

H13333

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

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: H13333

LOCALITY

State(s): Maine

General Locality: Gulf of Maine

Sub-locality: Mistaken Ground

2019

CHIEF OF PARTY
CDR Mark Blankenship, NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

H13333

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): **Maine**

General Locality: **Gulf of Maine**

Sub-Locality: **Mistaken Ground**

Scale: **40000**

Dates of Survey: **10/19/2019 to 10/31/2019**

Instructions Dated: **10/07/2019**

Project Number: **OPR-A366-FH-19**

Field Unit: **NOAA Ship *Ferdinand R. Hassler***

Chief of Party: **CDR Mark Blankenship, 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 19N, 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 H13333

Project: OPR-A366-FH-19

Locality: Gulf of Maine

Sublocality: Mistaken Ground

Scale: 1:40000

October 2019 - October 2019

NOAA Ship *Ferdinand R. Hassler*

Chief of Party: CDR Mark Blankenship, NOAA

A. Area Surveyed

The survey area is located 30NM due East of Kennebunkport, ME.

A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
43° 23' 49.53" N	43° 19' 36.72" N
69° 49' 40.13" W	69° 3' 4.68" W

Table 1: Survey Limits

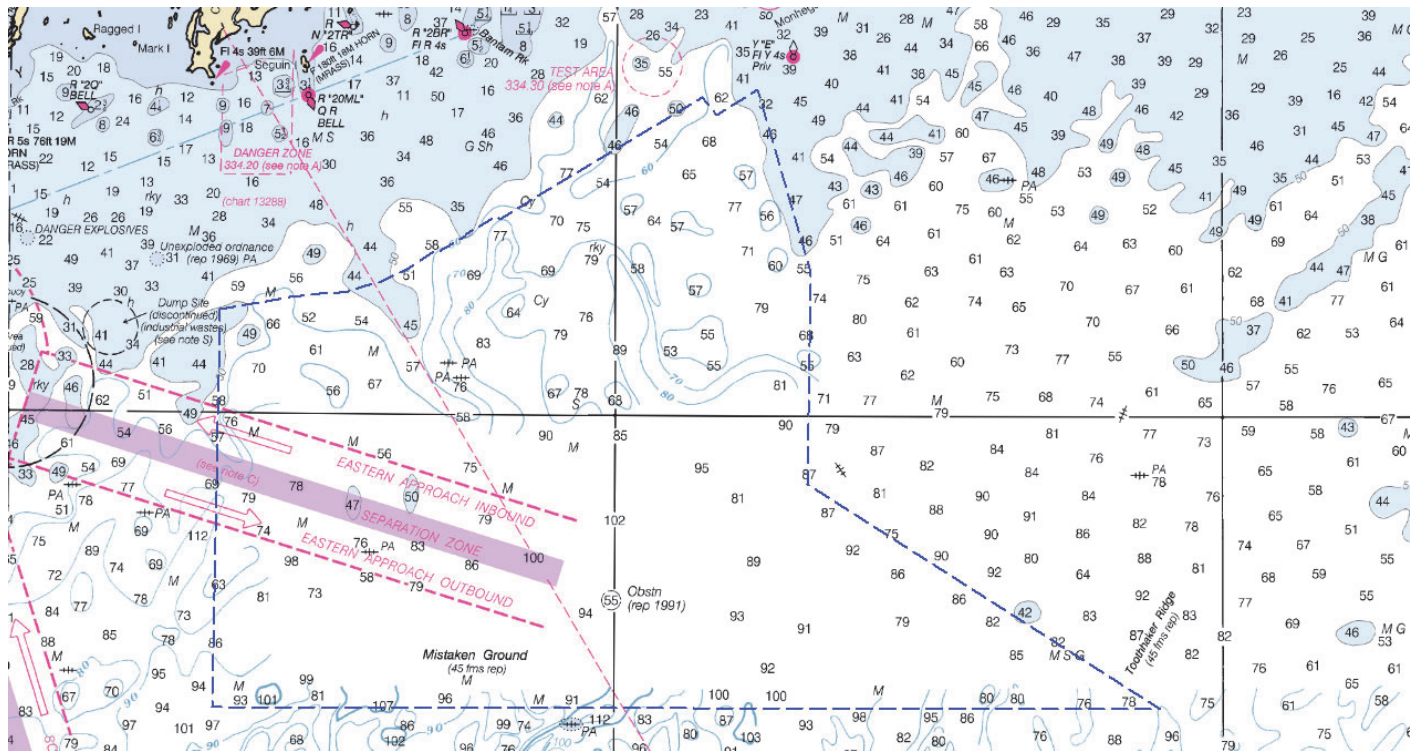


Figure 1: Sheet limits of H13333 (blue) overlaid onto NOAA Raster Chart 13260.

Data were acquired to the survey limits in accordance with the requirements in the Project Instructions and the 2019 NOS Hydrographic Surveys Specifications and Deliverables (HSSD).

A.2 Survey Purpose

Mistaken Ground is a 580 square nautical mile project of the coast of Maine and includes the Eastern Approach to Portland Harbor. Portland Harbor support container, fuel and cruise ships and is one of the largest sources of home heating fuel for the region. The majority of the charted data is from 1835. Acquiring this data will complete the coverage for the National Bathymetric Source (NBS) database for this region, providing modern bathymetric data for updating of National Ocean Service (NOS) nautical charting products to increase maritime safety.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Data acquired in H13333 meet multibeam echo sounder (MBES) coverage requirements for complete coverage, as required by the HSSD.

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 (Refer to HSSD Section 5.2.2.3)

Table 2: Survey Coverage

The entirety of H13333 was acquired with complete coverage, meeting the requirements listed above and in the HSSD, with the exception of the crossline requirement (HSSD Section 5.2.4.2). See Figure 2 for an overview of coverage.

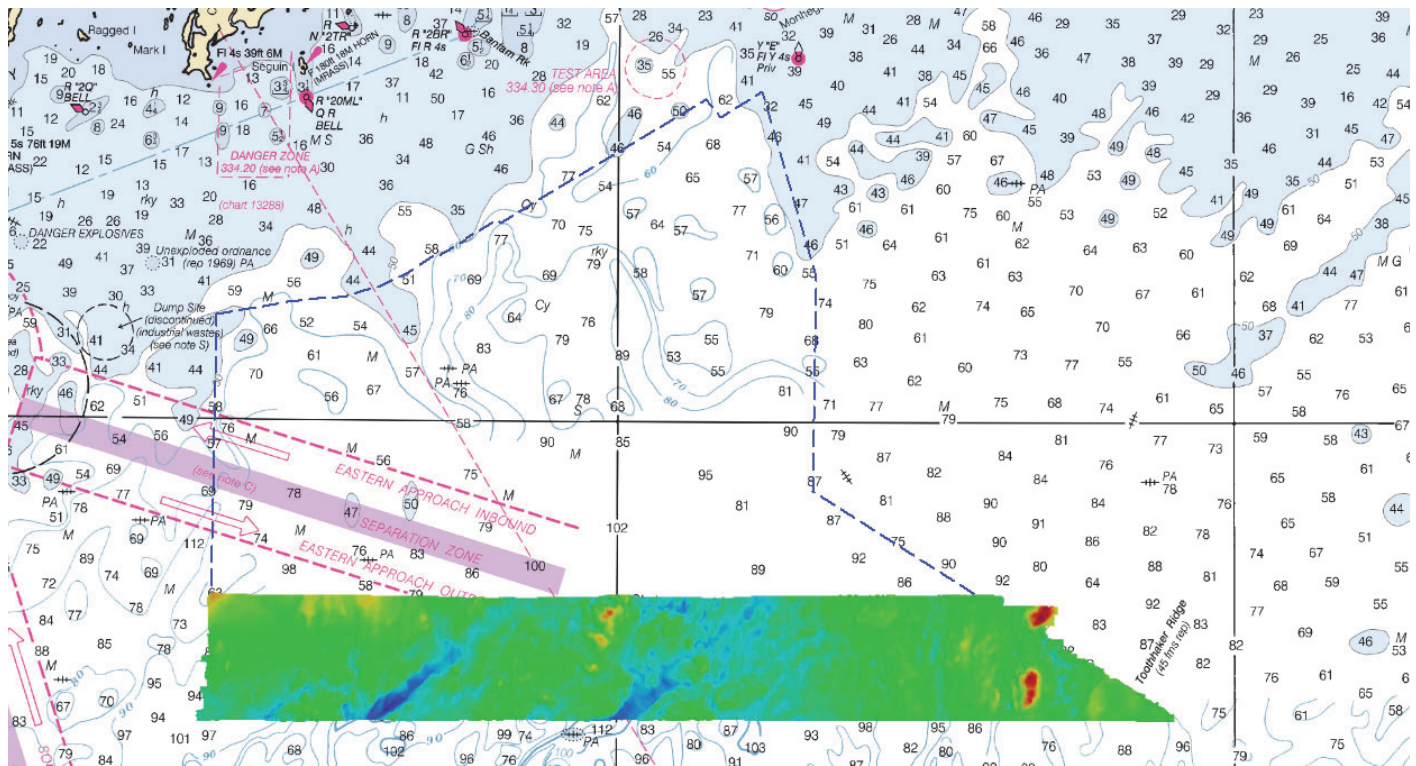


Figure 2: H13333 survey coverage overlaid onto Chart 13260.

A.6 Survey Statistics

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

	HULL ID	<i>S250</i>	<i>Total</i>
LNM	SBES Mainscheme	0	0
	MBES Mainscheme	482.41	482.41 381.973
	Lidar Mainscheme	0	0
	SSS Mainscheme	0	0
	SBES/SSS Mainscheme	0	0
	MBES/SSS Mainscheme	0	0
	SBES/MBES Crosslines	5.66	5.66
	Lidar Crosslines	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			138.774 278

Table 3: Hydrographic Survey Statistics

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

Survey Dates	Day of the Year
10/19/2019	292
10/20/2019	293

Survey Dates	Day of the Year
10/25/2019	298
10/26/2019	299
10/27/2019	300
10/30/2019	303
10/31/2019	304

Table 4: Dates of Hydrography

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the OPR-A366-FH-19 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>S250</i>
LOA	37.7 meters
Draft	3.77 meters

Table 5: Vessels Used

B.1.2 Equipment

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

Manufacturer	Model	Type
Kongsberg Maritime	EM 2040	MBES
AML Oceanographic	MVP200	Conductivity, Temperature, and Depth Sensor
Teledyne RESON	SVP 70	Sound Speed System
Applanix	POS MV 320 v5	Positioning and Attitude System

Table 6: Major Systems Used

The equipment was installed on the survey platform as follows: S250 utilizes two Kongsberg EM 2040 MBES, a POS MV v5 system for position and attitude, SVP 70 surface sound speed sensors, and AML Oceanographic MVP 200 for conductivity, temperature, and depth (CTD) casts.

B.2 Quality Control

B.2.1 Crosslines

Multibeam/single beam echo sounder/side scan sonar crosslines acquired for this survey totaled 1.17 ~~48~~% of mainscheme acquisition.

The crossline collection requirement (see Section 5.2.4.2 of the HSSD) was not met due to limited survey days caused by weather and mechanical issues. Final acquisition days were lost due to these issues and 4% crossline coverage was not met. Only 5.66 LNM of crossline data were collected leading to 1.17 ~~48~~% crossline coverage. Crosslines and MBES mainscheme grids were compared using Pydro Explorer's Compare Grids tool. The two surfaces generally agreed with a mean difference of 0.12m and a standard deviation of 0.72, all of which is within the allowable TVU at these depths.

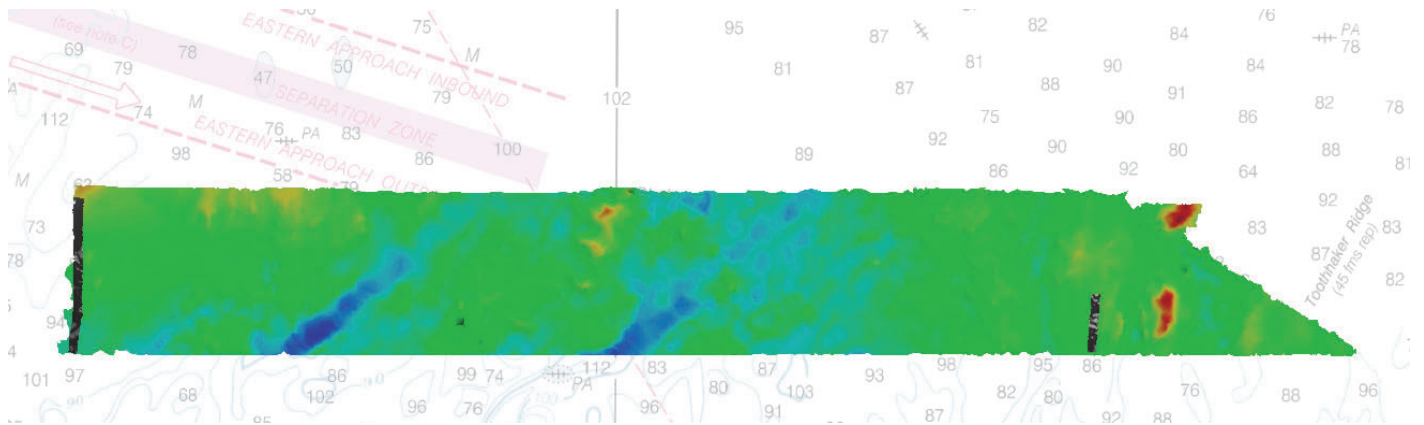
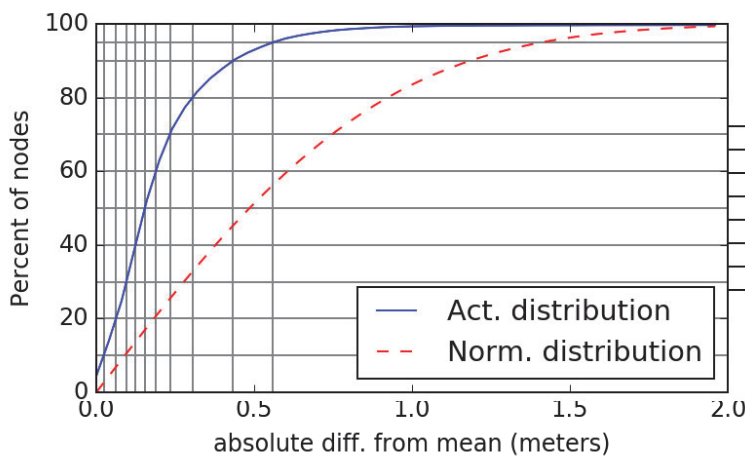
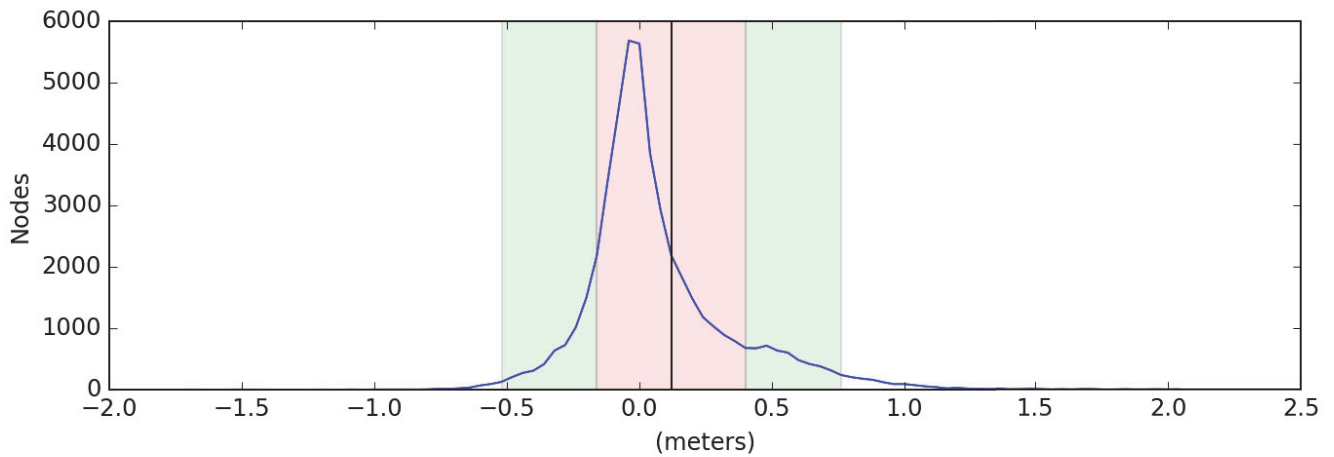


Figure 3: Overview of H13333 crosslines (dark grey) overlaid on the mainscheme MBES surface (rainbow).

H13333_MB_VR_MLLW_Final-H13333_8m_XLs_MLLW
 Mean: 0.12 | Mode: -0.04 | One Standard Deviation: 0.72 | Bin size: 0.04



Percent of nodes	Deviation (m)
50%	+/- 0.15
60%	+/- 0.19
70%	+/- 0.23
80%	+/- 0.30
90%	+/- 0.43
95%	+/- 0.56

Figure 4: H13333 crossline and mainscheme difference statistics.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Method	Measured	Zoning
ERS via VDATUM		0.1 meters

Table 7: Survey Specific Tide TPU Values.

Hull ID	Measured - CTD	Measured - MVP	Surface
S250	N/A	1.0 meters/second	0.5 meters/second

Table 8: Survey Specific Sound Speed TPU Values.

In addition to the usual a priori estimates of uncertainty via device models for vessel motion and VDATUM, real-time and post-processed uncertainty sources were also incorporated into the depth estimates of survey H13333. Real-time uncertainties were provided via EM 2040 MBES data and Applanix Delayed Heave RMS. Following post-processing of the real-time vessel motion, recomputed uncertainties of vessel roll, pitch, gyro and navigation were applied in CARIS HIPS and SIPS via a Smoothed Best Estimate of Trajectory (SBET) RMS file generated in Applanix POSPac.

B.2.3 Junctions

H13333 does not junction with any contemporary surveys.

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: MVP casts on S250 were conducted at an average interval of 70 minutes, guided by observation of the surface sound speed. All sound speed methods were used as detailed in the DAPR.

B.2.8 Coverage Equipment and Methods

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

B.2.9 Holidays

H13333 data were reviewed in CARIS HIPS and SIPS for holidays in accordance with Section 5.2.2.3 of the HSSD. Three (3) holidays which meet the definition described in the HSSD for complete coverage were identified using HydrOffice QC Tools' Holiday Finder. This tool automatically scans the surface for holidays as defined in the HSSD and was run in conjunction with a visual inspection of the surface by the hydrographer. These holidays were caused by a lack of sufficient overlap coverage between swaths and were not able to be covered as acquisition time was cut short due to weather and mechanical issues.

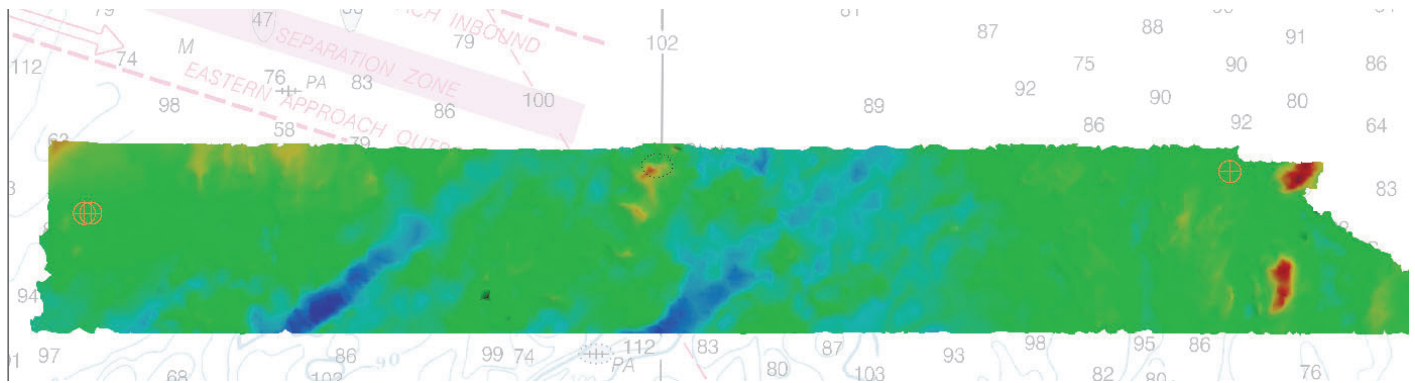


Figure 5: Locations of the three (3) holidays in H13333, shown as orange targets.



Figure 6: A closer view of the holidays on the western side of H13333.

B.2.10 NOAA Allowable Uncertainty

The surface was analyzed using QC Tools' Grid QA feature to determine compliance with specifications. Overall, 99.5+% of nodes within the surface meet NOAA allowable uncertainty specifications for H13333.

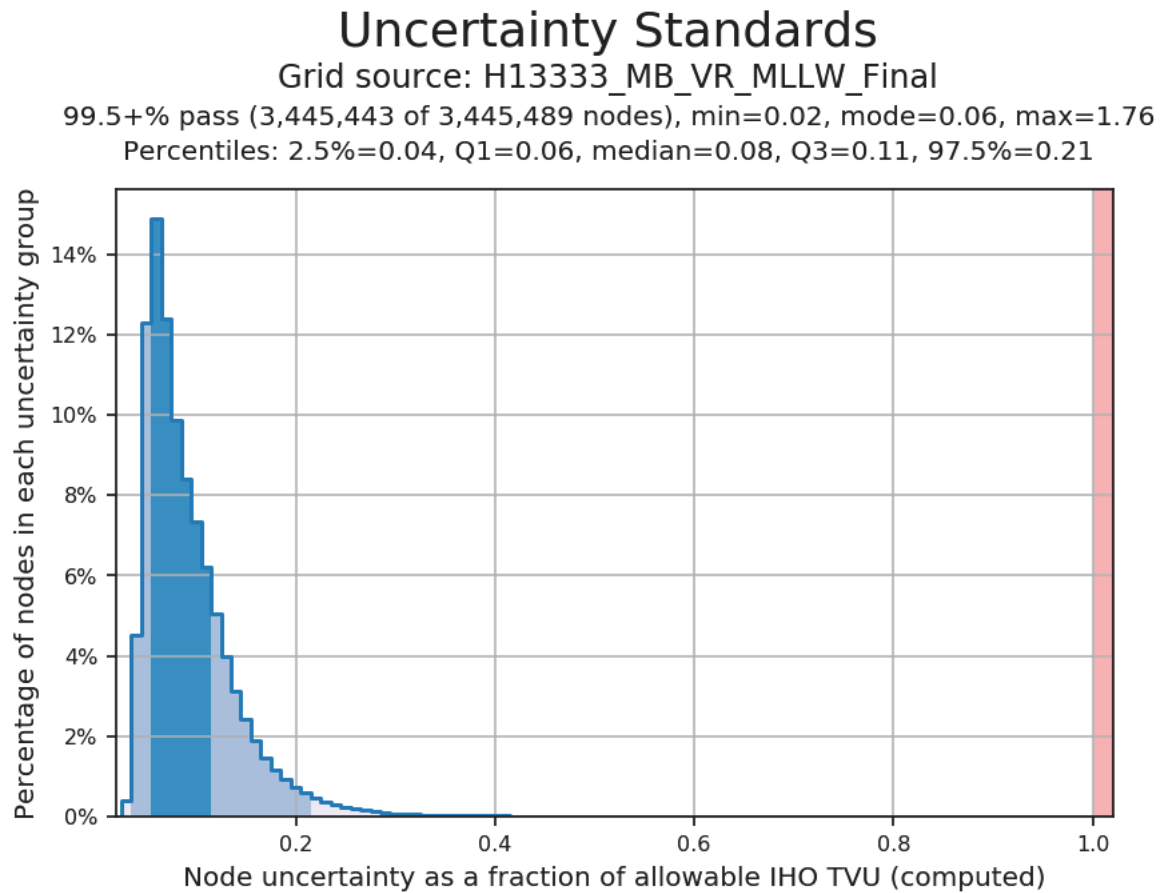


Figure 7: H13333 allowable uncertainty statistics.

B.2.11 Density

The surface was analyzed using HydrOffice QC Tools' Grid QA feature to determine compliance with specifications. Density requirements for H13333 were achieved with at least 99.5+% of surface nodes containing five or more soundings as required by HSSD Section 5.2.2.3.

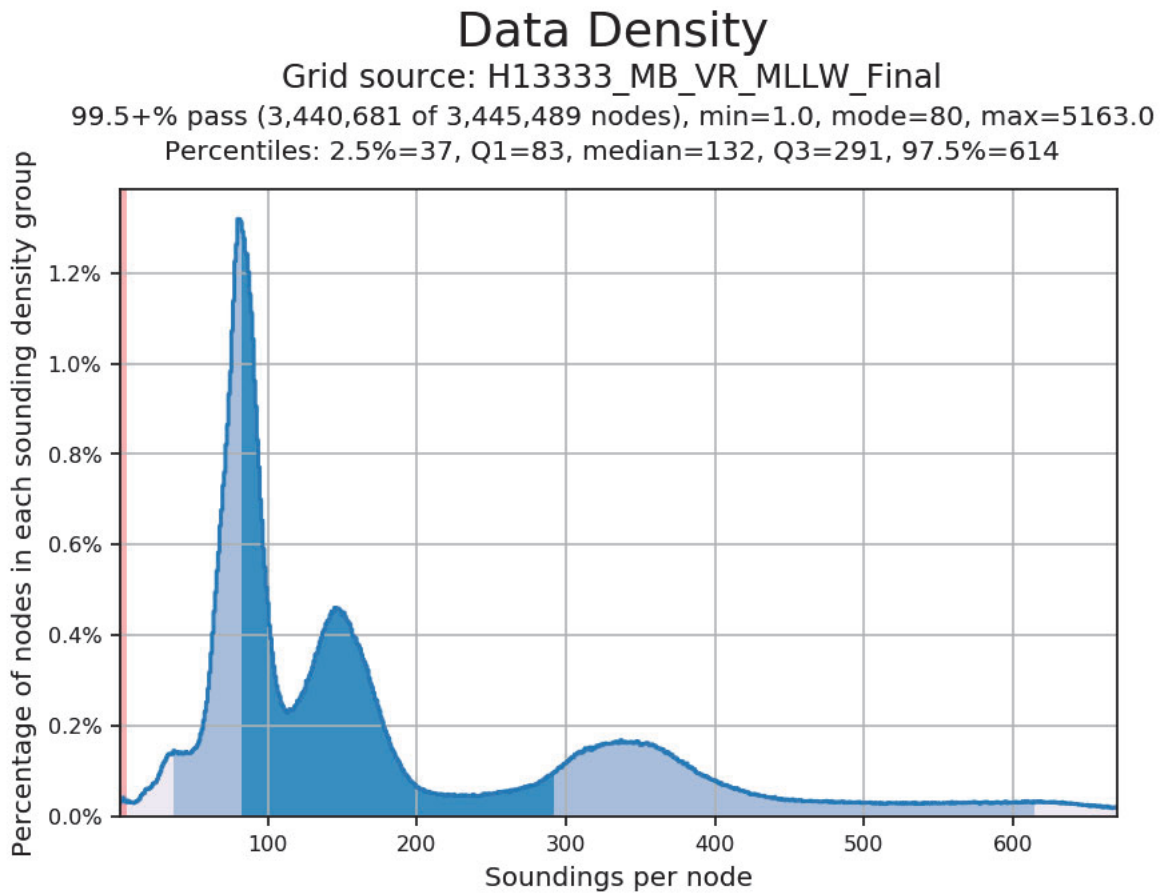


Figure 8: H13333 data density statistics.

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 stored in the .all file for Kongsberg systems. All backscatter were processed to GSF files and a floating point mosaic was created by the field unit via Fledermaus FMGT 7.8.6. See Figure 16 for a greyscale representation of the complete mosaic.

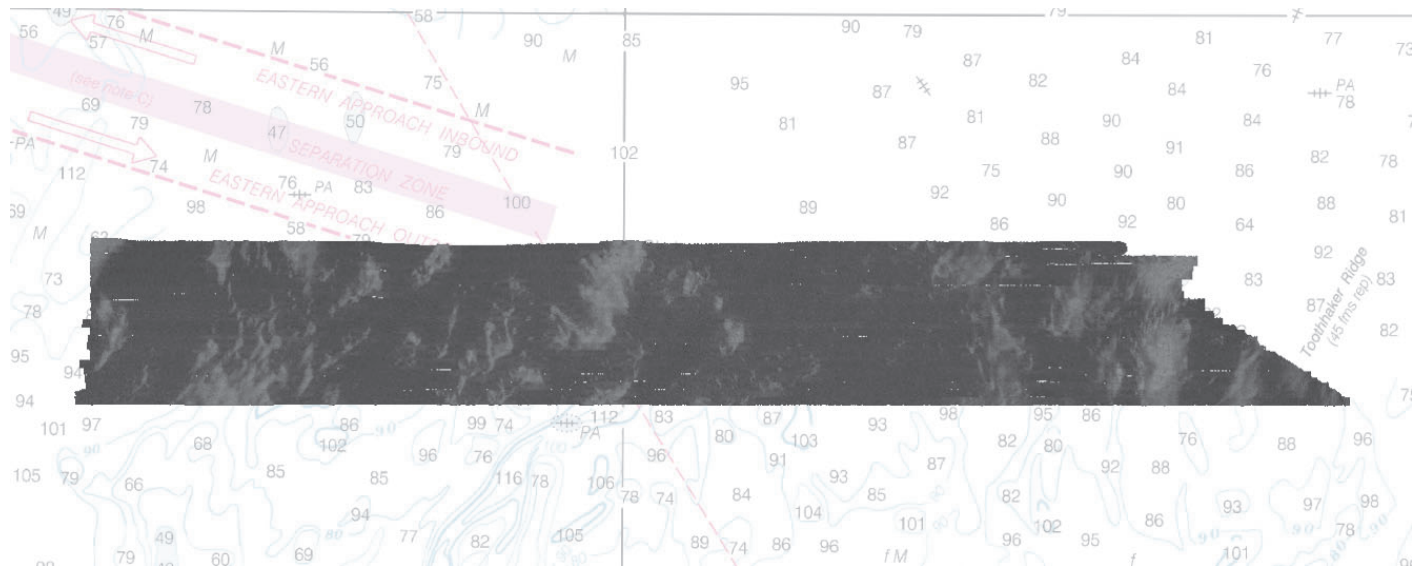


Figure 9: Backscatter mosaic for H13333.

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	10.4.16

Table 9: Primary bathymetric data processing software

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

Manufacturer	Name	Version
QPS	FMGT	7.8.6

Table 10: Primary imagery data processing software

The following Feature Object Catalog was used: Caris_Support_Files_2019v1.

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
H13333_MB_VR_MLLW	CARIS Raster Surface (CUBE)	Variable Resolution	77.5 meters - 226.7 meters	NOAA_VR	Complete MBES
H13333_MB_VR_MLLW_Final	CARIS Raster Surface (CUBE)	Variable Resolution	77.5 meters - 226.7 meters	NOAA_VR	Complete MBES
H13333_MBAB_2m_S250_300kHz_1of1	MB Backscatter Mosaic	N/A	0 N/A -	N/A	N/A

Table 11: Submitted Surfaces

The NOAA CUBE parameters defined in the HSSD were used for the creation of all CUBE surfaces for H13333. The surfaces have been reviewed where noisy data, or "fliers" are incorporated into the gridded solutions causing the surface to be shoaler or deeper than the true sea floor. Where these spurious soundings cause the gridded surface to vary from the reliably measured seabed by greater than the maximum allowable Total Vertical Uncertainty at that depth, the noisy data have been rejected by the hydrographer and the surface recomputed.

Flier Finder, part of the QC Tools package within HydrOffice, was used to assist the search for spurious soundings following gross cleaning. Flier Finder was run iteratively until all remaining flagged fliers were deemed to be valid aspects of the surface.

B.5.3 Data Logs

Data acquisition and processing notes are included in the acquisition and processing logs. All data logs are submitted digitally in the Separates I folder.

C. Vertical and Horizontal Control

Per Section 5.1.2.3 of the 2014 Field Procedures Manual, no Horizontal and Vertical Control Report has been generated for H13333.

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-A366-FH-20_NAD83_VDatum_MLLW.csar

Table 12: ERS method and SEP file

ERS methods were used as the final means of reducing H13333 to MLLW for submission.

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 19.

The following PPK methods were used for horizontal control:

- RTX

Vessel kinematic data were post-processed using Applanix POSPac processing software and RTX positioning methods described in the DAPR. Smoothed Best Estimate of Trajectory (SBET) and associated error (RMS) data were applied to all MBES data in CARIS HIPS and SIPS.

WAAS

During real-time acquisition, all platforms received correctors from the Wide Area Augmentation System (WAAS) for increased accuracies similar to USCG DGPS stations. WAAS and SBETs were the sole methods of positioning for H13333 as no DGPS stations were available for real-time horizontal control.

D. Results and Recommendations

D.1 Chart Comparison

A comparison was performed between survey H13333 and ENC's US3EC10M and US3EC11M using CARIS HIPS and SIPS. A sounding set and contours from H13333 were visually compared with currently charted data.

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	Preliminary?
US3EC10M	1:378838	42	08/02/2018	10/02/2019	NO
US3EC11M	1:378838	6	08/22/2018	10/28/2019	NO

Table 13: Largest Scale ENC's

US3EC10M

Upon visual inspection, charted soundings and survey soundings generally agree in most locations across the survey area within 10 to 20m. However, some shoals detected by this survey are not reflected in the charted soundings and contours. Charted contours in this region end abruptly within the survey limits of H13333 due to a lack of contemporary bathymetry data in this region. No sonar data is available for the majority of the area covered by H13333. As such, the hydrographer recommends that all charted soundings and contours be superseded with data from H13333.

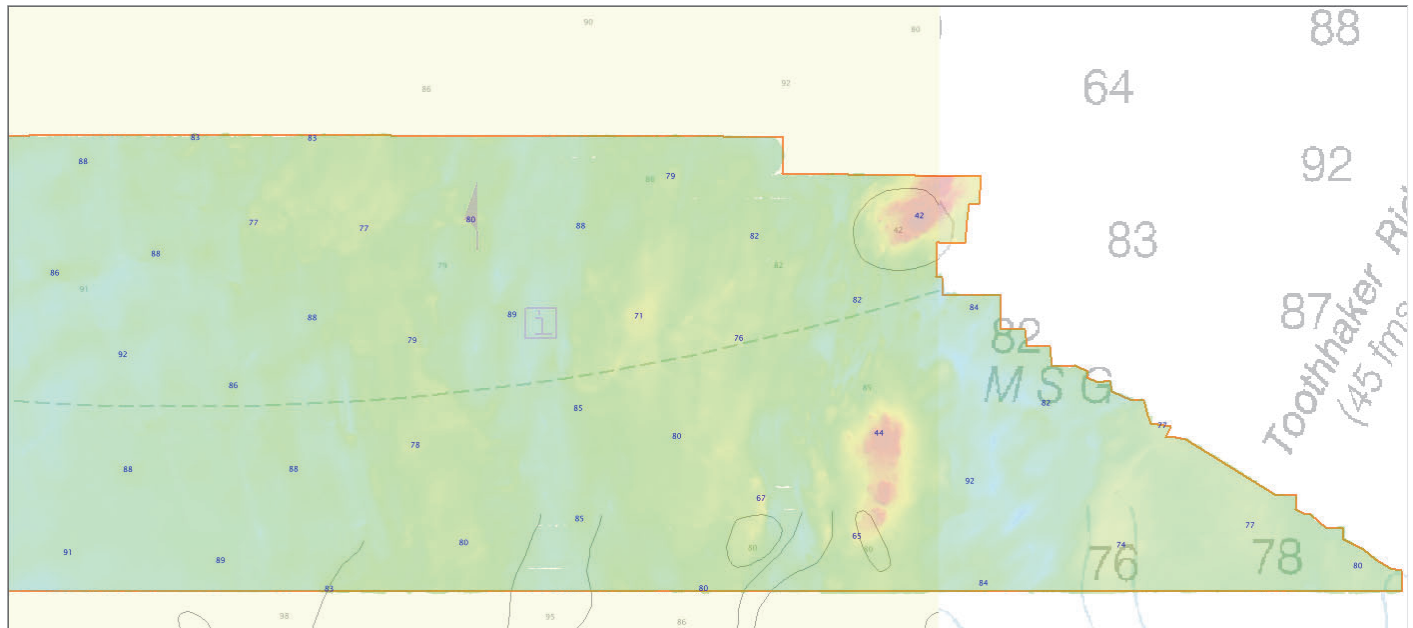


Figure 10: Chart Comparison of H13333 soundings (blue), and charted soundings and contours (grey). The shoal in the southern portion of the survey area is not reflected in charted soundings or contours.

US3EC11M

Upon visual inspection, charted soundings and survey soundings generally agree in most locations across the survey area within 10 to 20m. However, some shoals detected by this survey are not reflected in the charted soundings and contours. Charte contours in this region end abruptly within the survey limits of H13333 due to a lack of contemporary bathymetry data in this region. No sonar data is available for the majority of the area covered by H13333. As such, the hydrographer recommends that all charted soundings and contours be superseded with data from H13333.

D.1.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

D.1.3 Charte Features

All charted features were investigated as part of the H13333 survey and are addressed in the Final Feature File.

D.1.4 Uncharted Features

No uncharted features exist for this survey.

D.1.5 Shoal and Hazardous Features

A non-hazardous shoal exists in the central northern region of the survey area. The hydrographer believes that this shoal corresponds with the charted obstruction, of which no evidence was found.

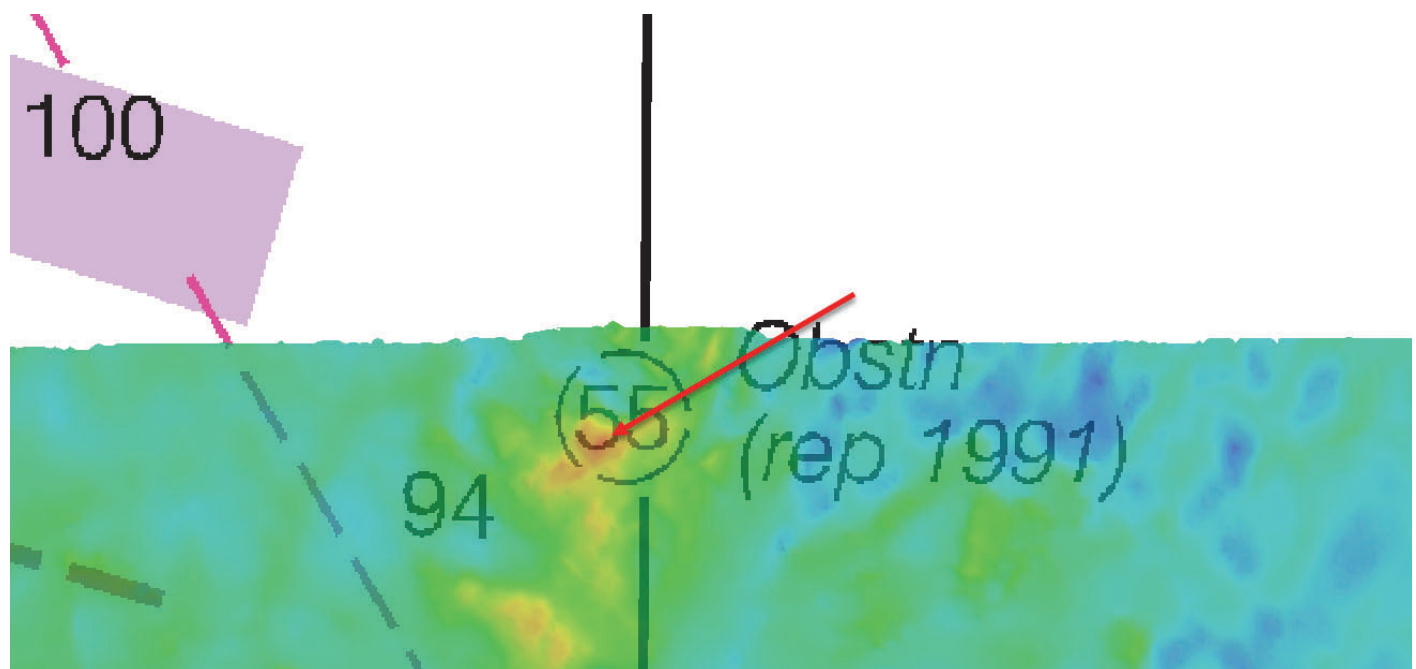


Figure 11: Non-hazardous Shoal Corresponding with Charted Obstruction

D.1.6 Channels

Channels, designated anchorages, precautionary areas, safety fairways, traffic separation schemes, pilot boarding areas, and/or channel and range lines exist within the survey limits, but were not investigated. A traffic separation area begins in the northern region however no charted soundings within the traffic separation scheme were covered by H13333.

D.1.7 Bottom Samples

No bottom samples were required for this survey.

D.2 Additional Results

D.2.1 Shoreline

Shoreline was not assigned in the Hydrographic Survey Project Instructions or Statement of Work.

D.2.2 Aids to Navigation

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

D.2.3 Overhead Features

No overhead features exist for this survey.

D.2.4 Submarine Features

No submarine features exist for this survey.

D.2.5 Platforms

No platforms exist for this survey.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Abnormal Seafloor and/or Environmental Conditions

No abnormal seafloor and/or environmental conditions exist for this survey.

D.2.8 Construction and Dredging

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

D.2.9 New Survey Recommendation

Due to weather conditions and mechanical issues, the full planned extents of H13333 were not achieved. Due to the importance of surveying this region for NOAA's National Bathymetric Source (NBS) project, it is recommended that a survey of this region is completed in the near future.

D.2.10 Inset Recommendation

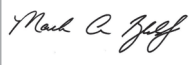
No new insets are recommended for this area.

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 Mark Blankenship	Chief of Party	01/14/2020	 2020.01.14 15:14:58 -05'00'
LT Steven Wall	Field Operations Officer	01/14/2020	WALL.STEVEN.JA MES.1459978298 Digitally signed by WALL.STEVEN.JAMES.145997 8298 Date: 2020.01.16 09:18:16 -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
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



OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

PROJECT CLOSE: OPR-A366-FH-19 Mistaken Ground, ME - acquisition is complete

1 message

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Fri, Nov 8, 2019 at 7:42 AM

To: Corey Allen - NOAA Federal <corey.allen@noaa.gov>, "CO.Ferdinand Hassler - NOAA Service Account" <co.ferdinand.hassler@noaa.gov>, "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>, Colleen Roche - NOAA Federal <colleen.roche@noaa.gov>, Sarah <Sarah.Cotnoir@maine.gov>, Daniel Garatea - NOAA Federal <daniel.garatea@noaa.gov>, Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>, Christina Fandel - NOAA Federal <christina.fandel@noaa.gov>, Lorraine Robidoux - NOAA Federal <lorraine.robidoux@noaa.gov>, Lucy Hick - NOAA Federal <lucy.hick@noaa.gov>, Richard Brennan - NOAA Federal <richard.t.brennan@noaa.gov>, "XO. Ferdinand Hassler - NOAA Service Account" <xo.ferdinand.hassler@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>, Katrina Wyllie - NOAA Federal <katrina.wyllie@noaa.gov>

Cc: John Nyberg - NOAA Federal <john.nyberg@noaa.gov>, Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>, AHB Chief - NOAA Service Account <ahb.chief@noaa.gov>, Tara Wallace - NOAA Federal <tara.wallace@noaa.gov>, Christiaan VanWestendorp - NOAA Federal <christiaan.vanwestendorp@noaa.gov>, Jay Nunenkamp - NOAA Federal <jay.nunenkamp@noaa.gov>, Crescent Moegling <crescent.moegling@noaa.gov>, Kristen Crossett - NOAA Federal <Kristen.Crossett@noaa.gov>

Hello Folk,

Hydrographic Survey data acquisition has ended on *OPR-A366-FH-19 Mistaken Ground*, ME. The requirement of updating the data gap from 1835 vintage leadline to modern multibeam survey was not met, so it is likely we will return next year.

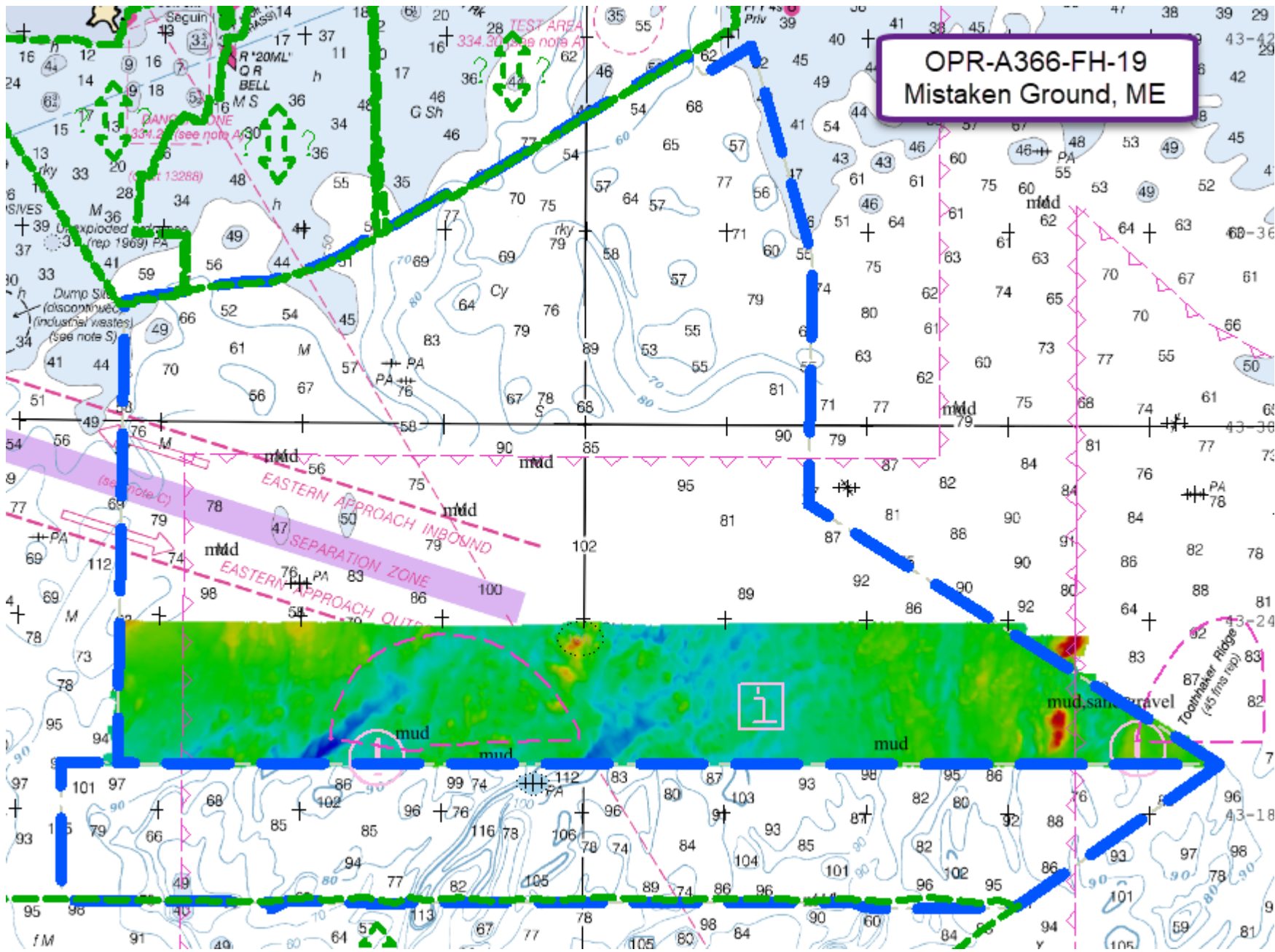
Though the primary objective was not met, *Mistaken Ground* has been a good project. NOAA Ship *Ferdinand R. Hassler*, updated over half the area. This includes the mysterious caution area "Mistaken Ground", an obstruction area, and much of the area extending beyond the existing eastern approach to Portland, Maine.

The *Mistaken Ground* survey will substantially improve a portion of the chart supporting the Portland Harbor. Portland Harbor is home to over 100 cruise ships; is one of the largest sources of home heating fuel for the region; and supports \$460 Million worth of commerce annually. The high resolution hydrographic data acquired addresses key features that will improve the safety of navigation; and will be used to support BOEM and USCG on natural resource and traffic management.

In addition to the hydrographic mission we came together and improved our internal and external communications. Due to a last minute priority change, the Mistaken Ground project was put together with only two weeks notice. Team HSD OPS worked together to put together the project and notify stakeholders within three business days of receiving the request. Navigation Manager Colleen Roche, Sarah Cotnoir of Maine Department of Marine Resources, NOAA Ship Ferdinand R Hassler, and Team HSD OPS worked hard to ensure that the communication required for fishing gear interactions were established as quickly as possible. HSD Operations is using the lessons learned on this project to inform their change management documentation process. Many people worked hard to bring this project into reality.

Thank you everyone for making this project possible.

Sincerely,
Starla Robinson



Starla D. Robinson, Physical Scientist
NOS - OCS - Hydrographic Survey Division - Operations Branch
National Oceanic Atmospheric Administration

11/8/2019

National Oceanic and Atmospheric Administration Mail - PROJECT CLOSE: OPR-A366-FH-19 Mistaken Ground, ME - acquisition is complete

Pronouns: she / her or neutral

*Office: **240-533-0034** (Updated 6/13/17)*

Cell: 360-689-1431

Website Acquisition: [HSD Planned Hydrographic Surveys](#)

Website Planning: [OCS Survey Plans](#)



OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

OPR-A366-FH-19 Sheet H13333 Survey Outline

1 message

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Fri, Nov 8, 2019 at 1:02 PM

To: NOS OCS Survey Outlines <survey.outlines@noaa.gov>

Cc: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Good Afternoon,


Please see the attached .hob file as submission for sheet H13333, OPR-A366-FH-19

Very Respectfully,
-Steve W.

LT Steven Wall
Operations Officer, NOAA Ship FERDINAND R. HASSLER
ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

Physical Address (UPS/FedEx):
UNH Judd Gregg Marine Research Complex
[29 Wentworth Rd](#)
[New Castle, NH 03854](#)

Mailing Address:
PO Box 638, New Castle, NH 03854

 **H13333_Outline.hob**
2K



OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

NCEI Sound Speed Data

1 message

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Fri, Nov 8, 2019 at 7:59 AM

To: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>, "NODC.Submissions" <NODC.Submissions@noaa.gov>

Greetings,

Please see attached .zip file containing sound speed data collected during this year's project: OPR-A366-FH-19.

LT Steven Wall

Operations Officer, NOAA Ship FERDINAND R. HASSLER

ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

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[New Castle, NH 03854](#)

Mailing Address:

PO Box 638, New Castle, NH 03854

 **OPR-A366-FH-19_20191105.zip**
998K



OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

OPR-A366-FH-19_November_04

9 messages

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Mon, Nov 4, 2019 at 7:26 AM

To: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>

Cc: Charles Corea - NOAA Federal <charles.corea@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Good Morning,

I am emailing you in order to provide the weekly update for project OPR-A266-FH-19 for the week of 27OCT2019.

The Hassler was delayed by weather and arrived in port at New Castle, NH on October 27th. On October 29th the Hassler was underway on project and collected data on app. 239LNM. The Hassler returned into port on October 31st due to weather forecast, personnel transfer, fuel, and crew rest.

The plan for the coming week is to get underway on November 4th and continue acquisition from south to north.


Please see the attached image for reference.

V/r,
-Steve W.

LT Steven Wall
Operations Officer, NOAA Ship FERDINAND R. HASSLER
ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

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[New Castle, NH 03854](#)

Mailing Address:
PO Box 638, New Castle, NH 03854

 **OPR_A366_FH_19_November_4.pdf**
308K

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Mon, Nov 4, 2019 at 8:52 AM

To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

1/16/2020

National Oceanic and Atmospheric Administration Mail - OPR-A366-FH-19_November_04

Cc: _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Thank you for the update.

Best of luck,
Starla

[Quoted text hidden]

--

Starla D. Robinson, Physical Scientist

NOS - OCS - Hydrographic Survey Division - Operations Branch

National Oceanic Atmospheric Administration

Pronouns: she / her or neutral

Office: 240-533-0034 (Updated 6/13/17)

Cell: 360-689-1431

Website Acquisition: [HSD Planned Hydrographic Surveys](#)

Website Planning: [OCS Survey Plans](#)

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Tue, Nov 12, 2019 at 4:08 PM

To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

Cc: _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Hi FH Friends,

Please provide a weekly since the project is restarting. Could you also verify that the have acquired 7 days and 1075 LNM?

Thanks and best of luck,
Starla

[Quoted text hidden]

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Wed, Nov 13, 2019 at 3:19 AM

To: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Cc: _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Hi Starla,

I'll send you the update and the info when I return to the ship on Thursday from housekeeping leave.

Steve W.

[Quoted text hidden]

--

Pardon my brevity, this message was sent from my iPhone.

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>
To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

Wed, Nov 13, 2019 at 9:47 AM

Sounds good, thank you. Happy housekeeping! :)

[Quoted text hidden]

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov> Thu, Nov 14, 2019 at 11:41 AM
To: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>

Hi Starla,

I have acquisition *across* 7 days (so there were breaks, such as transit to and from - not acquisition for the entire time: DN 292, 293, 298, 299, 300, 303, 304). 770.35LNM.

If I may ask, how did you come about the 1075Inm number?

-Steve W

LT Steven Wall
Operations Officer, NOAA Ship FERDINAND R. HASSLER
ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

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[New Castle, NH 03854](#)

Mailing Address:
PO Box 638, New Castle, NH 03854

[Quoted text hidden]

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov> Thu, Nov 14, 2019 at 4:55 PM
To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>
Cc: _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>

That is good. That correlates better with the area covered and LNM estimate for the area covered.

When Charlene processes it reports some metadata to HQ. I was trying to see if I could use that to track progress and remaining LNM on a project. Obviously that did not work so well.... So I think I will request LNM in the weekly in the future. It would be neat if Pydro could automate some of the tracking reporting.

Sigh...
Starla

[Quoted text hidden]

Fri, Nov 15, 2019 at 8:47 AM

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

To: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Cc: _NOS OCS HSD Progress Sketches <progress.sketches@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>, Charles Corea - NOAA Federal <charles.corea@noaa.gov>

Oh I see. I think it just kept adding LNM on some of the data that we ran back through (reprocessed).

Charlene is something else for sure. Makes those of us who manually processed seem like old people.

LT Steven Wall

Operations Officer, NOAA Ship FERDINAND R. HASSLER

ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)Physical Address (UPS/FedEx):

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[29 Wentworth Rd](#)[New Castle, NH 03854](#)Mailing Address:

PO Box 638, New Castle, NH 03854

[Quoted text hidden]

Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Fri, Nov 15, 2019 at 7:39 PM

To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

*Imagining us on the back deck in rocking chairs hassling the young'ns *

If you got time to social some time, give me a call -*

[Quoted text hidden]



OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

OPR-A366-FH-19

4 messages

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Tue, Oct 22, 2019 at 9:16 AM

To: Corey Allen <Corey.Allen@noaa.gov>, Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>

Cc: CO HASSLER <co.ferdinand.hassler@noaa.gov>

Good Morning,

I am emailing you in order to nail down more priority areas. After seeing the actual swath width, the time it will take has changed, though we may be able to make up for it in the northern areas when we get there.

That being said, please verify the areas we should concentrate on as priorities. From the meeting it was mentioned that the south, south west part is higher, up to and including the shipping lanes. Please let me know if that is still the case (working from south to north), or if we should begin concentrating on the shipping lanes, or the mistaken ground area, etc.

V/r,
-Steve W.

LT Steven Wall
Operations Officer, NOAA Ship FERDINAND R. HASSLER
ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

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[29 Wentworth Rd](#)
[New Castle, NH 03854](#)

Mailing Address:
PO Box 638, New Castle, NH 03854

Corey Allen - NOAA Federal <corey.allen@noaa.gov>

Tue, Oct 22, 2019 at 9:18 AM

To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

Cc: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

What sort of density of pots are you seeing? Will they be avoidable or is it likely you will tangle with some? We need to know this asap so make a risk assessment and cost analysis.

Corey
[Quoted text hidden]
--
J. Corey Allen

Chief, Operations Branch
Office of Coast Survey, NOAA
Corey.Allen@noaa.gov
240.533.0037 (Office)
301.717.7271 (Cell)
[Click here for a StoryMap of 2019 NOAA Hydrographic Surveys](#)
Find us on [Facebook](#), [Twitter](#) and the [NOAA Coast Survey](#) blog

OPS.Ferdinand Hassler - NOAA Service Account <ops.ferdinand.hassler@noaa.gov>

Tue, Oct 22, 2019 at 9:25 AM

To: Corey Allen - NOAA Federal <corey.allen@noaa.gov>

Cc: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Hi Corey,

Where we were, we saw zero pots (south part of the sheet). I think CO mentioned that the pot density was observed to be essentially 0 out beyond the 300ft contour.

V/r,
-Steve W

LT Steven Wall
Operations Officer, NOAA Ship FERDINAND R. HASSLER
ship's cell: [603-812-8748](tel:603-812-8748) * VOIP: [541-867-8935](tel:541-867-8935) * irridium: [808-851-3826](tel:808-851-3826)

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Mailing Address:
PO Box 638, New Castle, NH 03854

[Quoted text hidden]

Corey Allen - NOAA Federal <corey.allen@noaa.gov>

Tue, Oct 22, 2019 at 9:27 AM

To: "OPS.Ferdinand Hassler - NOAA Service Account" <ops.ferdinand.hassler@noaa.gov>

Cc: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, CO HASSLER <co.ferdinand.hassler@noaa.gov>

Great. Thanks for the update. Please be sure to alert us if the situation changes as you move north.

[Quoted text hidden]

APPROVAL PAGE

H13333

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Data Acquisition and Processing Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Processed survey data and records
- Geospatial PDF of survey products
- Backscatter mosaic

The survey evaluation and verification have been conducted according to current OCS specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: _____

Commander Meghan McGovern, NOAA
Chief, Atlantic Hydrographic Branch