| U.S. Department of Commerce National Oceanic and Atmospheric Administration National Ocean Service | | |
|--|---|--|
|] | DESCRIPTIVE REPORT | |
| Type of Survey: | Navigable Area Support NMS | |
| Registry Number: | H13229 | |
| | LOCALITY | |
| State(s): | Louisiana | |
| General Locality: | Flower Garden Banks National Marine Sanctuary | |
| Sub-locality: | Sackett | |
| | | |
| | 2020 | |
| | CHIEF OF PARTY CDR Briana Hillstrom, NOAA | |
| | LIBRARY & ARCHIVES | |
| Date: | | |
| | | |



| NATION | U.S. DEPARTMENT OF COMMERCE AL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTRY NUMBER: | |
|------------------------|---|---|--|
| HYDROGRA | APHIC TITLE SHEET | H13229 | |
| INSTRUCTIONS: The H | ydrographic Sheet should be accompanied by this form, filled in as completely as possib | ble, when the sheet is forwarded to the Office. | |
| State(s): | Louisiana | | |
| General Locality: | Flower Garden Banks National Marin | ne Sanctuary | |
| Sub-Locality: | Sackett | | |
| Scale: | 40000 | | |
| Dates of Survey: | 10/05/2020 to 10/07/2020 | 10/05/2020 to 10/07/2020 | |
| Instructions Dated: | 02/28/2020 | | |
| Project Number: | OPR-K306-TJ-20 | | |
| Field Unit: | NOAA Ship Thomas Jefferson | | |
| Chief of Party: | CDR Briana Hillstrom, NOAA | | |
| Soundings by: | Multibeam Echo Sounder | | |
| Imagery by: | Multibeam Echo Sounder Backscatter | | |
| Verification by: | Atlantic 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 16N, 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 H13229

Project: OPR-K306-TJ-20 Locality: Flower Garden Banks National Marine Sanctuary Sublocality: Sackett Scale: 1:40000

October 2020 - October 2020

NOAA Ship Thomas Jefferson

Chief of Party: CDR Briana Hillstrom, NOAA

A. Area Surveyed

Survey H13229, located in the Gulf of Mexico approximately 18 to 45 NM southwest of the entrance to the Mississippi River Southwest Pass, was conducted in accordance with coverage requirements set forth in the Project Instructions OPR-K306-TJ-20.

A.1 Survey Limits

Data were acquired within the following survey limits:

| Northwest Limit | Southeast Limit |
|-----------------|------------------|
| 28° 44' 1.05" N | 28° 10' 2.24" N |
| 89° 50' 36" W | 89° 13' 11.65" W |

Table 1: Survey Limits

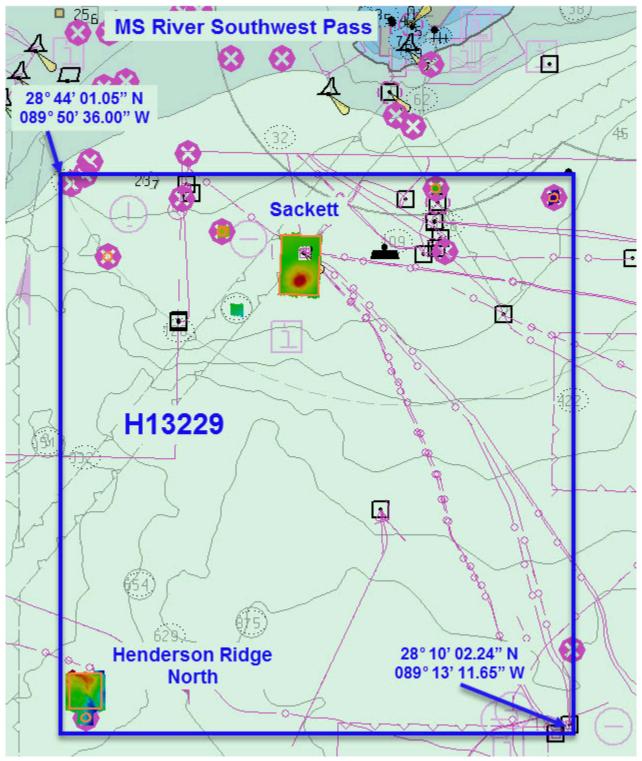


Figure 1: Survey layout for H13229, plotted over ENC US3GC04M. Orange outline represents the survey limits set forth by the Project Instructions.

Survey data were acquired in accordance with the requirements set forth by the Project Instructions (PI) and the Hydrographic Surveys Specifications and Deliverables (HSSD) dated May 2020.

A.2 Survey Purpose

This project will support the Bureau of Ocean Energy Management (BOEM) and the Flower Garden Banks National Marine Sanctuary (FGBNMS) in their efforts to effectively protect ecologically sensitive and important areas within the Northwestern Gulf of Mexico. Over the past seventeen years FGBNMS has successfully acquired multibeam echo sounder (MBES) data over numerous BOEM defined Topographic Features. These Topographic Features are geologic formations that support diverse communities of a high aesthetic, scientific, and economic value.(1) No Activity Zones (NAZ), declared by the BOEM, are designed to protect the most ecologically sensitive areas of the named Topographic Features.(2) However, the NAZ boundaries have not been updated since the original implementation in the 1970s/80s and BOEM will use the newly acquired bathymetry data in an evaluation of and possible updates to the NAZ boundary configurations in order to effectively protecting these crucial ecosystems. This project will generate high resolution data that will provide the basis for habitat characterization and ground-truthing activities for years to come. Past MBES surveys completed with the same purpose as this project have directly fed into the expansion of the sanctuary boundary. None of the nine banks to be surveyed in this project have been surveyed to modern standards. Four out of these nine banks overlap with the highly trafficked safety fairway connecting the Mississippi River to other high commerce ports to the west, such as Galveston and Corpus Christi.(3) Not only will this survey aid in the protection of ecologically significant communities, it will also enhance navigational safety via this fairway. Survey data from this project is intended to supersede all prior survey data in the common area, it will provide contemporary data to update National Ocean Service (NOS) nautical charting products, and will be used to enhance environmental protections of ecologically important areas.

(1) United States Department of the Interior Minerals Management Service Gulf of Mexico OCS Region. "Notice to Lessees and Operations of Federal Oil, Gas, and Sulphur Leases and Pipeline Right-of-Way Holders Outer Continental Shelf, Gulf of Mexico OCS Region." NTL No. 2009-G39.

(2) US Department of the Interior Bureau of Ocean Energy Management. "Western and Central Gulf of Mexico Topographic Features Stipulation Map Package for Oil and Gas Leases in the Gulf of Mexico." March 2018.

(3) US Department of the Interior Bureau of Ocean Energy Management Gulf of Mexico OCS Region. "Biologically Sensitive Areas (<300m)." December 2012.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Data acquired for H13229 meet multibeam echo sounder (MBES) coverage requirements for complete coverage as required by the HSSD dated March 2020. This includes crosslines (see Section B.2.1), NOAA allowable uncertainty (see Section B.2.10), and density requirements (see Section B.2.11).

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 survey area | Complete Coverage |

Table 2: Survey Coverage

Survey coverage is in accordance with requirements listed in Table 2 and in the 2020 HSSD. Coverage requirements were met with complete coverage MBES (Figure 1). However, there is one large deficiency (holiday) located in the polygon for Sackett (Figure 2). An offshore platform is located in the middle of this holiday and has a 0.25 NM exclusion zone surrounding it. The Commanding Officer of Thomas Jefferson set an additional 0.25 NM safety buffer resulting in a 0.5 NM holiday in coverage surrounding the charted platform. Also, there were five unverified charted features (UCFs) that were assigned for investigation. S222 was able to acquire MBES coverage over four of the assigned search radii. The 5th was located in close proximity (80m) to an offshore platform at 28°39'09.68"N 089°47'09.79"W and was deemed unsafe for ship operations (Figure 3, area A). While conducting survey operations within the polygon for Sackett, the field unit noticed an additional unassigned UCF located in the fairway for the Southwest Pass at 28°36'04.54"N 089°37'49.78"W (Figure 3, area B). Due to the location in the fairway and the proximity to the assigned survey area, the field unit conducted a search for this feature as well. See the Final Feature File for additional information.

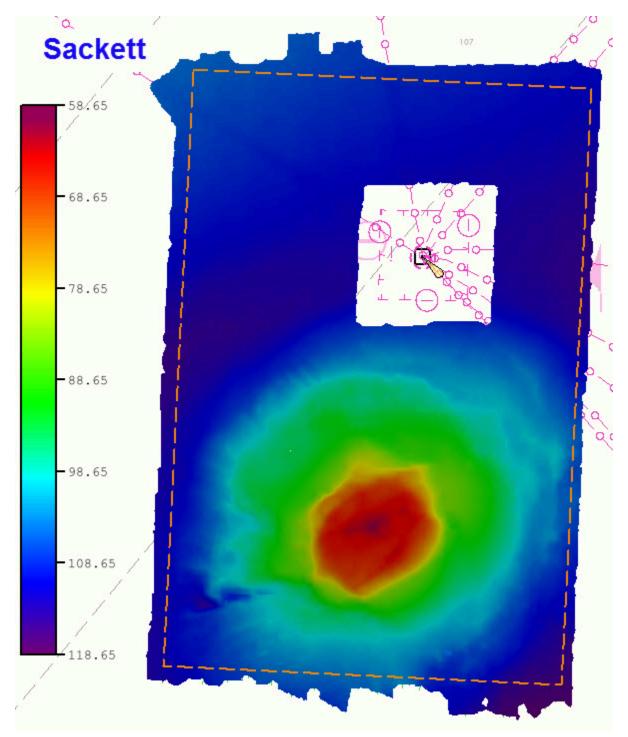


Figure 2: Holiday in the polygon for Sackett surrounding offshore platform with exclusion zone centered on 28°39'41.95"N 089°33'03.75"W.

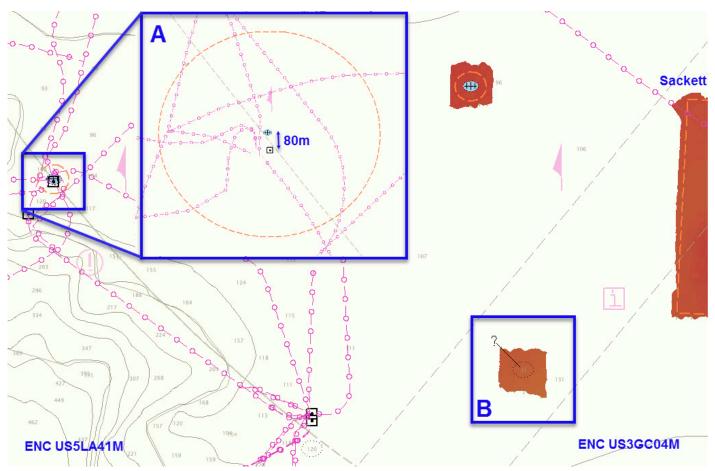


Figure 3: Area A: Unacquired search radii for UCF in close proximity to offshore platform. Area B: Additional search conducted over UCF located in fairway.

A.6 Survey Statistics

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

| | HULL ID | S222 | Total |
|----------------|--------------------------------------|--------|--------|
| | SBES Mainscheme | 0.0 | 0.0 |
| | MBES Mainscheme | 106.62 | 106.62 |
| | Lidar Mainscheme | 0.0 | 0.0 |
| LNM | SSS Mainscheme | 0.0 | 0.0 |
| | SBES/SSS Mainscheme | 0.0 | 0.0 |
| | MBES/SSS Mainscheme | 0.0 | 0.0 |
| | SBES/MBES Crosslines | 7.58 | 7.58 |
| | Lidar Crosslines | 0.0 | 0.0 |
| Numb Bottor | er of n Samples | | 0 |
| | er Maritime lary Points igated | | 0 |
| Numb | er of DPs | | 0 |
| | er of Items igated by)ps | | 0 |
| Total S | SNM | | 19.05 |

Table 3: Hydrographic Survey Statistics

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

| Survey Dates | Day of the Year |
|--------------|-----------------|
| 10/05/2020 | 279 |
| 10/06/2020 | 280 |

| Survey Dates | Day of the Year |
|--------------|-----------------|
| 10/07/2020 | 281 |

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. 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 | S222 |
|----------------|------------|
| LOA 63.4 meter | |
| Draft | 4.6 meters |

Table 5: Vessels Used

B.1.2 Equipment

| Manufacturer | Model | Туре | |
|---------------------|--|--|--|
| Kongsberg Maritime | EM 710 | MBES | |
| Kongsberg Maritime | EM 710 | MBES Backscatter | |
| Sea-Bird Scientific | SBE 19plus V2 | Conductivity, Temperature, and Depth Sensor | |
| AML Oceanographic | MVP100 | Conductivity, Temperature, and Depth Sensor | |
| AML Oceanographic | MVP-X Conductivity, Temperatur and Depth Sensor | | |
| Applanix | POS MV 320 v5 Positioning and Attitude S | | |
| Valeport | Thru-Hull SVS | Sound Speed System | |

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

Table 6: Major Systems Used

Vessel configurations, equipment operations, data acquisition, and processing were consistent with specifications described in the DAPR.

B.2 Quality Control

B.2.1 Crosslines

S222 collected 7.58 linear nautical miles of MBES crosslines, or 7.01% of mainscheme MBES data. A variable resolution (VR) Combined Uncertainty and Bathymetry Estimator (CUBE) surface of mainscheme data and a VR CUBE surface of crossline data were differenced - the resulting mean was 0.04m with a standard deviation of 0.25 (Figures 4 and 5). Visual inspection of the difference surface indicated no systematic issues.

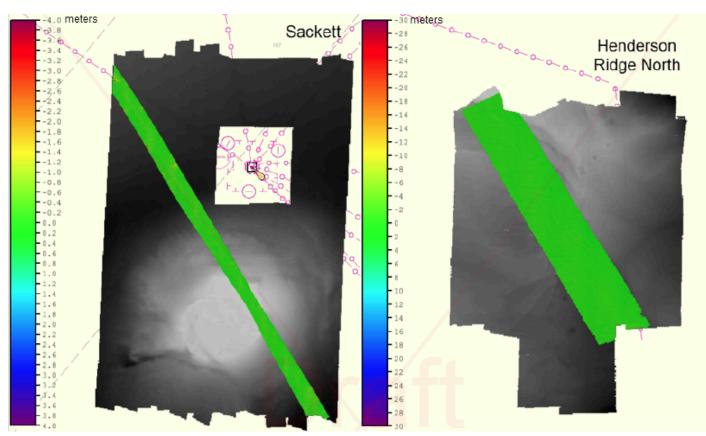


Figure 4: H13229 MBES crossline difference surface, shown in color, overlaid on mainscheme data, shown in greyscale.

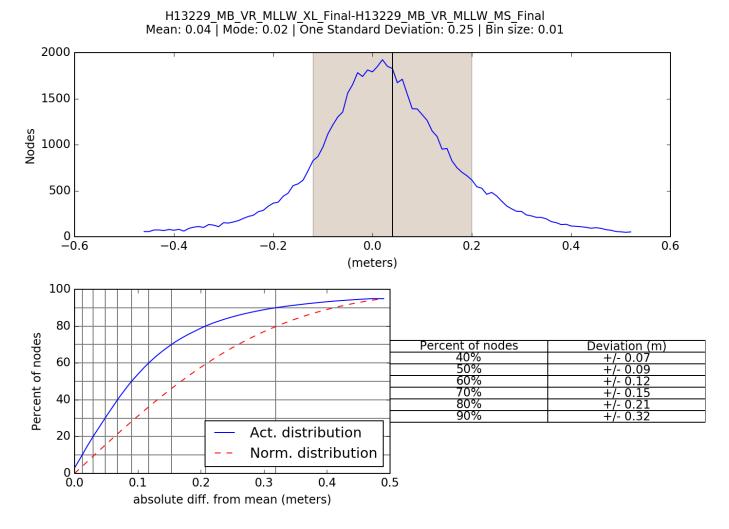


Figure 5: H13229 crossline/mainscheme comparison statistics.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

| Method Measured | | Zoning |
|-----------------|----------|-------------|
| ERS via ERTDM | 0 meters | 0.10 meters |

Table 7: Survey Specific Tide TPU Values.

| Hull ID | Measured - CTD | Measured - MVP | Measured - XBT | Surface |
|---------|-------------------|-------------------|-----------------|--------------------|
| S222 | 4.0 meters/second | 4.0 meters/second | 0 meters/second | 0.20 meters/second |

Table 8: Survey Specific Sound Speed TPU Values.

The bathymetric surface's uncertainty layer is compliant with HSSD 2020 uncertainty standards. Over 99.5% of all nodes pass uncertainty standards (Figure 6).

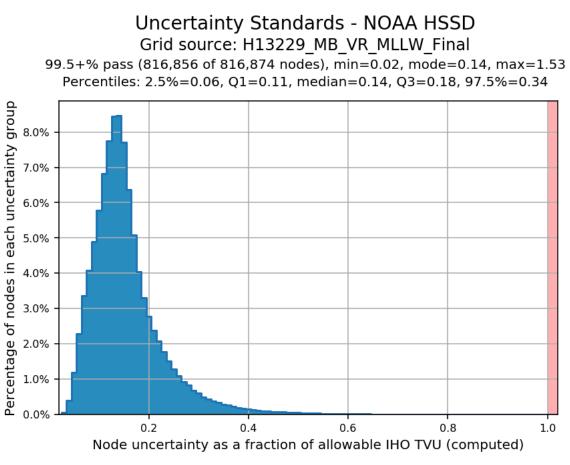


Figure 6: H13229 uncertainty standatds

B.2.3 Junctions

There are no prior or contemporary junctions for this survey.

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: Moving Vessel Profiler (MVP) casts on S222 were conducted at an average interval of 1 hour, guided by observations of the surface sound speed. The maximum depth achieved by MVP casts was 100m. Profiles from the MVP were extended using either a CTD cast conducted in the area within the previous 24 hours, or by using the World Ocean Atlas 09 (WOA09) before being transmitted to SIS and exported from Sound Speed Manager for data processing.

A CTD cast was conducted prior to acquisition on Henderson Ridge North to a depth of 400m. The cast information was transmitted to SIS and is included in the master .svp for data processing. The CTD cast was used to extend subsequent MVP casts for the Henderson Ridge polygon (see Figure 7 for cast distribution). MVP casts for Sackett and the surrounding UCFs were conducted to a maximum depth of 100m and then extended using the WOA09 (see Figure 8 for cast distribution).

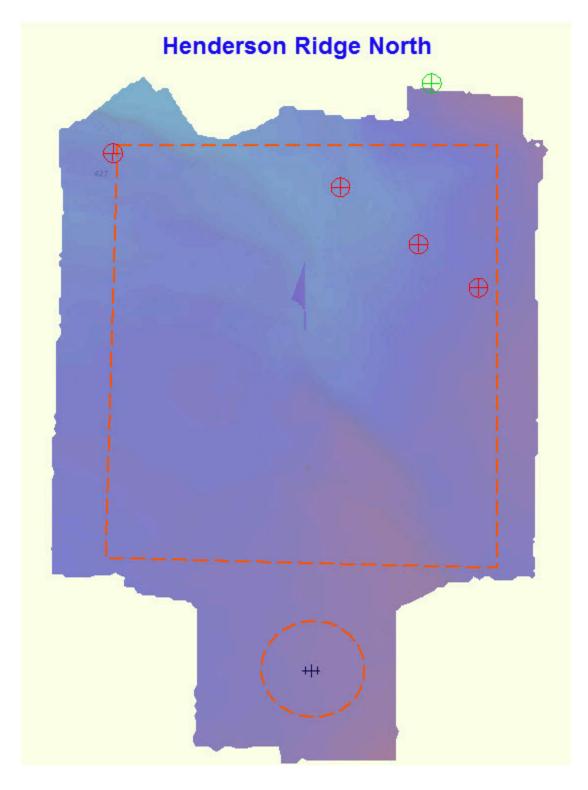


Figure 7: Sound speed cast locations for Henderson Ridge North. CTD cast show in green, MVP casts shown in red.

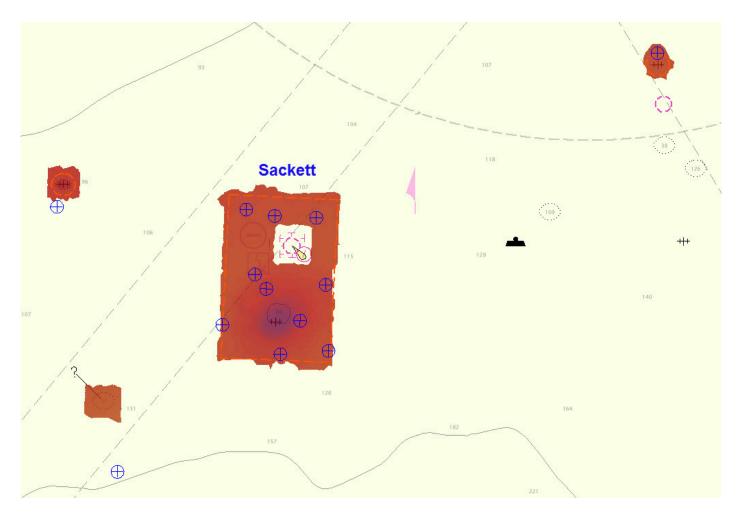


Figure 8: MVP cast locations shown in blue for Sackett and neighboring UCFs.

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

All equipment and survey methods were used as detailed in the DAPR. Raw MBES backscatter was logged as part of the .all file of the Kongsberg EM710 systems. Backscatter was processed in QPS Fledermaus GeoCoder Toolbox (FMGT) software, and the exported geotiff are included in the final processed data package (Figure 9). One MBAB holiday was observed within the Henderson Ridge North data (Figure 10). This holiday directly correlates with a decrease in data density due to depth or rough sea state.

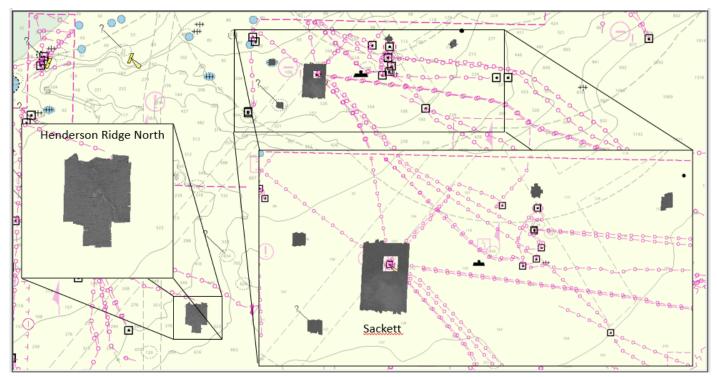


Figure 9: S222 100kHz multibeam acoustic backscatter at 6m resolution.

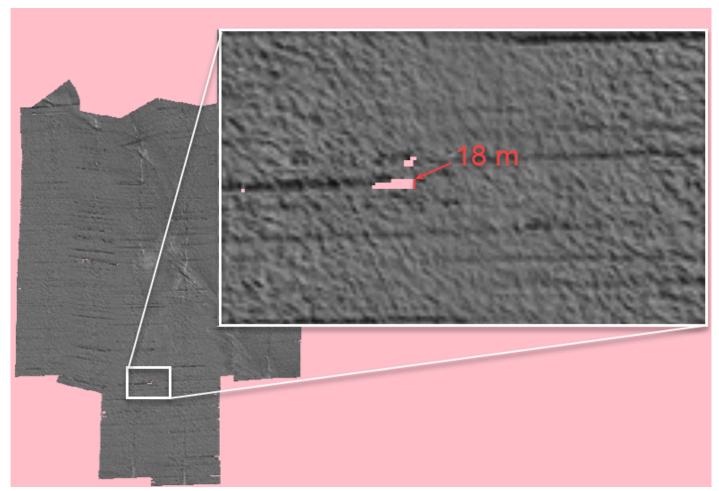


Figure 10: The MBAB holiday located in Henderson Ridge North.

B.5 Data Processing

B.5.1 Primary Data Processing Software

The following Feature Object Catalog was used: NOAA Profile Version 2020.

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 |
|---------------------------------|-------------------------------|------------------------|---------------------------------|----------------------|------------------|
| H13229_MB_VR_MLLW | CARIS VR Surface (CUBE) | Variable Resolution | 60.05 meters - 513.59 meters | NOAA_VR | Complete MBES |
| H13229_MB_VR_MLLW_Final | CARIS VR Surface (CUBE) | Variable Resolution | 59.68 meters - 513.59 meters | NOAA_VR | Complete MBES |
| H13229_MBAB_6m_S222_100kHz_1of1 | MB Backscatter Mosaic | None meters | - | N/A | Complete MBES |

Table 9: Submitted Surfaces

Complete coverage requirements were met by complete coverage MBES as specified under Section 5.2.2.1 of the 2020 HSSD. All bathymetric grids for H13229 meet density requirements per the 2020 HSSD (Figure 11).

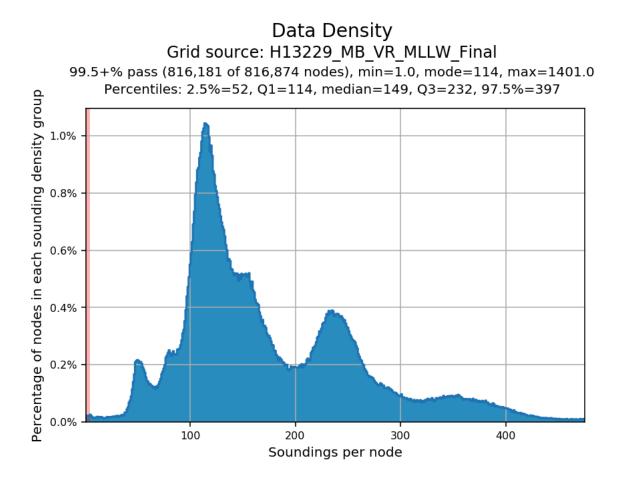


Figure 11: H13229 data density standards.

C. Vertical and Horizontal Control

No Horizontal and Vertical Control Report (HVCR) is required for this survey.

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 ERTDM | OPR-K306-TJ-20_ERTDM_NAD83_MLLW_09262020 |

Table 10: ERS method and SEP file

All soundings submitted for H13229 are reduced to MLLW using separation model techniques as outlined in the DAPR.

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD 83).

The projection used for this project is Universal Transverse Mercator (UTM) Zone 16.

<u>PPP</u>

Trimble-RTX service was used with an Applanix POS MVv5 GNSS_INS system to obtain highly accurate ellipsoidally referenced position data to meet ERS specifications for H13229 MBES data from vessel S222.

WAAS

The Wide Area Augmentation System (WAAS) was used for real-time horizontal control during data acquisition on vessel S222.

D. Results and Recommendations

D.1 Chart Comparison

A chart comparison was conducted between survey H13229 soundings and previously charted ENC soundings using procedures outlined in the DAPR.

D.1.1 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area:

| ENC | Scale | Edition | Update Application Date | Issue Date |
|----------|----------|---------|----------------------------|------------|
| US3GC04M | 1:250000 | 64 | 02/19/2020 | 02/19/2020 |

Table 11: Largest Scale ENCs

D.1.2 Shoal and Hazardous Features

There is one charted sounding (60m) and contour line (73.1m) that fall within the limits of H13229 and represent a shoal present in the Sackett polygon. Current survey data indicate a least depth of 59m with a location approximately 370m south of the charted position (Figure 12). This shoal is not considered hazardous due to its depth and the hydrographer recommends updating the position of the contour and sounding to reflect current data.

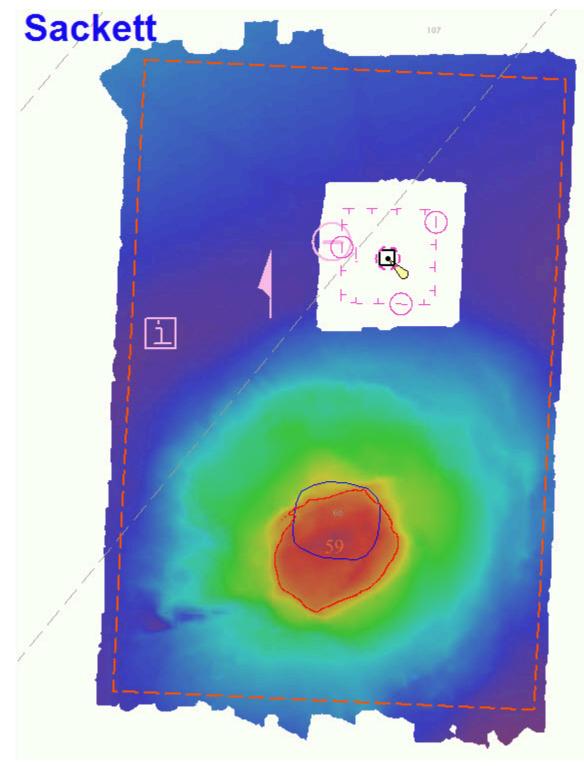


Figure 12: Shoal area in Sackett. Charted 73.1m contour shown in blue, surveyed 73.1m contour shown in red, surveyed least depth in orange.

D.1.3 Charted Features

A total of 15 charted features were investigated. Five features were deemed appropriate for deletion, nine were deemed appropriate to be retained as charted and one feature was not addressed. The UCF located at 28°39'09.68"N 089°47'09.79"W was not addressed due to its proximity to an offshore platform and was deemed unsafe for ship operations (Figure 13, area A). Included in the 15 charted features is an additional non-assigned feature that was investigated while surveying the polygon for Sackett. The UCF was located in the fairway for the Southern Pass at 28°36'04.54"N 089°37'49.78"W (Figure 13, area B). No feature was found and deletion is recommended. Reference Final Feature File for further information.

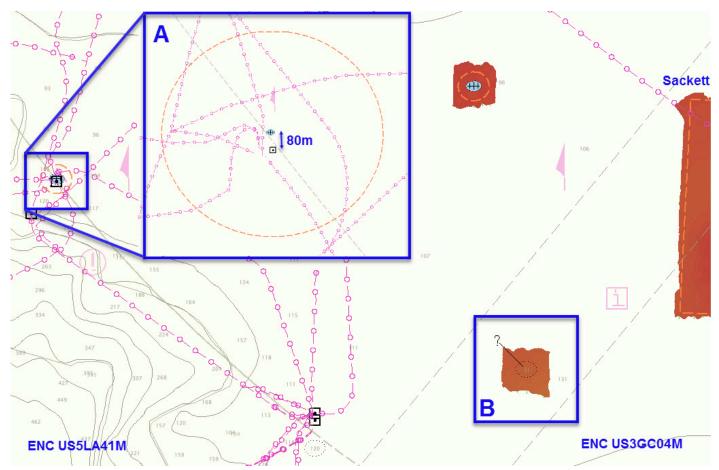


Figure 13: Area A: Unacquired search radii for UCF in close proximity to offshore platform. Area B: Additional search conducted over UCF located in fairway.

D.1.4 Uncharted Features

Two uncharted features were identified and investigated. Both uncharted features are potential wrecks (Figure 14). Neither of the uncharted features were considered dangerous to navigation. See Section the Final Feature File for more information.

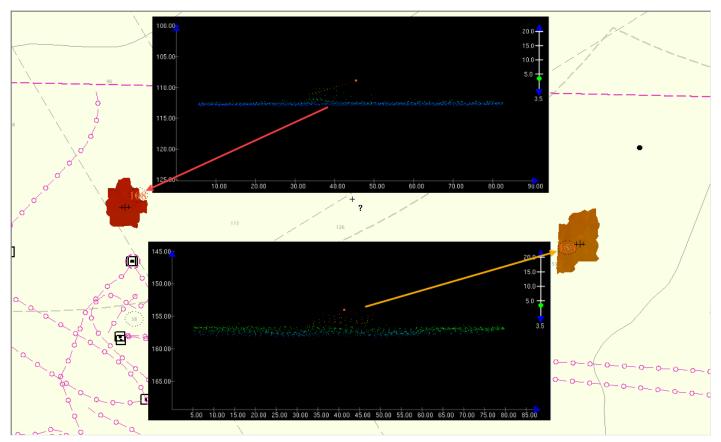


Figure 14: The two uncharted wrecks discovered while surveying two disprovals to the east of Sackett.

D.1.5 Channels

A portion of a fairway was investigated while surveying Sackett (Figure 15). Depths are consistent with charted soundings in close proximity.

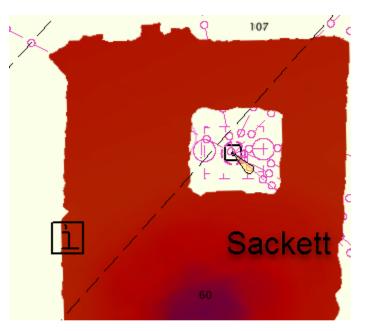


Figure 15: Coverage of the investigated fairway acquired while surveying Sackett.

D.2 Additional Results

D.2.1 Aids to Navigation

One aid to navigation (AtoN) was investigated while conducting survey H13229. The AtoN was observed on station and serving its intended purpose. Reference the Final Feature File.

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

15 pipelines were present within the survey area. One located in Henderson Ridge North (Figure 16) and 14 located in Sackett (Figure 17). Reference the Final Feature File for further information.

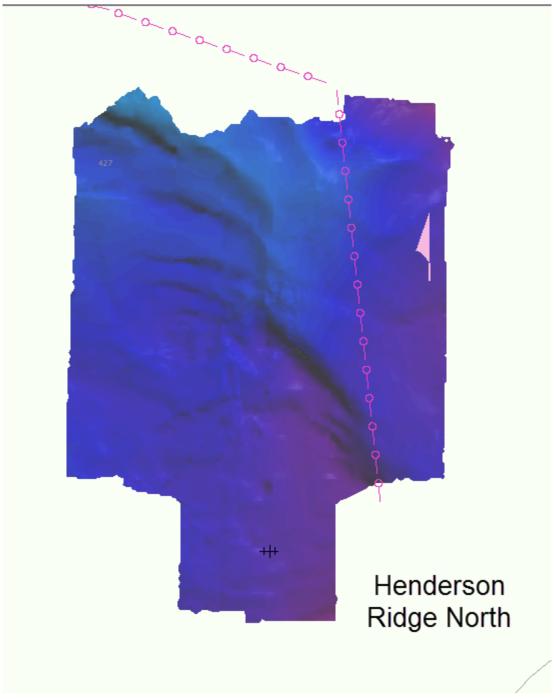


Figure 16: Submarine pipelines located in North Henderson Ridge

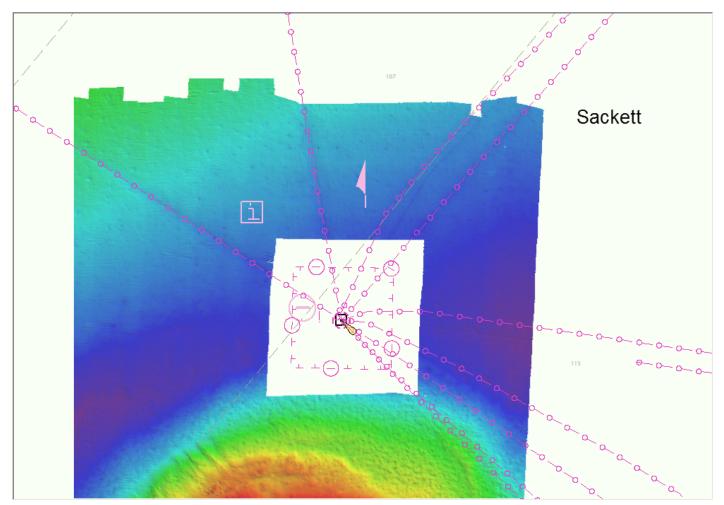


Figure 17: Submarine pipelines located in Sackett.

D.2.6 Platforms

One offshore platform was located within the survey limits of H13229 at 28°39'41.8962"N 089°33'3.78"W (Figure 18). The platform is positioned accurately. Reference the Final Feature File for further information.

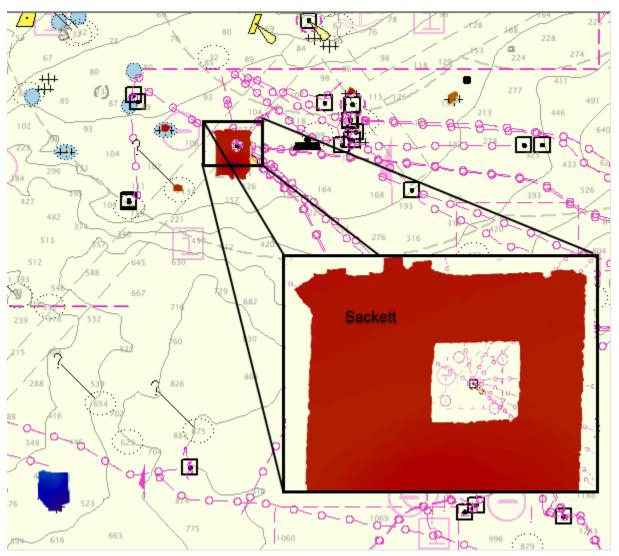


Figure 18: Location of the one offshore platform within the sheet limits of H13229.

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 |
|-------------------------------|--------------------------|---------------|---|
| CDR Briana Hillstrom, NOAA | Commanding Officer | 11/06/2020 | Digitally signed by HILLSTROMBRIANA.WELTON.126 7667531 Date: 2020.11.08 08:21:06-05'00' |
| LTJG Airlie Pickett, NOAA | Field Operations Officer | 11/06/2020 | A The Digitally signed by PICKETT.AIRLIE.GRACE.153 9170089 Date: 2020.11.06 19:47:24 Z |
| Douglas Wood | Chief Survey Technician | 11/06/2020 | WOOD.DOUG Digitally signed by WOOD.DOUGLAS.ALAN LAS.ALAN.128 1282580698 Date: 2020.11.09 09:45:01 -05'00' |
| Chloe Arboleda | Sheet Manager | 11/06/2020 | ARBOLEDA.CHLOE Digitally signed by ARBOLEDA.CHLOE ELIZABETH.B.1550 ELIZABETH.B.1550062760 Date: 2020.11.12 13:37:20 -05'00' |

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 |
| СО | 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 |
| ІНО | 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 |
| РНВ | Pacific Hydrographic Branch |
| POS/MV | Position and Orientation System for Marine Vessels |
| РРК | 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 |



OPS.Thomas Jefferson - NOAA Service Account <ops.thomas.jefferson@noaa.gov>

Thomas Jefferson Marine Mammal Observers

1 message

OPS.Thomas Jefferson - NOAA Service Account <ops.thomas.jefferson@noaa.gov> To: ocs.ecc@noaa.gov

Cc: Julia Waldsmith - NOAA Federal <julia.m.waldsmith@noaa.gov>

Good afternoon,

Attached is a list of Thomas Jeffesron's trained marine mammal observers. Please let me know if you have any questions or concerns.

Very Respectfully, LTJG Airlie Pickett --Acting Operations Officer, NOAA Ship *Thomas Jefferson* Ship Land Line: 757-441-6322 Ship Cell: 757-647-0187 Ship Iridium: 808-434-2706

MarineMammalTrainees.pdf 456K Fri, Oct 30, 2020 at 3:09 PM

11 Mar 20 EEBD / Marine Mammal Training Line throwing Gun / Escope from Quarters / MOB Name ROBERT BAYLISS BUSIN PARKER JIM BRZOSTEK Adam Martinez 2 < 2 2 2 2 Sophia Tigges Rax Castille AB OSBORN FYAN WARTICK AIRLIE PICKETT Chice Arboleda Erin Cziraki 5 Josh Hitesten CLARENCE Vick Gosha Thompson RASCOM, THOME Acton Burke BREAT TOURSED Tyler Aldrich Julia Waldsmith -----Kevin Brown Justin Blancher S.D. Hille Michael Wilson JUSTIN WITMER han les



OPS.Thomas Jefferson - NOAA Service Account <ops.thomas.jefferson@noaa.gov>

Coast Pilot Review - OPR-K306-TJ-20

1 message

OPS.Thomas Jefferson - NOAA Service Account <ops.thomas.jefferson@noaa.gov> Wed, Nov 4, 2020 at 11:27 AM To: OCS NDB - NOAA Service Account <OCS.NDB@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov> Cc: Alexandra Dawson - NOAA Federal <alexandra.dawson@noaa.gov>

Good morning,

The Coast Pilot Review Report for OPR-K306-TJ-20 is attached. The field unit does not recommend any updates at this time.

Please let me know if you have any questions or concerns.

Very Respectfully, LTJG Airlie Pickett --Acting Operations Officer, NOAA Ship *Thomas Jefferson* Ship Land Line: 757-441-6322 Ship Cell: 757-647-0187 Ship Iridium: 808-434-2706

OPR-K306-TJ-20_Coast Pilot Review Report.pdf



Erin Cziraki - NOAA Federal <erin.cziraki@noaa.gov>

NOAA Office of Coast Survey Profile Data accession 0221340 published

1 message

NCEI-MD.Ingest@noaa.gov <NCEI-MD.Ingest@noaa.gov> To: NODC.submissions@noaa.gov, erin.cziraki@noaa.gov Cc: John.Relph@noaa.gov Sat, Oct 31, 2020 at 3:12 PM

NCEI has archived and published the following NOAA Office of Coast Survey Profile data set:

Oceanographic profile data collected from CTD casts aboard NOAA LAUNCHES (THOMAS JEFFERSON and NOAA Ship Thomas Jefferson) as part of project OPR-K306-TJ-20 in the Gulf of Mexico from 2020-09-29 to 2020-10-22 (NCEI Accession 0221340)

You can find your new data set and associated metadata at https://accession.nodc.noaa.gov/0221340



Erin Cziraki - NOAA Federal <erin.cziraki@noaa.gov>

OPR-K306-TJ-20 NCEI data submission

3 messages

Erin Cziraki - NOAA Federal <erin.cziraki@noaa.gov>

Wed, Oct 28, 2020 at 11:08 AM

To: NODC.submission@noaa.gov Cc: Alexandra Dawson - NOAA Federal <alexandra.dawson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "ChiefST.Thomas Jefferson - NOAA Service Account" <chiefst.thomas.jefferson@noaa.gov>

Good morning,

Attached are the .nc files for project OPR-K306-TJ-20. Please let me know if there is any additional information that can be sent.

V/r,

Erin K. Cziraki Hydrographic Survey Technician NOAA ship *Thomas Jefferson* 439 W. York St. Norfolk, VA 23510 Personal Cell: (843) 340-7252 Ship Cell: (757) 647-0187 VIOP: (541) 867-8927 Irridium: (757) 808-434-2706

OPR-K306-TJ-20_20201028.zip 1854K

Mail Delivery Subsystem <mailer-daemon@googlemail.com> To: erin.cziraki@noaa.gov Wed, Oct 28, 2020 at 11:08 AM



Address not found

Your message wasn't delivered to **NODC.submission@noaa.gov** because the address couldn't be found, or is unable to receive mail.

The response was:

550 5.7.1 unrecognized address - gcdp b3sor3842578ioq.34 - gsmtp

Final-Recipient: rfc822; NODC.submission@noaa.gov Action: failed Status: 5.7.1 Diagnostic-Code: smtp; 550 5.7.1 unrecognized address - gcdp b3sor3842578ioq.34 - gsmtp Last-Attempt-Date: Wed, 28 Oct 2020 08:08:28 -0700 (PDT)

------ Forwarded message ------From: Erin Cziraki - NOAA Federal <erin.cziraki@noaa.gov> To: NODC.submission@noaa.gov Cc: Alexandra Dawson - NOAA Federal <alexandra.dawson@noaa.gov>, "OPS.Thomas Jefferson - NOAA Service Account" <ops.thomas.jefferson@noaa.gov>, "ChiefST.Thomas Jefferson - NOAA Service Account" <chiefst.thomas.jefferson@noaa.gov> Bcc: Date: Wed, 28 Oct 2020 11:08:13 -0400 Subject: OPR-K306-TJ-20 NCEI data submission ----- Message truncated -----

Erin Cziraki - NOAA Federal <erin.cziraki@noaa.gov> To: _NODC Submissions <nodc.submissions@noaa.gov> Wed, Oct 28, 2020 at 11:10 AM

[Quoted text hidden]

OPR-K306-TJ-20_20201028.zip 1854K



OPS.Thomas Jefferson - NOAA Service Account <ops.thomas.jefferson@noaa.gov>

Fri, Oct 23, 2020 at 9:31 AM

H13229 Survey Outline

1 message

Chloe Arboleda - NOAA Federal <chloe.arboleda@noaa.gov> To: survey.outlines@noaa.gov Cc: Alexandra Dawson - NOAA Federal <alexandra.dawson@noaa.gov> Bcc: ops.thomas.jefferson@noaa.gov

Hello,

Attached is the S-57 of the final survey outline for sheet H13229 in the project OPR-K306-TJ-20.

Please let me know if you need anything else.

Thank you Chloe

Chloe Arboleda Hydographic Survey Technician NOAA Ship Thomas Jefferson 439 W York Street, Norfolk VA 23510 Ship Cell: 757-647-0187 Ship Landline: 757-441-6322 Irridium: 808-434-2706

H13229_SurveyOutline.000

APPROVAL PAGE

H13229

The survey data meet or exceed the current requirements of the Office of Coast Survey hydrographic data review process and may be used to update NOAA products. The following survey products will be archived at the National Centers for Environmental Information:

- Descriptive Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Collection of acoustic backscatter mosaics
- Geospatial PDF of survey products

Approved:_____

Commander Meghan McGovern, NOAA Chief, Atlantic Hydrographic Branch