

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: Shallow Water and Offshore Conductivity-Temperature-Depth (CTD) Profiles for select coral reef locations across the Hawaiian Archipelago since 2013

1.2. Summary description of the data:

Nearshore and offshore Conductivity-Temperature-Depth (CTD) casts were collected at sites in the Hawaiian Archipelago as part of the National Coral Reef Monitoring Program (NCRMP). These surveys were conducted by the NOAA Pacific Islands Fisheries Science Center (PIFSC), Ecosystem Sciences Division (ESD; formerly the Coral Reef Ecosystem Division) during ESD-led NCRMP missions in the main Hawaiian Islands (MHI) and Northwestern Hawaiian Islands (NWHI) in 2013, 2015, 2016, 2019, 2021, and 2024. The CTD casts provide vertical profiles (downcast only) of water column conductivity, temperature, and pressure with calculated depth, salinity, and water density.

Nearshore CTD (Sea-Bird Electronics SBE19plus in 2013, 2015, and 2016; RBR Concerto 3 in 2019, 2021, and 2024) casts were collected from a small boat using a hand line and held just under the surface for 1 minute. Data were collected by lowering the CTD in profiling mode at an even pace (descent rate ~0.5 to 0.75 meters per second) to a maximum depth of ~30 m. Offshore (~10-15km from land) CTD profiles were collected from the ship using a SBE19plus (2013, 2015, 2016), RBR concerto 3 (2019, 2024 NWHI), or SBE911plus (2024 MHI). Offshore casts were typically conducted to a maximum depth of ~10m, though deeper profiles (down to ~500m) were collected at some locations and years. Data processing was performed using Sea-Bird Scientific SBE or RBR Ruskin Data Processing Software and the R package "oce".

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:

2016-07-14 to 2016-09-27, 2013-10-18 to 2013-10-30, 2013-09-05 to 2013-09-18, 2015-07-31 to 2015-08-19, 2013-07-13 to 2013-07-14, 2013-08-02 to 2013-08-22, 2019-08-27 to 2019-09-05, 2019-04-21 to 2019-08-06, 2021-05-19 to 2021-07-16, 2024-05-30 to 2024-06-11, 2024-07-

04 to 2024-08-28

1.5. Actual or planned geographic coverage of the data:

W: -178.5583, E: -154.6987, N: 28.4604, S: 18.92599

Extent of CTD observations in the Hawaiian Archipelago in 2013, 2015, 2016, 2019, 2021, and 2024 across the Main Hawaiian Islands (MHI; Oahu, Niihau, Molokai, Maui, Lanai, Kauai, Kahoolawe, Big Island) and Northwestern Hawaiian Islands (NWHI; French Frigate, Kure, Lisianski, Maro, and Pearl & Hermes).

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 Concerto3 CTD, SBE 19plus V2, Sea-Bird SBE-911plus

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:

Lori H Luers

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

lori.luers@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:

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:

Following a 1 minute soak, CTDs are usually deployed 5-10 feet above the reef at depths ranging from 0-30 m at fixed and stratified random monitoring sites established by the NOAA Fisheries, Ecosystem Sciences Division.

Process Steps:

- The CTD was deployed from a small boat using a hand line and held at approximately 1-m depth for 1 minute to cycle water through the instrument and tubing (SBE19) or equilibrate the internal thermistor with ambient seawater (RBR). Afterwards, the CTD is lowered in profiling mode, at an even, hand-over-hand pace (descent rate ~0.5 to 0.75 meters per second) to a depth roughly 5-10 feet above the reef (maximum depth of 30m). Once the target depth is reached, the CTD is immediately pulled back on board. A GPS waypoint is taken at the beginning of the cast to mark the position and time. (Citation: RK Hoeke, JM Gove, E Smith, P Fisher-Pool, M Lammers, D Merritt, OJ Vetter, CW Young, KB Wong & RE Brainard (2009) Coral reef ecosystem integrated observing system: In-situ oceanographic observations at the US Pacific islands and atolls, Journal of Operational Oceanography, 2:2, 3-14, DOI: 10.1080/1755876X.2009.12027737)
- Raw profile data from the SBE19+ are downloaded from the CTD as .HEX and converted to .CNV using the manufacturer-provided instrument-specific configuration file in Sea-Bird Scientific SBE Data Processing Software. Raw profile data from the RBR Concerto3 are downloaded from the CTD as .RSK and converted to .CSV using the manufacturer-provided instrument-specific Ruskin Software. Profiles are then trimmed to downcast only, any erroneous data spikes are filtered out, the surface equilibration period is removed, and data are binned into 1-m depth bins in R using the package "oce". Processed profile data are then exported as .CSV files.

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):

The data is quality controlled by NOAA PIFSC Ecosystem Sciences Division (ESD) personnel after the data is downloaded from the instruments, prior to and after the data are migrated to the PIFSC enterprise Oracle database, and once again when the data are submitted to the NOAA National Centers for Environmental Information.

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/36818>

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/0161170>

<https://accession.nodc.noaa.gov/0161170>

<https://accession.nodc.noaa.gov/0161171>

<https://accession.nodc.noaa.gov/0161171>

<https://accession.nodc.noaa.gov/0161327>

<https://accession.nodc.noaa.gov/0161327>

<https://accession.nodc.noaa.gov/0227711>

<https://accession.nodc.noaa.gov/0227711>

<https://accession.nodc.noaa.gov/0251327>

<https://accession.nodc.noaa.gov/0251327>

<https://accession.nodc.noaa.gov/0300661>

<https://accession.nodc.noaa.gov/0300661>

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_CO

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 post-cruise into the PIFSC enterprise Oracle database. The cruise server is regularly backed up by the cruise data manager while at sea, and the PIFSC network is 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.