

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:**

Towed-Diver Observations in the Main Hawaiian Islands to Assess the Mass Coral Bleaching Event in November 2015

1.2. Summary description of the data:

A team from the Pacific Islands Fisheries Science Center (PIFSC), Coral Reef Ecosystem Program (CREP) deployed on a two-week research cruise in November 2015 to evaluate the impacts of the 2015 mass coral bleaching event in the Main Hawaiian Islands via towed-diver surveys. Areas surveyed included south Oahu, west Maui, Lana'i, and west Hawaii island. Over the course of 10 survey days, the team surveyed approximately 90 km of 15-m wide transects at depths ranging from 2 to 10 m.

Data provided in this dataset include visual estimates recorded by towed divers of percentage of live coral that was pale and bleached, as well as presence/absence data of condition by generic composition. Analysis of observer data reveals estimates of live coral affected by the event (pale or bleached) show a regional mean of 38.8% (+/- 1.96% CI95), with large variation in impact apparent between transects on the same island separated by as little as 13 km.

Additionally, instruments mounted on the towboards collected other in-situ data that are documented separately. A downward-facing DSLR camera with strobes collected photographic quadrat data by capturing an image of the benthos at 15-second intervals during the surveys. Oceanographic data was collected continuously throughout each survey with a suite of mounted sensors recording conductivity, temperature, depth, fluourometry (chlorophyll-a), turbidity and dissolved oxygen.

The towed-diver visual estimate data can be accessed online via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive.

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:

2015-11-03 to 2015-11-18

1.5. Actual or planned geographic coverage of the data:

W: -157.94722922, E: -155.82934199, N: 21.30306893, S: 19.74853696

Extent of underwater surveys in Main Hawaiian Islands in November 2015.

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:**

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:

Noah Pomeroy

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):

Process Steps:

- A pair of scuba divers is towed about 1 m above the reef roughly 30 m behind a small boat at a constant speed of about 1.5 kt. Both divers collect visual observations of the benthos. Towboards are connected to the small boat by a bridle and towline. A tow survey is typically 50 minutes and covers about 2 km of habitat. Each survey is divided into 5-minute segments, with data recorded per segment to allow observations to be georeferenced within the ~200 m covered during each 5-min segment. Throughout a survey, the latitude and longitude of the survey track is recorded at 5-second intervals on the small boat with a global positioning system (GPS). Following a survey, towed-diver tracks are generated using this GPS data and a layback algorithm to account for the position of the diver relative to the small boat. For each 5-minute tow segment, each diver notes live coral cover, the percentage of that cover that is noticeably pale, and the percentage of that cover that is bleached. They also record the presence/absence of condition classes of each of the five major coral genera/morphologies found in Hawaiian waters, specifically, Pocillopora, Montipora, Porites massive, Porites branching, Pavona, and other. Each genus is also noted as the presence/absence of the conditions: healthy, pale, bleached, and recently dead.

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):

Observations, including species identification and coverage area estimates were periodically checked during the expedition for consistency between divers. Data entry was usually conducted on the same day as the surveys using MS Access. Data was quality controlled by the divers using a two-person system. The data was then run through rigorous quality control checks by the data management team before the data was migrated to the Oracle database. Given the size of the data set, there remains some possibility of typographical or other errors.

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/32588>

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:

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/0157624>

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

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.