

*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 Assessment and Monitoring Program: Rapid Ecological Assessment Quadrat Surveys of Corals around the Marianas Islands from 2003 to 2007

### **1.2. Summary description of the data:**

The Pacific Reef Assessment and Monitoring Program (Pacific RAMP), established by the Coral Reef Ecosystem Program (CREP) of the NOAA Pacific Islands Fisheries Science Center (PIFSC), is tasked with documenting and understanding the status and trends of coral reef ecosystems in the U.S. Pacific. Pacific RAMP involves an interdisciplinary series of integrated ecosystem observations of coral reefs around ~ 50 islands, atolls, and shallow-water banks of the Mariana Archipelago, American Samoa, the Hawaiian Archipelago, and the Pacific Remote Islands Marine National Monument. Pacific RAMP surveys are designed to characterize the spatial and temporal variability of the distribution, abundance, and diversity of corals, algae, other macro-invertebrates, and fishes in the context of their benthic habitats and oceanographic environments.

As part of this Pacific-wide monitoring effort, CREP conducted its first Pacific RAMP research cruise to the Mariana Archipelago (MARAMP) in 2003, with subsequent cruises to follow on a biennial cycle through 2011, and on a triennial cycle thereafter when Pacific RAMP was implemented as part of NOAA's National Coral Reef Monitoring Program (NCRMP).

The coral data described herein were collected via Rapid Ecological Assessment (REA) surveys following the quadrat method, and conducted at specific reef sites around the islands and reefs of Guam and the Commonwealth of the Northern Mariana Islands (CNMI) during MARAMP 2003, 2005, and 2007. During MARAMP 2003, 2005, and 2007, the majority of REA surveys were conducted along the fore reef slopes of islands at depths of 10-20 m; however, other habitat types were also surveyed. During REA surveys, biological assessment teams—a fish team, a coral team, and a combined algal and macro-invertebrate team—followed highly structured protocols that were repeated at each REA site. REA sites were selected in 2003 and, when possible, revisited during 2005 and 2007; a few additional sites were added in 2005 and 2007, and were chosen based on consultations with the resource management agencies of each jurisdiction.

Quadrat surveys were conducted at all islands surveyed during MARAMP 2003, all but

one island during MARAMP 2005, and at 10 of 15 islands during MARAMP 2007. The quadrat method was only employed during surveys in the Mariana Archipelago, and the method was retired from Pacific RAMP following MARAMP 2007.

The quadrat survey data include species/genus identification of individual coral colonies and empirical size measurements (colony length and width) that can provide metrics such as generic richness and composition, coral-colony density, and size distribution (not included in the dataset), and can be accessed online via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive, accession #0129066.

**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:**

2007-05-25 to 2007-06-08, 2003-08-22 to 2003-09-28, 2005-09-04 to 2005-09-30

**1.5. Actual or planned geographic coverage of the data:**

W: 142.8, E: 145.9, N: 20.6, S: 12.8

The Mariana Archipelago, including the following list of islands, banks, and reefs: Agrihan, Aguijan, Alamagan, Anatahan, Arakane Reef, Asuncion, Farallon de Pajaros (Uracas), Guam, Guguan, Maug, Pagan, Pathfinder Reef, Rota, Saipan, Santa Rosa Bank, Sarigan, and Tinian.

**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:

The quadrat survey method was used to collect coral assemblage data as part of Rapid Ecological Assessment (REA) surveys. Generic richness, colony density, and size distribution of coral colonies can be calculated from the data.

Process Steps:

- Along the length of a single 50-meter transect line at each site, a quadrat (0.5 × 0.5 meters) was haphazardly placed on hard-bottom substrate with corals for a combined total of either 15 (in 2003) or 16 (in 2005 and 2007) times per site (total survey area = 3.75 or 4 square meters per site). Each scleractinian or hydrozoan colony whose center lay inside a quadrat was identified to species (or genus, for small colonies in which species characteristics had not yet developed), and the maximum and perpendicular diameters were measured (colony length and width respectively). (Citation: Brainard RE, Asher J, Blyth-Skyrme V, Coccagna EF, Dennis K, Donovan MK, Gove JM, Kenyon J, Looney EE, Miller JE, Timmers MA, Vargas-Ángel B, Vroom PS, Vetter O, Zgliczynski B, Acoba T, DesRochers A, Dunlap

MJ, Franklin EC, Fisher-Pool PI, Braun CL, Richards BL, Schopmeyer SA, Schroeder RE, Toperoff A, Weijerman M, Williams I, Withall RD (2012) Coral reef ecosystem monitoring report of the Mariana Archipelago: 2003– 2007. NOAA Fisheries, Pacific Islands Fisheries Science Center, PIFSC Special Publication, SP-12-01, 1019 p.)

**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):**

## 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)
- 5.2. Quality control procedures employed

**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/24527>

**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](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/0129066>

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**7.3. Data access methods or services offered:**

Data can be accessed via the NOAA National Centers for Environmental Information (NCEI) Ocean Archive, accession #0129066.

**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*

Data resides in PIFSC ITS Oracle database. Standard language to be provided by ITS.

**9. Additional Line Office or Staff Office Questions**

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