

*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:**

Multibeam Bathymetric Gridded Data for selected U.S. locations in the Pacific since 2003

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

Gridded bathymetry for selected U.S. locations in the Pacific. The netCDF and Arc ASCII grids include multibeam bathymetry from the Simrad EM300, Simrad EM3002D, and Reson 8101 multibeam sonars collected by the NOAA Coral Reef Ecosystem Division. Please see the individual metadata records for additional information about each location. Specific equipment configurations are documented as part of the dataset Multibeam Sonar Data - Cruise Metadata.

ADDED FROM OLDER REC:

Accurate, high-resolution habitat maps are essential for effective management of coral reefs. As directed by the National Coral Reef Action Strategy, the Pacific Islands Benthic Habitat Mapping Center (PIBHMC) at Coral Reef Ecosystem Division, Pacific Islands Fisheries Science Center is tasked with the delineation of the benthic habitat of coral reef ecosystems throughout the U.S. Pacific Islands, including the Hawaiian and Mariana archipelagos, American Samoa and the remote, U.S.-affiliated islands in the Pacific Ocean. These habitats cover over 400,000 sq. km and are dispersed across the entire central Pacific, extending over 40 degrees in latitude and 60 degrees in longitude. Products created by PIBHMC provide resource managers with comprehensive habitat maps on which to base decisions about Pacific coral reef ecosystems.

NOAA's Biogeography Program leads the effort to comprehensively map the distribution of shallow coral reefs and other benthic habitats in Pacific waters using satellite-based techniques that are best suited for shallow-water habitats in less than 20 meters of water. PIBHMC uses acoustic and optical techniques to extend those shallow-water maps into deeper waters where satellite and diver-based techniques are not feasible. PIBHMC personnel support mapping missions on NOAA Ships Hi`ialakai and operate the NOAA Fisheries survey launch R/V AHI as well. The data collected during these missions are used to create a set of standard map products that are available to resource management agencies, researchers and the general public.

The Hi`ialakai is equipped with two multibeam sonars: EM300 and EM3002D. The Kongsberg 300 kHz EM3002 that can map in depths up to 150 m, and the Kongsberg 30 kHz EM300 that maps in depths between 50 and 3000 m. These sonars were chosen to enable the ship to collect comprehensive ecosystem habitat information on the bank tops as well as on the adjoining slopes, where important bottom fish habitats are located. In addition, vertical reference, CTD, data collection, and data processing hardware and software were chosen that are entirely compatible with the AHI's multibeam system; this allows scientists and survey technicians to easily collect and process on both the Hi`ialakai and the AHI.

The 25-ft survey launch, R/V AHI, is equipped with a RESON 8101ER multibeam sonar, which at 240-kHz is designed for mapping in depths between 5 and 250 m. The R/V AHI was designed to be deployed independently or from the NOAA Ship Hi`ialakai.

These multibeam data were collected using SAIC ISS-2000 software in the Generic Sensor Format and processed using SABER editing software. Surface sound velocity values were supplied by a Seabird SBE-45 MicroTSG and a SBE-38 remote temperature probe. Sound velocity corrections from a Seabird 911 CTD sensor and motion corrections from a POS-MV vertical reference were applied to the data in real time. Predicted tides were applied to the data in real time using predicted tides downloaded from NOAA's National Ocean Service Center for Operational Oceanographic Products and Services (CO-OPS) website.

Horizontal accuracy is 20 m if no differential GPS correctors applied, or ~5m if DGPS from NavCom sensor from C&C Technologies used. Vertical accuracy is depth dependent (~1% of water depth), WGS84 datum. These data are not to be used for navigation. Depths mapped range from ~5-350 m.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

Ongoing series of measurements

**1.4. Actual or planned temporal coverage of the data:**

2003 to Present

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

W: 144.326, E: -156.647, N: 28.584921, S: -14.384053

US-affiliated Pacific islands and atolls

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Map (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.)*

Instrument: RESON 8101ER, Kongsberg 300 kHz EM3002D, and Kongsberg 30 kHz

EM300 multibeam sonars

Platform: R/V AHI (Acoustic Habitat Investigator), and NOAA Ships Hi'ialakai and Oscar Elton Sette

Physical Collection / Fishing Gear: Not applicable

**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:**

Michael W Akridge

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

Pacific Islands Fisheries Science Center

**2.4. E-mail address:**

michael.akridge@noaa.gov

**2.5. Phone number:**

(808)725-5483

**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:**

Frances Lichowski

**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:

Gridded bathymetry for selected U.S. locations in the Pacific. The netCDF and Arc ASCII grids include multibeam bathymetry from the Simrad EM300, Simrad EM3002D, and Reson 8101 multibeam sonars collected by the NOAA Coral Reef Ecosystem Division.

**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):**

REQUIRED

**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?**

Yes

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

**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://inport.nmfs.noaa.gov/inport/item/12601>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: <https://inport.nmfs.noaa.gov/inport/downloads/data-documentation-procedural-directive.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:**

Pacific Islands Fisheries Science Center

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

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

<http://www.soest.hawaii.edu/pibhmc>

<http://www.soest.hawaii.edu/pibhmc>

<http://www.soest.hawaii.edu/pibhmc>

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

Send email to [nmfs.pic.credinfo@noaa.gov](mailto:nmfs.pic.credinfo@noaa.gov)

**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-CO

**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.*