

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:

Environmental Monitoring of Coral Bleaching and Disease in the Hawaiian Islands; Belt Transect Surveys and Disease Assessments of Coral Populations in Hawaii, Maui, and Oahu from March 8, 2010 to November 8, 2011

1.2. Summary description of the data:

Coral belt transect surveys, focused at quantifying the relative abundance, density, and size-class distribution of the anthozoan and hydrozoan corals, as well as the condition and health state of the coral populations were conducted around the islands of Maui, Hawaii, and Oahu by the NOAA Coral Reef Ecosystem Program and the Hawaii Division of Aquatic Resources (DAR) from March 8, 2010 to November 8, 2011.

The surveys were conducted along two pre-selected transect lines. For coral observations the transect length was 12 m long and the transect width was 1 m wide (0.5 m on each side of the transect line). For coral condition and health observations, the transect length was between 12.5 and 25 m long and the transect width was 1 m, 2 m or 4 m wide (0.5 m, 1.0 m, or 2.0 m on each side of the transect line). The surveyed area was 24 m² per site for the coral observations, and ranged from 25 m² to 200 m² per site for the disease observations.

Within each transect 1-m segments were surveyed, whereby in each segment all coral colonies whose center fell within 0.5 m of either side of the transect line were identified to the lowest taxonomic level possible (genus or species) and colony size visually estimated and binned by its maximum diameter in one of 7 size classes: 0-5 cm, 5-10 cm, 10-20 cm, 20-40 cm, 40-80 cm, 80-160 cm, or >160 cm.

When a coral colony exhibited signs of disease or compromised health, additional information was separately recorded. Within each of the two transects, all diseased coral colonies whose center fell within 0.5–2 m on each side of each transect line were carefully examined, measured (length and width of the colony in centimeters, when survey time allowed), identified to the lowest taxonomic level possible, and assigned to one of several types of afflictions, including coral and algal diseases, bleaching, infections, infestations, discolorations, predation, pigmentation responses, skeletal growth anomalies, and tissue loss. Severity of the affliction (mild, moderate, marked,

severe, acute) was also recorded for a subset of bleaching observations only. Photographic documentation was also captured (archived and documented separately).

Raw survey data includes species presence, colony counts per taxon, colony size (binned sizes for coral observations, colony width and length for a subset of disease observations), affliction observed, and severity of condition (for observations of bleached corals only).

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:

2010-03-08 to 2010-05-06, 2010-07-06 to 2010-08-10, 2010-09-28 to 2010-11-11, 2011-02-01 to 2011-05-12, 2011-08-23 to 2011-11-08

1.5. Actual or planned geographic coverage of the data:

W: -157.82596, E: -155.84877, N: 21.47695, S: 19.36916

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:

Bernardo Vargas-Angel

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:

Belt transect surveys of corals and coral diseases are investigations that provide a high degree of taxonomic resolution for coral. The majority of surveys were conducted at depths between 3 and 48 m. The selection of survey sites was made in close consultation local partners.

Process Steps:

- The surveys were conducted along two pre-selected transect lines. For coral observations the transect length was 12 m long and the transect width was 1 m wide (0.5 m on each side of the transect line). For coral condition and health observations, the transect length was between 12.5 and 25 m long and the transect width was 1 m, 2 m or 4 m wide (0.5 m, 1.0 m, or 2.0 m on each side of the transect line). The surveyed area was 24 m² per site for the coral observations, and ranged from to 25 m² to 200 m² per site for the disease observations. Within each transect 1-m segments were surveyed, whereby in each segment all coral colonies whose center fell within 0.5 m of either side of the transect line were identified to the lowest taxonomic level possible (genus or species) and colony size visually estimated and binned by its maximum diameter in one of 7 size classes: 0-5 cm, 5-10 cm, 10-20 cm, 20-40 cm, 40-80 cm, 80-160 cm, or >160 cm. When a coral colony

exhibited signs of disease or compromised health, additional information was separately recorded. Within each of the two transects, all diseased coral colonies whose center fell within 0.5–2 m on each side of each transect line were carefully examined, measured (length and width of the colony in centimeters, when survey time allowed), identified to the lowest taxonomic level possible, and assigned to one of several types of afflictions, including coral and algal diseases, bleaching, infections, infestations, discolorations, predation, pigmentation responses, skeletal growth anomalies, and tissue loss. Severity of the affliction (mild, moderate, marked, severe, acute) was also recorded for a subset of bleaching observations only. Photographic documentation was also captured

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 of the data occurred at a few stages from data entry to data ingestion into the Oracle database. Data entry is conducted using a data entry interface with several data controls employed, and are quality controlled by individual divers checking entry errors at a separate time by checking the data entered against the physical data sheets. The data was then run through rigorous quality control checks by the data management team before the data was migrated to the Oracle database. There are also several queries in the MS Access / Oracle database to flag errors based on pre-defined criteria. 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/25285>

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/0168912>

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<https://accession.nodc.noaa.gov/0168912>

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.