

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:

Pacific Reef Monitoring and Assessment Program: Line-Point-Intercept (LPI) Surveys for Benthic Cover at Coral Reef Sites across the Pacific Ocean from 2005 to 2012

1.2. Summary description of the data:

A REA survey is a collection of inter-disciplinary protocols for gathering data pertaining to ecologically relevant biological components of a reef habitat over small spatial scales. A key facet of a REA survey includes specialists in different disciplines, including Fish, Coral, Algae, and Invertebrates. The REA surveys are conducted along a set of transect lines that are laid out by the first team to enter the water (i.e. the fish team). In this way, all of the biotic observations are referenced with regard to the same spatial coordinates, producing a more integrated biological description of a reef community than would any single, specialized survey.

At each REA survey site, the Line-Point-Intercept methodology is implemented to quantitatively document the benthic cover along two consecutively placed, 25 m line transects (with a 5 m inter-transect distance). The LPI diver determines the benthic composition at pre-determined intervals along the transect line. During the initial years of RAMP (2005-2008) LPI surveys were conducted at 50-cm intervals for a total of 50 data points per transect; subsequently (2010–2012) LPI surveys were conducted at 20-cm intervals for a total of 125 data points per transect.

All living benthic elements (e.g., coral, algae, and other sessile invertebrates) are identified to the lowest taxonomic level possible, often substituting functional group categories for turf algae and crustose coralline algae when identification in the field is extremely difficult. Raw survey data consist of counts of benthic elements, including but not limited to live coral, dead coral, carbonate pavement, sand, coral rubble, fleshy macroalgae, crustose coralline algae, turfalgae, as well as other sessile invertebrates along the two transects. The data allows for the assessment and monitoring of community structure and composition, and provide the basis for computing quantitative estimates of percent benthic cover at higher taxonomic levels like functional group (live coral, macroalgae, turf algae) or on a finer taxonomic resolution such as genus level.

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:

2006-02-11 to 2006-03-08, 2008-02-18 to 2008-03-18, 2010-02-17 to 2010-03-20, 2012-03-21 to 2012-04-26, 2006-07-27 to 2006-08-19, 2008-10-17 to 2008-11-13, 2010-10-08 to 2010-11-04, 2006-09-03 to 2006-10-01, 2009-09-19 to 2009-10-16, 2007-09-21 to 2007-10-08, 2008-09-14 to 2008-10-09, 2010-09-07 to 2010-09-24, 2005-10-03 to 2005-10-08, 2007-05-25 to 2007-06-08, 2009-04-18 to 2009-05-05, 2009-04-05 to 2009-04-14, 2011-04-07 to 2011-05-09, 2007-05-12 to 2007-05-22, 2005-10-18 to 2005-10-22, 2006-01-18 to 2006-02-01, 2006-03-20 to 2006-04-03, 2007-04-30 to 2007-05-03, 2008-01-27 to 2008-02-09, 2008-03-26 to 2008-04-07, 2009-03-22 to 2009-03-26, 2010-01-24 to 2010-04-19, 2011-03-23 to 2011-03-26, 2012-03-02 to 2012-05-19

1.5. Actual or planned geographic coverage of the data:

W: -171.092233, E: -168.1377763, N: -11.04566831, S: -14.55963914

American Samoa

W: -160.545217, E: -154.8805369, N: 22.23061443, S: 18.965417

Main Hawaiian Islands

W: -178.378433, E: -164.6919167, N: 28.4546, S: 23.56496667

Northwestern Hawaiian Islands

W: 144.42387, E: 145.8529194, N: 20.5532, S: 12.8113

Mariana Archipelago

W: -176.6241332, E: -159.97264, N: 16.78817, S: -0.3825

Pacific Remote Island Areas (excluding Wake Atoll)

W: 166.59378, E: 166.6604718, N: 19.3254, S: 19.26829571

Wake Atoll

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):

Process Steps:

- REA surveys are investigations that provide a high degree of taxonomic resolution for coral, algae, and other macroinvertebrate communities. The majority of REA surveys were conducted along the forereef slopes of individual islands at depths

between 10 and 20 m. However, additional habitats including lagoonal-type patch reef and offshore oceanic banks were surveyed when they existed. During REA surveys, biological assessment teams follow highly structured protocols that are repeated at each REA site. Upon arrival at an REA site, divers entered the water and deployed two 25 m transect lines which are shared with coral surveys that gather community structure, diversity, recruitment, and health status data. The sampling effort takes between 60 and 80 min to complete. The selection of REA sites was made in close consultation with local management agencies. Factors considered during REA site selection included: (1) ensuring a range of sample sites representative of the benthic and reef fish habitats around each island; (2) selecting a mixture of sites within and outside of marine protected areas; (3) selecting a mixture of both 'impacted' and 'least impacted' sites; (4) selecting some sites adjacent to local villages; and (5) selecting a number of sites that could be compared to and complement previous assessment and monitoring work as well as future coral reef monitoring proposed by CRAG and local agencies. It is important to note that access to REA sites can be limited by wave exposure, weather conditions, and other environmental factors such as currents, which can affect the ability to re-survey sites between years. Transect placement was guided by: (1) a focus on hard-bottom communities; (2) deploying lines along an isobath to the extent possible at each site, and (3) laying the transect lines into the prevailing current.

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 are periodically checked during expeditions for consistency. Data entry is usually conducted on the same day as the surveys using a data entry interface with several data controls employed, and are quality controlled by the observer. Following a mission, the data is then run through rigorous quality control checks by the data management team before the data are 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)

- 7.2. Name of organization of facility providing data access
- 7.2.1. If data hosting service is needed, please indicate

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/25261>

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:****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/0163748>

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.