

H13733

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: H13733

LOCALITY

State(s): American Samoa

General Locality: American Samoa and PRIA

Sub-locality: Swains Island

2023

CHIEF OF PARTY
Héctor L. Cassanova, CAPT/NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

H13733

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State(s): **American Samoa**

General Locality: **American Samoa and PRIA**

Sub-Locality: **Swains Island**

Scale: **10000**

Dates of Survey: **03/30/2023 to 08/25/2023**

Instructions Dated: **02/22/2023**

Project Number: **OPR-T382-RA-23**

Field Unit: **NOAA Ship *Rainier***

Chief of Party: **Héctor L. Cassanova, CAPT/NOAA**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Multibeam Echo Sounder Backscatter**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

Remarks:

Any revisions to the Descriptive Report (DR) applied during office processing are shown in red italic text. The DR is maintained as a field unit product, therefore all information and recommendations within this report are considered preliminary unless otherwise noted. The final disposition of survey data is represented in the NOAA nautical chart products. All pertinent records for this survey are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <https://www.ncei.noaa.gov/>. Products created during office processing were generated in NAD83 UTM 2S, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.

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Descriptive Report to Accompany Survey H13733

Project: OPR-T382-RA-23

Locality: American Samoa and PRIA

Sublocality: Swains Island

Scale: 1:10000

March 2023 - August 2023

NOAA Ship *Rainier*

Chief of Party: Héctor L. Cassanova, CAPT/NOAA

A. Area Surveyed

This survey is referred to as H13733, "Swains Island" (Sheet 4) within the Project Instructions. The assigned survey area encompassed an estimated 1,935 square nautical miles around the U.S. island territory of American Samoa in the Western Pacific Ocean.

A.1 Survey Limits

Data were acquired within the following survey limits:

| Northwest Limit | Southeast Limit |
|--------------------------------------|---------------------------------------|
| 10° 39' 23.44" S 171° 29' 59.4" W | 11° 28' 14.35" S 170° 40' 16.31" W |

Table 1: Survey Limits

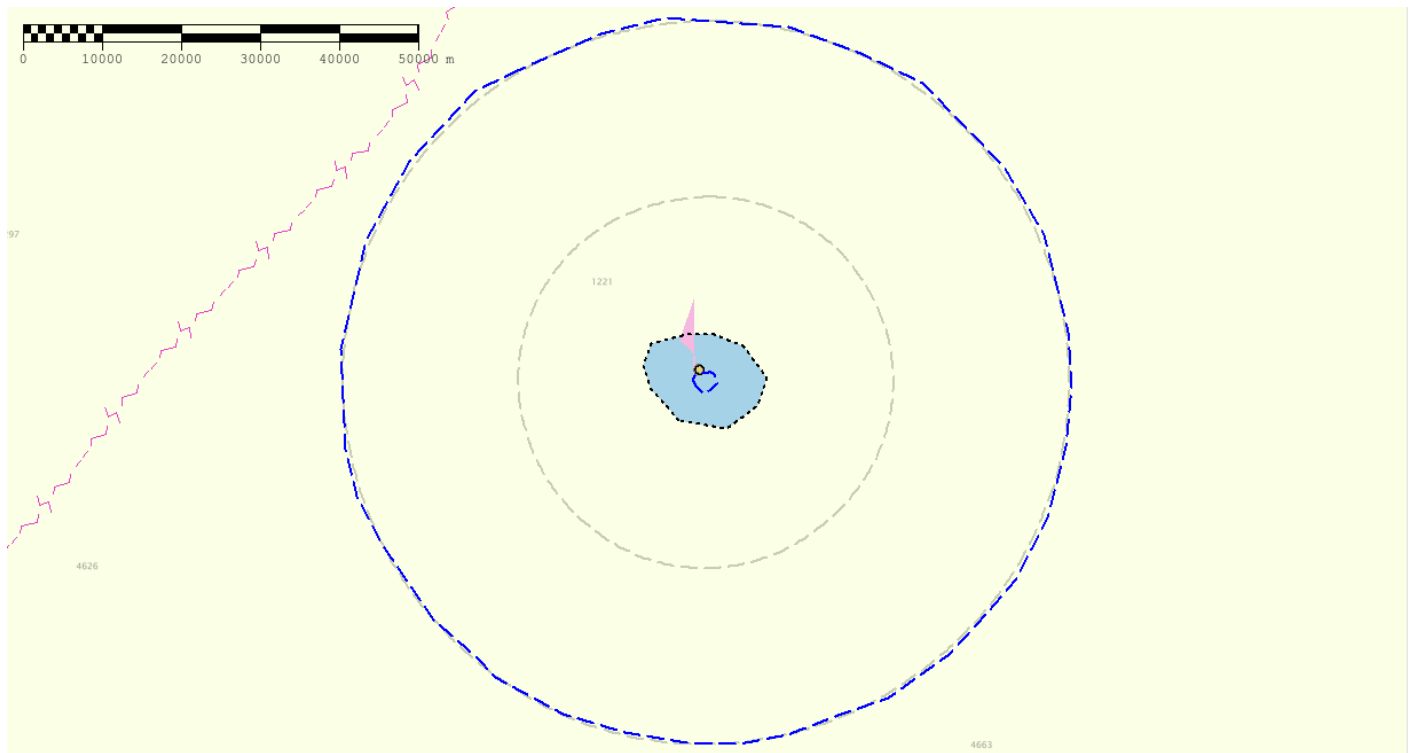


Figure 1: H13733 assigned survey area. (Chart US1EEZ3M).

Survey limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

A.2 Survey Purpose

The ecosystem surrounding American Samoa is experiencing stress imposed by climate change and other environmental factors. For this project, NOAA Ship RAINIER operated around American Samoa to conduct an extensive hydrographic survey to map bathymetry and habitat around the islands, pinnacles, and reefs in support of nautical charting and habitat mapping.

With the collaboration and partnership of the National Centers for Coastal and Ocean Science (NCCOS), the National Coral Reef Monitoring Program (NCRMP), and the National Marine Fisheries Service (NMFS), this project studied the health of coral reef systems, ocean chemistry, and fisheries habitat. This team has developed a strategy to map the waters from nearshore to depths greater than 5000 meters. Within the project area, the ship's crew collected bathymetric data to update charts and acquired backscatter data to characterized habitat, while visiting scientists from NCRMP performed coral reef assessment dives and other oceanographic observations.

Data collected during this mission is pivotal to long-term biological and oceanographic monitoring of coral reef ecosystems in American Samoa. This project will add to information collected during previous monitoring and mapping surveys. Oceanographic and ecological time series data will allow scientists to

evaluate potential changes in environmental conditions and coral reef health. This will enable federal and state resource managers to more effectively conserve coral reef ecosystems of American Samoa and manage ecosystem services. Data collected during this project will also support monitoring components of the NCRMP Coral Reef Ecosystem Integrated Observing System.

A modern bathymetric survey in this area will identify hazards and changes to the seafloor, provide critical data for updating National Ocean Service (NOS) nautical charting products, and improve maritime safety. It will also address data gaps to support the Seabed 2030 global mapping initiative. Survey data from this project is intended to supersede all prior survey data in the common area.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Pydro QC Tools Grid QA v6 was used to analyze H13733 multibeam echosounder (MBES) data density. The submitted H13733 variable-resolution (VR) surface met HSSD density requirements shown in the histograms below. Grid QA results determined that 11% of H13733 nodes met full coverage resolution requirements as explained below.

For project OPR-T382-RA-23 Resolution Requirements graphs produced by Pydro's Grid QA tool have been showing extremely low percentages of grid nodes meeting full coverage resolution requirements. The likely cause of this issue is RAINIER's use of 64m grids in depths greater than 1000m to maintain a reasonable data density. Since the Grid QA tool was written to match the HSD specifications with a maximum 32m grid in all waters greater than 640m, RAINIER grids created using the 64m increase in resolution will always fail the resolution requirements check in areas exceeding 1000m. This will decrease the percentage of grid nodes meeting coverage resolution requirements. For surveys with a large percentage of area greater than 1000m in depth, this reduction can be significant. As shown with H13733, the majority of the data collected was at depths of 1000m up to 5000m.

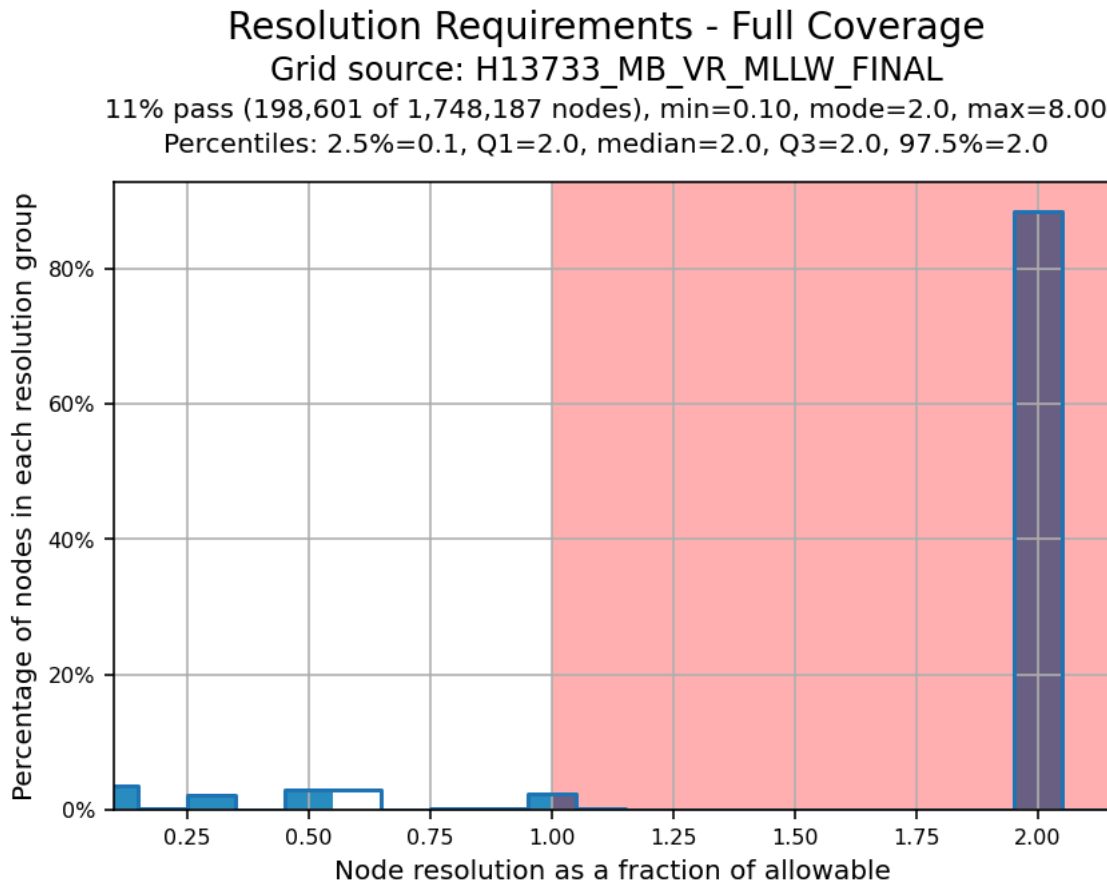


Figure 2: Pydro derived plot showing Grid QA results of H13733 full coverage resolution requirements.

A.4 Survey Coverage

The following table lists the coverage requirements for this survey as assigned in the project instructions:

| Water Depth | Coverage Required |
|--------------------------------|---|
| All waters in remaining sheets | Complete Coverage (Refer to HSSD Section 5.2.2.3) |

Table 2: Survey Coverage

The majority of the extent of the assigned sheet limits was surveyed for H13733. This project's requirement to coordinate hydrographic operations with nearshore diving priorities, in addition to the limited number of project days allocated to sheet H13733, imposed significant limitations on the amount of MBES data acquired. Due to these limitations, a portion of area offshore encompassing outer sheet limits, was not surveyed. H13733 Multibeam echosounder coverage was acquired to the inshore limit of hydrography, the Navigable Area Limit Line (NALL), within the sheet limits. The NALL is defined as the most seaward of the

following: the surveyed 10 meter depth contour, the line defined by the distance seaward from the observed MHW line (the assigned sheet limits closely reflect this), or the inshore limit of safe navigation.

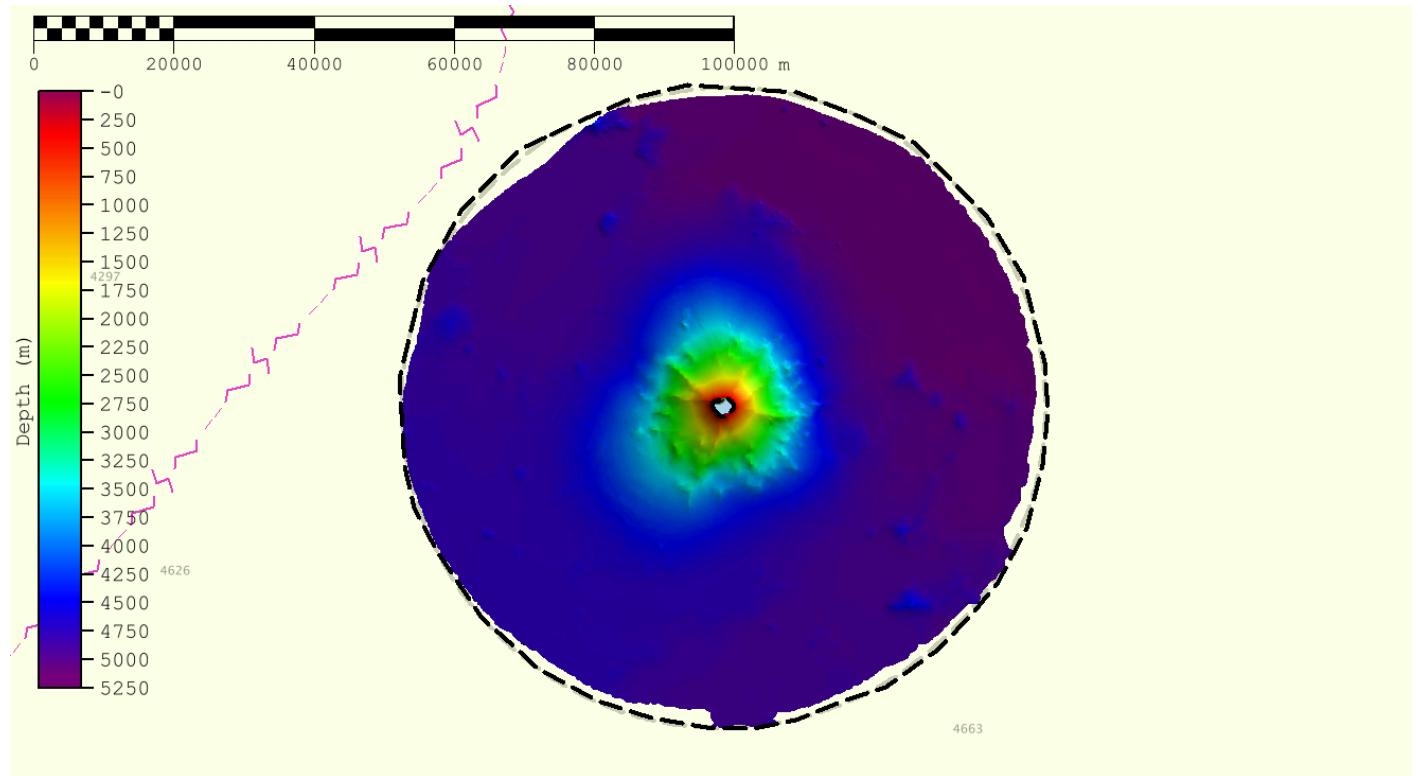


Figure 3: H13733 survey coverage and assigned survey limits for Swains Island (Chart US1EEZ3M).

A.6 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

| | HULL ID | <i>S221</i> | <i>2802</i> | <i>Total</i> |
|---|-----------------------------|-------------|-------------|--------------|
| LNM | SBES Mainscheme | 0.0 | 0.0 | 0.0 |
| | MBES Mainscheme | 687.0 | 10.58 | 697.5 |
| | Lidar Mainscheme | 0.0 | 0.0 | 0.0 |
| | SSS Mainscheme | 0.0 | 0.0 | 0.0 |
| | SBES/SSS Mainscheme | 0.0 | 0.0 | 0.0 |
| | MBES/SSS Mainscheme | 0.0 | 0.0 | 0.0 |
| | SBES/MBES Crosslines | 82.5 | 0.0 | 82.5 |
| | Lidar Crosslines | 0.0 | 0.0 | 0.0 |
| Number of Bottom Samples | | | | 0 |
| Number Maritime Boundary Points Investigated | | | | 0 |
| Number of DPs | | | | 0 |
| Number of Items Investigated by Dive Ops | | | | 0 |
| Total SNM | | | | 1804.26 |

Table 3: Hydrographic Survey Statistics

The following table lists the specific dates of data acquisition for this survey:

| Survey Dates | Day of the Year |
|---------------------|------------------------|
| 03/30/2023 | 89 |
| 03/31/2023 | 90 |

| Survey Dates | Day of the Year |
|---------------------|------------------------|
| 04/01/2023 | 91 |
| 04/02/2023 | 92 |
| 08/23/2023 | 235 |
| 08/24/2023 | 236 |
| 08/25/2023 | 237 |

Table 4: Dates of Hydrography

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

| Hull ID | <i>S221</i> | <i>2802</i> |
|----------------|-------------|-------------|
| LOA | 70.4 meters | 8.8 meters |
| Draft | 4.7 meters | 1.1 meters |

Table 5: Vessels Used



Figure 4: NOAA Ship RAINIER.



Figure 5: NOAA Hydrographic survey launch 2802.

All data for H13733 were acquired by NOAA Ship RAINIER and survey launch 2802. The vessels acquired MBES data, backscatter imagery, and sound speed profiles.

B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

| Manufacturer | Model | Type |
|--------------------------|---------------|---|
| Sea-Bird Scientific | SBE 19plus | Conductivity, Temperature, and Depth Sensor |
| Teledyne RESON | SVP 70 | Sound Speed System |
| AML Oceanographic | MVP200 | Conductivity, Temperature, and Depth Sensor |
| Kongsberg Maritime | EM 304-MK2 | MBES |
| Kongsberg Maritime | EM 2040-MK2 | MBES |
| Applanix | POS MV 320 v5 | Positioning and Attitude System |
| Lockheed Martin Sippican | Deep Blue XBT | Sound Speed System |
| Kongsberg Maritime | EM 2040 | MBES |

Table 6: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

NOAA Ship RAINIER acquired 82.5 nautical miles of multibeam crosslines, approximately 11 percent, across a range of depths in the mainscheme data. The Compare Grids function in Pydro Explorer was used to analyze the finalized VR surfaces of H13733 mainscheme only and crossline only data. Pydro determined that 99.5 percent of nodes met allowable uncertainties. For additional results, see plots below.

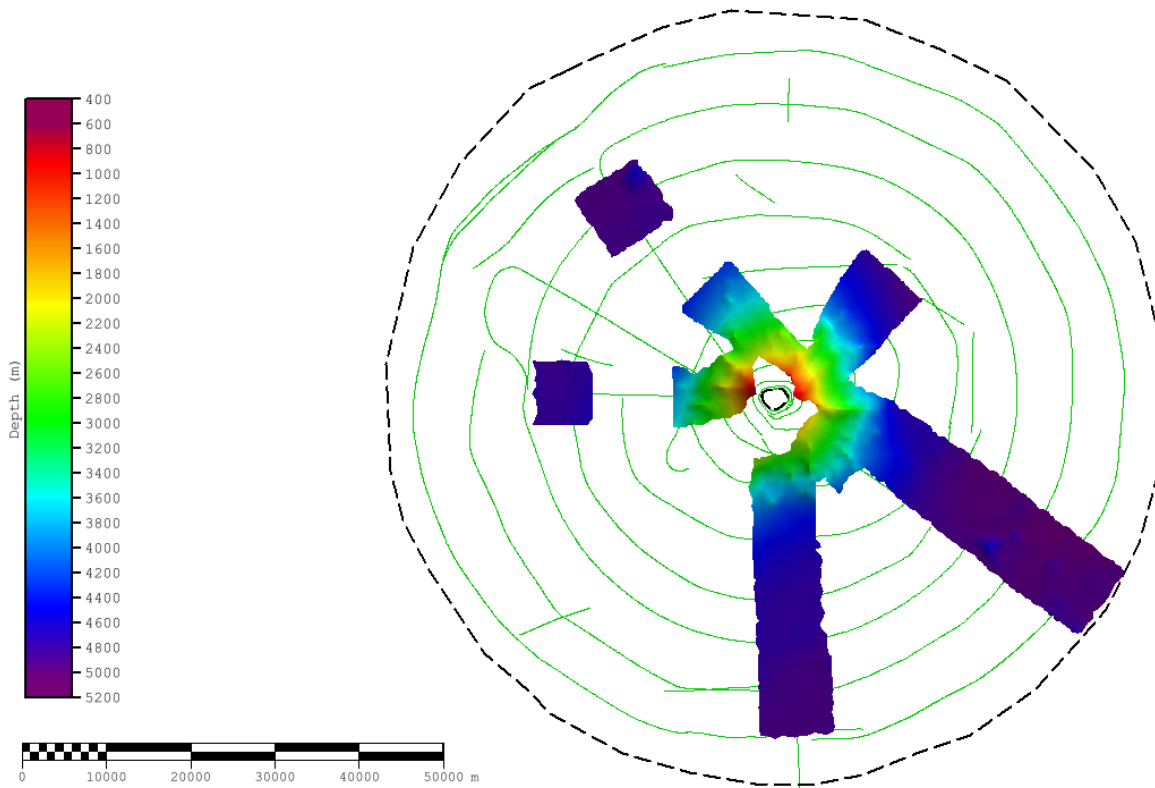


Figure 6: H13733 crossline surface overlaid on mainscheme tracklines.

H13733_MB_VR_MLLW_MS-H13733_MB_VR_MLLW_XL
 Mean: 0.24 | Mode: -0.36 | One Standard Deviation: 5.02 | Bin size: 0.30

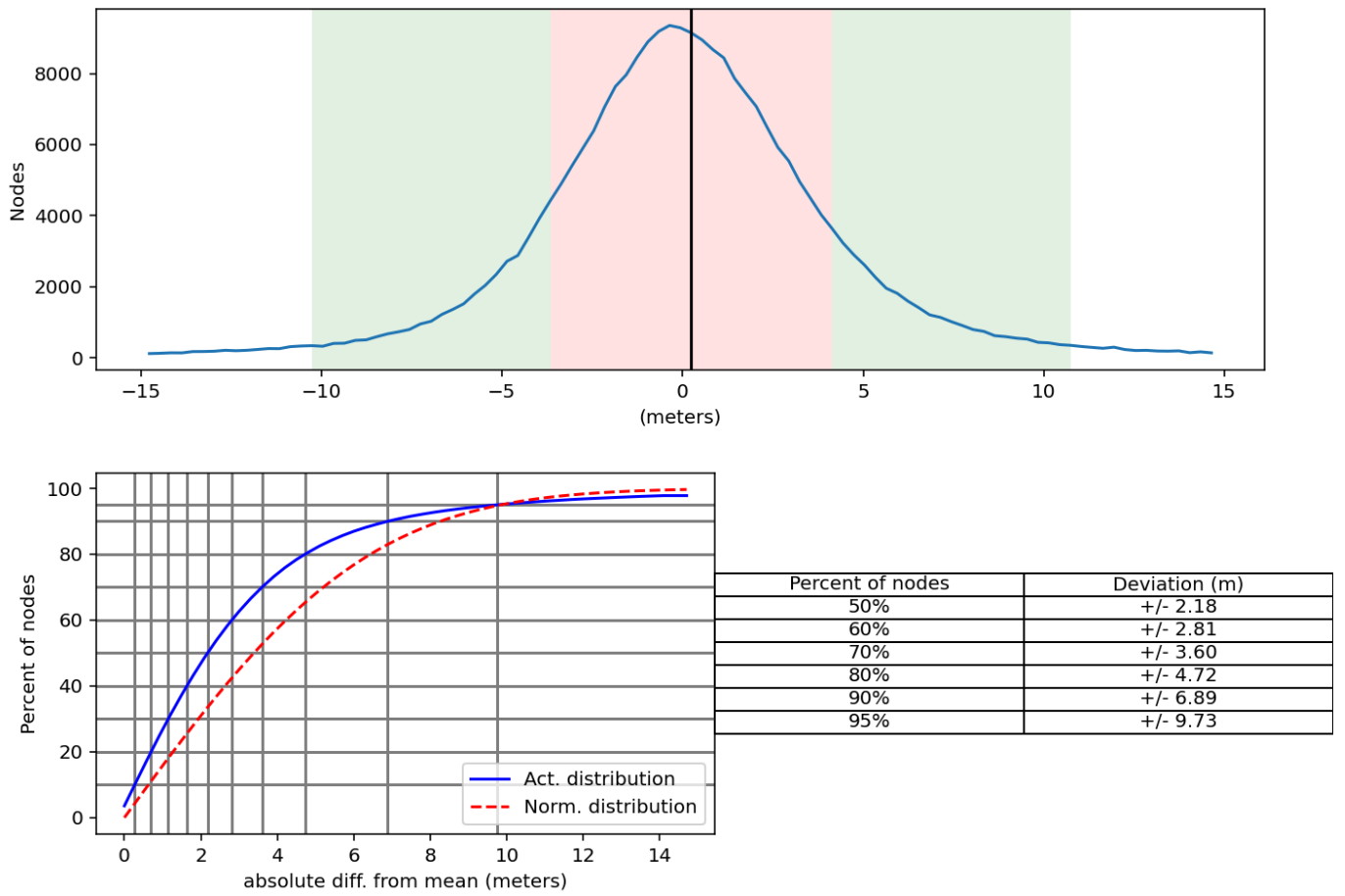


Figure 7: Pydro derived plot showing absolute difference statistics of H13733 mainscheme to crossline data.

Comparison Distribution

Per Grid: H13733_MB_VR_MLLW_MS-H13733_MB_VR_MLLW_XL_fracAllowErr.csar

99.5+% nodes pass (256316), min=0.0, mode=0.1 mean=0.0 max=1.7

Percentiles: 2.5%=0.0, Q1=0.0, median=0.0, Q3=0.0, 97.5%=0.2

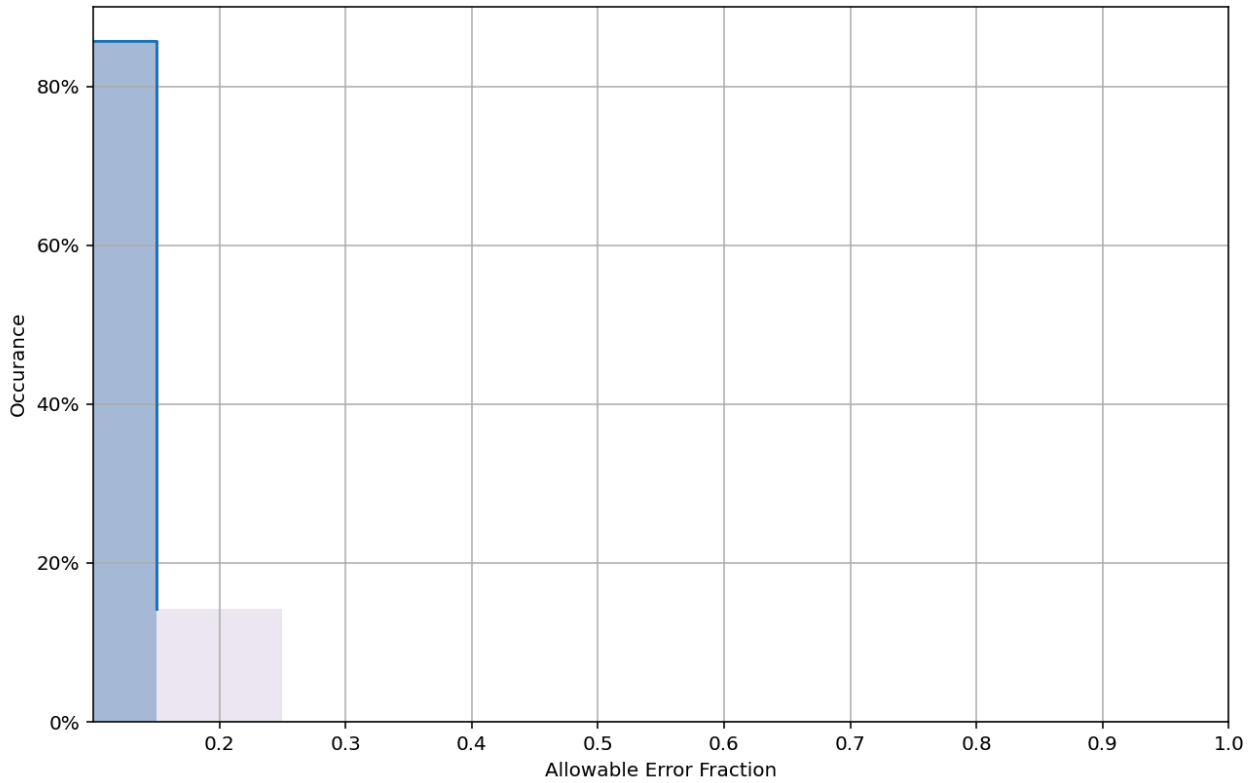


Figure 8: Pydro derived plot showing percentage-pass value of H13733 mainscheme to crossline data.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

| Method | Measured | Zoning |
|----------------|------------|-------------|
| ERS via VDATUM | 0.0 meters | 0.11 meters |

Table 7: Survey Specific Tide TPU Values.

| Hull ID | Measured - CTD | Measured - MVP | Measured - XBT | Surface |
|---------|-------------------|-------------------|-------------------|--------------------|
| S221 | N/A meters/second | 1.0 meters/second | 4.0 meters/second | 0.05 meters/second |
| 2802 | 3.0 meters/second | N/A meters/second | N/A meters/second | 0.05 meters/second |

Table 8: Survey Specific Sound Speed TPU Values.

Total Propagated Uncertainty (TPU) values for survey H13733 were derived from a combination of fixed values for equipment and vessel characteristics, as well as from field assigned values for sound speed uncertainties. Tidal uncertainty was provided in metadata for the NOAA vertical datum transformation model used for this survey.

In addition to the usual a priori estimates of uncertainty, real-time and post-processed uncertainty sources were also incorporated into the depth estimates of this survey. Real-time uncertainties for position, navigation and vessel motion data from Applanix POS MV were applied during acquisition and initially in post-processing. POSpac SBET and RMS files were subsequently applied in Caris HIPS to supersede POS MV uncertainties associated with GPS height and position.

Uncertainty values of the submitted finalized grids were calculated in Caris using "Uncertainty" when creating the finalized surface. Grid QA v6 within Pydro QC Tools was used to analyze H13733 TVU compliance. H13733 met HSSD requirements in 99.5 percent of grid nodes as shown in the histogram plot below.

Pydro QC Tools 3 Grid QA was used to analyze H13733 multibeam echosounder (MBES) data density. The submitted H13733 variable-resolution (VR) surface met HSSD density requirements shown in the histograms below.

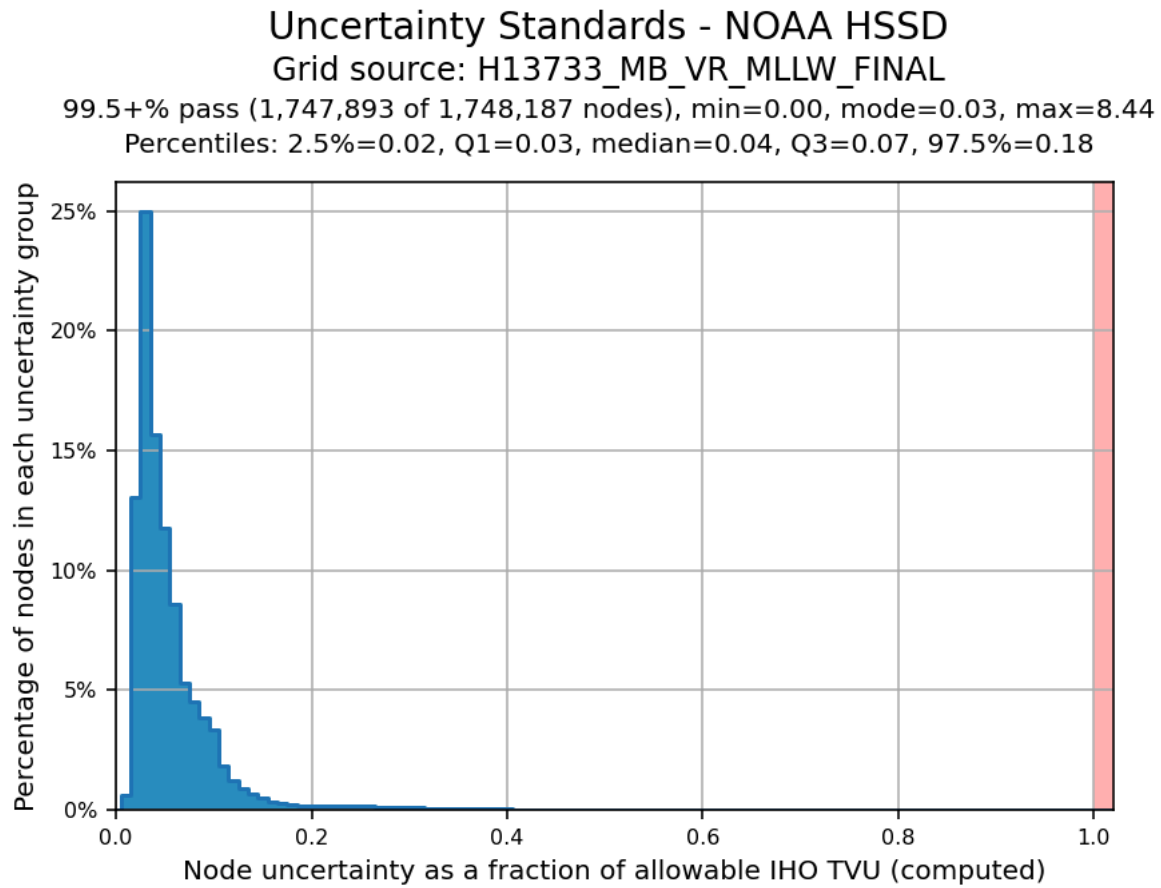


Figure 9: Pydro derived plot showing TVU compliance of H13733 finalized variable-resolution MBES data.

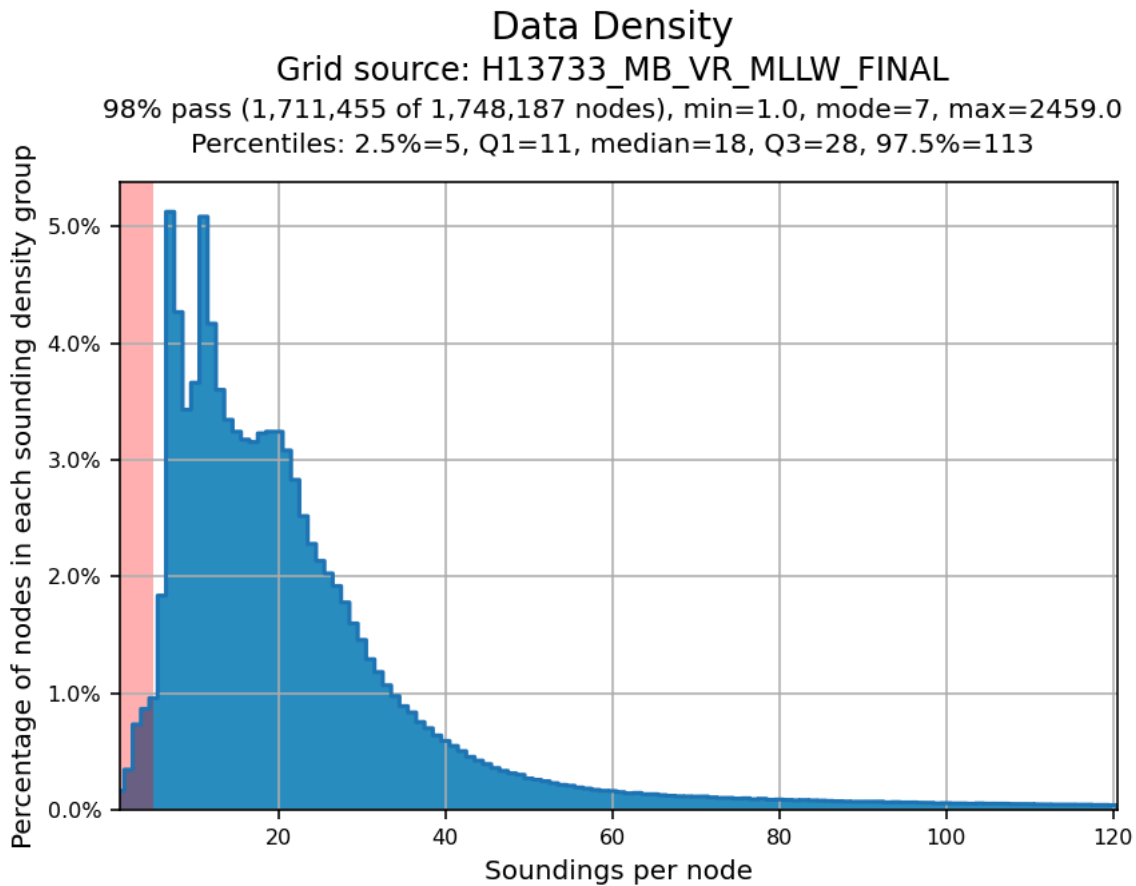


Figure 10: Pydro derived histogram plot showing HSSD density compliance of H13733 finalized variable-resolution MBES data.

B.2.3 Junctions

There are no contemporary surveys that junction with this survey.

B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

B.2.5 Equipment Effectiveness

There were no conditions or deficiencies that affected equipment operational effectiveness.

B.2.6 Factors Affecting Soundings

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: At least once every 4 hours or as needed.

A total of 32 sound speed profiles ("casts") were acquired for this survey at discrete locations within the assigned area at least once every four hours, when significant changes to surface sound speed were observed, or when shifting operations to a new area. All sound speed profiles were concatenated into a master file and applied to H13733 MBES data using the "Nearest distance within Time" (4 hours) profile selection method.

Additionally, data collected while utilizing the XBT were referenced separately from data collected while using the MVP in order to apply the correct TPU values. After making the necessary referencing corrections, no sound speed issues were identified.

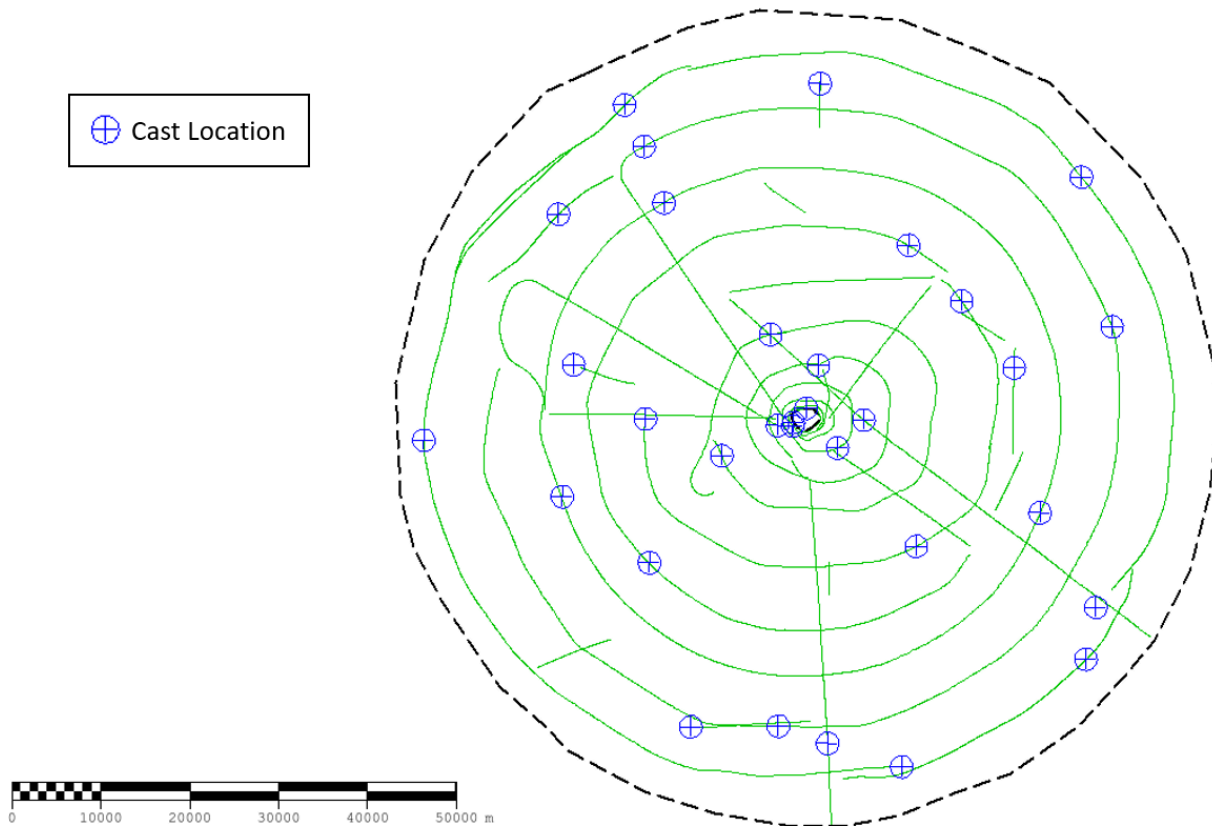


Figure 11: H13733 sound speed cast locations.

B.2.8 Coverage Equipment and Methods

All equipment and survey methods were used as detailed in the DAPR.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

B.4 Backscatter

Raw backscatter data were acquired as .KMALL and .ALL files logged during MBES operations and subsequently processed by RAINIER personnel. The .GSF files created during processing, and backscatter mosaics have been delivered with this report. Backscatter processing procedures are described in the DAPR.

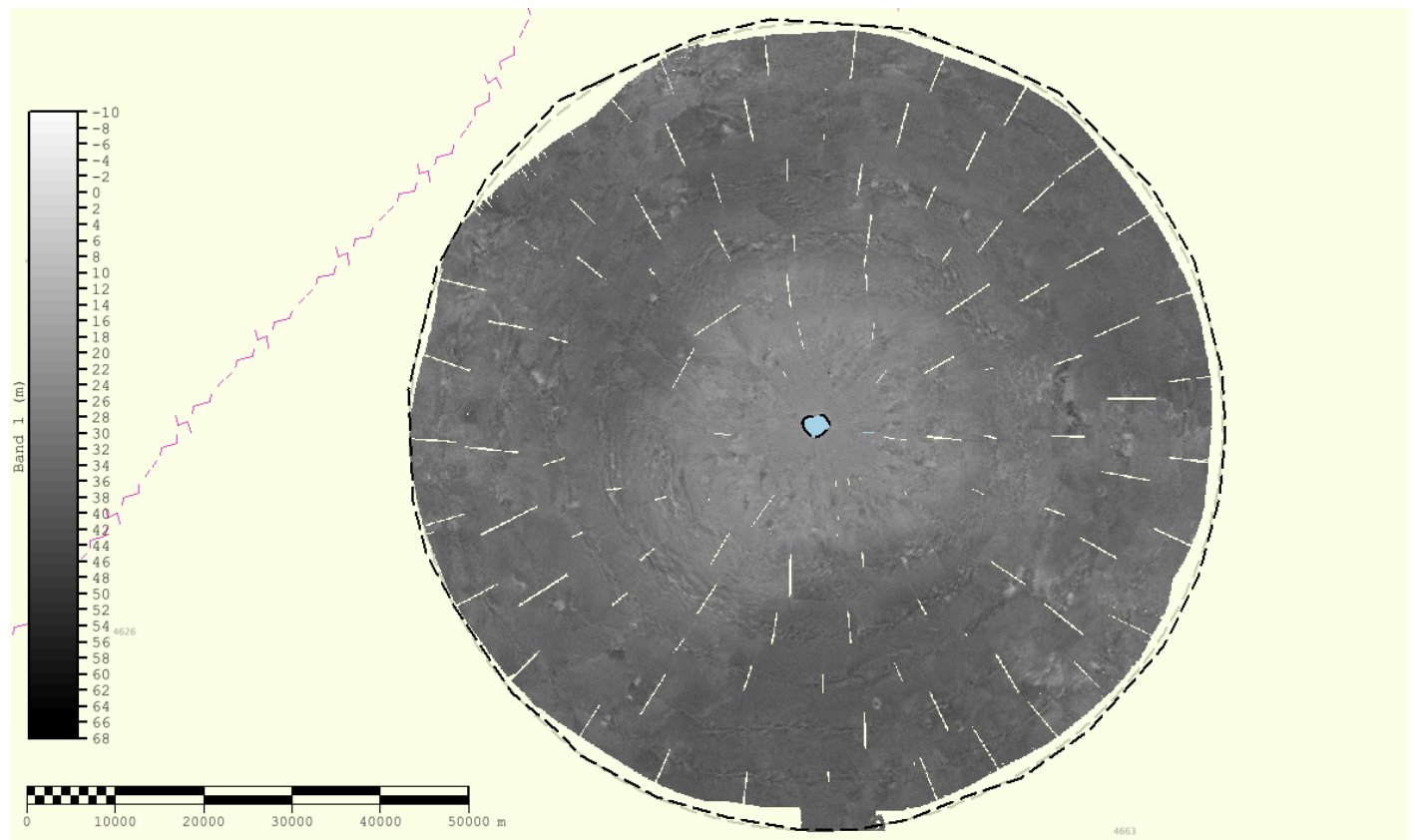


Figure 12: Overview mosaic of H13733 multibeam acoustic backscatter coverage (Chart US1EEZ3M).

B.5 Data Processing

B.5.1 Primary Data Processing Software

The following software program was the primary program used for bathymetric data processing:

| Manufacturer | Name | Version |
|--------------|---------------|---------|
| CARIS | HIPS and SIPS | 11.4.6 |
| QPS | Fledermaus | 7.10.2 |

Table 9: Primary bathymetric data processing software

The following Feature Object Catalog was used: NOAA Profile Version 2023.

B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

| Surface Name | Surface Type | Resolution | Depth Range | Surface Parameter | Purpose |
|---------------------------------|-------------------------|---------------------|----------------------------|-------------------|---------------|
| H13733_MB_VR_MLLW | CARIS VR Surface (CUBE) | Variable Resolution | 7.8 meters - 5153.6 meters | NOAA_VR | Complete MBES |
| H13733_MB_VR_MLLW_FINAL | CARIS VR Surface (CUBE) | Variable Resolution | 7.9 meters - 5159.2 meters | NOAA_VR | Complete MBES |
| H13733_MBAB_6m_S221_32kHz_1of3 | MB Backscatter Mosaic | 6 meters | - | N/A | Complete MBES |
| H13733_MBAB_6m_S221_32kHz_2of3 | MB Backscatter Mosaic | 6 meters | - | N/A | Complete MBES |
| H13733_MBAB_2m_2802_300kHz_3of3 | MB Backscatter Mosaic | 2 meters | - | N/A | Complete MBES |

Table 10: Submitted Surfaces

Submitted H13733 surfaces were generated using NOAA recommended parameters for density-based (Ranges) Caris variable-resolution bathymetry grids. Per correspondence with the Project Manager, the submitted surfaces were generated with a updated Range/Resolution file, NOAA_DepthRanges_CompleteCoverage_2023_RA, that includes 64 meter grids for depths exceeding 1000 meters. Surfaces were generated with a maximum grid size of 256 meters to minimize Caris holidays. See Supplemental Records for more information.

Pydro QC Tools v.3.10.2 Flier Finder, with default settings, was used to identify sounding "fliers" in the finalized H13733 VR surface. Obvious noise was rejected by the hydrographer in Caris Subset Editor. After data cleaning, the Flier Finder tool was run again and found 1,230 potential fliers in the Complete Coverage surface. These were investigated and determined to be a result of the significant slope in the terrain and limited data density on the steep slopes and offshore coverage where depths exceeded 1000m. Therefore, these fliers have been found to be false positives. The image below depicts examples of fliers that have been determined to be false.

Pydro QC Tools v3.10.2 Holiday Finder was used with default settings to find holidays in the finalized H13733 VR surface. Holiday Finder detected 9 certain and 12 possible holidays in the Complete Coverage Surface. All of the holidays are all located outside 4500 meters depth and are primarily a result of low data density at those depths. The holidays were reviewed and do not impact the quality or reliability of the data. See figures below for more information.

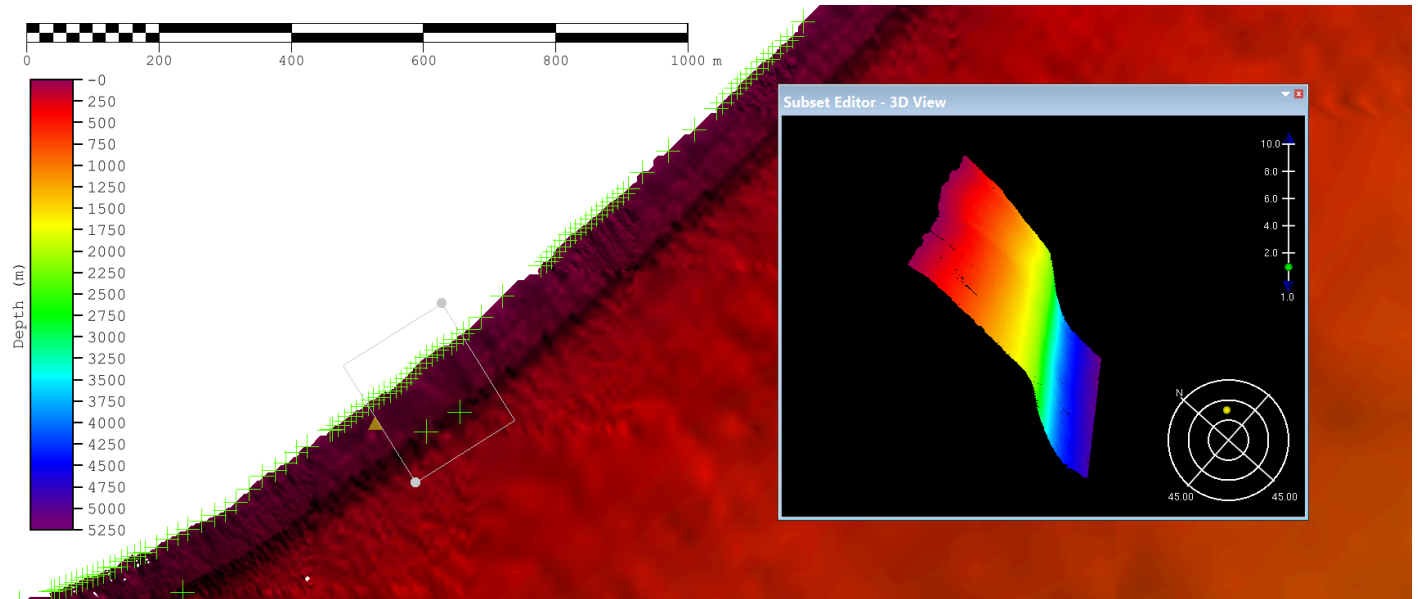


Figure 13: Example of fliers determined to be false.

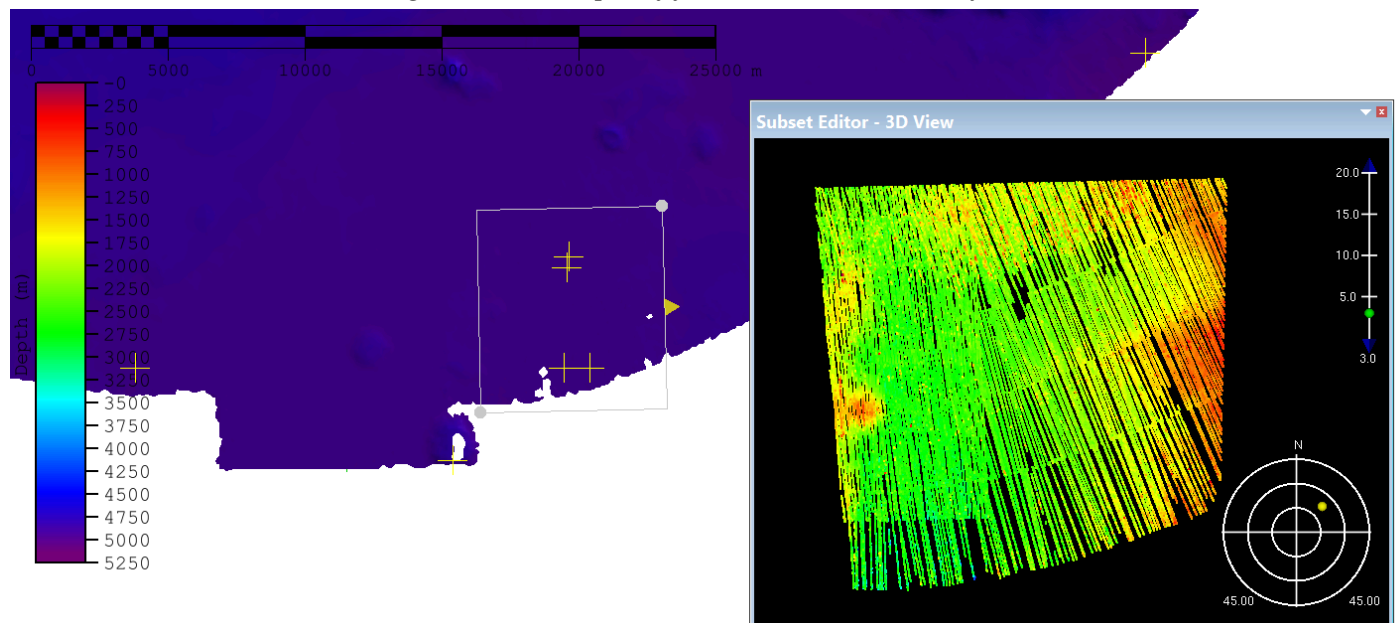


Figure 14: Example of holidays detected by QC Tool Holiday finder.

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying DAPR.

C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

ERS Datum Transformation

The following ellipsoid-to-chart vertical datum transformation was used:

| Method | Ellipsoid to Chart Datum Separation File |
|----------------|---|
| ERS via VDATUM | OPR-T382- RA-23_American_Samoa_ERTDM_NAD83(PA11)- MLLW_11cm1sigma.csar OPR-T382- RA-23_American_Samoa_ERTDM_NAD83(PA11)- MHW_11cm1sigma.csar |

Table 11: ERS method and SEP file

All submitted H13733 MBES data were vertically referenced to the ellipsoid. VDATUM models included with the Project Instructions were used for referencing H13733 data to MLLW and MHW.

C.2 Horizontal Control

The horizontal datum for this project is North American Datum 1983 (PA11).

The projection used for this project is Universal Transverse Mercator (UTM) Zone 2.

RTK

Precise Positioning-Real time Extended (PP-RTX) processing methods were used in Applanix POSPac MMS (v8.9) software for post-processing horizontal correction of submitted H13733 MBES data.

D. Results and Recommendations

D.1 Chart Comparison

D.1.1 Electronic Navigational Charts

The following are the largest scale ENC's, which cover the survey area:

| ENC | Scale | Edition | Update Application Date | Issue Date |
|----------|-----------|---------|-------------------------|------------|
| US1EEZ3M | 1:3500000 | 2 | 10/21/2013 | 08/28/2020 |
| US5SP31M | 1:40000 | 5 | 09/06/2017 | 09/06/2017 |

Table 12: Largest Scale ENC's

D.1.2 Shoal and Hazardous Features

No shoals or potentially hazardous features exist for this survey.

D.1.3 Charted Features

No charted features exist for this survey.

D.1.4 Uncharted Features

No uncharted features exist for this survey.

D.1.5 Channels

No channels exist within the survey limits.

D.2 Additional Results

D.2.1 Aids to Navigation

No Aids to navigation (ATONs) exist for this survey.

D.2.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

D.2.3 Bottom Samples

No bottom samples were required for this survey.

D.2.4 Overhead Features

No overhead features exist for this survey.

D.2.5 Submarine Features

No submarine features exist for this survey.

D.2.6 Platforms

No platforms exist for this survey.

D.2.7 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.8 Abnormal Seafloor or Environmental Conditions

No abnormal seafloor or environmental conditions exist for this survey.

D.2.9 Construction and Dredging

No present or planned construction or dredging exist within the survey limits.

D.2.10 New Survey Recommendations

No new surveys or further investigations are recommended for this area.

D.2.11 ENC Scale Recommendations

No new ENC scales are recommended for this area.

E. Approval Sheet

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys Specifications and Deliverables, Field Procedures Manual, Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

| Approver Name | Approver Title | Approval Date | Signature |
|----------------------------------|--------------------------|---------------|--|
| Héctor L. Casanova, CAPT/NOAA | Chief of Party | 11/08/2023 |  Digitally signed by CASANOVA.HECTOR.LUIS.1253816461 DN: cn=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=CASANOVA.HECTOR.LUIS.1253816 461 Date: 2023.11.08 16:06:24 -10'00' |
| Garrison L. Grant, LT/NOAA | Field Operations Officer | 11/08/2023 | GRANT.GARRISON .LAWRENCE.15237 50115  Digitally signed by GRANT.GARRISON.LAWRENCE. 1523750115 Date: 2023.11.08 13:16:34 -10'00' |
| James B. Jacobson | Chief Survey Technician | 11/08/2023 | JACOBSON.JAMES.BRY AN.1269664017 2023.11.08 14:22:29 -08'00'  |
| Brian K. Mershon Jr | Sheet Manager | 11/08/2023 | MERSHON.BRIAN. KENT.1523061689  Digitally signed by MERSHON.BRIAN.KENT.1523061689 Date: 2023.11.08 14:04:59 -08'00' |

F. Table of Acronyms

| Acronym | Definition |
|----------------|--|
| AHB | Atlantic Hydrographic Branch |
| AST | Assistant Survey Technician |
| ATON | Aid to Navigation |
| AWOIS | Automated Wreck and Obstruction Information System |
| BAG | Bathymetric Attributed Grid |
| BASE | Bathymetry Associated with Statistical Error |
| CO | Commanding Officer |
| CO-OPS | Center for Operational Products and Services |
| CORS | Continuously Operating Reference Station |
| CTD | Conductivity Temperature Depth |
| CEF | Chart Evaluation File |
| CSF | Composite Source File |
| CST | Chief Survey Technician |
| CUBE | Combined Uncertainty and Bathymetry Estimator |
| DAPR | Data Acquisition and Processing Report |
| DGPS | Differential Global Positioning System |
| DP | Detached Position |
| DR | Descriptive Report |
| DTON | Danger to Navigation |
| ENC | Electronic Navigational Chart |
| ERS | Ellipsoidal Referenced Survey |
| ERTDM | Ellipsoidally Referenced Tidal Datum Model |
| ERZT | Ellipsoidally Referenced Zoned Tides |
| FFF | Final Feature File |
| FOO | Field Operations Officer |
| FPM | Field Procedures Manual |
| GAMS | GPS Azimuth Measurement Subsystem |
| GC | Geographic Cell |
| GPS | Global Positioning System |
| HIPS | Hydrographic Information Processing System |
| HSD | Hydrographic Surveys Division |

| Acronym | Definition |
|----------------|---|
| HSSD | Hydrographic Survey Specifications and Deliverables |
| HSTB | Hydrographic Systems Technology Branch |
| HSX | Hypack Hysweep File Format |
| HTD | Hydrographic Surveys Technical Directive |
| HVCR | Horizontal and Vertical Control Report |
| HVF | HIPS Vessel File |
| IHO | International Hydrographic Organization |
| IMU | Inertial Motion Unit |
| ITRF | International Terrestrial Reference Frame |
| LNM | Linear Nautical Miles |
| MBAB | Multibeam Echosounder Acoustic Backscatter |
| MCD | Marine Chart Division |
| MHW | Mean High Water |
| MLLW | Mean Lower Low Water |
| NAD 83 | North American Datum of 1983 |
| NALL | Navigable Area Limit Line |
| NTM | Notice to Mariners |
| NMEA | National Marine Electronics Association |
| NOAA | National Oceanic and Atmospheric Administration |
| NOS | National Ocean Service |
| NRT | Navigation Response Team |
| NSD | Navigation Services Division |
| OCS | Office of Coast Survey |
| OMAO | Office of Marine and Aviation Operations (NOAA) |
| OPS | Operations Branch |
| MBES | Multibeam Echosounder |
| NWLON | National Water Level Observation Network |
| PDBS | Phase Differencing Bathymetric Sonar |
| PHB | Pacific Hydrographic Branch |
| POS/MV | Position and Orientation System for Marine Vessels |
| PPK | Post Processed Kinematic |
| PPP | Precise Point Positioning |
| PPS | Pulse per second |

| Acronym | Definition |
|----------------|--|
| PRF | Project Reference File |
| PS | Physical Scientist |
| RNC | Raster Navigational Chart |
| RTK | Real Time Kinematic |
| RTX | Real Time Extended |
| SBES | Singlebeam Echosounder |
| SBET | Smooth Best Estimate and Trajectory |
| SNM | Square Nautical Miles |
| SSS | Side Scan Sonar |
| SSSAB | Side Scan Sonar Acoustic Backscatter |
| ST | Survey Technician |
| SVP | Sound Velocity Profiler |
| TCARI | Tidal Constituent And Residual Interpolation |
| TPU | Total Propagated Uncertainty |
| USACE | United States Army Corps of Engineers |
| USCG | United States Coast Guard |
| UTM | Universal Transverse Mercator |
| XO | Executive Officer |
| ZDF | Zone Definition File |