H12600

NOAA Form 76-35A

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

DESCRIPTIVE REPORT

Type of Survey:	Navigable Area
Registry Number:	H12600

LOCALITY

State:	New York
General Locality:	Vicinity of Southern Long Island
Sub-locality:	Vicinity of North of Fire Island

2013

CHIEF OF PARTY
Ransom C. White III

LIBRARY & ARCHIVES

Date:

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET		**H12600**

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:	**New York**
General Locality:	**Vicinity of Southern Long Island**
Sub-Locality:	**Vicinity of North of Fire Island**
Scale:	**20000**
Dates of Survey:	**09/30/2013 to 01/13/2014**
Instructions Dated:	**06/27/2013**
Project Number:	**OPR-C331-KR-13**
Field Unit:	**Williamson & Associates, Inc., M/V Nooit Volmaakt**
Chief of Party:	**Ransom C. White III**
Soundings by:	**Multibeam Echo Sounder**
Imagery by:	**Side Scan Sonar**
Verification by:	**Pacific Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**
HCell Compilation Units:	**meters at Mean Lower Low Water**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold, red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

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Descriptive Report to Accompany Survey H12600

Project: OPR-C331-KR-13

Locality: Vicinity of Southern Long Island

Sublocality: Vicinity of North of Fire Island

Scale: 1:20000

September 2013 - January 2014

Williamson & Associates, Inc., M/V Nooit Volmaakt

Chief of Party: Ransom C. White III

A. Area Surveyed

Williamson & Associates, Inc. conducted a hydrographic survey in the southern waters off of Long Island, NY. The sub-locality of this survey is described as Vicinity of North of Fire Island, NY.

The survey encompassed an area of approximately 5 square nautical miles and was assigned registry number H12600. Project instructions required object detection coverage in 2-4 meters of water with 100% SSS and concurrent set line spacing SBES or MBES and backscatter. Object detection coverage was required as well in 4-20 meters of water with 200% SSS and concurrent MBES and backscatter. Complete MBES and backscatter were the only requirements in water depths greater than 20 meters.

It should be noted that the appendices and separates for this report were created using the XML Schema format from XMLDR v13.1 released in June 2013 and will not follow the format outlined by the HSSD 2012. This was approved through email correspondence with our COTR on 4/10/2013, see correspondence in Appendix II.

A.1 Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
40.66645625 N 73.1295097222 W	40.6257343889 N 73.3126450278 W

Table 1: Survey Limits

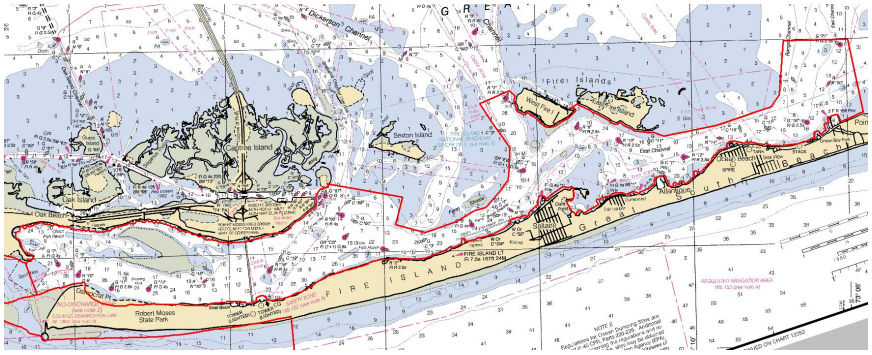


Figure 1: H12600 Sheet Boundaries Overlaid on Chart 12352

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

A.2 Survey Purpose

As per the project instructions: The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. This project is in response to different user group needs following Hurricane Sandy landfall. Specifically these data will adjoin updated shoreline, address the need for updated bathymetry for inundation modeling, and help identify marine debris for potential removal.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Survey quality was reviewed mainly by utilizing daily checks for data matchup, swath density, and motion/ refraction artifacts. Sounding density was found to meet or exceed the object detection and single line spacing requirements out to roughly 40-45 degrees from nadir. Given our requirements called for skunk stripe MBES as a gap filler for 100% (2-4m) and 200% (4-20m) SSS this was deemed acceptable as a full MBES coverage plan would include at least a 20% swath overlap. Motion artifacts, when found, were due to excessive weather conditions. Latency values were checked and the motion artifacts were measured. The majority of motion artifacts found fell under our IHO Order 1a error budget and were located well offshore in easily navigable waters. Considering the consistently poor working conditions during the winter months, motion artifacts became somewhat frequent, however they posed little threat to the usefulness of the data as expected vessel traffic in the area consists of no vessels that draw more than 2-3 meters.

In-depth crossline comparisons were also completed. The results of the crossline comparison can be found in section B.2.1 of this report. The crossline comparisons consisted of analyzing each individual crossline with the finalized CUBE surface using the CARIS surface report tool. Once a CARIS surface report was generated, the results were inserted into a spreadsheet for total calculations of the survey area. The surface report informs the user of the percentage of soundings across the swath in increments set by the user that fall within the desired IHO specifications, in our case 10 degree increments, within IHO Order 1a. Areas that did not pass the IHO order 1a specification were due to shifting bathy near the inlets and can be reviewed in section B.2.6 of this report.

Survey quality is acceptable to supersede previous bathymetric, shoreline, overhead and submerged feature data.

While various artifacts can be found in the data, all have been reviewed for compliance with specification and none have been found to exceed NOAA complete coverage error budgets. The data is adequate for charting.

A.4 Survey Coverage

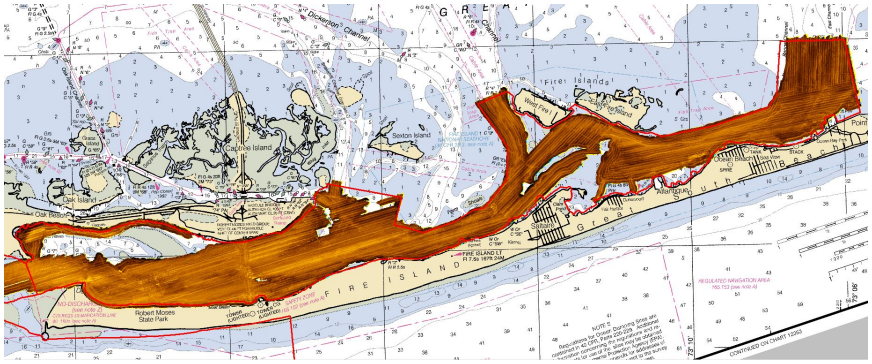


Figure 2: H12600 SSS Mosaic of all Data Acquired Overlaid on Chart 12352

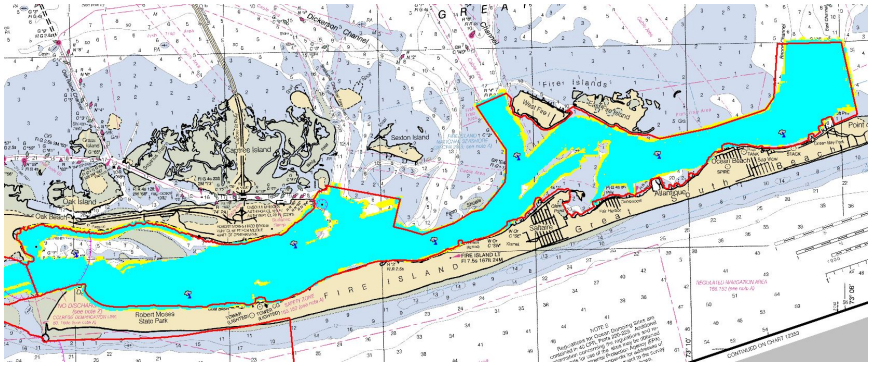


Figure 3: H12600 SSS Coverage Depicting percent of coverage: Yellow = 100%, Cyan = 200%

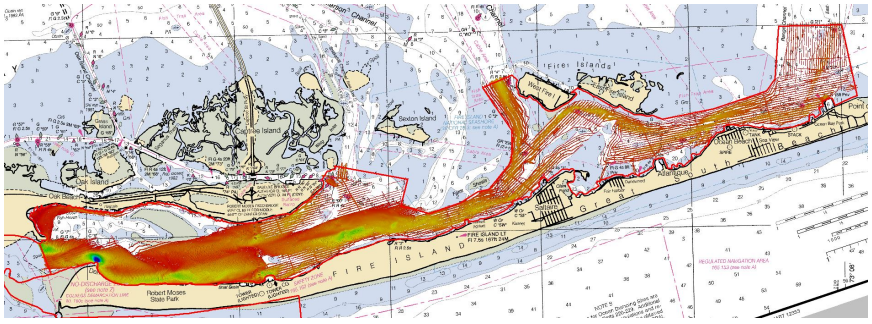


Figure 4: H12600 MBES Coverage Overlaid on Chart 12352

Due to changing morphology and a combination of shoal and swell, coverage gaps are present in some SSS data. Vessel and crew safety is a priority and was always taken into consideration. There are five coverage gaps on this sheet. There is a large coverage gap north of Democrat Point, which is a direct result of a shoal area and shallow waters. The coverage gaps west and east of the channel to Captree Island, as well as the area directly north of Fire Island were caused by shoals and inaccessible water depths. A large shoal area is present south of West Fire Island which reduced the survey in that area and resulted in a coverage gap.

Please refer to section D.1.3 "AWOIS Items" for information on survey coverage gaps.

It should be noted that during initial acquisition the survey line plan used was designed to obtain full multibeam coverage in shoal water depths. A new survey line plan was set in place on October 23rd containing line spacing to result in 200% SSS coverage with skunk stripe MBES. The line plan was implemented on October 25th and was confirmed by the COTR via email on October30th. Please refer to Appendix II of this report for email communications.

Certain sections associated with the NALL were not fully covered due to the extent of changes in seabed. Please refer to section D.2.1 "Shoreline" for NALL information.

A.5 Survey Statistics

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

	HULL ID	*'W46077J'*	*Total*
LNM	**SBES Mainscheme**	0	0
	MBES Mainscheme	0	0
	Lidar Mainscheme	0	0
	SSS Mainscheme	0	0
	SBES/MBES Combo Mainscheme	0	0
	SBES/SSS Combo Mainscheme	0	0
	MBES/SSS Combo Mainscheme	352.64	352.64
	SBES/MBES Combo Crosslines	9.92	9.92
	Lidar Crosslines	0	0
Number of Bottom Samples			8
Number of DPs			0
Number of Items Items Investigated by Dive Ops			0
Total Number of SNM			4.56

Table 2: Hydrographic Survey Statistics

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

Survey Dates
09/30/2013
10/02/2013
10/06/2013
10/07/2013
10/08/2013
10/09/2013
10/18/2013
10/20/2013
10/27/2013
11/03/2013
11/04/2013
11/08/2013
11/10/2013
11/11/2013
11/13/2013
11/15/2013
11/17/2013
11/22/2013
11/25/2013
11/26/2013
12/05/2013
12/06/2013
12/07/2013
12/29/2013
12/31/2013
01/13/2014

Table 3: Dates of Hydrography

The previously uncharted private aids mentioned in Section D.2.3 were not reported in Table 2 as DPs. The number of DP's reported should be 7.

A.6 Shoreline

Sheet H12600 contains areas where the NALL requirements were not achieved. The bottom and water depths were changed drastically in many areas, which is the primary reason NALL requirements were not always met. In some areas, however, survey was conducted inside of the NALL because water depths were deeper than previously charted. Please refer to section D.2.1 "Shoreline" for more information.

A.7 Bottom Samples

There were 8 required bottom samples in this sheet. We successfully collected grab samples at each location with the exception of one. This bottom sample location was shifted south to be located in water depths that are navigable. One extra bottom sample was collected in an anchorage area near AWOIS Item 15113.

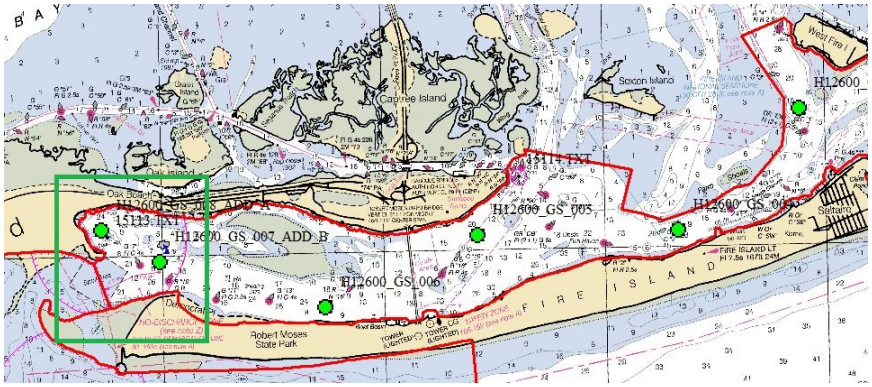


Figure 5: Overhead view of H12600 boundaries in Red showing also the Grab Sample alteration area in Green

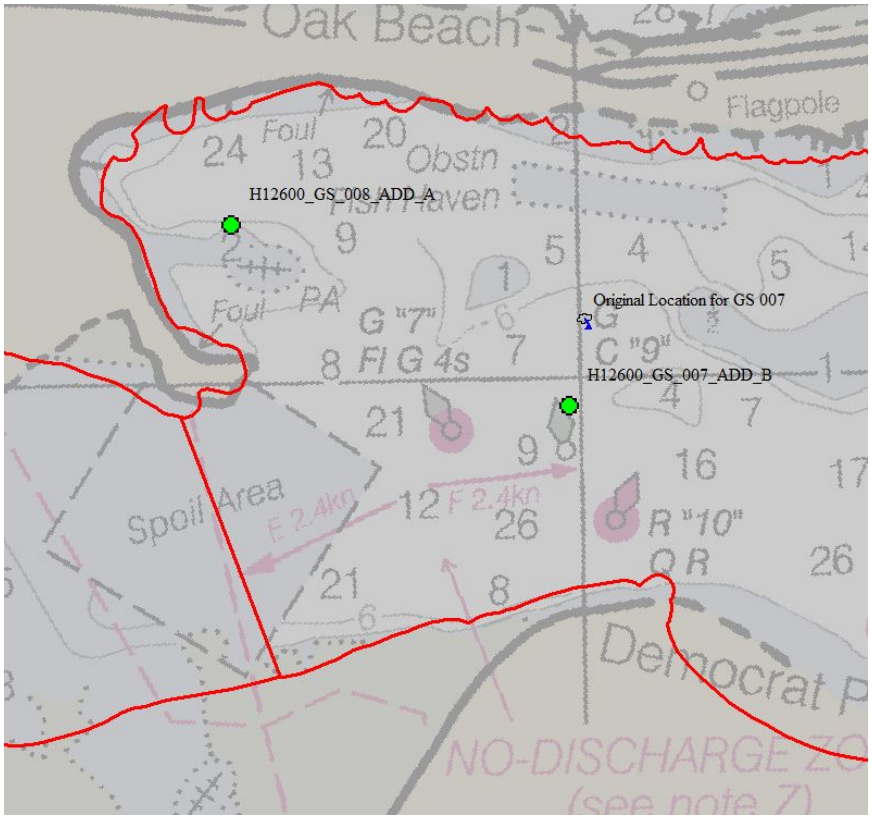


Figure 6: Close up of H12600 showing the area outlined by the green box in figure 5. Note the shifted and added grab samples in Green. Also showing are the CSF sample location as an S-57 "springs" icon and the AWOIS Item 15113 and the associated search radius.

There were only 8 submitted bottom samples. There are no charted anchorage areas within limits of this survey.

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	***W46077J7***
LOA	7.32 meters
Draft	1.2 meters

Table 4: Vessels Used

Figure 7: M/V Nooit Volmaakt from the port side. The pole mount on the bow for the Edge Tech SSS can be seen.

Figure 8: M/V Nooit Volmaakt from the starboard bow. The pole mount on the bow for the Edge Tech SSS can be seen.

The M/V Nooit Voolmakt acquired all multibeam data with a pole mounted R2Sonic 2024 at 400kHz and a pole mounted EdgeTech 4600 at 540 kHz using a POSMV for position, orientation and motion corrections. For more detailed information on equipment and vessel please refer to OPR-C331-KR-13 DAPR submitted under a different cover.

B.1.2 Equipment

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

Manufacturer	Model	Type
R2Sonic	2024	MBES
EdgeTech	4600	SSS
Applanix	POS MV 320	Positioning and Attitude System
Valeport	MiniSVS	Sound Speed System
SeaBird	SBE19	Conductivity, Temperature and Depth Sensor
SeaBird	SBE19+	Conductivity, Temperature and Depth Sensor

Table 5: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

Quality control crosslines were planned so that most main scheme lines would intersect with at least one crossline, they were well distributed geographically, and that total crossline nautical miles ran would total more than 4 % of the main scheme nautical miles (a specification set forth by the HSSD 2012). Our quantification of required crossline distance in this sheet was complicated by a change in our line plan to a set line spacing from full MBES coverage, causing skunk striping in the shallower areas. Survey that had taken place prior to the line plan change caused there to be far more line miles of data than what the new line plan called for. The quantification for line miles of crosslines was based on the new line plan, which had fewer lines. Therefore, the percentage of crosslines to total main line mileage will appear to be less than what was required, however, the true percentage should be determined as described above.

Total crossline length surveyed for task order OPR-C331-KR-13 sheet H12600 was 9.92 nautical miles or 4.32% of the total main scheme distance (352.64 nautical miles). All crosslines were compared to the main scheme line CUBE, using the CARIS HIPS QC Report process for individual lines. The swath was split by swath angles in 10 degree increments for the crossline analysis. The seabed located mid-channel was so dynamic, being current driven, that it changed significantly from day to day. Ten crosslines obtained across the main channel independently failed to meet the standards set forth by the HSSD (more information can be found in section B.2.6, Factors Affecting Soundings). With these ten failed lines included the vast majority of beams passed within the IHO Order 1a specifications at a 95% confidence level or better with an overall average of 95.08%, however without the outliers a confidence level of 99.53% and a standard deviation of

1.05% was calculated. (See Separate IV). Lines that covered both the 50cm (0-20m water depth) and the 2m (18-40m water depth) surfaces were analyzed independently for each surface.

The actual total crossline percentage is 2.813%, which does not meet specifications. The data is adequate to supersede charted data despite not meeting the crossline requirements.

The crossline analysis spreadsheet was submitted stand-alone and not as Separate, therefore the reference to Separate IV is in error.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
	0.418meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
HEW46077J708	1.5meters/second		0.2meters/second

Table 7: Survey Specific Sound Speed TPU Values

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of the uncertainty values used for processing sheet H12600.

According to the confidence interval values reported by JOA Surveys, our tidal uncertainty value at the 95% confidence level was 0.228m from zone GB11, which has the highest uncertainty value of the zones that encompass sheet H12600. This uncertainty value is higher than expected due to the omission of one of the subordinate gauges from the zoning (refer to section C.1 Vertical Control). This value includes the estimated gauge measurement error, tidal datum computation error and tidal zoning error. The reported error value was then divided by 1.96 since CARIS assumes TPU values to be 1 sigma (Field Procedures Manual April 2013) resulting in a value of 0.116m. The tidal uncertainty field labeled in CARIS as “measured” was left at zero as the reported error value of 0.228m included the estimated gauge measurement error and the tidal datum computation error as well as the tidal zoning error. Any max standard deviation measurements exceeding IHO Order 1a specifications are due to shifting sand bars and seabed morphology and are explained in section B.2.6 (Factor Affecting Soundings).

The TPU value for tide zoning uncertainty reported in Table 6 (0.418m) is incorrect. The value reported in the paragraph above (0.116m) was the tide zoning uncertainty value applied to the data.

B.2.3 Junctions

There are no contemporary surveys that junction with this survey.

There are no contemporary surveys that junction with this survey.

No junctioning surveys were assigned in the Project Instructions, but survey H12603 from the same project junctions with this survey. A difference surface comparison was conducted at the Processing Branch. The depths in this area range from 3 - 17m and the overlap width between the two surveys is approximately 50m. The difference surface analysis showed that H12600 is shoaler by an average of 0.55m, with a standard deviation of 0.87m, a minimum value of -3.22 (where H12603 is shoaler) and a maximum value of 5.30m (where H12600 is shoaler). Differences in depth between the two surveys is most likely attributed to the highly dynamic environment resulting in sediment deposition and erosion over the span of the two surveys. The data is adequate to supersede charted data in the common area.

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

B.2.5.1Grounding of MBES system

In shallow waters and during periods of high tidal-current influence the survey vessel occasionally grounded the MBES unit on sand bars. Patch tests were immediately performed afterwards. No groundings occurred within the same survey day. The patch test lines were calibrated within 12 hours and any changed offsets were input into the HIPS Vessel File and applied to all data acquired after the grounding occurred. See DAPR C.6.

The data is adequate for charting despite the need for multiple patch tests throughout the survey.

B.2.5.1POS MV 320

The POS MV 320 functioned adequately throughout considering the frequent higher sea state. The average sea state offshore during the high majority of survey days was a 1m swell. Depending on the direction of the swell some attitude artifacting resulted, mostly in deeper areas of the survey. These lines were not rejected as no latency was found to exist and QC showed the lines to still be within spec using crossline analysis. This was concluded to be the result of a small survey vessel in large enough seas to challenge the accuracy of the IMU.

The data is adequate for charting despite the sea state pushing the limits of the IMU.

B.2.6 Factors Affecting Soundings

B.2.6.1 Shifting Sand Waves / Bars / Features

Sand features in water depths less than 10 meters are constantly shifting, as much as 25cm per day in some areas. Areas concentrated around the inlet and the central channel are subject to the strongest and most rapid tidal currents, as a result these areas experience the most morphological shifting. Large sand waves can be seen in the majority of H12600. These sand waves were very dynamic and constantly shifting. This resulted in poor data alignment, even if overlapping acquisition was separated by only 5-10 days. Due to this effect on the data overlapping, the timing of acquisition was strongly considered in planning.

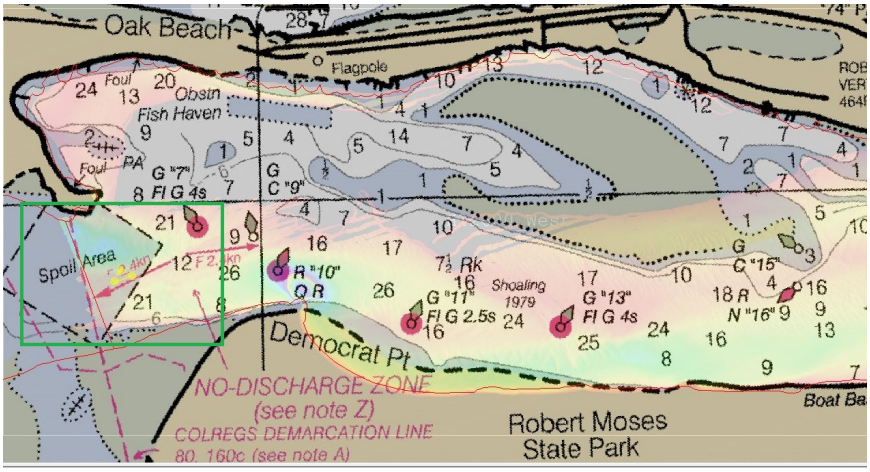


Figure 16: Overhead view of the western area of H12600 showing chart 12352. The area of shifting bathy shown in the following figures is highlighted by the green box.

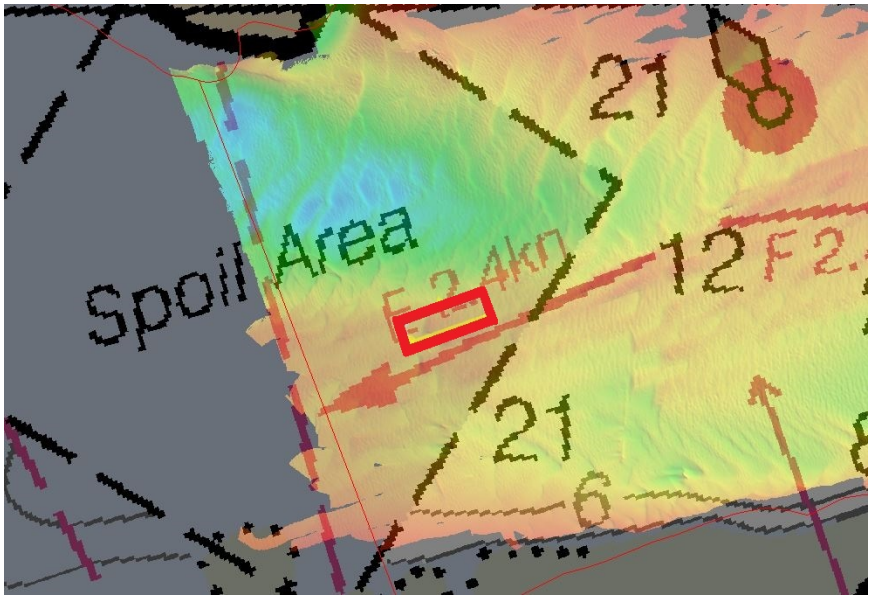


Figure 17: Overhead view showing the area within the green box highlighted in the previous figure with the MBES data overlaid with chart 12352. The area shown in the following figures is highlighted by the red box.

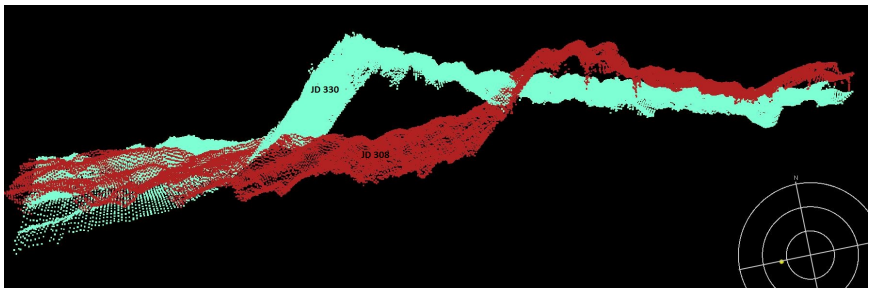


Figure 18: 3D view of shifting sand features, the red line was acquired on Julian Day 308 while the blue line was acquired on Julian Day 330, a 22 day separation.

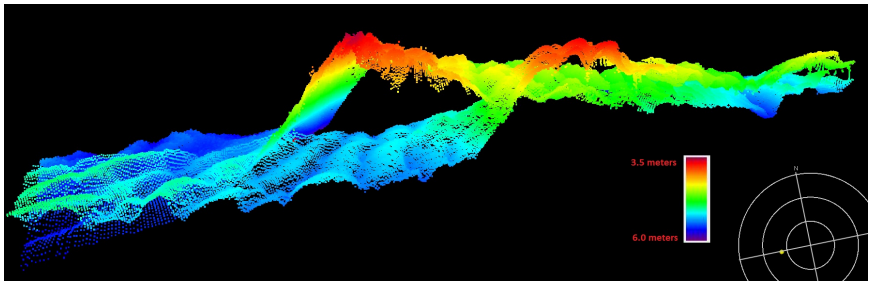


Figure 19: 3D view of shifting sand features, showing the depths for each line. This image has been 5x vertically exaggerated.

Much of the survey area is known to be dynamic. The data acquired during this survey is adequate for charting as it is an accurate snapshot of the seafloor at the time of survey.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: A Sea-Bird CTD was taken every 2-4 hours depending on the surface sound velocity variation. As per the HSSD, casts were taken if the surface sound velocity changed by more than 2 m/s. Two Sea-Bird CTDs were used aboard the survey vessel, a SBE 19 and SBE 19+.

Sound Velocity was close to homogeneous from day to day. No significant sound velocity errors were encountered.

B.2.8 Coverage Equipment and Methods

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

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

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

B.3.2 Calibrations

Multiple calibration patch tests were conducted for the MBES system after the initial calibration. These were conducted to account for small shifts in the mounting flange. No resulting issues were found to adversely affect the data.

B.4 Backscatter

Backscatter was converted to HDCS file format and is included with the data submitted to the Branch.

The hydrographer has not submitted backscatter files for processing into a mosaic. The R2Sonic unit used for the survey area is not supported by the software platform used to mosaic backscatter data.

B.5 Data Processing

B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used: 5.2

No Software updates have been implemented that differ from the DAPR.

B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12600_East_MB_50cm_MLLW_Fina	CUBE	0.5 meters	0 meters - 20 meters	NOAA_0.5m	Object Detection
2600_Central_MB_50cm_MLLW_Fi	CUBE	0.5 meters	0 meters - 20 meters	NOAA_0.5m	Object Detection
12600_West_MB_50cm_MLLW_Fin	CUBE	0.5 meters	0 meters - 20 meters	NOAA_0.5m	Object Detection
H12600_West_MB_2m_MLLW_Final	CUBE	2 meters	18 meters - 40 meters	NOAA_2m	Complete MBES
H12600_SSS_1m_100%_A	SSS Mosaic	1 meters	0 meters - 40 meters	N/A	100% SSS
H12600_SSS_1m_100%_B	SSS Mosaic	1 meters	0 meters - 40 meters	N/A	100% SSS

Table 8: CARIS Surfaces

As per the project instructions a 1m SSS mosaic resolution was used. The 200% SSS coverage was split into 100% coverage mosaics. The MBES data was gridded at 0.5 meters in water depths ranging between 0 and 20 meters, and gridded at 2 meters in water depths of 18-40m. Multiple 50cm surfaces were created in lieu of one large surface to reduce the file size and allow for quicker localized surface loading.

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.

Standard Vertical Control Methods Used:

Discrete Zoning

The following subordinate water level stations were established for this survey:

Station Name	Station ID
Seaview Ferry Dock	8514779
Fire Island Coast Guard Station	8515186

Table 9: Subordinate Tide Stations

File Name	Status
8515186.tid	Final Approved

Table 10: Water Level Files (.tid)

File Name	Status
JOA-C331KR2013-GREAT SOUTH BAY - 20140506.zdf	Final

Table 11: Tide Correctors (.zdf or .tc)

A request for final approved tides was sent to N/OPS1 on 02/14/2014. The final tide note was received on 04/16/2014.

Stations 8514779 and 8515186 were both installed and functioning during the same period of time, however during its deployment gauge 8514779 (Seaview Ferry Dock) shifted 1.3cm down. This vertical shift prohibited its use to correct soundings. It was used to aid in the creation of the zoning file, however was not used to directly affect any soundings in sheet H12600.

The shift itself has no effect on the phase delay of the tide wave, and small effect on the range of the tide. The three months of collected data at Seaview were analyzed using a series of JOA created Python scripts, based on CO-OPS "Computational Techniques for Tidal Datums Handbook - NOAA Special Publication NOS CO-OPS 2". The method of Monthly Means was used for October through December, 2013. The Monthly Means were then corrected to the 1983-2001 tidal epoch by comparing with the published values for the NWLON at Sandy Hook, NJ. The Seaview gauge was reinstalled and operated from 7/31/14 to 9/8/14 in order to provide vertical datum and fulfill other NOAA objectives.

The HWI and LWI were averaged at Sandy Hook, Fire Island and Seaview, and were converted from decimal hours to minutes. By differencing the stations, Fire Island to Seaview was shown to be 150 minutes apart, which when divided by 6 minutes resulted in 25 zones. The range at Seaview is 60% the range at Fire Island, or 0.25m less. Each zone was then reduced 98-99% of the range from the previous zone.

More information can be found in Appendix I.

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The following DGPS Stations were used for horizontal control:

DGPS Stations
Moriches, Broadcast Site ID: 803

Table 12: USCG DGPS Stations

C.3 Additional Horizontal or Vertical Control Issues

3.3.1 DGPS DOP associated with Overhead Features

DGPS position suffered slightly under the Robert Moses Bridge. Small positional discrepancies are focused around the bridge supports where satellite coverage is partially blocked. Many passes were made in this area, however horizontal matchup of the data directly under the bridge could not be resolved to the positional standard as the rest of the data set. The positions are however still within the allowable DGPS horizontal uncertainty. The largest horizontal offset measured beneath the bridge was 80cm.

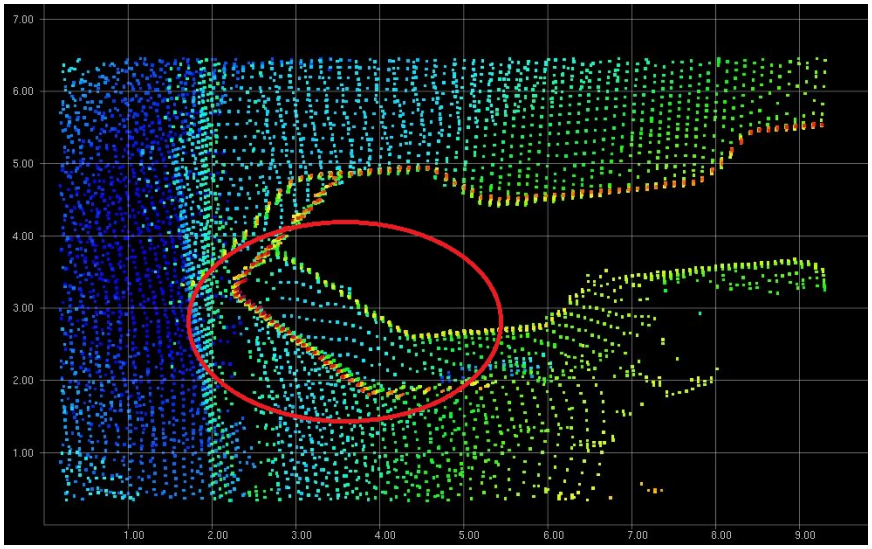


Figure 20: This overhead image shows the soundings in CARIS from 3 separate passes by a bridge support. The positional discrepancy can be seen within the red circle. Red soundings are shoal while blue soundings are deeper.

Figure 21: Overhead view of chart 12352. The red circle highlights the area of discussion for the horizontal offset beneath Robert Moses Bridge.

The data is adequate for charting despite positional offsets under the Robert Moses Bridge.

D. Results and Recommendations

D.1 Chart Comparison

D.1.1 Raster Charts

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

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12352	1:40000	34	09/2012	04/16/2014	04/16/2014

Table 13: Largest Scale Raster Charts

12352

H12600 survey data were compared to Raster Chart 12352. In general the vertical agreement between the acquired bathymetry and the western charted area of the survey sheet is poor. Large areas of the seabed just inshore of the inlet have shoaled or deepened. The seabed surrounding the western most fish haven in this sheet has shoaled significantly with one charted 24 feet having a surveyed least depth of 6 feet. The southeastern portion of an area charted as foul has deepened to roughly 20 feet at the southernmost boarder. The central channel under Robert Moses Bridge has shoaled significantly on the southern edge. The charted 12 feet located central of channel just west of Robert Moses Bridge has a surveyed least depth of roughly 6 feet. The fish haven east of Robert Moses Bridge has deepened and shoaled in areas as well however the channel has retained a safe navigable depth. The portion of the survey sheet east of longitude 73-13.00W has generally retained the charted depths with an overall slight deepening. The charted shoals in the eastern portion have generally retained their boundaries and depths.

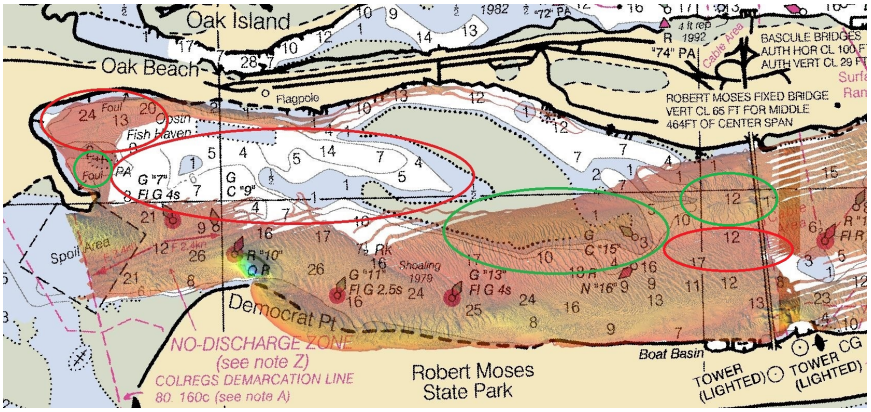


Figure 22: Chart 12352 overlaid with the western sheet boundaries for H12600. The green and red circles show areas of shoaling or deepening. The red circle shows areas of shoaling while green shows areas of deepening. The largest of the red circles highlights an area where shoal depths did not allow the survey vessel to operate.

The KAPP number for the chart panel used in the comparison is 698.

D.1.2 Electronic Navigational Charts

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

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5NY52M	1:40000	10	12/27/2012	03/12/2013	NO

Table 14: Largest Scale ENCs

US5NY52M

H12600 survey data was compared to Electronic Chart US5NY52M. Results were very similar to the above comparisons with Raster Chart 12352. See discussion for Chart 12352 for chart comparison.

D.1.3 AWOIS Items

Number of AWOIS Items Addressed: 2
Number of AWOIS Items Not Addressed: 0

Two AWOIS items were investigated, items 15113 and 15114.

The search radius for item 15113 contained 3 wrecks within sheet H12600. A portion of this search radius extended into sheet H12603 and will be reported on during H12603 sheet submittal under a separate cover. The dimensions for the wreck associated with AWOIS 15113 are roughly 7 x 2.5 meters and there is a small snag/mast protruding from the bow/stern (the vessel is also rectangular). The other contacts/wrecks in this area are both at least double the distance away from the central AWOIS location and resemble a barge and a wreck.

Item 15114 and the associated search radius contained only one feature, a small insignificant rock. This feature had recently been dredged over and did not resemble AWOIS item 15114. Nearly half of the associated search radius was not surveyable due to the limiting depth of the area. No visual signs of a stump or snag were seen from the vessel. The dredged area covered almost exactly half of the search radius and may have been the cause for the disappearance of this AWOIS item. One other SSS target was found within the search radius however it is a buoy mooring for State Boat Channel Buoy 88 Red.

As discussed in section A.4 regarding shoal and swell conditions degrading survey data, there were some AWOIS items with nodes containing less than the required number of soundings. There were three features that did not receive adequate coverage density, including FISH HAVEN 3846, FEATURE 5111 and WRECK 5125. Seas did not always allow many passes over location. We did achieve 200% SSS coverage in these areas and operated under the assumption that this would make up for small discrepancies of this nature.

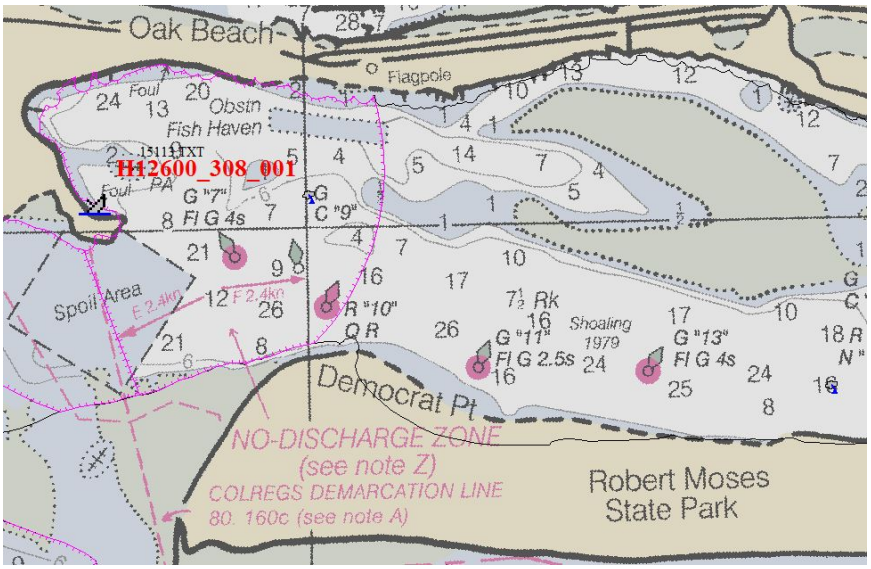


Figure 23: Overhead view showing western H12600 with the AWOIS search radius for Item # 15113 overlaid on chart 12352. The position of the wreck associated with AWOIS 15113 is also shown as a "Wreck" icon and labeled with red text.

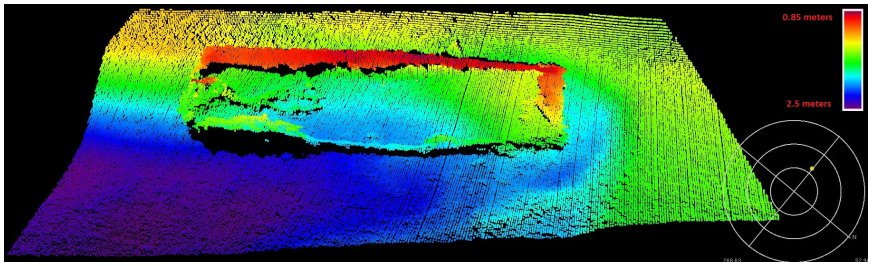


Figure 24: Multibeam image showing target H12600_308_001. This 7.2 meter long wreck is believed to be AWOIS Item # 15113.

See attached Feature Report for the disposition of each AWOIS item.

D.1.4 Charted Features

Thirteen charted features were assigned for investigation in sheet H12600. These features were not AWOIS items but were investigated with MBES and 200% SSS coverage. All features assigned for investigation are addressed in the Final Feature S-57 File. The source for all features were the United States NOS with the exception of the abandoned advertising sign near Captree Island which was received from and assigned by NOAA with an unknown source.

Figure 25: Picture taken on site of the abandoned advertisement sign near Captree Island, this feature was assigned to verify.

D.1.5 Uncharted Features

H12600 contained a large amount of uncharted wreckage and debris. Twenty-eight wrecks are located throughout the survey sheet with only one of those being in a fish haven. The remaining 27 wrecks range from large 30m vessels to small 2m craft. The survey area also contained multiple significant features that were not categorized as wrecks, but rather as debris or rock. Seventeen significant features were found outside of the charted fish havens. All features are addressed in the attached Final Feature S-57 File.

There were 27 wrecks submitted in the Final Feature File. An additional wreck was identified and attributed during office review, bringing the total to 28 wrecks.

D.1.6 Dangers to Navigation

Danger to Navigation Reports are included in Appendix I of this report. Twenty features submitted as DTONs between the beginning of the survey on October 2nd and November 7th were rejected as DTONs by the PHB. Only those features carried through as DTONs by the PHB, five in total, were attributed as DTONs in the Final Feature file. All DTONs have been applied to the current chart.

A total of 6 DTONs were included in the submitted Final Feature File. A seventh DTON was submitted to report a missing ATON. All 7 DTONs have been applied to the latest charts. The DTON reports were included in Appendix II_Supplemental_Survey_Records_&_Correspondence. See DTON section of attached Feature Report.

D.1.7 Shoal and Hazardous Features

In order to investigate shoaling areas and compare to charted depths a grid was overlaid on raster chart 12352. This allowed the area to be compared visually and easily obtain depth values differences with a high level of accuracy. The Western portion of sheet H12600 contains most of the discrepancies between the survey data and the charted depths. The eastern portion contains no dangerous shoaling that has not been already charted previously. The only significant shoaling occurs centrally in the channel just west of Robert Moses Bridge. The shoaling area extends west from the bridge to an area between State Boat Channel green marker 13 and green marker 11, charted as “Shoaling 1979” on raster chart 12352. The surveyed depths beneath “Shoaling 1979” are as shallow as 8 feet, while the corresponding charted depths are 16 – 24 feet. The shoal deepens but the feature continues east with many large sand waves. The shoaling increases close to the bridge if you approach from the west with a surveyed depth of 6 feet atop charted 12 feet. The current natural channels run to the north and south of this central shoal area. The majority of boat traffic in this area do not draft enough for this shoal to be problematic however the channel should reflect the shoaling morphologies near the bridge.

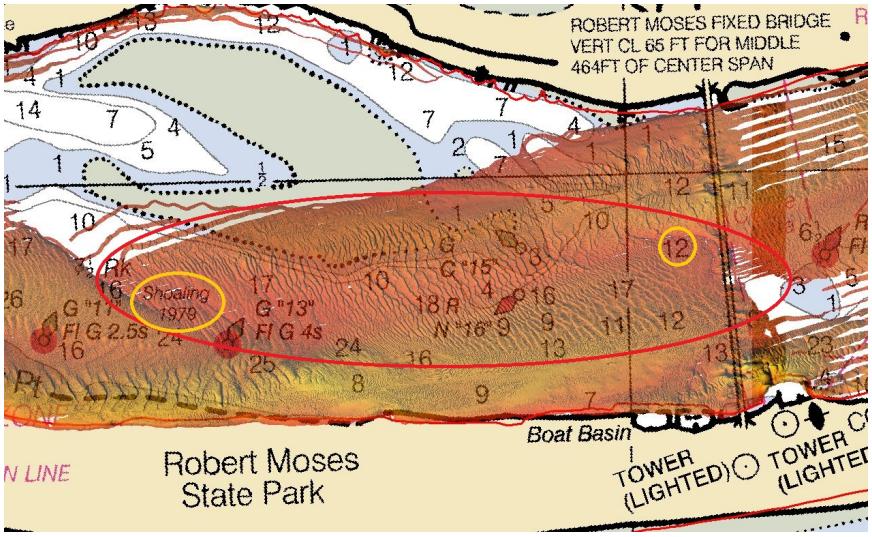


Figure 26: Image showing the shoaling area west of Robert Moses Bridge. The red circle highlights the general shoaling area while the yellow circles highlight the two most shoal areas, one of which was surveyed at 6 feet depth atop a charted 12 feet.

D.1.8 Channels

A high majority of the channels have either deepened or remain at charted depths. State Boat Channel extends from the inlet east under the Robert Moses Bridge. The portion of this channel just to the west of the bridge has shoaled considerably and needs dredge maintenance. The shoaling behavior of this area was discussed in the previous sections labeled Shoal and Hazardous Features. The channel leading into Captree Boat Basin has been dredged to a controlling depth of at least 12 feet. The dredged channel into Captree is mainly used by charter fishing boats and ferries, however the dredged portion of the channel is far narrower than the marked channel.

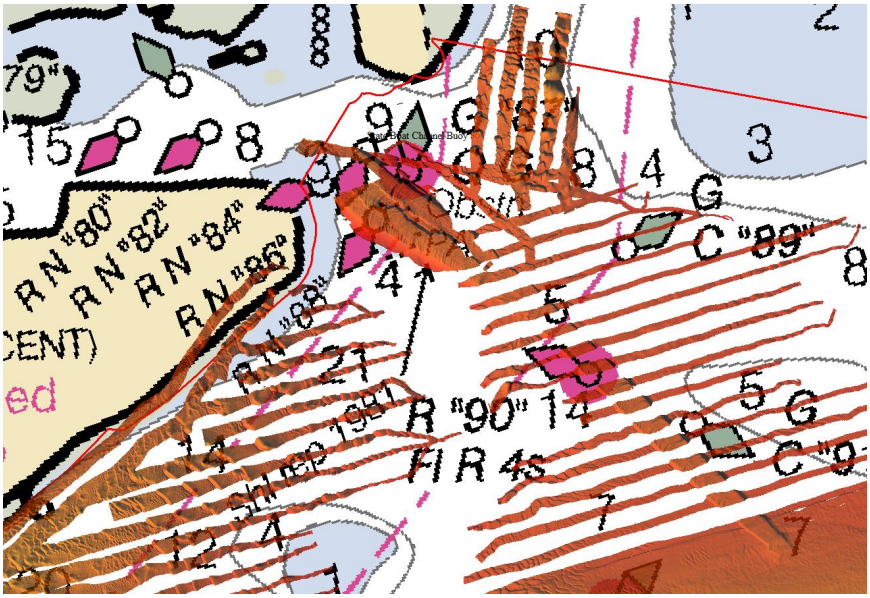


Figure 27: Image showing the MBES data overlaid on Chart 12352. The dredged portion of the channel can be seen leading into the Captree Boat Basin.

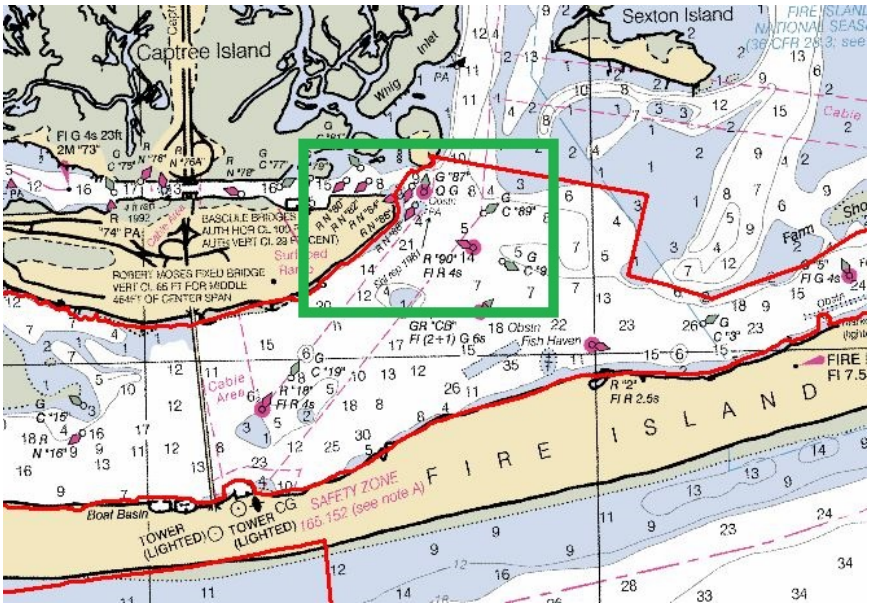


Figure 28: Overhead image of Chart 12352. The green box highlights the extents of the channel discussed in this section.

Numerous natural channels exist throughout the survey area. While some may occasionally be maintained via dredging operations, none of the channels within the survey area are charted with fixed extents or controlling depths.

D.2 Additional Results

D.2.1 Shoreline

A limited shoreline investigation was completed as per the project instructions following the procedures discussed in the DAPR. The majority of the shoreline associated with the survey sheet remained as charted with three exceptions. Two of these are located at the western most side of the survey sheet near the inlet. Just inshore of the inlet to the south side of the entry channel 1.6 km of the shore line has been eroded roughly 170 meters inland at the most. North of the inlet channel in a small anchorage basin the surrounding shoreline has undergone aggredation in some areas and extends out slightly more than previously charted. The third noticeable shoreline change near Fair Harbor and Clam Pond. Where once a small peninsula extended out towards the Fair Harbor Channel, now lie shallow sand bars. The last two shoreline shifts mentioned do not affect navigation. The first shoreline shift mentioned south of the inlet channel increases the navigable area to the south of the channel.

Sheet H12600 contains areas where the NALL requirements were not achieved. Any areas that were not satisfied were due to safety concerns with swell or sand bar impacts on the vessel. The sonar was grounded several times, so the crew was more cautious of shallow water as the survey continued. In some areas, however, survey coverage exceeded NALL because water depths were deeper than previously charted due to Sandy. The survey area located north of Fire Island was drastically changed and proved to contain a number of new sand bars and shoal areas.

The area located north of Fire Island proved to contain a number of new sand bars and shoal areas. A large NALL area exists on the western edge of the survey area, as well as south of both West and East Fire Island.

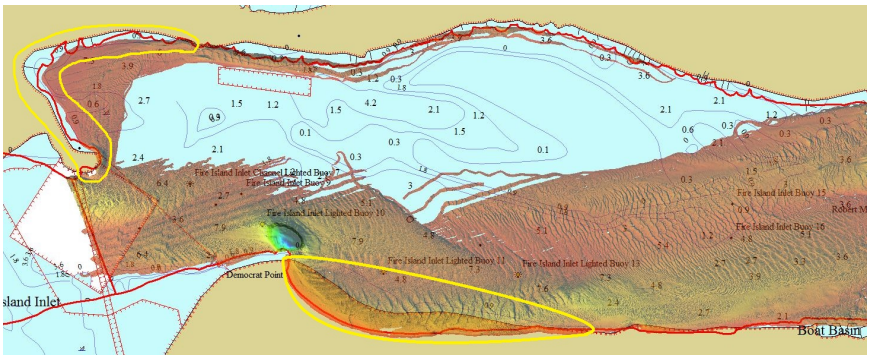


Figure 29: Image showing the MBES data overlaid on Chart US5NY52M. The yellow circle highlights the two areas of shoreline shifting near the inlet channel. The southern area can clearly be seen as the most drastic shift.

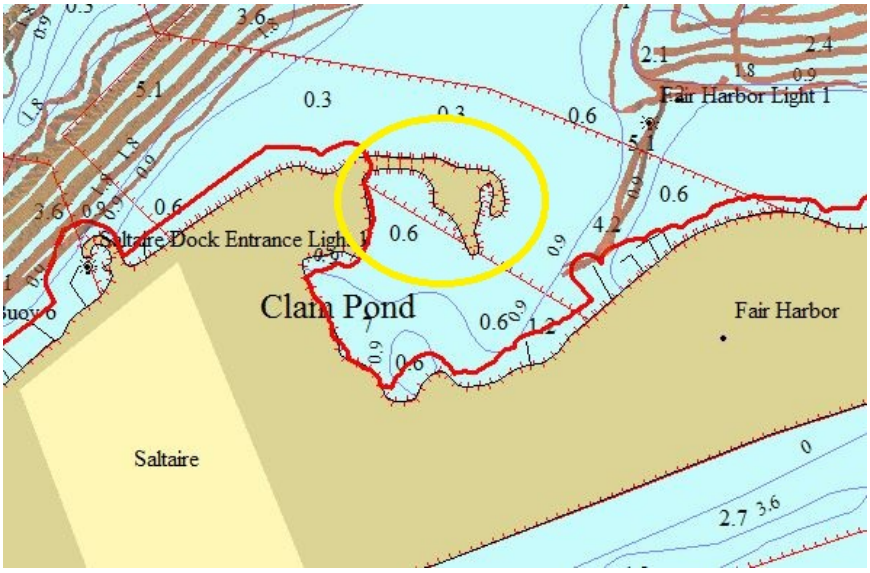


Figure 30: Image showing the MBES data overlaid on Chart US5NY52M. The yellow circle highlights the charted peninsula of land that no longer exists above water.

D.2.2 Prior Surveys

No prior survey comparisons exist for this survey.

D.2.3 Aids to Navigation

One channel marker was not found on location, or found to exist at all. This ATON, State Boat Channel Buoy 86, was reported as a DTON on 11/21/2013. Please refer to Appendix 1 for DTON reports. All other ATONS are as charted. Seven private channel markers near Fair Harbor are included in the Final Feature File.

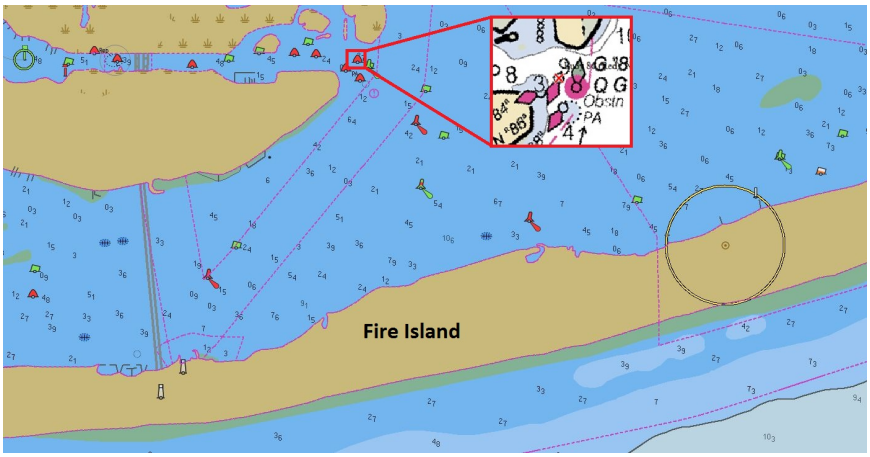


Figure 31: Image showing ENC chart US5NY52M with RNC chart 12352 insert. Both charts highlight the position of the missing ATON.

State Boat Channel Buoy 86 is positioned correctly on the latest charts. The DTON reports were included in Appendix II_Supplemental_Survey_Records_&_Correspondence. See special DTON report for this feature.

The four Atlantique Entrance lateral buoys are maintained from May 1 to November 15. The positions and characteristics are up-to-date in the USCG Light List, with the exception of the buoy numbers, which were found to be reversed moving from offshore to inshore. Fair Harbor Light 1 is maintained from May 1 to November 25 and was found to be 56 meters off the Light List position. Dunewood Light 2 is maintained from May 1 to November 15 and was found to be 113 meters of the Light List position. The final ATON is at the head of Dunewood channel and is not charted or included in the USCG Light List. All ATON discrepancies have been reported to the USCG.

D.2.4 Overhead Features

The Robert Moses Bridge is the only overhead feature within the H12600 survey bounds. The minimal clearance of the bridge is charted at 65 feet for the middle 464 feet of center span. The survey vessel used a laser sight to shoot directly up at the underside of the bridge. The laser sight altitude was reduced to the water level on the vessel which was then reduced to Mean High Water using preliminary tidal zoning supplied by COOPs and Sandy Hook Tide Station # 8531680. The bridge was measured from the vessel while holding position at 40° 37' 51.6821" N, 73° 15' 44.8725" W. The clearance was calculated to be 66.26 feet from Mean High Water.

Value	in FEET	Value	Info
Laser Sight	60.00	Tide Zone	FIR 36
Sight to Deck	5.50	Tide Station	8531680
Deck to WL	0.98	Tide Offset	minus 12 minutes
MHW Tide Value	-0.22	UTC time of Sight	12:11
Bridge to WL	66.48	Multiplyer	0.45
Bridge to MHW	66.26	MHW Tide Value	-0.483

Figure 32: Table showing values obtained and used to calculate the surveyed clearance of Robert Moses Bridge.

Figure 33: Picture showing central span of Robert Moses Bridge.

D.2.5 Submarine Features

Submarine cables/pipes were seen in the data but were not investigated at each landing site. Four exposed pipe features were discovered in the MBES and SSS data. Only one of the four submarine pipes/cables was located near a charted cable crossing area. This exposed portion of pipe was beneath the Robert Moses Bridge to the west side of the southern bridge supports. There is a significant scour suspending a portion of the pipe by approximately 0.4 meters near the bridge support. All located pipe/cable features are fully attributed in the Final Feature File with the acronym PIPSOL. In two cases multiple features were created to portray the extent of exposure. Please refer to the attached Final Feature File for the targeted PIPSOL features.

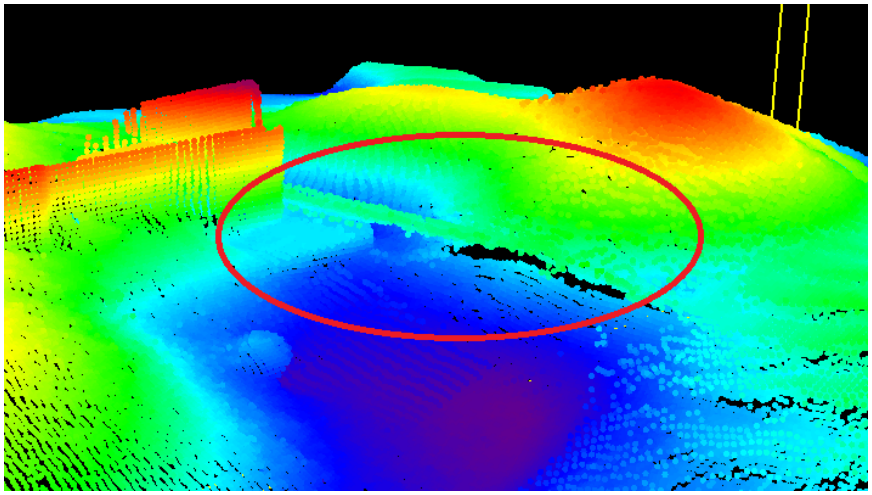


Figure 34: Image showing soundings in CARIS. The pipe can be seen highlighted by the red circle and is suspended above the seabed and extending away from the bridge support. Red soundings are the most shoal while purple soundings are the deepest.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Platforms

No platforms exist for this survey.

D.2.8 Significant Features

Features that were identified as significant and not pre-existing were investigated and the LEAST depth sounding was used as the designating sounding. Additionally, see previous section D.1.4 "Charted Features" and D.1.5 "Uncharted Features."

Several features had soundings designated that were not the actual least depth. The soundings were re-designated with the proper least depth during office review and the corresponding features were updated accordingly.

D.2 Construction and Dredging

Dredging is currently occurring in the mouth of the Fire Island Inlet, however the dredging so far has taken place just outside of the H12600 survey bounds. The Robert Moses Bridge was undergoing scaffolding construction for painting purposes. No other dredging or construction of significance was taking place within the sheet bounds during survey acquisition.

E. Approval Sheet

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

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

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

Approver Name	Approver Title	Approval Date	Signature
Ransom C. White III	Chief of Party	11/20/2014	
Curtis Clement	Project Manager	11/20/2014	

F. Table of Acronyms

Acronym	Definition
AFF	Assigned Features File
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 Staiton
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
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
HSSDM	Hydrographic Survey Specifications and Deliverables Manual

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	Local Notice to Mariners
LNM	Linear Nautical Miles
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
ST	Survey Technician
SVP	Sound Velocity Profiler
TCARI	Tidal Constituent And Residual Interpolation
TPU	Total Porpagated Error
TPU	Topside Processing Unit
USACE	United States Army Corps of Engineers
USCG	United Stated Coast Guard
UTM	Universal Transverse Mercator
XO	Exectutive Officer
ZDA	Global Positiong System timing message
ZDF	Zone Definition File

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Center for Operational Oceanographic Products and Services
Silver Spring, MD 20910

Date: July 16, 2014

TO: LCDR Michael Gonsalves
Chief, Operations Branch
Hydrographic Services Division
Office of Coast Survey

FROM: Gerald Hovis
Chief, Products and Services Branch
Oceanographic Division
CO-OPS

HOVIS.GERALD.THOMAS.1365860250
Digitally signed by HOVIS.GERALD.THOMAS.1365860250
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HOVIS.GERALD.THOMAS.1365860250
Date: 2014.07.17 10:03:37 -04'00'

RE: Validation of Zoning supplied in support of OPR-C331-KR-2013, Vicinity of Southern Long Island, NY

John Oswald & Associates (JOA) submitted discrete tidal zoning for validation by CO-OPS based on subordinate water level data collected at Fire Island (851-5186), Moriches Inlet (851-3398), Moriches Coast Guard Station (851-3388), Shinnecock Inlet (851-2354), and Ponquogue Point (851-2451). CO-OPS finds the water level data as well as discrete zoning submitted in support of OPR-C331-KR-2013 to be valid and meet the requirements under NOS Specifications and Deliverables.

CO-OPS bases its validation of the contractor supplied zoning on the following reasons:

1. JOA's method to develop final zoning geometry and tide correctors is reasonable
2. The estimate of total propagated error within the survey area using JOA's final tidal zoning and provided zoning station water level data (BMPGs and Seaview Ferry (851-4779)) is within 0.26 meters.

CC:
Jeff Ferguson
Patrick Burke
Michael Brown
Matthew Jaskoski
Castle "Gene" Parker
LCDR Ben Evans
Laura Rear McLaughlin
Corey Allen
Cristina Urizar
Grant Froelich
Colleen Fanelli

H12600 Feature Report

Registry Number: H12600
State: New York
Locality: Vicinity of Southern Long Island
Sub-locality: Vicinity of North of Fire Island
Project Number: OPR-C331-KR-13
Survey Dates: 09/30/2013 - 01/13/2014

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12352	34th	09/01/2012	1:40,000 (12352_3)	USCG LNM: 11/4/2014 (2/17/2015) CHS NTM: None (1/30/2015) NGA NTM: None (2/28/2015)
12353	18th	11/01/2003	1:80,000 (12353_1)	[L]NTM: ?
12326	50th	05/01/2006	1:80,000 (12326_1)	[L]NTM: ?
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

Feature Type	Survey Depth	Survey Latitude	Survey Longitude
Wreck	9.76 m	40° 38' 00.1" N	073° 14' 28.8" W
Wreck	9.50 m	40° 37' 59.7" N	073° 14' 28.1" W
Wreck	[None]	40° 37' 58.6" N	073° 14' 12.5" W
Wreck	[None]	40° 38' 58.1" N	073° 11' 25.1" W
Wreck	0.86 m	40° 38' 03.5" N	073° 18' 35.5" W
Wreck	2.05 m	40° 38' 09.1" N	073° 18' 30.2" W
Wreck	5.46 m	40° 37' 43.9" N	073° 18' 16.0" W
Wreck	3.23 m	40° 38' 17.1" N	073° 18' 07.6" W
Wreck	2.42 m	40° 37' 56.9" N	073° 16' 40.1" W

Wreck	5.64 m	40° 38' 13.7" N	073° 15' 12.0" W
Wreck	5.24 m	40° 38' 01.8" N	073° 14' 34.3" W
Wreck	6.44 m	40° 38' 03.1" N	073° 14' 26.5" W
Wreck	4.96 m	40° 38' 16.9" N	073° 12' 34.0" W
Wreck	6.04 m	40° 38' 17.3" N	073° 12' 32.9" W
Wreck	5.29 m	40° 39' 27.8" N	073° 12' 26.1" W
Wreck	6.08 m	40° 39' 17.3" N	073° 12' 26.0" W
Wreck	4.83 m	40° 38' 19.1" N	073° 12' 25.9" W
Wreck	3.05 m	40° 39' 13.6" N	073° 12' 17.6" W
Wreck	5.68 m	40° 38' 35.2" N	073° 11' 58.2" W
Wreck	5.43 m	40° 39' 08.0" N	073° 09' 24.2" W
Wreck	6.34 m	40° 37' 37.6" N	073° 16' 03.0" W
Wreck	3.89 m	40° 37' 57.2" N	073° 15' 57.5" W
Wreck	5.46 m	40° 37' 57.6" N	073° 15' 52.3" W
Wreck	5.09 m	40° 38' 06.3" N	073° 14' 07.6" W
Wreck	3.81 m	40° 38' 16.4" N	073° 12' 30.1" W
Wreck	2.95 m	40° 39' 17.7" N	073° 12' 19.1" W

1 - Charted Features

1.1) US 0000005136 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 00.1" N, 073° 14' 28.8" W
Least Depth:	9.76 m (= 32.03 ft = 5.338 fm = 5 fm 2.03 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005136 00001(0226000014100001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Debris associated with H12600-291-029 wreck, 21 x 10m, 3m off bottom, adjacent to fish haven

Hydrographer Recommendations

Chart new wreck.

Cartographically-Rounded Depth (Affected Charts):

32ft (12352_3, 12326_1, 12353_1)

5 ¼fm (12300_1, 13006_1, 13003_1)

9.7m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Debris associated with H12600-291-029 wreck, 21 x 10m, 3m off bottom, adjacent to fish haven
	OBJNAM - H12600_291_028
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 9.762 m
	WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Wreck is on the boundary of fish haven.

Feature Images

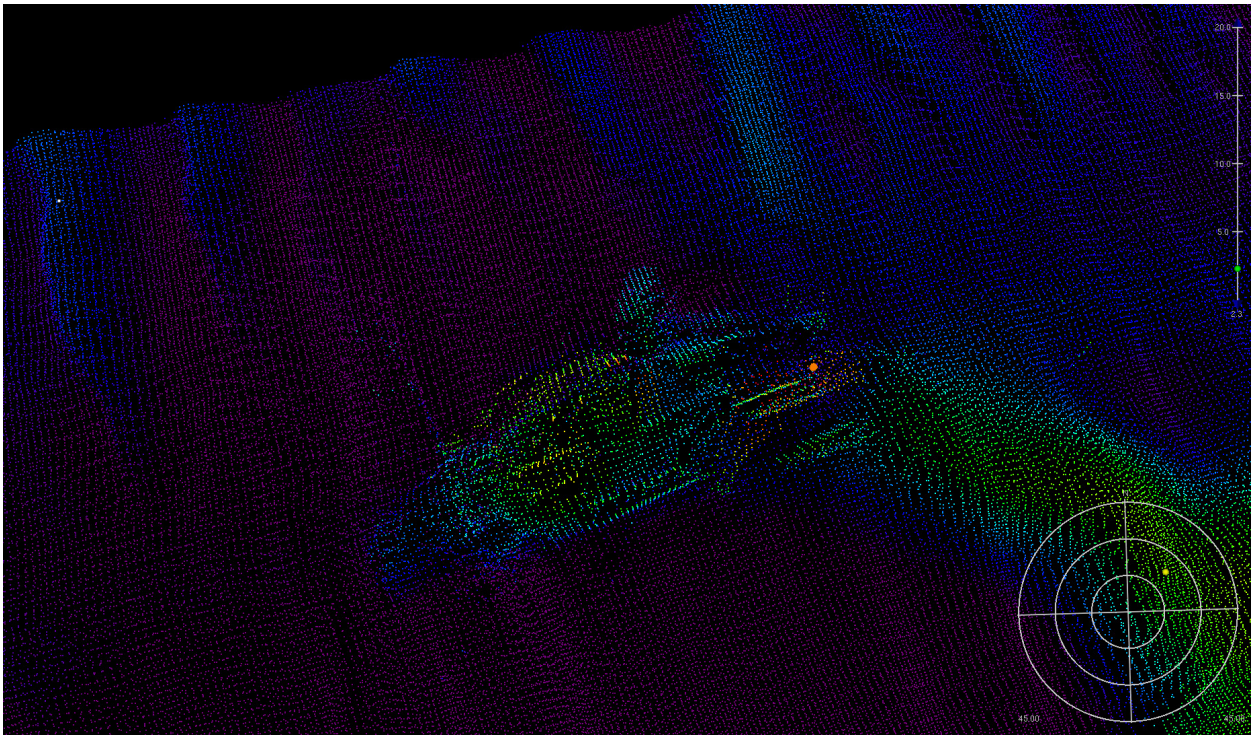


Figure 1.1.1

1.2) US 0000005020 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 37' 59.7" N, 073° 14' 28.1" W
Least Depth:	9.50 m (= 31.17 ft = 5.195 fm = 5 fm 1.17 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005020 00001(02260000139C0001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

large rectangular wreck in fish haven, 20 x 12m, 3.20m off bottom

Hydrographer Recommendations

Chart new wreck.

Cartographically-Rounded Depth (Affected Charts):

31ft (12352_3, 12326_1, 12353_1)

5 ¼fm (12300_1, 13006_1, 13003_1)

9.5m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - large rectangular wreck in fish haven, 20 x 12m, 3.20m off bottom
	OBJNAM - H12600_291_029
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 9.500 m
	WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Wreck is within fish haven.

Feature Images

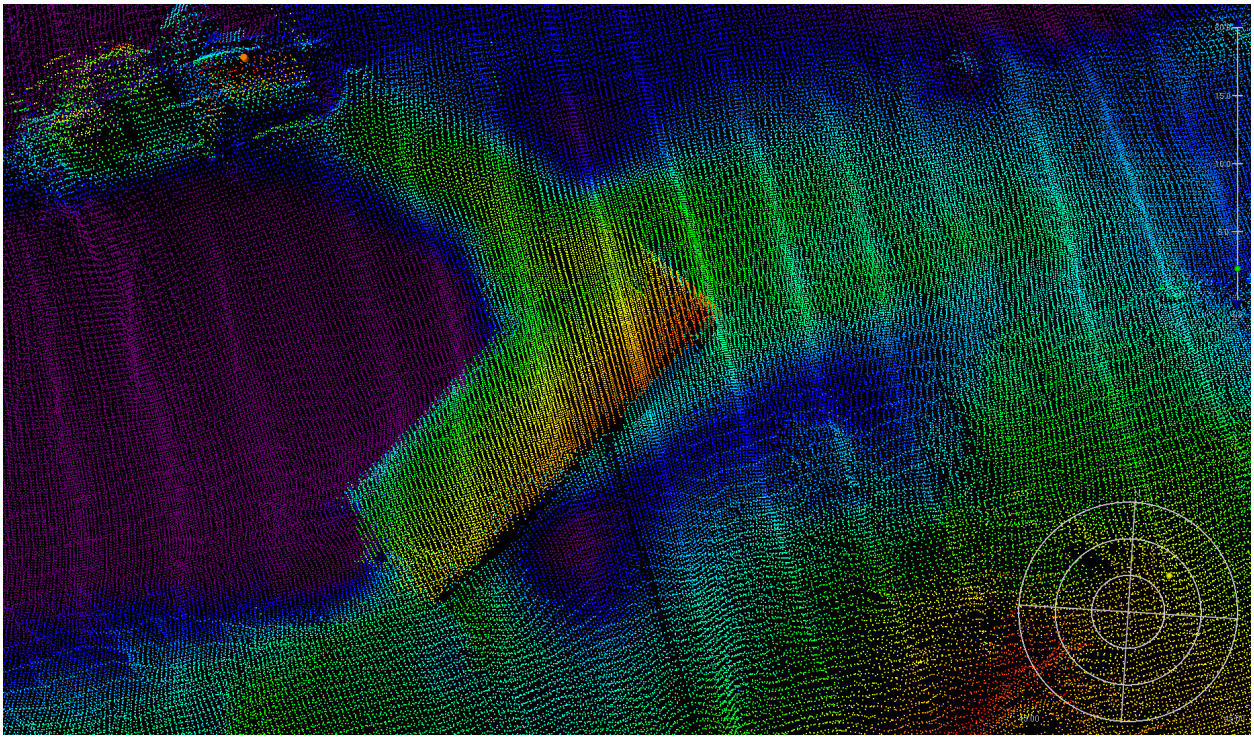


Figure 1.2.1

1.3) US 0000000343 00001 / H12600_Feature_Report_Office.000

Charting Action is Not Addressed

Survey Summary

Survey Position:	40° 37' 58.6" N, 073° 14' 12.5" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2006-060.00:00:00.000 (03/01/2006)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000000343 00001(0226000001570001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Wreck was not visible in either the MBES or SSS data.

Hydrographer Recommendations

Recommend deleting feature.

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	QUASOU - 2:depth unknown
	SORDAT - 20060300
	SORIND - US,US,graph,Chart 12352
	WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Wreck not adequately addressed by field. Retain wreck.

1.4) US 0000000345 00001 / H12600_Feature_Report_Office.000

Charting Action is Not Addressed

Survey Summary

Survey Position:	40° 38' 58.1" N, 073° 11' 25.1" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2006-060.00:00:00.000 (03/01/2006)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000000345 00001(0226000001590001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: complete coverage was not obtained over this feature.

Hydrographer Recommendations

Recommend retaining feature

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	QUASOU - 2:depth unknown
	SORDAT - 20060300
	SORIND - US,US,graph,Chart 12352
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

2 - New Features

2.1) US 0000005060 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 03.5" N, 073° 18' 35.5" W
Least Depth:	0.86 m (= 2.82 ft = 0.470 fm = 0 fm 2.82 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005060 00001(0226000013C40001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: New wreck north of charted foul area

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

3ft (12352_3, 12326_1)

0 ½fm (12300_1, 13006_1, 13003_1)

0.8m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck in Foul Area, 2.04 x 7.2m, 0.87m off bottom
	OBJNAM - H12600_308_001
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 0.859 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

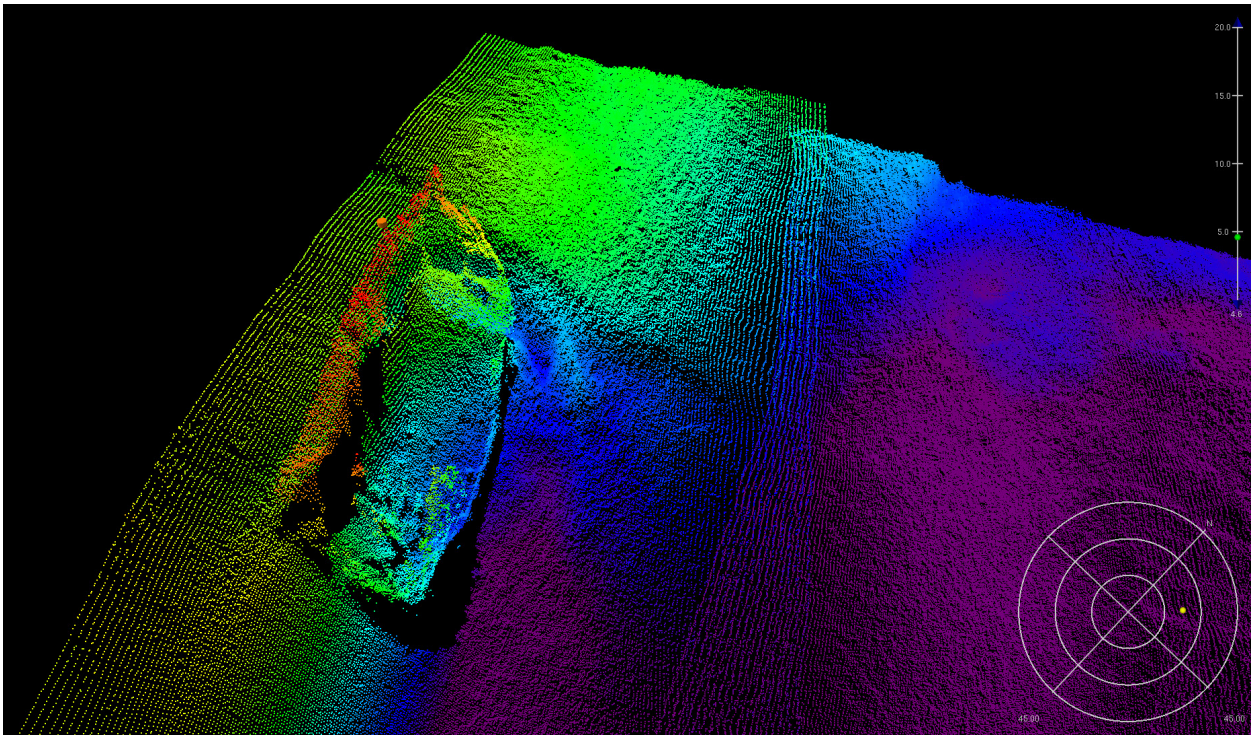


Figure 2.1.1

2.2) US 0000000347 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 09.1" N, 073° 18' 30.2" W
Least Depth:	2.05 m (= 6.73 ft = 1.122 fm = 1 fm 0.73 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000000347 00001(02260000015B0001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Not seen in SSS, but the feature is visible in the MBES.

Hydrographer Recommendations

Chart new position of AWOIS 15113

Cartographically-Rounded Depth (Affected Charts):

6ft (12352_3, 12326_1)

1fm (12300_1, 13006_1, 13003_1)

2.0m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	QUASOU - 2:depth unknown
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	VALSOU - 2.051 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Chart new position and update least depth.

Feature Images

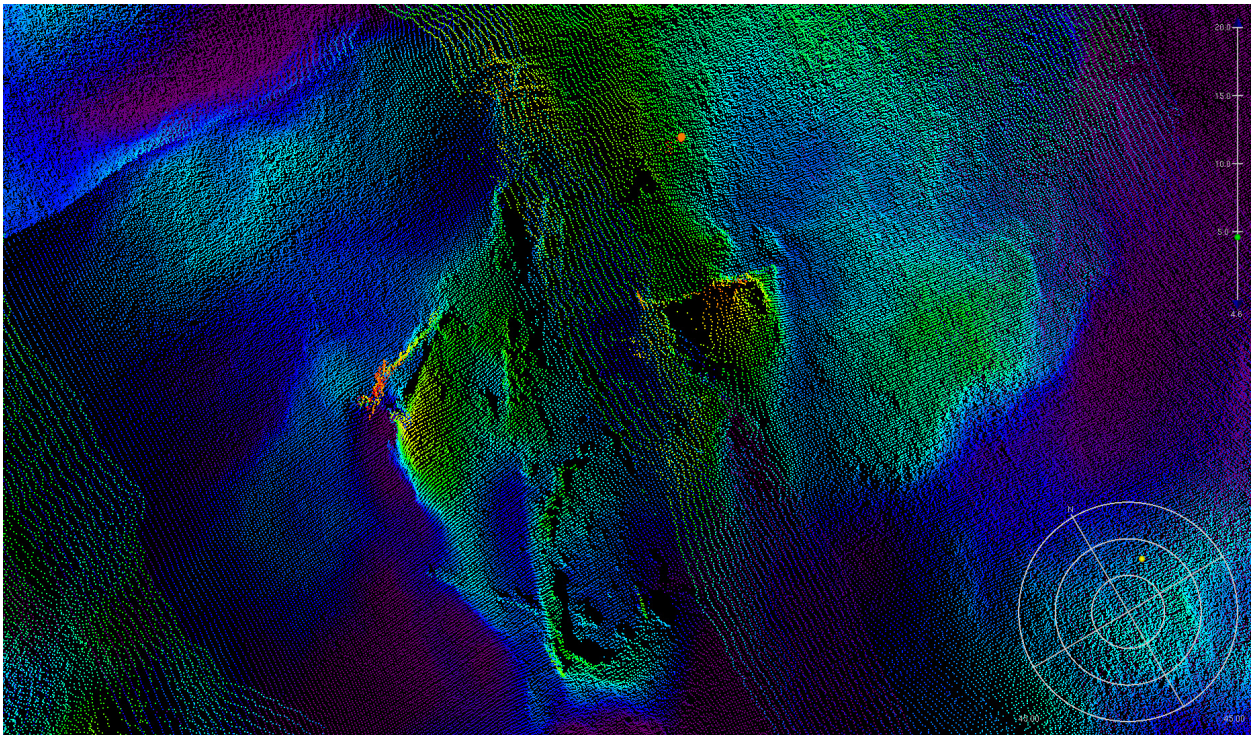


Figure 2.2.1

2.3) US 0000005185 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 37' 43.9" N, 073° 18' 16.0" W
Least Depth:	5.46 m (= 17.93 ft = 2.988 fm = 2 fm 5.93 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005185 00001(0226000014410001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: new wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

18ft (12352_3, 12326_1)

3fm (12300_1, 13006_1, 13003_1)

5.4m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Uncharted Dangerous Wreck/Debris, Vertical structural protrusions from wreckage, 6.6 x 2.6m, 2.60m off bottom
	OBJNAM - H12600_293_015
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.464 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

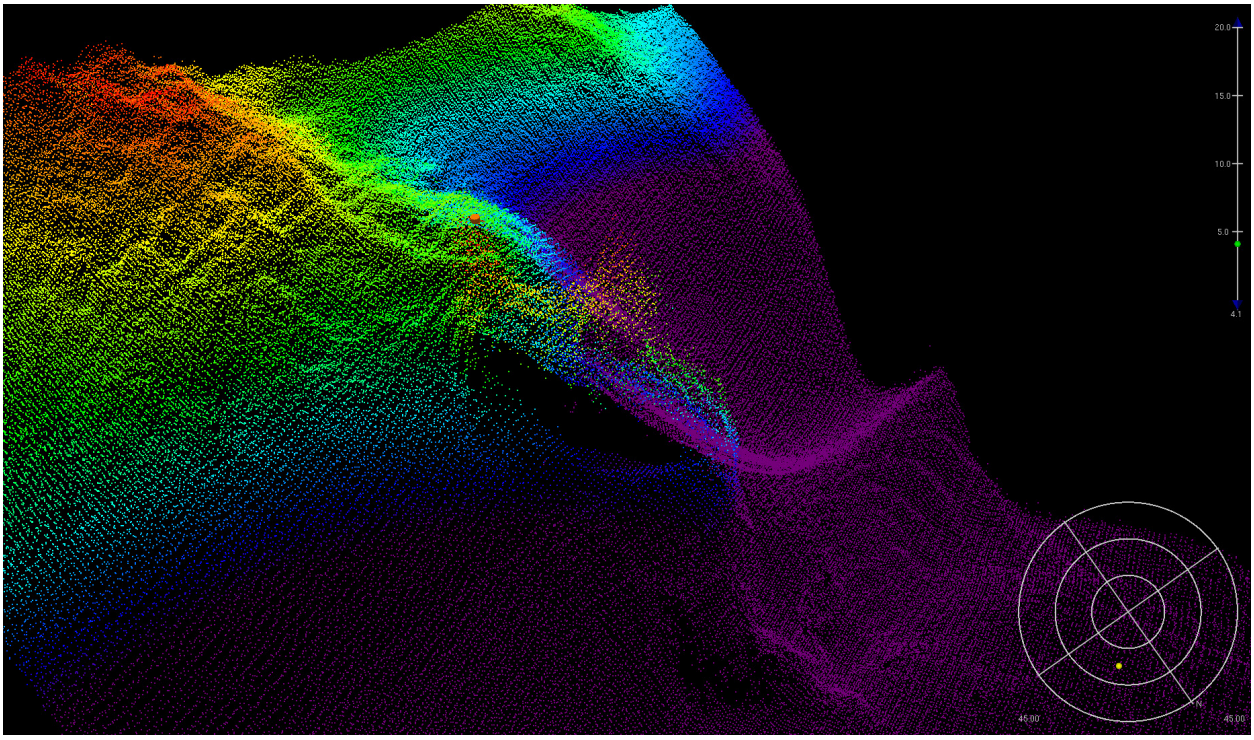


Figure 2.3.1

2.4) US 0000005212 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 17.1" N, 073° 18' 07.6" W
Least Depth:	3.23 m (= 10.58 ft = 1.763 fm = 1 fm 4.58 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005212 00001(02260000145C0001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: New obstruction

Hydrographer Recommendations

Chart new obstruction

Cartographically-Rounded Depth (Affected Charts):

10ft (12352_3, 12326_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.2m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Large Barge Wreck, 40m from Fish Haven, 29 x 8.5m, 1.18m off bottom
	OBJNAM - H12600_308_003
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 3.225 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Chart new wreck.

Feature Images

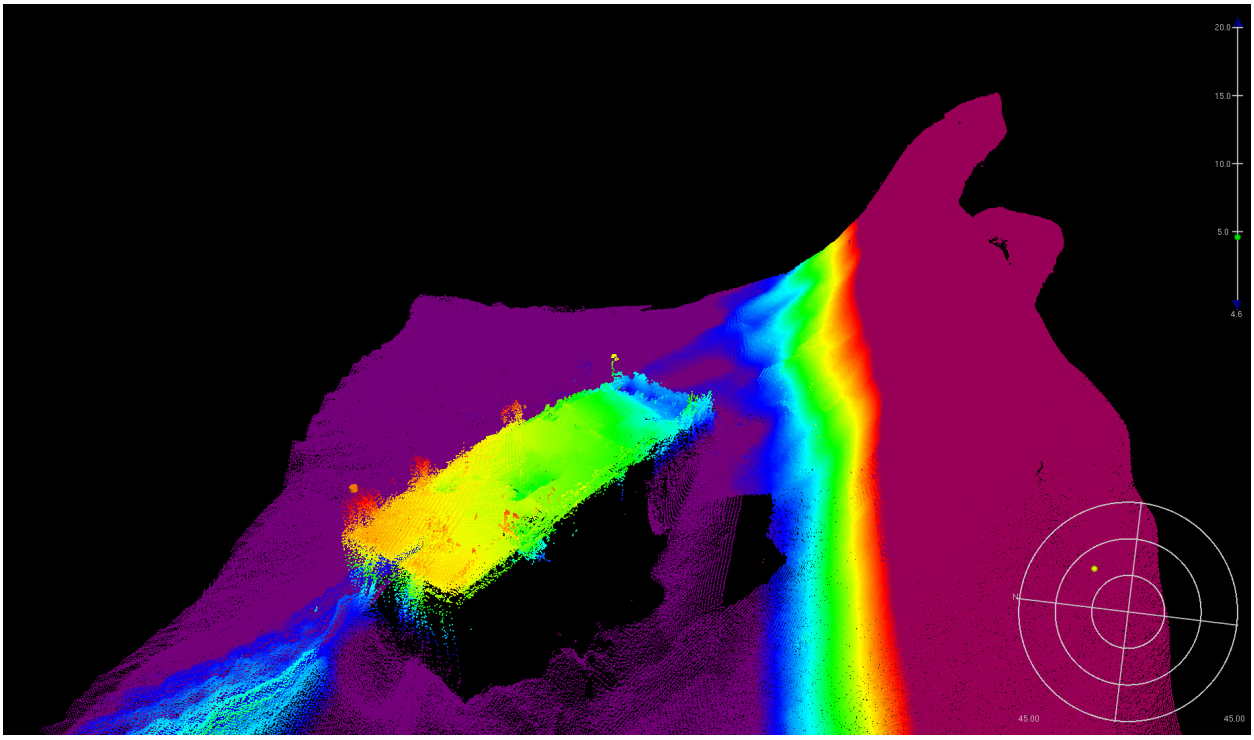


Figure 2.4.1

2.5) US 0000005047 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 37' 56.9" N, 073° 16' 40.1" W
Least Depth:	2.42 m (= 7.93 ft = 1.321 fm = 1 fm 1.93 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005047 00001(0226000013B70001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: New wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

8ft (12352_3, 12326_1)

1 ¼fm (12300_1, 13006_1, 13003_1)

2.4m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 4:wreck showing mast/masts
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Uncharted Dangerous Wreck/Debris, Mast sticking off bottom, Within Charted Foul Area, 5 x 0.7m, 0.95m off bottom
	OBJNAM - H12600_293_011
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 2.416 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

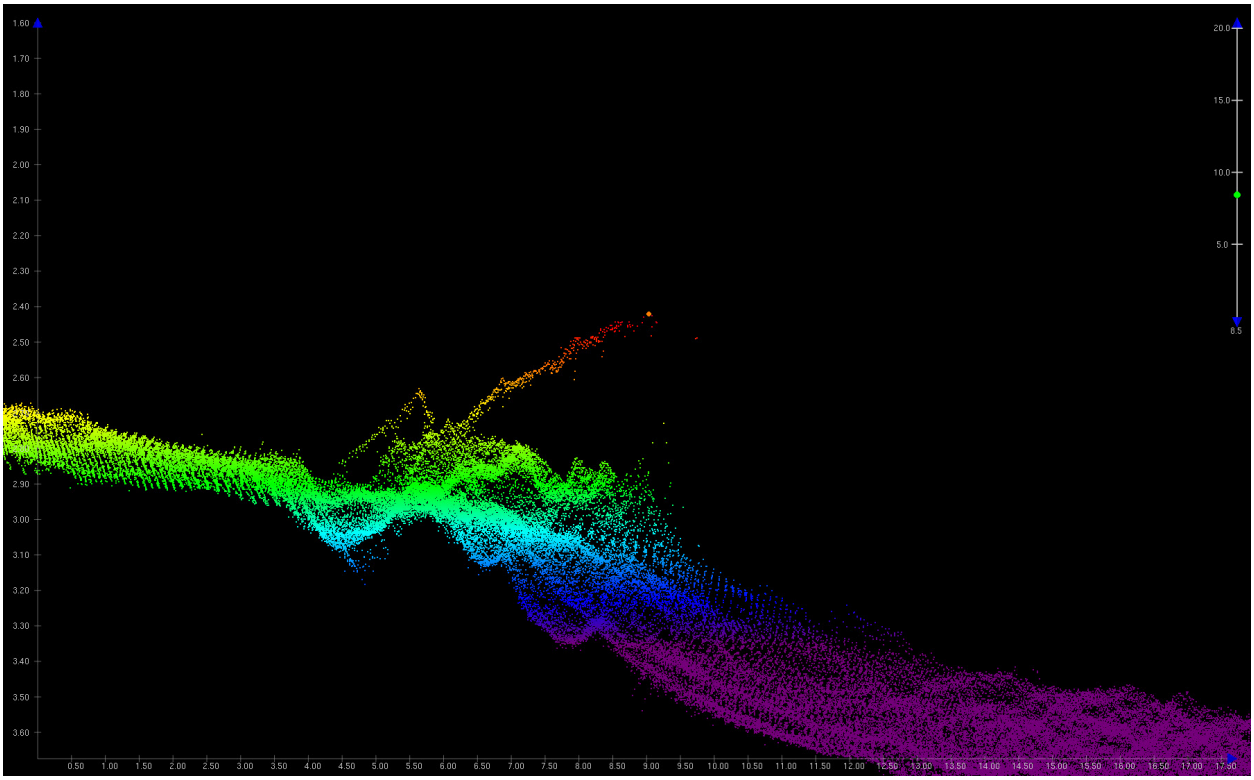


Figure 2.5.1

2.6) US 0000005612 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 13.7" N, 073° 15' 12.0" W
Least Depth:	5.64 m (= 18.50 ft = 3.083 fm = 3 fm 0.50 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005612 00001(0226000015EC0001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: New wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

18ft (12352_3, 12326_1, 12353_1)

3fm (12300_1, 13006_1, 13003_1)

5.6m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck. Near charted 20ft / 6m, 2.80 x 2.5m, 1.83m off bottom
	OBJNAM - H12600_308_035
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.639 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

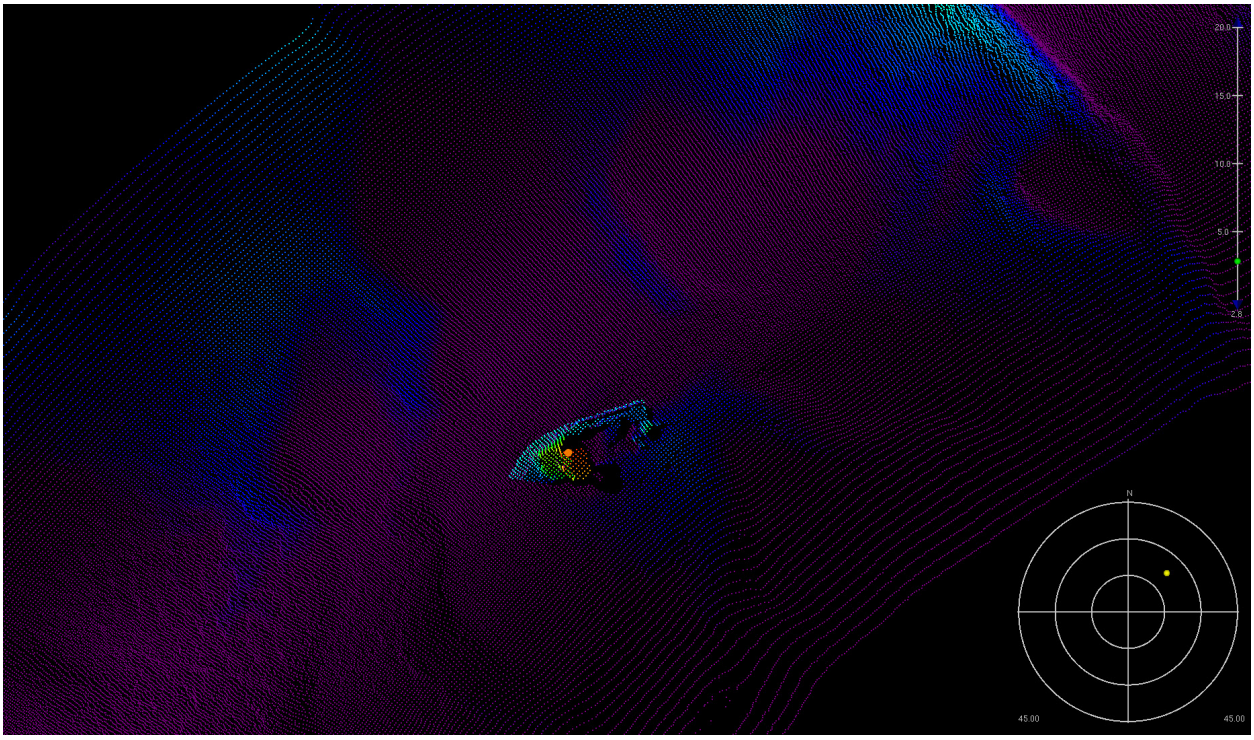


Figure 2.6.1

2.7) US 0000005139 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 01.8" N, 073° 14' 34.3" W
Least Depth:	5.24 m (= 17.19 ft = 2.865 fm = 2 fm 5.19 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005139 00001(0226000014130001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: New wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

17ft (12352_3, 12326_1, 12353_1)

2 ¾fm (12300_1, 13006_1, 13003_1)

5.2m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Large Wreck, 6 x 5m, 4.6m off bottom, surrounded by scour and then large sand bar
	OBJNAM - H12600_291_011
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.240 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

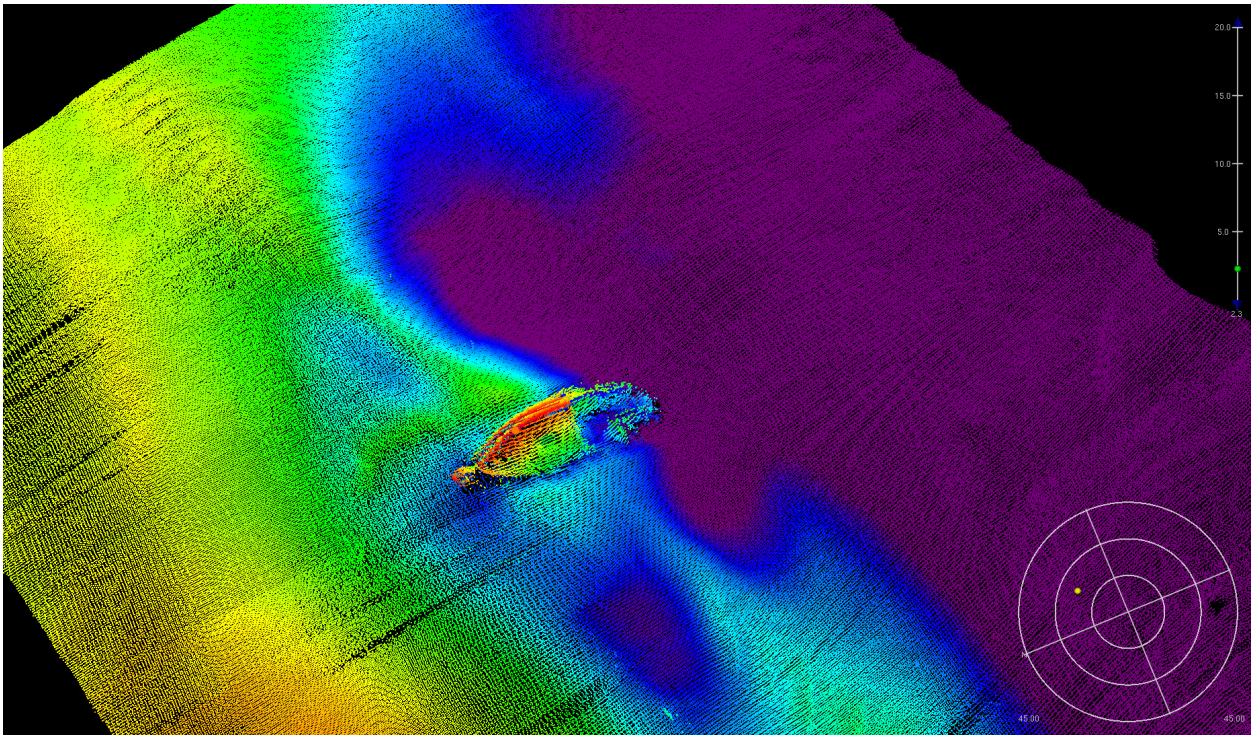


Figure 2.7.1

2.8) US 0000005138 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 03.1" N, 073° 14' 26.5" W
Least Depth:	6.44 m (= 21.12 ft = 3.519 fm = 3 fm 3.12 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005138 00001(0226000014120001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: new wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

21ft (12352_3, 12326_1, 12353_1)

3 ½fm (12300_1, 13006_1, 13003_1)

6.4m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck or Debris, 4.5 x 3.5m, 1.5m off bottom
	OBJNAM - H12600_291_012
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 6.436 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

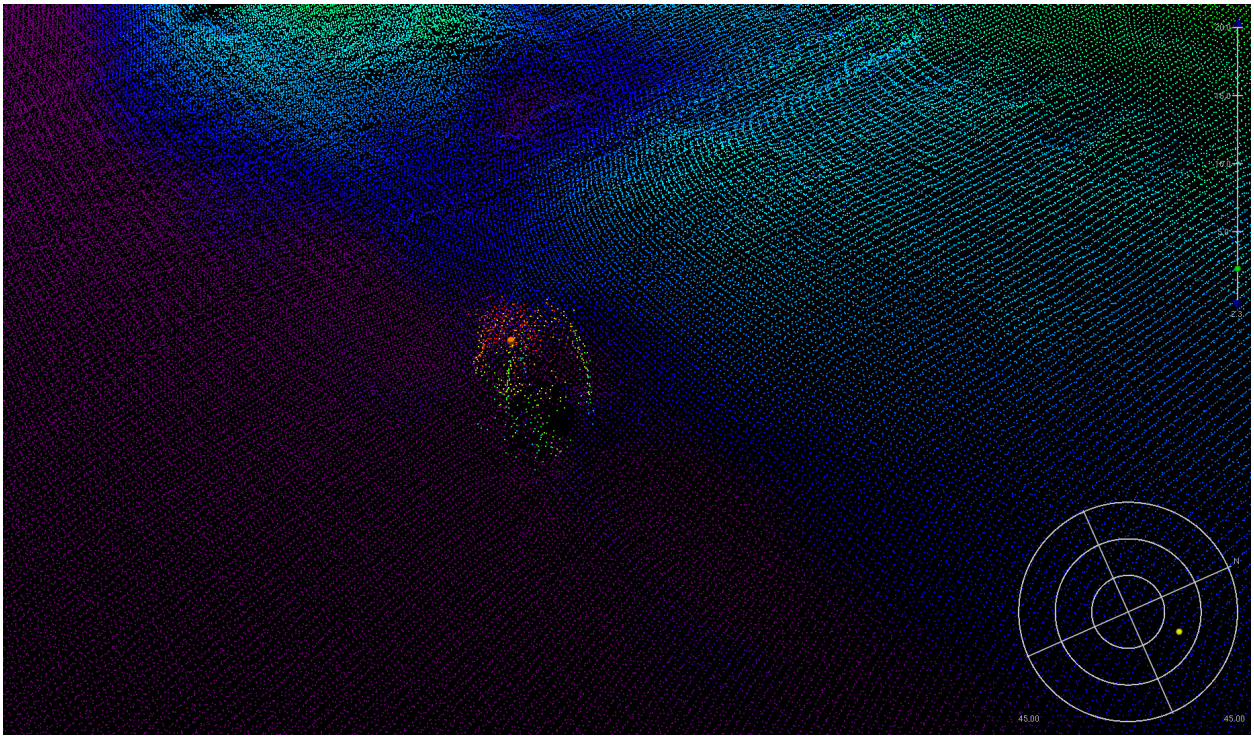


Figure 2.8.1

2.9) US 0000005108 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 16.9" N, 073° 12' 34.0" W
Least Depth:	4.96 m (= 16.26 ft = 2.709 fm = 2 fm 4.26 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005108 00001(0226000013F40001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Chart new wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

16ft (12352_3, 12326_1, 12353_1)

2 ¾fm (12300_1, 13006_1, 13003_1)

4.9m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Uncharted Wreck, 15.4 x 6.0, 2.1m off bottom
	OBJNAM - H12600_307_003
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 4.955 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Three additional wrecks are in close proximity to this wreck. Chart all four wrecks as a wreck area.

Feature Images

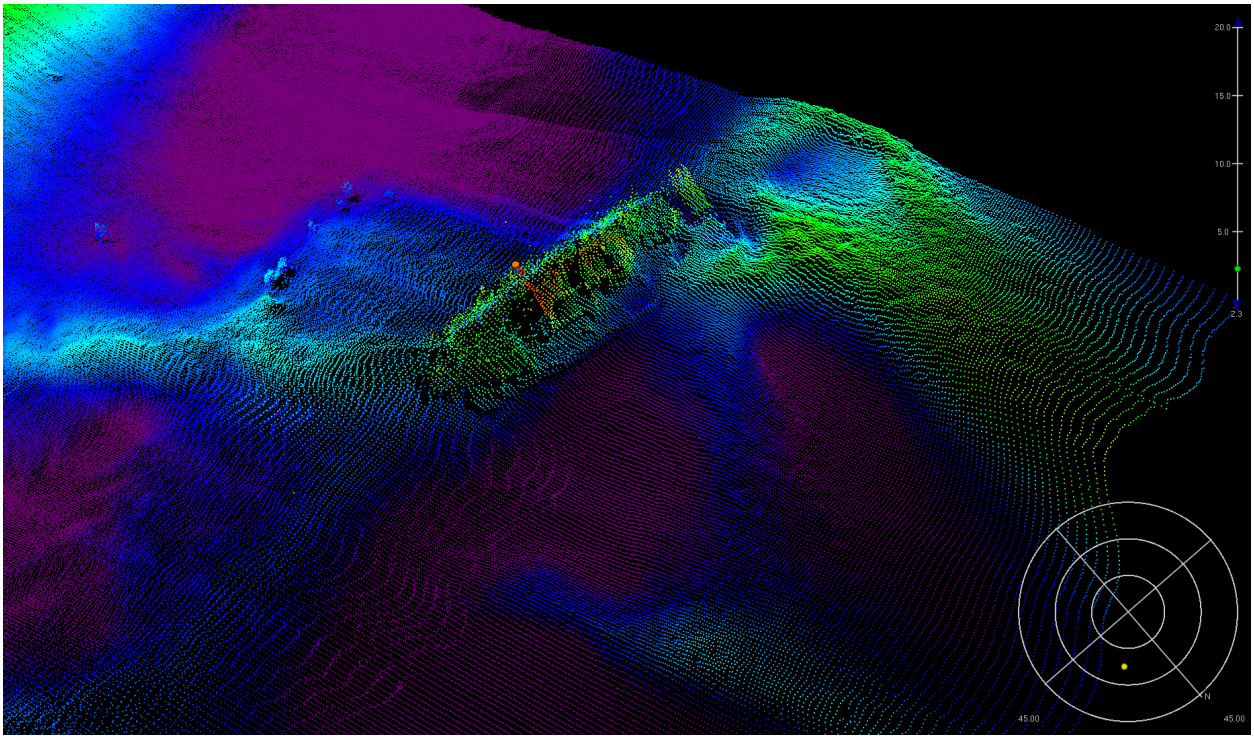


Figure 2.9.1

2.10) US 0000005145 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 17.3" N, 073° 12' 32.9" W
Least Depth:	6.04 m (= 19.83 ft = 3.305 fm = 3 fm 1.83 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005145 00001(0226000014190001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Chart new wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

20ft (12352_3, 12326_1, 12353_1)

3 ¼fm (12300_1, 13006_1, 13003_1)

6.0m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Uncharted Wreck, rectangular, 13.4 x 3.5m, 1m off bottom
	OBJNAM - H12600_307_004
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 6.045 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Three additional wrecks are in close proximity to this wreck. Chart all four wrecks as a wreck area.

Feature Images

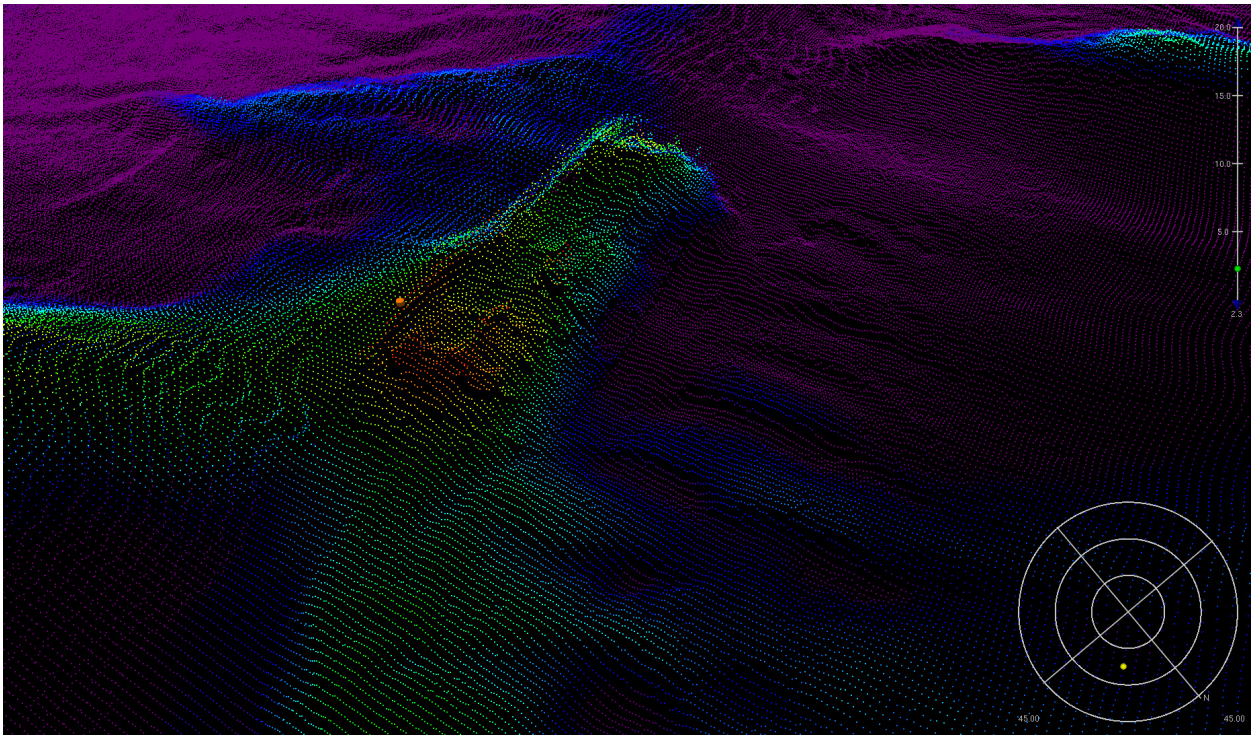


Figure 2.10.1

2.11) US 0000005222 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 39' 27.8" N, 073° 12' 26.1" W
Least Depth:	5.29 m (= 17.36 ft = 2.893 fm = 2 fm 5.36 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005222 00001(0226000014660001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: wreck

Hydrographer Recommendations

chart as wreck

Cartographically-Rounded Depth (Affected Charts):

17ft (12352_3, 12326_1, 12353_1)

2 ¾fm (12300_1, 13006_1, 13003_1)

5.3m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Insignificant Feature, Wreck, 4.2 x 2m, 0.5m off bottom, Small Craft on sloping seabed
	OBJNAM - H12600_307_043
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.291 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

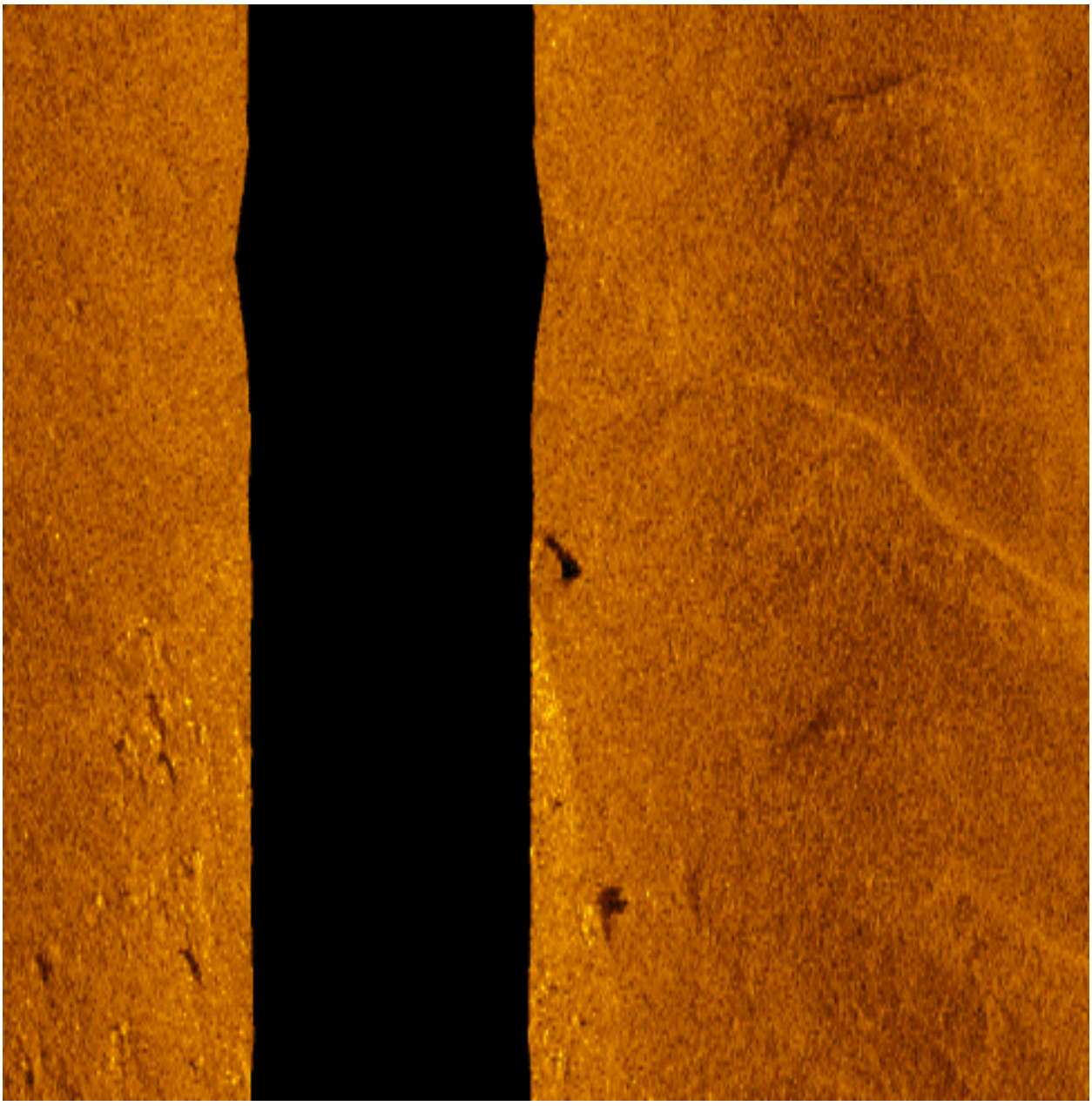


Figure 2.11.1

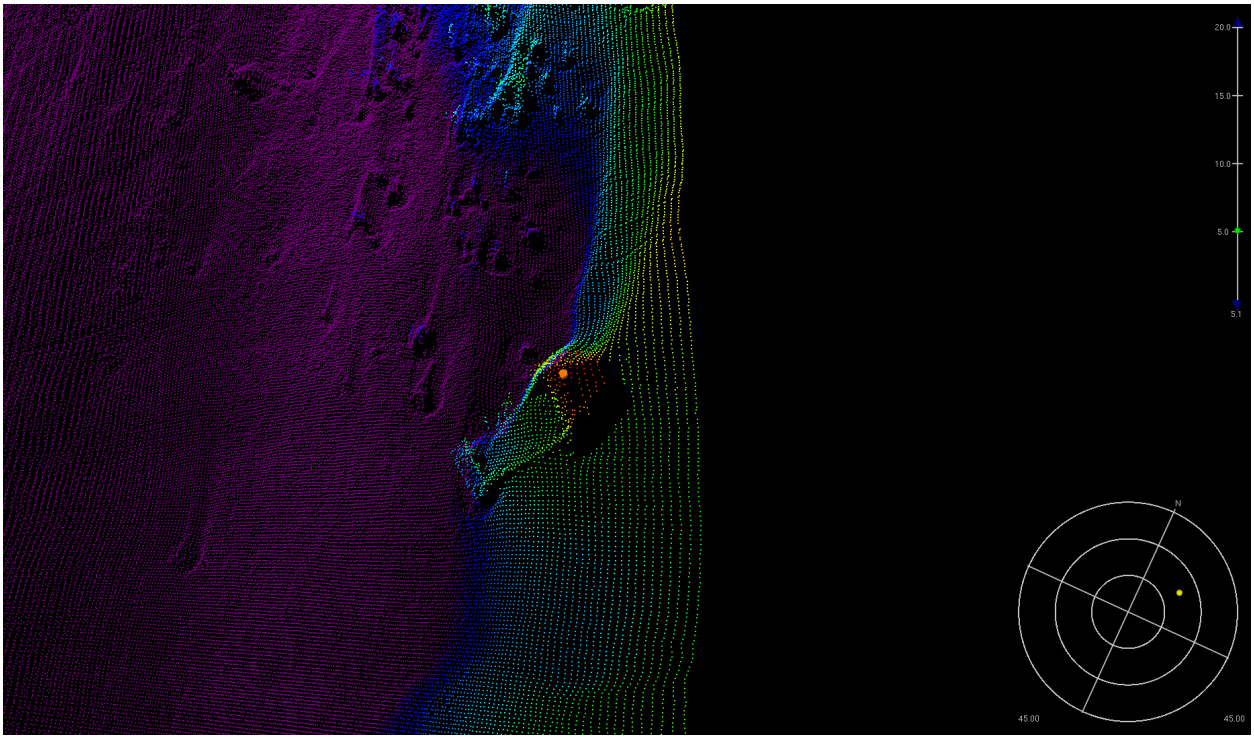


Figure 2.11.2

2.12) US 0000005142 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 39' 17.3" N, 073° 12' 26.0" W
Least Depth:	6.08 m (= 19.96 ft = 3.327 fm = 3 fm 1.96 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005142 00001(0226000014160001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: wreck

Hydrographer Recommendations

chart new wreck

Cartographically-Rounded Depth (Affected Charts):

20ft (12352_3, 12326_1, 12353_1)

3 ¼fm (12300_1, 13006_1, 13003_1)

6.1m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck, 16 x 5m, 1.60m off bottom
	OBJNAM - H12600_307_045
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 6.085 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Two additional wrecks are in close proximity to this wreck. Chart all three wrecks as a wreck area.

Feature Images

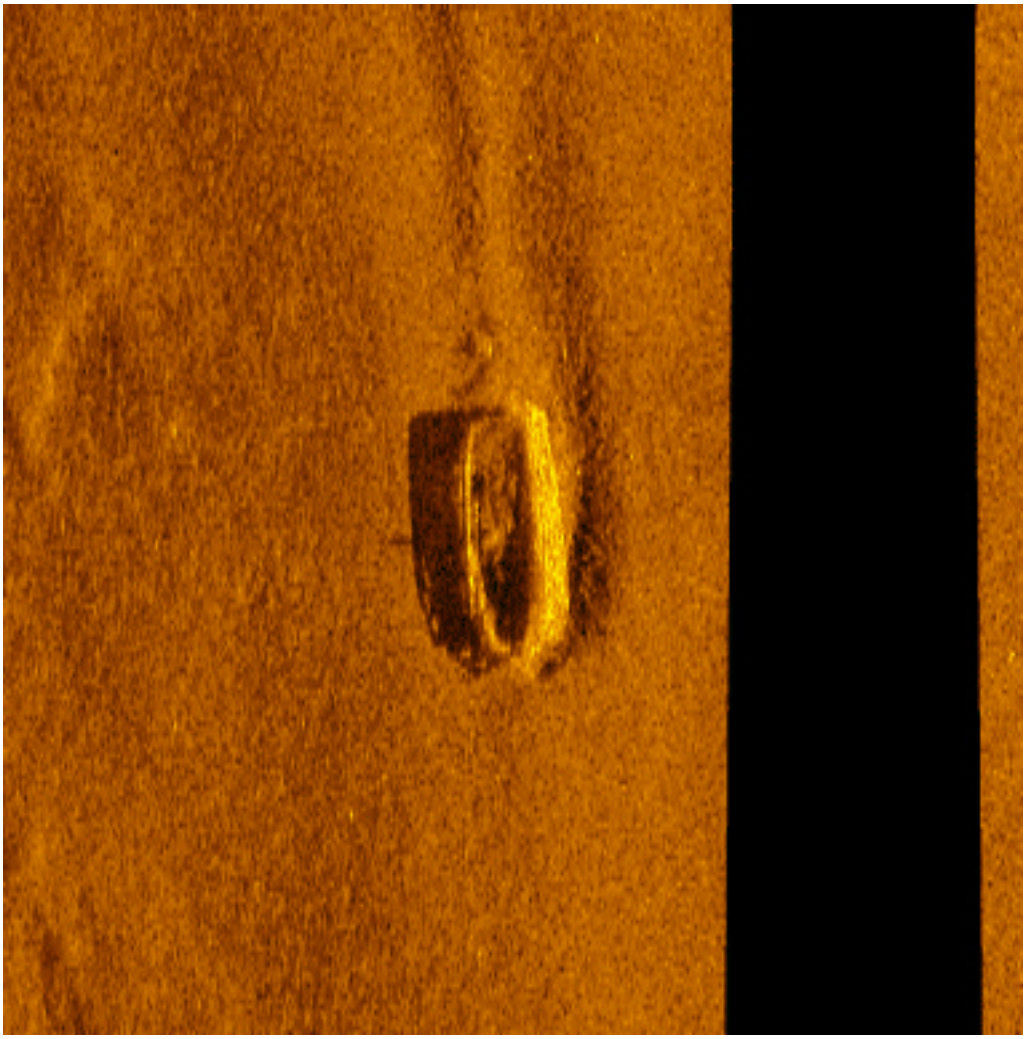


Figure 2.12.1

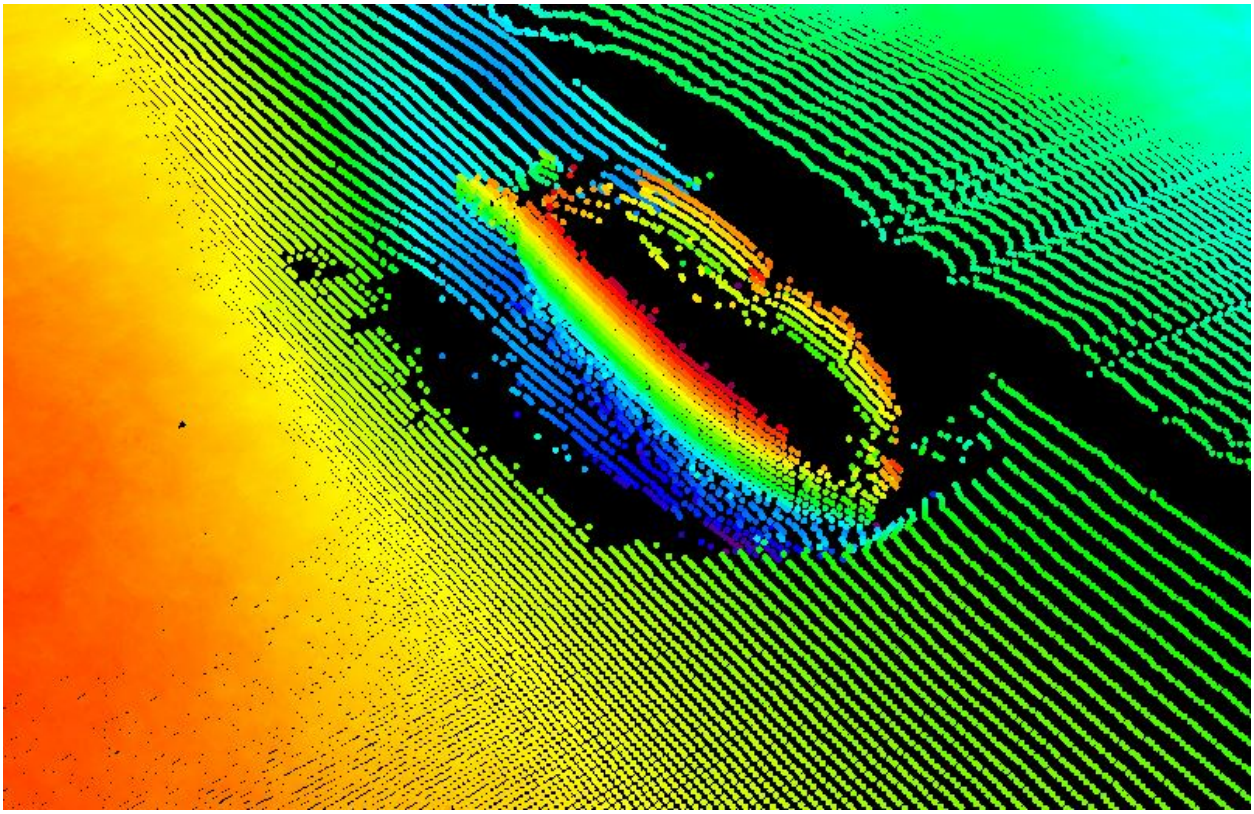


Figure 2.12.2

2.13) US 0000005187 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 19.1" N, 073° 12' 25.9" W
Least Depth:	4.83 m (= 15.83 ft = 2.639 fm = 2 fm 3.83 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005187 00001(0226000014430001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

16ft (12352_3, 12326_1, 12353_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.8m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Structural Debris, b/t charted 11 and 19ft
	OBJNAM - H12600_307_002
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 4.826 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Three additional wrecks are in close proximity to this wreck. Chart all four wrecks as a wreck area.

Feature Images

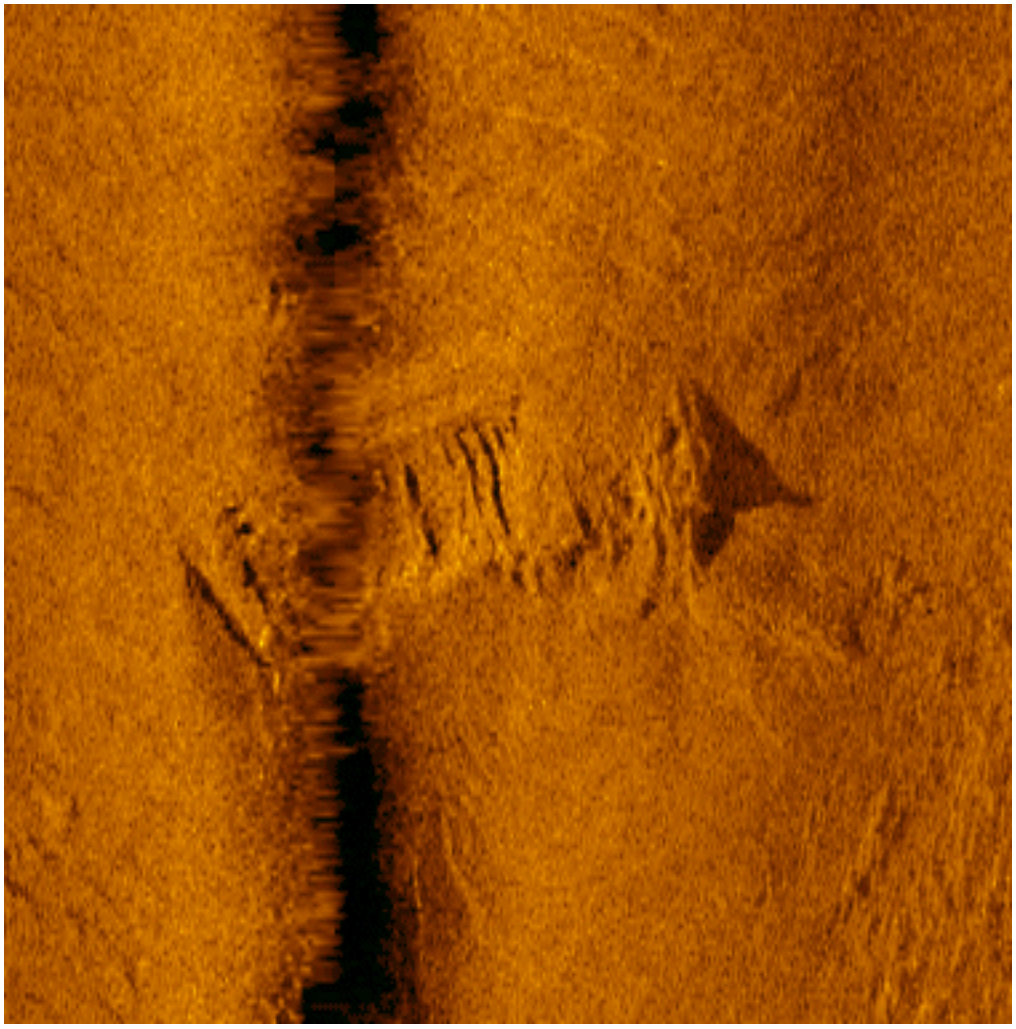


Figure 2.13.1

2.14) US 0000005124 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 39' 13.6" N, 073° 12' 17.6" W
Least Depth:	3.05 m (= 10.02 ft = 1.669 fm = 1 fm 4.02 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005124 00001(0226000014040001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

10ft (12352_3, 12326_1, 12353_1)

1 ½fm (12300_1, 13006_1, 13003_1)

3.0m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck, 9 x 3m, 1.00m off bottom
	OBJNAM - H12600_307_047
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 3.053 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Two additional wrecks are in close proximity to this wreck. Chart all three wrecks as a wreck area.

Feature Images

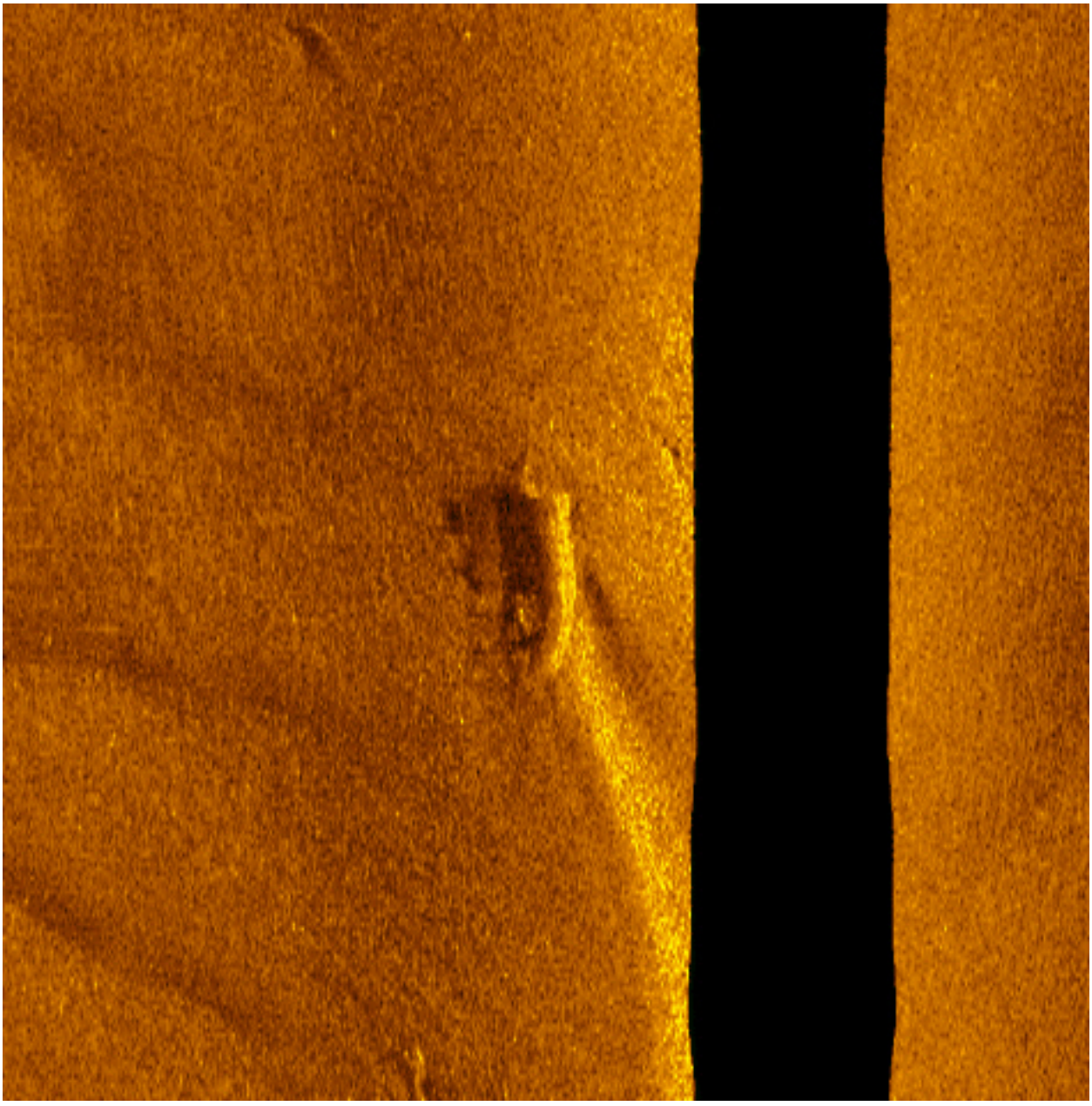


Figure 2.14.1

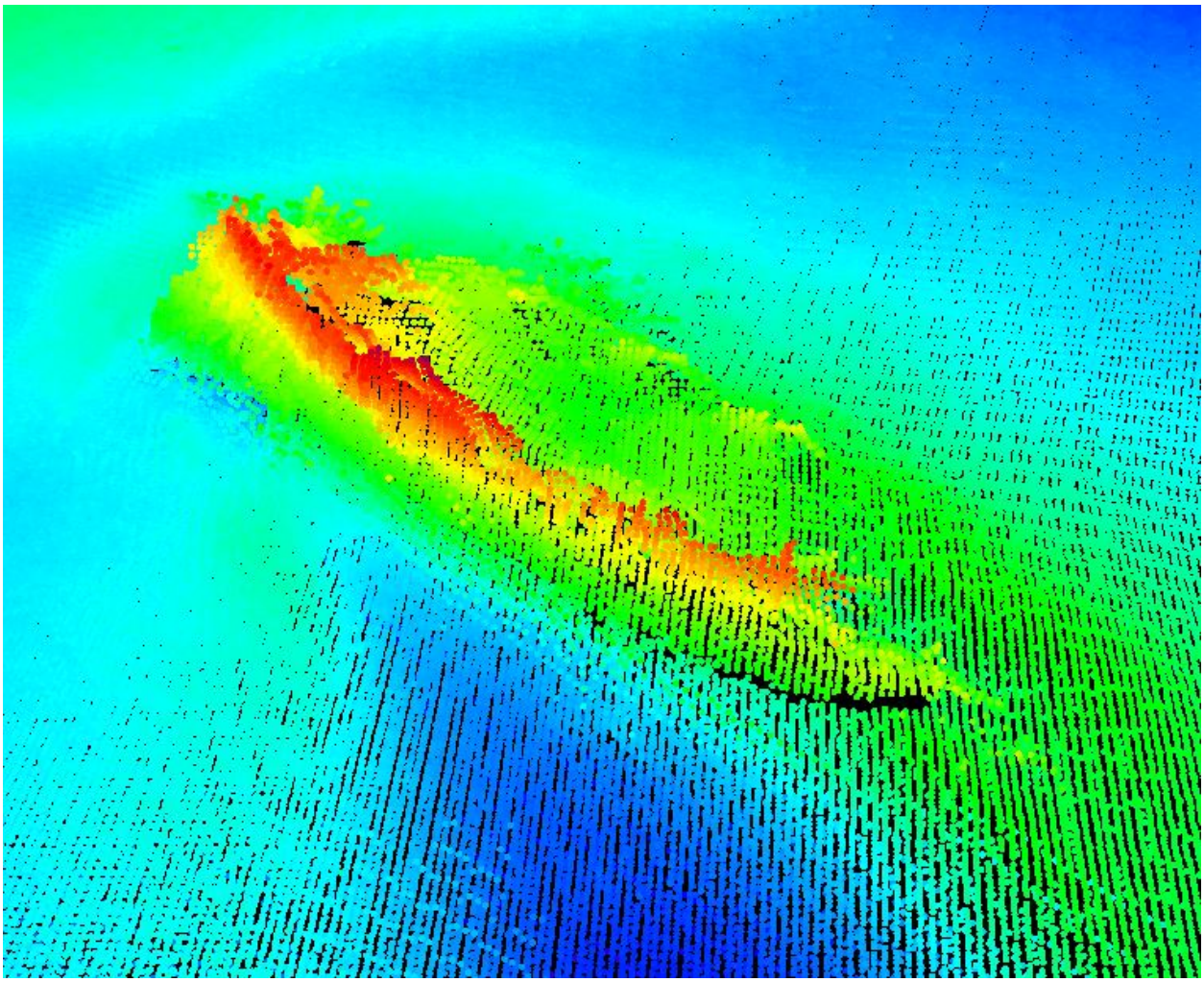


Figure 2.14.2

2.15) US 0000005144 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 38' 35.2" N, 073° 11' 58.2" W
Least Depth:	5.68 m (= 18.65 ft = 3.108 fm = 3 fm 0.65 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005144 00001(0226000014180001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: wreck

Hydrographer Recommendations

Chart new wreck

Cartographically-Rounded Depth (Affected Charts):

18ft (12352_3, 12326_1, 12353_1)

3fm (12300_1, 13006_1, 13003_1)

5.7m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck, 2.6 x 1.5m, 0.70m off bottom
	OBJNAM - H12600_300_009
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.683 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

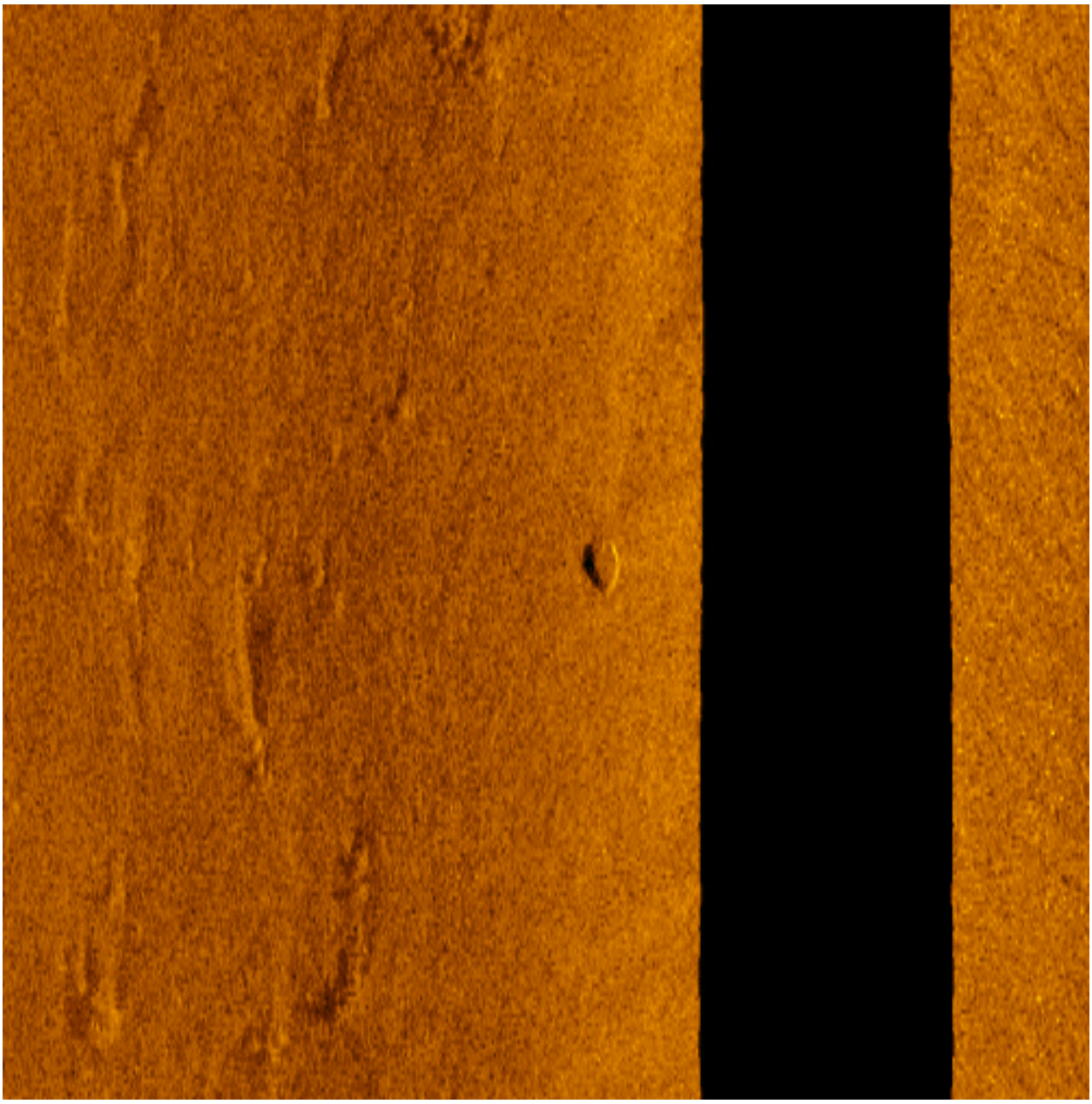


Figure 2.15.1

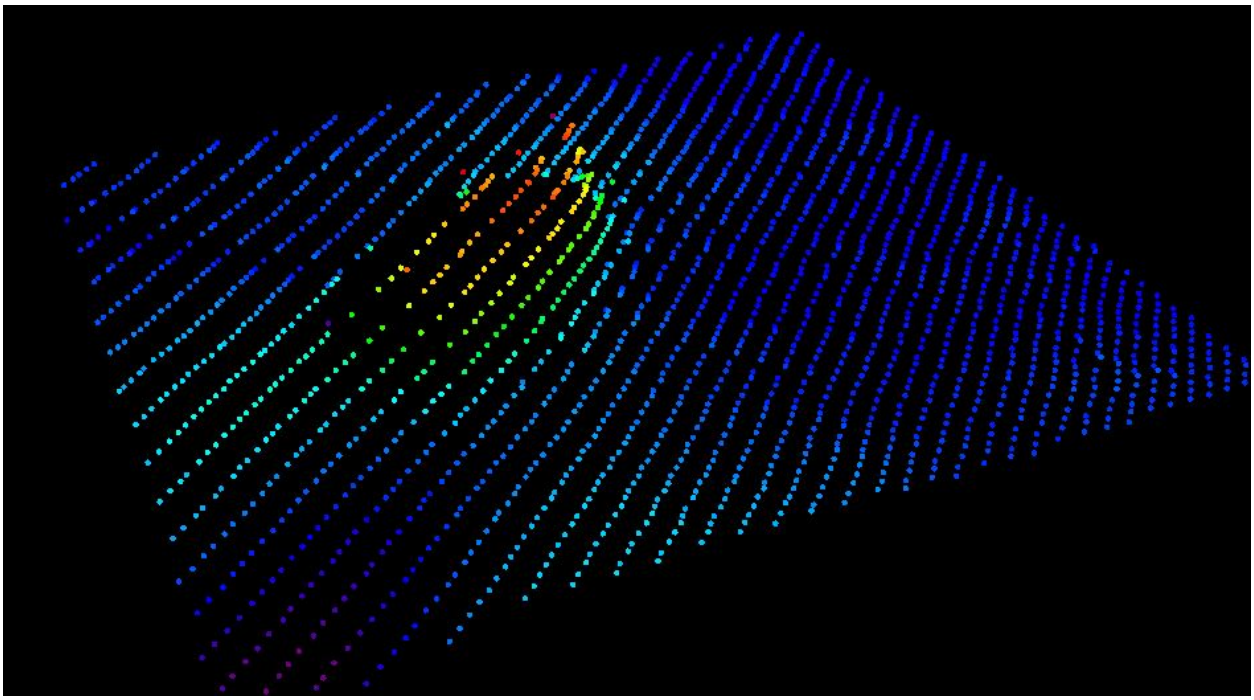


Figure 2.15.2

2.16) US 0000005123 00001 / H12600_Feature_Report_Office.000

Survey Summary

Survey Position:	40° 39' 08.0" N, 073° 09' 24.2" W
Least Depth:	5.43 m (= 17.82 ft = 2.970 fm = 2 fm 5.82 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005123 00001(0226000014030001)
Charts Affected:	12352_3, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Significant Feature, Wreck, 5.53 x 2m, 1.05m off bottom

Hydrographer Recommendations

Chart new wreck.

Cartographically-Rounded Depth (Affected Charts):

18ft (12352_3, 12353_1)

3fm (12300_1, 13006_1, 13003_1)

5.4m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck, 5.53 x 2m, 1.05m off bottom
	OBJNAM - H12600_321_003
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam
	VALSOU - 5.431 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

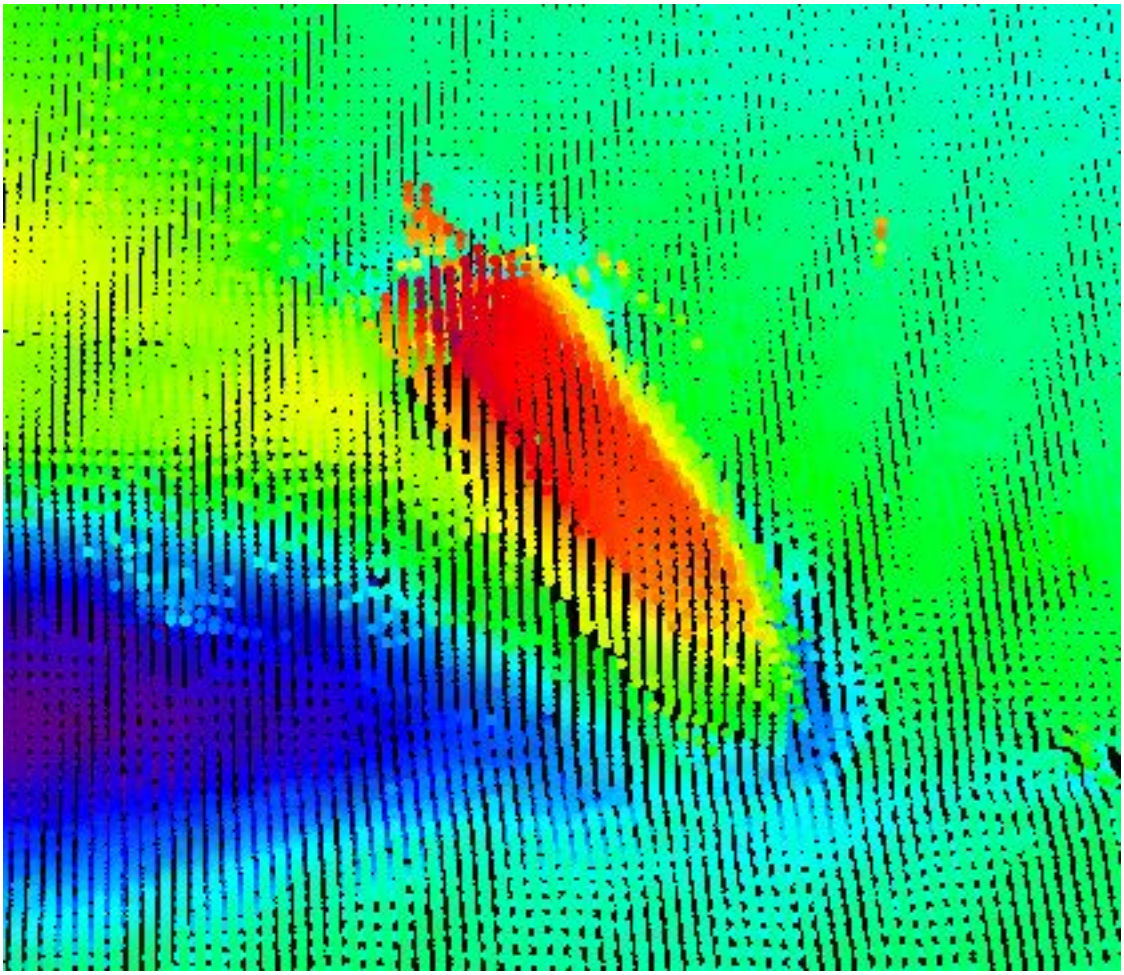


Figure 2.16.1

3 - Dangers To Navigation

3.1) US 0000005021 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 37' 37.6" N, 073° 16' 03.0" W
Least Depth:	6.34 m (= 20.80 ft = 3.467 fm = 3 fm 2.80 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005021 00001(02260000139D0001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Large Cylindrical Debris (Wreck) with a slight conical taper, 7.5 x 3 m, 1.5m off bottom

Hydrographer Recommendations

Chart new wreck.

Cartographically-Rounded Depth (Affected Charts):

21ft (12352_3, 12326_1)

3 ½fm (12300_1, 13006_1, 13003_1)

6.3m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Large Cylindrical Debris (Wreck) with a slight conical taper, 7.5 x 3 m, 1.5m off bottom
	OBJNAM - H12600_280_011
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 6.340 m

WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

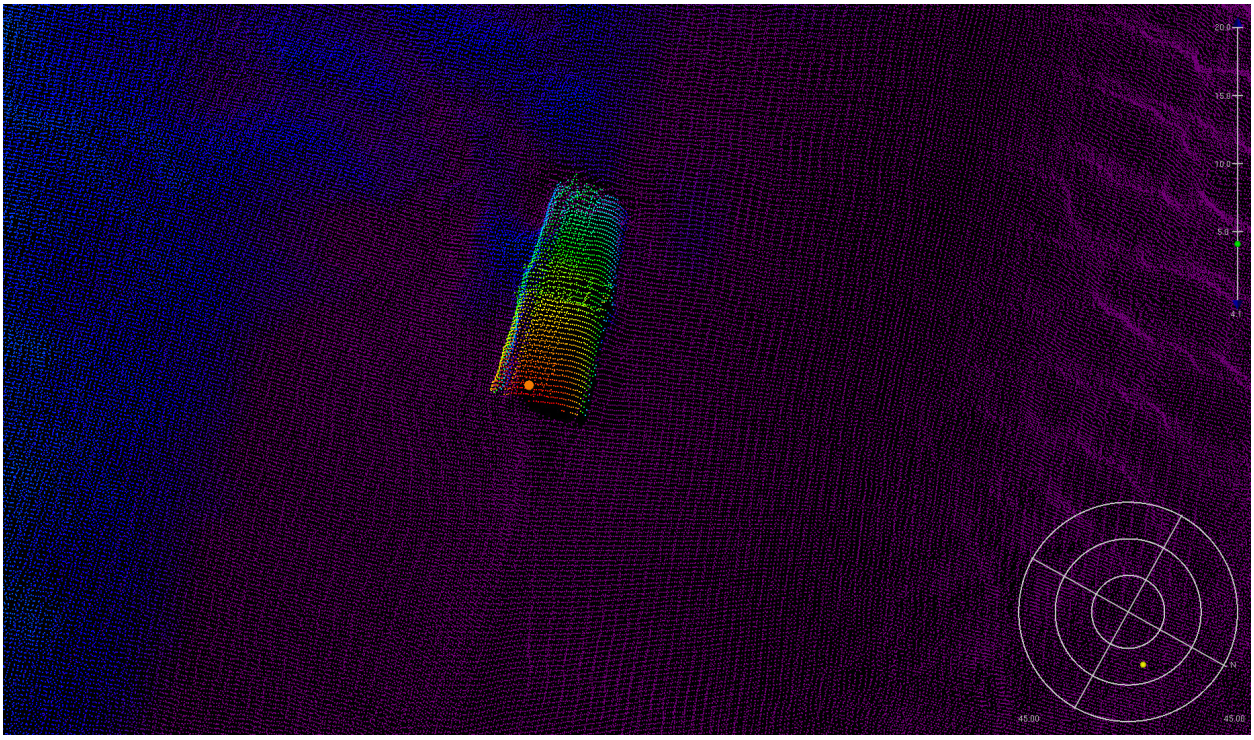


Figure 3.1.1

3.2) US 0000005025 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 37' 57.2" N, 073° 15' 57.5" W
Least Depth:	3.89 m (= 12.77 ft = 2.128 fm = 2 fm 0.77 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005025 00001(0226000013A10001)
Charts Affected:	12352_3, 12326_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Position of charted feature on ENC is not accurate.

Hydrographer Recommendations

Recommend repositioning charted feature and updating least depth.

Cartographically-Rounded Depth (Affected Charts):

13ft (12352_3, 12326_1)

2fm (12300_1, 13006_1, 13003_1)

3.9m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Large Wreck in Shallow Water, sitting right side up, hull mostly intact, debris on deck topside. 28.5 x 8 m, 3.3m off bottom
	OBJNAM - H12600_281_001
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 3.891 m

WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

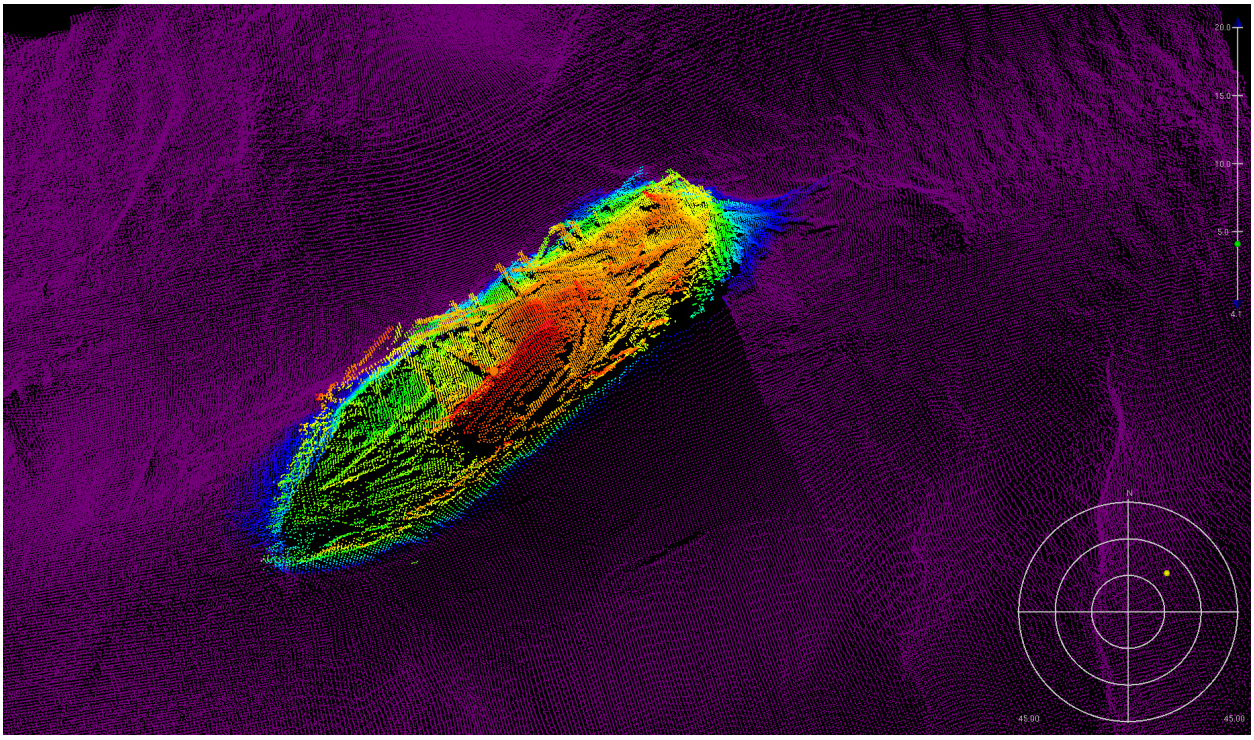


Figure 3.2.1

3.3) US 0000005026 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 37' 57.6" N, 073° 15' 52.3" W
Least Depth:	5.46 m (= 17.91 ft = 2.985 fm = 2 fm 5.91 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005026 00001(0226000013A20001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Position of charted feature on ENC is not accurate.

Hydrographer Recommendations

Recommend repositioning charted feature on the ENC and updating least depth.

Cartographically-Rounded Depth (Affected Charts):

18ft (12352_3, 12326_1, 12353_1)

3fm (12300_1, 13006_1, 13003_1)

5.4m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	EXPSOU - 1:within the range of depth of the surrounding depth area
	INFORM - Wreck of small vessel. Hull appears intact and upside down. 4.5 x 1.7 m, 1m off bottom
	OBJNAM - H12600_281_007
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 5.459 m

WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

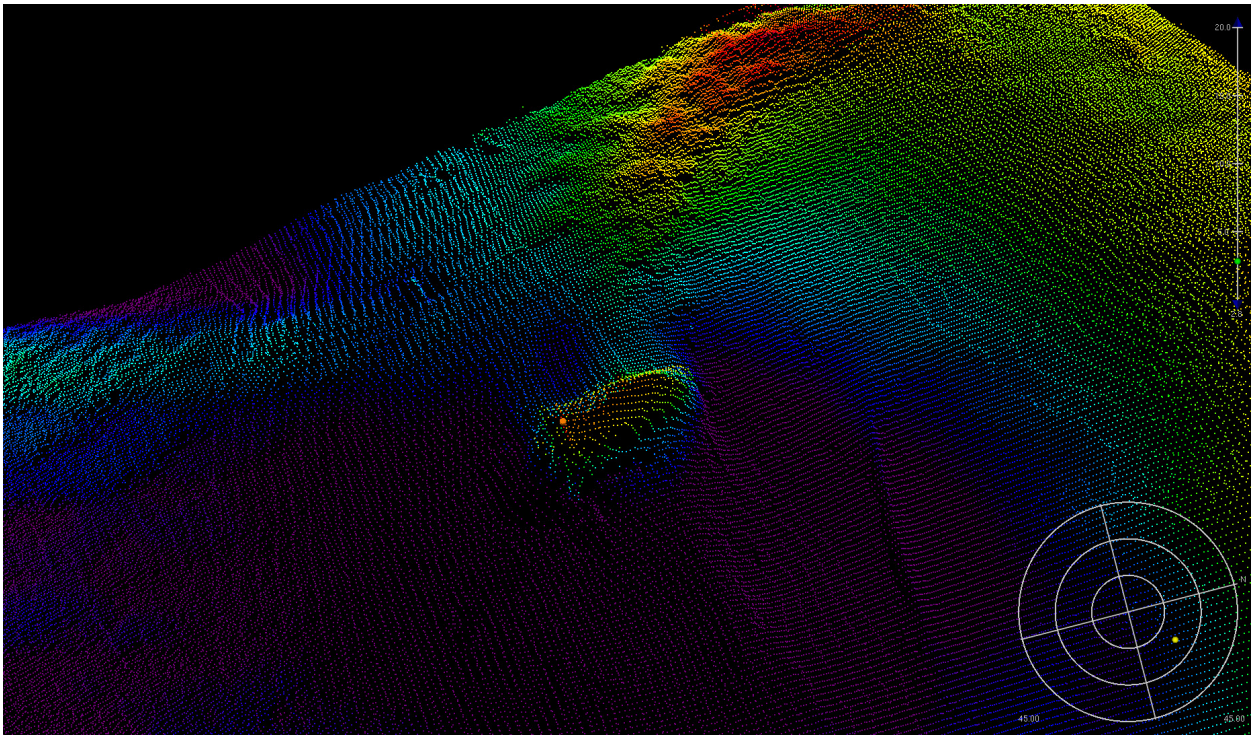


Figure 3.3.1

3.4) US 0000005010 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 38' 06.3" N, 073° 14' 07.6" W
Least Depth:	5.09 m (= 16.71 ft = 2.785 fm = 2 fm 4.71 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005010 00001(0226000013920001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Position of charted feature on ENC is not accurate.

Hydrographer Recommendations

Recommend repositioning charted feature on ENC and updating least depth.

Cartographically-Rounded Depth (Affected Charts):

16ft (12352_3, 12326_1, 12353_1)

2 ¾fm (12300_1, 13006_1, 13003_1)

5.1m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Wreck, 20 x 5m, 2.20m off bottom
	OBJNAM - H12600_291_018
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 5.094 m

WATLEV - 3:always under water/submerged

Office Notes

Concur.

Feature Images

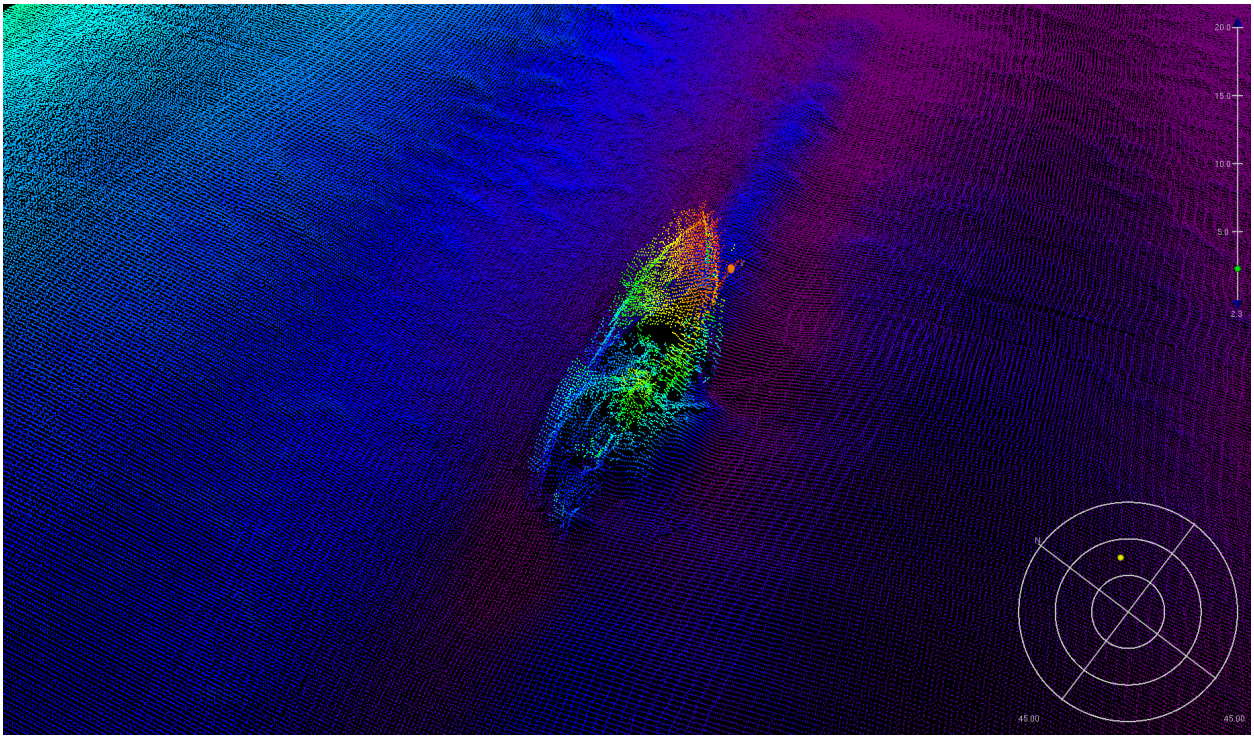


Figure 3.4.1

3.5) US 0000005125 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 38' 16.4" N, 073° 12' 30.1" W
Least Depth:	3.81 m (= 12.48 ft = 2.081 fm = 2 fm 0.48 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005125 00001(0226000014050001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Position of charted feature on ENC is not accurate.

Hydrographer Recommendations

Recommend repositioning charted feature on ENC and updating least depth.

Cartographically-Rounded Depth (Affected Charts):

12ft (12352_3, 12326_1, 12353_1)

2fm (12300_1, 13006_1, 13003_1)

3.8m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck vertical debris rising from wreckage, 29.5 x 6.5m, 2m off bottom
	OBJNAM - H12600_307_009
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 3.805 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Three additional wrecks are in close proximity to this wreck. Chart all four wrecks as a wreck area.

Feature Images

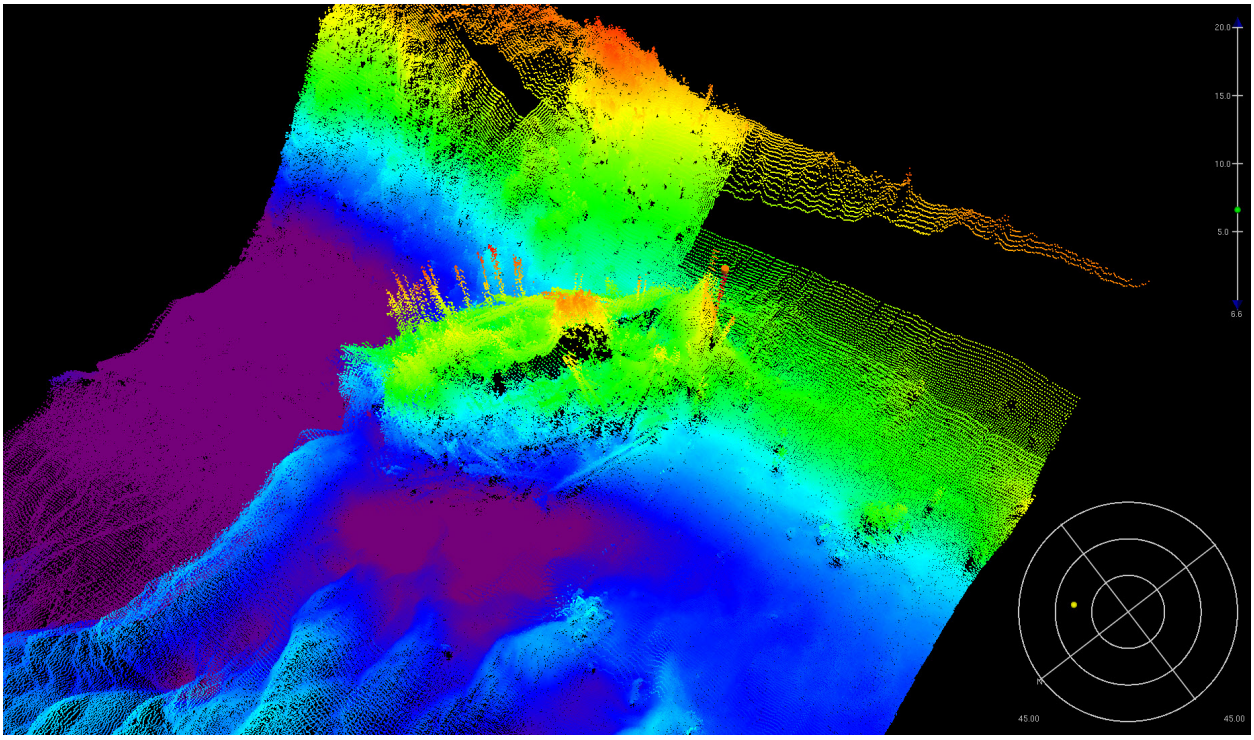


Figure 3.5.1

3.6) US 0000005143 00001 / H12600_Feature_Report_Office.000

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 39' 17.7" N, 073° 12' 19.1" W
Least Depth:	2.95 m (= 9.68 ft = 1.613 fm = 1 fm 3.68 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2014-013.00:00:00.000 (01/13/2014)
Dataset:	H12600_Feature_Report_Office.000
FOID:	US 0000005143 00001(0226000014170001)
Charts Affected:	12352_3, 12326_1, 12353_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Charted position on ENC is not over least depth.

Hydrographer Recommendations

Recommend repositioning charted feature on ENC and updating least depth.

Cartographically-Rounded Depth (Affected Charts):

9ft (12352_3, 12326_1, 12353_1)

1 ½fm (12300_1, 13006_1, 13003_1)

2.9m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Significant Feature, Wreck with large scour, 11.7 x 3.33m, 4.60m off bottom
	OBJNAM - H12600_307_050
	QUASOU - 6:least depth known
	SORDAT - 20140113
	SORIND - US,US,graph,H12600
	TECSOU - 3:found by multi-beam

VALSOU - 2.949 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Two additional wrecks are in close proximity to this wreck. Chart all three wrecks as a wreck area.

Feature Images

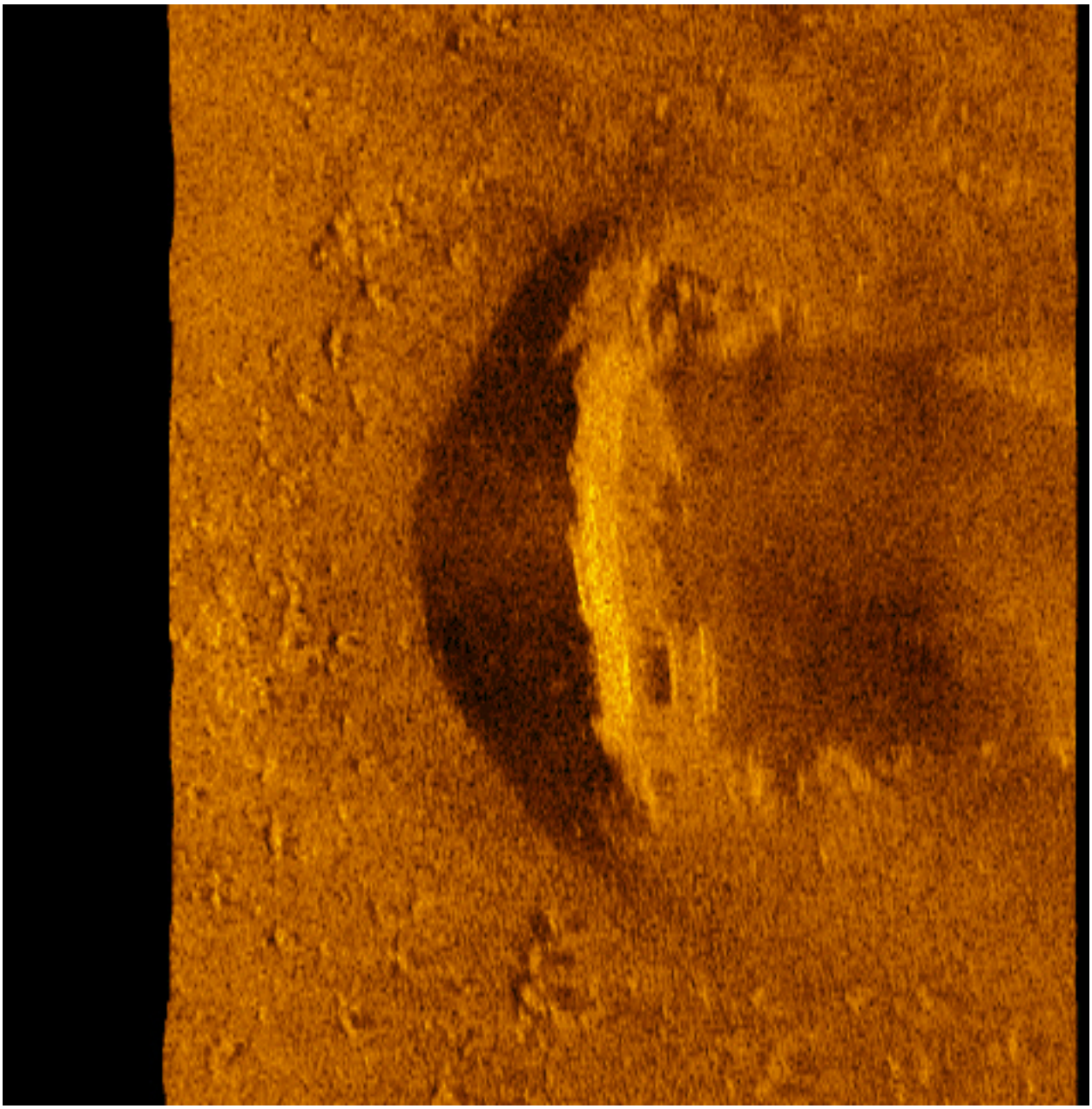


Figure 3.6.1

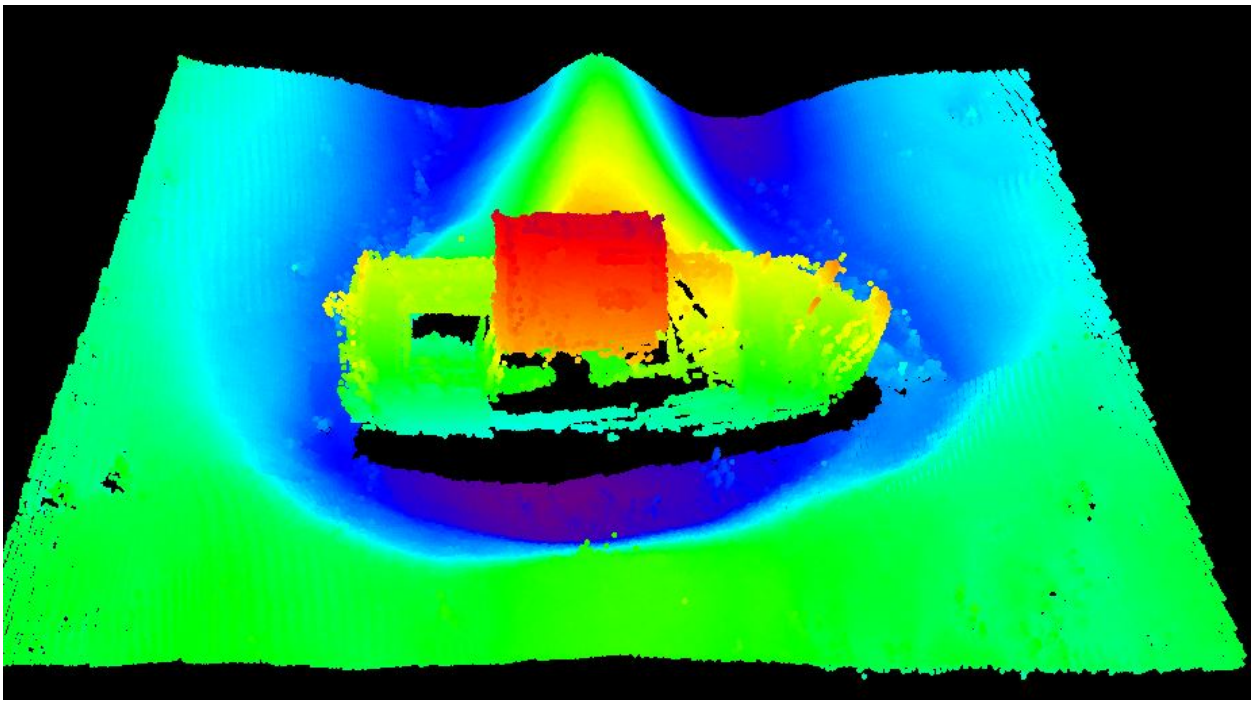


Figure 3.6.2

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H12600

Survey Title: State: New York
Locality: Vicinity of Southern Long Island
Sublocality: Vicinity of North of Fire Island

Project Number: OPR-C331-KR-13

Survey Dates: September 30, 2013 – January 15, 2013

Survey Danger Acquisition Date and Time: November 15, 2013

ATONs are positioned on NAD 83.

Charts affected:

RNC Charts: 12352 34th Edition/September, 2012, scale 1:40,000, NAD 83
12326 51st Edition/April, 2009, scale 1:80,000, NAD 83

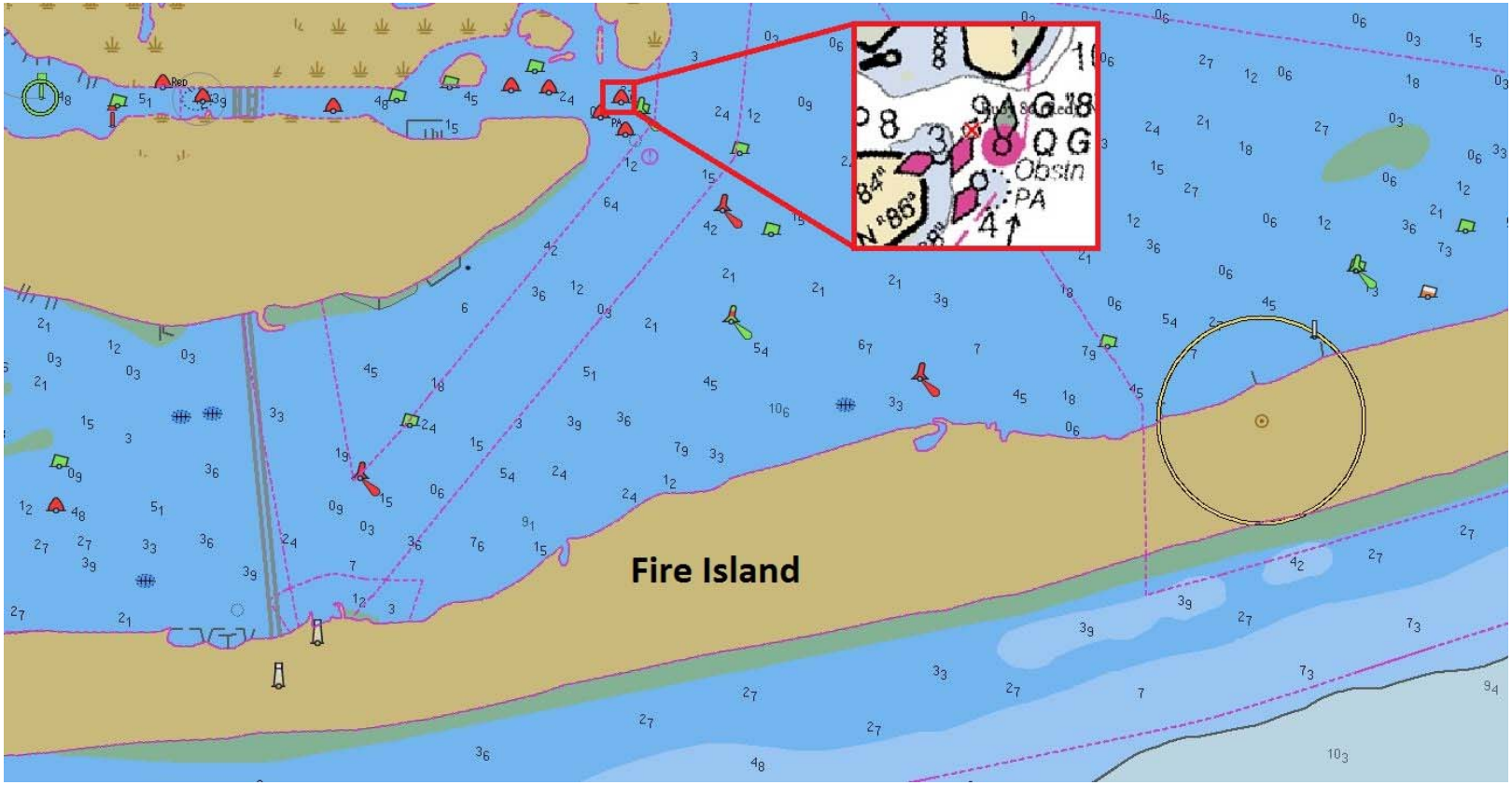
ENC Charts: US5NY52M 10th Edition/March 12, 2013, scale 1:40,000, NAD 83
US4NY1BM 2nd Edition/January 24, 2013, scale: 1:80,000, NAD 83

Dangers to Navigation

ATON	Status	LATITUDE (N)	LONGITUDE (W)
State Boat Channel Buoy 86 (Red)	Not Present	40° 38' 34”N	73° 14' 47”W

Office Notes

Concur with clarification. State Boat Channel Buoy 86 is positioned correctly on the latest charts.



Charted State Boat Channel Buoy 86 (Red) Missing from Waterway.

Chartlet 1 of 1

	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	Project: OPR-C331-KR-13 Survey: H12600 State: New York Sublocality: Vicinity of North of Fire Island Survey Scale: 1:20,000	Sounding Units: Meters Sounding Datum: MLLW Horizontal Datum: NAD 83 Projection: UTM 18N Central Meridian: 073° 14.00

APPROVAL PAGE

H12600

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 NGDC for archive

- H12600_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12600_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications.

Digitally signed by HOLMBERG.PETER.SCOTT.1365886101
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HOLMBERG.PETER.SCOTT.1365886101
Date: 2015.09.02 13:55:35 -07'00'

Approved:_____

Peter Holmberg
Cartographic Team Lead, Pacific Hydrographic Branch

The survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Digitally signed by EVANS.BENJAMIN.K.1237217094
Reason: I am approving this document
Date: 2015.09.02 14:22:00 -07'00'

Approved:_____

CDR Benjamin K. Evans, NOAA
Chief, Pacific Hydrographic Branch