

*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:**

Effects of water quality on non-coral communities: surveys of macroinvertebrates, benthic microalgae, and benthic foraminifera at sites along a water quality gradient in Aua, American Samoa in 2022

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

This metadata record describes the non-coral bioindicator datasets funded by the NOAA Coral Reef Conservation Program (CRCP) Project Number 31303 to study effects of land-based sources of pollution (LBSP) in Aua, American Samoa. In September 2022 Ecosystem Sciences Division (ESD) scientists of the Pacific Islands Fisheries Science Center (PIFSC) flew into American Samoa to survey 18 sites along a water quality gradient off of Aua. This specific metadata record refers to the quantitative analysis of benthic foraminifera, benthic microalgae, and macroinvertebrates from samples collected between 9-28 September 2022. Samples were preserved in the field, and brought back to the NOAA Inouye Regional Center (IRC) and analyzed via microscopy. Collection methods for each bioindicator were as follows:

(1) Benthic foraminifera: Sediment samples were collected (Sept 26, 2022) using a small sediment corer (60 ml syringe with the tip removed and a stopper placed there instead). Only the top 3 cm were retained. Under the microscope, benthic foraminifera were picked out of the sediment and identified.

(2) Benthic microalgae: Microscope slides were deployed (Sept 11-26, 2022) on the seafloor at each site for 2 to 3 weeks and the benthic microalgae that settled will be fixed and preserved in Lugol's solution and analyzed. Microalgae included diatoms ( pennate and centric), dinoflagellates, chlorophyta, and cyanobacteria.

(3) Macroinvertebrates: Plastic scouring pads were deployed (Sept 11-26, 2022) and attached to the substratum via zip-ties for 2 to 3 weeks. The scouring pads were removed after the settlement period, all plastic zip-ties and additional waste were removed from the reef. Macroinvertebrates that settled on the scouring pad were placed into sampling jars and fixed and preserved with 4% formalin, and subsequently analyzed under the microscope.

**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:**

2022-09-11 to 2022-09-26

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

W: -170.669, E: -170.665, N: -14.2717, S: -14.2881

The bounding coordinates of the 18 sites sampled in the bay off of Aua in Tutuila, American Samoa. The sites were established to span a locally known water quality gradient.

**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:**

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:**

Joy Smith

### 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:

Collection methods for each bioindicator were as follows: (1) Benthic foraminifera: Sediment samples were collected using a small sediment corer (60 ml syringe with the tip removed and a stopper placed there instead). Only the top 3 cm were retained. Under the microscope, benthic foraminifera were picked out of the sediment and identified. (2) Benthic microalgae: Microscope slides were deployed on the seafloor at each site for 2 to 3 weeks and the benthic microalgae that settled will be fixed and preserved in Lugol's solution and analyzed. Microalgae included diatoms (pennate and centric), dinoflagellates, chlorophyta, and cyanobacteria, and were identified and counted under the microscope. (3) Macroinvertebrates: Plastic scouring pads were deployed and attached to the substratum via zip-ties for 2 to 3 weeks. The scouring pads were removed after the settlement period, all plastic zip-ties and additional waste were removed from the reef. Macroinvertebrates that settled on the scouring pad were placed into sampling jars and fixed and preserved with 4% formalin, and subsequently identified to major taxonomic categories and counted under the microscope.

Process Steps:

- For macroinvertebrates, deploy scouring pad into the seafloor, leave for a few weeks, then retrieve and place organisms into sample jar and preserve
- For benthic microalgae, deploy microscope slides onto the seafloor, leave for a few weeks, then retrieve and place organisms into sample jar and preserve
- For benthic foraminifera, using mini-corer to collect top 2 cm at each site, place sediment into Falcon tube, and store.
- All three sample types need to be placed under a microscope in the laboratory and organisms counted and identified to major taxonomic unit

**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 generated from laboratory results, 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?**

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/68092>

**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:**

National Centers for Environmental Information - Silver Spring, Maryland (NCEI-MD)

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

<http://accession.nodc.noaa.gov/0284083>

<http://accession.nodc.noaa.gov/0284083>

<http://accession.nodc.noaa.gov/0284083>

**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.*