa.gov/0300489
https://accession.nodc.noaa.gov/0300489
https://accession.nodc.noaa.gov/0162216
https://accession.nodc.noaa.gov/0162219
https://accession.nodc.noaa.gov/0210383
https://accession.nodc.noaa.gov/0210383
https://accession.nodc.noaa.gov/0210383
https://accession.nodc.noaa.gov/0162216
https://accession.nodc.noaa.gov/0162216
https://accession.nodc.noaa.gov/0162219
https://accession.nodc.noaa.gov/0162219

7.3. Data access methods or services offered:

Data can be accessed online via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive.

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)

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

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

The data is captured in several locations: files stored on the cruise server during the mission and the PIFSC network, and data are imported into the PIFSC Oracle database. The cruise server is regularly backed up by the cruise data manager while at sea, and the PIFSC network and Oracle database are maintained and regularly backed up by PIFSC ITS.

9. Additional Line Office or Staff Office Questions

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