

H13170

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

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: H13170

LOCALITY

State(s): Florida

General Locality: Approaches to Tampa Bay, FL

Sub-locality: Vicinity of Pass-A-Grille Channel

2018

CHIEF OF PARTY
Scott Melancon

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Date:

HYDROGRAPHIC TITLE SHEET

H13170

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): **Florida**

General Locality: **Approaches to Tampa Bay, FL**

Sub-Locality: **Vicinity of Pass-A-Grille Channel**

Scale: **20000**

Dates of Survey: **08/18/2018 to 02/05/2019**

Instructions Dated: **07/17/2018**

Project Number: **OPR-J317-KR-18**

Field Unit: **Oceaneering International, Inc.**

Chief of Party: **Scott Melancon**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

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 17N, 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 H13170

Project: OPR-J317-KR-18

Locality: Approaches to Tampa Bay, FL

Sublocality: Vicinity of Pass-A-Grille Channel

Scale: 1:20000

August 2018 - February 2019

Oceaneering International, Inc.

Chief of Party: Scott Melancon

A. Area Surveyed

The survey area is located in the Vicinity of Pass-A-Grille Channel, in the general locality of the Approaches to Tampa Bay, Florida.

A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
27° 45' 2.69" N	27° 36' 42.28" N
82° 52' 2.81" W	82° 45' 13.81" W

Table 1: Survey Limits

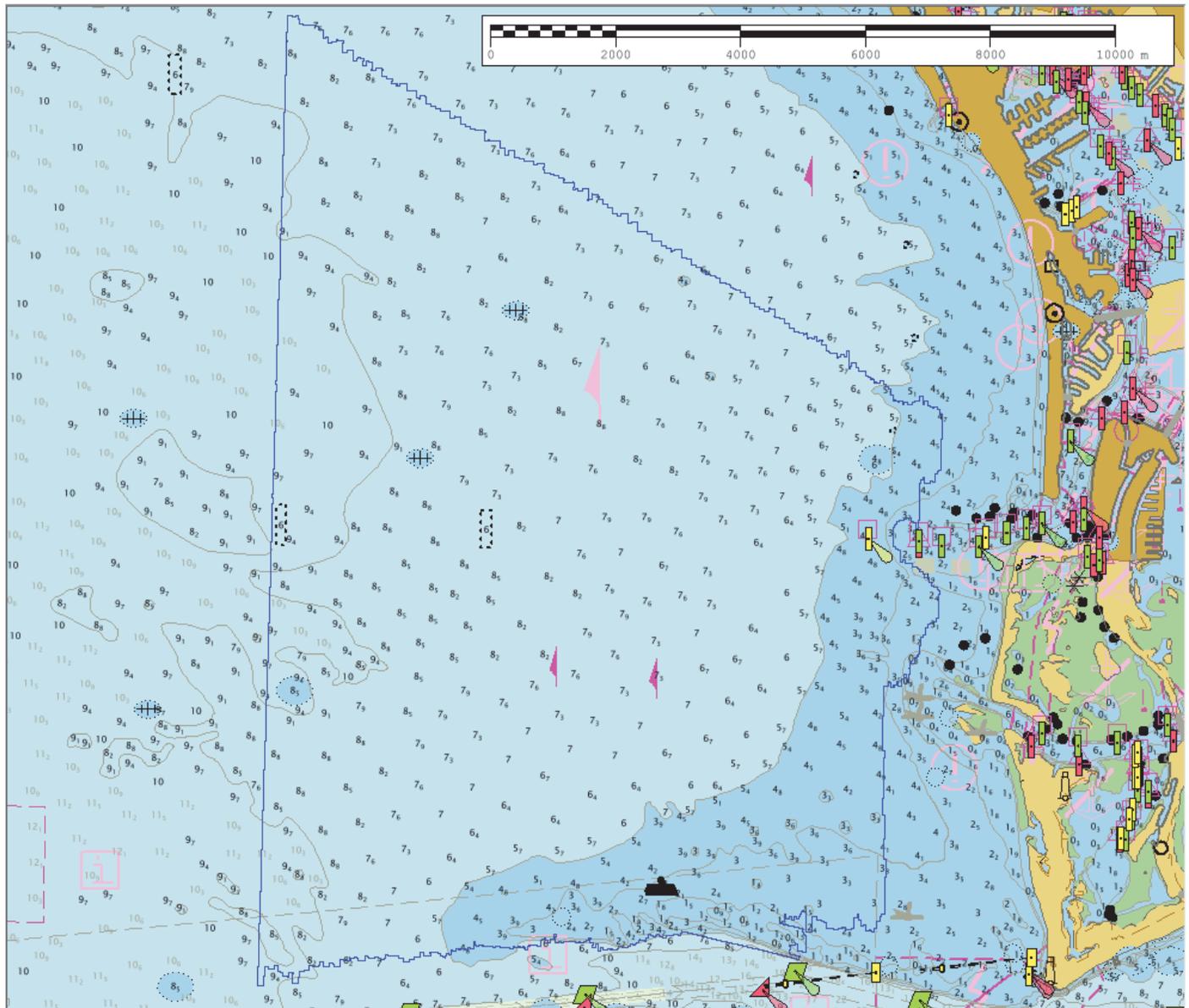


Figure 1: H13170 Survey Limits

Survey limits were acquired in accordance with the requirements in the Project Instructions and the HSSD (2018).

A.2 Survey Purpose

The purpose of the project is to provide contemporary surveys to update National Ocean Service nautical charting products to support an increase in vessel traffic into Tampa Bay. There is a lack of modern data in the area and the area is subject to strong storm events that have the potential to cause shoaling.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

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 the survey area (except Sheet 4)	Complete Coverage
All waters in survey area	Report significant shoaling via weekly progress reports. PM/COR may adjust prioritization based on observed shoaling.

Table 2: Survey Coverage

Survey coverage was in accordance with the requirements listed above and in the HSSD.

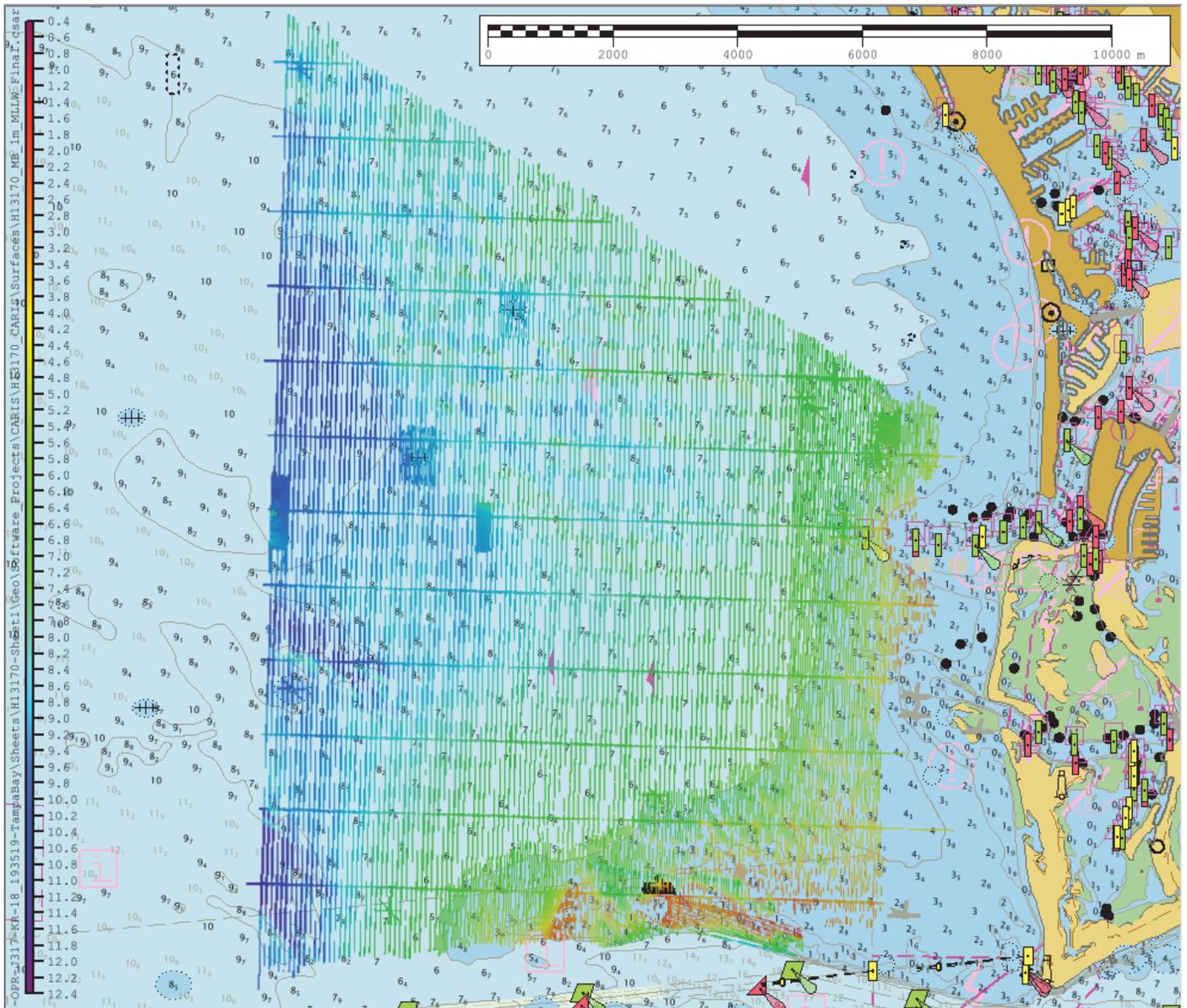


Figure 2: H13170 Survey Coverage

A.5 Survey Statistics

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

	HULL ID	<i>JQN00027J708</i>	<i>Total</i>
LNM	SBES Mainscheme	0.00	0
	MBES Mainscheme	0.00	0
	Lidar Mainscheme	0.00	0
	SSS Mainscheme	0.00	0
	SBES/SSS Mainscheme	0.00	0
	MBES/SSS Mainscheme	1046.96	1046.96
	SBES/MBES Crosslines	55.44	55.44
	Lidar Crosslines	0.00	0
Number of Bottom Samples			10
Number Maritime Boundary Points Investigated			0
Number of DPs			40
Number of Items Investigated by Dive Ops			0
Total SNM			35.33

Table 3: Hydrographic Survey Statistics

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

Survey Dates	Day of the Year
08/18/2018	230
08/19/2018	231

Survey Dates	Day of the Year
08/20/2018	232
08/21/2018	233
08/22/2018	234
08/23/2018	235
08/24/2018	236
08/25/2018	237
08/26/2018	238
08/27/2018	239
08/28/2018	240
08/29/2018	241
08/30/2018	242
08/31/2018	243
09/01/2018	244
09/02/2018	245
09/04/2018	247
09/05/2018	248
09/20/2018	263
09/21/2018	264
09/22/2018	265
10/16/2018	289
10/17/2018	290
10/30/2018	303
10/31/2018	304
11/04/2018	308
11/05/2018	309
11/06/2018	310
11/07/2018	311
11/09/2018	313
11/13/2018	317
12/04/2018	338
12/06/2018	340
12/07/2018	341

Survey Dates	Day of the Year
12/08/2018	342
02/04/2019	35
02/05/2019	36

Table 4: Dates of Hydrography

It was observed that there were several unit options for nautical miles within the CARIS program. However, 'area' only had one option for nautical miles units as Square Int. Nautical Miles. To be consistent, Int. Nautical Miles was used as the unit for the LNM shown in Table 3. Detached Positions (DP) include CTD fixes and one buoy fix conducted within survey boundaries; lead line comparisons were conducted outside survey bounds. Bottom sample fixes were also not included because there is a separate entry for those.

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	JQN00027J708
LOA	9.144 meters
Draft	0.762 meters

Table 5: Vessels Used

The R/V C-Wolf (Hull ID JQN00027J708) was used as the survey platform for all data acquisition within H13170.

B.1.2 Equipment

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

Manufacturer	Model	Type
Kongsberg Maritime	EM 3002	MBES
EdgeTech	4200	SSS
CodaOctopus	F180	Positioning and Attitude System
C-Nav	3050	Positioning System
Sea-Bird Scientific	SBE 19plus	Conductivity, Temperature, and Depth Sensor
YSI	600R-BCR-C-T	Conductivity, Temperature, and Depth Sensor

Table 6: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

Multibeam/single beam echo sounder/side scan sonar crosslines acquired for this survey totaled 5.30% of mainscheme acquisition.

Crosslines were run generally perpendicular to mainscheme lines in order for quality control statistics to be generated after completion of mainscheme survey lines. The total crossline mileage was 55.44 nautical miles and total mainline mileage was 1046.96 nautical miles. Lines collected for fill-in purposes were included in the total mainline mileage. Investigation lines and SSS rerun lines for which MB was also acquired were not included; however, these were included in the mainline surface.

Separate 1-meter mainline and crossline Combined Uncertainty and Bathymetric Estimator (CUBE) surfaces were generated and the surface difference tool within CARIS HIPS was used to evaluate crossline and mainscheme line agreement. The mainline surface was used as Surface 1 and the crossline surface as Surface 2. Statistical information about the difference surface was generated using the Compute Statistics tool (Figure 3). The analysis shows that greater than 97% of depth difference values are between -0.237 and 0.263 meters. This is well within the maximum allowable Total Vertical Uncertainty (TVU) for the depths of the comparison area (0.53 – 12.25 meters) which ranges from ± 0.500 to ± 0.525 meters. It is evident from the histogram (Figure 3) that several depth differences exceed the maximum allowable TVU. Further examination indicates that depth differences greater than ± 0.50 m are concentrated within 7 discrete areas (Figure 4). The northern difference value is associated with a contact. The southern areas are all along crossline H70-TIE-112. Review of these areas did not indicate obvious outliers, instead the data indicate the

seafloor in this area changed from the time the crossline was collected to when the mainlines were collected (example shown in Figure 5). Refer to section D.2.8 for additional information.

The crossline surface, mainline surface, difference surface and exported ASCII file of histogram results are located in Separates\II_Digital_Data\Crossline_Comparison.

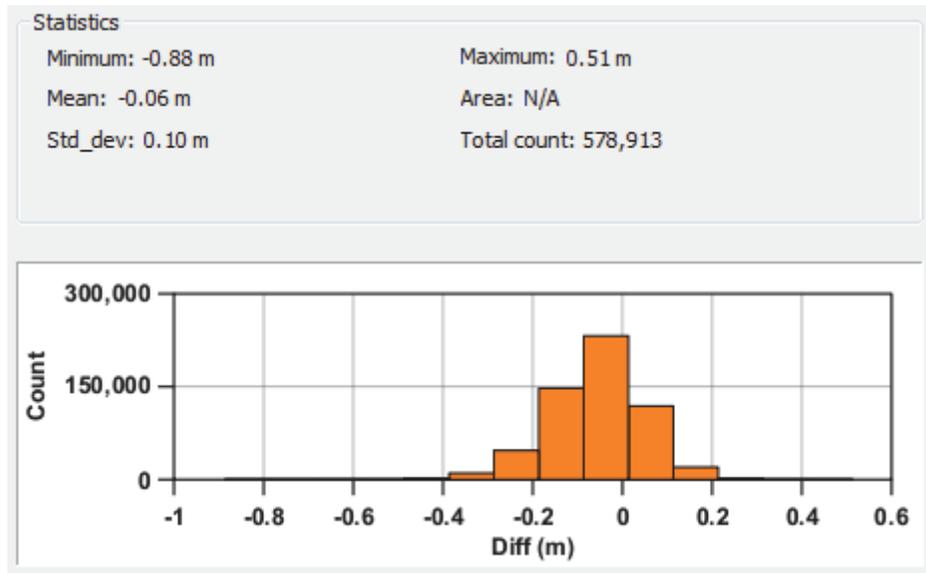


Figure 3: H13170 crossline comparison statistics and histogram output from CARIS compute statistics tool.

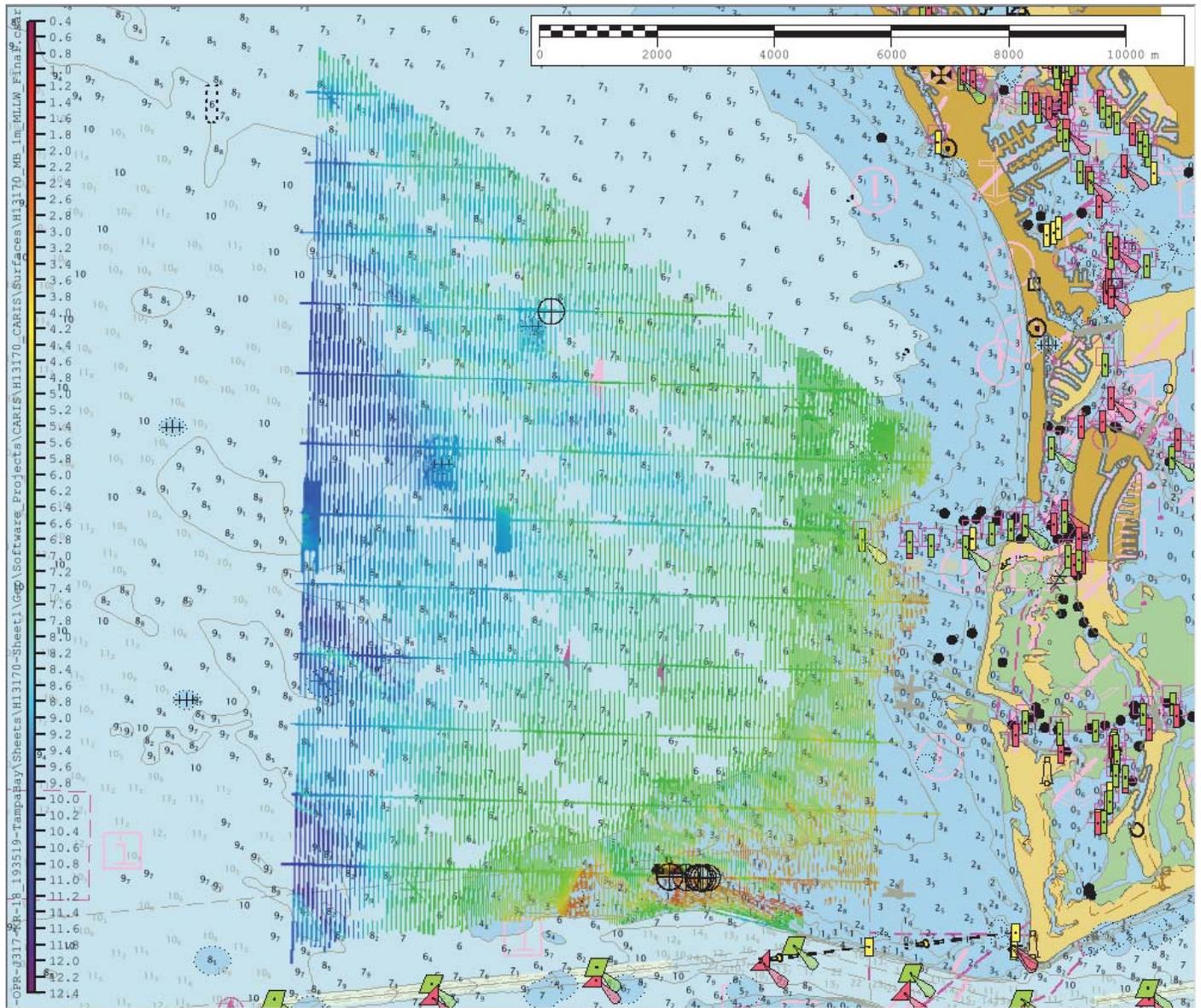


Figure 4: H13170 survey area overlain with black compass features that indicate where depth difference values between mainlines and crosslines are greater than $\pm 0.50\text{cm}$.

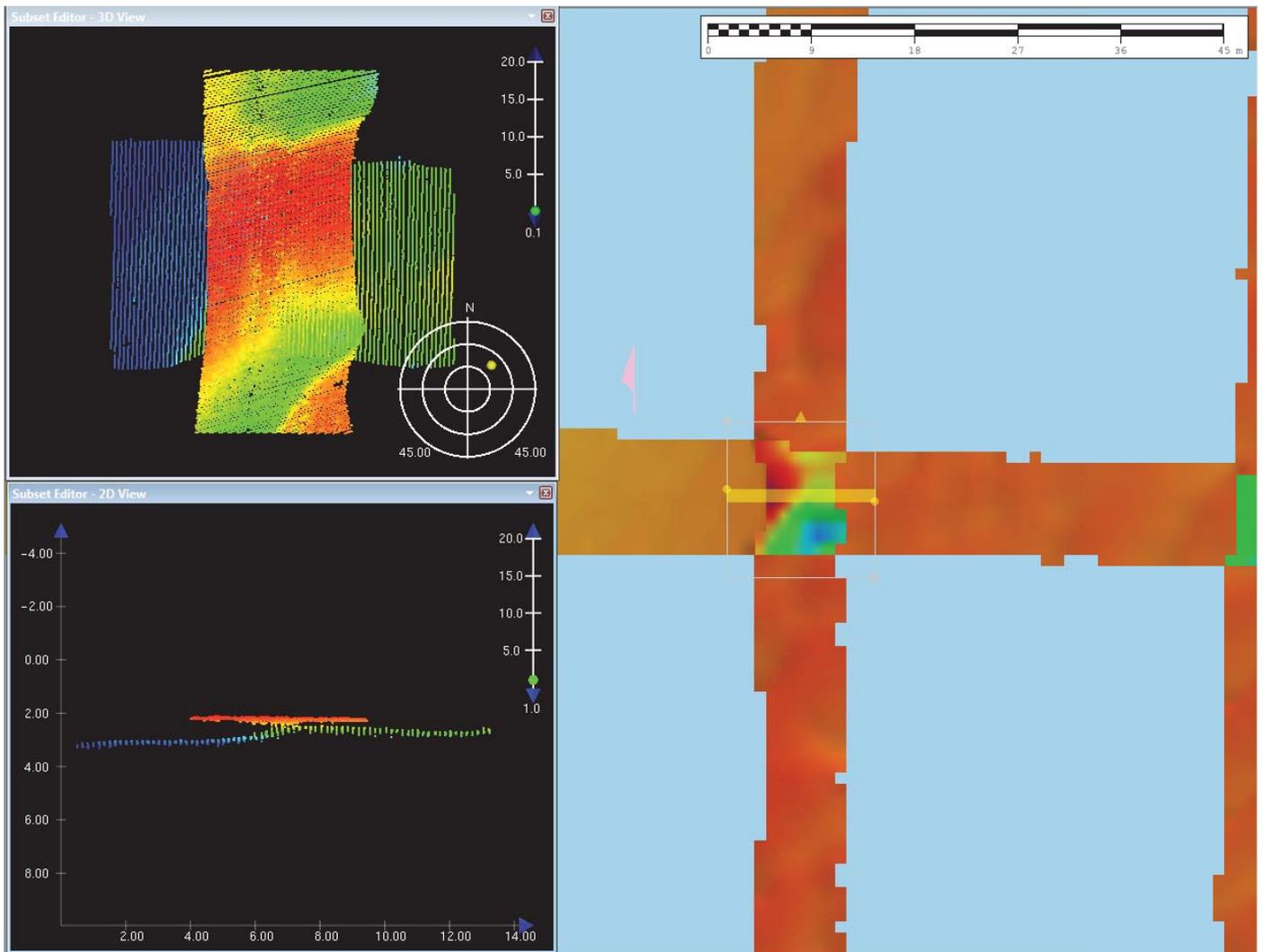


Figure 5: Comparison of H70-TIE-112 and mainline 1165-2 in which data indicate seafloor features have changed between the time the tieline was collected and when the mainline was collected.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Method	Measured	Zoning
ERS via VDATUM	0.1 meters	0.131 meters

Table 7: Survey Specific Tide TPU Values.

Hull ID	Measured - CTD	Measured - MVP	Surface
JQN00027J708	2 meters/second	n/a meters/second	0.8 meters/second

Table 8: Survey Specific Sound Speed TPU Values.

The Total Propagated Uncertainty (TPU) for each sounding was computed within CARIS, the MBES processing software. The vessel file stores static values of the estimated uncertainties associated with each individual sensor. The Compute TPU dialog contains placeholders for the user to specify tidal and sound speed uncertainty, as well as whether the sources of uncertainty are static (come from the vessel file) or were collected in real-time. This particular survey contains all static uncertainty sources. The above uncertainty estimates are combined with a DeviceModels.xml that contains individual sonar model characteristics to calculate the total TPU.

Currently there is no entry for static vertical uncertainty associated with a positioning system or the separation model within CARIS. The workaround is to enter these values in the Tide Measured and Zoning entry locations. Internal verification indicates that the C-Nav™ 3050 systems have a vertical uncertainty of ~20 cm at the 95% confidence level. The 95% confidence level is expressed as 1.96 standard deviations from the mean. CARIS entries of uncertainty are assumed to be 1-sigma (one standard deviation from the mean) and this value of 20 cm is divided by 1.96 for a value of 10 cm to enter into CARIS. The 1-sigma VDATUM Maximum Combined Uncertainty (MCU) value for the separation model (13.1 cm) is provided in the project instructions.

An Uncertainty child layer is generated during the bathymetric surface creation process that shows the uncertainty at each node of the surface. HydrOffice QCTools was used to analyze the uncertainty of all finalized and un-finalized grids. It was observed that all uncertainty values are within specifications for all un-finalized surfaces (Figures 6 - 8) but two out of the three finalized surfaces contain less than 0.1% of values that do not meet specifications (Figures 9 - 11). Review indicates that this is due to the finalization parameter where the uncertainty is defined as the greater of either the standard deviation or uncertainty for a particular node. Review of the finalized surfaces indicate that nodes that do not meet specifications are mainly associated with seafloor features and contacts.

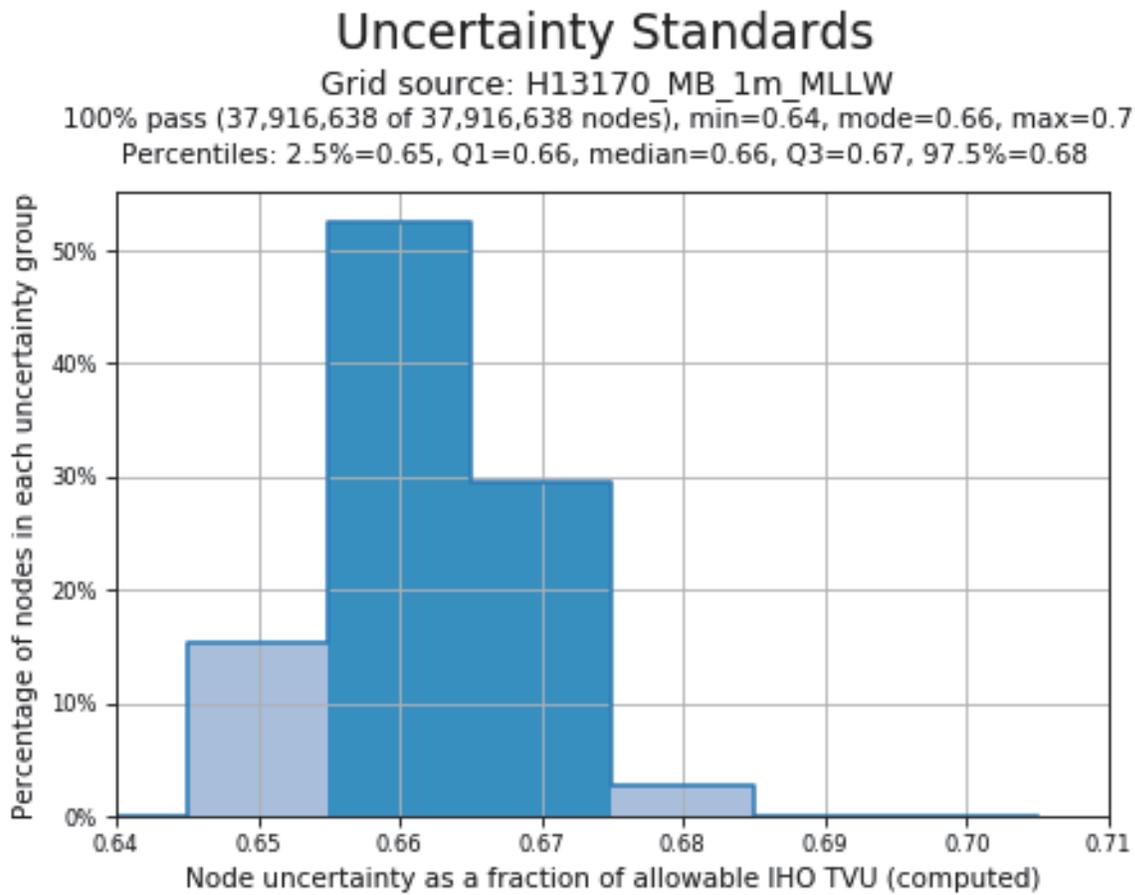


Figure 6: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_1m_MLLW.

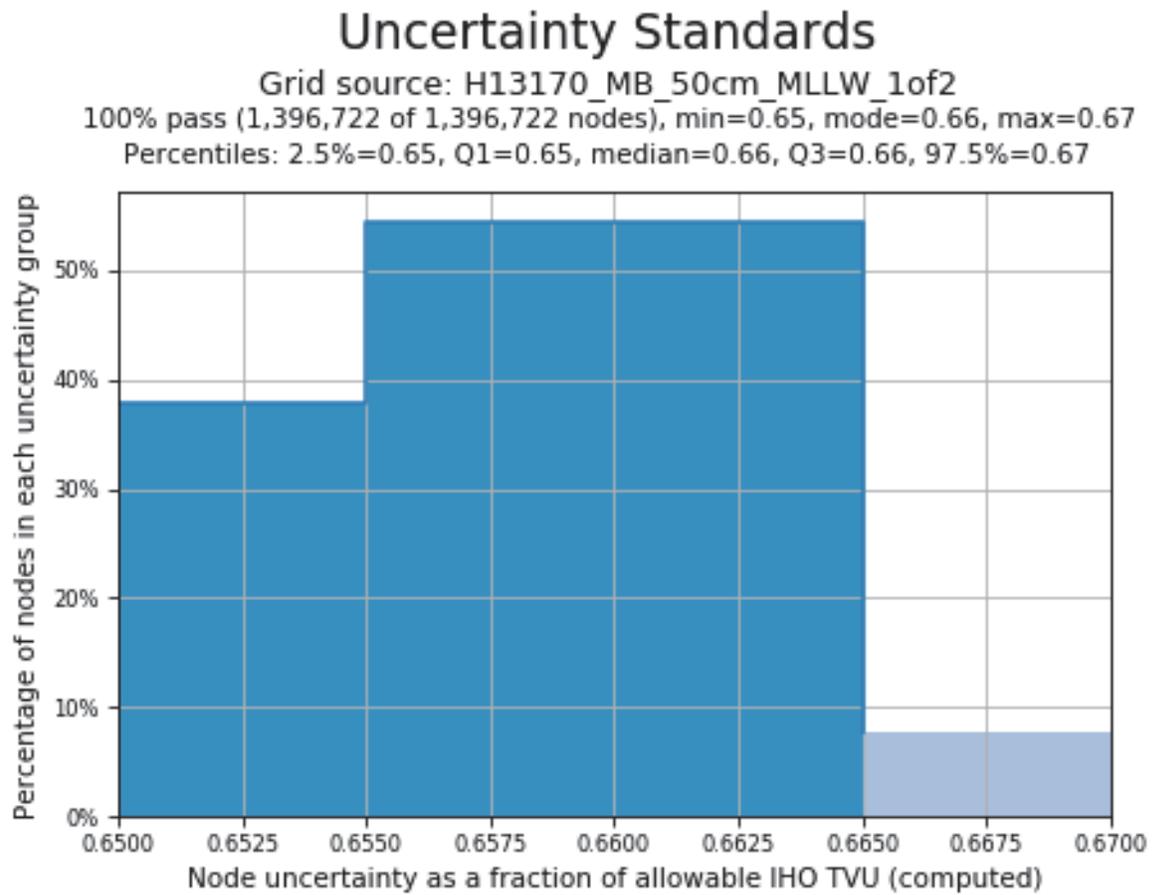


Figure 7: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_50cm_MLLW_1of2.

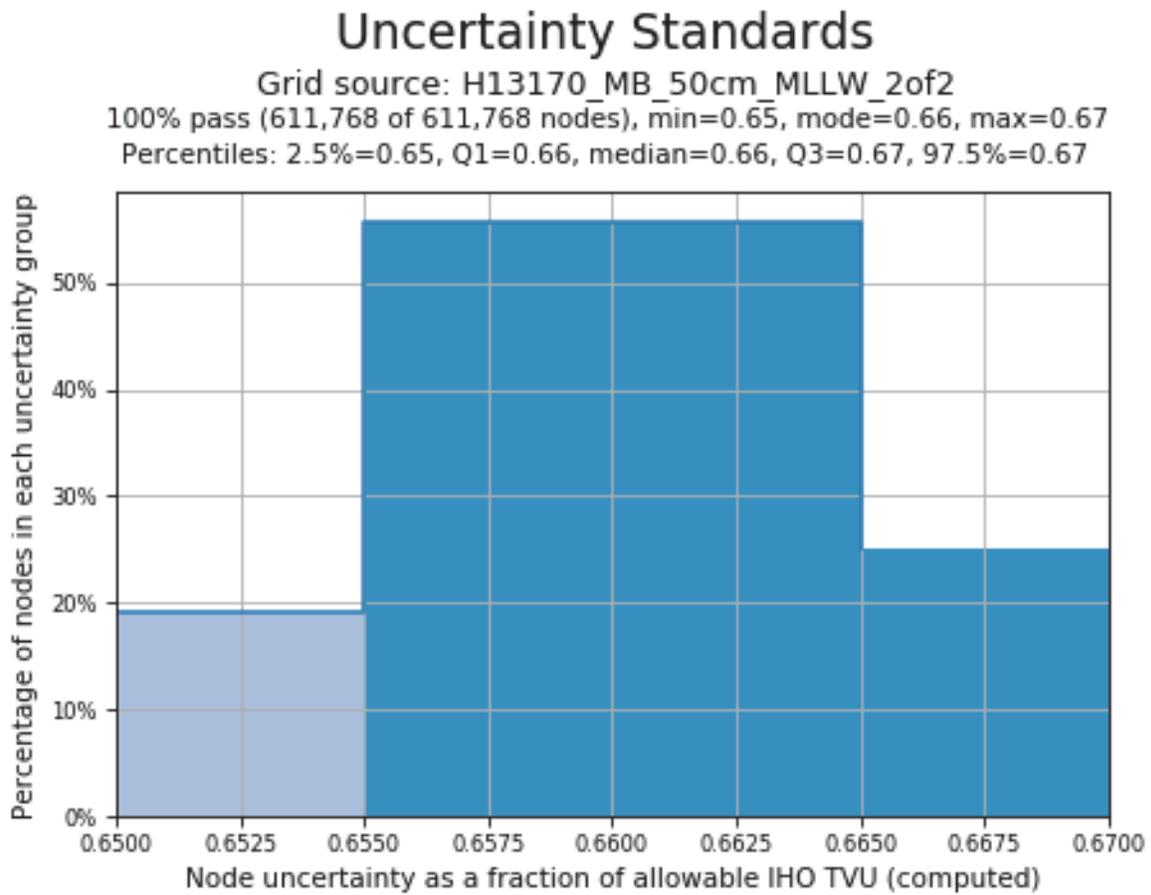


Figure 8: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_50cm_MLLW_2of2.

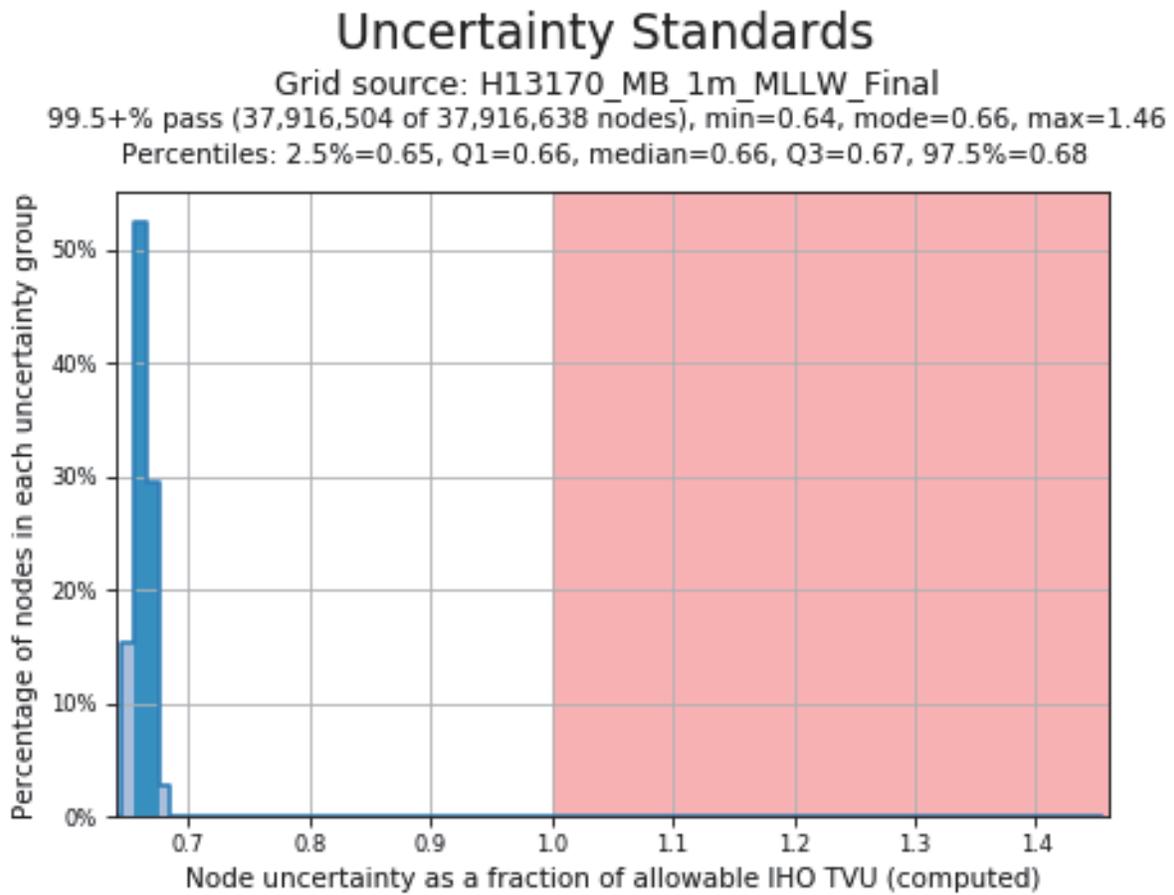


Figure 9: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_1m_MLLW_Final.

Uncertainty Standards

Grid source: H13170_MB_50cm_MLLW_1of2_Final

99.5+% pass (1,395,302 of 1,396,722 nodes), min=0.65, mode=0.66, max=1.89

Percentiles: 2.5%=0.65, Q1=0.65, median=0.66, Q3=0.66, 97.5%=0.67

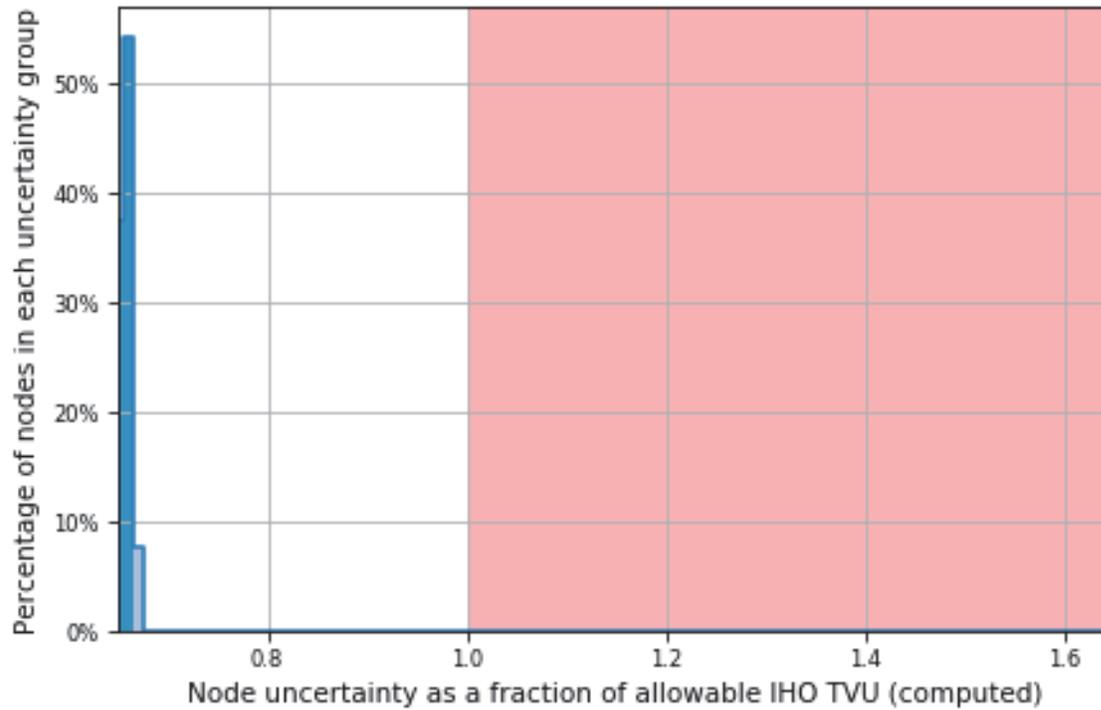


Figure 10: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_50cm_MLLW_1of2_Final.

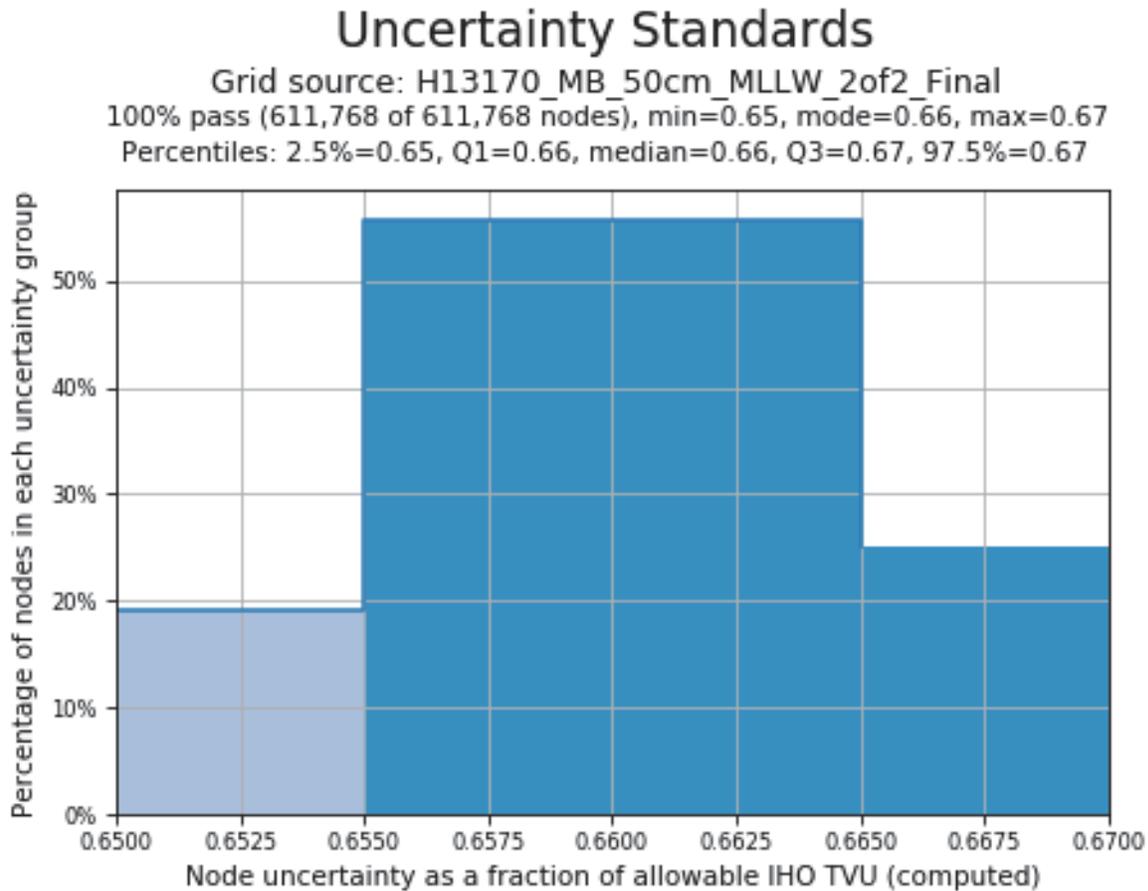


Figure 11: Uncertainty QA output from HydrOffice QCTools for surface H13170_MB_50cm_MLLW_2of2_Final.

B.2.3 Junctions

H13170 junctions with two contemporary surveys (H13171 and H13173) and one prior survey (W00312) as shown in Figure 12. Difference surfaces between the depth layers of H13170 and the adjoining surveys were generated and areas of disagreement were evaluated. Finalized surfaces were used when available and the analysis addresses difference values greater than $2^{0.5} * TVU$, as outlined in the HSSD (2018).

An absolute difference surface for each junction difference surface was created by squaring all difference values and then taking the square root of those values. A junction compliance layer was generated for the H13170_MB_MLLW_1m_Final surface using the following formula: $2^{0.5} * TVU$ where TVU is $(0.5^2 + (0.013 * \text{Depth})^2)^{0.5}$, as outlined in section 5.1.3 of the HSSD (2018). A difference surface was generated between the junction compliance layer of the main surface (surface 1) and the absolute difference layer of the difference surface (surface 2). Positive values indicate that the difference between the two data

sets is less than $2^{0.5} * TVU$ while negative values indicate that the difference between the two data sets is greater than $2^{0.5} * TVU$. Areas where negative values were observed were evaluated. Note that previous correspondence with CARIS support indicates a known issue with the Compute Layer tool in CARIS 10.4. When Depth is in the middle of an expression, the Compute Layer function assumes Depth is negative even if the Z-axis convention is set to positive. It was observed that the signs of computed layers were not consistent in CARIS 10.4 and all junction analyses were conducted in CARIS 9.1 using just the surfaces of interest.

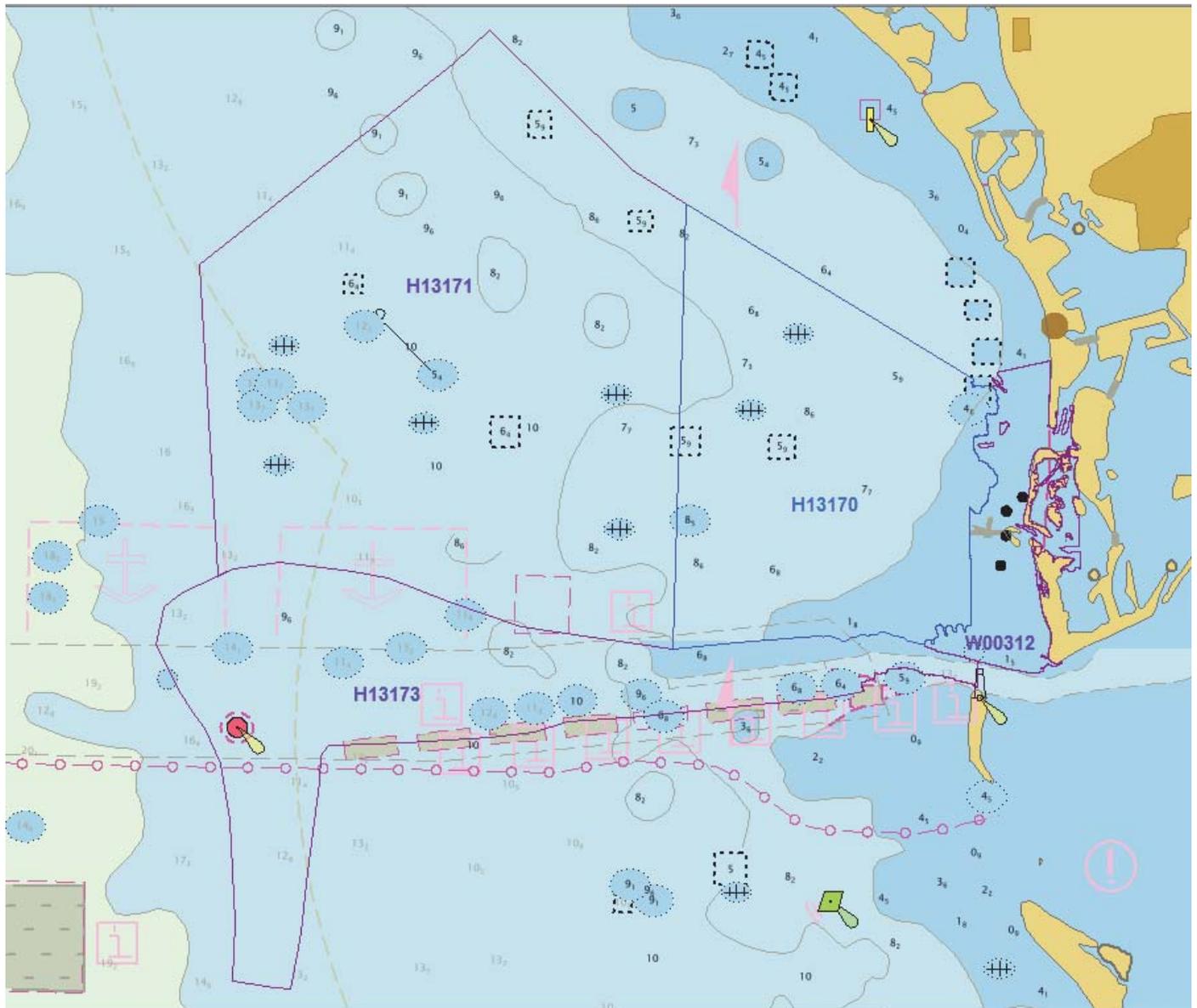


Figure 12: H13170 Survey Junctions.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H13171	1:20000	2018	Oceaneering	W
H13173	1:20000	2018	Oceaneering	S
W00312	1:20000	2016	LiDAR	E

Table 9: Junctioning Surveys

H13171

H13170 junctions with H13171 to the west. The overlap consists of crossline data that extend into the adjoining sheet and some adjoining coverage west of a charted fish haven. A difference surface was generated between the two surveys with H13170_MB_1m_MLLW_Final as surface 1 and H13171_MB_1m_MLLW_Final as surface 2. The difference surface indicates that data from H13170 and H13171 agree well (Figure 13) with greater than 99% of difference values between -0.18 and 0.22 meters.

Analysis indicates 14 difference values are greater than $2^{*}0.5 * TVU$. These are associated with three distinct features along the overlapping area west of the charted fish haven. Data indicate two of the three features were only partially ensonified in one or the other data set. One small feature appears to have been fully ensonified in both data sets but is offset by ~2.0 meters; this is within the allotted Total Horizontal Uncertainty, as defined in section 3.1 of the HSSD (2018).

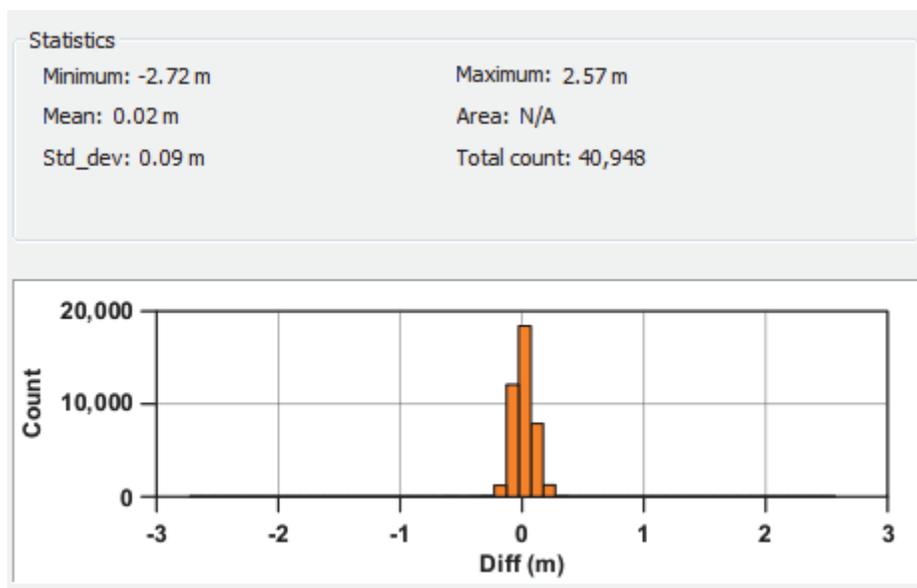


Figure 13: Histogram of depth difference values between overlapping data of H13170 and H13171.

H13173

The survey junction between H13170 and H13173 will be addressed in the Descriptive Report for H13173.

W00312

H13170 junctions with W00312 to the east. A 5-meter grid for the H13170 area that overlaps the W00312 5-meter grid was generated with the closest NOAA CUBE Configuration of 4 meters. A difference surface was generated between the two surveys with the 5-meter grid of H13170 as surface 1 and W00312_LI_5m_MLLW_1of1 as surface 2. It is evident that the difference values are variable and that some very large difference values exist (Figure 14). Further analysis indicates ~89% of difference values are between -0.447 and 0.453 meters and 8% of all difference values exceed $2^{0.5} * TVU$.

Figure 15 shows the areas of overlap where difference values exceed $2^{0.5} * TVU$. The sections are labeled 1 - 7 from north to south. Review of data within Section 1 indicate H13170 survey data is shallower than the junction data but deeper than or in line with currently charted depths (US5FL11M). Review of data within Section 2 indicate H13170 survey data is shallower than the junction data but in line with charted depths. H13170 survey data within Section 3 is deeper than both the junction data and charted depths. Review of data within Section 4 indicate that H13170 survey data is shallower than the junction by up to 2.66 m. Survey data in this area is also shallower than charted and DtoNs were submitted to reflect this. H13170 survey data within Section 5 is deeper than the junction data and either deeper than or in line with charted depths. Review of data within Section 6 indicate H13170 survey data is shallower than both junction data and charted depths; a DtoN was submitted within survey bounds to reflect the difference in charted depths. Review of data within Section 7 indicate H13170 survey data is much deeper (up to 7.36 m) than the junction data; H13170 survey data also much deeper than charted. Refer to the chart comparison section for additional information.

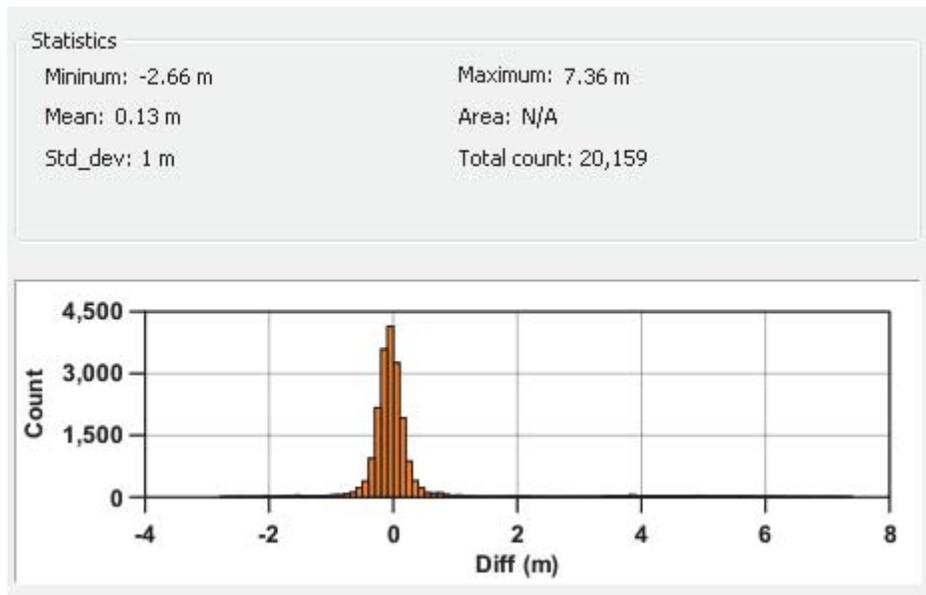


Figure 14: Histogram of depth difference values between overlapping data of H13170 and W00312.

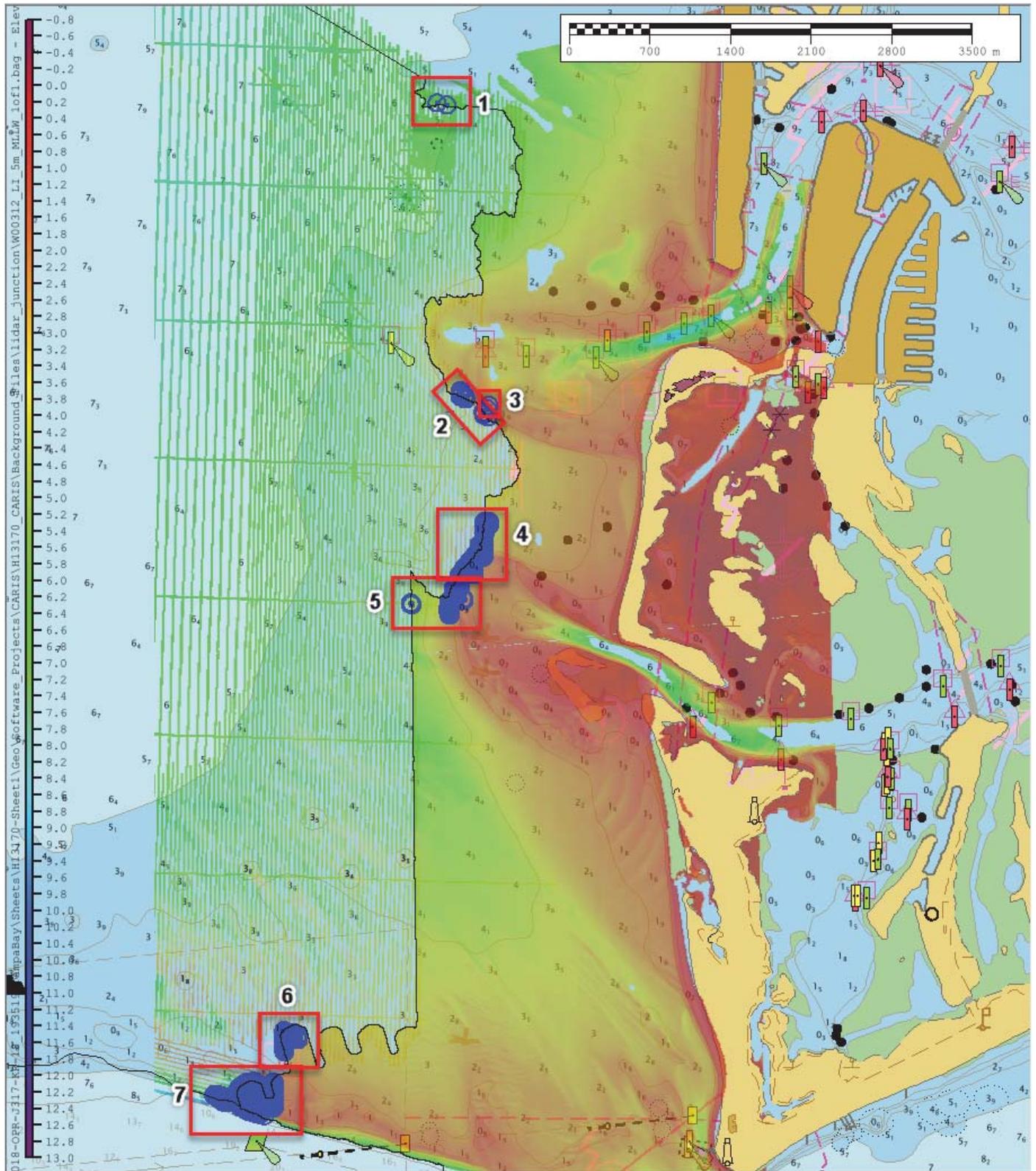


Figure 15: Areas of depth differences between H13170 and W00312 that exceed $2^{0.5} * TVU$. Refer to text for explanation of areas.

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

Sonar Settings

If necessary, the angle of the multibeam sonars were modified in order to moderate the effects of factors such as increased sea state or to increase coverage; any changes are documented in the acquisition logs.

"W" Pattern Artifacts

The data collected with the EM3002 multibeam echo sounder aboard the R/V C-Wolf (Hull ID JQN00027J708) exhibits a thicker region of nadir depth returns that manifests as an along track data artifact (Figure 16). This is more noticeable in the higher resolution, 50-cm grids. Although the region can measure 30 cm from top to bottom, this does not exceed the allowable TVU.

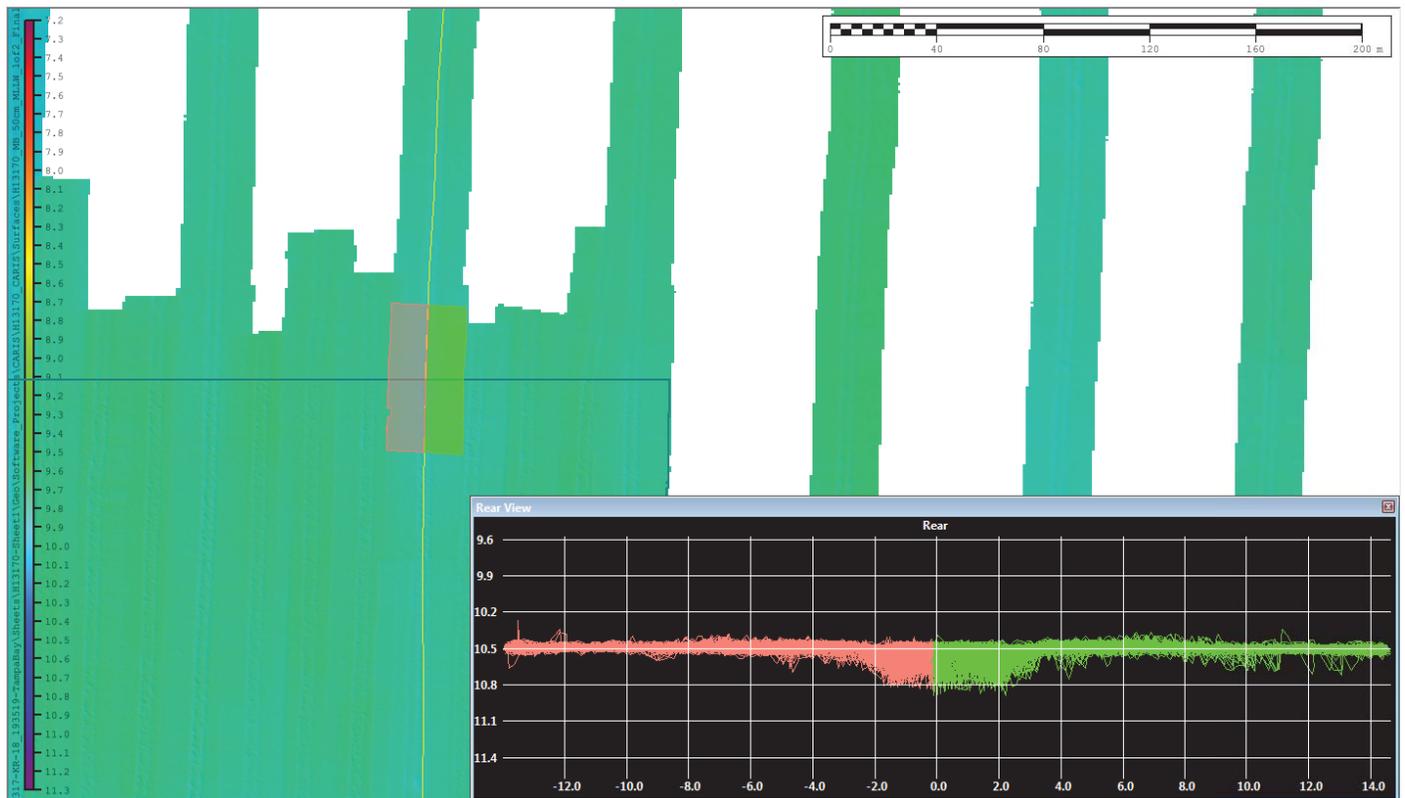


Figure 16: H13170_MB_1m_MLLW_Final surface in the background overlain with the H13170_MB_50cm_MLLW_1of2_Final surface (with same color map). Boundary of the H13170_MB_50cm_MLLW_1of2_Final surface shown. Line in swath editor shows the thicker nadir region.

B.2.6 Factors Affecting Soundings

Environmental Factors

Weather, sea state, thermoclines, and fish/marine life were all temporary factors that affected the data periodically throughout the duration of the survey. These are noted in the acquisition and processing logs and reruns were collected when necessary.

Periodic Noise

Noise is evident in the MBES data periodically throughout the survey area. Particularly, artifacts are evident where the swath on either port or starboard (often both) gets shallower and then deeper a small period of time (Figure 17). Although it is unclear exactly the cause of this, field correspondence indicates it may be at least in part be due to aeration under the multibeam head. The noise is not systematic, which indicates it is due at least in part to environmental factors. Variations were reviewed, particularly using the standard deviation layer, and cleaned as necessary.

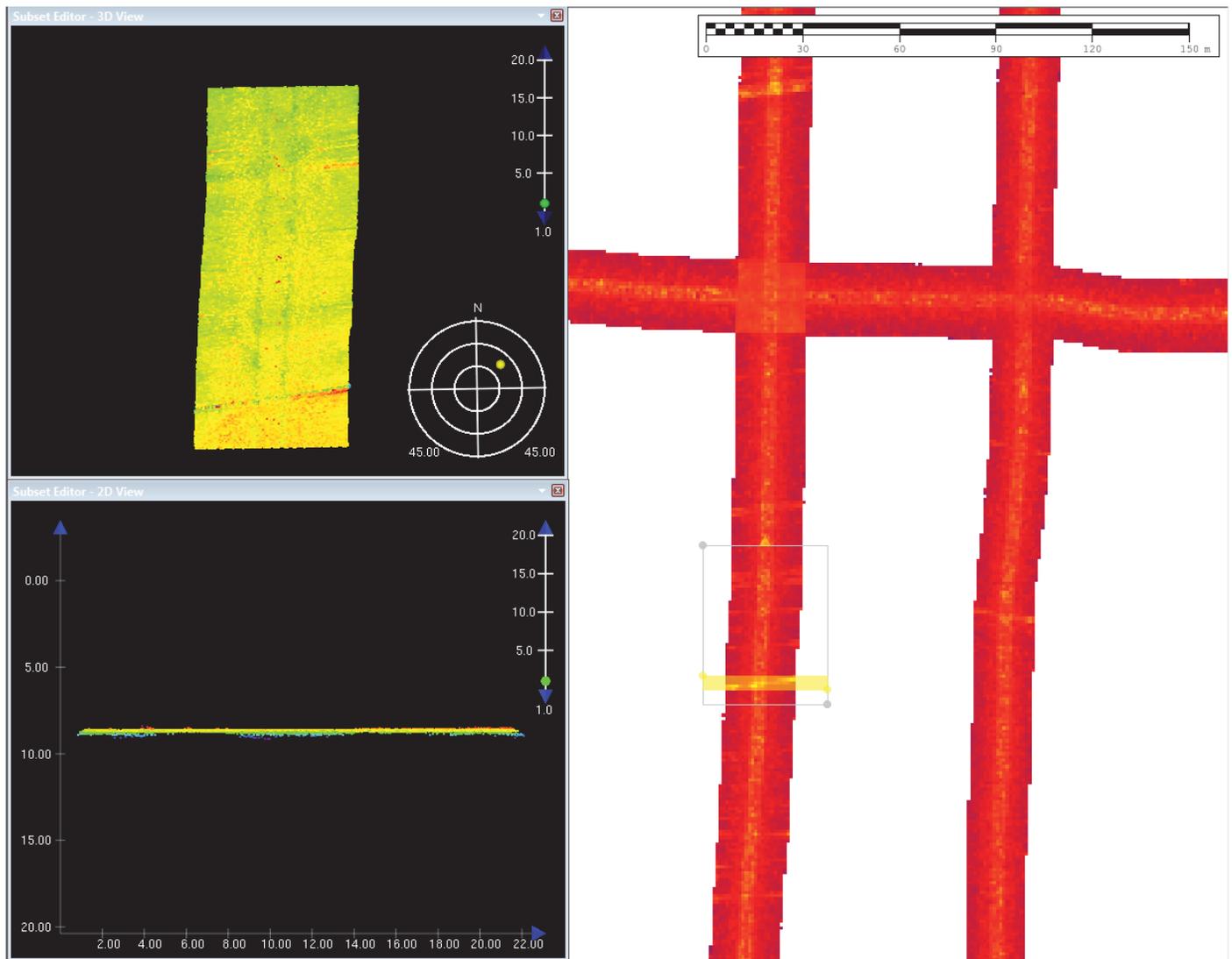


Figure 17: H13170_MB_1m_MLLW_Final surface with standard deviation layer displayed and an area of noise shown 2D and 3D view.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Once per day and more often if necessary.

Sea-Bird Scientific SBE19 and SBE19plus Conductivity, Temperature, and Depth (CTD) sensors were used for speed of sound measurements through the water column. Endeco YSI sondes were used to determine the sound speed at the transducer. The multibeam data were corrected for the water column sound speed in real-time using the SIS control software. Sound speed data are located in Separates II Digital Data\Sound Speed Data Summary.

B.2.8 Coverage Equipment and Methods

Mainline coverage within the survey area consisted of Complete Coverage (100% side scan sonar with concurrent multibeam data) acquisition. Feature disprovals were conducted with either 200% SSS or Object Detection Multibeam Coverage. Specifically, all Fish Haven areas were surveyed with Object Detection MBES coverage. Other assigned investigations were surveyed with either 200% SSS or Object Detection MBES coverage.

The line plan was modified in the southeastern portion of the survey area to define the 3.5-meter contour more effectively. Data coverage does not exist in some areas where depths are shallower than 3.5 meters. There is a small area deeper than 3.5 meters where side scan coverage is missing, likely due to when the multibeam line was stopped due to the shallow depths and the SSS was still some distance behind the vessel (Figure 18).

There is also a small gap within the 200% disproval radius of the northeastern area obstruction feature where the vessel appeared to be offline (Figure 19). The first 100% side scan sonar covers this area, as does the MBES swath.

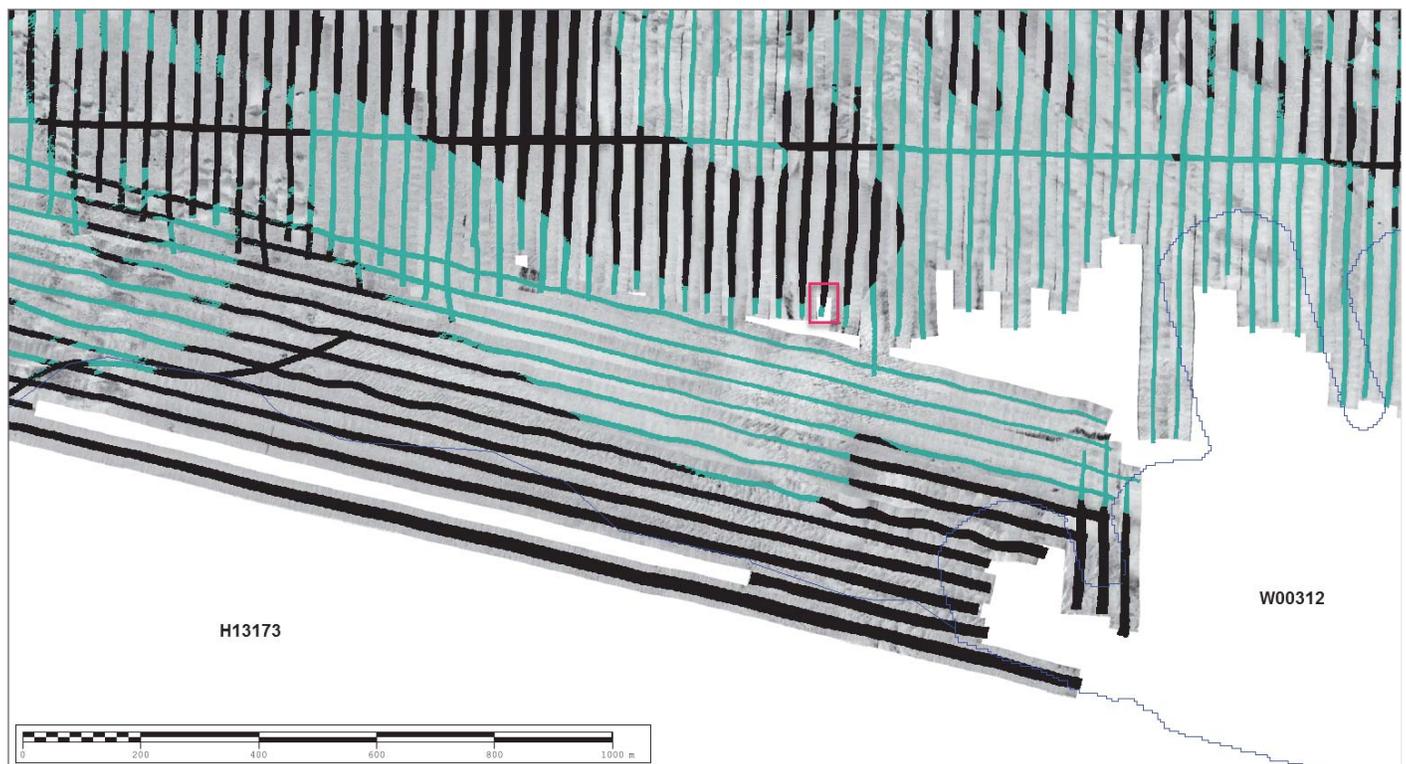


Figure 18: Image showing the southeastern portion of the H13170 survey area with survey H13173 to the south and W00312 to the east. Depths 0 - 3.5 meters shown in teal and depths greater than 3.51 meters in black. Red rectangle shows small area where side scan coverage is missing although depths are greater than 3.5 meters.

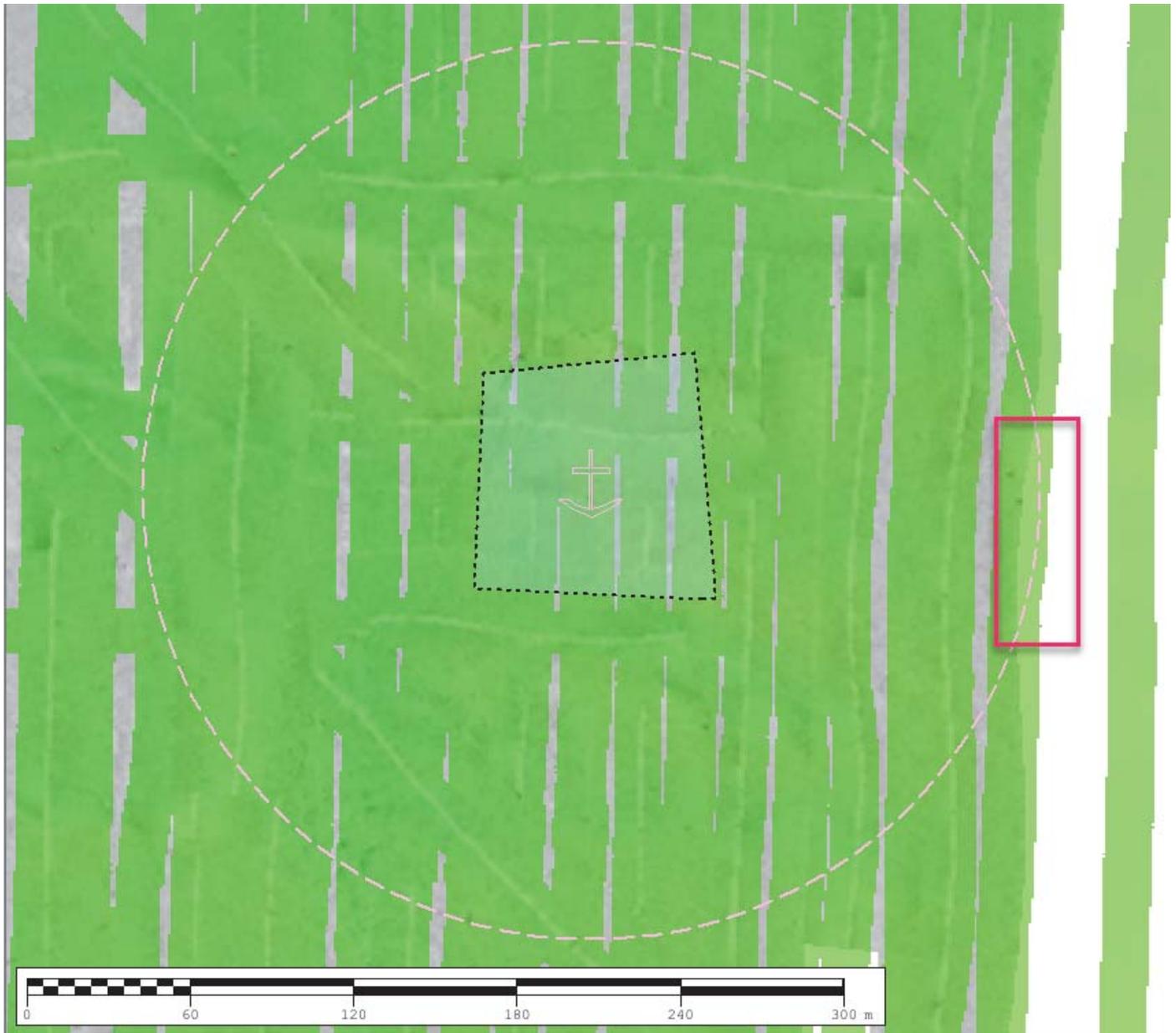


Figure 19: 200% disproval side scan sonar coverage over area obstruction overlain with MBES surface.

B.2.9 Density

HydrOffice QCTools was used to analyze the density of all finalized surfaces. The density of all finalized surfaces meet the density requirements for which at least 95% of all nodes on the surface shall be populated with at least 5 soundings (Figures 20 - 22).

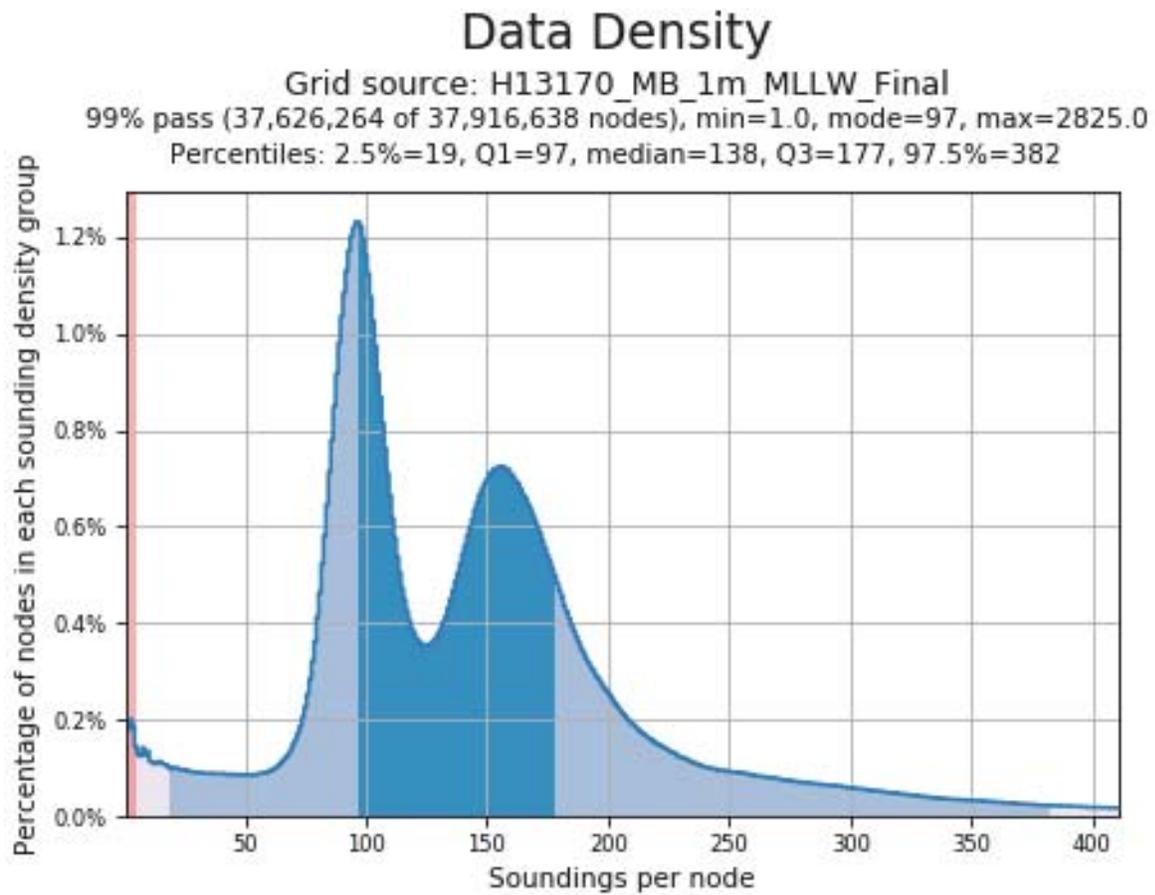


Figure 20: Statistical information about the density child layer of the H13170_MB_1m_MLLW_Final surface generated from HydrOffice QCTools.

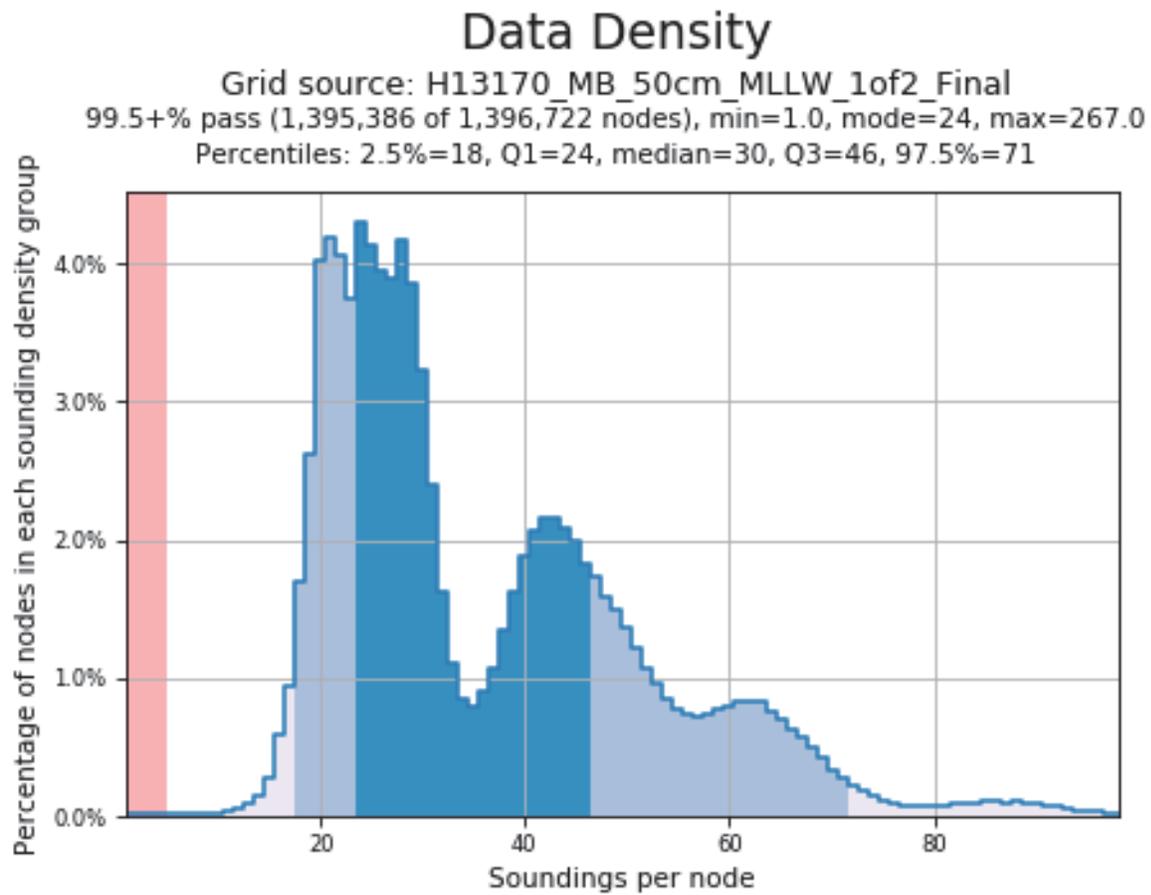


Figure 21: Statistical information about the density child layer of the H13170_MB_50m_MLLW_1of2_Final surface generated from HydrOffice QCTools.

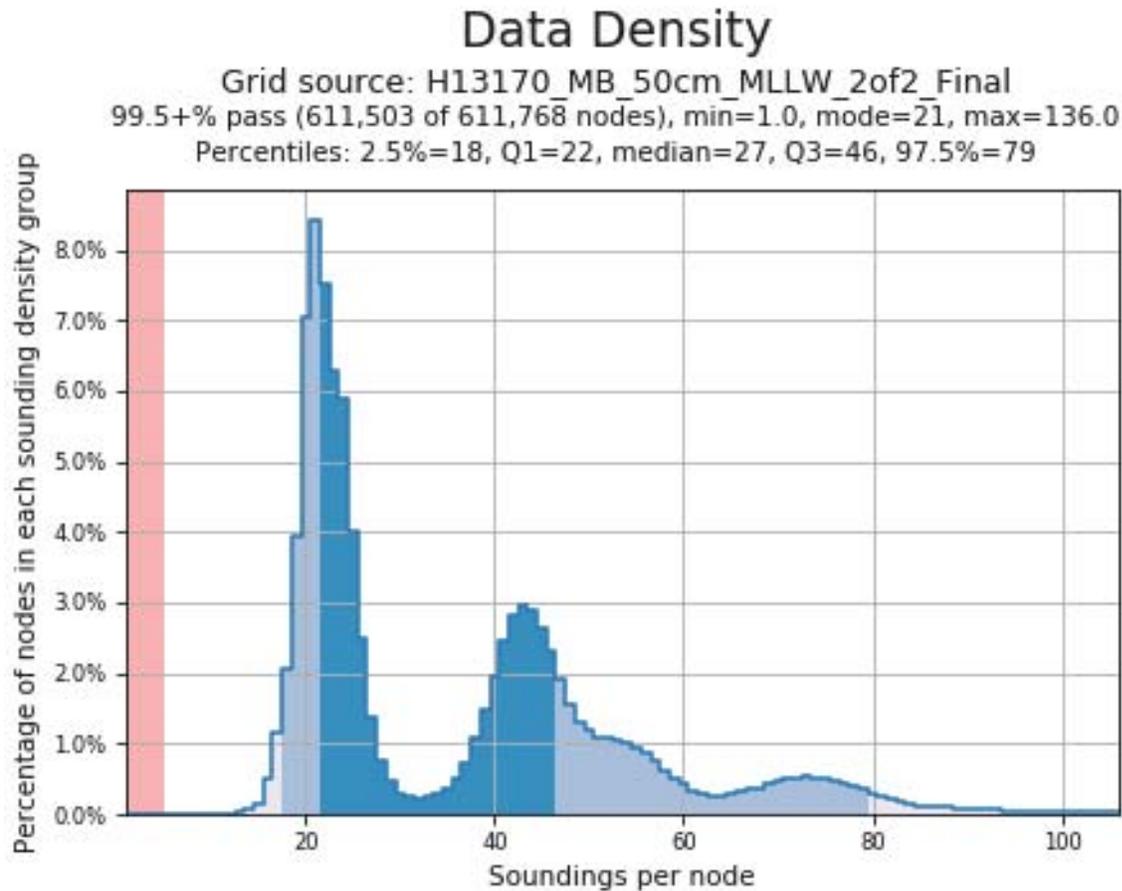


Figure 22: Statistical information about the density child layer of the H13170_MB_50m_MLLW_2of2_Final surface generated from HydrOffice QCTools.

B.2.10 Holidays

HydrOffice QCTools was used to determine the existence of holidays within all Object Detection MBES grids. No holidays exist within the H13170_MB_50m_MLLW_1of2_Final or H13170_MB_50m_MLLW_2of2_Final surfaces over the charted Fish Haven areas. Two holidays exist within the H13170_MB_50m_MLLW_1of2_Final surface over a feature on the western edge of coverage, but this is beyond the survey boundaries.

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 was logged within the Kongsberg .all file and has been sent to the Processing Branch. Backscatter was not processed by the field unit.

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
Teledyne	HIPS/SIPS	10.4

Table 10: Primary bathymetric data processing software

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

Manufacturer	Name	Version
Chesapeake Technology	SonarWiz	V6005.0025

Table 11: Primary imagery data processing software

The following Feature Object Catalog was used: NOAA Profile V_5_8.

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
H13170_MB_1m_MLLW	CARIS Raster Surface (CUBE)	1 meters	0.53 meters - 12.25 meters	NOAA_1m	Complete MBES

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H13170_MB_1m_MLLW_Final	CARIS Raster Surface (CUBE)	1 meters	0.44 meters - 12.25 meters	NOAA_1m	Complete MBES
H13170_MB_50cm_MLLW_1of2	CARIS Raster Surface (CUBE)	0.5 meters	7.24 meters - 11.22 meters	NOAA_0.5m	Object Detection
H13170_MB_50cm_MLLW_1of2_Final	CARIS Raster Surface (CUBE)	0.5 meters	7.23 meters - 11.22 meters	NOAA_0.5m	Object Detection
H13170_MB_50cm_MLLW_2of2	CARIS Raster Surface (CUBE)	0.5 meters	8.26 meters - 9.19 meters	NOAA_0.5m	Object Detection
H13170_MB_50cm_MLLW_2of2_Final	CARIS Raster Surface (CUBE)	0.5 meters	8.26 meters - 9.19 meters	NOAA_0.5m	Object Detection
H13170_SSSAB_1m_545kHz_1of1	SSS Mosaic	1 meters	-	N/A	100% SSS
H13170_SSSAB_1m_545kHz_2of2	SSS Mosaic	1 meters	-	N/A	200% SSS

Table 12: Submitted Surfaces

B.5.3 MBES Data Review

The data were filtered using a surface filter set to reject data greater than 3 standard deviations from the surface. The data were then reviewed for fliers using the standard deviation layer and depth layer of the surface. Higher standard deviation is generally associated with bathymetric features, contacts, and/or areas of bathymetric change. Noise can also be identified by high standard deviation. The Flier Finder utility within HydrOffice QCTools was used as an additional quality control tool to evaluate the surface for fliers during the cleaning process. Erroneous data were rejected.

A final evaluation of the surface was also conducted with all flier checks enabled and a 'force flier heights' to 0.5 meters. Review of the output indicates that the majority of potential fliers identified are associated with known contacts, bottom features or changes, and differences between data collected after a period of time (refer to section D.2.8 for additional information).

B.5.4 Fixed File Path

During post-processing, ASCII navigation files (time, lat, lon, GPS height) were imported into CARIS with an associated .info file, which contains information on the contents and formatting of the ASCII navigation files.

When projects processed in the above manner were copied from a network location to external or internal drives or from internal to external drives it was observed that the path of the info file remained fixed to the original path name. Upon opening the copied project, the CARIS program asked to update the navigation folder, but not the info file. Keeping the info file in with the ASCII navigation did not appear to change this. Certain editors such as navigation editor or swath editor could not be opened within CARIS and the lines became locked.

The workaround is to recreate the exact folder structure of the original project on the internal or external drive. However, it is recognized that this is an issue for submission because files are placed in the appropriate submission folders without regard for how the projects were originally set up.

A request was logged with CARIS support and the information sent to the development team. Information from CARIS supports indicates that the Check Project process was not checking for an *.info file when using an ASCII file for auxiliary navigation. CARIS correspondence indicates that this has been fixed so that the check process will look for *.info missing files, enabling users to update their location using the Reset Raw Data Location dialog box. This fix should be available in both versions 10.4.10 and 11.1.0. Due to licensing limitations this has not been tested in-house and the workaround to maintain original path names and drive letters was used. The original path for this project is:

N:\noaa\2018-OPR-J317-KR-18_193519-TampaBay\Sheets\H13170-Sheet1\Geo\Software_Projects\CARIS\H13170_CARIS

C. Vertical and Horizontal Control

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

C.1 Vertical Control

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

ERS Methods Used:

ERS via VDATUM

Ellipsoid to Chart Datum Separation File:

TampaBay_EC_poly_xyNAD83-MLLW_geoid12b.txt

C.2 Horizontal Control

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

The projection used for this project is Projected UTM 17N.

The positioning systems aboard the vessels utilize Oceaneering® C-Nav® systems which deliver Precise Point Positioning (PPP). The C-Nav® GPS systems receive corrections through the C-Nav® Subscription Services.

D. Results and Recommendations

D.1 Chart Comparison

A combination of sounding selection layers and user-defined depth ranges were used to compare surveyed soundings to charted depths using tools within the CARIS MBES processing software. The sounding selection layer was generated from the H13170 surface using a shoal biased, single-defined radius of 150 meters, which provided sufficient soundings across the survey area with which to compare to charted depths and contours. A user-defined color map was generated to match the contour intervals present on US5FL11M (Figure 23).

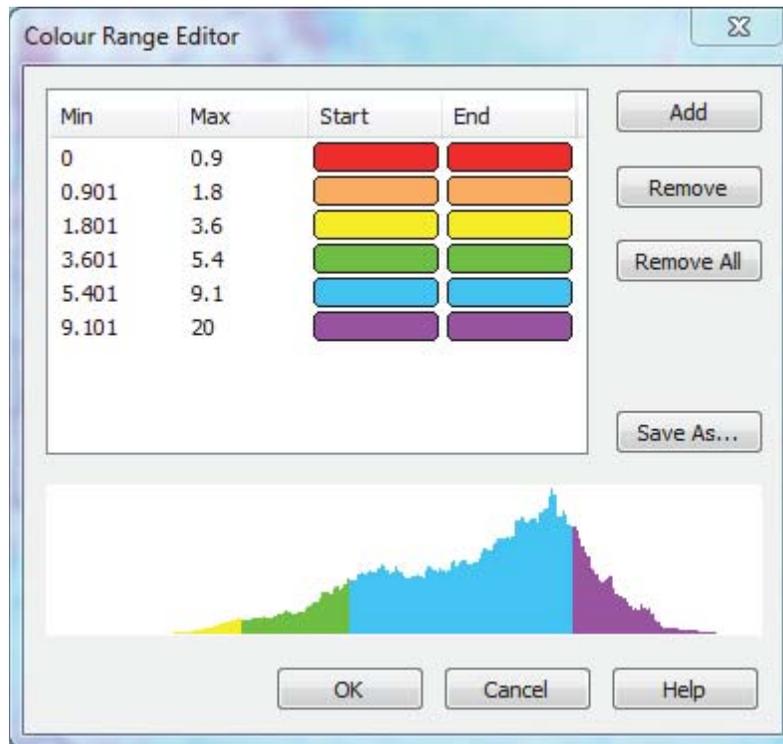


Figure 23: Color range used to compare H13170 surveyed depths to charted contours.

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?
US5FL11M	1:40000	47	03/11/2019	03/18/2019	NO
US4FL10M	1:80000	34	03/18/2019	03/18/2019	NO
US3GC07M	1:350000	34	03/11/2019	03/11/2019	NO
US3GC06M	1:456394	24	03/12/2019	03/12/2019	NO

Table 13: Largest Scale ENC's

US5FL11M

NOAA Local Notice to Mariners (LNM) were reviewed subsequent to the date of the Project Instructions and before the end of the survey for RNC 11415. The last LNM reviewed for Chart: 11415, Current Edition: 13, Print Date: Nov. /2018, Tampa Bay Entrance; Manatee River Extension was LNM 47/18, 7th Dist posted on 11/15/2018 to Add an Obstruction in Feet. Ten LNM were issued within the survey bounds, eight of which correspond to DtoN sounding features submitted for this survey; the other two LNM were to delete charted depths close to the new added depths.

Surveyed depths are shallowest to the east and southeast within the survey area. Depths increase to the west. The 0.9-m, 1.80-m, 3.60-m, 5.40-m and 9.10-m contours of US5FL11M are present within the H13170 survey area. In general, survey data indicate that the contours have shifted landward, and surveyed soundings are deeper than currently charted (Figure 24).

In the western portion of the survey area, west of the charted 5.40-meter contour, survey data indicate surveyed depths generally agree with charted depths within ± 1 foot or are up to 2 feet deeper; in some isolated areas, surveyed soundings may be up to 4 feet deeper than charted depths. Data indicate that, in general, surveyed depths greater than 9.1-meters extend east and southeast of the currently charted contour (refer to Figure 24).

The eastern margin of the survey area shows the most change with regard to charted depths. In the northeastern portion of the survey area survey data indicate surveyed depths are deeper than charted depths by up to 4 feet (Figure 25). In the southeastern portion of the survey area survey data indicate surveyed depths are deeper than charted, particularly with regard to depths within and around the 0.9-m and 1.8-m contours. Data indicate that several large differences exist between surveyed soundings and charted depths in this area (Figure 26) where surveyed soundings are up to 13 - 17 feet deeper than currently charted depths. Survey data also indicate several surveyed soundings that are shallower than surrounding charted depths. A selection were submitted as DtoN sounding features; refer to section D.1.5 for additional information.

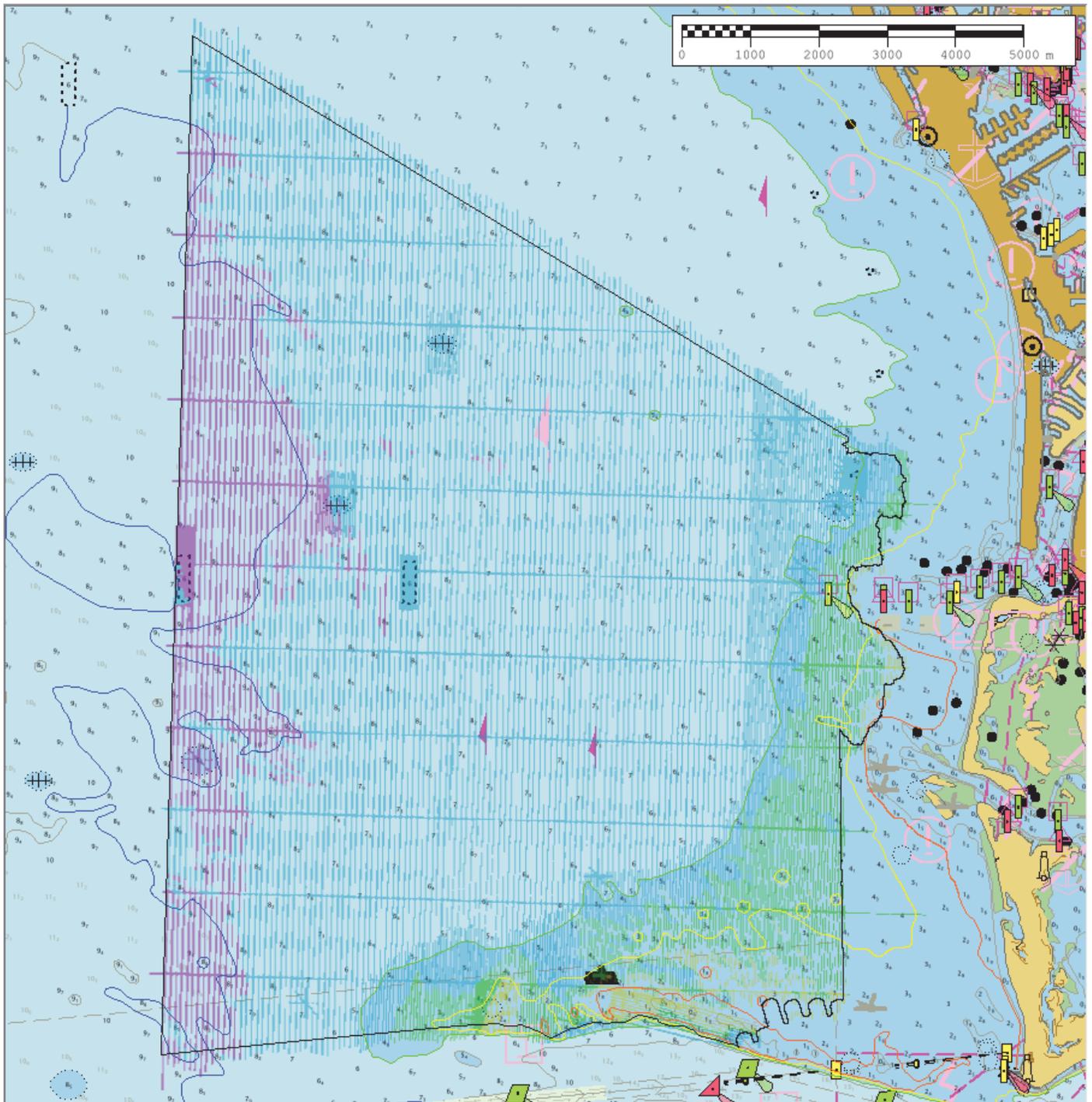


Figure 24: Comparisons of surveyed depths to charted contours. H13170 surface colored by color range chart shown in Figure 23; charted contours colored the same.

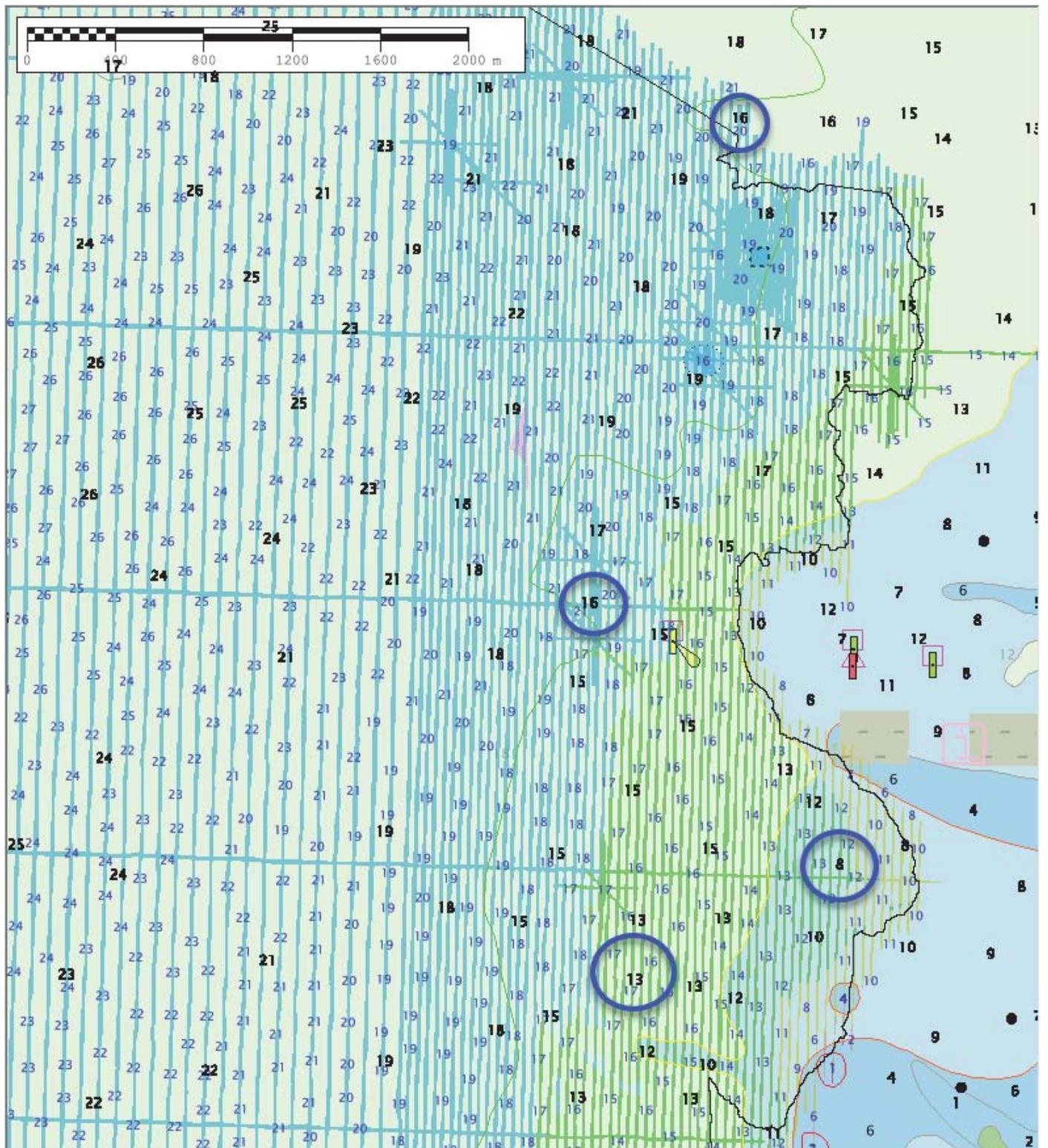


Figure 25: Comparison of northeastern portion of H13170 survey area to charted depths. Selected soundings layer from H13170 in blue, charted depths in black. H13170 surface colored by color range chart shown in Figure 23; charted contours colored the same. Blue circles show areas where surveyed soundings are deeper than charted depths by up to 4 feet.

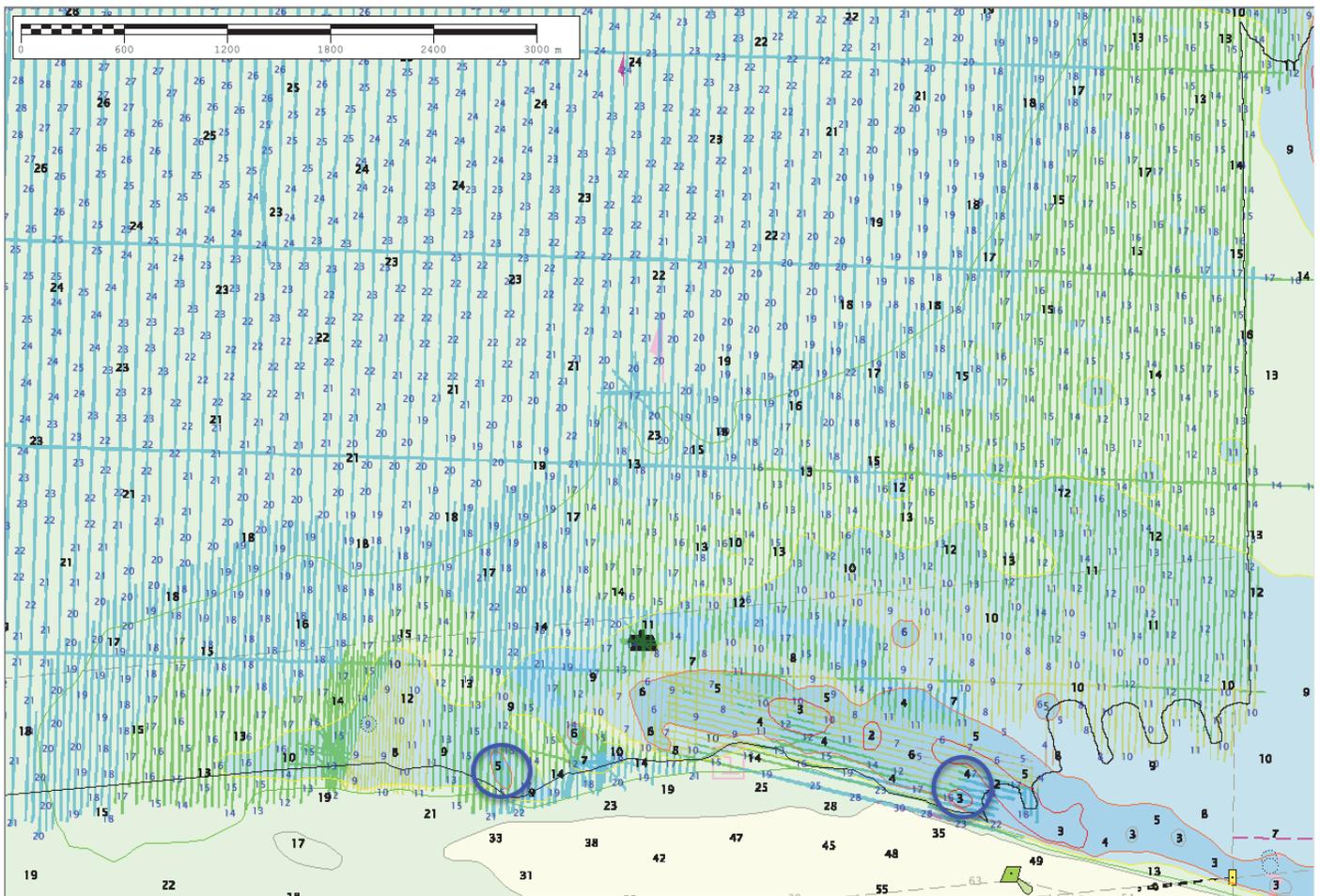


Figure 26: Comparison of southeastern portion of H13170 survey area to charted depths. Selected soundings layer from H13170 in blue, charted depths in black. H13170 surface colored by color range chart shown in Figure 23; charted contours colored the same. Blue circles show areas where surveyed soundings are substantially deeper than charted depths.

US4FL10M

NOAA Local Notice to Mariners (LNM) were reviewed subsequent to the date of the Project Instructions and before the end of the survey for RNC 11412. The last LNM reviewed for Chart: 11412, Current Edition: 49, Print Date: Feb. /2019, Tampa Bay and St. Joseph Sound was LNM 47/18, 7th Dist posted on 11/15/2018 to Add an Obstruction in Feet. Ten LNM were issued within the survey bounds, eight of which correspond to DtoN sounding features submitted for this survey; the other two LNM were to delete charted depths close to the new added depths.

Due to the scale of chart US4FL10M, charted depths are sparser than on US5FL11M. The charted contours on US4FL10M are slightly different than that of US5FL11M, but do follow the same trend, though the 0.9-meter contour is lacking on US4FL10M. Despite the differences, the charted depths on both charts generally agree well and the comparisons between surveyed data and US5FL11M are valid for US5FL10M. It was

observed that one charted 23-foot depth on US4FL10M did not have a corresponding charted depth on US5FL11M; survey data indicate surveyed soundings are deeper than charted depths in this area (Figure 27).

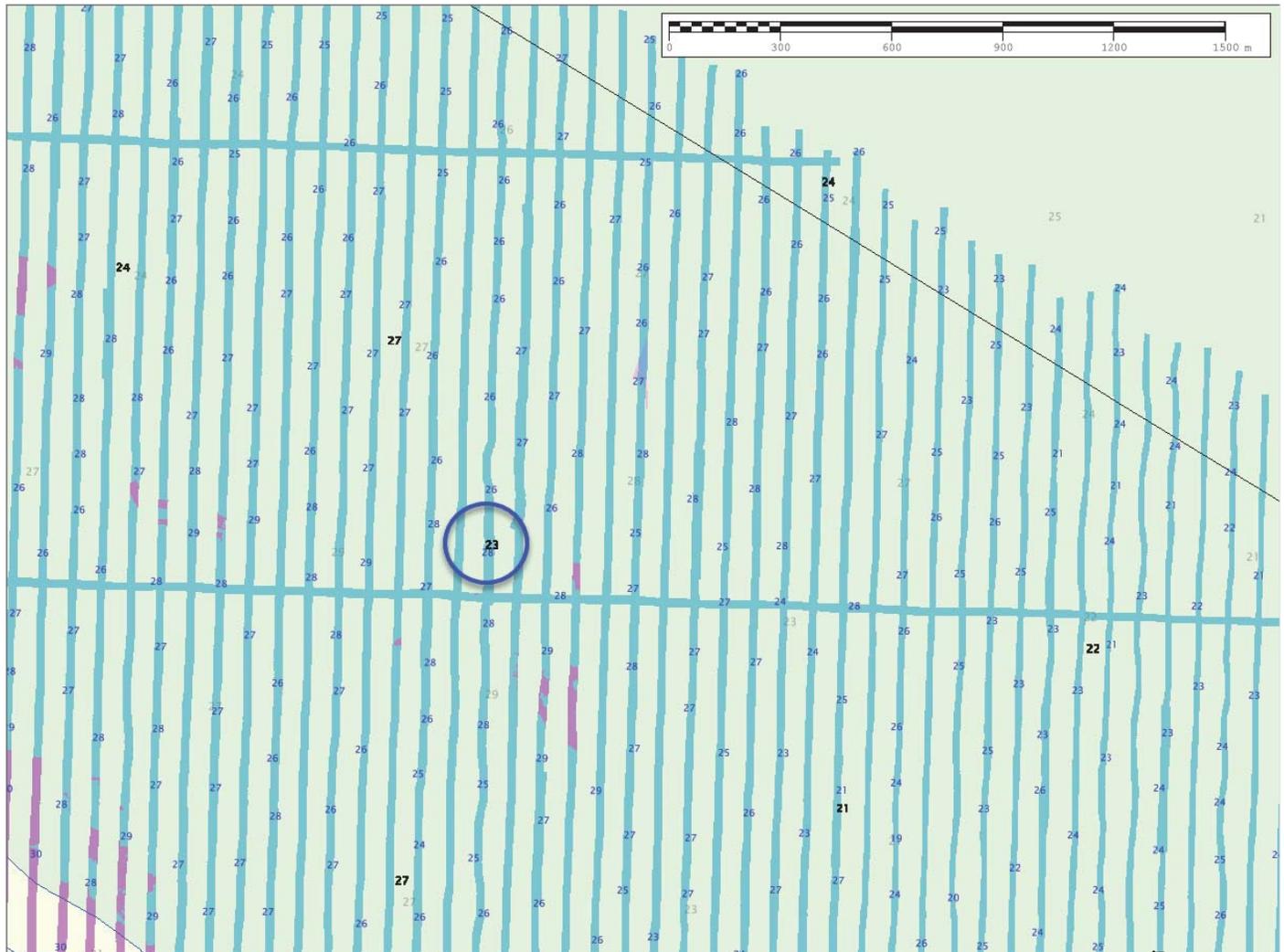


Figure 27: Comparison of H13170 surveyed soundings to charted depths of US4FL10M and US5FL11M. Selected soundings layer from H13170 in blue, US4FL10M charted depths in black, US5FL11M charted depths in grey. H13170 surface colored by color range chart shown in Figure 23; charted contours colored the same. Blue circle indicates area where charted depths differ.

US3GC07M

NOAA Local Notice to Mariners (LNM) were reviewed subsequent to the date of the Project Instructions and before the end of the survey for RNC 11420. The last LNM reviewed for Chart: 11420, Current Edition: 32, Print Date: Oct. /2018, Havana to Tampa Bay was labeled as 'Not Yet Published' posted on 1/17/2019

to Add a Rock in Fathoms. No Notices to Mariners were issued within the survey bounds subsequent to the date of the Project Instructions and before the end of the survey.

The H13170 survey area covers a small portion of the US3GC07M chart in the southwest corner. The portion surveyed falls broadly within the 0 - 5.4-meter depth contour of chart US3GC07M although there is a charted 6.8-meter depth to the west. Though there is one small area of overlap that shows surveyed soundings of 4.2 - 4.4 meters, in general, surveyed soundings are deeper than 5.4 meters in this area.

US3GC06M

NOAA Local Notice to Mariners (LNM) were reviewed subsequent to the date of the Project Instructions and before the end of the survey for RNC 11400. The last LNM reviewed for Chart: 11400, Current Edition: 36, Print Date: Jan. /2006, Tampa Bay to Cape San Blas was LNM 46/18, 8th Dist posted on 11/29/2018 to Add a Dangerous Wreck. No Notices to Mariners were issued within the survey bounds subsequent to the date of the Project Instructions and before the end of the survey.

The US3GC06M chart is present in most of the H13170 survey area, except for a very small region in the southwest corner. Only the 5.4-meter and 9.1-meter contours are present on US3GC06M within the H13170 survey area. While the 5.4-meter contour generally follows the same trend as on US5FL11M, the 9.1-meter contour is different and generally much further west than on US5FL11M. Surveyed data indicate surveyed soundings deeper than the currently charted contour exist eastward and landward of the currently charted contours. Survey data also indicate that surveyed soundings generally agree with the nine charted depths that fall within the H13170 survey area within ± 1 foot or are deeper than charted. The comparison made for US5FL11M in which surveyed soundings are substantially deeper in the southeast corner of the survey area remains valid for US3GC06M (Figure 28).

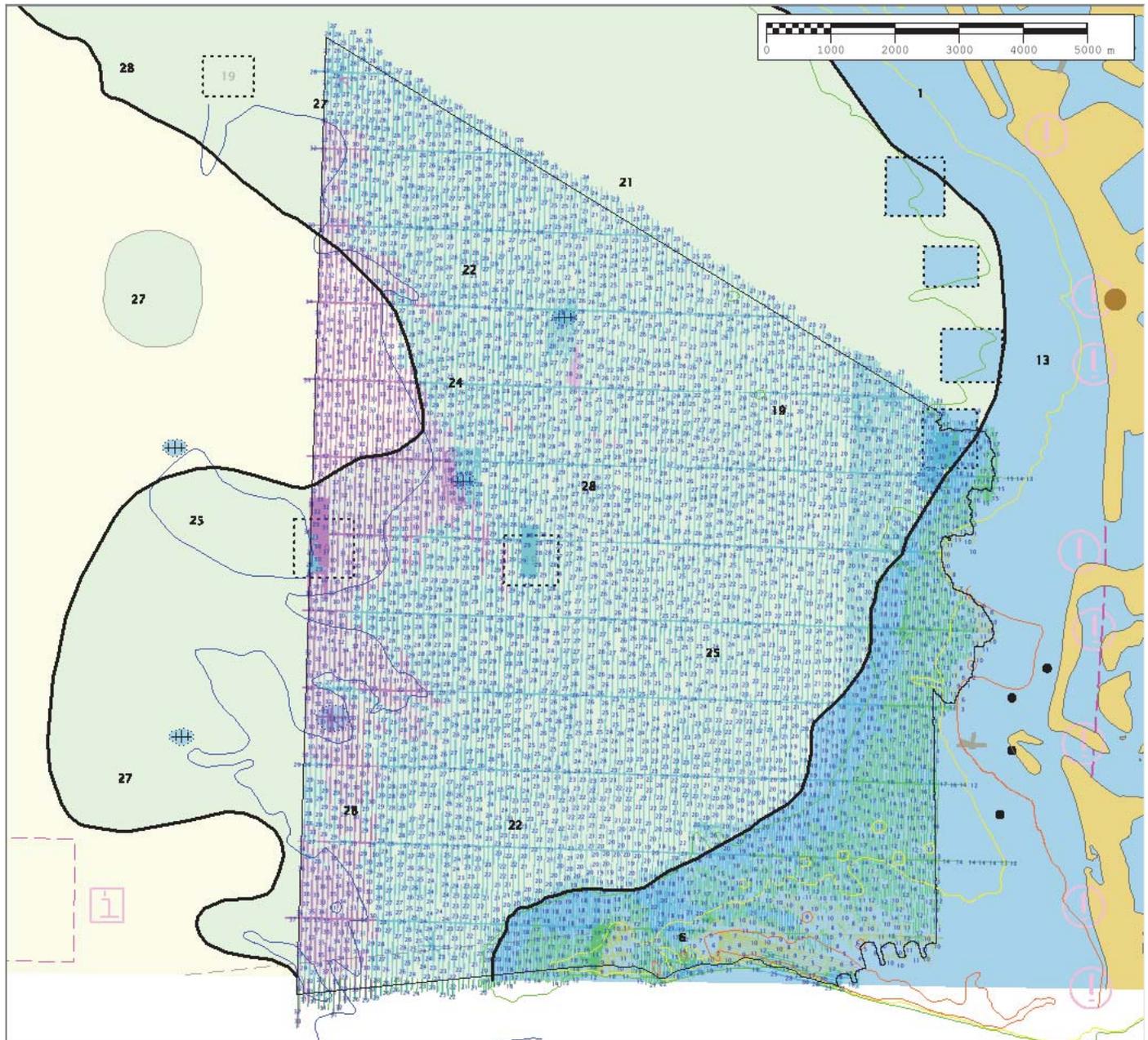


Figure 28: Comparison of H13170 to US3GC06M. Selected soundings layer from H13170 in blue, US3GC06M charted depths and contours in black. H13170 surface colored by color range chart shown in Figure 23; US5FL11M charted contours colored the same.

D.1.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

D.1.3 Charted Features

Prior to starting survey operations, the Composite Source File (CSF) indicated nine charted features within survey limits: one ATON, two mooring facilities, two fish haven areas, one obstruction area, one point obstruction and two wrecks. These were all addressed during survey operations. Refer to the Final Feature File for additional information regarding all charted features.

D.1.4 Uncharted Features

An additional nine features were added to the Final Feature File that were not addressed as Dangers to Navigation due to factors such as charted depths, proximity to charted features, or proximity to other DtoNs. Refer to the Final Feature File for additional information. Contacts observed within the multibeam data that were less than 1 m in height were often 'Examined' to show that they had been reviewed; these remain 'Examined' in the CARIS project.

D.1.5 Shoal and Hazardous Features

Fourteen Danger to Navigation Reports were submitted for this survey within three separate submission packages. The first ten DtoNs were sounding features representative of where survey data indicate shallower depths than currently charted in the eastern and southeastern portions of the survey area; Figure 29 shows areas that have since been updated on the chart. The remaining four DtoNs were discrete obstructions. Refer to the Final Feature File and Supplemental Survey Records and Correspondence for additional information.

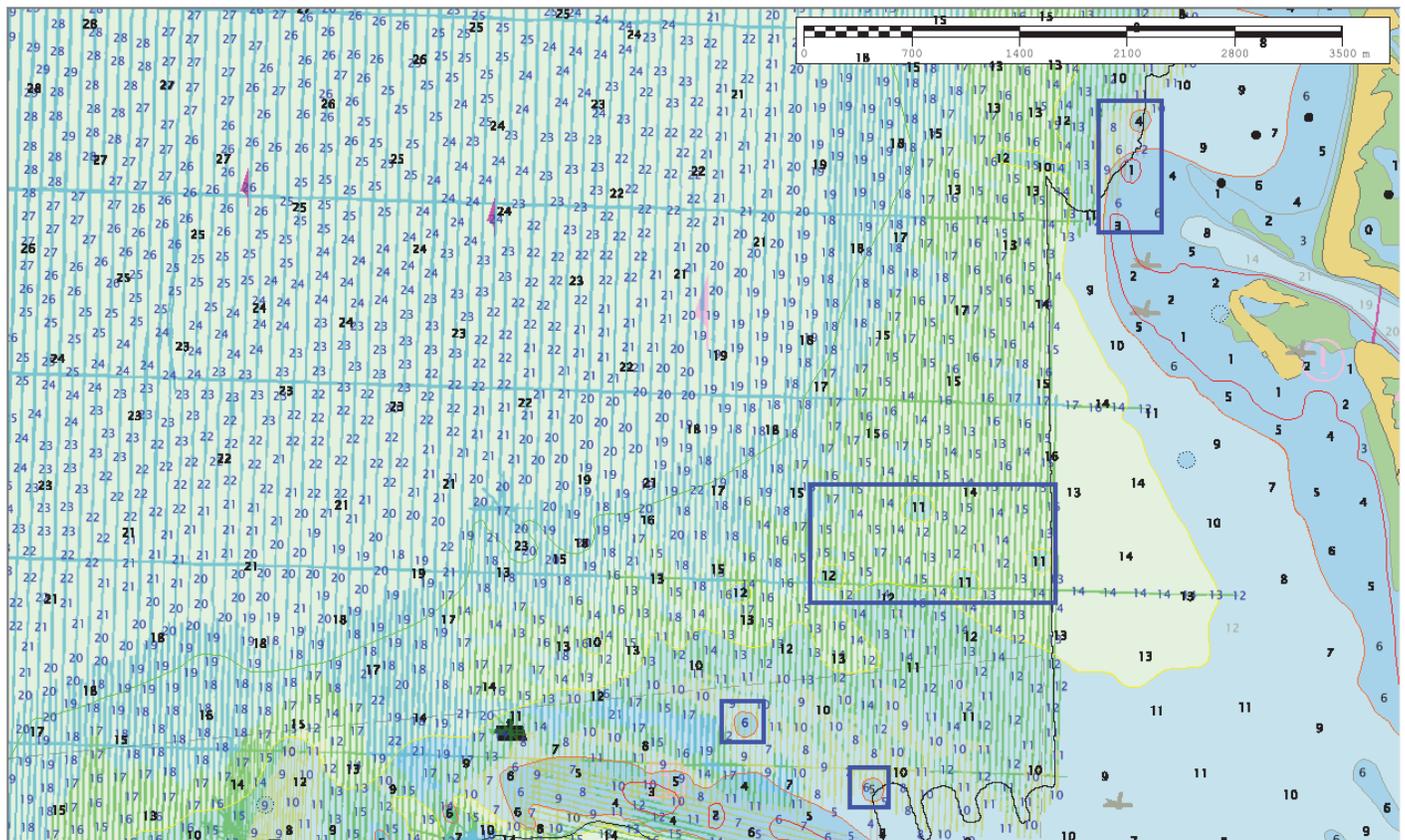


Figure 29: Areas of H13170 where survey data indicate shallower than charted depths used to update the chart based on submitted DtoNs. Selected soundings layer from H13170 in blue, US5FL11M charted depths in black. H13170 surface colored by color range chart shown in Figure 23; US5FL11M charted contours colored the same.

D.1.6 Channels

H13170 is north of Egmont Channel and the survey area covers the northern portion of the safety fairway around Egmont Channel (Figure 30). Within the western portion of the safety fairway surveyed soundings are generally deeper than charted depths by 1 - 2 feet. Within the eastern portion of the safety fairway the largest differences were observed between surveyed soundings and charted depths with surveyed soundings being substantially deeper than charted depths. Refer to the chart comparison section for additional information.

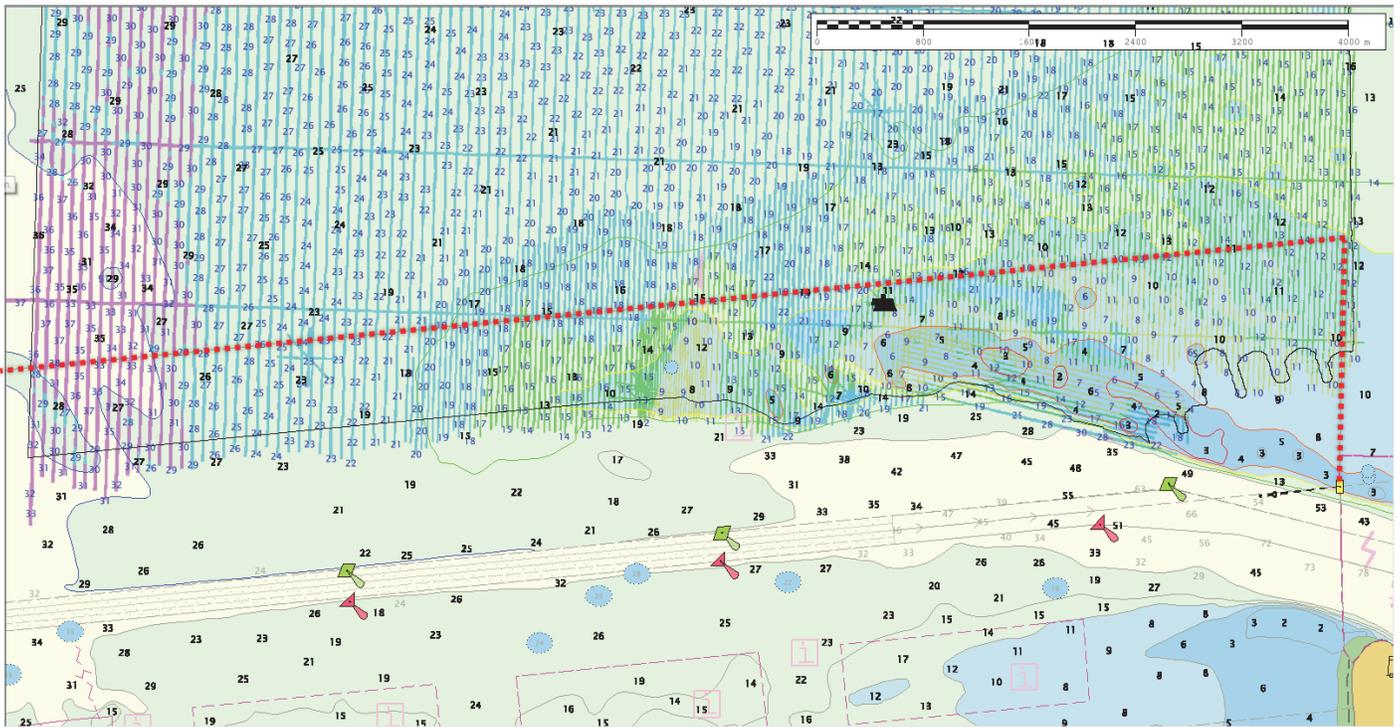


Figure 30: Areas of overlap of the H13170 survey area and the safety fairway north of Egmont Channel. Selected soundings layer from H13170 in blue, US5FL11M charted depths in black. H13170 surface colored by color range chart shown in Figure 23; US5FL11M charted contours colored the same. Safety fairway outline in red.

D.1.7 Bottom Samples

A total of 10 bottom samples were obtained within the H13170 survey area. Another four were attempted, but no sample obtained. Refer to the Final Feature File for additional information.

D.2 Additional Results

D.2.1 Shoreline

The inshore limit of hydrography and feature verification for Navigable Area Surveys is the Navigable Area Limit Line (NALL), as stated in section 1.3.2 of the HSSD (2018). For this survey the NALL consisted of the 3.5-meter depth contour, which was defined along the central-eastern, southeastern and southern portions of the survey area (Figure 31). One assigned investigation was located within an area partially shallower than the 3.5-meter contour; side scan sonar coverage was obtained. Refer to the chart comparison section for details on charted contours and surveyed soundings and the Final Feature File for additional information about charted features.

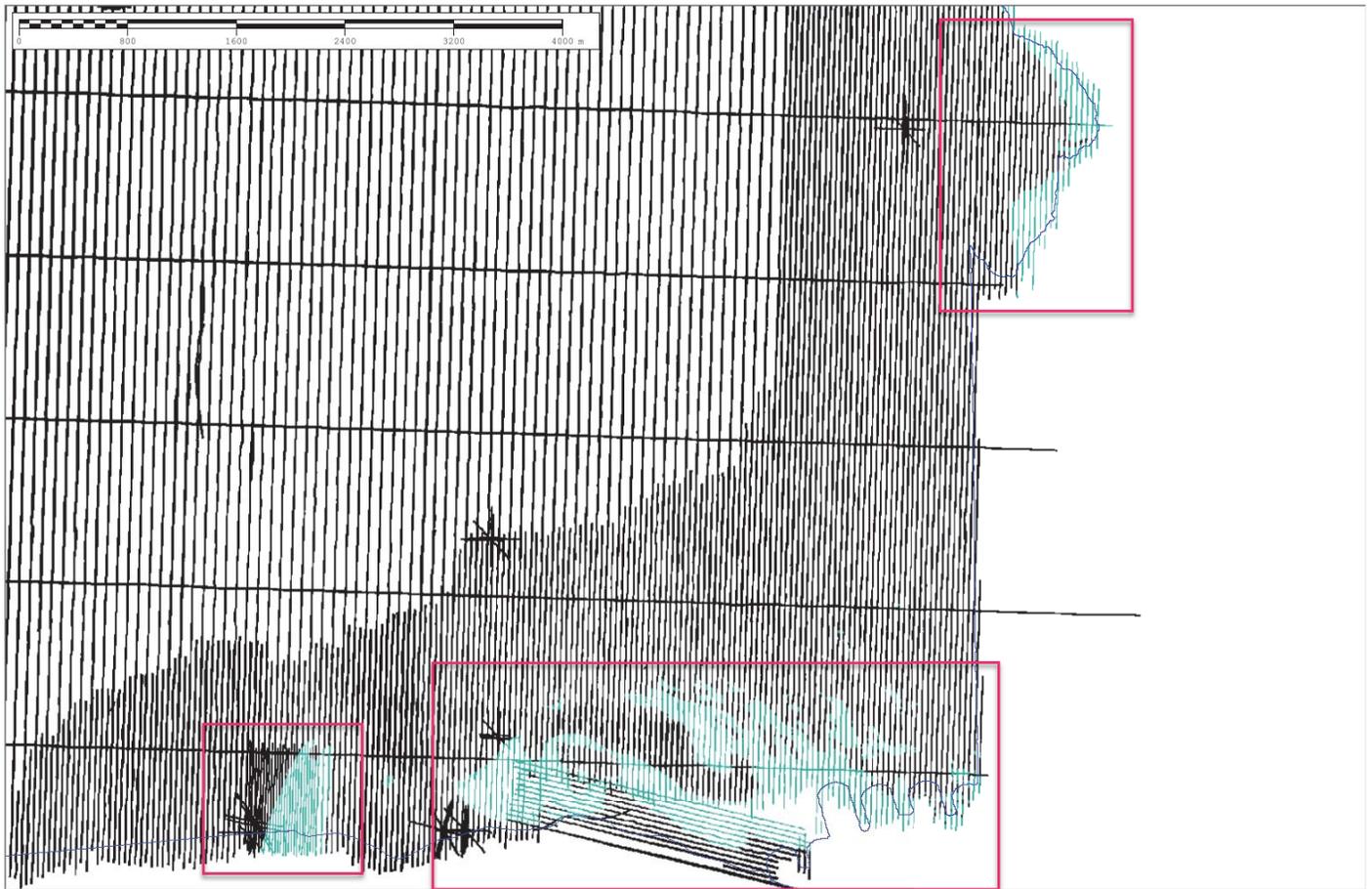


Figure 31: Southeastern portion of the H13170 survey area where the 3.5-meter contour was defined. Surveyed soundings 3.5 meters or less shown in teal, surveyed soundings greater than 3.51 meters shown in black. Survey outline shown in blue.

D.2.2 Prior Surveys

No prior survey comparisons exist for this survey.

D.2.3 Aids to Navigation

One aid to navigation is present within the survey area. A position fix was obtained during field operations. This, in conjunction with the SSS data, indicates that the ATON is in the charted location. Field correspondence indicates the aid to navigation is operating as charted.

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 and/or Environmental Conditions

Data indicate bathymetric features representative of sand waves may be present within portions of the survey area at some points in time and are absent in the same area at other points in time. Data indicate that sand waves are present in the south-central portion of the survey area near the southern survey limits when the data were surveyed. Adjacent lines collected at later date do not indicate the presence of sand waves (Figure 32).

Survey data suggest that data collected at different points in time can show bathymetric changes. Multibeam fill-ins and SSS reruns for which MBES data was collected were incorporated into the surfaces. It was observed that these areas can show higher standard deviation. Evaluation of some of these areas indicates that the seafloor bathymetry is different at a later date. An example is shown in Figure 33.



Figure 32: Survey data shows bathymetric features representative of sand waves on lines collected earlier in time (to the east), but overlapping data collected at a later date (to the west) does not indicate the presence of sand waves.

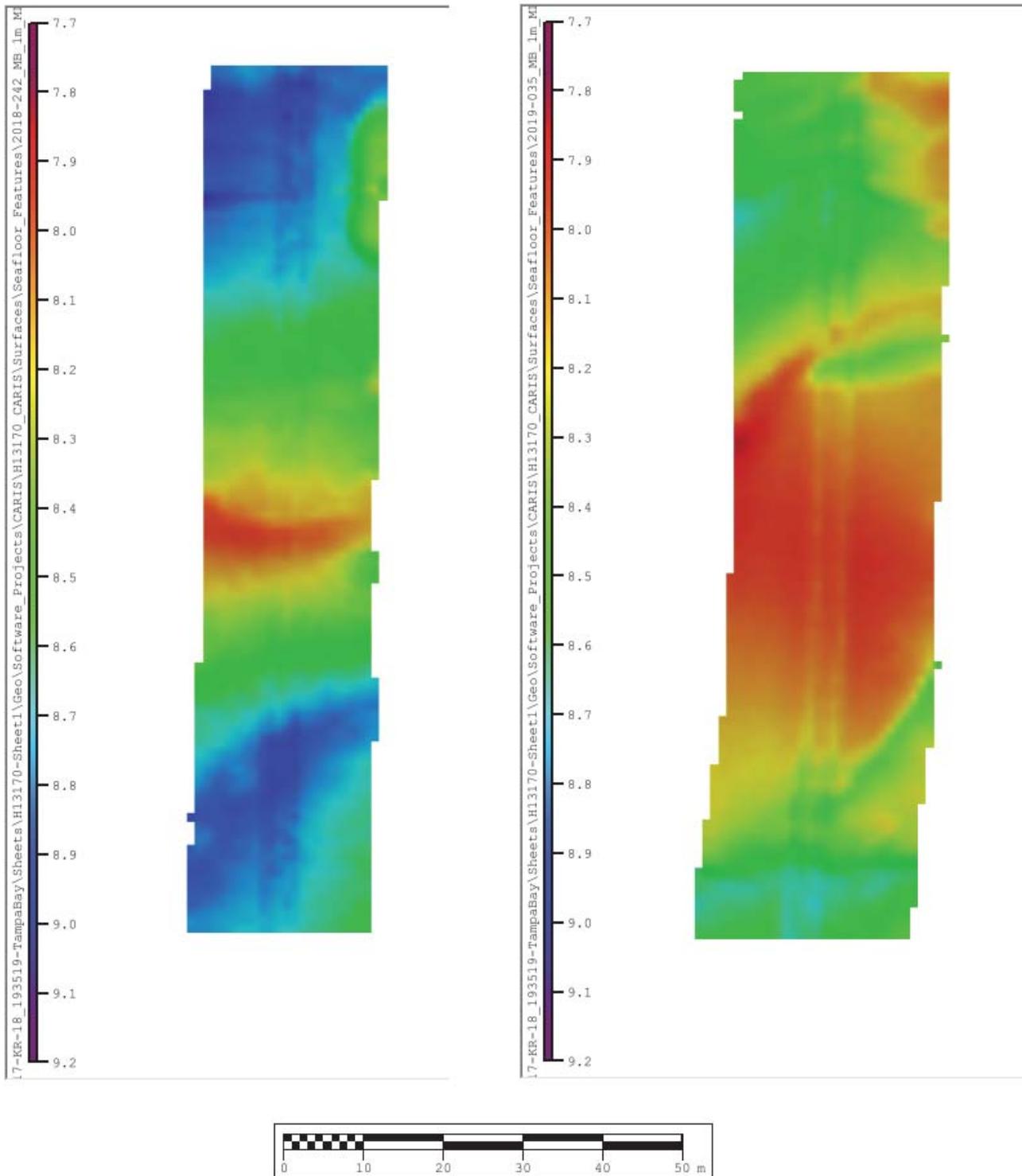


Figure 33: Survey data (sample of trackline 1315) collected at an earlier date on the left and survey data collected at a later date in the same location on the right show differences in bathymetry. Color map is the same for both images.

D.2.9 Construction and Dredging

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

D.2.10 New Survey Recommendation

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

D.2.11 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.

This report and attached survey data have been reviewed. 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 meet or exceed requirements as set forth in the NOS Hydrographic Surveys Specifications and Deliverables, Statement of Work and Project Instructions. 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.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2019-03-11
Horizontal and Vertical Control Report	2019-03-11

Approver Name	Approver Title	Approval Date	Signature
Scott Melancon	Chief of Party	04/10/2019	Scott Melancon <small>Digitally signed by Scott Melancon DN: cn=Scott Melancon, o, ou, email=smelancon@oceaneering.com, c=US Date: 2019.04.12 08:27:05 -0500</small>
Nicole Galloway	Geoscientist	04/10/2019	

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	Continually 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
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
HSSD	Hydrographic Survey Specifications and Deliverables

Acronym	Definition
HSTP	Hydrographic Systems Technology Programs
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
NAIP	National Agriculture and Imagery Program
NALL	Navigable Area Limit Line
NM	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
PST	Physical Science Technician
RNC	Raster Navigational Chart
RTK	Real Time Kinematic
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
TPE	Total Propagated Error
TPU	Topside Processing Unit
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
UTM	Universal Transverse Mercator
XO	Executive Officer
ZDA	Global Positioning System timing message
ZDF	Zone Definition File

ABSTRACT OF TIMES OF HYDROGRAPHY
R/V C-Wolf

Project: OPR-J317-KR-18 Registry No.: H13170
Contractor Name: Oceaneering International, Inc.
Date: March 2019
Sheet Number: 1
Inclusive Dates: August 18, 2018 - February 5, 2019
Field Work is Complete

Time (UTC)

Julian Day	Start	End	Year
230	1625	2236	2018
231	1228	2219	2018
232	1230	2211	2018
233	1143	2230	2018
234	1302	2202	2018
235	1205	2215	2018
236	1501	2218	2018
237	1215	2107	2018
238	1210	2230	2018
239	1454	2148	2018
240	1158	2100	2018
241	1140	2130	2018
242	1143	1848	2018
243	1135	2012	2018
244	1130	2214	2018
245	1235	1925	2018
247	1755	2227	2018
248	1134	2108	2018
263	1338	2159	2018
264	1142	1958	2018
265	1215	1923	2018
289	1200	1710	2018
290	1434	1442	2018
303	1413	2045	2018
304	1400	2030	2018
308	1615	2030	2018
309	1315	2023	2018
310	1306	2100	2018
311	1305	1950	2018
313	1407	1945	2018
317	1217	1630	2018
338	1251	1445	2018
340	1650	2141	2018

Julian Day	Start	End	Year
341	1238	2142	2018
342	1300	1954	2018
035	1320	2217	2019
036	1243	1325	2019



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 Sheet 1 (H13170) clarifications

8 messages

Galloway, Nicole <ngalloway@oceaneering.com>

Thu, Nov 1, 2018 at 3:26 PM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>

Hi Meredith,

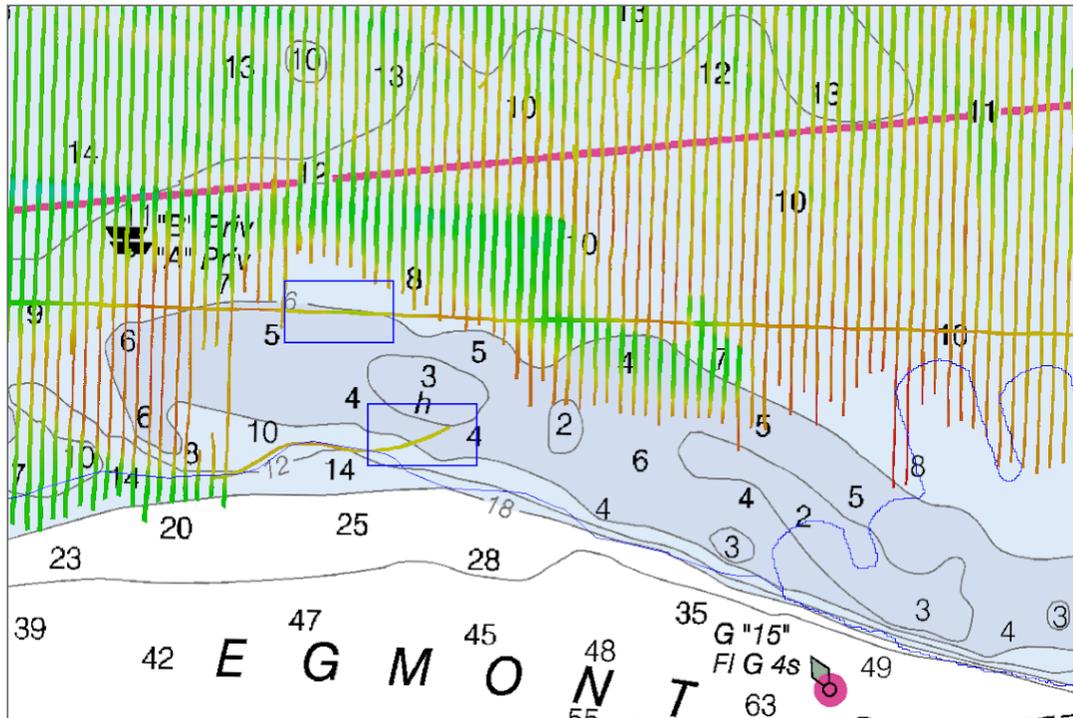
We would like to discuss the following two items in Sheet 1:

- the 3.5 m contour in the southeast portion of the survey area
- Obstruction (Feature ID 0000000604 00001)

I will attempt to explain below but thought setting up a Google Hangout with the ability to share my screen might be helpful. Let us know what you think.

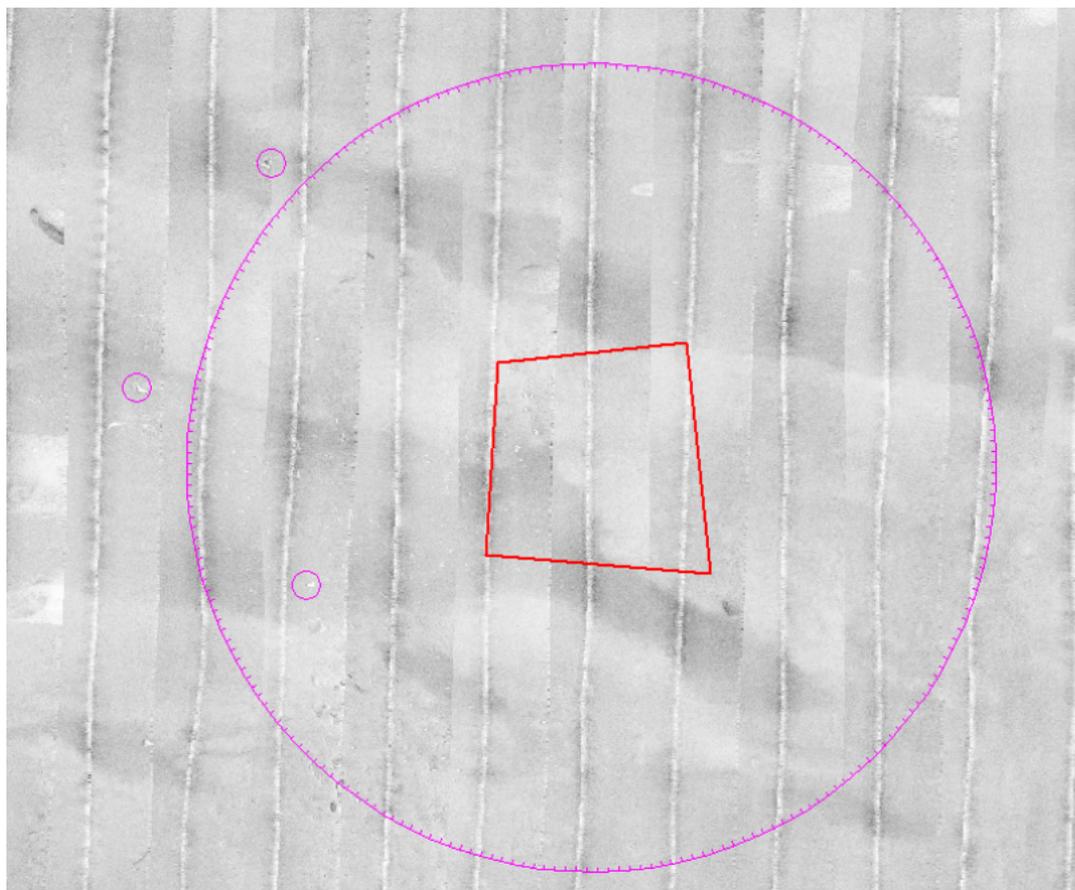
3.5 m contour

We believe we have captured the majority of the 3.5 m contour but sometimes the data indicate that depths get shallow and then deep again. An area that shows this is in the north blue rectangle where depths are shallower than 3.5 m to the north but the crossline indicates depths greater than 3.5 m (up to 4.5 m). A reconnaissance line to the south also indicates depths greater than 3.5 m (around 4 m). The southern portion may at least in part be covered by data from Sheet 4. We want to ensure we have the appropriate coverage.



Obstruction

This obstruction is an area feature surrounded by a search radius of 170 m for disproval. However, there are many small contacts within this radius and at least one contact that measures greater than 1 m in height (from the SSS). Originally we had planned for 200% SSS over this area but we've had some internal discussion over whether 100% MB coverage within this radius might be more beneficial or if MB coverage over the contact measuring greater than 1 m is sufficient.



We would appreciate your input.

Thank-you!

Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com



2155 Steppingstone Square | Chesapeake, VA | USA, Tel (+1)757 985 3714 | oceaneering.com

This email is confidential, may be privileged, and should be read or retained only by the intended recipient. If you have received this email in error, please immediately notify me, delete it from your system and do not retain any copies. Thank you for your cooperation.

Galloway, Nicole <ngalloway@oceaneering.com>

Thu, Nov 15, 2018 at 3:36 PM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>

Good afternoon Meredith,

I'm sure you're catching up this week after having been out of the office, but I was wondering if you have had minute to look at the above?

Thank-you!

Nikki

[Quoted text hidden]

Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Thu, Nov 15, 2018 at 4:01 PM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>
Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>

Hello Nikki,

You are right and things have been pretty manic here. I have time on my schedule on Tuesday afternoon (11/20). Does sometime then work for you?

Sincerely,

Meredith

[Quoted text hidden]

--

Meredith C. Payne

Physical Scientist,

Hydrographic Surveys Division Operations Branch

National Oceanic & Atmospheric Administration

[1315 East-West Hwy](#), N/CS31

Silver Spring, MD 20910

240-533-0025

Visit our [StoryMap!](#)

Sign up for our [Weekly Hydrographic Ship Reports Newsletter](#)

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Nov 16, 2018 at 9:08 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>

Good morning Meredith,

Thank-you for getting back to me! Would 3 pm eastern time (2 pm central time) on Tuesday 11/20 work for you?

Nikki

[Quoted text hidden]

Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Fri, Nov 16, 2018 at 10:06 AM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>

Hi Nicole,

I have 3:00 - 3:30 on Tuesday the 20th. If you think a half-hour is long enough, I will put it on my calendar. Otherwise, I am wide open on Friday, 11/23.

Sincerely,

Meredith

[Quoted text hidden]

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Nov 16, 2018 at 10:24 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>

Hi Meredith,

Our offices will be closed for the Thanksgiving holiday next Thursday and Friday. But we think that a half hour will be enough time and will plan for 3:00 - 3:30 pm on Tuesday the 20th. Would you like us to set up a Google Hangout meeting on our end so there is the option to screen-share?

Thanks again!

Nikki

[Quoted text hidden]

Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Fri, Nov 16, 2018 at 11:13 AM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>, Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>

That sounds good. It would also be helpful to us if you would resubmit the image of your NALL reconnaissance effort where shallower than 3.5 meters is colored black. Then we can more easily interpret your image.

Thank you.

Sincerely,

Meredith

[Quoted text hidden]

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Nov 16, 2018 at 1:18 PM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Christopher Baker <crbaker@oceaneering.com>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>, Martha Herzog <martha.herzog@noaa.gov>

Hi Meredith,

Everyone on this list should receive an invite to the Hangouts Meet. Please add anyone else if you need to.

Also, please see attached updated image and colormap. I should have the remainder of the mainlines added by the meeting next week.

Thank-you!

Nikki

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

H13170 DtoNs #1 - #10 Submission to NDB

2 messages

Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Tue, Oct 2, 2018 at 8:07 AM

To: OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Cc: Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Tim Osborn - NOAA Federal <tim.osborn@noaa.gov>, Nicole Galloway <ngalloway@oceaneering.com>, smelancon@oceaneering.com

Good day,

Please find attached compressed file related to H13170 DtoN Report #1-#10, containing ten shoal depths located between Egmont Channel northward to Bunces Pass that are shoaler than the current charted depths and outside the applicable depth range. The submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD) is intended for chart application.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review, processing, and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Regards,

Gene

*Castle Eugene Parker**NOAA Office of Coast Survey**Atlantic Hydrographic Branch**Hydrographic Team Lead / Physical Scientist*castle.e.parker@noaa.gov*office (757) 364-7472*

 **H131701_DtoN_1-10.zip**
366K

OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Tue, Oct 2, 2018 at 1:28 PM

To: Castle E Parker <castle.e.parker@noaa.gov>

Cc: Briana Welton <Briana.Hillstrom@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Tim Osborn <tim.osborn@noaa.gov>, Nicole Galloway <ngalloway@oceaneering.com>, smelancon@oceaneering.com, _NOS OCS PBA Branch <ocs.pba@noaa.gov>, _NOS OCS PBB Branch <ocs.pbb@noaa.gov>, _NOS OCS PBC Branch <ocs.pbc@noaa.gov>, _NOS OCS PBD Branch <ocs.pbd@noaa.gov>, _NOS OCS PBE Branch <ocs.pbe@noaa.gov>, _NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, Nautical Data Branch <OCS.NDB@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Tara Wallace <Tara.Wallace@noaa.gov>

DD-29929 has been registered by the Nautical Data Branch and directed to Products Branch B for processing.

The DtoNs reported are 10 shoal soundings located southwest of Pass-A-Grille Channel in the Gulf of Mexico.

The following charts are affected:

11411 kapp 191
11415 kapp 2981
11412 kapp 175
11400 kapp 177

The following ENC's are affected:

US5FL11M
US4FL10M
US3GC06M

References:

H13170
OPR-J317-KR-18

This information was discovered by a NOAA contractor and was submitted by AHB.

Nautical Data Branch/[Marine Chart Division](#)/
Office of Coast Survey/[National Ocean Service](#)/
Contact: ocs.ndb@noaa.gov



[Quoted text hidden]

 **H131701_DtoN_1-10.zip**
366K



Galloway, Nicole <ngalloway@oceaneering.com>

H13170 DtoN #11 and #12 Submission to NDB

2 messages

Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Fri, Nov 30, 2018 at 2:15 PM

To: OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Cc: Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Nicole Galloway <ngalloway@oceaneering.com>

Good day,

Please find attached compressed file related to H13170 DtoN Report #11 and #12, containing two obstructions (16ft and 28ft). The 16ft Obstruction is approximately 0.7nm north of the North Channel sea buoy, while the 28ft Obstruction is located approximately 2.93nm north of Egmont Channel. The submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD) is intended for chart application.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review, processing, and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Regards,

Gene

*Castle Eugene Parker**NOAA Office of Coast Survey**Atlantic Hydrographic Branch**Hydrographic Team Lead / Physical Scientist*castle.e.parker@noaa.gov*office (757) 364-7472*

 **H13170_DtoN_11-12.zip**
1301K

OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Fri, Nov 30, 2018 at 4:43 PM

To: Castle E Parker <Castle.E.Parker@noaa.gov>
Cc: Briana Welton <Briana.Hillstrom@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Nicole Galloway <ngalloway@oceaneering.com>, _NOS OCS PBA Branch <ocs.pba@noaa.gov>, _NOS OCS PBB Branch <ocs.pbb@noaa.gov>, _NOS OCS PBC Branch <ocs.pbc@noaa.gov>, _NOS OCS PBD Branch <ocs.pbd@noaa.gov>, _NOS OCS PBE Branch <ocs.pbe@noaa.gov>, _NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Tara Wallace <Tara.Wallace@noaa.gov>

DD-30171 has been registered by the Nautical Data Branch and directed to Products Branch B for processing.

The DtoNs reported are two obstructions in the approaches to Tampa Bay, FL.

The following charts have been assigned to the record:

11411 kapp 191
11415 kapp 2981
11412 kapp 175
11400 kapp 177

The following ENC's have been assigned to the record:

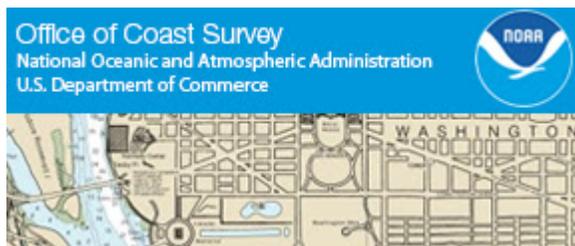
US5FL11M
US4FL10M
US3GC06M

References:

H13170
OPR-J317-KR-18

This information was discovered by a NOAA contractor and was submitted by AHB.

Nautical Data Branch/[Marine Chart Division](#)/
Office of Coast Survey/[National Ocean Service](#)/
Contact: ocs.ndb@noaa.gov



[Quoted text hidden]

 **H13170_DtoN_11-12.zip**
1301K



Galloway, Nicole <ngalloway@oceaneering.com>

H13170 DtoN 3: #13 and #14 Submission to NDB

2 messages

Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Mon, Mar 11, 2019 at 9:32 AM

To: OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Cc: Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, AHB Chief - NOAA Service Account <ahb.chief@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Nicole Galloway <ngalloway@oceaneering.com>, Scott Melancon <smelancon@oceaneering.com>

Good day,

Please find attached compressed file related to H13170 DtoN Report #13 and #14, containing one 17ft obstruction and a 20ft obstruction recommend to be applied to the chart as a sounding. The obstruction and sounding are located 1.62nm to 2.02nm north of the Egmont Channel. The submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD) is intended for chart application.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review, processing, and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Regards,

Gene

*Castle Eugene Parker**NOAA Office of Coast Survey**Atlantic Hydrographic Branch**Hydrographic Team Lead / Physical Scientist*castle.e.parker@noaa.gov*office (757) 364-7472*

 **H13170_DtoN3-13-14.zip**
939K

OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Mon, Mar 11, 2019 at 3:41 PM

To: Castle E Parker <Castle.E.Parker@noaa.gov>

Cc: Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, AHB Chief <AHB.Chief@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Nicole Galloway <ngalloway@oceaneering.com>, Scott Melancon <smelancon@oceaneering.com>, _NOS OCS PBA Branch <ocs.pba@noaa.gov>, _NOS OCS PBB Branch <ocs.pbb@noaa.gov>, _NOS OCS PBC Branch <ocs.pbc@noaa.gov>, _NOS OCS PBD Branch <ocs.pbd@noaa.gov>, _NOS OCS PBE Branch <ocs.pbe@noaa.gov>, _NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Tara Wallace <Tara.Wallace@noaa.gov>

DD-30507 has been registered by the Nautical Data Branch and directed to Products Branch B for processing.

The DtoNs reported are two features in the approaches to Tampa Bay, FL, north of Egmont Key.

The following charts have been assigned to the record:

11411 kapp 191

11415 kapp 2981

11412 kapp 175

11400 kapp 177

The following ENC's have been assigned to the record:

US5FL11M

US4FL10M

US3GC06M

References:

H13170

OPR-J317-KR-18

This information was discovered by a NOAA contractor and was submitted by AHB.

Nautical Data Branch/[Marine Chart Division](#)/
Office of Coast Survey/[National Ocean Service](#)/
Contact: ocs.ndb@noaa.gov



[Quoted text hidden]

 **H13170_DtoN3-13-14.zip**
939K



Galloway, Nicole <ngalloway@oceaneering.com>

Fwd: DTON question

4 messages

Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Wed, Sep 26, 2018 at 11:24 AM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>

Hi Nikki,

We reached out to the processing branch to give you the best guidance with respect to your question on soundings indicating shoaling. Please read their reply below.

Sincerely,
Meredith

----- Forwarded message -----

From: **Castle Parker - NOAA Federal** <castle.e.parker@noaa.gov>

Date: Tue, Sep 25, 2018 at 2:30 PM

Subject: RE: DTON question

To: Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>, Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

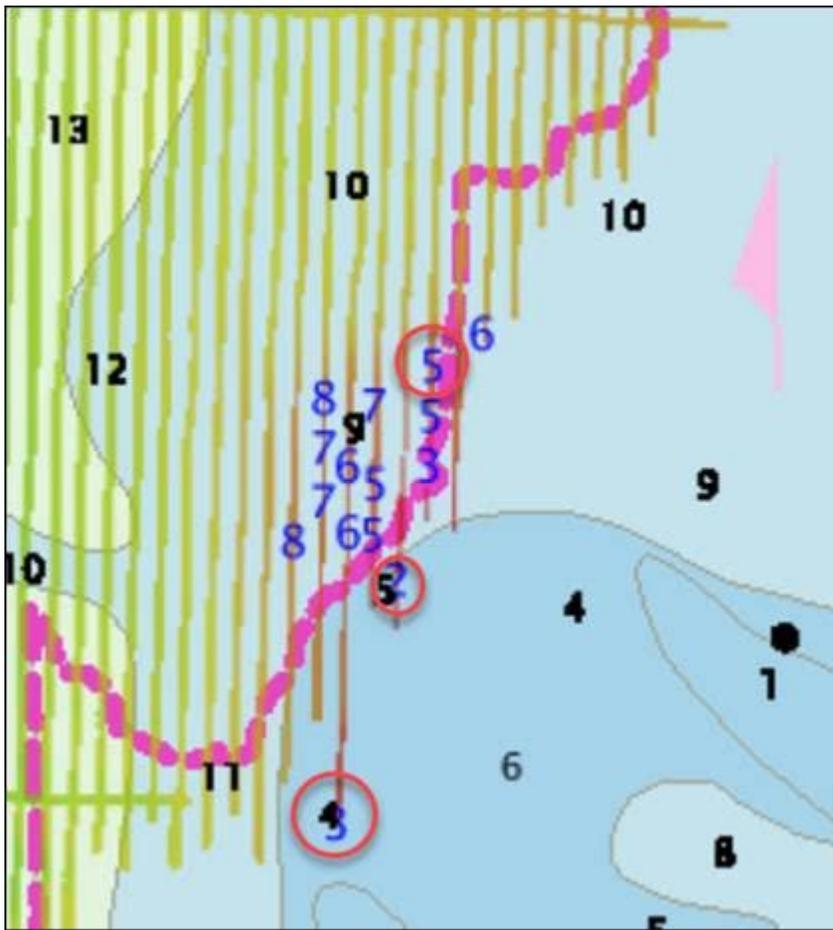
Hello Martha,

I would select the shoal sounding that is outside or seaward of the appropriate and applicable depth range. Below are screen grabs of what I would select, selected soundings within the red circles. This is what I recommend. It looks like the Field Unit is referencing CARIS standard sounding rounding XML file, rounded at 0.75; when I open the S57 file, I see depth difference. HSD rounding file is 0.5. We just went through this with other KR DtoN submissions and HSD will not submit rounded selections. Rounding was removed from specs so, I would that Oceaneering is referencing the correct sounding rounding file, the same rounding as MCD.

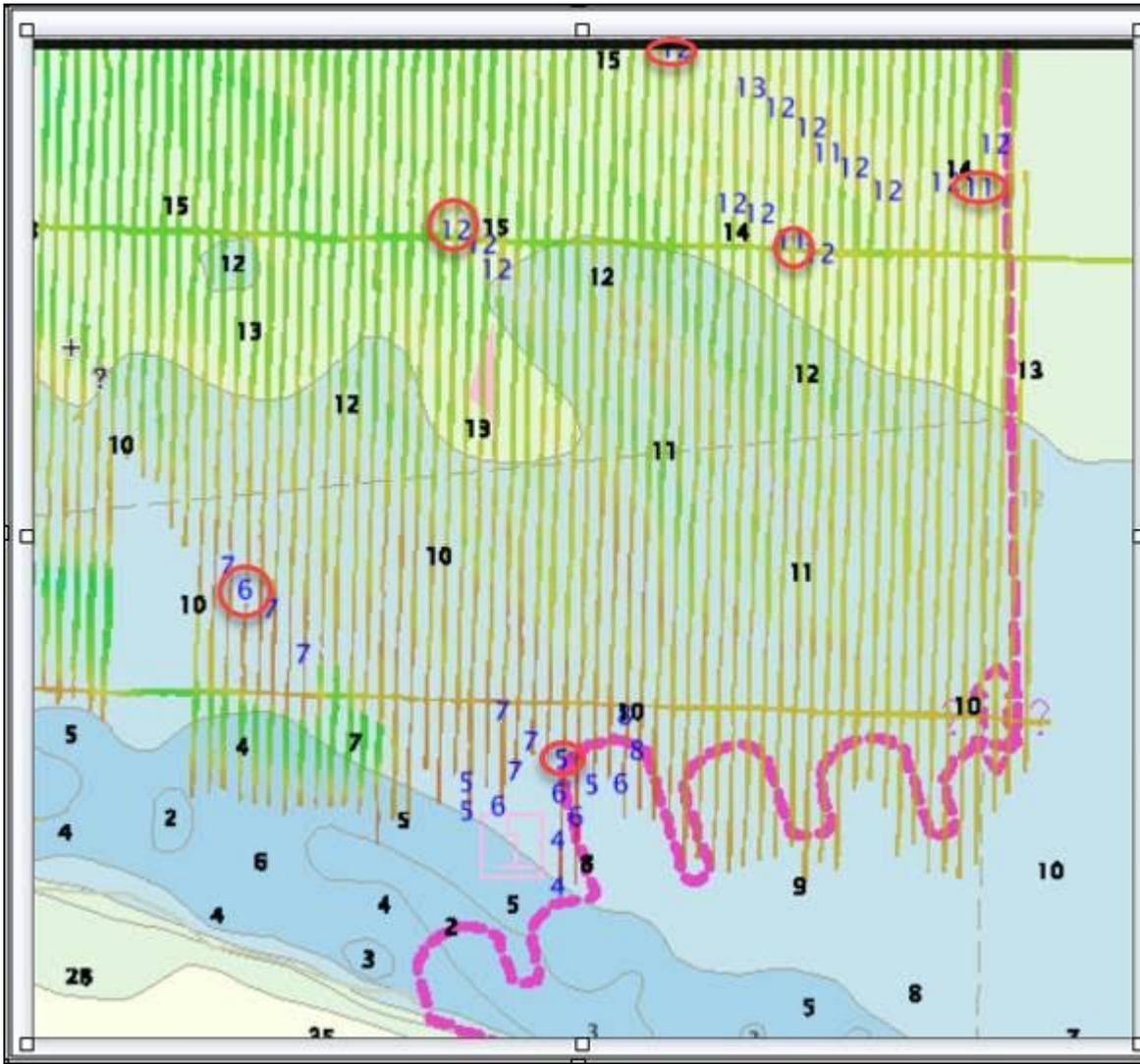
Regards,

gp

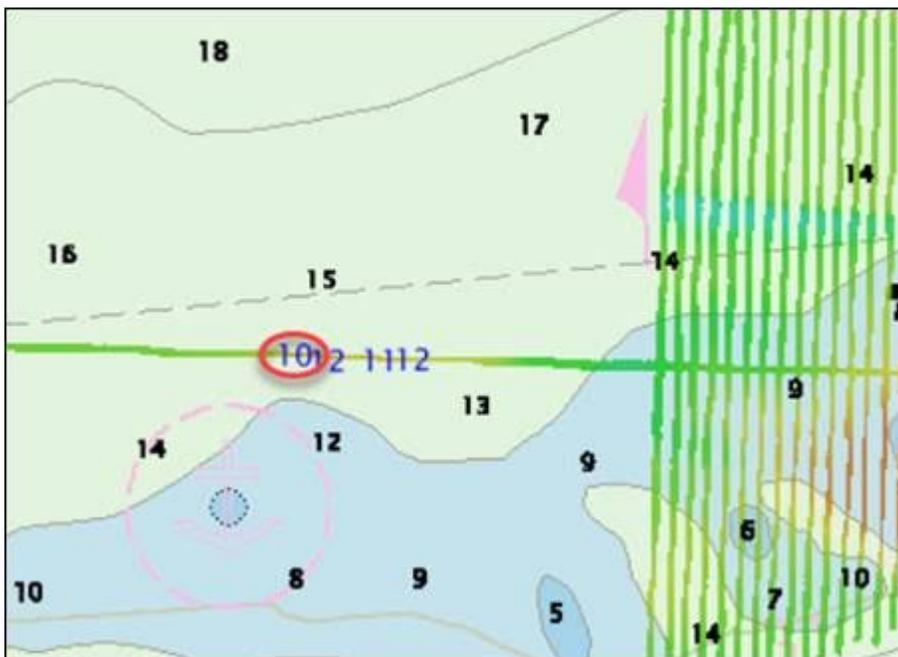
NW of Bunces Pass: I would select the 2, 3, and 5.



N of Egmont Channel1



N of Egmont Channel 2



Castle Eugene Parker

NOAA Office of Coast Survey

Atlantic Hydrographic Branch

Hydrographic Team Lead / Physical Scientist

castle.e.parker@noaa.gov

office (757) 364-7472

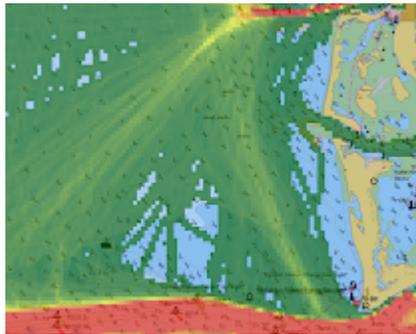


image009.png
283K

Galloway, Nicole <ngalloway@oceaneering.com>

Wed, Sep 26, 2018 at 12:14 PM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Martha Herzog <martha.herzog@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Thank-you Meredith, this is very helpful!

Just so I am clear on the rounding aspect: I believe the rounding is for sounding display purposes?

According to the 0.5 rule, we should pick the sounding rounding option that would round, for example, a value of 6.60 feet to 7 feet, not 6 feet. In the display window, the sounding of 6.60 feet would display as 7 feet. But regardless of what is displayed, we would submit a value of 6.60 feet in a DtoN report, not a rounded value.

Second question - the soundings I submitted to you came from a selected sounding layer. I thought it might be better to use the selected soundings layer as a guide to identify the areas with the shallowest depth and then go back to the data and see if the the selected sounding layer actually picked the shallowest depth or if a shallower depth exists in that area. Please let me know if that makes sense and if you have any thoughts on that.

Thanks again!

Nikki

[Quoted text hidden]

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com



2155 Steppingstone Square | Chesapeake, VA | USA, [Tel \(+1\)757 985 3714](tel:+17579853714) | oceaneering.com

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Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Wed, Sep 26, 2018 at 4:22 PM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Dear Nikki,

Correct, you should submit an unrounded value of at least centimeter precision (HSSD 5.1.2). 6.60 ft should be 6.60 ft in the DTON report. Generally for a DTON, a designated sounding is used for the least depth.

Sincerely,

Meredith

[Quoted text hidden]

--

Meredith C. Payne

Physical Scientist,

Hydrographic Surveys Division Operations Branch

National Oceanic & Atmospheric Administration

[1315 East-West Hwy](#), N/CS31

Silver Spring, MD 20910

240-533-0025

Visit our [StoryMap!](#)

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Sep 28, 2018 at 7:50 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Martha Herzog <martha.herzog@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Thank-you Meredith,

I will work on an official DtoN submission for these soundings.

Nikki

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 H13170 (Sheet 1) DtoN Submission 1

5 messages

Galloway, Nicole <ngalloway@oceaneering.com>

Mon, Oct 1, 2018 at 2:52 PM

To: ahb.dton@noaa.gov

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good afternoon,

Please see attached zip file for DtoN Submission 1 of H13170 (Sheet 1) of OPR-J317-KR-18, which contains information regarding 10 attributed sounding features observed to be shallower than charted depths.

Please let us know if you have any questions or need any additional information.

Thank you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, Tel (+1)757 985 3714 | oceaneering.com

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 **H13170_DtoN_Submission_1.zip**
4408K

Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Mon, Oct 1, 2018 at 4:03 PM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Hello Nikki,

Thanks for the DtoN selections. I wanted to let you know that some of the depths are changing based upon the sounding rounding file and values. HSSD 2018 does not include rounding anymore, and HSD is no longer making HCells that referenced rounding at X0.5ft rather than the MCD value of X0.75. Bearing in mind AHB is no longer compiling HCells, AHB has gone back to the rounding that is in party with MCD.

CARIS has been installing their default sounding rounding file and it is in parity with MCD's value of X0.75. I'm suggesting to maintain the rounding at X.75 such that both MCD and AHB SAR products as well as DtoN submission are rounding with the same value.

Review H13170 DtoN submission, a few soundings are being rounded differently than was documented within the images. I don't expect any resubmission of the images and I will take care of that when processing the DtoNs.

When one installs CARIS HIPS/SIPS 10.4.6 the correct rounding file will be installed. Without re-installing the software, one can replace the rounding file with the one I have attached.

The 5ft north changes to 4ft 27-39-42N 082-45-32W, the 2ft changes to 1ft 27-39-32N 082-45-34W, 11ft 27-38-20N 082-46-23W changes to 11ft, the rest remain as submitted.

Standby with the DtoN submission, probably tomorrow.

Regards,

Gene

Castle Eugene Parker

NOAA Office of Coast Survey

Atlantic Hydrographic Branch

Hydrographic Team Lead / Physical Scientist

castle.e.parker@noaa.gov

office (757) 364-7472

From: ahb.dton@noaa.gov <ahb.dton@noaa.gov> **On Behalf Of** Galloway, Nicole
Sent: Monday, October 1, 2018 2:53 PM
To: ahb.dton@noaa.gov
Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>; Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>; Scott Melancon <smelancon@oceaneering.com>
Subject: OPR-J317-KR-18 H13170 (Sheet 1) DtoN Submission 1

[Quoted text hidden]

 **SoundingRounding.xml**
13K

Galloway, Nicole <ngalloway@oceaneering.com> Tue, Oct 2, 2018 at 8:20 AM
To: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>
Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Good morning Gene,

My apologies! Meredith had provided us with your guidance for submission but I must have misunderstood. I thought we were going the other way, with a 0.5 rounding.

I checked the XML you attached with the XML already in the CARIS > HIPS and SIPS > 10.4 > system folder, and the two files appear to match. Testing the 'Default Feet' and 'NOAA Feet' indicates that using the 'NOAA Feet' provides an appropriate sounding display value: The value of 4.64 feet in the S-57 file at 27-39-42N, 82-45-32W displays as 5 feet

with 'Default Feet' selected and as 4 feet with 'NOAA Feet' selected. I noticed that the sounding rounding can be specified in two places: Tools > Options > Units, and also in the Properties tab of a hob or S-57 file. It appears that whatever is selected in Tools > Options takes precedence.

Please let me know if you agree with the above, for reference future DtoN submissions.

Thank-you,
Nikki

PS: also just received the DtoN submission

[Quoted text hidden]

Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Tue, Oct 2, 2018 at 8:46 AM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Hello Nikki,

No worries. In my email yesterday, the default I referenced was the sounding rounding file loaded by default. I currently select NOAA Feet for rounding (X.75). Referencing the DtoN submission, you are correct with the Default Feet that rounds at X0.5. I suggest referencing NOAA Feet so that we are back on the same page as MCD.

HSD was using the rounding value of X0.5 for the past several years for HCell compilation. Since HSSD 2018 does not include rounding and the HCell has a finite life, and SAR products are direct deliverable to MCD, AHB is going back to round at X.75 for parity with MCD. So, we've come full circle!

I noticed the rounding was varying from other DtoN submissions and talked with AHB Chief to get back in line with MCD. Sorry for any confusion. NOAA Feet is the proper selection for rounding for chart comparison.

Regards,

gp

Castle Eugene Parker

NOAA Office of Coast Survey

Atlantic Hydrographic Branch

Hydrographic Team Lead / Physical Scientist

castle.e.parker@noaa.gov

office (757) 364-7472

From: Galloway, Nicole <ngalloway@oceaneering.com>

Sent: Tuesday, October 2, 2018 8:20 AM

To: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>; Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Subject: Re: OPR-J317-KR-18 H13170 (Sheet 1) DtoN Submission 1

[Quoted text hidden]

Galloway, Nicole <ngalloway@oceaneering.com>

Tue, Oct 2, 2018 at 9:09 AM

To: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Thank-you Gene!

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 H13170 (Sheet 1) DtoN Submission 2

1 message

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Nov 30, 2018 at 10:17 AM

To: ahb.dton@noaa.gov

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good morning

Please see attached zip file for DtoN Submission 2 of H13170 (Sheet 1) of OPR-J317-KR-18, which contains information regarding 2 obstructions (DtoNs 11 and 12) observed within the survey area.

Please let us know if you have any questions or need any additional information.

Thank you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, [Tel \(+1\)757 985 3714](tel:+17579853714) | oceaneering.com

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 H13170_DtoN_Submission_2.zip
698K



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 H13170 (Sheet 1) DtoN Submission 3

1 message

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Mar 8, 2019 at 3:32 PM

To: ahb.dton@noaa.gov

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good afternoon,

Please see attached zip file for DtoN Submission 3 of H13170 (Sheet 1) of OPR-J317-KR-18, which contains information regarding 2 potential obstructions (DtoNs 13 and 14) observed within the survey area.

Please let us know if you have any questions or need any additional information.

Thank you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, Tel (+1)757 985 3714 | oceaneering.com

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 **H13170_DtoN_Submission_3.zip**
487K



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 H13170 (Sheet 1) Final Survey Outline

2 messages

Galloway, Nicole <ngalloway@oceaneering.com>

Thu, Mar 7, 2019 at 12:36 PM

To: survey.outlines@noaa.gov

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good afternoon,

Attached is the final survey outline for H13170 (Sheet 1) of OPR-J317-KR-18 in S-57 format.
Please let us know if you have any questions.

Thank-you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, [Tel \(+1\)757 985 3714](tel:+17579853714) | oceaneering.com

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 **H13170_Final_Survey_Outline.000**
69K**Brian Mohr - NOAA Federal** <brian.mohr@noaa.gov>

Mon, Mar 11, 2019 at 1:00 PM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Got it, thank you, I'll get H13170 updated in SURDEX shortly.

Brian Mohr
Physical Scientist - Data Manager
Hydrographic Surveys Division
brian.mohr@noaa.gov

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 Fish Haven debris Sheet1/Sheet2

1 message

Galloway, Nicole <ngalloway@oceaneering.com>

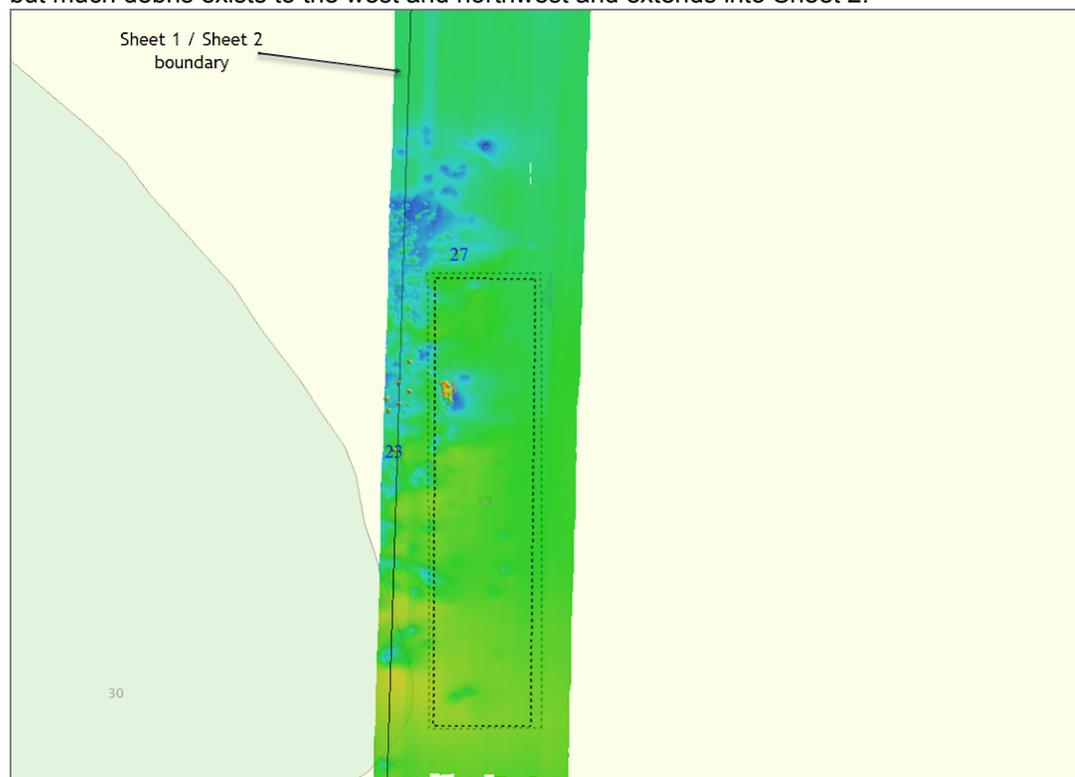
Fri, Nov 30, 2018 at 9:05 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Cc: Scott Melancon <smelancon@oceaneering.com>

Good morning Meredith,

There is a Fish Haven in the western part of Sheet 1. There is not much debris in the actual bounds of the Fish Haven, but much debris exists to the west and northwest and extends into Sheet 2.



While the data does not indicate contacts greater than 1 m in height more than 160 m from the Fish Haven boundary in Sheet 1, there may be contacts that would warrant DtoN submission in Sheet 2. I will be looking at the Sheet 2 data soon and will be able to provide additional information.

Thank-you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, Tel (+1)757 985 3714 | oceaneering.com

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Galloway, Nicole <ngalloway@oceanering.com>

OPR-J317-KR-18 H13170 (Sheet 1) mooring buoy review

2 messages

Galloway, Nicole <ngalloway@oceanering.com>

Fri, Mar 8, 2019 at 1:47 PM

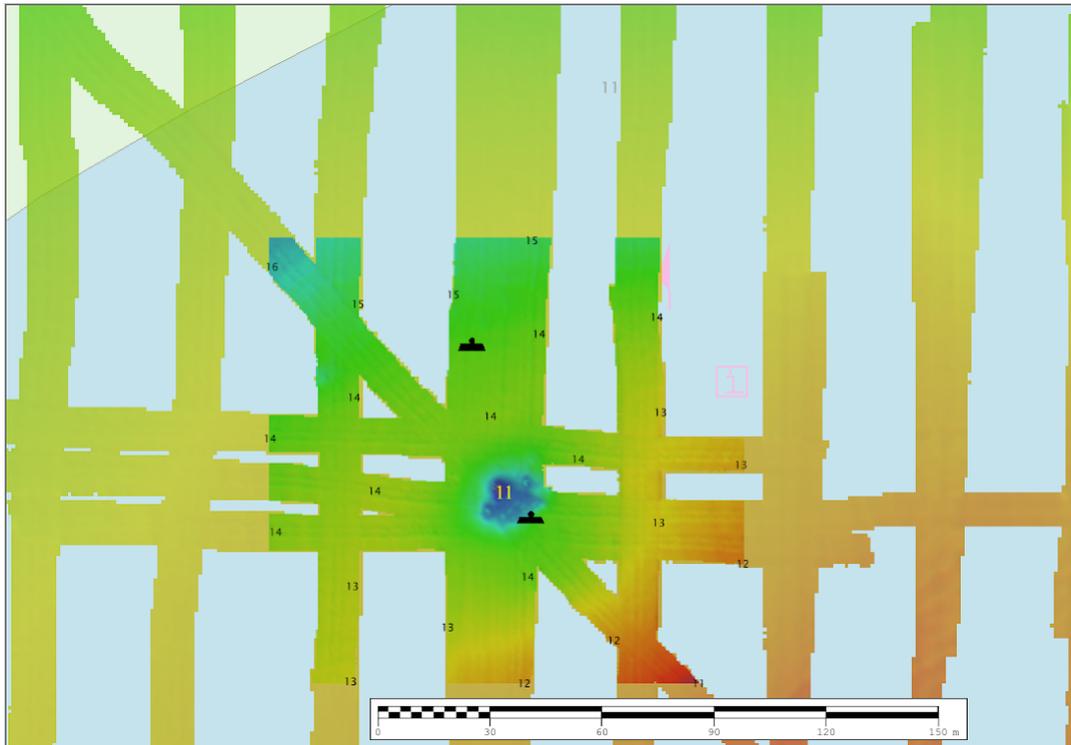
To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Cc: Scott Melancon <smelancon@oceanering.com>

Good afternoon,

There are two mooring buoys assigned for investigation within the bounds of H13170 (Sheet 1). These were not observed visually but contacts were observed within the SSS data near the location of the southeast charted buoy. Further MB investigation was conducted, which indicates that several contacts exist within a shallow depression. The least depth of the tallest contact is 3.5 m (11.5 ft), which is in line with charted depths.

Below image shows US5FL11M ENC in the background with a 1 m grid overlain with a 50 cm grid of the contact location. Yellow soundings show the least depth of the contact of interest and black soundings are a generated selected sounding layer from the 50 cm grid. CSF file with mooring buoy locations shown.



We recognize that the CSF instructions state to contact the PM/COR in the event that the buoys were not observed visually and we wanted to provide an update of the coverage in this location.

Thank-you,
Nikki

--

Best regards,

Nicole Galloway
Geoscientist
Direct (+1) 337 761 6872
Mobile (+1) 603 978 7211
ngalloway@oceanering.com



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Galloway, Nicole <ngalloway@oceaneering.com>

Mon, Mar 18, 2019 at 11:15 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Cc: Scott Melancon <smelancon@oceaneering.com>

Good morning,

I wanted to follow up on the above email to determine if the current coverage of the mooring buoy locations is sufficient or if anything else might be necessary.

Thank-you,
Nikki

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

Potential wreck submission protocol clarifications

4 messages

Galloway, Nicole <ngalloway@oceaneering.com>

Thu, Sep 20, 2018 at 10:35 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Cc: Scott Melancon <smelancon@oceaneering.com>

Good morning Meredith,

I hope you are doing well.

Could you please provide some clarification on how to approach the submission of potential uncharted wrecks observed within survey data? We would like to ensure we follow the proper protocol in the case they may be historic.

- If the potential wreck is observed within SSS, is it preferred to wait to submit any information until a least depth from MB is obtained (provided that it is safe to do so)?
- Should we reach out to the PM and COR with potential wreck information prior to submitting a DToN?
- The HSSD indicates that any potential wrecks observed should be referred to as obstructions in DToN submissions. Is it OK to state in the description or in the text of the email submission that it is a potential wreck?

Thank-you!

Nikki

--

Best regards,

Nicole Galloway

Geoscientist

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Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Fri, Sep 21, 2018 at 11:43 AM

To: "Galloway, Nicole" <ngalloway@oceaneering.com>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Corey Allen <Corey.Allen@noaa.gov>, Martha Herzog - NOAA Federal <martha.herzog@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>

Hi Nikki,

- Without deviating from your original survey plans, how long (timewise) do you think it will take to develop the feature with multibeam?
- Based on the SSS (rough calculation), how high does the object stand and in what depth of water?
- DToNs should be submitted to the branch (AHB) with the PM and COR cc'd on that report. There is no need to inform the PM and COR first.
- It is fine to indicate that the DToN is a suspected wreck in your email transmission.

Sincerely,
Meredith

[Quoted text hidden]

--

Meredith C. Payne

Physical Scientist,
Hydrographic Surveys Division Operations Branch
National Oceanic & Atmospheric Administration
[1315 East-West Hwy](#), N/CS31
Silver Spring, MD 20910
240-533-0025
Visit our [StoryMap!](#)

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Sep 21, 2018 at 2:36 PM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>, Martha Herzog <martha.hertzog@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>

Hi Meredith,

Thank-you for the info! Please see my comments below.

- We anticipate that developing this contact would take ~0.5 hours.
- The SSS data indicate that the contact stands about 80 cm off the seafloor, but the entirety of the shadow was not fully ensonified. MB data to either side indicate the water depth is ~5 m (~17 feet).
- It is our intention to develop this contact to obtain more accurate height and dimension information.

Thanks again!

Nikki

[Quoted text hidden]

Galloway, Nicole <ngalloway@oceaneering.com>

Fri, Nov 30, 2018 at 8:02 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>, Corey Allen - NOAA Federal <Corey.Allen@noaa.gov>, Martha Herzog <martha.hertzog@noaa.gov>, Stacy Fullerton - NOAA Federal <stacy.fullerton@noaa.gov>

Good morning Meredith,

I just wanted to give you an update on this contact. MBES data indicate that the least depth of the contact is 3.63 m (11.92 ft). Currently the contact is located between the 1.8 m (5.91 ft) and 3.6 m (11.81 ft) contours on charts US4FL10M and US5FL11M. The least depth is slightly deeper than charted depths and while the feature will be included in the Final Feature File, we do not plan to submit as a DtoN at this time unless you suggest otherwise.



Thank-you!

12/3/2018

Oceaneering International Mail - Potential wreck submission protocol clarifications

Nikki

[Quoted text hidden]



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 Sheet 1 (H13170) Sounding Selection

1 message

Galloway, Nicole <ngalloway@oceaneering.com>

Tue, Sep 25, 2018 at 8:52 AM

To: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>

Cc: Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good morning Meredith,

As per the Project Instructions, we wanted to send an update to keep you informed about areas of potential shoaling within the Sheet 1 (H13170) survey area.

So far we have identified an area NW of Bunces Pass and a couple areas N of Egmont Channel where surveyed data indicates that surveyed soundings are shallower than charted depths and/or outside charted contours of the same depth range. Survey data has been imported into CARIS and reduced to MLLW using the provided separation model.

Attached is a zip file containing three PNG images. These images have ENC US5FL11M in the background with charted depths in black. Surveyed soundings picked from a selected sounding layer are shown in blue. Also included is an S-57 file of the soundings shown in blue. These soundings are a subset of selected soundings layers with selection criteria of shoal biased radius and distance on the ground (m) with single defined radii of 100 and 75.

Could we please discuss and/or could you please provide some guidance on how to proceed with DtoN submission for shoal soundings?

Thank-you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, [Tel \(+1\)757 985 3714](tel:+17579853714) | oceaneering.com

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 OPR-J317-KR-18_H13170_Selected_Soundings.zip
584K

Marine Mammal Observer Training List	
Name	Date
Tara Levy	9/22/2018
Barry Banks	9/22/2018
Tracy McMillan	9/22/2018
Steven Bellot	9/22/2018
Brad Daigle	9/22/2018
Faith Scheel	9/22/2018
John Ringle	10/8/2018
Sean Stokes	9/20/2018
Daniel Schaeffer	10/8/2018
Abel Trevino	10/8/2018
Ralph Morris	10/22/2018
Grace Smythe	11/4/2018
John Baker	8/10/2018
Jim Wade	8/10/2018
Ryan Houghton	8/10/2018



Galloway, Nicole <ngalloway@oceaneering.com>

OPR-J317-KR-18 Coast Pilot Review

1 message

Galloway, Nicole <ngalloway@oceaneering.com>

Mon, Apr 22, 2019 at 1:33 PM

To: OCS.NDB@noaa.gov, Coast.Pilot@noaa.gov

Cc: Meredith Payne - NOAA Federal <meredith.payne@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>, Scott Melancon <smelancon@oceaneering.com>

Good afternoon,

Please see attached Coast Pilot Review Report for Project OPR-J317-KR-18. Note that no changes were made as of the submission of deliverables for Sheets 1 and 2 of this project. There were no specific investigation items for OPR-J317-KR-18 with regard to the Coast Pilot and only one minor suggestion is addressed in this submission. We will continue to review the Coast Pilot information for the duration of the project will let you know if any updates are found.

Thank-you,
Nikki

--

Best regards,

Nicole Galloway

Geoscientist

Direct (+1) 337 761 6872

Mobile (+1) 603 978 7211

ngalloway@oceaneering.com2155 Steppingstone Square | Chesapeake, VA | USA, Tel (+1)757 985 3714 | oceaneering.com

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**OPR-J317-KR-18_Coast Pilot Review Report.pdf**

1183K



Galloway, Nicole <ngalloway@oceaneering.com>

[Send2NCEI] data submission confirmation for Reference ID: 0G07LE

1 message

NODC.DataOfficer@noaa.gov <NODC.DataOfficer@noaa.gov>
To: ngalloway@oceaneering.com

Tue, Apr 9, 2019 at 3:15 PM

Dear Nicole Galloway,

Thank you for submitting your data collection, titled "Sound Speed (CTD) collected from R/V C-Wolf in Approaches to Tampa, FL from 2018-08-18 to 2019-02-05", to the NOAA National Centers for Environmental Information (NCEI). Your submission package has been assigned Reference ID: 0G07LE. After reviewing your data and metadata, NCEI will update you about the archival status of your submission package.

You will be notified if NCEI creates an archival information package (accession) of your data, including the unique identifier for that archival information package (the NCEI Accession number). When your data are archived, NCEI keeps an exact copy of the data and metadata you sent and will develop necessary tracking and discovery metadata. In addition, NCEI may create additional versions to ensure your data are preserved for long-term access.

Upon completion of these archival ingest actions, NCEI will publish your data online (including a copy of your original files). You will receive another email once your submission package (Reference ID: 0G07LE) is published for global access. In addition, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

If you have any questions about NCEI archival processes, please contact NODC.DataOfficer@noaa.gov. Also, if at any time you wish to update your submission package, please send an e-mail to NODC.DataOfficer@noaa.gov with your request. Please remember to include your submission package Reference ID.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

NCEI Data Officer Team
NOAA National Centers for Environmental Information
NOAA/NESDIS
1315 East-West Highway
Silver Spring, MD 20910
USA



Nav Notes & Information

- Search Our Site
- Radio Navigation Meetings

Maritime Safety Data

- Broadcast Notice to Mariners
- Daily LNM Discrep & Temp CH File
- Daily LNM File Description
- N. American Iceberg KML File
- DGPS Site Configurations
- Weekly Light Lists (XML and PDF)

Mission Areas

- AIS - Are You In Compliance?
- AIS Data Request
- Global Positioning System (Civil Support)
- AIS - Types, Messages, Etc.
- CGSIC Information
- Long Range Identification and Tracking
- Nationwide DGPS
- LORAN C (archive)

Maritime Safety Information

- Local Notices to Mariners
- Light List Volumes (2020)
- Navigation Rules - Amalgamated
- Maritime Telecommunications
- PAWSA
- International Ice Patrol (IIP)
- Public Notices for Bridges
- Nav Pubs and Documents
- Vessel Traffic Services
- USCG Homeport Website
- Coast Guard Safety Alerts (uscg.mil)

Subscribe / Report (free)

- Subscription Services / RSS (free)
- Report an ATON Discrepancy
- Report a GPS Problem
- Report an NDGPS Problem
- Report an LRIT Problem
- Report an AIS Problem
- Contact Our Watch or SME

Thank you, your report has been sent.

Thank you for your input! The information you have provided has been processed and is shown below. You should print information and so that you can remember the specifics of this outage in case we have to call you to gather more information.

You may return to our [home page](#) or click on your browser's BACK button to return to the page from which you came.

Name: Castle Parker
Email Address: castle.e.parker@noaa.gov
Telephone number: 757-364-7472
Waterway/Area/State: Approximately 1600m north of Egmont Channel, Florida
Your Vessel's Name: Cwolf
Type of Vessel: NOAA contract hydrographic survey vessel
DOC# / HIN / VIN / State #: JQN00027J708; LA-2935-FS
AID Name (from Light List): USS Narcissus Mooring Buoy A and USS Narcissus Mooring Buoy B
Light List Number (LLNR): LL22334; LL22334.1
Structure Discrepancy: None
Buoy Discrepancy: Missing
Lighted ATON Discrepancy: None
Other type of discrepancy:

Hazard: No

Comments: NOAA charts RNC 11415 and ENC US5FL11M includes charted mooring buoys listed in the Light List as : Narcissus Mooring Buoy A 27-37-31.380N 082-47-58.860W and Light List #22334.1 USS Narcissus Mooring Buoy B 27-37-31.380N 082-47-59.460W. NOAA hydrographic survey H13170 (08/18/2018 – 02/05/2019) documents that the mooring buoys were visually and considered disproved with the survey data. Survey H13170 investigated the common area with the charted with multibeam sonar and 200% side scan sonar coverage resulting in the disproval of the existence of the mooring buoys. The mooring buoys were located near a historic ship wreck the USS Narcissus that is considered hallowed ground with loss of life for the ship in 1866. Bearing in mind the historic nature of the wreck and in conjunction with the National Historic Preservation Act (16 USC 431-437) it is recommended to remove the mooring buoys from the Light List, and upon the fact the mooring buoys do not exist at the locations.

APPROVAL PAGE

H13170

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
- GeoPDF of survey products
- Collection of Backscatter mosaics

The survey evaluation and verification has been conducted according 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